

Choice of Tenancy in Rural Bangladesh: Evidence from the 62-Village, HIES, and BIDS-BARD 6-Village Surveys

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Structure of Presentation

- Three Puzzles
- 62-Village Evidence on Trends in Tenancy and Landless Tenancy
- HIES Based Analysis of Who Gives and Who Takes Land in the Tenancy Market
- BIDS-BARD Micro Survey Based Analysis of Who Gives and Who Takes Land in the Tenancy Market
- Concluding Remarks

Three Puzzles

Three Puzzles (1)

- **The rise of land under tenancy:** Owner-operated and owner-managed farming should become more profitable in course of modernization of agriculture. Both Marxist and neo-classical literature postulate that outcome. According to the Marxist view, the so-called semi-feudal relationship model should give way to more smallholder peasant farming and/ or large-scale capitalist farming (i.e. the choice between the Prussian and American path of development of capitalism in agriculture depending on the country context). As impersonal capitalist market-relations in land and other rural markets develop, personalized semi-feudal relationship between landlord and tenants outlined by Bhaduri (1973) should gradually break down.

Three Puzzles (2)

- According to the neo-classical view, owner-operated and owner-managed farming are, in theory, more efficient than tenant operated farming because the tenant sharecropper usually gives less work effort to farming. This is known as the Marshallian inefficiency associated with sharecropping described in his Principle of Economics (Marshall 1920). This is because in the presence of moral hazard, and imperfect monitoring, inputs and output per acre of sharecropped land is likely to be lower than that of owned land. The discrepancy arises because the sharecropper tenant does not obtain full benefits of his inputs and hence is likely to under-supply those inputs resulting in lower land productivity. This however may not happen under complete or near-complete monitoring of inputs (Cheung 1968). For instance, under sharecropping with cost-sharing arrangement land productivity may still be higher compared to pure sharecropping without any provision for cost-sharing. There are also other explanations such as “limited liability” (Basu 1989) explaining the existence of sharecropping under capitalist agriculture.

Three Puzzles (3)

- Even then, it is generally accepted that owner-farming (operated with family labor or managed with hired labor) is likely to be more profitable (with higher land productivity) than sharecropping and have more incentives to owner-operated farming. This is because owner-farmer would be the residual claimant. The argument is also applicable—though with less force from the tenant point of view—to all types of fixed rental arrangements as well when compared to owner-operated farming.
- This is the theoretical prediction. However, the reality showed quite different outcomes, not entirely foreseen by theory. The land under tenancy (sharecropping, fixed rent, mortgage considered all together) did not go down as green revolution and commercial agriculture progressed in Bangladesh. To the contrary, the share of land under tenancy has increased; in fact, it has more than doubled between late 1980s and mid-2010s.

Three Puzzles (4)

- **The rise of landless tenancy:** This is puzzling because in the classical literature the group of landless tenants is seen more as a vanishing tribe compared to owner-cum-tenants. The former, arguably, lacked farming experience, financial resources (agricultural working capital) as well as draught power to cultivate the leased-in land compared to the latter.
- This is, of course, in theory. A quick reality check shows that not only the share of agricultural land under tenancy has increased, the share going to the landless tenants (defined as having 50 or less land) has also staged a spectacular come back.

Three Puzzles (5)

- **Change in the form of tenancy from sharecropping to cash rental:** In the 1970s, sharecropping without cost-sharing was the prevalent form of land-leasing. In the 1980s and 1990s, sharecropping with cost-sharing became increasingly prevalent especially in the areas of green revolution. In the 2000s and 2010s the weight of sharecropping with or without cost-sharing has gone down appreciably. Its place has been taken by cash rental system on a yearly or seasonal basis. This is particularly seen in areas of high agricultural mechanization.
- As the supervision and monitoring costs on the part of landowners went up, so did their preference for contractarian farming through short-term tenancy contracts with prospective leaseholders.

Three Puzzles (6)

- This is also a change not foreseen earlier in the Bangladesh literature (though anticipated by the theory of capitalist leasing of land by Marx in *Capital*). However, in the Bangladesh case, it is the small (often poorer) leaseholders who showed the way of capitalist leasing of land earlier than the so-called contract agriculture practiced in corporate farming (the so-called “Capitalism from above”). We term it “capitalism from below” (Sen 1988).
- Bangladesh has silently made transition from ‘inefficient’ sharecropping to more ‘efficient’ fixed rental system (a clear statement on the relative efficiency of the fixed rental system can be found in Debraj Ray’s *Development Economics* discussing Marshall’s “Principles of Economics” where Marshall compared the French *metayage* system involving the customary output sharing practice of 50-50 division with the British *fixed-rent tenancy* system).

Micro Evidence on Changes in the Tenancy Market

62-Village Panel Surveys by Late Mahbub Hossain (BIDS/ BRAC) and HIES Rounds

Increasing Share of Agricultural Land under Tenancy

- **Credible macro evidence is lacking** but credible micro evidence from large-scale farm surveys are available.
- **Share of Rented-In Land in Total Cultivated Land:** In 1988, only 23.4% of cultivated land was under tenancy in rural Bangladesh; the matched share increased to 32.9% in 2000, rising further to 39.8% in 2008 (Hossain and Bayes 2009; Hossain, Sen and Sawada 2016). By 2014, it has increased further to 45%.
- **Share of Sharecroppers/ Leaseholders in Total Rural Households:** In 1988, 43.6% of households rented land from others; the matched share rose to 54.2% in 2000 and 58.3% in 2008. It has increased

Rising Importance of Landless Tenancy: Evidence from the MH Panel Survey of 62-Villages

Expanding Tenancy Market and Rising Landless Tenancy



The Rise of Landless Tenancy: Evidence from the 62-Village Panel Survey

- **Share of Landless Tenants in Total Rural Households:** In 1988, only 13.6 of rural households were landless tenants; the matched share has increased to 20.5% in 2000, rising further to 27.6% in 2004. It has increased further in 2014.
- **Share of Landless Tenants in Total Cultivated Land:** In 1988, only 6.7% of total cultivated land was under the landless tenancy; the matched share has increased to 12.4% in 2000, rising further to 19.3% in 2004. It has increased further in 2014.
- **Forms of Tenancy Changed from Sharecropping to Fixed Rent:** According to 1960 Agricultural Census, 91% of land under tenancy were cultivated under the sharecropping system. As per the 2008 Agricultural Census, 43% of land are cultivated under the sharecropping system, the rest being cultivated under fixed rental and/or long-term mortgage arrangements. By the end of the 2010s, the latter became even more prevalent.
- The above trends are also supported by the HIES data.

Distribution of Tenant Farms and Rented-In Farmlands by Landownership Groups: Evidence from HIES 2000 and 2010

	2000	2000	2010	2010
	% of Tenant Farms	% of Rented-In Land	% of Tenant Farms	% of Rented-In Land
Landless	43.14	45.22	52.13	49.87
Functional landless	22.68	20.74	24.75	22.24
Marginal	22.19	22.96	16.62	18.19
Small	6.9	5.87	4.07	5.96
Medium	3.78	3.63	1.98	3.38
Large	1.31	1.58	0.45	0.36
Total	100.00	100.00	100.00	100.00

The Rise of Landless Tenancy: The HIES Evidence from 2000-2010

- The share of 'pure tenant' farms has increased from 43 to 52% while their claim over total rented-in land has risen from 45 to 50%. Even if we assume some reporting errors on landholding of the pure landless and functionally landless, it is safe to conclude from both MH and HIES data that the land-poorest category is prominently represented among the tenant farms of rural Bangladesh.

Distribution of Landlord Farms and Rented-Out Farmlands by Landownership Groups: Evidence from HIES 2000 and 2010

	2000	2000	2010	2010
	% of Landlord HH	% of Rented-Out Land	% of Landlord HH	% of Rented-Out Land
Functional landless	8.86	0.68	11.55	1.34
Marginal	23.1	4.43	28.56	9.31
Small	18.04	6.50	20.97	12.78
Medium	24.68	15.95	21.04	20.94
Large	25.32	72.44	17.88	55.63
Total	100.00	100.00	100.00	100.00

Rising Opportunity Costs and Increased Opportunities: A Tentative Framework

Role of Rural Non-Farm, Domestic and International Migration, Microfinance, and Mechanized Service Markets

Who Gives and Who Takes: Outlining an Analytical Framework (1)

- **Increased Supply of Farm Land to the Agricultural Tenancy Market:**
- We need to explain why there is an increased supply of rentable land in the rural tenancy market.
- Supply of agricultural land to the tenancy market can increase due to rising importance of non-agricultural incomes for agricultural landowners. Secondly, it may also increase due to rising 'supervision cost' in hired labor based farming due to increased specialization in nonagricultural work. Thirdly, even those medium/large farms who previously conducted family labor based farming may opt for tenant based farming, facing demographic decline in the supply of family labor.
- In the empirical work, we capture these tendencies by four variables: salaried work (proxy for non-agricultural income), domestic migration and foreign migration (proxy for supervision cost), and availability of male worker (proxy for family labor).

Who Gives and Who Takes: Outlining an Analytical Framework (2)

- **Increased Demand for Farm Land in the Agricultural Tenancy Market:**
- We need to explain why there is an increased demand for farm land in the rural tenancy market on the part of landless tenant households.
- Firstly, traditional theory suggests that demand for landless tenancy will be limited because the latter has limited financial capital needed to pay for the land-rent (often such rent needs to be paid ahead of the cultivation season, as in case of the cash-leasing system). Secondly, the landless tenants typically lack complementary non-land assets such as draught power and irrigation pumps that are needed for cultivation.

Who Gives and Who Takes: Outlining an Analytical Framework (3)

- However, these traditional theories are based on 'old' production conditions which no longer remain valid for rural Bangladesh.
- Thus, landless tenant households can address their financial capital need much better than before through access to microfinance, which has expanded virtually to each village of Bangladesh.
- Landless tenant households are no longer constrained by the lack of complementary non-land inputs. There has been a rapid expansion of mechanized service markets supporting agricultural operations (hiring power tiller services substituting for animal draught power, buying irrigation water from different private sources, and recently, taking recourse to mechanized thrashers). These labor saving techniques help landless tenants to reduce the costs of hiring labor in the face of peak season labor shortages.
- This also suggests that some landless households will specialize in (nonagricultural) wage-employment while other landless households will specialize in (agricultural) self-employment via the route of tenancy.

Who Takes? Evidence from HIES Rounds (Sen and Dorosh 2018)

Correlates of Tenant farming (Households who *Rent in Land* from Others): Results for 'All Tenants' and 'Landless Tenants'

Who Rents in land: Results for 'All Tenants' and 'Landless Tenants' (1)

- What are the *likelihood of being a tenant farmer as opposed to owner farmer*? To answer this question, we run a probit model for both HIES 2010 and HIES 2000. We estimated both 'unweighted' and 'weighted' probit models and the results were very similar. The model controls for standard demographics, income level, and spatial (sub-district) fixed effects. Here we focus on the results for 2010.
- **Tenancy makes distribution of land more equitable:** The first thing to note is that the distribution of land tenancy market is highly biased towards the landless tenants. The less one owns cultivable land in rural areas, the more likely one will be renting in land. The reverse is also true for 'renting out' land: the more one owns land, the more likely one would be prone to renting out land.

Probability of Renting In vs. Owner Farming: Key Results for 2010 HIES

Variables	All Tenants	Landless tenants
Someone with salaried jobs	-0.0420***	-0.0430***
Domestic remittance	0.0116	0.0247*
Foreign remittance	-0.0185	-0.0168
Microcredit access	0.0182*	0.00637
Irrigation access	0.193***	0.185***
Rented power tiller/ tractor	0.342***	0.315***
HH Head's education	-0.00653***	-0.00388***
Female Headship	-0.0893***	-0.0825***
Number of adult males	0.0232***	0.0127*
HH Size	0.00660**	0.00322

Who Rents in land: Results for 'All Tenants' and 'Landless Tenants' (2)

- **Access to mechanized service markets**--access to irrigation and power tiller services-- increases the probability of being in the tenant category both for 'all tenants' and for 'landless tenants'.
- **Access to microfinance** enhances the probability of being in the tenant category, as it reduces the problem of raising finance. However, the result is significant only for 'all tenants'. This may suggest that microfinance addresses the problem of start-up agricultural capital not for the pure landless having no amount of land but for the other groups of the *less poor* with some amount of land.

Who Rents in land: Results for ‘All Tenants’ and ‘Landless Tenants’ (3)

- **Access to migration to cities** acts as a stimulating factor for landless tenants. Financial support through the route of domestic migration helps them to pay for the cash rent.
- **Availability of adult male workers** adds to the **pool of family labor** and thereby increases the chances of being in the tenant category.
- Access to **salaried jobs** (as well as **human capital accumulation**) discourages tenant farming both for ‘all tenants’ and for ‘landless tenants’. This finding may suggest the **possibility of specialization for the land-poorest**—one opting for the route of non-agricultural jobs and the remaining other, specializing in agriculture.

Who Gives? Evidence from HIES Rounds (Sen and Dorosh 2018)

Correlates of Landlords (Households who *Rent out Land* to Others): Results for 'All Landlords' and 'Medium/ Large Landlords'

Who Rents out land: Results for 'All Landlords' and 'Large Landlords' (1)

- Renting out for common among the relatively large and medium sized landowning groups. Thus, an active tenancy market contributes to equitable land-distribution.
- We run the same probit model for exploring the decisions to rent out land. Decisions for renting out seem to be associated with factors which are almost the **mirror images** of factors correlated with decisions for renting in. This is true for both the groups of 'all landlords' and 'large landlords'.
- Thus, having salaried jobs and human capital encourages renting out. Similarly, non-availability of male family labor encourages them to rent out land. Female headship also motivates the households to rent out land.

Probability of Renting Out vs. Owner Farming: Key Results for 2010 HIES

Variables	All Landlords	Large Landlords
Someone with salaried jobs	0.0168*	0.0807**
Domestic remittance	0.0227**	0.0818*
Foreign remittance	0.0158	0.0531
Microcredit access	0.00826	0.0279
Irrigation access	-0.0744***	-0.0783*
Rented power tiller/ tractor	-0.132***	-0.149***
HH Head's education	0.00492***	0.00775**
Female Headship	0.0303**	0.115**
Number of adult males	-0.0231***	-0.0339
HH Size	-0.00246	-0.00868

Who Rents out land: Results for 'All Landlords' and 'Large Landlords' (2)

- Not all landowning groups opt out for the rent out option, however. In places where there has been a development of market for mechanized services some landowning groups may be encouraged in remaining in owner-farming.
- Intriguingly, access to foreign remittances does not have statistical effects on either renting in or renting out land. There is conflicting evidence in this regard. From other evidence (BBS 2014) we know that such remittances are associated with the purchase of agricultural land and assets by the remittance-receiving households. However, remittance-receiving households may be more biased towards non-agricultural sectors in terms of household labor allocation.
- Access to domestic remittances can have different meanings for landlord and tenants. For landlords, it can encourage renting out land (signaling greater non-agricultural involvement). However, for tenants, it can serve as a source for agricultural finance (signaling greater agricultural orientation).

Evidence from BIDS-BARD 6- Village Micro Surveys

Who Takes and Gives Land under Lease Arrangements ?

Insightful Descriptives (1)

Variables	Who Takes Land	Who Gives Land	Pure Owner Cultivator
Male Headed HH	98.88%	96.96%	99.53%
Female Headed HH	1.12%	3.04%	0.47%
Age of HH head (years)	47.059	46.396	48.061
Education of HH head			
No Education	67.29%	25.65%	44.60%
Class 1-5	12.64%	13.04%	9.39%
Class 6-9	10.04%	13.04%	17.84%
SSC	5.58%	20.43%	17.84%
HSC and above	4.46%	27.83%	10.33%

Insightful Descriptives (2)

Variables	Who Takes Land	Who Gives Land	Pure Owner Cultivator
Share of hh members engaged in agri. work	22.1%	8.6%	0.196%
Foreign remittance receiving HHs	20.45%	43.48%	31.46%
Domestic remittance receiving HHs	8.92%	21.74%	7.51%
Membership in any organization (Yes=1)	47.58%	21.74%	22.07%
Access to microcredit (Yes=1)	43.12%	17.39%	14.08%
Access to mobile banking (Yes=1)	49.44%	65.65%	54.56%
Access to tractor during Boro (Yes=1)	70.76%	33.04%	75.12%
Access to STW during Boro (Yes=1)	81.78%	38.70%	68.08%
Access to Thresher during Boro (Yes=1)	39.78%	17.83%	36.62%

Insightful Descriptives (3)

Variables	Who Takes Land	Who Gives Land	Pure Owner Cultivator
Farm size			
Landless	83.64%	42.17%	55.87%
Marginal	13.38%	38.70%	33.80%
Small	2.23%	12.17%	6.10%
Medium	0.74%	6.09%	2.35%
Large	0.00%	0.87%	1.88%
Villages			
Fulkumari	20.45%	30.00%	28.17%
Dorimirzanagar	14.13%	11.74%	13.62%
Kawrier char	10.04%	18.26%	14.55%
Gongadas	15.61%	3.04%	15.49%
Jadupoddar	10.41%	19.57%	14.55%
West Khonjonmara	29.37%	17.39%	13.62%

Multinomial Probit Analysis: BIDS-BARD Surveys

Who Rents out Land?

Variables	dy/dx	Std. error	dy/dx	Std. error
	(1)	(2)	(3)	(4)
Male headed HH (male=1)	-0.121	0.159	-0.054	0.160
Age of household head (years)	0.023*	0.012	0.030**	0.012
Age square of household head	-0.001**	0.001	-0.001***	0.001
Education of household head (years)	0.007**	0.004	0.008**	0.004
Share of hh members engaged in ag. work	-0.523**	0.207	0.536***	0.197
Foreign remittance receiving hhs (=1)	0.092**	0.042	0.091*	0.047
Domestic remittance receiving hhs (=1)	0.239***	0.058	0.251***	0.058
Membership in any organization (=1)	-0.058	0.075	-0.053	0.072
Access to microcredit (=1)	0.186**	0.088	0.181**	0.084
Access to mobile banking (=1)	0.035	0.041	0.031	0.039
Access to tractor during Boro (=1)	-0.275***	0.047	-0.251***	0.040
Access to STW during Boro (=1)	-0.045	0.046	-0.069	0.049
Access to Thresher during Boro (=1)	-0.087	0.053	-0.024	0.053
Farm size (Ref: Landless farm)				
Marginal farm	0.121***	0.043	0.139***	0.043
Small farm	0.285***	0.067	0.302***	0.067
Medium farm	0.267**	0.106	0.322***	0.099
Large farm	0.069	0.118	0.192*	0.114
Village fixed effects		No		Yes
No. of observations		443		443
Pseudo R2		0.287		0.320
Prob> chi2		0.0000		0.0000

Summary of Regression Results: Who Rents out Agricultural Land?

- **Higher educational qualification of household's head enhances the possibility of renting-out agricultural land.**
- **More involvement of household members in agricultural jobs reduces the probability of renting-out agricultural land.**
- **Receipts of both foreign and domestic remittance increases the likelihood of renting-out agricultural land.**
- Access to microcredit, overall, enhances the possibility of renting-out agricultural land, possibly it enhances non-farm opportunities for land-givers.
- Compared with the functionally landless households the probability of renting-out agricultural land is relatively higher among households having marginal, small, and medium sized agricultural land.

Who Rents in Land?

Variables	dy/dx	Std. error	dy/dx	Std. error
	(1)	(2)	(3)	(4)
Male headed HH (male=1)	0.030	0.178	0.074	0.197
Age of household head (years)	-0.014	0.011	-0.015	0.011
Age square of household head	0.000	0.000	0.000	0.000
Education of household head (years)	-0.020***	0.004	-0.014***	0.004
Share of hh members engaged in ag. work	-0.055	0.166	-0.084	0.159
Foreign remittance receiving hhs (=1)	-0.077*	0.046	-0.086*	0.051
Domestic remittance receiving hhs (=1)	0.133*	0.074	0.163**	0.073
Membership in any organization (=1)	0.002	0.061	-0.001	0.063
Access to microcredit (=1)	0.254***	0.064	0.255***	0.066
Access to mobile banking (=1)	-0.025	0.042	-0.016	0.043
Access to tractor during Boro (=1)	-0.072	0.049	-0.031	0.050
Access to STW during Boro (=1)	0.190***	0.051	0.132**	0.054
Access to Thresher during Boro (=1)	0.017	0.043	0.061	0.043
Farm size (Ref: Landless farm)				
Marginal farm	-0.261***	0.051	-0.305***	0.052
Small farm	-0.350***	0.094	-0.387***	0.094
Medium farm	-0.232	0.189	-0.304*	0.177
Large farm				
Village fixed effects		No		Yes
No. of observations		482		482
Pseudo R2		0.202		0.221
Prob> chi2		0.000		0.000

Summary of Regression Results: Who Rents in Agricultural Land?

- Higher educational qualification of household's head reduces the possibility of renting-in agricultural land.
- Remittance receipts enforce mixed impacts on renting-in decisions. Notably, receipts of foreign remittance decrease the likelihood of renting-in agricultural land.
- Conversely, receipts of domestic remittance enhance the possibility of renting-in agricultural land.
- Organizational membership as such has no impact on renting-in decisions. But, access to microcredit, overall, enhances the possibility of renting-in agricultural land.
- Agricultural mechanization imposes mixed impacts on renting-in decisions. First, having access to shallow tubewells for irrigation during Boro season enhances the probability of renting-in agricultural land.
- Having access to tractors and thresher during Boro season has no influence on renting-in decisions because they are not still typically used by the landless tenants. Mechanized service market for these specific technologies may not be easily accessible by them at least in this sample.
- Compared with households having no agricultural land or fractional amount of agricultural land, the probability of renting-in agricultural land is relatively lower among households having marginal and small pieces of agricultural land.

Concluding Remarks: Combining Insights from HIES and BIDS-BARD Micro Surveys

- The **increase in the share of cultivable area under tenancy** and the **unpredictable rise of landless tenants** have been brought about by a confluence of **several factors that underpinned rural structural transformations** in Bangladesh
- Spread of **education, expansion of regular jobs, and urbanization (domestic migration)** have encouraged **renting out** of the agricultural lands on the part of land-rich households
- The **growth of microfinance and the rapid development of market for mechanized services** have made the tenant farming on an increasing scale a feasible proposition. This is true in case of landless tenants as well.
- These transformations in the tenancy market are brought about not by decree (i.e. land tenure reform, as in West Bengal) but by changing market conditions, and in that sense, **they are market-led, not state-led transformations**
- There seems to be a **trend of specialization going on among the landless households** in rural Bangladesh: some landless groups are entering into the land sector as tenants, while other landless groups are moving out of the land sector, being increasingly involved in non-agricultural jobs.
- In conclusion, the **agricultural route of upward mobility via landless tenancy** must be recognized as equally potent route as the non-farm route for uplifting the landless households out of poverty

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