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Le développement

Paris : CIHEAM

Options Méditerranéennes; n. 11

1972

pages 80-83

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To cite this article / Pour citer cet article

Stickley T. **The role of land tenure in agricultural development: The Bani-Hasan area of Jordan**. *Le développement*. Paris : CIHEAM, 1972. p. 80-83 (Options Méditerranéennes; n. 11)



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The role of land tenure in agricultural development : the Bani-Hasan Area of Jordan ⁽¹⁾

(1) This is the condensation of a Master of Science Thesis in Agricultural Economics entitled *Land Tenure in Jordan : A Case Study of the Bani-Hasan Area* by Ahmad Abu Shai-kha, Faculty of Agricultural Sciences, American University of Beirut, Beirut, Lebanon, 1971, approved publication in *Options Méditerranéennes* as AUB-FAS Journal Number 372, and Miscellaneous Publications Series Number 62.

Underdeveloped agricultural areas exist in almost every country of the world. The need for the development of each area in order to raise the level of living of its inhabitants and enable them to contribute to the development of their countries is recognized.

One such area in Jordan is the Bani-Hasan area which lies north of Amman approximately half way to the Syrian border. This area is inhabited by approximately 20 000 people all of whom are sedentary bedouins, depending on farmings as their main source of income and employment. The majority of the farmers are elderly and illiterate people. The principle crops grown by these farmers are cereals, mainly wheat. Orchards (predominantly olives and grapes) have been introduced recently into the area mainly through governments projects, but the land area in orchards is still small, not exceeding six percent of the total cultivated area. Vegetables are grown in years when there is enough rainfall. Another agricultural enterprise is livestock, especially sheep and goats.

Because non-irrigated farming is fully dependent on rainfall, which fluctuates from year to year, a farmer's income fluctuates accordingly, and in some dry years there is no income. Furthermore, with no alternate employment in the district, seasonally as well as in dry years there is an employment problem.

For these reasons the Government of Jordan has shown deep interest in developing the agriculture of the area. Therefore, realizing that land tenure is one of the most important factors affecting agricultural development, a study of land tenure was conducted in the Bani-Hasan area during the summer of 1970. The objectives of the study were to identify the conditions of land ownership and tenancy and to determine whether these conditions are the ones most conducive to agricultural development or if they need to be modified.

For the purpose of conducting the study a sample of 106 farmers was selected randomly from nine villages (also selected randomly, representing the Bani-Hasan area geographically). The selected farmers were interviewed from an interview schedule.

FINDINGS OF THE STUDY

The most important findings of the study are the following :

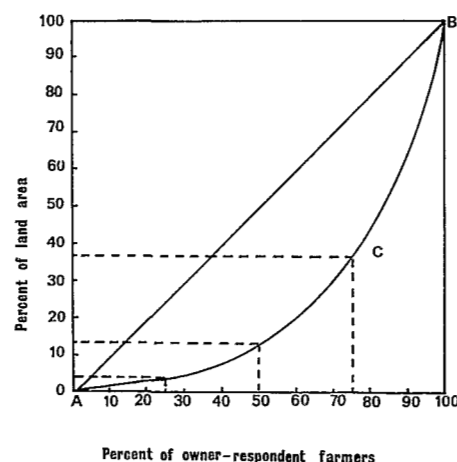
1. Types of Land Tenure

Two types of land tenure were found to prevail in the Bani-Hasan area : owner-operatorship and sharecropping. Of the respondents, four fifths were found to be owner-operators and one fifth were sharecroppers.

2. Land Ownership

The average (mean) land area owned was found to be 20.6 hectares per owner-respondent. However, land was not equally distributed among land owners. Of the total land area, 3 % was distributed among 25 % of the owner-respondents, 33 % was distributed among the next 50 % of the respondents, leaving 64 % which was distributed among the remaining 25 % of the respondents (Figure 1).

FIG. 1. — Cumulative distribution of land ownership among the 98 owner-respondents in the Bani-Hasan area of Jordan, 1970.



Line AB: The theoretically equal distribution of land.
 Line ACB: The actual distribution of land among the owner-respondents of this sample.

3. Déficits in the Owner-Operators System

The majority of the owner-respondents was found to own agricultural land mainly through inheritance. The ownership of land through inheritance has two main serious consequences :

a) Parcelling of Agricultural Land

Through examining cadastral maps it was found that agricultural land was stripped into very long and narrow strips. Sometimes the strips were 300 meters in length but only a few meters in width (Figure 2). This causes difficulty in using agricultural land in the most efficient way.

b. Land Fragmentation.

Land fragmentation is a situation where an agricultural holding consists of several discrete parcels, often scattered over a wide area.

It was found that the number of fragments per owner-respondent in the Bani-Hasan area ranged from one to nine fragments with an average (mean) of three fragments per holding. Those having the least fragmented holdings were found to be about two thirds, 65 % of the respondents, while those having medium fragmented holdings were about one third, 34 %. Only 3 % of the owner-respondents had highly fragmented holdings (Table 1).

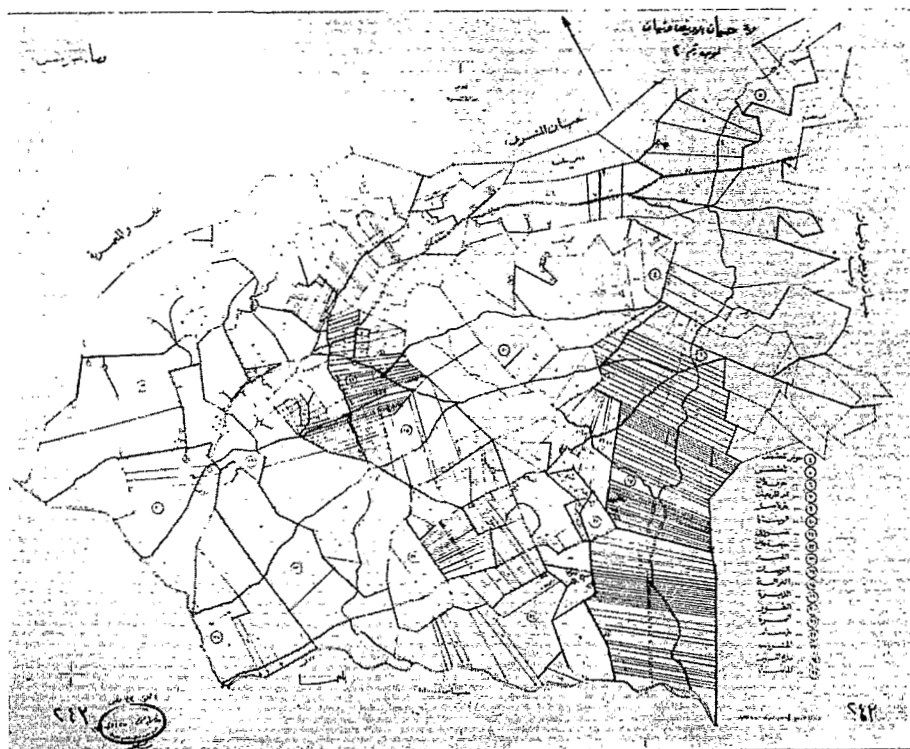


TABLE 1
Degree of land fragmentation in the Bani-Hasan area of Jordan, 1970

Number of fragments per holding	Owner-respondents	
	Number	Percent
Less fragmented		
1	25	25.51
2	20	20.41
3	17	17.35
Medium fragmented		
4	15	15.31
5	13	13.26
6	5	5.10
Highly fragmented		
7	1	1.02
8	1	1.02
9	1	1.02
Total	98	100.00

TABLE 2
Types of sharecropping arrangements in the Bani-Hasan area of Jordan, 1970

Type of lease arrangement	Division of cost of producing wheat (in percent) (*)				Division of returns in percent	Number of respondents	Percent
	Land	Plough	Seed	Labor			
1 { Owner . . .	100	0	0	0	33	22	53.66
1 { Tenant . . .	0	100	100	100	67		
2 { Owner . . .	100	0	50	0	50	8	19.51
2 { Tenant . . .	0	100	50	100	50		
3 { Owner . . .	100	0	0	0	25	6	14.64
3 { Tenant . . .	0	100	100	100	75		
4 { Owner . . .	100	0	0	0	50	4	9.75
4 { Tenant . . .	0	100	100	100	50		
5 { Owner . . .	100	50	50	0	50	1	2.44
5 { Tenant . . .	0	50	50	100	50		
Total						41	100.00

(*) Since none of the respondents were using other inputs (such as fertilizer or pesticides) these (land, plough, seed and labor) represent the total inputs (except for management). Harvesting was done mainly by labor. Rental of a harvesting sled was paid before the product was divided.

That fragmentation is associated with the high cost of production and low returns per unit of land has been cited frequently. This study showed that the relationship between the degree of land fragmentation and the cost of labor and seeds, income from field crops per hectare, use of machinery, making fences around the plots and

TABLE 3
Cost of wheat production
at three yield levels.

Item	Production per hectare (kilograms)		
	0	500	1 500
	Cost per hectare (fils)(*)		
Fixed			
Rent of land	4 000	4 000	4 000
Ploughing	2 000	2 000	2 000
Seeds	3 450	3 450	3 450
Seeding	300	300	300
Variable			
Weeding	0	1 000	2 000
Harvesting	0	5 280	9 250
Hauling	0	2 000	1 000
Threshing	0	710	2 130
Total (Fils) (*)	9 750	17 740	25 130

(*) 1 000 Fils = 1 Jordanian Dinar = 1 Pound Sterling.

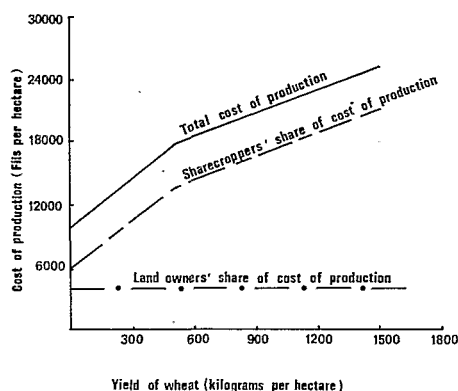


FIG. 3. — Land owners' and type number 1* sharecroppers' shares in the cost of production of wheat at different yields in the Bani-Hasan area of Jordan, 1970.

(*) As defined in Table 2.

TABLE 4
Division of costs and returns of wheat production for sharecroppers of Lease
Arrangement Type Number 1 (*) at three yield levels.

	Costs (in percent and Jordanian Fils (**)) per hectare) and returns (in percent and kilograms per hectare) at three levels of wheat production		
	Wheat Production	Levels (Kilograms per hectare)	
	0	500	1 500
Tenant's share			
Costs			
Percent.	59	77	84
Amount (Fils) (**)	5 750	13 740	21 130
Returns			
Percent.	67	67	67
Amount (Kilograms)	0	333	1 000
Landlord's share			
Costs			
Percent.	41	23	16
Amount (Fils) (**)	4 000	4 000	4 000
Returns			
Percent.	33	33	33
Amount (kilograms)	0	167	500
Total			
Costs			
Amount (Fils) (**)	9 750	17 740	25 130
Returns			
Amount (kilograms)	0	500	1 500

(*) As defined in Table 2.

(**) 1 000 Fils = 1 Jordanian Dinar = 1 Pound Sterling.

the occurrence of disputes between farmers on boundaries and paths was not found to be significant at the five percent level of significance. The reason behind these contradictory results is that land fragmentation was found to be more excessive in the eastern parts of the area studied. This land is less productive because the amount of annual rainfall is less. Consequently the costs, principally the amount of seed used per hectare are also less. Accordingly, farmers are putting less effort into this land. Also, the eastern part is less hilly. Therefore, machinery is used as much there as in the western parts, if not more.

4. Tenancy Condition

a. Types of Tenancy.

Sharecropping was found to be the predominant form of tenancy prevailing in the Bani-Hasan area. The majority of the sharecroppers made written one-year contracts with the land owners. The division of costs and return between the land owner and the sharecropper is the crucial factor in sharecropping because it affects the net returns and the incentives for each of them. Five different types of sharecropping arrangements were found to exist (Table 2). The contribution of the owner in paying the cost of production ranged from contributing land only to contributing land and half of the cost of ploughing and seeds. In return, the owner's share in the yield ranged from 25 to 50 % of the crop production.

b. Fairness of the Sharecropping Arrangements.

The criterion used to determine whether or not the sharecropping arrangements were fair (equitable) was the following : A fair sharecropping arrangement is one in which the yield is divided between the land owner and the sharecropper according to each one's contribution toward the cost of production. For the purpose of determining the fairness of the sharecropping arrangements wheat was selected because all the sharecroppers were found growing it. The cost of producing wheat calculated at three levels of production (0, 500, and 1500 kilograms of wheat per hectare). The total cost consisted of two types of costs : fixed cost which did not vary with the yield and variable costs which varied directly with the level of production (Table 3). It was found that land owners were contributing inputs such as land (and in some cases half of the cost of seed and ploughing). The sharecropper contributed all the other costs (mainly labor).

The cost of production borne by the sharecropper was found to increase with an increase in the level of production, while that borne by the land owner was always constant (Table 4 and Figure 3). This is one presentation of the gap between the land owner and the sharecropper which, in absolute quanti-

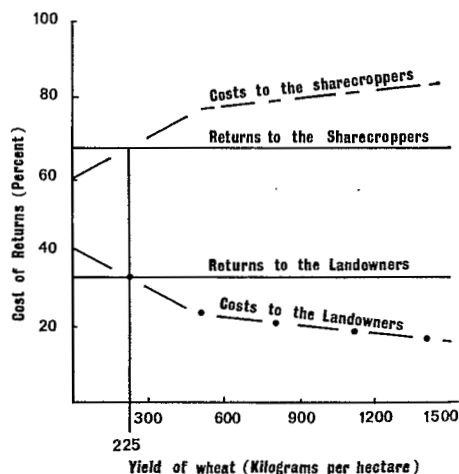


Fig. 4. — Shares of the landowners and the type number 1 sharecroppers as percentages of the total costs and returns at different yields of wheat in the Bani-Hasan area of Jordan, 1970.

(*) As defined in Table 2.

ties, was found to be widening with the increase in the level of production per unit of land. Furthermore, the land owner's share of the cost of production, calculated as a percent of the total cost of production, was found to be decreasing with the increase in the level of production, while that for the sharecropper was found to be increasing (Table 4 and Figure 4). This is a second presentation of the widening gap between the land owner and the sharecropper's shares in the cost of production. Only at a yield of 225 kilograms per hectare is the Type # 1 lease fair. Above 225 it is favorable to the land lord but unfair to the tenant and vice versa below 225.

This disparity plus the fact that the rent period was for only one year, reduced the incentive for the sharecropper to make productive permanent improvements on leased land. This was found to be the case. As evidence of this, owner-operators were found to differ significantly from sharecroppers in the extent to which they were making water reservoirs, growing fruit trees, following crop rotations and making terraces.

The problems faced by farmers were, in their own opinions, the lack of rainfall, lack of credit, insufficient government services, and lack of water for irrigation and drinking. The problems of land tenure were, in their opinions, considered to be the least important of their problems.

Recommendations.

The most important factor affecting agriculture in the Bani-Hasan area is the shortage of irrigation water. The modernization of agriculture in that area can only be achieved through the utilization of underground water and taking measures to get the maximum advantage of the natural rainfall through soil conservation, reforestation and planting fruit trees in the area.

Compared to the shortage of water, the problem of land tenure is of a secondary importance. Only 8 % of the farmers are sharecroppers, those who have small farms (as measured by land area) are few, and land fragmentation is not serious at the present time. However, with the rapid increase in the population, and the persistence of local inheritance customs the land tenure problems may be aggravated in the future. It is recommended that measures should be taken to prevent further fragmentation of agricultural land in the future. It is also recommended that partial consolidation, i.e., the exchange of plots between farmers, be encouraged. Complete consolidation should be implemented in one of the villages in the area (as an example to the whole area) where land fragmentation is an acute problem and where farmers have favorable attitudes towards land consolidation. Finally, tenancy legislation should be enacted to regulate the relations between sharecroppers and land owners based on the following criteria :

a. Security of tenure for tenants as presented by :

- i. Written contracts,
- ii. Automatically renewable contracts,
- iii. Long leasing periods.
- iv. Compensation for any unexhausted improvement on land made by tenants.

b. High incentives for tenants through:

- i. Reasonable rent charges.
- ii. Equitable division of costs and returns between tenants and land owners at all levels of production.
- iii. Facilities and fringe benefits provided to the tenant by the land owner.

Legislation regarding these landlord-tenant relations should specify the means of implementation desired, e.g., voluntary, encouraged voluntary, or enforced. The former (voluntary) may be more acceptable, politically, in the short run. The latter (enforced) may be more rapid in bringing about desired change.

