After the Commons: Economic Opportunity and Colonial Legacies of Land Privatization

Allison Spencer Hartnett*

October 18, 2024

Abstract

European colonial administrations often implemented land settlement programs that privileged property rights over indigenous communal tenure systems. Given the large body of literature that supports private property rights as welfare-enhancing, I examine how British property rights reforms affected inter-generational economic opportunity in the case of Jordan, a British colony from 1921 to 1946. I argue that the conversion of communal tenure into private holdings introduced short-term economic benefits that did not result in inter-generational gains in economic well-being. To test this argument, I leverage variation in the pre-reform proportion of villages' communal tenure to examine individual-level economic well-being after the colonial-era reform. Using a contemporaneous case study and survey data from the 2016 wave of the Jordan Labor Market Panel Survey (JLMPS), I examine how exposure to the land settlement reform affected individuals' wealth, asset ownership, and educational attainment. In the short term, children from peasant families were increasingly able to attend school due to the capital infusion from land titling. In the decades that followed, however, I find that individuals born in villages with higher levels of historic communal tenure have lower levels of wealth and educational attainment. This paper contributes to our understanding of how colonial legacies may perpetuate inequalities in post-colonial autocracies, and challenges the characterization of private property rights as a prerequisite for development and democratization

*University of Southern California (ahartnet@usc.edu)

[W]hile agricultural societies all over the world do share certain universal features, like the peasant household at the core of society, it should not be assumed that all agricultural societies necessarily follow the same pattern of development as the European ones. (Schaebler 2000, 241)

1 Introduction

Social scientists tend to consider private property rights to be superior to communal regimes. But while the development of property rights in Europe culminated in a system based on a relation between an individual and the capital they possess, property rights in the rest of the world were not rooted in the same liberal ideology. Or, as Elinor Ostrom would argue, "diverse production and allocation functions" will lead to a variety of property relations (Ostrom 2003, 239).

European private property norms came into direct conflict with communal property regimes during the age of European imperial expansion. Rather than following a natural evolution toward private property, colonialism accelerated the turn toward land privatization through targeted programs known as land settlement. The survey and registration of property under private tenure was a common policy across the British and French colonial empires in the 19th and 20th centuries. After conducting cadastral and fiscal surveys, European land settlement officers, with the occasional assistance of local staff and judges, would consult extant property records, interview landholders, and register individual titles to land which had previously been held in common. Despite the prevalence of these programs, their study has been mainly limited to a few select cases (e.g. India) and with little consensus as to how these programs impacted the economic well-being of rural families.

In this paper, I shed light on how the privatization of communal land resources might condition inter-generational economic opportunities in the former British colony of Transjordan (now the Hashemite Kingdom of Jordan). I argue that exposure to land privatization resulted in short term gains in economic well-being, but reduced individuals economic well-being in the long term. I use several measures of individuals'

exposure to land privatization to determine the effect of such reforms on wealth, asset ownership, and educational attainment. In the next section, I survey the literature on private property rights and economic well-being. I then describe the British land privatization program in colonial Transjordan. The empirical analysis begins with a case study of a single primary school's student enrollment records to demonstrate changes in students' class backgrounds after the privatization reforms. I expand this analysis temporarily and geographically by examining how exposure to privatization reforms may impact individuals' wealth accumulation and education attainment using the 2016 Jordan Labor Market Panel Survey (JLMPS).

2 Property Rights and Individual Economic Well-Being

The political economy literature on property rights in developing contexts tends to view private property rights as normatively positive. Hernando de Soto argued that securing private property rights for the poor creates value, as capital can be used as collateral and the state recognizing property rights reduces risk. Ostrom (2003) and others challenge the presumption that private property rights are inherently superior to communal tenure. In a working paper, Le Rossignol et al. (2022) find that communal property rights are most prevalent in regions where ecological factors require longer fallow periods between cropping cycles and may reduce conflict in settings where resources are scarce. These findings invite broader questions about how the dismantling of communal tenure systems affect the individuals who live in areas where such policies were implemented, given the potential disconnect between local economic needs and private tenure regimes.

The relationship between property rights and political order is particularly contentious in colonized countries. As Boone (2014) and Mamdani (2011) argue, access to land has shaped arenas of political competition in sub-Saharan Africa, and without exception, those land policies have roots in colonial administrations. After piloting the practice of land settlement in India and Ireland, British administrators pursued a vari-

ety of land settlement procedures throughout the empire's African and Asian territories (Home 2006). In countries under direct rule, the expansion of settler colonialism led to multi-tiered systems of land tenure. Settlers usually received private titles to land, while the indigenous systems were re-engineered to ensure preferential European access to land, the pacification of local elites, or both.

The question of what to do with land in indirectly ruled colonies was caught between two imperatives: a modernizing world view and fiscal exigencies (Scott 1998). Colonial administrations came up against fiscal obstacles; as large overseas empires began to unravel after World War II, competing martial and budgetary commitments in the metropole reduced the ability of colonial governments to pursue their policy goals (Lawrence 2013).[1]

Variation in land settlement makes clear that the colonial state is much more constrained than the historical legacies literature assumes. Like any autocratic system, colonial administrators depended on their alliances with elites to govern. Colonial re-engineering of land tenure and property rights systems transformed rural economies with potentially long lasting effects. Banerjee and Iyer (2005) argued that regions where landlords held proprietary rights performed worse with regard to agricultural productivity and human capital investments when compared with regions where cultivators held tenure. Also studying the case of India, Lee (2019) finds that the powerful landlords enfranchised by the British-designed Zamandari system prevented the spread of the colonial bureaucracy. Lee argues that this lower state capacity depressed downstream local economic activity for decades after independence.

3 Historical Background

Jordan, like other Levantine states, was under the control of the Ottoman Empire prior to the establishment of European Mandates after World War I. Communal tenure

[1]This is consistent with Lee's (2017) argument that precolonial elites in regions annexed during war are systematically less wealthy than those annexed during peacetime, a difference he attributes to the colonizer's strategic attempts to forestall revolt.

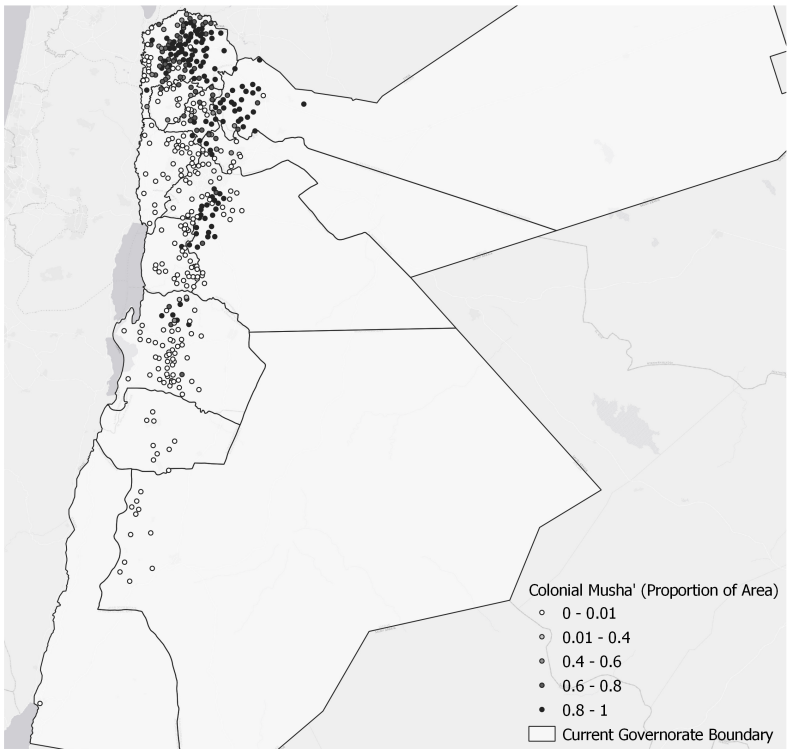
on arable land, known as *musha'*, had been a long-standing feature of agrarian life in the region. *Musha'*, refers to a system of land access (not ownership) where parcels of cultivated land are periodically re-partitioned by village leadership to members of the community (Nadan 2020, Schaebler 2000). Land would be divided into sections to ensure equal distribution of soil type, terrain, distance to the village (Schaebler 2000, 246). Villagers with shares in the land would then receive parcels in each section (Antoun 1970, 21-22). The village, therefore, was the "owner" of the land, and land could only be distributed within villager clans and families (Antoun 1970, 22).

While land policies in directly-ruled British India has been relatively well-studied, land settlement programs became a prevalent policy feature of late colonialism and were particularly focused on dismantling communal tenure for the purposes of simplifying tax collection by the colonial state. Land settlement practices under French indirect rule also favored the titling of private property, with the stated intention of instituting medium and small agricultural holdings. 'Abdullah Hanna describes the French Mandate in Syria as a time when the large landowning class "stabilized" and the commodification of land occurred at the expense of the peasantry (Hanna 2004). The French conducted a cadastral survey to promote smallholder property rights, reduce the Ottoman-era practice of landed elite tax farming, and to establish a more equitable tax system (Khoury 1989, 214). The French began land survey operations in 1923, but the cadastre was only 45 percent complete in 1955, nine years after independence (Provence 2005). Laws passed in 1925 and 1926 formalized French attempts at rural reform like dismantling collective (*musha'*) tenure, but without a complete survey and sufficient funding, the plans were discarded after re-titling only 50,000 acres (Warriner 1948).

Figure 1 shows the proportion of musha' land held in all villages in Transjordan as determined by the British land settlement program. Although musha' villages - those where the majority of land is classified as communal - are densely concentrated in the northern region of Ajlun, these can be found as far south as the region of Karak, over

185 kilometers away. South of Karak, all settled land was either private (mafruz) or state domain.

Figure 1: Musha' as a proportion of village area in Transjordan

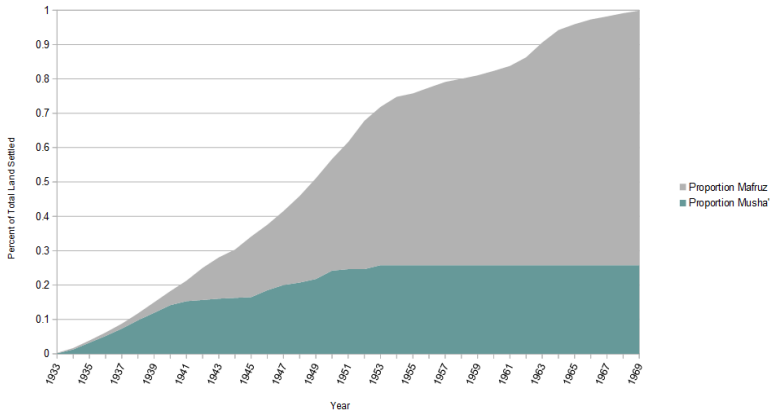


The colonial land program began with a British cadastral survey conducted in the late 1920s. Using this survey to assess land values, private property rights were then allocated using Ottoman tapu records to identify shares of communal land (for musha') or individual owners (for mafruz land).[2] Based on the data in the villages register and in the annual reports from the Department of Land and Survey, early settlement operations focused on musha' tenure, while mafruz lands - which comprised the majority of settled land - only began in earnest in the 1940s. This mirrors the colonial administration's focus on privatizing communal land tenure. All village settlement of musha' land in the now-independent Hashemite Kingdom of Jordan was complete by 1947, one year after independence from Britain. After that date, the only musha' left to settle was located in the West Bank, which had been annexed by Jordan after the creation of the state of

[2]Kew National Archives files CO 831/19/3, CO 831/33/5, CO 831/54/7

Israel. Jordanian East Bank mafruz (privately titled) lands were mostly settled by the mid-1950s. Figure 2 illustrates the progress of the land settlement program from its beginning in 1933 to 1970.

Figure 2: Land Settlement Completion by Year (Musha' and Mafruz Settled in a Given Year as a Proportion of the Total Land Settled)



The colonial state believed that dismantling communal tenure and registering all land as private tenure would natural lead to capital accumulation by the peasantry, and ultimately increase the Transjordanian state's tax revenue via taxes on property and production. Recent work by Nadan (2020) refutes this view, arguing that the social relations embedded within the musha' system provided security against an arid and variable climate, frequent raids by nomadic tribes, and served to reinforce communal supports. The reality of agrarian conditions in Jordan meant that could not work the land alone, and farmers needed to collaborate with all cultivators in the village to appropriately time planting and harvests as a matter of survival (Antoun 1970).

There have been no systematic studies of the outcomes of land privatization in Jordan, but one case study by Antoun (1970) described several economic trends that he attributed to the dissolution of the musha' system. The study centers the case of the former musha' village of Kufr el-Ma in northern Jordan, where the land settlement program completed the partition of musha' lands in 1939. In the intervening 31 years, Antoun observed several negative economic consequences of land privatization. Where farmers

had previously relied on a system of local redistribution and mutual assistance, farmers now managed the agriculturally-risky climate and unstable economy alone. Drought drove down yields, which meant farmers could not pay their taxes. Agricultural lending from the central government's new Agricultural Bank sky-rocketed. Small-holders who were now responsible for the development of their own lands were often forced into bankruptcy, stressing the rural labor market. Larger landowners and other wealthy individuals purchased land, leading to higher concentration of assets among a smaller pool of owners than had existed before the reform. Farmers also often chose to sell their land to fund their sons' education. A primary education was a ticket to a prestigious job in the new bureaucracy, or even more coveted, the military. Another legacy of privatizing musha' parcels in Kufr el-Ma was the fragmentation of holdings, both spatially and among owners. Because plots had been held in shares, it was rare for small-holders to have enough land to efficiently produce for market.

4 Data and Analysis

The analysis in this paper is based on multiple sources. The primary data contribution of this paper is the digitization of the entire corpus of the Transjordanian land settlement register.[3] These registers include the village's name, the start and end dates of the land settlement process, and the area of musha', mafruz, and total land in dunums (1000 square meters)[4] for the 452 colonial-era villages in Jordan.

I used QGIS to manually georeference the village boundaries for each village using a series of British military survey maps published in the years immediately preceding the land settlement program (1929-1932). I then digitized contemporary localities (NUTS 4 level) and matched them within historic village boundaries so that I could associate each locality with historical exposure to land settlement.

[3]The Department of Land and Survey (DLS) maintains archival records on the land settlement process that are currently closed to foreign researchers. Historian Michael Fischbach shared his handwritten transcription of the village registry of land tenure and settlement dates from his fieldwork in the 1990s.

[4]A dunum is an Ottoman unit of measure that often varied locally in terms of its definition. The standard metric conversion is one dunum to one thousand square meters.

The biggest challenge in this analysis is that survey data in Jordan is temporally distant from the land settlement program's implementation. Given that I want to understand the impact of the privatization of communal land on economic well-being over time, I took two steps to address this issue.

In order to examine the effects of land settlement during the period of the program's implementation, I use a case study of a single school's enrollment records that cover before and after the land program's implementation in students' home villages. I obtained the complete registers for the Sama School from its founding in 1919 until 1952 from the Jordanian National Archive. In addition to the name and birth date of each student, the register includes the name, occupation, and village of each student's father. This rare and comprehensive resource allows me to test whether land settlement had a measurable impact on the class composition of students. Furthermore, I am able to see whether students came from outside the village to study - a choice that would have entailed significant costs, including but not limited to room and board.[5] Based on the secondary historical and anthropological evidence described above, I would expect that families might leverage the change in property regime to either invest in or use as collateral for their children's' education.[6].

To assess the economic well-being of individuals over time, I make use of the Jordan Labor Market Panel Survey. This survey is unique for several reasons. First, it reports both the current location and the location of birth for each respondent at the locality level. The survey asks detailed quesitons about asset ownership, educational attainment, and labor market participation for all respondents. Additionally, the survey reports the birth year, education, and labor market participation of individuals parents. Parental birth year is often listed as "Unknown", so I do not include this measure in

[5]I am also able to identify siblings based on availability of father's first name and family name for each student. An initial examination shows that although some fathers experienced class mobility (moving from peasant to farmer, for example), these changes occur infrequently across the pre- and post-reform periods. For some students, I have information on why they left the school and could use this as an additional source of variation - some left due to inability to pay fees, for example.

[6]Summary statistics for Sama School are in Appendix Table 3. The average proportion of musha' in student home villages is 74.9%, as compared to 67.1% in all of Ajlun

the analysis due to missingness. I use this detailed survey data to generate different measures of "exposure" to the land settlement program. I include a binary variable if the respondent's father worked in the agricultural sector, as those individuals are more likely to have been directly impact by the privatization of musha' land. I also generated a measure of temporal exposure for each individual, where I subtracted the year of land settlement completion from their birth year to measure how "distant" each person's birth was from the implementation of the land program in their birth locality. I also include dummy variables if the respondent is a Palestinian national or female, as both groups would be less likely to own their own agricultural land. Jordanians of Palestinian descent are underreported in the survey because they hold Jordanian citizenship and are therefore coded as Jordanian. I restrict the analysis to villages that underwent land settlement[7], and have non-missing values for birth year and year of settlement. The final dataset includes 19,203 individuals.

Summary statistics for all variables are presented in Table 1 .

Table 1: JLMPS Summary Statistics

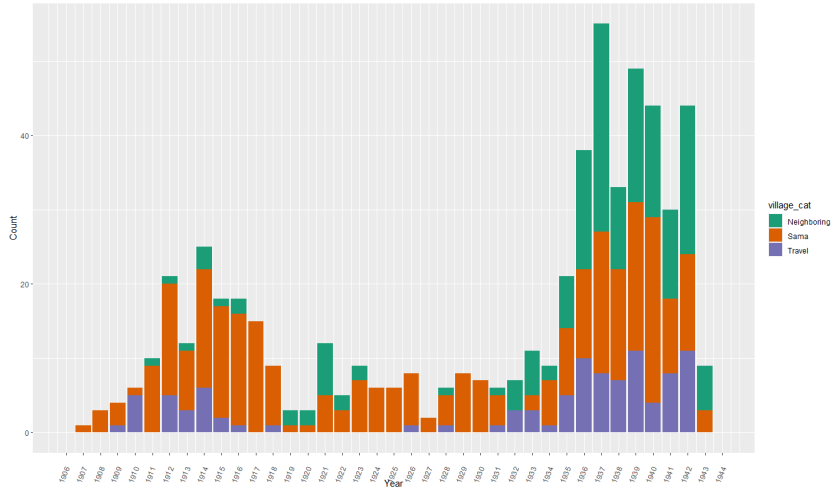
Statistic	N	Mean	St. Dev.	Min	Max
Perc. Musha'	24,491	0.2	0.4	0.0	1.0
Settlement Exposure	19,215	47.0	20.1	−32	82
Ag. Father	24,491	0.1	0.3	0	1
Palestinian	24,491	0.1	0.2	0	1
Female	24,491	0.5	0.5	0	1

5 Short-Run Effects of Land Privatization: Sama School as a Case

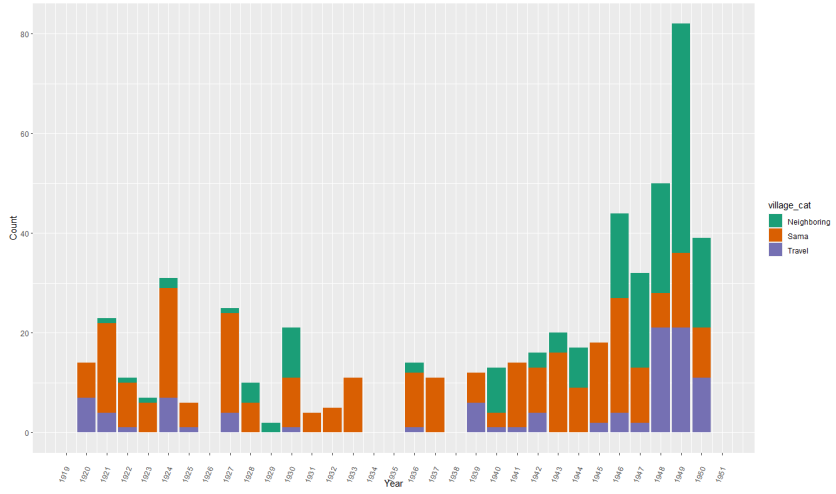
In order to examine the short-run effects of land settlement by social class, I examine the case of Sama Primary School. Sama School opened in 1919, two years prior to the

[7]Some localities were established long after the land settlement program ended, predominantly in Bedouin ranging areas in the the desert.

establishment of the British Mandate in Transjordan. It was among the first public schools opened in the region, and was particularly important as being one of the first schools to serve a village rather than a town in northern Transjordan. The rarity of the school meant that individuals from across social classes with the means and motivation would have been incentivized to attend, given the lack of other schools in the area (Abu Sha'ar 2022, p. 334-36).



(a)



(b)

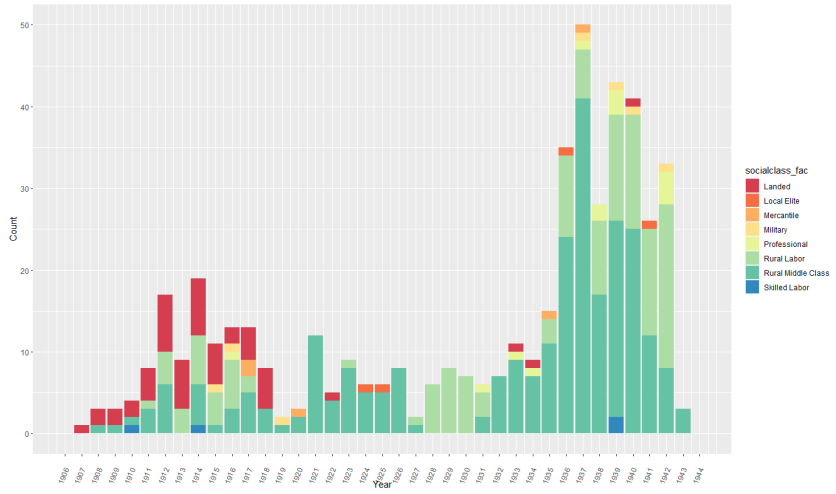
Figure 3: Student Enrollment by Student Village of Origin

Figures 3 and 4 summarize the composition of newly enrolled students by birth year (panel A) and by enrollment year (panel B). Figure 3 shows the frequency of students from the school's village, Sama, neighboring villages (i.e., they share a boundary with

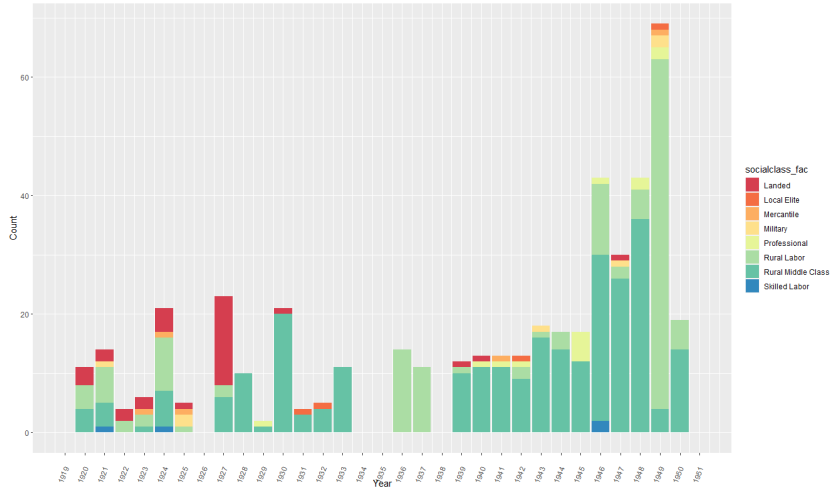
Sama), or villages requiring greater travel. The neighboring village centroids are between 1.8 to 5.5 kilometers from the centroid of Sama. Non-neighboring villages range from 5.1 to 200 kilometers between centroids. In this 41 year period, Sama School enrolled students from 29 Transjordanian villages and towns and eight localities from outside of Jordan.[8] Several patterns emerge over time. As we might expect, students from Sama village are well-represented across the entire period. For students born after 1934 (Figure 3, Panel A), the earliest date for villages in the sample to begin land settlement, we begin to see an uptick in the frequency of students from neighboring villages and from farther afield. As the student body grows over the course of the 1940s, non-local students become the majority in the school.

Abu Sha'ar (2022, p. 345) describes the political economy of rural Transjordan during this period as completely tied to the land, no matter one's social class: "The majority of people owned some land and farmed it themselves in their own time, and farmers did not work on a large landowner's land. Even those who opened small shops practiced agriculture in their personal time. Being involved in trade did not mean leaving the land." Acknowledging this fact, there is considerable variation in the paternal social class of Sama School students. Based on the register's paternal occupation data, I coded eight distinct social class backgrounds based on a Jordanian historian's categorization of social hierarchy (Abu Sha'ar 2022). Landed elites (malaak) are individuals who own their land outright (not communally). Many farm it themselves, or may employ some rural labor. Local elites include tribal shaykhs, mayors, and other social elites (za'im). Professionals include school teachers and administrators, lawyers, local bureaucrats, and imams, as these occupations require training and the minimum of a primary education. The rural middle class are those who list their occupation as farmer. They may or may not own their own land. Rural labor includes peasants, farm workers, pastoralists, and plowmen. Skilled labor include artisans and shoemakers. Merchants

[8]These distances were not calculated for students from other territories, of which there were several. From Syria (Damascus), Palestine (Safed, Arab Rahel, Saran, Samakh, Shuab, the West Bank of the Jordan Valley, and Haifa).



(a)



(b)

Figure 4: Student Enrollment by Father's Social Class

and military receive their own categories.

Figure 4 shows the trends for social class backgrounds by birth year (Panel A) and by enrollment year (Panel B). In general, most students born after the beginning of the Mandate (1918) or enrolled after 1926 are from the rural middle class. If land privatization affects a family's ability to afford schooling for their children, we should observe an increase in the number of students from rural labor families, as they are the most likely to receive new land titles though the process of dissolving communal land tenure. The plots do show higher numbers of rural labor students enrolled in Sama school from 1936 (birth years 1927 to 1931). It is probable that the number of students

whose fathers might have originally been from the rural labor class is underestimated in the data due to the process of land settlement itself. It is likely that those who received shares of formerly communal land would no longer be classified as peasant, but as a farmer.

Consider the village of Sama itself as an example. Land settlement in Sama began on 15 September 1936 and was completed on 5 August 1937. Students generally entered the school between the ages 6 and ten (although this could range as high as twelve). Appendix Figure 6 plots the number of newly enrolled students from Sama by birth year (Panel A) and by enrollment year (Panel B). The children of landed elites are more prominent among the early cohorts (enrollment years 1919-1927, birth years 1906-1918). Children born after the British invasion in 1918 and enroll after 1927 are more likely to be the children of farmers (rural middle class). In the 1936-37 school year, all newly admitted students were from rural labor backgrounds, meaning that their fathers worked as contract farm labor, a peasant, or a pastoralist. This contrasts sharply with the previous cohorts. After 1939, students from the lower and middle classes comprise the majority of new students, and there is an upward trend in total enrollment prior to 1946, the year Transjordan became nominally independent.

As a preliminary test of my theory that land settlement will affect inter-generational economic opportunities, I estimate the following equation:

$$y_{svy} = \beta_1 mushaa_v \times postSettlement_y + \alpha_v + \gamma_y + \theta + \varepsilon_{svy} \quad (1)$$

where y_{svy} is the social class of student s from village v in birth year y, $mushaa_v$ is the percentage of the village's land that is classified as musha' in village v prior to land settlement, $postSettlement_y$ is a dummy variable indicating whether the student's birth year y is after the their village's land settlement was completed, α_v is a full set of village fixed effects that capture the cross-village baseline heterogeneity, and γ_y is a full set of birth year fixed effects that capture aggregate shocks that may have affected all villages. This is not a generalized differences in differences analysis, as we do not

observe individuals who could have enrolled but did not. Due to this limitation, it is not a causal analysis, but rather describes shifts within the student population after land settlement in their home villages.

The results of the analysis are presented in Table 2 and provide some evidence that the short-term effects of land privatization were not equally distributed among rural social classes. An enrolled student was more likely to be from a peasant family if they were born in a village with a high percentage of musha' land tenure after the land settlement. In contrast, enrolled students were less likely to be from a rural middle class family if they were born in a high musha' village after the land settlement. There is no statistically significant effect on large landowners (column 2), non-peasant rural labor (column 3), professionals (column 5) or rural elites (column 6).

Table 2: Student Social Class and Sama School Enrollment

	Dependent variable:					
	Peasant	Landowner	Labor	Farmer	Professional	Elite
	(1)	(2)	(3)	(4)	(5)	(6)
% Musha'	1.383*	-0.161	0.767	0.194	-1.105***	-0.224
	(0.565)	(0.402)	(0.585)	(0.645)	(0.257)	(0.410)
Post	-2.037*	-0.222	-1.048	2.706**	-0.276	-0.549
	(0.851)	(0.605)	(0.856)	(0.943)	(0.375)	(0.599)
% Musha' * Post	1.823*	0.248	1.163	-2.841**	0.390	0.669
	(0.879)	(0.625)	(0.885)	(0.976)	(0.388)	(0.620)
Constant	-0.887	0.987*	-0.399	-0.182	1.021***	1.035*
	(0.585)	(0.416)	(0.612)	(0.675)	(0.268)	(0.428)
Observations	505	505	505	505	505	505
R^2	0.410	0.429	0.319	0.383	0.294	0.362
Adjusted R^2	0.318	0.340	0.223	0.296	0.195	0.271
Residual Std. Error	0.348 (df = 436)	0.247 (df = 436)	0.380 (df = 489)	0.419 (df = 489)	0.167 (df = 489)	0.266 (df = 489)
F Statistic	4.461*** (df = 68; 436)	4.824*** (df = 68; 436)	3.325*** (df = 69; 489)	4.399*** (df = 69; 489)	2.958*** (df = 69; 489)	4.013*** (df = 69; 489)
Note:						*p<0.05; **p<0.01; ***p<0.001

There is reason to be concerned that some feature of communal agriculture could be determining the allocation of schools. To alleviate these concerns, I examine when and where schools appeared in Ajlun both before and after land settlement in each village. I used the Jordan Schools Census to identify all public and private schools in Sama's historic district, Ajlun, from the Ottoman period until the end of the British Mandate in 1946. The results in Appendix Tables 4 and 5 present evidence that land tenure was not linked to the foundation of schools before or after land settlement. The proportion of musha' in a village is not correlated with having a school (private or public) in the

village before land settlement 4. The only significant determinant of school location is the size of the village in square kilometers (Columns 1–3) and in population (Column 3); larger localities are more likely to have a school. When I consider how many new schools were added to a locality after land settlement (Table 5), I find no relationship between land privatization and new school founding, for either public schools (Columns 2 –4) or the total number of schools (Column 1, private and public). In both sets of models, none of the other geographic covariates that are related to musha' explain school placement.

The rich data on student enrollment in Sama schools provide a picture of how communal land privatization affected short-run economic well-being via access to schooling. Communal land privatization results in a short-run increase to the number of enrolled students from peasant families. This dovetails with the case study findings of Antoun (1970) that owners of privatized shares led poorer families families transformed capital into human capital by investing in their children's education. In the next section, I consider how this pattern evolved in the long term using the Jordan Labor Market Panel Survey from 2016.

6 Individual Economic Well-Being in the Jordan Labor Market Panel Survey

To examine how land privatization may have affected long-term economic well-being, I combine the village data on land settlement with the 2016 wave of the Jordan Labor Market Panel Survey (JLMPS) (OAMDI 2018). This nationally representative survey reports on the economic well-being of Jordanian residents and households. I matched each respondent's locality of birth to its historic village boundaries. I am therefore able to test the effect of the proportion of land privatization of one's birth locality (village). I restrict the sample to include Jordanian and Palestinian individuals born in Jordan in villages where the land settlement program was applied between 1933

and 1954.

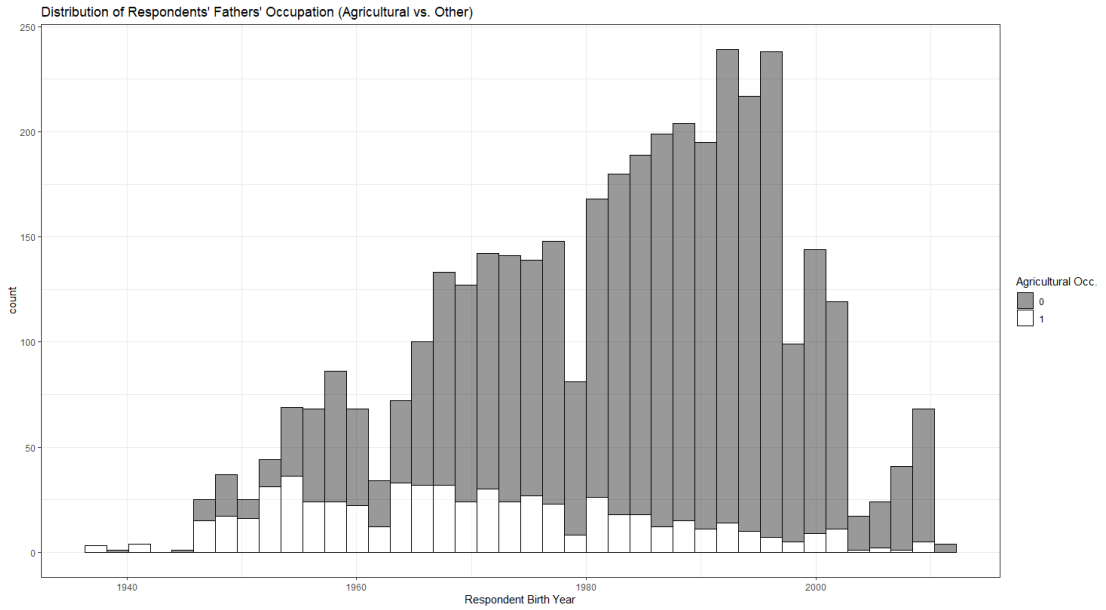
In addition to the JLMPS' high local resolution with regard to birth locality, the survey also contains information about the economic activity of respondents' parents. I focus on respondents fathers, as most mothers in my sample did not enter the labor force. Property rights inheritance law and norms in Jordan also tend to favor male children (Ababsa 2017). It is therefore reasonable to expect that economic benefits would be primarily transmitted through fathers' socioeconomic status.

In the current analysis, I capture exposure to the land settlement program in several ways. First, I use the percentage of respondents' birth village that was held under musha' tenure prior to the land program to proxy for the "intensity" of the land program. Converting communal shares to private tenure would constitute a major shift for a village that should increase with the proportion of village land held under communal tenure, whereas the recognition of pre-existing private tenure would be less disruptive to the status quo. I also measure "temporal exposure" to the land program by subtracting the year that land settlement was completed from the respondents year of birth to account for how removed in time an individual was from the intervention. I also include a dummy variable for whether a respondents' father was primarily employed in agriculture, as they would be most affected the program. Figure 5 shows the distribution of respondents with fathers in agriculture versus all other respondents.

Given that the survey was conducted in 2016, it is to be expected that the sample does not include many respondents born during land settlement (1933 - 1952). But we can see that older respondents are more likely to have had a father whose primary occupation was agriculture than those born in later cohorts. There are 602 respondents in the agricultural father sample, and 3,286 in the non-agricultural father sample.

In each OLS regression model, I interact the proportion of musha' (*settlement*) with the temporal settlement exposure variable to capture the intensity of a respondent's potential exposure to the effects of land privatization. I also include dummy variables for having a father whose primary employment was in agriculture (Ag. Father), being

Figure 5: Distribution of JLMPS 2016 Respondents' Fathers with Agriculture as Primary Occupation by Birth Year



Palestinian, or female. I then regress these variables on several outcomes. I use a continuous index of wealth included in the JLMPS survey and binary variables for land and home ownership to test whether land settlement affected respondents' wealth and capital. I then measured respondents educational attainment as a continuous measure (years of schooling). Each model includes fixed effects for historic villages and standard errors are clustered at the historic village level.

Dependent Variables:	Wealth	Own Land	Own House	Yrs School
Model:	(1)	(2)	(3)	(4)
Variables				
Perc. Musha'	1.071***	0.0052	0.1928***	2.860***
	(0.0467)	(0.0115)	(0.0354)	(0.3293)
Settlement Exposure	-0.0003	0.0002	-0.0019***	-0.1052***
	(0.0004)	(0.0001)	(0.0002)	(0.0050)
Ag. Father	-0.1608***	-0.0365***	-0.0420**	-1.885***
	(0.0501)	(0.0105)	(0.0210)	(0.3919)
Palestinian	-0.0904	0.0093*	-0.0215	0.0225
	(0.0761)	(0.0047)	(0.0332)	(0.3275)
Female	0.0112	0.0011	0.0009	-0.2989***
	(0.0110)	(0.0019)	(0.0035)	(0.0688)
Perc. Musha'a $*$ Settlement Exposure	-0.0030***	-0.0001	-0.0003	-0.0244***
	(0.0010)	(0.0002)	(0.0007)	(0.0068)
Fixed-effects				
Village	Yes	Yes	Yes	Yes
Fit statistics				
Observations	19,203	19,215	19,215	19,215
R^2	0.33112	0.09220	0.10510	0.18693
Within R^2	0.00608	0.00417	0.00862	0.14226

Clustered (Village) standard-errors in parentheses

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Models 1, 3, and 4 show that the percentage musha' land in a historical village is positively correlated with wealth, owning a house, and years of schooling when Settle-

ment Exposure is equal to zero. As settlement exposure increases (i.e., the longer it has been between a respondents birth and the time of land settlement), the positive effects of musha' on wealth, home ownership, and years schooling decrease. The interaction between percentage of musha' and settlement exposure is negative and statistically significant ($p = 0.01$) for wealth (Model 1) and educational attainment (Model 4). While more settlement exposure in higher musha' villages does not eliminate the positive effect of privatization on wealth over time, it does reduce the magnitude. It does, however, meaningfully reduce school attainment, suggesting a differential effect on respondents from higher musha' that were born longer after their village underwent land settlement. In all models, having a father whose primarily employment was in agriculture is negatively correlated with economic well-being outcomes.

7 Conclusion

In this paper, I presented preliminary evidence that links colonial land settlement in Transjordan to long-run economic outcomes. While Transjordan is only one case, the study of land settlement in this context is instructive for other cases of indirect rule and late colonized states - particularly in the British empire. I have shown that the privatization of communal land can have negative consequences long after independence, particularly for the most economically vulnerable citizens. This study also helps address some open questions among scholars of Jordan, particularly surrounding poverty pockets in the Ajlun district. Why is the the most fertile area of the country, and the one with the longest history of bureaucratic state capacity, the poorest region in modern Jordan? By highlighting the economic challenges of communal land privatization, we might be one step closer to understanding contemporary patterns of poverty in Jordan.

8 Appendix

Table 3: Sama School Villages Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
% Mushaa	30	0.749	0.290	0.000	0.979
Pop 1916	18	602.778	833.221	100	3,500
Pop1949	26	1,021.423	1,506.429	59	6,693
Bani Hassan	30	0.033	0.183	0	1
Year Start	28	1936.893	1.343	1934	1940
Year End	30	1938.600	2.824	1934	1949
Pop (1961)	30	2,221.433	8,037.199	155	44,685
Distance to Sama (KM)	29	17.347	36.644	0.000	200.000

Pre-Settlement Schools Table 4 shows that school placement pre-settlement is not being driving by musha' or correlates of musha'. The only significant predictor of school placement is the natural log of the area of the village.

Table 4: Schools Pre-Land Settlement in Ajlun

	Dependent variable:		
	presettlement_schools	public_presett_schools	
	(1)	(2)	(3)
% Musha'	-0.139	-0.049	-0.028
	(0.148)	(0.131)	(0.333)
log(Distance Damascus)	-0.725		
	(0.537)		
log(Distance Amman)		0.272	0.158
		(0.210)	(0.620)
Cropland 1930	-0.063	-0.057	-0.061
	(0.074)	(0.069)	(0.041)
Altitude	0.077	0.066	
	(0.076)	(0.071)	
log(Area KM)	0.247***	0.223***	0.275*
	(0.051)	(0.046)	(0.123)
Irbid Qada	0.068	0.270	0.780*
	(0.186)	(0.163)	(0.368)
Jerash Qada	0.167	0.407*	0.480
	(0.184)	(0.175)	(0.369)
Bani Hassan	-0.076	-0.104	
	(0.164)	(0.148)	
log(Pop 1916)			0.310**
			(0.091)
Constant	6.223	-5.245*	-5.431
	(6.373)	(2.397)	(7.035)
Observations	200	200	83
R^2	0.127	0.128	0.334
Adjusted R^2	0.090	0.091	0.272
Note:			*p<0.05; **p<0.01; ***p<0.001

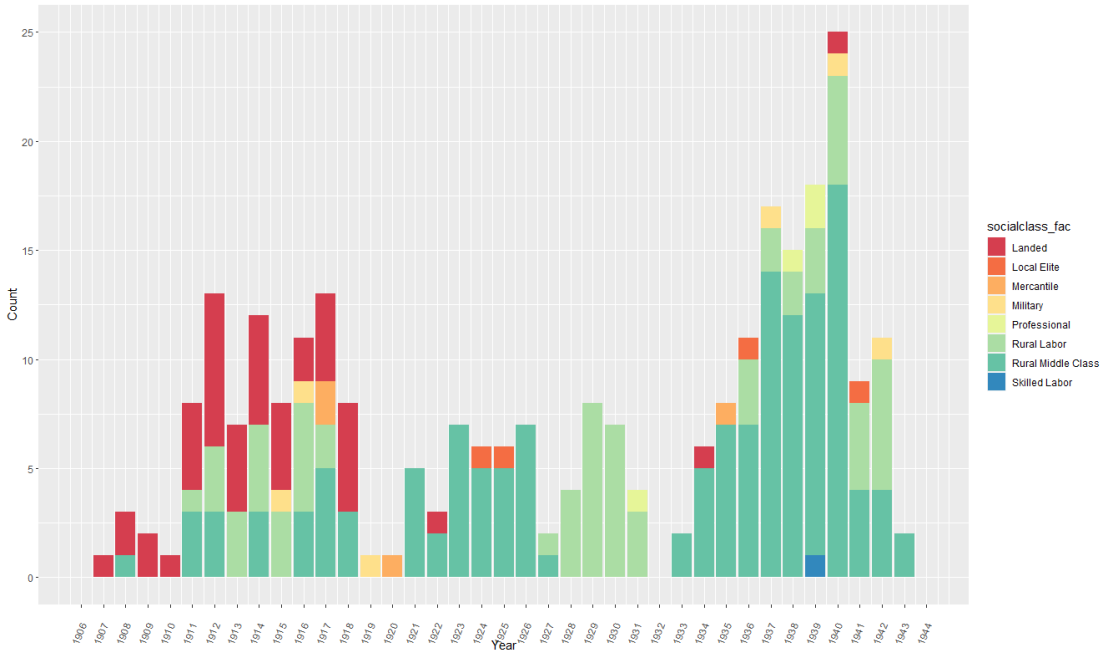
Post-Settlement Schools Table 5 shows that musha' and other geographic covariates do not explain variation in schools opening after land settlement (until the end of the mandate).

Table 5: School Location Post-Land Settlement in Ajlun

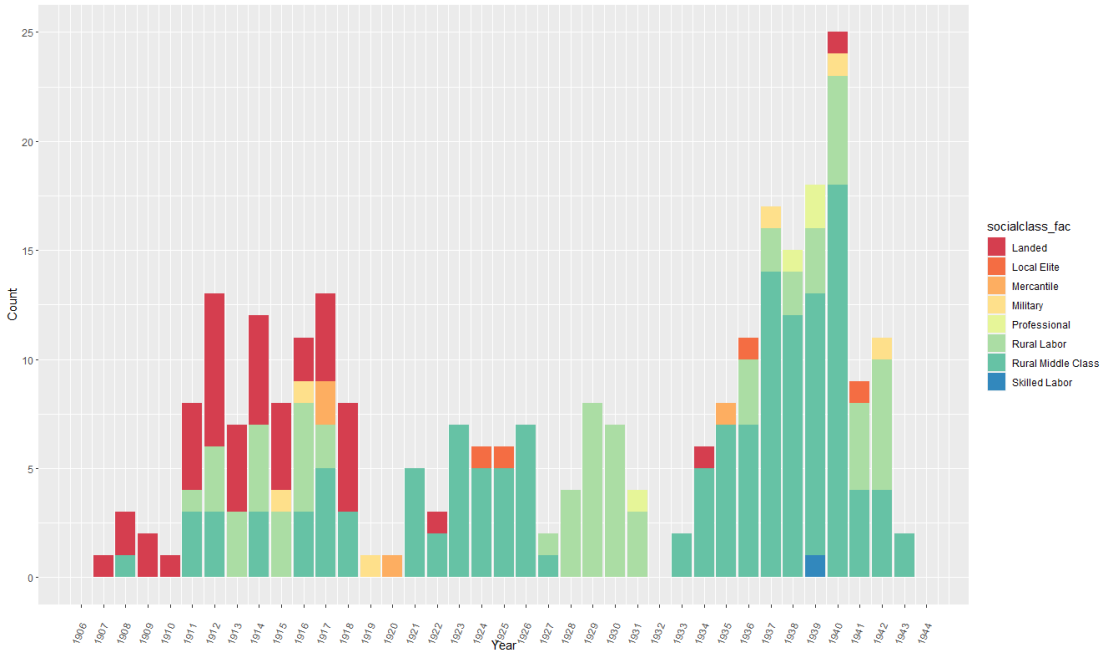
	Dependent variable:			
	school_diff	publicschool_diff		
	(1)	(2)	(3)	(4)
N Schools Pre	0.001			
	(0.015)			
N Public Schools Pre		-0.009	-0.009	-0.019
		(0.017)	(0.032)	(0.021)
% Musha'	-0.032	-0.035	-0.122	-0.036
	(0.032)	(0.031)	(0.093)	(0.039)
log(Distance Damascus)	0.057			
	(0.115)			
log(Distance Amman)		-0.009	-0.062	-0.009
		(0.050)	(0.174)	(0.068)
Cropland 1930	-0.003	-0.004	-0.010	-0.001
	(0.016)	(0.016)	(0.012)	(0.003)
Altitude	0.003	0.004		
	(0.016)	(0.017)		
log(Area)	0.008	0.010	0.001	0.003
	(0.012)	(0.012)	(0.036)	(0.018)
Irbid Qada	-0.072	-0.075	-0.084	-0.110*
	(0.040)	(0.039)	(0.106)	(0.054)
Jerash Qada	-0.105**	-0.103*	0.239*	-0.146**
	(0.039)	(0.042)	(0.105)	(0.056)
Bani Hassan	0.008	0.007		
	(0.035)	(0.035)		
log(Pop 1916)			-0.006	
			(0.027)	
log(Pop 1949)				0.019
				(0.017)
Constant	-0.626	0.128	1.085	0.117
	(1.360)	(0.575)	(1.978)	(0.761)
Observations	200	200	83	148
R^2	0.073	0.074	0.136	0.109
Adjusted R^2	0.029	0.030	0.042	0.057
Note:	*p<0.05; **p<0.01; ***p<0.001			

Sama School Results Tables This figure shows the social class composition of each annual enrollment in the Sama School for students from the village of Sama. Panel A shows the frequency of student class background by birth year. Panel

B shows the same by year of entry to the school.



(a)



(b)

Figure 6: Student Enrollment by Father's Social Class

References

Ababsa, M. (2017). The Exclusion of Women from Property in Jordan: Inheritance Rights and Practices. *Hawwa*, 15(1-2):107–128.

Abu Sha'ar, H. (2022). *Tarikh al-Urdun fii 'Ahed al-Imara (1921-1946): Population and Education*. Fida'at, Amman.

Antoun, R. T. (1970). *Arab Village: A Social Structural Study of a Trans-Jordanian Peasant Community.* Indiana University Press, Bloomington.

Banerjee, A. and Iyer, L. (2005). History, institutions, and economic performance: The legacy of colonial land tenure systems in India. *American Economic Review*, 95(4):1190–1213.

Boone, C. (2014). *Property and Political Order in Africa*. Cambridge University Press, Cambridge.

Home, R. (2006). Scientific survey and land settlement in British colonialism, with particular reference to land tenure reform in the Middle East 1920–50. *Planning Perspectives*, 21(1):1–22.

Lawrence, A. K. (2013). *Imperial Rule and the Politics of Nationalism: Anti-Colonial Protest in the French Empire*. Cambridge University Press, Cambridge.

Lee, A. (2019). Land, State Capacity, and Colonialism: Evidence From India. *Comparative Political Studies*, 52(3):412–444.

Mamdani, M. (2011). Beyond Settler and Native as Political Identities: Overcoming the Political Legacy of Colonialism Author(s). *Comparative Studies in Society and History*, 43(4):651–664.

Nadan, A. (2020). Revisiting the anti-musha' reforms in the levant: origins, scale and outcomes. *British Journal of Middle Eastern Studies*, 47(4):595–611.

OAMDI (2018). Labor Market Panel Surveys (LMPS). Technical report, Economic Research Forum (ERF), Egypt.

Ostrom, E. (2003). How Types of Goods and Property Rights Jointly Affect Collective Action. *Journal of Theoretical Politics*, 15(3):239–270.

Schaebler, B. (2000). Practicing Musha': Common Lands and the Common Good in Southern Syria under the Ottomans and the French. In Owen, R., editor, *New Perspectives on Property and Land in the Middle East*. Harvard University Press, Cambridge, MA.

Scott, J. C. (1998). *Seeing Like a State*. Yale University Press, New Haven.

Warriner, D. (1948). *Land and poverty in the Middle East*. Royal Institute of International Affairs, London.