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ZILLA ROADS/LOCAL FINANCE PROJECT
INTERIM REPORT No. 4
THE LAND DEVELOPMENT TAX IN BANGLADESH
INSIGHTS FROM THE 1978 LAND
OCCUPANCY SURVEY
BARBARA D. MILLER AND JAMES A. KOZNY

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FOREWORD

This paper was the fourth in the series of Interim Reports issued from the Zilla Roads/Local Finance Project. Originally released in April 1983, the current version has been revised slightly to reflect changes in government structure that have occurred since then and to incorporate comments made on the original paper.

The paper focuses on the distributional effects and revenue potential of the Land Development Tax, a land-based tax levied against total land ownership. Although not currently a local government revenue source, the LDT constitutes the principle land-based tax in the country and is the single most important revenue instrument designed to mobilize resources directly from the agricultural sector. Furthermore, if revenue mobilization is to be strengthened in the rural areas of the country, it is likely that a tax such as the Land Development Tax will have to be imposed.

The paper utilizes a unique data set--the 1978 Land Occupancy Survey of land ownership in Bangladesh--which previously has not been employed to analyze land-based taxes in the country. By combining land ownership information with both the 1976 and 1982 tax rate structures, Miller and Wozny are able to draw conclusions regarding the distributional implications of the tax under both rate structures as well as to estimate the tax yield potential inherent in this levy. Given the unequal distribution of land ownership in Bangladesh and the progressive rates of the tax, a small proportion of all landowners (10 percent) should have been paying most (80 percent) of the tax under the 1976 rate structure and even more (86 percent) under the new rates. Interestingly, the alteration of rates with minimal taxes imposed on all land-holders also increases the proportion of the tax liability of owners of the smallest plots.

Barbara Miller is a Senior Research Associate in the Metropolitan Studies Program; James Wozny is a doctoral student in Economics at the Maxwell School and a Graduate Research Associate in the Metropolitan Studies Program. The authors are grateful for the assistance provided to them by numerous individuals. Especially helpful in Bangladesh were Paul O'Farrell, Charles Antholt and Richmond Allen at the USAID mission. In the United States, Tomasson Jannuzi of the University of Texas (Austin) and James Peach of New Mexico State University generously provided information regarding the Land Occupancy Survey. James Peach, David Sopher of Syracuse University, and Joan Mencher of CUNY New York, offered helpful comments on the paper.

The Local Finance Project is one component of the Bangladesh Zilla Roads Maintenance and Improvement Project (Project Number 388-0056) and is intended to assess and increase the capacity of local governments in Bangladesh to mobilize and effectively administer financial resources. The work is supported by the United States Agency for International

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Larry Schroeder
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THE LAND DEVELOPMENT TAX IN BANGLADESH:
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and
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Introduction

The direct taxation of agricultural land is one important mechanism through which governments generate revenue. In Bangladesh, agricultural land is taxed in two ways: by local governments through the holdings tax, and by the central government through the Land Development Tax (LDT). This paper analyzes survey data on land-ownership patterns in 128 villages in reference to the potential revenue of the LDT under the 1976 and 1982 rate structures.¹ The importance of landholding patterns in the context of a graduated rate structure is highlighted.

Looking at Tax Potentials

Before fresh taxation is proposed or considered, it is desirable that the incidence, yield and possibilities of existing rates of taxation should be measured.²

More than half a century ago a British administrator in (then) Bengal performed an economic survey of the district of Faridpur, a district which lies in the center of present-day Bangladesh and is one of its very

¹The holdings tax receives attention in Showkat Hayat Khan, "Aspects of Public Finance in a Union Parishad: A Sociopolitical Case Study," Interim Report No. 12, Local Revenue Administration Project, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, 1984).

²J.C. Jack, The Economic Life of a Bengal District (Delhi: Agam Prakashan, 1975, reprint of 1917 edition), p. 133.

poorest. The author of the survey, J.C. Jack, mentions the dispute over whether Bengal in fact was one of the most lightly taxed countries (through direct taxation) in the world, and if so, why this is the case. The author feels that Bengal was scarcely taxed at all, and that the reasons are largely due to government policy against heavier taxes. He felt that better statistics would convince the government that heavier taxes could be borne, that the benefits of services such as roads, water, and health would convince people to pay their taxes more willingly, and that improved assessment and collection procedures could easily double local revenues without a rate increase.

The problem of improved local taxation in Bangladesh is now as cloudy as it was in Jack's time, and statistics on local taxation may be even poorer than they were in the early 1900s. Systematic analyses of fiscal data on various land and property-based taxes in Bangladesh are being reported on elsewhere.¹ This paper relies on a different set of data that shed light on the potentials of one of Bangladesh's land-based taxes, the Land Development Tax (LDT). Although the LDT is currently a central government tax, we believe it merits analysis as a potential local revenue source.

¹James Alm and Larry Schroeder, "The Land Development Tax in Bangladesh," Interim Report No. 7, Local Revenue Administration Project, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, June 1983); James Alm, "The Immoveable Property Transfer Tax in Bangladesh," Interim Report No. 3, Local Revenue Administration Project, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, April 1983).

The paper proceeds from a discussion of the data employed to a review of the evolution of the LDT, after which the results of the analysis of potential revenue from the LDT are presented, including revenue effects and distributional effects of the rate change from 1976 to 1982. In conclusion, we offer suggestions for future research and policy.

The Land-Ownership Data

Obtaining dependable data on land ownership patterns in any developing country is very difficult, whether the data are collected by an anthropological fieldworker who has spent months living among the people being surveyed, or by a well-trained professional surveyor who collects verbal reports on ownership from a household member. Ideally, one should employ multiple data bases which can be used to cross-check one another and to fill in gaps. The best possible data situation would be a combination of government records as to ownership (which are rarely up-to-date and completely accurate), a careful survey of stated ownership, and also information gathered through in-depth fieldwork in several locales in order to check and complement other information. Even in-depth field research may fail to expose the true extent of ownership, particularly for the largest landowners, due to deliberate attempts to conceal the truth or more innocent reasons such as extremely scattered holdings.

In two successive years, economists Jannuzi and Peach were involved in conducting a Land Occupancy Survey (LOS) throughout Bangladesh on a sample

basis.¹ The 1977 and 1978 surveys were conducted in the same villages, though several villages surveyed in 1977 were dropped in the 1978 survey due to a variety of factors. The 1977 survey was conducted among only a percentage of the households in the sample villages, while the 1978 survey was a total census of all households in the villages included in the sample. It is the 1978 data which we rely upon here.

The 1978 LOS was conducted in 128 villages ("primary sampling units") in 18 districts, chosen through a random selection of thanas in every district, then a random selection of unions, and finally a random selection of villages within the unions (Appendices A and B).² Villages with strong urban characteristics were deleted from the sample. The authors provide little insight into the errors created by such a sampling method, and they do not discuss the representativeness of villages surveyed. In all fairness to Jannuzi and Peach, it must be mentioned that the sampling method was of less concern to them since their goal was to generate national estimates.

¹F. Tomasson Jannuzi and James T. Peach, "Report on the Hierarchy of Interests in Land in Bangladesh" (USAID: Dhaka, September 1977); F. Tomasson Jannuzi and James T. Peach, The Agrarian Structure of Bangladesh: An Impediment to Development (Boulder, Colorado: Westview Press, 1980). Data for the 1977 and the 1978 surveys were collected in Bangladesh under the auspices of the United States Agency for International Development in collaboration with the Bangladesh Bureau of Statistics.

²The Chittagong Hill Tracts were not included in the 1978 LOS due to political disturbances there, and present-day Jamalpur district was included in Mymensingh district at the time of the survey.

The field staff was provided by the Bangladesh Bureau of Statistics and trained intensively by Jannuzi and Peach. The village surveys were conducted simultaneously by one or more staff members in each village usually within one week, but two weeks were spent in larger villages.¹

In spite of some problems that have been mentioned elsewhere regarding the 1978 LOS,² we feel that the data provide rich information on local patterns of land ownership which can help assess revenue potential from the LDT. We have used the data in the following way. We have not assumed "typicality" of the individual villages but have nevertheless examined individual village data in order to get an idea of the range of variation in patterns of landownership within the entire data set. Table 1 shows the villages surveyed, the population in the village, and the total acreage of reported owned land in the village. There is a rough correspondence between size of the district (population-wise) and the number of villages surveyed since thanas and unions are generally formed on the basis of population. Thus, the district with the smallest population, Tangail, has only three surveyed villages, while large districts such as Mymensingh and Dhaka have fourteen and ten surveyed villages, respectively.

¹Jannuzi and Peach, "Report on the Hierarchy of Interests in Land in Bangladesh," pp. 89-90. Villages in the sample range in size from the smallest of 327 in Sreemangal, Sylhet district, to the largest of 4927 in Bancharampur, Comilla district.

²Mead Cain, "Landlessness in India and Bangladesh: A Critical Review of Data Sources" (New York: The Population Council, Center for Policy Studies, Working Paper No. 71, May 1981).

Jannuzi and Peach discuss three major biases in the survey data: significant underestimation of land ownership among the top 10 percent of the population (resulting from simple reporting errors by informants, conscious misreporting, and the fact that absentee landlords were not included in the survey since questionnaires were administered only to resident household heads); underestimation of the proportion of the landless (it is common for respondents to claim ownership of some land even though such is not the case); and understatement of the extent of tenancy and amount of land tilled by those households.¹ Since we are concerned only with land owned, the last bias relating to tenancy does not affect us; but the first two biases must be considered.

The biases created by ownership misreporting at the extremes (large holdings and small holdings) will have the following effects on our analysis: we will consistently undercount the amount of acreage held by large landowners and will thus underestimate the revenue that should be earned at the upper end, and we will overestimate acreage in small holdings and will thus overestimate the revenue to be earned from the smallest holdings.²

There are, however, some clear advantages to the LOS data. First, land is distinguished as either homestead land (i.e., generally not used for cultivation, though perhaps for some gardening), and "other" which includes both cultivable and non-cultivable land. The data show, as Cain

¹Jannuzi and Peach, The Agrarian Structure of Bangladesh, pp. 91-92.

²Throughout the paper, for brevity's sake, we refer to village acreage, or per capita acreage rather than the more accurate terms, reported village acreage, and reported per capita acreage.

comments, that there is "remarkably little noncultivable [sic] land aside from homestead land...under private ownership in rural Bangladesh, particularly at the lower end of the distribution."¹ Therefore, estimations of revenue potential could be made separately for homestead and non-homestead land, which future tax rates may take into account. Second, the breakdown in reported land is in decimals which are fine categories (one acre equals one hundred decimals), allowing detailed analysis.

Advantages and disadvantages of the LOS data aside, it must be remembered that we can learn from them only about LDT potential, something which is often far removed from the reality of collection statistics.² Even though the LOS data were amassed with a different purpose in mind, they do provide a rich source of insight concerning revenue potentials.

The Land Development Tax

The direct taxation of land in Bangladesh has an ancient heritage.³ By the third century B.C. land revenue was the accepted source of income for the government of northern India (which then included Bangladesh).⁴ A text from the era of the Mauryan Empire (321-185 B.C.) called the

¹Cain, "Landlessness in India and Bangladesh," p. 11.

²By tax potential, we mean the amount of the tax that should be collected from each taxpayer given the legal rate structure and the reported size of holdings of the taxpayer.

³For a brief review, see, Government of Bangladesh, Final Report of the Taxation Enquiry Commission (Dhaka, 1979), pp. 260-262.

⁴Romila Thapar, A History of India, Vol. I (Baltimore, MD: Penguin Books, 1969), pp. 75-77.

Arthashastra, which dealt with government and economics, refers at length to methods and problems of land tax assessment and collection. At that time land revenue was fixed at about one-sixth of the gross product. A centralized government administration was in charge of surveying the fields and maintaining soil classification records. During the Muslim rules of Sher Shah and Akbar (in the sixteenth and seventeenth centuries), further refinements in the assessments were made. Akbar classed land into four grades and stipulated that settlements should be reconsidered every ten years. Under the British, land revenue was still assessed on the basis of the productivity of land, supposedly 9/10th of what the zamindars realized from their tenants in rent.

Historical documentation for the change from a tax on productivity of the land to a flat rate per plot size is difficult to find, though it is clear that between the time of the British presence in South Asia and the independence of Bangladesh from Pakistan, the flat rate per acreage had been introduced. This form of taxation is easier to administer since it does not require periodic estimations of the productivity of each acre of land, but it is less equitable because the same rate of tax is paid on all land regardless of variation in yield from different types of land. Another major problem with this type of tax is that tax revenues do not rise automatically with inflation. If the government wishes to maintain a constant level of expenditures in real terms it frequently must increase the rates per acre.¹

¹Our analysis is made much simpler and yet more relevant by the flat rate character of the Land Development Tax. It is made simpler because we can calculate individual tax liabilities using the data on the size

The most important changes in the land revenue since Independence include the 1972 exemption by the Awami League government of owners having up to 25 bighas (8.33 acres) from paying land revenue, while the revenue demand for those holding more than 25 bighas was Tk. 6.45 per acre. In 1976 the Land Development Tax Ordinance created the basic form of the present Land Development Tax by merging the land revenue with some other taxes such as the local rate. For agricultural land, the LDT rate was set at Tk. 2.7 per acre for a family holding up to 8.25 acres, and Tk. 15 per acre for a family holding more than 8.25 acres. In 1982 the LDT rates were further amended through the imposition of a more complex graduated structure (see Appendix C).

Thus, the LDT has moved in the direction of greater progressivity in its rate structure. A progressive rate structure for a land tax is generally recognized to have merit in terms of vertical equity. If the graduation in rates were related to the potential output of agricultural land, the tax would discourage speculative holdings of idle land by absentee landlords and would complement land reform policy by promoting the sale of such land to small-scale producers who would use it more intensively. All owners would be encouraged to put land to its most productive uses.¹ The LDT rates are based solely on the size of

(continued) distribution of landholdings provided by the Land Occupancy Survey; knowledge of actual agricultural production is not required. Our analysis is made more relevant because the government will feel the pressure for frequent revisions of the rate structure and the information we are able to supply will be of use in designing a structure to meet revenue and distributional objectives.

¹See the discussion of these issues in Stephen R. Lewis, Jr., "Agricultural Taxation in a Developing Economy," in Richard M. Bird and Oliver Oldman, Readings on Taxation in Developing Countries, 3rd edition (Baltimore, MD: Johns Hopkins University Press, 1974), pp. 392-393.

holdings and thus, at first glance, offer no incentive for efficient production; we examine this problem below.

The extreme jump in the rate of the 1976 tax at the 8.25 acre break-off point should provide a considerable incentive to larger landowners either to sell some of their holdings, register them in someone else's name, or to under-report their owned acreage to the LCS surveyor (as is often the case with reporting of owned holdings to land registration offices throughout the country). A close examination of the number of households reporting each plot size, however, yields no evidence of a kink around 8.25 acres in the roughly asymptotic decline in the number of households with increasing holding size. The more sharply graduated 1982 rate structure should significantly increase the incentive to alter either the reported or the actual size of landholdings; future landowning survey data would help shed light on this possibility as would complementary analysis of the LDT tax records.

Revenue Effects of the Rate Change

The tax potential for each village was computed simply by applying the appropriate rate to each household plot in the village and summing the amounts of tax owed by each household.¹ Table 1 shows the tax liability for all of the households in the survey. Under the former rate structure the government should have been able to collect 395,000 taka from this sample of villages which encompasses 60,200 acres of land. With the revision of LDT rates in 1982 the government should be able to collect

¹Plots included in this survey are only those owned by inhabitants of the village where the survey was conducted. There may be plots within the village boundary owned by persons in adjacent villages, or by absentee

TABLE 1

SUMMARY RESULTS, LOS SAMPLE

A. Revenue Impact From LDT Rate Change

Total Sample Population:	201,892
Total Sample Acreage:	60,200 acres
Potential Revenue Under 1976 Rate Structure:	395,000 taka
Potential Revenue Under 1982 Rate Structure:	1,140,000 taka
Percent Increase in Potential Revenue Due to Revision of Rates	188.6%

B. Means and Coefficients of Variation Across Villages for Population,

Acres Per Capita and Revenue Potentials^a

	<u>Population</u>	<u>Acres Per Capita</u>	<u>Potential Revenue Per Capita</u>		<u>Potential Revenue Per Acre</u>		<u>Percentage Increase^b Per Acre</u>
			<u>1976</u>	<u>1982</u>	<u>1976</u>	<u>1982</u>	
Unweighted Mean	1577	.31	2.03	5.68	5.73	15.60	163.3
Weighted ^c Mean		.30	1.96	5.65	6.56	18.94	188.6
Coefficient of Variation ^d	69.41	47.62	88.28	101.22	38.10	49.96	31.28

^a Individual village data are provided in Appendix B.

^b Averages of and variation in individual village increases.

^c Weighted by population for the per capita variables and by acreage for the per acre variables.

^d Ratio of the standard deviation of the variable to the mean of the variable.

SOURCE: Computed by the authors using data from the 1978 Land Occupancy Survey.

1,140,000 taka from this same tax base. The 1982 rate enhancement has thus increased the revenue potential of this sample by 188.6 percent.

The weighted means of tax payments given in Table 1 show that on average an LOS household should have paid 6.56 taka per acre under the old rate structure. Under the 1982 rates the average tax liability per acre will be 18.94 taka. The unweighted means in Table 1 show the per acre tax liability in the average village. The coefficients of variation reveal that, even after controlling for village size, there is considerable variation in tax potentials across villages.

Our empirical base is limited to comprehensive data on both the size of landholdings within each village and village populations. Thus, the analysis abstracts from any differences among villages in the effectiveness of tax administration. Any variation in tax potential revealed by this analysis, therefore, is entirely attributable to the variation in the size distribution of landholdings across villages. The following section addresses the nature of this relationship.

Inter-Village Variation

As a consequence of the graduated rate structure of the LDT, villages of equal land area will generate different LDT revenue totals if they differ in the size distribution of landholdings. For two equal-sized villages the one which has a higher share of its acreage in large plots will have a higher revenue potential because the amount of tax paid per

(continued) landlords. Likewise, persons living in the village where the survey was conducted may be less likely to report holdings which lie in other village areas.

acre increases with plot size. The more steeply graduated the rate structure of land tax, the greater will be the per acre revenue variation caused by variations in land distribution. The coefficients of variation in Table 1 show that inter-village variation in tax potential has increased with the introduction of the more sharply graduated 1982 LDT rates.

We define high-tax (low-tax) villages as those who fall into the highest (lowest) quartile of the sample villages ranked according to potential tax revenue per acre (or per capita, depending on the context). Under the 1982 LDT rates, no high-tax-per-acre village has less than 16 percent of its total acreage in plots of over 10 acres, whereas none of the low-tax villages has more than 12 percent of its acreage in holdings of this size. In the same vein, none of the high-tax villages has more than 64 percent of its total acreage in holdings of less than five acres, while no low-tax village has less than 67 percent of its acreage in such plots. In the sample as a whole, 25 percent of total acreage is held in plots over ten acres in size and 52 percent of the land consists of plots of less than five acres. The village in Niamatpur, Rajshahi district, which has the highest revenue potential per acre in the sample, 42.30 taka, has 75 percent of its total acreage in plots larger than 10 acres and only 12 percent in plots smaller than five acres. In contrast, the Raipura village, in Dhaka district, which has a per acre revenue potential of only 4.34 taka, has 93 percent of its acreage in holdings below five acres. Unfortunately, except for district-level estimates of land productivity (measured in terms of value-added per acre) examined in the

next section, we have no detailed information concerning the relationship between size and productivity of holdings.

The geographic dispersion of high- and low-tax-per-acre villages is presented in Figures 1a and 1b. This pattern corresponds, logically enough, with the regional ecology and demography of Bangladesh. High-tax villages are found preponderantly in the moribund delta districts on the periphery extending from the northwestern corner eastward to Sylhet and southward to Khulna. This region is generally characterized by relatively lower population density and less rich soil than the active delta districts. In the active delta region (comprising Dhaka, Faridpur, Noakhali, Barisal, and Patuakhali districts) population densities are the highest and the soil is the most fertile due to constant refurbishment from the flooding rivers. This group of active delta districts, along with Chittagong district, contains preponderantly low-tax villages.

If we look instead at the dispersion of high- and low-tax-per-capita villages (Figures 2a, 2b) the regional contrast becomes even more distinct because of the higher concentration of population in the delta relative to the rest of the country. Villages in this region on average have lower total acreages per capita (see Appendix B) in addition to having lower tax potential per acre. There is much greater variation across villages in revenue potential per capita than exists on a per acre basis.

Villages with relatively high revenue potentials under the 1976 LDT rates in general have experienced relatively large percentage increases in revenue potential as a result of the 1982 rate revision (Figure 3a). Likewise, villages with relatively low revenue potential under the 1976

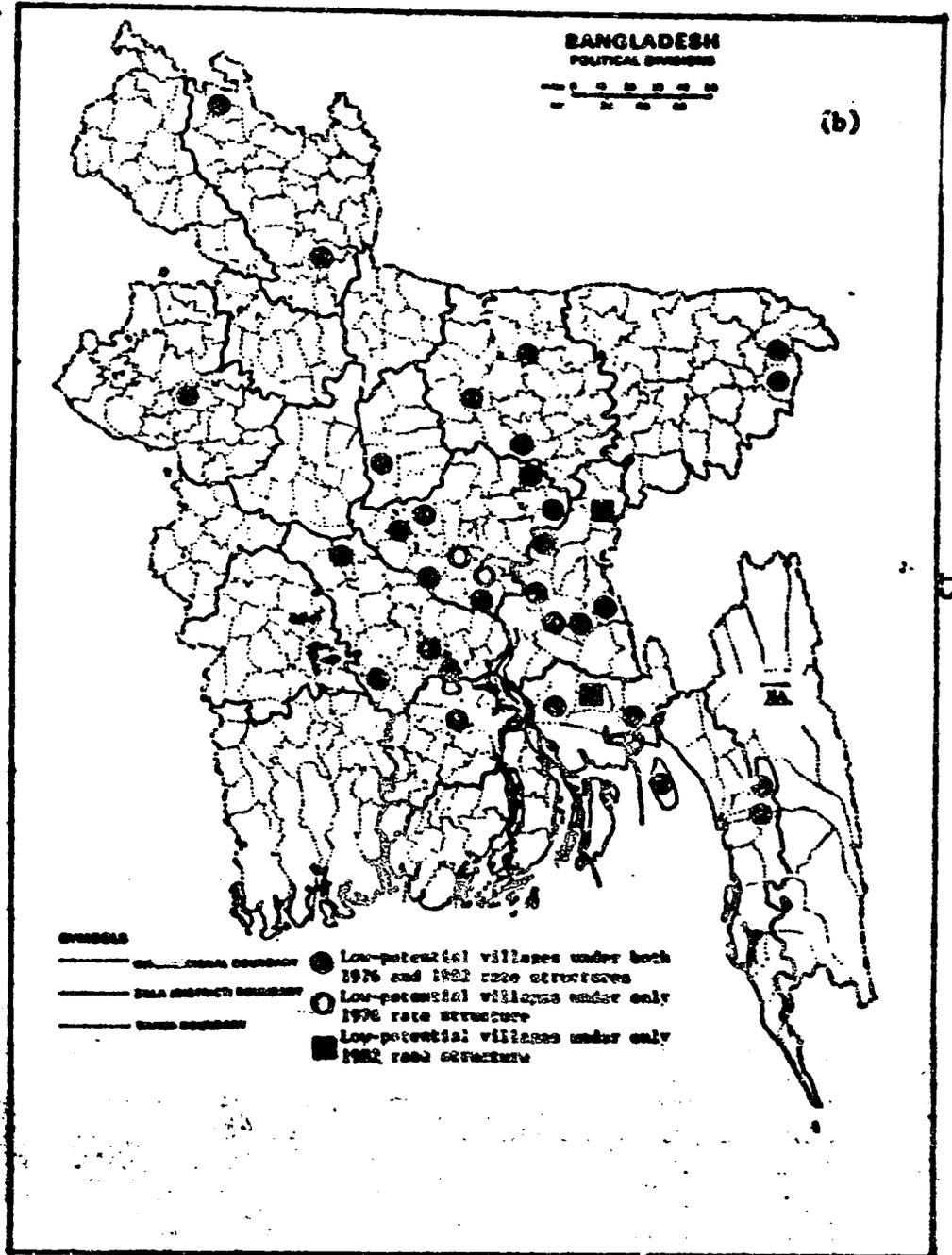
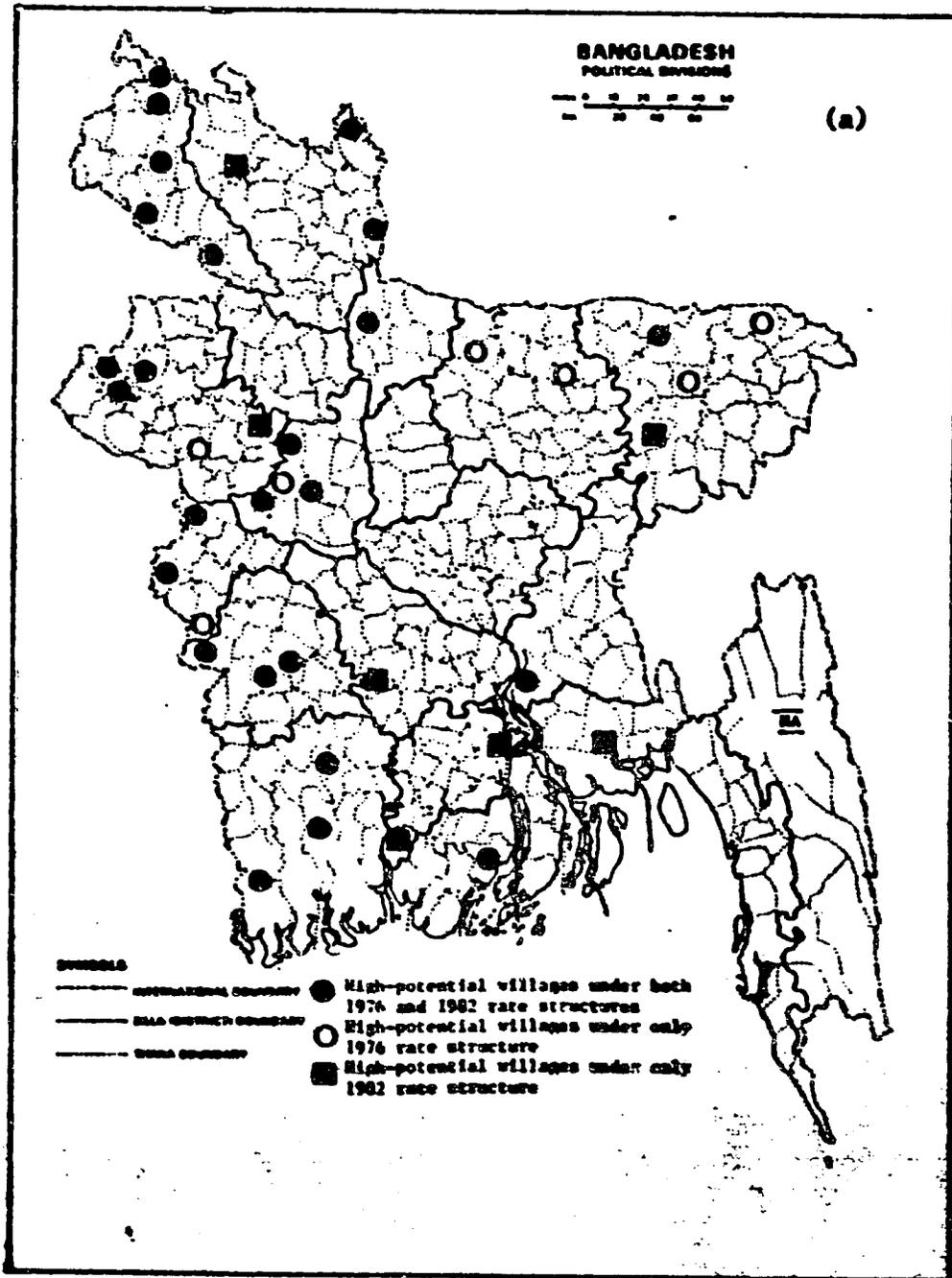


Figure 1. 105 Villages with (a) High Revenue Potential Per Acre and (b) Low Revenue Potential Per Acre, 1976 and 1982 Rates.

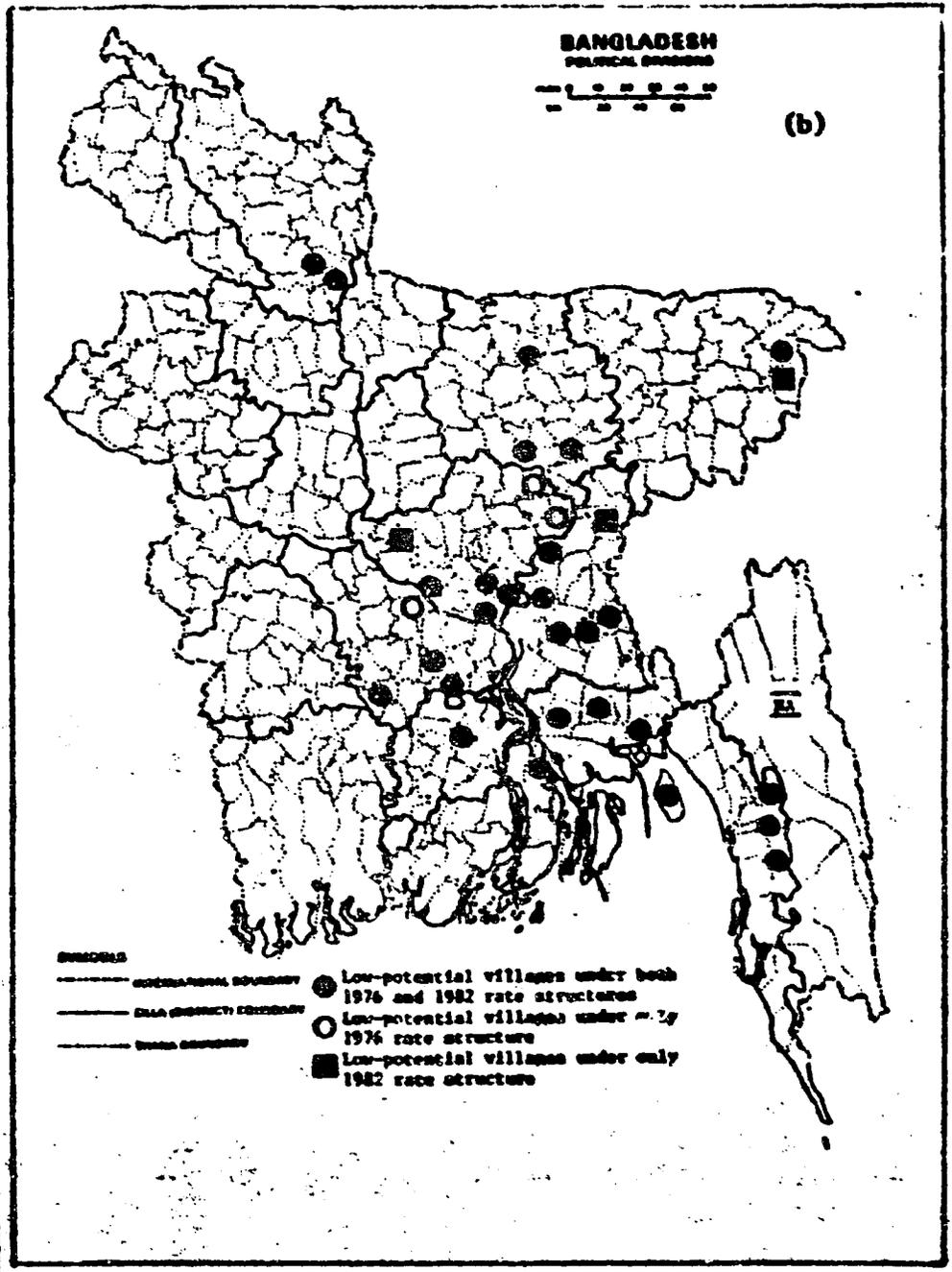
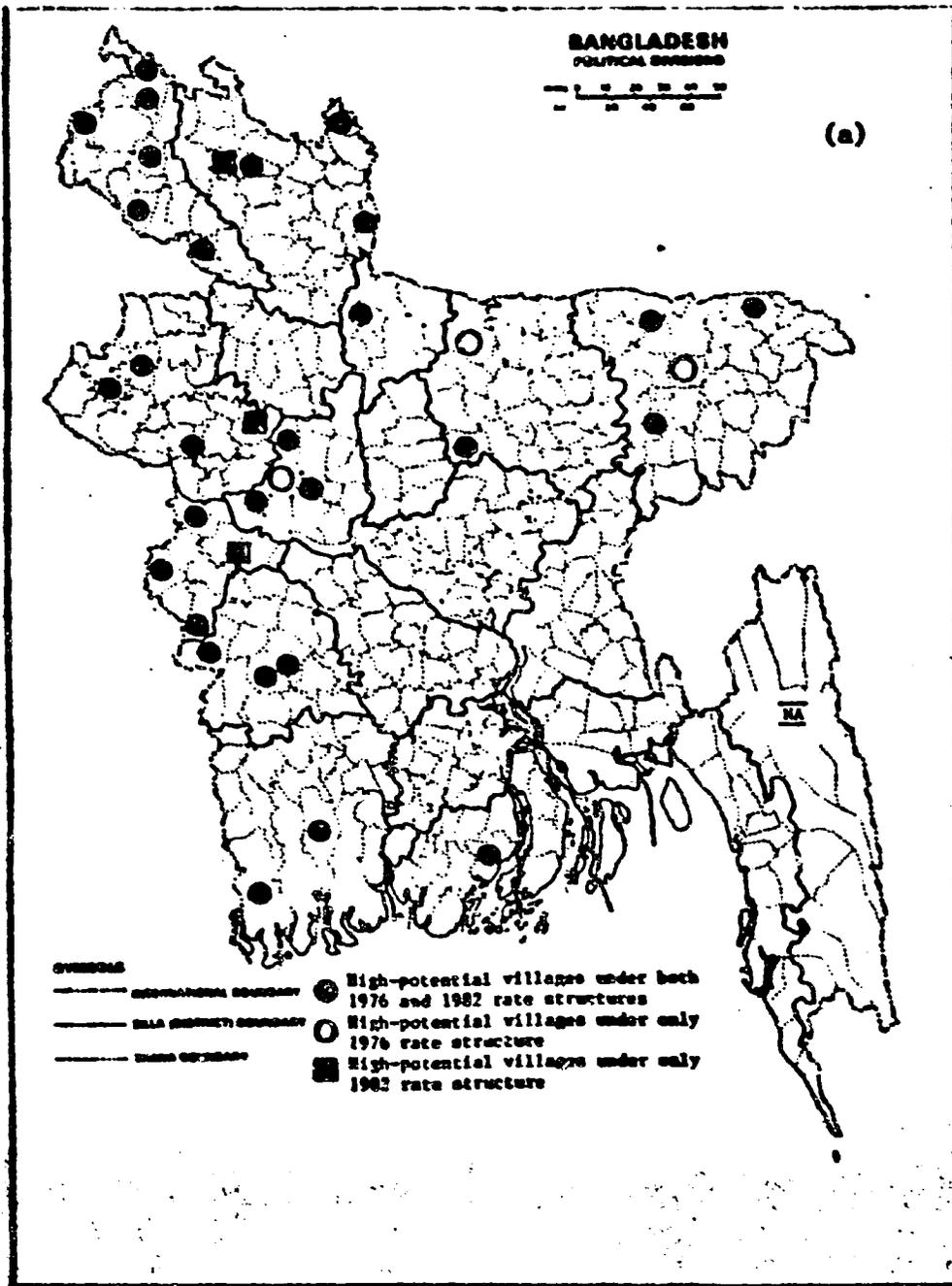


Figure 2. LOS Villages with (a) High Revenue Potential Per Capita and (b) Low Revenue Potential Per Capita, 1976 and 1982 Rates.

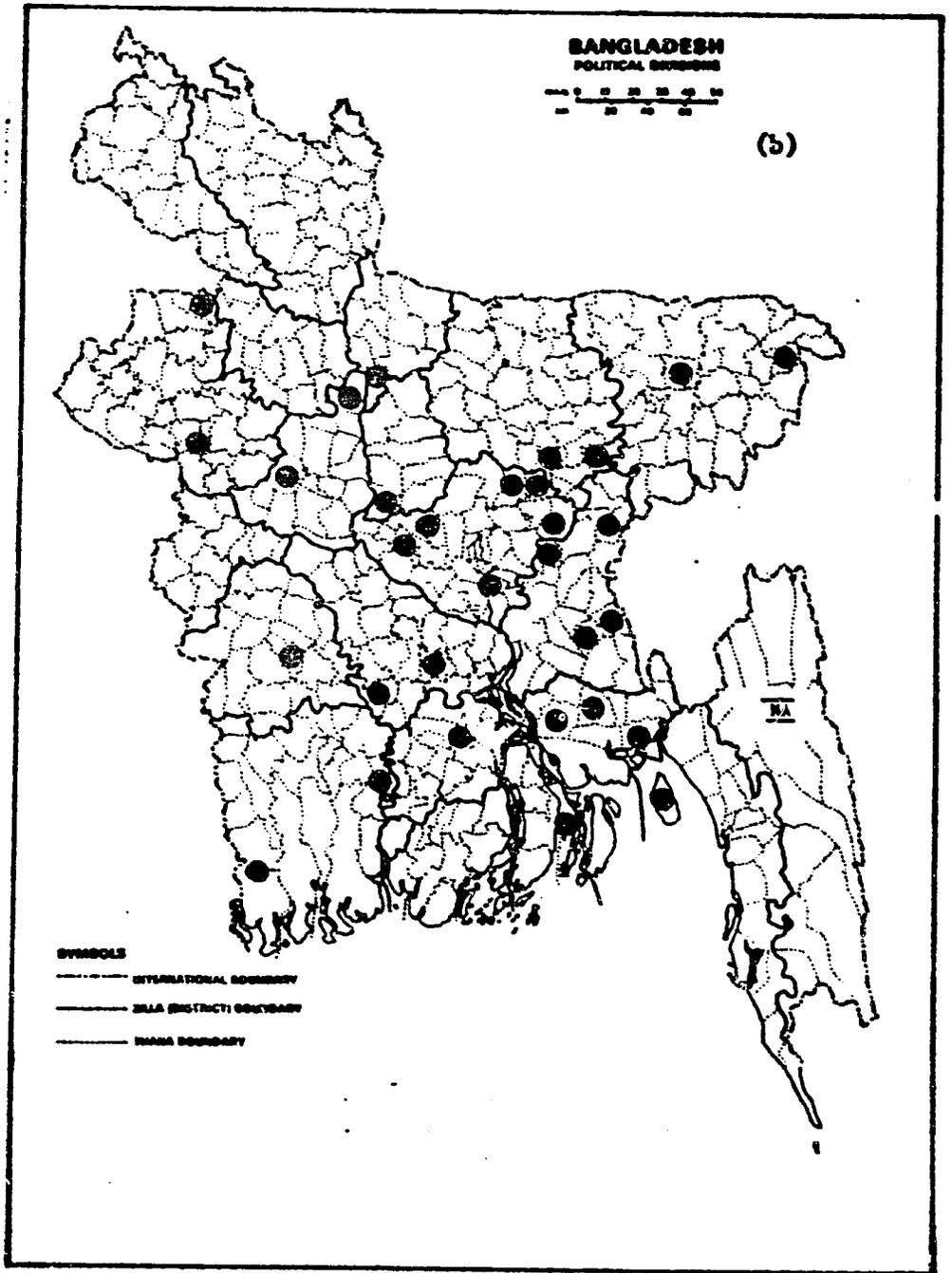
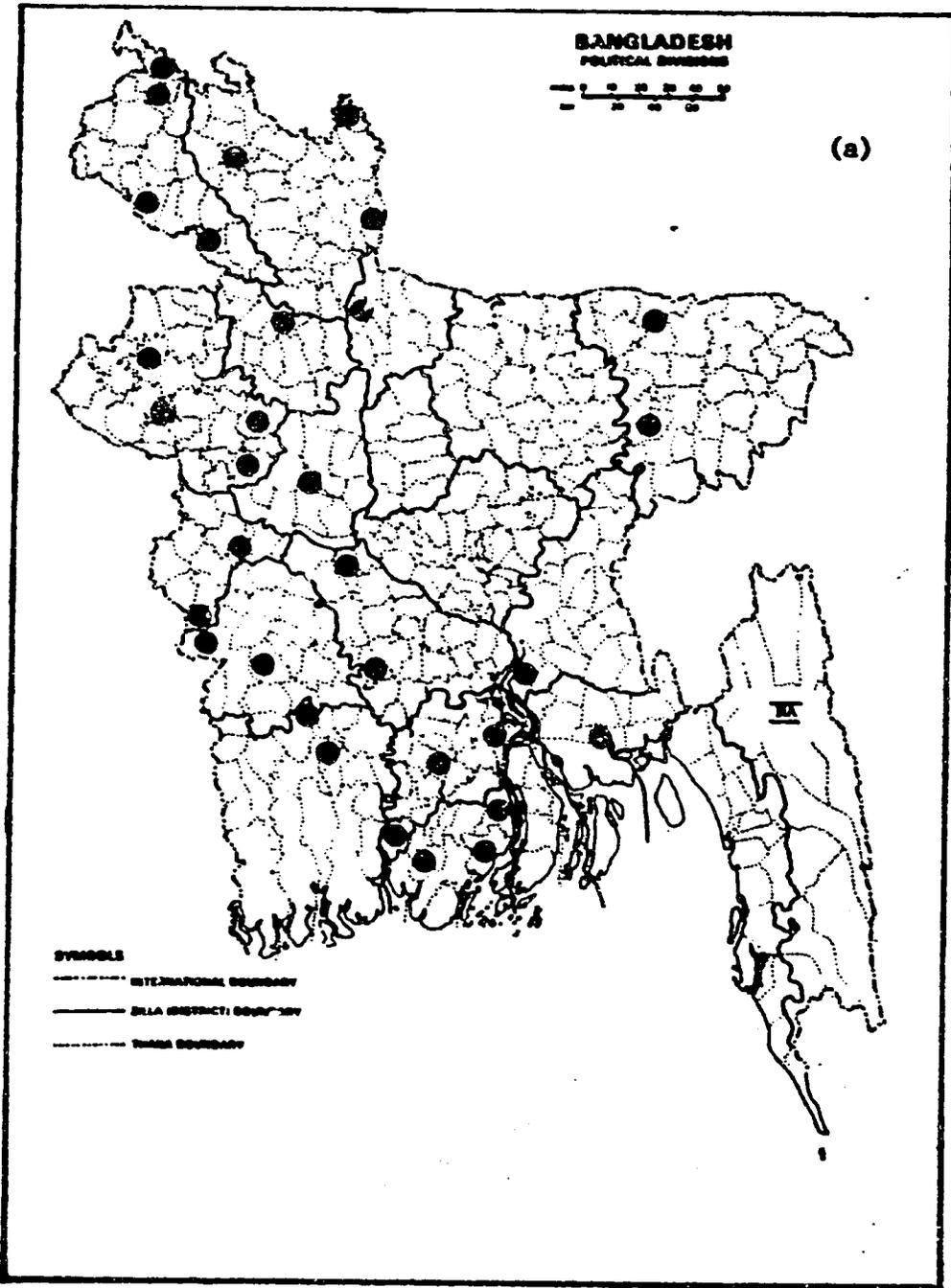


Figure 3. LOS Villages with (a) Highest Percentage Increase and (b) Lowest Percentage Increase in Revenue Potential Due to the Rate Structure Change.

LDT rates generally have experienced relatively small percentage increases in revenue potential as a result of the 1982 revision (Figure 3b).

District-Wise Variation

Tables 2 and 3 provide insights into the district-level relationships between plot sizes, land distribution, land productivity and tax potentials. Per acre revenue potentials for the districts were estimated by pooling all households in the sample villages of each district and repeating the calculations that were carried out on the village-level data. A projection of this sort exceeds the "representative validity" of the LOS, but, since actual LDT liability data are not disaggregated below the district level, it is a means of comparing our estimates of tax liabilities under the 1976 rates with the demand (assessments) recorded by the Government of Bangladesh.

The maps of district-wise revenue potentials (Figures 4a and 4b) show the familiar regional differentiation between core (active delta districts) and periphery (moribund delta districts). The basic pattern visible in Figure 4a, which maps "total taxable acreage per capita," recurs for other variables such as revenue potential per capita and revenue potential per acre for both the 1976 and the 1982 rates. We provide only one map of revenue potential per acre (Figure 4b) because maps of the other variables are exactly the same.

There are a number of reasons why our district-level projections will differ from government demand figures. The LOS was designed as a sample of "rural Bangladesh"--a subsector of the country which includes less commercial property and forested area than does the nation as a whole.

TABLE 2
DISTRICT-LEVEL DATA

District ^a	Potential Tax Revenue Per Acre (takas)		Official Tax Demands (Assessments) Per Acre (FY 1980-81)	Value-Added Per Acre (takas) 1979-80	Average Plot Size (acres) ^b	Gini Coefficients		Distribution of Potential Tax Burden		Percentage Increase in Revenue Potential Due to Rate Change
	1982 Rates	1976-81 Rates				Land Distribution		1976-81 Rates	1982 Rates	
						All Households	Landowning Households			
Dinaipur	29.1	9.0	6.3	2.7	3.73	.72	.63	.85	.86	224.9
Fajshahi	23.4	7.6	6.4	3.0	2.84	.67	.62	.82	.85	206.5
Fushtia	23.1	7.8	6.9	2.8	2.83	.67	.63	.82	.84	195.1
Pabna	22.9	8.2	5.5	3.1	2.61	.69	.66	.83	.85	179.3
Sylhet	21.7	7.5	5.8	3.1	2.49	.65	.63	.81	.84	191.3
Phulna	20.9	7.6	4.6	2.4	1.97	.71	.68	.79	.83	178.0
Jessore	20.2	7.4	6.2	3.1	2.91	.65	.60	.81	.83	175.7
Fangpur	20.1	6.6	6.0	4.6	2.39	.69	.62	.81	.85	205.8
Patuakhali	17.7	5.9	6.5	2.9	2.01	.64	.61	.78	.83	202.1
Barisal	16.1	5.2	6.7	4.2	1.38	.67	.64	.78	.84	205.7
Mymensingh	14.9	5.9	3.9	3.9	1.95	.65	.61	.78	.82	152.0
Pogra	14.4	5.3	6.2	4.1	1.60	.68	.64	.79	.83	171.8
Noakhali	13.3	5.1	4.2	4.1	1.51	.68	.59	.78	.84	157.8
Faridpur	12.9	4.4	5.2	3.4	1.66	.65	.61	.75	.81	190.5
Chittagong	11.2	4.5	7.5	3.9	1.29	.78	.65	.83	.85	151.2
Tangail	10.5	4.0	3.0	3.6	1.61	.60	.57	.69	.78	161.6
Comilla	10.5	4.0	3.9	3.7	1.04	.67	.62	.74	.80	163.5
Dhaka	8.7	3.8	16.5	4.3	1.25	.61	.57	.69	.77	131.1
Mean of Districts	17.3	6.1	6.2	3.5	2.06	.67	.62	.79	.83	180.2
BANGLADESH ^c	18.9	6.6	6.3	3.5	2.03	.69	.64	.81	.85	188.6

^aRanked according to tax per acre, 1982.

^bTotal district landholdings divided by the number of landowning households in the district.

^cExcluding the Chittagong Hill Tracts.

SOURCES: Estimates computed by the authors using data from the 1978 Land Occupancy Survey; actual acreage per capita, per capita LDT liabilities, per acre LDT liabilities, and value-added per acre, based on data from the 1980 Statistical Yearbook of Bangladesh, Tables 2.2 and 4.48; and tax liability data provided by the Ministry of Law and Land Reforms of the Government of the People's Republic of Bangladesh.

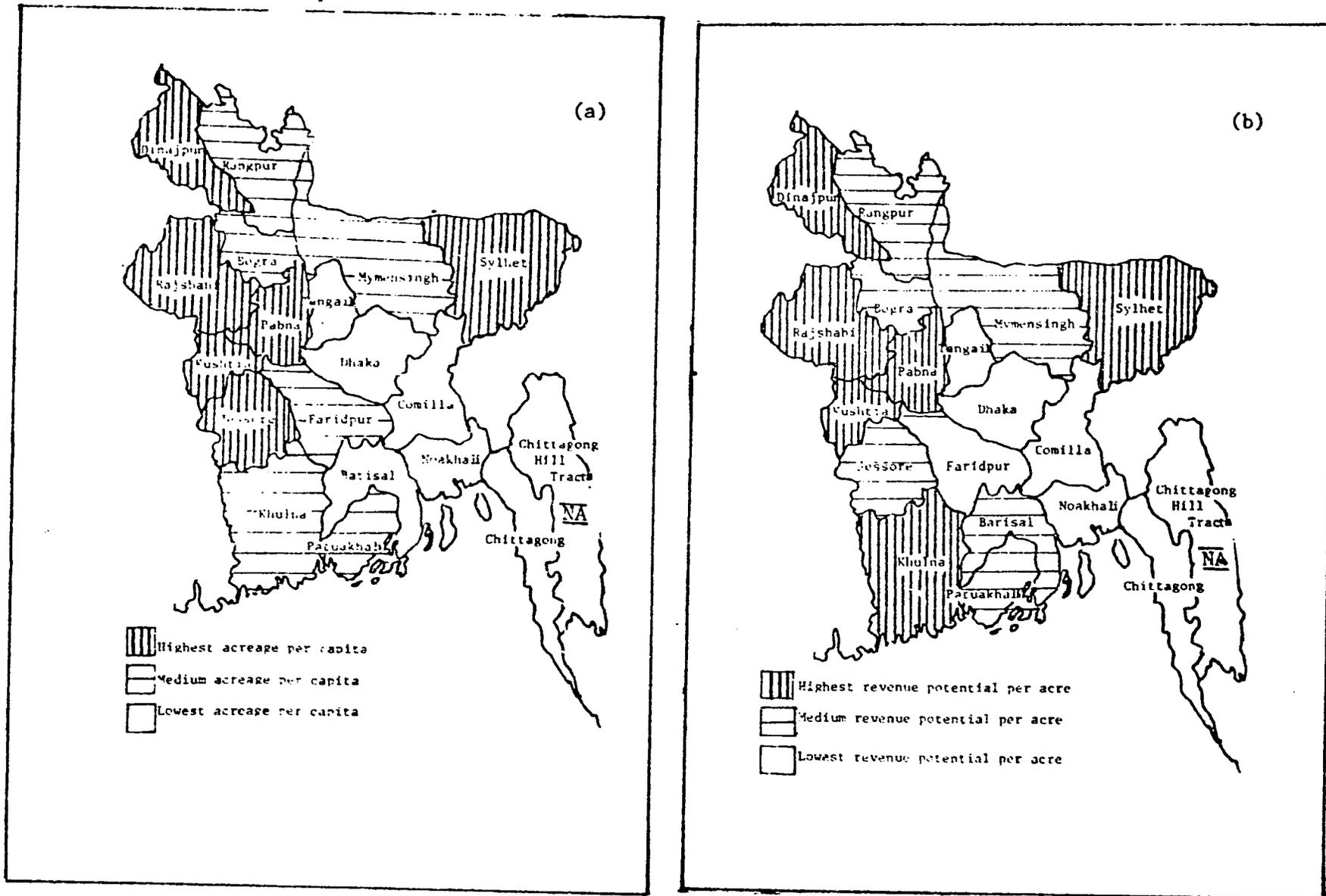


Figure 4. District-wise Revenue Potentials (a) Total Taxable Acreage Per Capita, (b) Revenue Potential Per Acre, Based on LOS Data.

TABLE 3

SIMPLE CORRELATION COEFFICIENTS BETWEEN LANDHOLDINGS CHARACTERISTICS AND
TAX POTENTIAL AT THE DISTRICT LEVEL^a

	Tax Potential Per Acre		Gini Coefficient For The Intra-District Distribution of Tax Potential		Value-Added Per Acre
	<u>1976-81 Rates</u>	<u>1982 Rates</u>	<u>1976-81 Rates</u>	<u>1982 Rates</u>	
Gini Coefficient for Land Distribution:					
Across All Households			.713	.708	
Across Landed Households	.501*	.471*	.659	.637	
Plot Size:					
All Households					-.655
Landed Households	.914	.930	.682	.582	-.611
Value-Added Per Acre	-.665	-.649			
Gini Coefficient for Tax Distribution:					
1976-81 Rates	.791				
1982 Rates		.734			

^aAll coefficients are statistically significant at the .01 level except for those with an asterisk which are significant at the .05 level.

This shortcoming in our data will lead to an underestimation of district tax potentials, especially in Chittagong, Tangail, Dhaka and Khulna. We have no means of calculating the percent of the national LDT liability derived from commercial or forested land, but it is not thought to be substantial. Another problem with our projections stems from the small number of observations per district, especially in the case of the less-populated districts. And, as previously mentioned, our calculated potentials for individual villages are better estimates of what should be collected and worse estimates of what will be collected than are government demand figures.

In spite of the above-mentioned difficulties, a closer examination of district patterns is illuminating. Gini coefficients of inequality were calculated for the distribution of land among all households as well as for land distribution among only the landowning population. Gini coefficients for the distribution of potential tax liabilities were calculated for both sets of rate structures.¹ By comparing the mean of the district coefficients with the country-wide Gini coefficient for land, one sees that on average land is slightly more equally distributed within each district than it is within the country as a whole. For this reason the distribution of tax liabilities on average also will be more equally distributed within each district than it is nationwide. The difference in each case, however, is not great.

¹In order to compute all of the Gini coefficients, households were ranked according to size of landholdings and grouped into deciles.

Since tax rates are positively related to holdings size, it is not surprising to find a high correlation between average plot size and per acre tax potential across districts (Table 3, Figure 5). There is no statistical relationship between average holding size and inequality in the intra-district distribution of holdings among either all households or all landowning households. This finding suggests that higher-than-average holdings in some districts are not due to a concentration of large holdings among only the largest landholders. Instead, it appears that holdings are larger in all deciles in the districts with high-average holdings. (Average holding size may be related to conditions such as population density, soil, and climatic conditions.)

High inequality in land distribution is positively correlated with high tax potential per acre, but this relationship is not as strong as that between plot size and tax potential. It is interesting to note that the dominance of average holdings size over the distribution of holdings in the determination of per acre tax potential increases with the imposition of the new rate structure.

The most important finding relevant to tax policy revealed in Tables 2 and 3 is the existence of a strong, negative relationship between value-added per acre and average holding size (and therefore also between value-added per acre and tax potential per acre). If large holdings tend to be less productive on a per acre basis than small holdings because the land is worked less intensively, then the LDT should stimulate agricultural production by encouraging the division of large holdings. The direction of causality, however, may be reversed; that is, poor soil

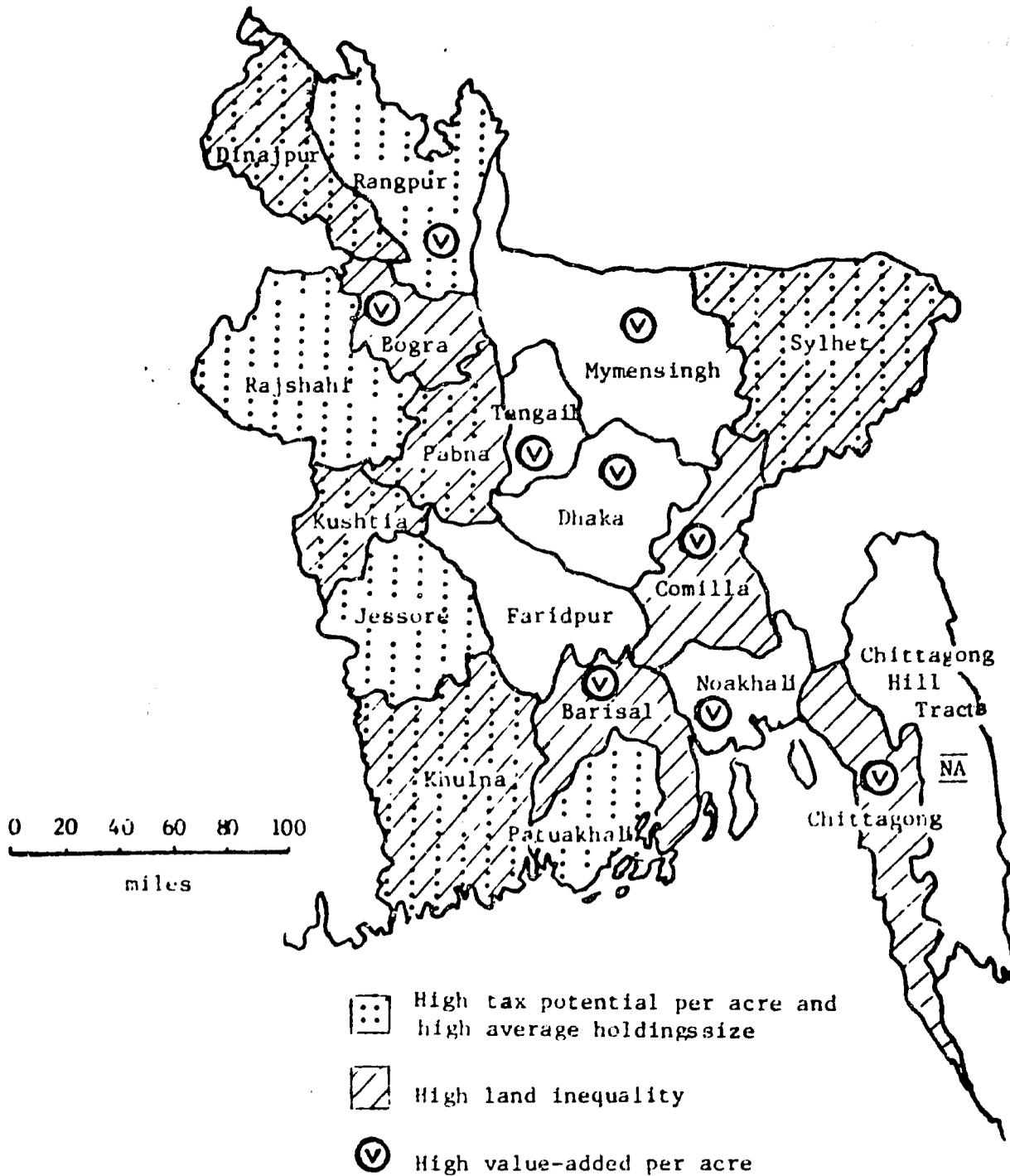


Figure 5. District-Level Relationships Between Holdings Characteristics and LIT Potential. "High" refers to the top nine districts for each variable. SOURCES: See Table 3.

conditions may require a household in one district to farm a larger plot than a household earning the same agricultural income on a smaller but more productive plot in another district. If such is the case, then the LDT is not equitable in the sense of taxing households of equal means equally. Unfortunately we cannot, at present, determine the basis of this important district-level relationship.¹ In any case, district totals of the tax demand assessed by the government are not significantly related to either value-added per acre or average holdings size.²

Surprisingly, despite a stronger relationship between plot size and tax potential per acre under the 1982 rates, there is a weaker relationship between tax potential and value-added per acre. We have, as yet, no explanation for this finding. One final relationship to note is between tax potential per acre and inequality in the intra-district distribution of potential tax liability. Districts with relatively high per acre tax potentials will be those in which the tax liability is most unevenly distributed.

Distributional Effects

The LOS data provide the basis for a precise description of the distributional impact of the 1982 LDT rate revision for this particular

¹We lack information concerning the relationship between the size and productivity of landholdings within regions of comparable soil and climatic conditions.

²Correlation coefficients which are not even remotely significant are not included in Table 3.

TABLE 4

DISTRIBUTION OF POPULATION, LANDHOLDINGS, AND POTENTIAL TAX REVENUE
BY DECILE OF HOUSEHOLDS RANKED ACCORDING TO SIZE OF HOLDINGS

Decile of Households With Plot-Size Range (acres)	Percent of Sample Population Within Each Decile ^a	Percent of Total Landholdings Within Each Decile	Percentage of Total Revenue Potential	
			1976	1982
1st (0)	15.5 (15.5) ^b	0 (0)	0 (0)	0 (0)
2nd (0- .03)		.1 (.1)	0 (0)	.2 (.2)
3rd (.04- .10)	8.7 (24.2)	.4 (.5)	.2 (.2)	.3 (.5)
4th (.11- .29)	8.9 (33.1)	1.1 (1.6)	.4 (.6)	.3 (.8)
5th (.30- .60)	9.4 (42.5)	2.6 (4.2)	1.1 (1.7)	.4 (1.2)
6th (.61- 1.04)	9.3 (51.8)	4.6 (8.8)	1.9 (3.6)	.7 (1.9)
7th (1.05- 1.63)	10.1 (61.9)	7.6 (16.4)	3.1 (6.7)	1.2 (3.1)
8th (1.64- 2.53)	10.7 (72.6)	11.9 (28.3)	4.9 (11.6)	2.4 (5.5)
9th (2.54- 4.42)	12.1 (84.7)	19.3 (47.6)	7.9 (19.5)	8.0 (13.5)
10th (4.43-76.27)	15.3 (100.0)	52.4 (100.0)	80.4 (100.0)	86.5 (100.0)

^aCumulative percentages are provided in parentheses.

^bSince more than 10 percent of the households own no land, there is no way to define precisely the upper bound of the first decile. These numbers, therefore, refer to the first and second deciles combined.

SOURCE: Computed by the authors using data from the 1978 Land Occupancy Survey.

TABLE 5

COMPARISON OF THE DISTRIBUTION OF LDT LIABILITY FOR LOS
VILLAGES UNDER THE 1976 AND 1982 RATE STRUCTURES
(in takas)

Decile of Households	Total Liability		Liability Per Household		Per Capita Liability		Per Acre Liability	
	1976	1982	1976	1982	1976	1982	1976	1982
1st	0	0	0	0	0	0	0	0
2nd	109	1,786	.03	.5	.01	.23	2.7	44.1
3rd	644	3,553	.2	1.0	.04	.20	2.7	14.9
4th	1,720	3,482	.5	1.0	.10	.19	2.7	5.5
5th	4,222	4,726	1.2	1.4	.22	.25	2.7	3.0
6th	7,490	8,322	2.2	2.4	.40	.44	2.7	3.0
7th	12,421	13,801	3.6	4.0	.61	.68	2.7	3.0
8th	19,308	27,294	5.6	7.9	.89	1.26	2.7	3.8
9th	31,375	91,240	9.0	26.3	1.28	3.73	2.7	7.9
10th	<u>317,832</u>	<u>985,917</u>	91.5	283.7	10.29	31.94	10.1	31.2
Total	395,121	1,140,122						

SOURCE: Computed by the authors using data from the 1978 Land Occupancy Survey.

sample of households. The 34,745 households were ranked according to size of landholdings and grouped into deciles. Tables 4 and 5 show the distribution of population, landholdings and LDT liabilities across the deciles of households.

The extreme inequality of the distribution of land is apparent from Table 4. Of the LOS households, 19.8 percent, representing 15.5 percent of the sample population, own .03 acres of land or less (of these, 14.7 percent of all households own no land, and comprise 11.6 percent of the sample population). The lower half of the households own less than 5 percent of the land while households in the top decile own over half the total sample acreage. The graduated rate structure of the LDT translates this skewedness in land distribution into a more extreme skewedness in the distribution of tax liabilities. Under the crudely progressive 1976 rates, 80 percent of total payments should have come from the largest 10 percent of landowners. As of 1982, this tax decile should be paying 86.5 percent of the LDT, while the top 20 percent of households, encompassing 27.4 percent of the sample population and 71.7 percent of the sample acreage, should provide over 94 percent of total tax payments.

Table 5 furnishes per acre, per capita, per household, and total tax liabilities for each decile. The column second from the right shows that the 1976 rate structure was proportional at 2.7 taka per acre over the acreage range (up to 8.25 acres) that comprises 96 percent of the sample households. For the 4 percent of the households with landholdings above 8.25 acres, the per acre liability jumped to 15 taka. Of the sample acreage, 31.4 percent consisted of this more highly taxed land.

The 1982 rate revision has increased the per acre payments of all holdings-size groups by an average of 188.6 percent, but the proportions of these increases vary significantly across deciles. The per acre payment for the lowest holdings-size groups has increased by more than a factor of 15 due to the provision under the 1982 law for a minimum payment of one taka on all holdings. In contrast, the tax per acre owned by the 5th through 7th deciles of households has increased by only 11 percent. Per acre payments of the highest decile have tripled. As a result of these changes, the lowest and highest holdings-size groups will contribute a larger share of total LDT payment for the sample. Thus, the tax has been made less progressive at the lower end of the rate structure (covering the lower 50 percent of the households) and more progressive at the upper end (covering the top 95 percent of landholdings). This change in the shares of tax payments resulting from the revision of rates is presented graphically in Figure 6. If one assumes that household income varies directly with the size of landholdings, the minimum payment provision makes the tax highly regressive within the first tax bracket (holdings below 2.00 acres). This bracket encompasses 74 percent of the sample households. The tax is progressive over the range of holdings greater than 2.00 acres into which 26 percent of the households fall and from which 96 percent of the tax payments should originate. One final fact illustrated in Table 3 is that, since households with larger holdings tend to have more members, per capita tax liabilities rise less sharply than do per household liabilities as acreage increases.

Considerations for Future Research and Policy

The present analysis prompts several suggestions concerning directions that future research and policy on land taxation might pursue. These ideas are limited to thoughts that directly emanate from this analysis, rather than broader issues related to the LDT which are the subject of another report.

Research Priorities

This study demonstrates an important use of land-ownership data which previously had been neglected. In this case, the data previously collected were aimed at exposing the national pattern of landlessness especially in reference to possible land reform needs. We have used the data to indicate revenue potentials from a land tax; data on tax potentials are rarely easily available to planners so that our use of the LOS data is a valuable contribution.

Landownership patterns, however, change through time. In Bangladesh most analyses show that landlessness is increasing, but it is less clear how patterns of ownership are changing (i.e., there may be a greater increase in the largest holdings, or greater increase in small and medium holdings). Planned alterations in the land ownership structure through land reform measures could result in a rather different pattern of revenue potential from the LDT--of which planners should be aware when both revised ownership patterns and tax rates are considered.

Compared to other South Asian countries, Bangladesh now possesses one of the best studies of land occupancy, one that could well serve as a

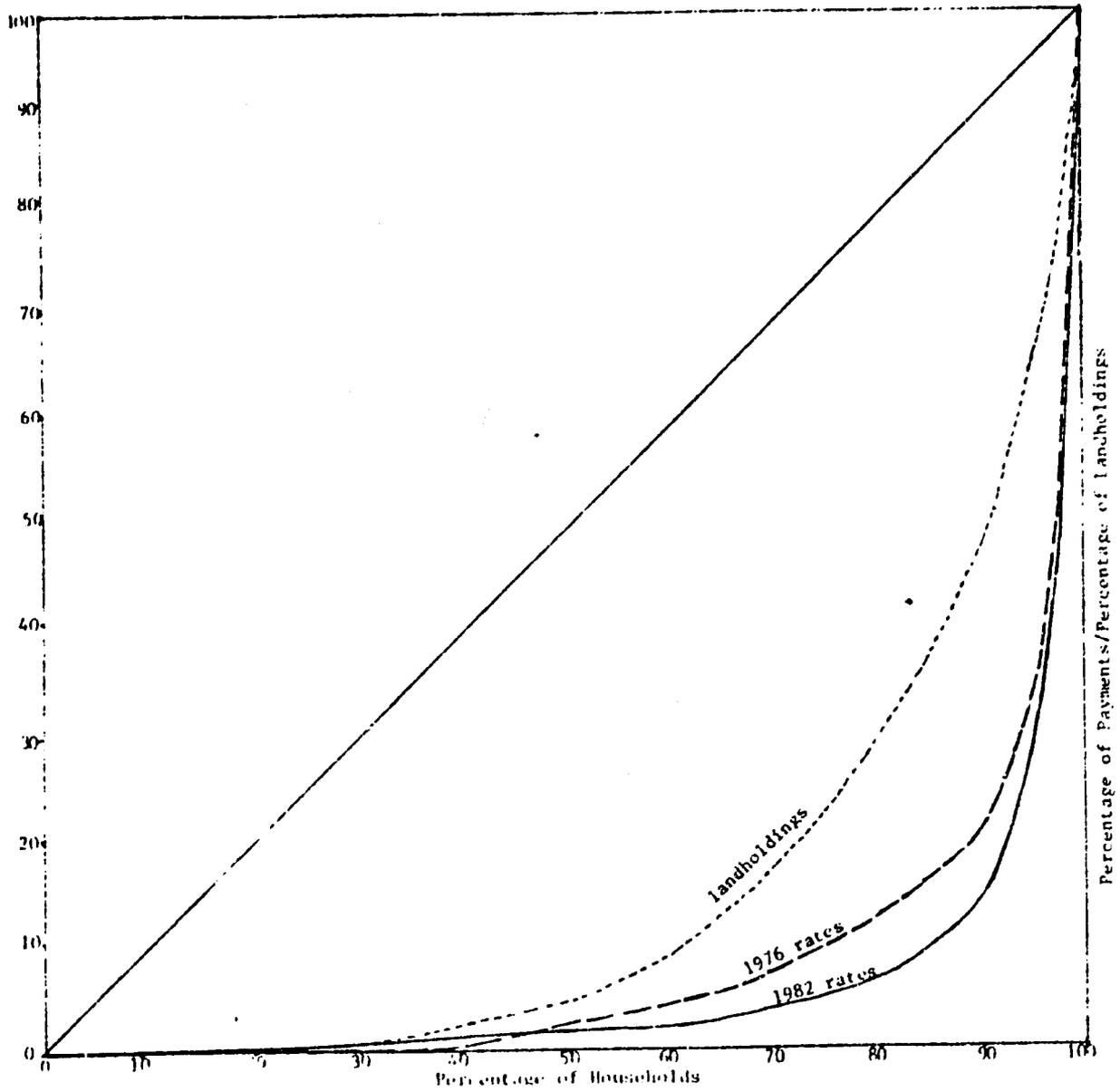


Figure 6. Comparison of Landholdings Shares and Tax Potential Shares under 1976 and 1982 Rate Structures.

model for other countries. This healthy situation should be capitalized on by updates at regular intervals, preferably every five years, along the lines of the 1978 LOS.

Regular re-surveys are possible in terms of personnel capacity of the Bangladesh Bureau of Statistics which has a trained representative stationed at each upazila throughout the country. A training session organized once every five years to teach rigorous surveying methods would not be wasted effort, and could be funded through a combination of internal and external resources. Since the Jannuzi-Peach approach required only one week, perhaps two in the largest villages, for conducting the survey, the demand on the time of the BBS local-level personnel would not be excessive. Furthermore, the BBS is interested in promoting improved local-level statistics, particularly in the domain of resource mobilization.¹ The current LOS survey could be shortened, with the main questions focusing on land ownership and tenancy, and reduced sections on irrigation and fertilizer use.²

Policy Priorities

Two of the most important policy issues that emerge from the analysis are: the equity of the current LDT rate structure, and the possible need for equalizing policy due to the regional disparity in revenue potential (if the LDT were made into a local tax).

¹Interview with Dr. Gulam Rabbani, Chief, Bangladesh Bureau of Statistics, September 1982, Dhaka.

²Jannuzi and Peach, 1980, mention the difficulty of obtaining dependable data on such questions as nature of irrigation, types and quantity of fertilizer used, etc.

The equity question is complicated. According to the present rate structure, the larger landowners account for a very large proportion of the tax revenue, but the smallest holders are bearing a relatively large burden. Furthermore, since the tax is assessed only according to plot size and not plot quality, there may also be severe inequity built into the assessments. The subject of equity under the LDT is further complicated by the probable inequitous compliance pattern, with small and medium holders being more compliant than the largest landowners.

The current rate structure, however, may possess merit in terms of encompassing more of the agricultural sector within the taxpaying population. Also, horizontal equity suggests that even small landowners should be taxed since urban dwellers earning minimal incomes are taxed, albeit indirectly, on their purchases of goods.

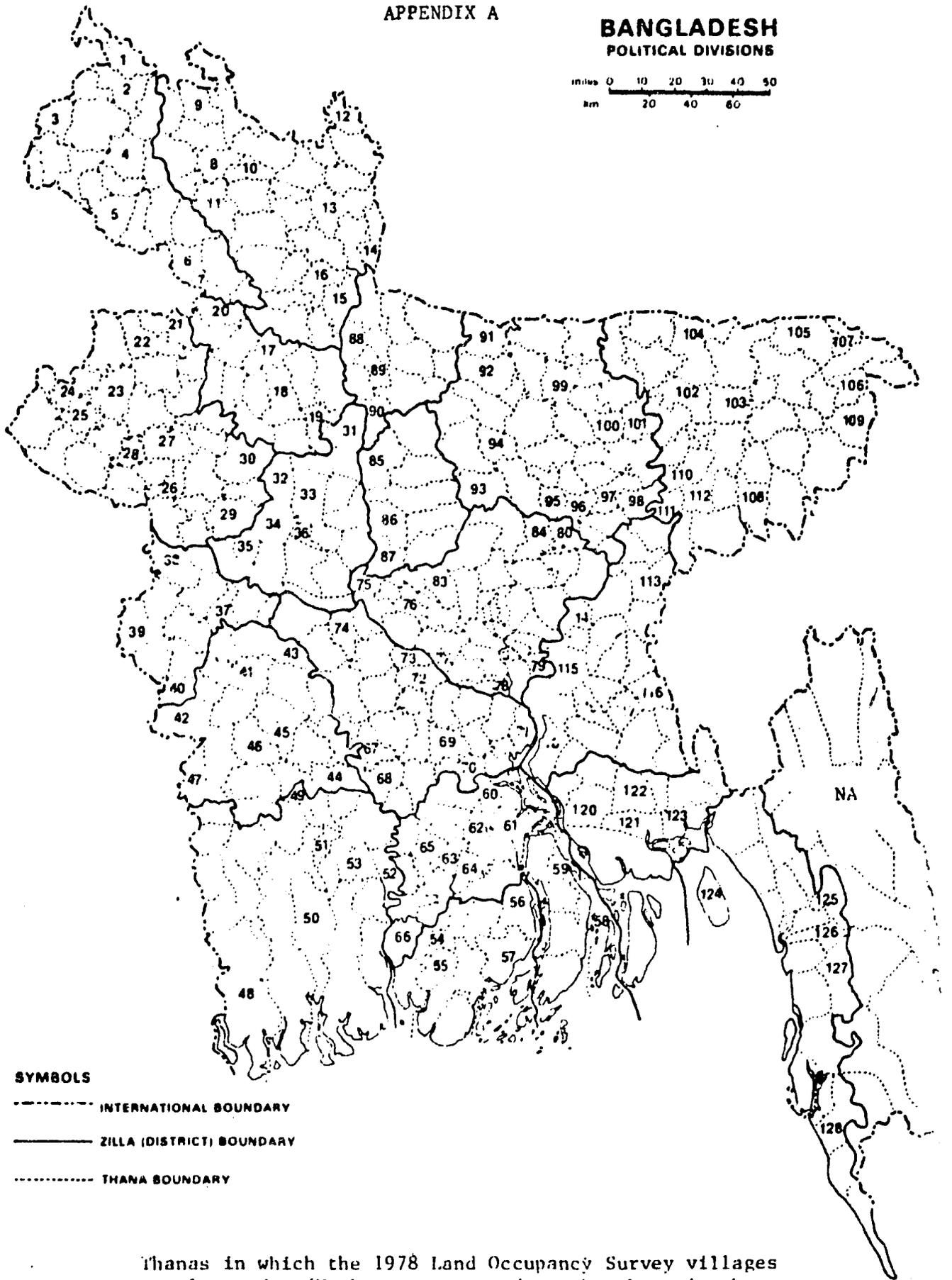
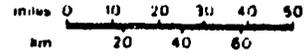
The other major policy implication of the present study rises out of the regional pattern of revenue potential. If the upazila were to assume the LDT as a major revenue (non-grant) source, then upazilas in the active delta districts would have a smaller tax base than districts on the periphery. The central government may choose to deal with this regional disparity, perhaps through a system of equalizing grants.

This latter problem of regional disparity might be reduced if the Government of Bangladesh were to revive the historic (sixteenth and seventeenth century) practice of taxing land productivity, since the active delta districts have the most productive land. While acreage and holdings patterns, under a tax based only on plot size, place the active delta districts in the low-revenue-potential category, these same

districts would move into a higher category if the tax were based on productivity. Additionally, such a change would also improve the revenue growth potential of the LDT.

APPENDIX A

**BANGLADESH
POLITICAL DIVISIONS**



SYMBOLS

- INTERNATIONAL BOUNDARY
- ZILLA (DISTRICT) BOUNDARY
- THANA BOUNDARY

Thanas in which the 1978 Land Occupancy Survey villages are located. (Numbers correspond to the those in the tabular data of Appendix A). Note: This map shows a division between the districts of Mymensingh and Jamalpur which did not exist at the time of the 1978 LOS.

APPENDIX B

LOS SAMPLE VILLAGES, POPULATION, ACREAGE, AND TAX POTENTIALS

<u>Village^a</u>	<u>Population</u>	<u>Acres Per Capita</u>	<u>Tax Potential Per Capita</u>		<u>Tax Potential Per Acre</u>		<u>Percentage Increase in Revenue Due to Rate Change</u>
			<u>1976</u>	<u>1982</u>	<u>1976</u>	<u>1982</u>	
<u>Manajpur District</u>							
1. Panchagarh ^b	2627	0.55	5.35	16.60	9.68	30.00	210
2. Bodia	4195	0.49	4.67	17.00	9.52	34.60	263
3. Baliadangi	1228	0.44	3.03	8.50	6.82	19.10	180
4. Birgonj	745	0.59	5.64	15.90	9.54	26.80	181
5. Biral	725	0.48	4.44	13.30	9.25	27.60	199
6. Fulbari	908	0.67	6.15	19.90	9.21	29.80	223
7. Hakimpur	949	0.38	1.85	4.75	4.87	12.50	157
<u>Manjpur District</u>							
1. Kishoregonj	4563	0.31	2.01	7.91	6.46	25.40	293
2. Dimla	4322	0.32	1.23	3.55	3.79	11.00	189
3. Gangachara	569	0.42	2.84	8.05	6.73	19.10	184
4. Badargonj	3534	0.38	2.59	6.90	6.85	18.30	166
5. Bhurangamari	3515	0.39	2.96	8.66	7.65	22.30	192
6. Ulipur	1715	0.22	1.11	2.61	5.05	11.90	135
7. Roumari	1698	0.58	5.75	17.60	9.85	30.20	206
8. Fulchari	1051	0.14	0.83	2.07	5.79	14.40	149
9. Gaibondha	483	0.24	0.64	1.61	2.70	6.75	150
<u>Manjira District</u>							
1. Shibgonj	2695	0.32	1.78	5.15	5.63	16.30	190
2. Bogra	1782	0.21	1.01	2.59	4.80	12.30	157
3. Dhunat	959	0.23	0.99	2.64	4.23	11.20	166
4. Panchbibbi	755	0.27	1.62	3.78	6.01	14.00	133
<u>Manjshahi District</u>							
1. Dhamirhat	1008	0.37	1.81	4.09	4.94	11.20	126
2. Patnitala	1018	0.31	1.34	3.70	4.39	12.10	176
3. Niamatpur	860	1.02	12.70	43.30	12.40	42.30	241
4. Gomastapur	634	0.29	2.09	5.58	7.20	19.20	166
5. Nachol	1078	0.34	3.11	8.85	9.03	25.70	184
6. Puthia	662	0.45	3.49	7.44	7.79	16.60	113
7. Baymara	743	0.28	0.91	2.25	3.31	8.19	147
8. Mohanpur	580	0.30	1.39	4.06	4.69	13.70	192
9. Baraigram	1470	0.35	2.21	6.72	6.24	18.90	204
10. Singara	1260	0.38	2.52	9.53	6.64	25.10	277

APPENDIX B (CONT.)

Village ^a	Population	Acres Per Capita	Tax Potential Per Capita		Tax Potential Per Acre		Percentage Increase in Revenue Due to Rate Change
			1976	1982	1976	1982	
<u>Na District</u>							
Kazipur	1200	0.26	1.50	3.19	5.85	12.40	112
Tarash	919	0.76	7.40	19.20	9.70	25.20	160
Ullahpara	2488	0.22	1.42	3.87	6.39	17.40	173
Chatmohar	782	0.38	2.84	6.53	7.55	17.40	130
Atgharia	974	0.36	2.93	7.42	8.16	20.70	153
Faridpur	3800	0.39	3.46	10.90	8.79	27.70	215
<u>ntia District</u>							
Kushtia	2906	0.34	2.38	7.49	7.05	22.20	215
Daulatpur	715	0.39	2.79	7.42	7.24	19.20	166
Meharpur	1593	0.50	4.38	12.30	8.72	24.40	180
Jibannagar	797	0.36	3.01	9.18	8.48	25.90	205
<u>ore District</u>							
Jhenaidah	1502	0.28	1.57	3.96	5.58	14.10	152
Mohespur	847	0.71	7.82	25.10	11.00	35.20	221
Sripur	842	0.26	1.51	4.08	5.86	15.80	170
Kalia	937	0.49	2.79	7.12	5.68	14.50	155
Bagherpara	1165	0.52	4.13	9.42	7.89	18.00	128
Kotwali	962	0.49	3.64	10.60	7.46	21.70	190
Sursa	1480	0.18	0.85	2.27	4.78	12.80	168
<u>na District</u>							
Shyamagar	1105	0.41	4.35	9.11	10.60	22.20	110
Fultola	3896	0.24	1.28	3.85	5.38	16.20	201
Dacope	1490	0.58	4.78	13.30	8.23	22.90	179
Khulna	4272	0.19	1.64	5.21	8.69	27.60	217
Kochua	718	0.28	1.28	2.74	4.54	9.67	113
Bagerhat	930	0.29	1.92	5.03	6.54	17.20	163
<u>akhali District</u>							
Betagi	3241	0.30	1.42	3.93	4.79	13.30	177
Barguna	1277	0.38	2.09	7.08	5.56	18.80	238
Banphul	965	0.30	1.37	3.98	4.56	13.20	190
Geiachipa	1498	0.38	3.27	10.10	8.49	26.30	210

APPENDIX B (CONT.)

<u>Village^a</u>	<u>Population</u>	<u>Acres Per Capita</u>	<u>Tax Potential Per Capita</u>		<u>Tax Potential Per Acre</u>		<u>Percentage Increase in Revenue Due to Rate Change</u>
			<u>1976</u>	<u>1982</u>	<u>1976</u>	<u>1982</u>	
<u>Arishal District</u>							
8. Monpura	2074	0.21	1.17	2.39	5.51	11.20	104
9. Daulatkhan	1203	0.13	0.53	1.36	4.17	10.60	154
0. Muludi	1035	0.29	1.65	4.67	5.62	15.90	183
1. Mehendigonj	1428	0.24	1.46	5.13	6.05	21.30	253
2. Babugonj	598	0.14	0.37	0.63	2.70	4.60	070
3. Jhalakati	2234	0.24	1.15	4.65	4.72	19.10	306
4. Nalchity	930	0.24	1.30	3.10	5.45	13.00	138
5. Swarupkati	2770	0.27	1.33	3.26	4.92	12.10	146
6. Mathbori	2260	0.24	1.46	5.79	6.04	24.00	297
<u>Arripur District</u>							
7. Kasiani	1025	0.33	1.68	6.60	5.03	19.80	294
8. Copalgonj	554	0.19	0.52	0.97	2.70	5.08	088
9. Madaripur	742	0.18	0.50	1.15	2.70	6.22	130
0. Kulkini	915	0.19	0.66	1.59	3.51	8.42	140
1. Bhedurgonj	708	0.20	0.88	2.44	4.46	12.30	176
2. Sadarpur	964	0.35	2.06	4.96	5.96	14.30	140
3. Charbhadrasan	212	0.32	1.81	4.88	5.66	15.20	169
4. Rajbari	617	0.31	1.05	3.49	3.35	11.20	234
<u>Chaka District</u>							
5. Daulatpur	921	0.28	1.23	3.03	4.37	10.80	147
6. Manikgonj	871	0.17	0.47	1.03	2.70	5.96	121
7. Dohar	1381	0.20	0.55	1.42	2.70	7.01	160
8. Tongibari	1133	0.13	0.36	0.83	2.70	6.18	129
9. Garzaria	3077	0.19	0.78	2.10	4.03	10.80	169
0. Monohardi	1059	0.21	0.57	1.16	2.70	5.52	104
1. Raipura	1399	0.14	0.38	0.61	2.70	4.34	061
2. Fatulla	1391	0.09	0.24	0.53	2.70	6.04	124
3. Dhamrai	705	0.27	1.11	2.45	4.08	9.01	121
4. Kapasia	1303	0.33	1.83	3.89	5.58	11.80	112
<u>Tangail District</u>							
5. Bhuapur	339	0.28	1.18	3.15	4.16	11.10	166
6. Tangail	3364	0.24	0.93	2.55	3.92	10.70	174
7. Nagarpur	736	0.28	1.21	2.54	4.26	8.92	109

APPENDIX B (CONT.)

Village ^a	Population	Acres Per Capita	Tax Potential Per Capita		Tax Potential Per Acre		Percentage Increase in Revenue Due to Rate Char
			1976	1982	1976	1982	
<u>mensingh District</u>							
8. Islampur	1182	0.43	3.78	11.90	8.87	28.00	216
9. Melanduha	2058	0.30	1.68	4.26	5.63	14.30	153
10. Sarishabari	953	0.29	1.64	3.47	5.69	12.10	112
11. Haluaghat	2299	0.38	2.32	5.76	6.06	15.00	148
12. Fulpur	702	0.38	2.97	7.18	7.91	19.10	142
13. Bhaluka	2286	0.43	2.94	7.53	6.84	17.60	157
14. Trisal	4263	0.28	1.10	2.81	3.92	9.98	155
15. Pakundia	1594	0.21	0.68	1.60	3.24	7.57	134
16. Katiadia	1177	0.30	1.98	4.02	6.69	13.60	103
17. Nikli	1562	0.12	0.62	1.53	5.32	13.00	144
18. Austagram	734	0.25	1.11	2.83	4.35	11.10	155
19. Kendua	689	0.19	0.66	1.36	3.54	7.32	107
20. Madon	1352	0.35	2.83	6.53	8.15	18.80	131
21. Khaliajuri	748	0.25	1.32	3.39	5.32	13.60	157
<u>lha District</u>							
2. Derai	1421	0.41	2.38	6.45	5.83	15.80	171
3. Jagannathpur	726	0.42	3.15	6.15	7.53	14.70	095
4. Sunamgonj	3213	0.61	6.29	20.60	10.30	33.70	227
5. Gowainghat	859	0.44	3.36	8.32	7.69	19.00	148
6. Beanibazar	1508	0.18	0.47	0.80	2.70	4.58	069
7. Jaintiapur	751	0.39	1.89	4.72	4.80	12.00	150
8. Sreemangal	327	0.28	1.19	3.09	4.24	11.00	160
9. Baralekha	980	0.24	0.87	2.06	3.67	8.69	137
10. Baniachong	693	0.46	3.27	10.40	7.05	22.50	218
11. Lakhai	1886	0.32	1.78	4.86	5.64	15.40	173
12. Hobiganj	858	0.32	2.05	4.77	6.41	14.90	132
<u>hilla District</u>							
1. Brahmanbaria	1716	0.21	0.98	2.02	4.65	9.58	106
2. Bancharampur	4927	0.16	0.54	1.04	3.29	6.38	094
3. Dautkandi	695	0.21	0.71	1.67	3.42	8.08	136
4. Kotwali	2170	0.13	0.35	0.69	2.70	5.27	095
5. Barura	881	0.17	0.58	1.23	3.50	7.37	111
6. Chandpur	2531	0.10	0.78	3.59	8.20	37.60	359
7. Kachua	697	0.26	0.71	1.70	2.70	6.51	141

APPENDIX B (CONT.)

<u>Village^a</u>	<u>Population</u>	<u>Acres Per Capita</u>	<u>Tax Potential Per Capita</u>		<u>Tax Potential Per Acre</u>		<u>Percentage Increase in Revenue Due to Rate Change</u>
			<u>1976</u>	<u>1982</u>	<u>1976</u>	<u>1982</u>	
<u>Chakhal District</u>							
0. Lakshmipur	4249	0.11	0.41	0.77	3.66	6.95	090
1. Sucharam	3816	0.32	2.26	6.80	7.12	21.40	201
2. Begumganj	3469	0.15	0.75	1.37	4.92	9.02	083
3. Sonagezi	3417	0.19	0.51	1.10	2.70	5.86	117
<u>Ittagong District</u>							
4. Sandwip	2497	0.08	0.25	0.55	3.34	7.27	118
5. Rangunia	1326	0.03	0.07	0.16	2.70	6.25	132
6. Putia	897	0.13	0.48	1.13	3.77	8.94	137
7. Satkania	1527	0.18	0.75	2.01	4.14	11.10	168
8. Ramu	1676	0.20	1.16	2.98	5.79	14.80	156

^a Actual village names are confidential information of the Bangladesh Bureau of Statistics. Villages are here referred to by the name of the thana in which each is located.

^b Numbers correspond to those on the LOS Sample Village Map (Appendix A).

NOTE: Computed by the authors using data from the 1978 Land Occupancy Survey.

APPENDIX C

RATES OF LAND DEVELOPMENT TAX FOR AGRICULTURAL LAND

1. Rate structure in effect from 1976 to April 1982
 - a. 2.7 paisa^a per decimal^b on holdings up to 8.25 acres
 - b. 15 paisa per decimal for holdings greater than 8.25 acres

2. Rate structure effective as of April 1982
 - a. Not more than 2.00 acres (a) 3 paisa per decimal subject to a minimum of 1 taka
 - b. More than 2.00 acres, but does not exceed 5.00 acres. (b) Tk. 6.00 for 2.00 acres plus 15 paisa per decimal for the land in excess of 2.00 acres.
 - c. More than 5.00 acres, but does not exceed 10.00 acres. (c) Tk. 51.00 for 5.00 acres plus 36 paisa per decimal for the land in excess of 5.00 acres.
 - d. More than 10.00 acres, but does not exceed 15.00 acres. (d) Tk. 231.00 for 10.00 acres plus 60 paisa per decimal for the land in excess of 10.00 acres.
 - e. More than 15.00 acres, but does not exceed 25.00 acres. (e) Tk. 531.00 for 15.00 acres plus 95 per excess of 15.00 acres.
 - f. More than 25.00 acres. (f) Tk. 1481.00 for 25.00 acres plus TK. 1.45 per decimal for the land in excess of 25.00 acres.

^aThere are 100 paisa in one taka.

^bThere are 100 decimals in one acre.