THE POTENTIAL FOR INCREASING AGRICULTURAL TAXES IN EAST PAKISTAN

by

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1.

INTRODUCTION

No one tax system is best suited for all countries or even for one country at all points of time. The tax structure as well as the tax level should change with the structural change in the economy during development. Otherwise the Government expenditure-revenue gap over time may become too wide and result in inflation and political instability.

Agriculture is still the main industry in East Pakistan contributing about 56% of the Gross Domestic Product (GDP). The new rice varieties demonstrate that there is great potential for increasing yields to as much as three times present levels, provided adequate investment is made in technological, institutional and physical factors. The rapid economic transformation of a nation depends to a great extent on the transformation of agriculture so as to provide food, fiber, and other resources for the growth of the non-agriculture sectors.

Agricultural taxes can play an important role in a growing economy. But in practice we find from different studies that the share of agricultural taxes in government in most of the Developing countries is declining. There is a growing view among economists that agriculture in many of the less developed countries (LDC's) is undertaxed.

If tax policy is not changed it is highly likely that agriculture will not contribute an appropriate share to government revenue out of the new income generated from the Green Revolution.

Stephen Lewis in examining tax policies in Pakistan emphasizes that agriculture as a dominant sector must make some net contribution to the rest of the economy.1/ His analysis of Pakistan's domestic resources and fiscal policy during Second and Third plans suggested that the achievement of the Third plan to a great extent would depend on what steps were taken to realize "the potential for additional taxation out of rapidly rising income in sectors like agriculture."2/

In this framework this paper explores the role, need and perspective of agricultural taxes during economic transformation. Agricultural tax experiences in selected developing countries have been cited as examples to provide certain results of possible applicability to East Pakistan. The current agricultural taxation situation in East Pakistan has been reviewed and the potentials for increased revenue from agriculture during the Green Revolution has been examined. Finally, certain conclusions have been drawn.

1/ Stephen R. Lewis. "Agriculture taxation in a Developing Economy" in Southworth and Johnston. Agricultural Development and Economic Growth, Cornell University Press, 1967, p. 460.

2/ Ibid "Domestic Resources and Fiscal Policy in Pakistan's Second and Third Plans", Pakistan Development Review, Autumn, 1965, p. 470.

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M.Z.R.

Note : Dr. M.C.Taylor, Professor of Fiscal policy, Department of Economics, M.S.U. while giving his expert opinion commented that in any fiscal measures the question of tax administration and compliance rather than changing the tax rates should be given priority. The Developing countries are generally confronted with these two basic problems. However, these two problems have been taken care of in the discussion of taxation in East Pakistan.

2. ROLE AND NEED FOR TAXES FROM THE AGRICULTURE SECTOR DURING DEVELOPMENT.

I. (a) Economic Transformation:

"Economic development is a process by which a population increases the efficiency with which it provides desired goods and services, thereby increasing per capita levels of living and general well being. The process is a dynamic one, involving constant change in the structures and procedures of the economy." 3/

In this dynamic process of economic transformation which embraces the whole life of a people in its various manifestation and interactions several factors like technology, capital stock, population and institutions may be involved. There are several views about the growth process. Historically we find the Rostow's growth stage theory which stresses the importance of a leading sector. 4/ Rostow's growth stage theory however, appears to be an over generalization. Economic growth can be conceptualized as a long term process of structural change in the economy over many generations involving a change in population and change in per capita income in agricultural, industrial and services sectors. In discussing the economic growth, the conventional method of measuring real per capita income or output is perhaps the reliable indicator of a system's economic achievement at any point in time and the change in real

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3/ John Mellor, The Econocics of Agricultural Development, Cornell University Press, 1964, pp. 31.

4/ Rostow, W., The Stages of Economic Growth, Cambridge University Press, 1960.

per capita income over a time measures growth.

Any viable theory of economic growth must explain both the level of per capita income of a given system at a point in time and the factors that determine the changes over time. The per capita income depends in part at a particular point in time on the quality and qunatity of the human resources, in part on the stock of material resources, in part how efficiently productive activity is organized and finally, in part on the institutional environment. The changes in per capita income should be explained in the above dimensions. According to G. Ranis all growth theories must take into account "the initial characteristics of and changes in the stock of material agents, i.e., the capital stock and changes in it, the initial characteristics of changes in the society's stock of human agents, i.e., population or labor force and population growth; the initial characteristics of changes in the quality or efficiency of the Production Process, i.e. technological change, and, finally the evolution of the society's organizational or institutional milieu". 5/

To determine the dimensions of the economic transformation of the above [illegible] view points the historical data that Kuznet has examined are most relevant. According to him modern economic growth of nations has two distinctive features: in all cases it involves a sustained and substantial rise in product per capita, and in almost all cases it involves a sustained and substantial rise in

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5/ Gustav Ranis, "Economic Growth Theory", international Encyclopedia of the Social Sciences, New York 1968, p.408

population and subsequently per capita rise was due to technological growth as well as decline in population growth. "The distinctive feature of modern economic growth is the frequent combination of high rates of growth of total population and of percapita product, implying even higher rates of growth of total product". Rising per capita product, has its implications for structure and conditions of modern economic growth. The rise in per capita product when population also rise can only be possible through innovations "an application of industrial system"--"the increasing use of scientific knowledge". 6/

In the following table the rates of growth of population, total product, product per capita of eleven countries over a few decades are presented.

Table:1.

Rates of Growth in Per Capita Product (Income) Over Long Periods, Selected Countries.

Country	Decades Included	Annual Rates of Growth (Approximate) Based on Percent of change per decade		
		Population	Total Product	Product/Capita
United Kingdom	8.65	.8	2.2	1.2
Ireland & Eire	8.65	-.4	1.3	1.7
France	10.55	.1	1.5	1.4
Germany	8.75	1.0	2.7	1.5
Switzerland	5.65	.8	2.4	1.5
Sweden	8.75	.7	3.6	2.8
Italy	8.7	.7	1.8	1.0
Russia	8.4	1.3	3.1	1.5
United States	7.85	1.7	4.1	2.0
Canada	7.75	1.8	4.1	1.9
Japan	6.95	1.3	4.2	2.6

Source: Adopted from Kuznets, Simon, "Six Lectures on Economic Growth", The Free Press of Glencoe, Illinois, 1959.

6/ Kuznets, Six lectures on Economic Growth. The Free Press of Glencoe, Illinois 1959, pp. 14-15.

The table shown in the prepage includes only the presently developed countries of the world. It further shows that since the industrial revolution in Great Britain, the spread of industrial system has been limited to only a limited part of the world. The long period data of these countries have shown the high rate of increase per capita which ranges from 10 to well over 20 percent per decade, the total product increased within the ranges from 15 to over 40 percent. For population the increase except Ireland ranges from 6 to 20 percent per decade.

Compared to this the most populous part of the world comprising 2/3 of the world's population in Asia, Africa and Latin America the per capita income is below $100.

The structural changes of the economy is more pronounced when the relative shares of agriculture, manufacturing and services sectors to Gross National Product (GNP) are looked at during the process of economic transformation. Kuznet's findings of a few selected developed countries are presented in the following table.

Table: 2.

Long term changes in shares of major sectors in National Product : selected countries.

Country	Dates	Shares in National Product		
U.K.	1895	A	M	S
	1948-54			
1. Initial period		10	37	53
2. Terminal period		6	46	48
3. Chnage		-4	+9	-5

table continued

Country	Dates	A	M	S
France.	1835 1949			
1. Initial period		51	25	25
2. Terminal period		23	46	31
3. Change		-28	+21	+6
Germany.	1860-69 1905-14			
1. Initial period		32	24	44
2. Terminal period		18	39	43
3. Change		-14	+15	-1
United States.	1869 & 1879 1947-54			
1. Initial period		20	21	59
2. Terminal period		7	38	55
3. Change		-13	+17	-4
Canada.	1870 1948-54			
1. Initial period		45	24	32
2. Terminal period		13	39	48
3. Change		-32	+15	+16
Japan.	1878-82 1947-54			
1. Initial period		65	11	25
2. Terminal period		24	32	44
3. Change		-41	+21	+19

Source: Adopted from Kuznet's "Six Lectures on Economic Growth," The Free Press of Glencoe, Illinois, 1959, (Table 6, pp. 50-52).

Note: A = Agriculture, M = Manufacturing, S = Services Sector.

In all these countries the shares of A sector have declined, that of M sector have increased, the shares of S sector have shown no consistency among these countries. Thus it can be said that the share of A sector to national income declines, that of M sector rises and the share of S sector may or may not rise, with the process of economic growth.

Similar conclusion can be drawn with regard to the relative share of labor force to GNP. in each sector. This pattern of long term structural change takes place as a part of the growth process. The most conspicuous change is found in case of Japan which initially was dominated by A sector then with economic transformation the relative share of A to GNP declines from 65 to 24.

Before we arrive at a conslusion on this process certain issues may be mentioned because of the predominance of agriculture sector of the Developing countries. The first to be mentioned is that in order to achieve higher per capita income as well as total product for economic transformation, which sector, agriculture or industry should get priority. Historically the economists concur that there are no successful cases of development in which rise in agricultural productivity did not precede or accompany industrial development. 7/ It has been recognized today that there is no need for doctrinaire statements as to which particular policy should be adopted for launching an economic transformation. "Every economy has an agricultural and a non-agricultural sector, and one of the most important aspects of development is the changing complex but always intimate relation between the two.8/

7/ Kuznets,"Six lectures on Economic Growth", The Free Press of Glencoe, New York, 1960,pp. 59-60.

8/ A.J. Youngdon, Possibilities of Economic Progress, Cambridge University Press, London, 1959, p. 284.

The other issue of economic transformation relates to the relative change in the occupational pattern. In this respect Dovring's analysis is important. His analysis shows that the relative proportion of labor force engaged in agriculture is very low in presently developed countries but the absolute decline took a long time to occur with the process of economic development. He concludes that "in most of the less developed countries today, there is no reason to expect reduction of absolute numbers in the agricultural population within the near future. It will take decades before agriculture ceases to employ and support the majority of the world's population." 9/ Thus we can say that in order to go through the process of economic transformation, per capita income and total product have to be increased over a long period. And to achieve that both agricultural and non-agricultural sectors must grow faster than the population growth rate.

(b) Increasing tax requirements for development.

The need for increased capital formation in the developing countries is universally acknowledged. Greater taxation in many nations will have to be a major source of expenditure. As Heller says, "Fiscal Policy, like other governmental [illegible] policy derives its meaning and direction from the aspirations and goals of the development society within which it operates, of the people whom it serves." 10/

9/ Folke Dovring, "The Share of Agriculture in Growing Population. Eicher and Witt. Agriculture in Economic Development, McGraw Hill Book Company, 1964, p. 97.

10/ Heller, Readings on Taxation in Developing Countries, edited by Bird R. and Oldman O. The John Hopkin Press, Baltimore, 1954.

The aspirations are reflected in the charter of the United Nations "to promote social progress and better standards of life in larger freedom". To achieve this one of the important criteria is to make available for economic development the optimum flow of material and human resources. The distinctive characters of the fiscal problems of the developing countries arises from the central problem of capital formation which is a key to economic development. Taxation as such is assigned increasingly a far greater role in the formation of capital in the developing countries.

Many developing countries may be caught in the vicious circle of poverty, low income per capita and high consumption. The high propensity to consume is likely to cause low savings which in turn is likely to lead to low capital formation. To break out of this circle as Heller points out, apart from foreign aid, calls for rigorous taxation and government development programs. Experience has shown that private investment in East Pakistan is shy, capital formation is low. This calls for greater effort on the part of the public sector to take the initiative of development directly on its shoulders in the financing of social and infrastructural overhead like education, training building of roads and communications, research and irrigation, flood control and drainage, generation of power, etc. There has also proved to be a need for Government activity in the industrial sector.

The Government of East Pakistan felt the need to create an East Pakistan Industrial Development Corporation (EPIDC) and the East Pakistan Road Transport Corporation (EPRTC) to provide incentive to the private sector as well as to fill in the gaps where the private sector is not likely to come forward. In addition, the Government's role in an inter mediate zone is also important where though actual investment projects are in private hands, funds are made available largely through government finance. An additional important function relates to the necessary incentives that are being provided by the public sector for private investment, both domestic and foreign. Taxation and fiscal policy have great bearing on this issue. In all these categories, the greater role of government is directed toward maximizing savings, mobilizing them for productive investment and channeling them so as to serve the purposes of a balanced development program. 11/

Richard Goode in his article "Taxation and Economic Development" has viewed taxation in relation to economic development from two points of view. First, an amount of taxation is needed to provide a non inflationary means of financing government expenditures that will promote development. Second, the kind of taxes that are levied need to be selected in such a way that their probable effects on the capacity and willingness to work, save and invest and their attractiveness to foreign investors also do not conflict.

11/ Heller in Readings on Taxation in Developing Countries, edited by Bird R. and Oldman O., The John Hopkins Press, Baltimore, 1954.

The way of economic development in fact is not along the easy path of low taxation and minimum government activity. The public sector has a greater role to play. To increase labor efficiency government has to spend on health and education. Besides, government provides public utility services such as transportation, communications, electric energy, water, storage, marketing facilities and credit institutions. Investment in these basic services opens up opportunities for private investment and innovation in agriculture, manufacturing and commerce. 12/ In addition, the public sector in East Pakistan has committed itself to invest in strategic large scale industries such as steel, fertilizer plants, insecticide plants, news print, jute manufacturing plants, etc. As there is a lack of organized saving institutions, money markets, bond markets there is demand that government meet increasing need for investment through foreign loans and deficit financing. This route may lead to inflation and future greater burden of taxation for repayment however. It may also result in great inequities. To offset these adverse effects as far as feasible, there is greater need now for higher taxation and mobilization of the internal resources.

Another important aspect in planned development is its implementation which requires expansion in administration and planning. To meet the cost of these large investment needs taxation has got to be raised from all possible sources.

12/ Richard Goode. "Taxation and Economic Development" in Morgan, Betz and Choudhry "Readings in Economic Development". p. 376. Wordsworth Publishing Co. Inc., Belmont, California, 1963.

One of the objectives of the government is to equalize per capita incomes between East and West Pakistan by 1985. To accomplish this accelerated growth rates, higher investments in agriculture, flood control, drainage, irrigation, adaptive research for higher yielding rice varieties and industries and other social and economic infrastructures investments are required. As can be seen from the following table, the growth rate in regional product of East Pakistan will have to be accelerated from the past rate of 5.4% to over 8% during the 20 years of the prespective plan periods to achieve the per capita income equality objective.

Table: 3.

Pattern of Regional Growth in the Perspective Plan
(1964-65 prices)

Year	Per Capita Income (Rs)			Growth rate in Regional Product (in percentage)		
	E.Pakistan	W.Pakistan	Total	E.Pakistan	W.Pakistan	Total
1959/60	297	391	340	5.4	5.0	5.2
1960/65	340	442	386	7.0	6.1	6.5
1969/70	416	531	467	8.3	6.2	7.3
1974/75	537	627	577	8.6	6.3	7.4
1979/80	709	750	727	8.1	6.8	7.5
1984/85	932	932	932			

Source: The Third Five Year Plan - 1965 - 70, p. 33.

It shows obviously from the growth pattern that the relative growth rate in East Pakistan has to be accelerated. It has to be ensured that necessary institutional framework is created and investment policies followed in order

to achieve proposed growth rate. This is a difficult question of public policy when West Pakistan has already been made a much more growth oriented both in public and private sectors. The strategy of investment both in public and private sectors, savings, balance of payments and how far resources from West to East through suitable fiscal policy can be transferred, consumption pattern, income distribution and employment have to be separately studied for these two wings of Pakistan so that adequate modifications and measures in development strategy as well as resource mobilization could be incorporated in mid term and annual operational plans in subsequent years. The Central Government has to play a greater role as equalizer in distribution and expenditures of the tax revenues on the basis of population and not on the basis of where it is raised from. This is in keeping with the principles of equity in fiscal policy advocated by both Heller and Buchanon.

The other important objectives include the complete elimination of foreign aid by 1985. To do so requires greater investment gradually from domestic savings not only to finance the development projects but also to service the loans already incurred. Public sector therefore, without creating disincentive effect on savings, willingness to work and invest must gear up its administrative machinery to tap various sources to increase the tax revenue.

(c) Impact of the Green Revolution on Agriculture Sector.

Agriculture sector has a vital role to play in the growth of the economy and in the growth of nonfarm sectors. If agriculture remains stagnant or if the growth rate is too slow economic development may meet with frustration because the sector will absorb resources instead of liberating them.

The biological and fertilizer revolution has altered the world's food and population balance prospects. This new technology popularly known as Green Revolution has not only provided a breathing space (spectre of famine is over) but also provided an extended opportunity for employment of the huge labor force. 13/ "Startling developments have been accomplished in wheat, rice and corn major food staples in much of the developing world. The possibilities for doubling or even tripling production are based upon high yield varieties coupled with adequate supplies of water, fertilizer, pesticides and modern equipment. Overnight, the image of agriculture in the developing countries has changed from that of an economic back water to that of a major potential contributor to over all development. 14/

The recent dramatic achievement of food grain production in West Pakistan, Phillipines, India and Taiwan

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13/ Bruce F. Johnston and John Cownie -- Fertilizer revolution and labor force absorption American Economic Review, LIX, Sept, 1969, pp. 569-82.

14/ Clifton R. Wharton, Jr. "The Green Revolution: Cornacopia or Pandora's box? Foreign Affairs, An American Quarterly Review, April, 1969, p. 1.

has shown that productivity of farm land and labor can be increased within the framework of small holdings. West Pakistan, Phillipines and Taiwan have emerged as self sufficient and/ or even surplus in wheat and rice within a reasonably short period. This dramatic development has saved foreign exchange on food imports, provided additional employment to rural labor, generated marketable surplus, reduced the pathological growth of urban slumps to a great extent. The economy has perhaps become more monetized. The public sector can capture part of the additional income for economic transformation by higher taxation and price policy. Complementary industries for fertilizer, pesticides, farm implemements, food processing and other consumers' goods are increasing in numbers. In West Pakistan the Green Revolution has had great impact on private tubewell irrigation which necessitated development of tubewell manufacturing by the private sector. This can be cited as a wonderful feat of achievement due to the stimulas of the revolution in accelerating the transformation of the economy.

The major responsibility for the success of Green Revolution in many nations lies in the public sector. As already stated the public sector usually has to provide research for genetic improvement, irrigation water, fertilizers, pesticides, extension services and other necessary input supplies, In addition, public sector is concerned with marketing, communication and transportation, storage and price policies.

Agriculture still being the predominant sector has responsibility for making a major contribution to the growth of nonfarm sectors. The increase in income in agruculture sector due to the green revolution can be marshalled for the growth of the non-farm sector in the following ways.

(1) Private individuals in agriculture can invest in non-agriculture sectors.

(2) The Government can tax the agricultural sector to provide infrastructure for the non-agricultural sector.

(3) Government by deliberate policy can help the higher saving sector such as industry by turning the terms of trade toward industry. N.A. Khan advocates mixture of the policy of turning terms of trade against agriculture and then tax the higher income sector (exposte). 15/ The possibilities of using any of these policies are appeared to be promising in the face of Green Revolution. The erosion of the tax base of agricultural sector particularly direct one should be stopped and moved in the positive direction due to the spurt in the economy by higher output per acre and per worker.

15/ S.R. Lewis, in Southworth and Johnstons "Agriculture Development and Economic Growth", Cornell University Press, 1967, pp. 460-61.

II. Perspective on role of agricultural taxes during the economic transformation:

The low income countries differ from high income countries both in tax structure and other economic characteristics. The desirable use of taxation are (1) allocation through government of resources to meet social wants (2) redistribution (3) Aid in stabilization of price level and (4) fostering the growth. How far the developing countries can meet these criteria successfully in their budgeting system is questionable and a matter of empirical evidence. The effectiveness of any taxation lies in its administration and compliance. In most of the Developing countries because of the large non monitized economy, market imperfections and lack of accounting and recording procedures in agriculture in particular there is difficulty in avoiding large scale tax evasion. Also a significant portion of agricultural output remains outside the scope of tax account and thus a substantial portion is not netted for taxation. The administrative problem, leads public authorities to the easiest sectors to tax and results in the creation of marketing boards for monopoly control of exportable taxes inspite of the fact that there is a lot of criticism against the creation of marketing boards. The question is what are the alternative arrangements for obtaining taxes? Whatever may be the abuse of this system it will continue to function until a better system is evolved.

Both Heller and Goode hold the view for general and direct taxes like the developed countries but there is difficulty again due to market distortion, accounting procedures, assessment etc., as such it will neither be a direct nor a general taxation. For example in the U.S. the personal income tax and corporation income tax contribute the 60% of the total federal tax revenues and because of the withholding system the collections on these accounts are very high. According to 1963 estimate the total personal income tax liability amounted to $ 49.2 billion dollars, and withholding brought in $ 40.2 billion which is about 82%. 16/ In contrast Kaldor has advocated a consumption tax on personal expenditures rather than, an income tax on the ground of high saving which is essential for development.17/ The consumption tax exempts savings. Consumption tax can be a progressive as the income tax. A consumption tax may have some merit but how can each family will keep its annual expenditure accounts and submit a balance sheet showing expenditures and total income? In most cases it will not only be a difficult problem to keep track of the expenditures but there will be deliberate attempts to show less expenditures per person or family. Moreover, Kaldor's view point may be appropriate for developed countries. But the less developed countries (LDC's) where a vast majority of the

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16/ Pechman, Federal Tax Policy, 1966 p. 57.

17/ N. Kaldor,"Taxation and Economic progress" in Scherer and Papke Public Finance & Fiscal Policy, Selected Readings. Houghton Miffin Co., Boston, 1966. pp. 274-279.

population is underfed and under nourished the comsumption tax would worsen the situation because between 50 and 80 percent of expenditures is on food items. On this ground Kaldor's advocacy for expenditure tax does not appear to be suitable for the LDC's. Richard Goode vehemently critizied the applicability of this system from the administrative and compliance point of view. Keynes, in his own evidence before the Colwyn Committee, dismissed the expenditure tax in a sentence by saying that while the tax is "perhaps theoretically sound, it is practically impossible." 18/ India and Ceylon adopted the expenditure tax system on Kaldor's advocacy but both the countries have rescinded it because of its practical difficulty inspite of its theoritical nicety.

The proper mix of taxes for any country depends on the objectives and policy of the government and the characteristics of the economy. There is no single tax structure which is appropriate for all countries or even for all countries or even for one country at different points in time. The tax structure changes with the change in the structure of the economy.

In discussing the perspective on the role of agriculture taxes during the economic transformation the writer has heavily depended on the view points of Lewis and Hinrichs as explained through their studies.

18/ Ibid. Income, Expenditure and taxable Capacity in Sherer & Papke. p. 168.

According to Lewis "the basic features of revenue (1) the share of tax revenue in national income increases from 10 or 15 percent or less to around 25 percent as per capita income rises from low level to moderately high levels (2) a much larger share of revenue comes from indirect taxes (10 to 25 percent) in low income countries, and direct taxes increase in importance as per capita income rises, (3) among low income countries, the share of foreign trade taxes varies with importance of imports and exports relative to national income; but (4) taxes on foreign trade, both imports and exports, constitute a very heavy share (30 to 60 percent) of the tax revenue of low income countries, and the share falls as the per capita income rises. Developing countries generally tax those sectors easiest to tax, using the taxes most easy to administer." 19/

In dealing with agricultural taxation policy the question of price policy cannot be neglected because different view points have emerged on these issues among the development economists. Chief among them are S.R.Lewis and Raj Krishna. Their view points are well expressed in their articles published in Southworth and Johnston (1967) Chapters 12 and 13. Both of them have their arguments based on personal experiences.

Lewis maintains that during the process of economic transformation agriculture being a dominant and fast rising sector should be appropriately taxed.

19/ S.R. Lewis, "Agriculture Taxation in a Developing Economy " in Southworth and Johnston's "Agricultural Development & Economic Growth", Cornell University Press, 1967, p. 454.

Krishna's emphasis is on "positive price policy" which stems from his conviction that there is a "critical minimum rate of agricultural growth" that must be achieved or over all economic growth will be frustrated. Technological development unless coupled with positive price policy will fail to achieve sustained agricultural growth. 20/

Without delving further into this controversy it may be appropriate to suggest that tax composition will, of course, be both direct like land and agricultural income taxes and indirect taxes like sales, excise and custom duties of exportable agricultural commodities. Direct and indirect taxes together can be used to manipulate the terms of trade toward agriculture. It is not unlikely that the agriculture sector in some of the developing countries may thus be caused to pay a relatively higher tax until such period that the non farm sector has grown sufficiently so that personal income tax, corporation and business taxes form bulk of the government revenue.

Hinrichs after analysing data from several countries has presented a generalized framework as to how a tax structure changes during the economic transformation. His generalizations are as follows. 21/ (See also Fig. 1)

> (1) A traditional society derives its revenue primarily from non tax sources and/or "traditional direct" taxes such as land taxes, livestock, heads, agricultural output, water rights etc.

20/ Raj Krishna. Agricultural Price Policy, Southworth and Johnston, Agricultural Development and Economic Growth Chap. 13, pp. 500

21/ Hinrich. A General Theory of Tax Structure Change During Economic Development, Harvard Law School, 1966,pp. 98-106.

(2) During transition to modernity the share of these sources is reduced as a percentage of both current revenue and national income.

(3) When the society breaks away from its old ways, indirect taxation becomes more important especially taxes on foreign trade when the country opens up to trade.

(4) At first external indirect taxes are likely to be more important but as industry develops and responds to the protection of tariff walls, monetization, domestic production and transaction increase internal indirect tax (sales, excise) becomes predominant.

(5) "Old style" direct taxes decline both relatively in terms of revenue, national income in money and real terms and modern direct taxes (personal and business) take the lead.

(6) Towards the end of the transition modern direct tax grows faster than internal indirect taxes.

(7) In modernity, the aggragate internal taxes (direct and indirect) will dominate, earlier foreign sector dominates and before the traditional direct and nontax revenue are the most dominant.

(8) Looking at tax revenue from broad perspective it may be said that the structural movement has been from (1) agriculture, to (2) foreign trade, to (3) consumption, to (4) net income, personal and business.

Looking from the broad perspective as shown above in (8) and judging the East Pakistan economy during the perspective plan period until 1985, it may be deduced that tax revenues from sources 1 and 4 taken together will remain dominant. In other words, agriculture manufacturing sectors directly and indirectly should likely to contribute relatively higher tax revenues than the modern direct tax revenues. Any way the transition of the direct indirect tax ratio in various phases of development has also been illustrated by Hinrichs with U shaped curve (Fig. 2).

TABLE 4: Revenue Receipts of East Pakistan 1955/56-1967/68

(IN MILLION CURRENT Rs)

Sources	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67	1967/68
A. Provincial													
Land revenue	50.8	51.5	67.5	130.5	93.5	108.3	145.5	76.6	130.0	121.5	134.3	146.9	160.0
Stamp duty Court fees	25.1	27.5	27.7	40.2	43.5	46.0	45.8	43.6	45.0	45.5	57.8	68.2	72.5
Registration	7.8	10.3	10.2	13.4	12.0	11.8	11.8	10.9	11.5	11.9	14.6	17.5	18.6
Provincial Excise	23.3	9.1	10.1	13.3	9.7	10.7	12.6	13.7	13.5	16.4	17.1	18.1	18.1
Agricultural Income tax	9.8	10.1	14.5	19.2	12.5	15.0	10.4	10.8	16.4	14.6	15.8	18.1	15.9
Total	116.8	108.5	130.0	216.6	171.2	191.8	226.1	155.6	216.4	209.9	239.6	268.8	285.1
Others	89.9	107.0	95.3	178.4	122.9	138.3	317.7	247.8	301.7	437.7	385.9	369.6	522.7
Total	206.7	215.5	225.3	395.0	294.1	330.1	543.8	403.4	518.1	647.6	625.5	638.4	807.8
B. Central													
Customs	58.1	45.1	43.3	51.7	47.5	35.5	66.2	45.8	45.9	26.7	14.3	13.6	8.4
Central Excise	14.6	17.5	18.4	25.1	21.6	27.7	31.5	52.8	147.3	60.3	89.0	120.5	132.3
Income tax	19.9	19.7	20.7	37.8	24.4	27.0	35.2	123.2	186.8	164.2	249.9	247.8	273.9
Sales tax	20.2	25.2	25.9	36.2	33.7	55.0	62.1	139.7	60.5	202.6	200.1	248.9	157.5
Wealth & Estate duty	--	--	--	--	--	--	--	--	0.2	--	0.6	0.3	0.8
Estate duty	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	112.8	107.5	108.3	150.8	127.2	145.2	195.0	361.5	440.7	453.8	553.9	631.1	572.9
Total A & B	319.5	323.0	333.4	545.8	421.3	475.3	738.8	764.9	958.8	1101.4	1179.4	1269.5	1380.7

Source: Economic Survey of East Pakistan, 1967/68 GOEP, Planning Department.

Notes: (a) slight discripancy in figures because of rounding off.
(b) the figures for 1958/59 include revenues for 15 months from April 1,1958 to June 30, 1959.
(c) R.E. Revised Estimates.

The present tax revenue trend in East Pakistan (in Table 4) has shown that custom duties are declining due to import substitution and export expansion policy. The major export tax revenue earning source--Jute, now virtually does not produce revenue because of the withdrawal of export duty. On the other side of the picture we find that sources which comprise motor vehicle tax, entertainment tax, taxes from small, medium and large-scale industries, sales and excise taxes are increasing as well as personal income taxes. This when translated in Figure 1 of Hinrichs, it can be said that East Pakistan could be considered to lie somewhere near point A. In respect of D/I ratio East Pakistans position could be somewhere between B^1 and C^1 in Figure 2.

It would be worthwhile to see the D/I ratio , share of total tax to GDP and money tax and real tax intakes as presented in the following table

Table: 5.

D/I Ratio . Total Tax Raised in East Pakistan Provincial and Central as % of GDP, money tax and real tax (deflated)

Year	D/I Ratio	Total Tax as % GDP	Total Money Tax	Total Real Tax (deflated)
			(In Million of Rupees)	
1960/61	.78	3.10	475.3	475.3
1961/62	.83	4.55	738.8	693.7
1962/63	.69	4.74	764.9	694.7
1963/64	1.00	5.36	958.8	853.7
1964/65	.82	6.11	1101.4	916.3
1965/66	1.00	6.33	1179.4	955.7
1966/67	.85	6.76	1269.5	929.3
1967/68	1.10	6.77		

Source: Adopted from "Economic Survey of East Pakistan 1967/68". Planning Dept. Govt. of East Pakistan. (pp. 66, 76, 81).

The D/I tax ratio does not show consistency. There is fluctuation in the D/I Ratio. The changing D/I ratio up and down is possible during development as observed by Hinrichs. The ratio of tax burden to total GDP is very low in comparision with Taiwan which between 1951 and 1961 varied from 13 to 17% of GDP. 22/

The last two columns show the difference between the money tax and real tax intakes. In money terms there appears to be a remarkable increase in the total tax intake. There has been increase in real tax intake no doubt except 1966/67 but the rate of change is not so sharp as revealed in money terms. In fact, in 1966/67, the increase in tax intake in money term shows a prominence but in real term the tax intake has decreased.

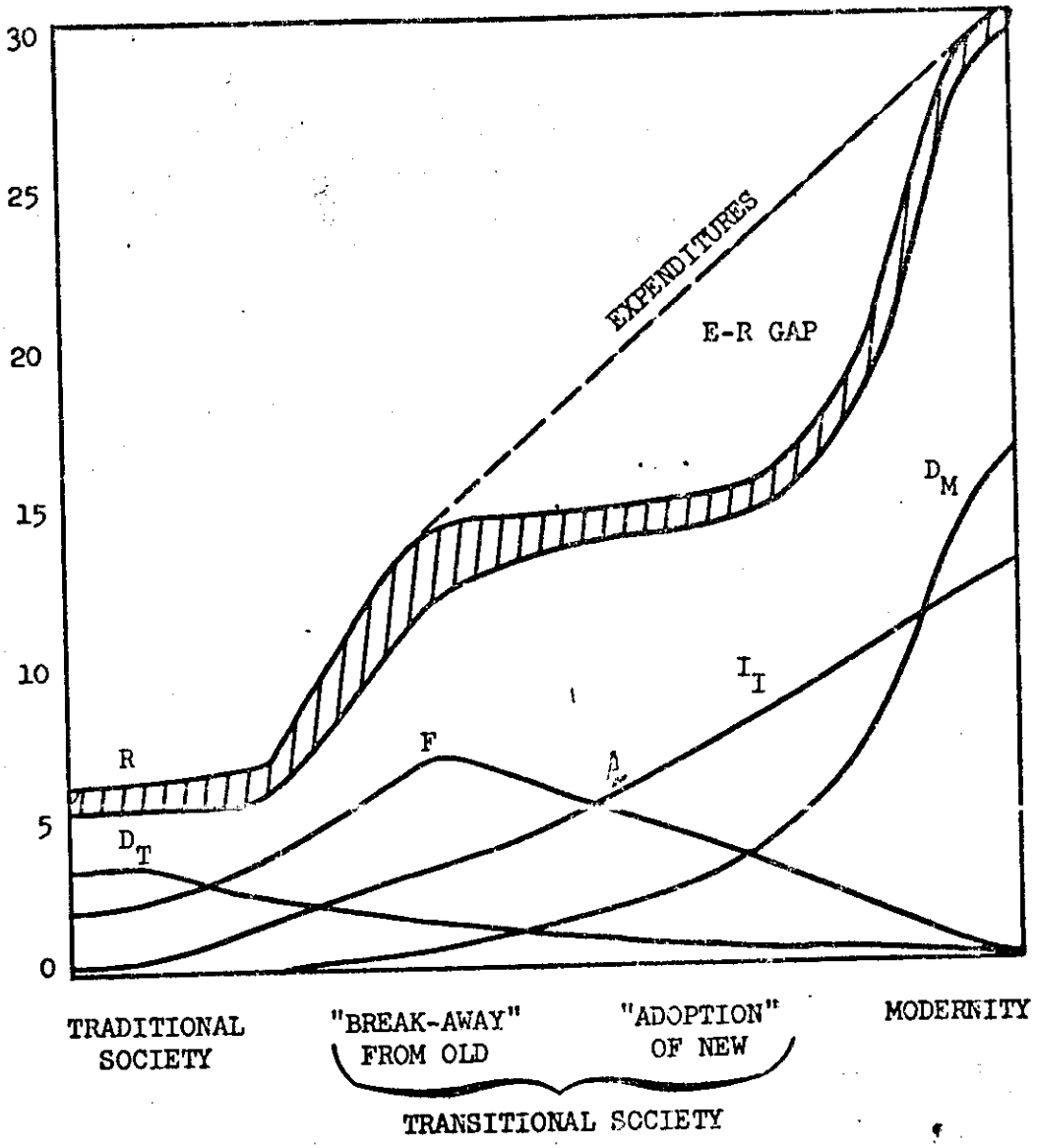
In this tax deflation the writer has used 1960/61 as base period = 100, then used the cost of living indices of Chittagong working class which is more representative. The deflators for 1961/62 are worked out as 105.5, 1962/63-110.1; 1963/64 - 112.3; 1964/65 - 120.2; 1965/66 - 123.4 and 1966/67 - 136.6. The deflators have been calculated from the Table 15 cost of Living indices for East Pakistan, in Economic Survey of East Pakistan, 1967/68.

It may be mentioned that sharp money tax rise is associated with inflation and unless deflated actual picture does not come out.

22/ Lee. Unpublished Dissertation, Cornell University, 1968. p. 260.

Figure 1

An Ideal Type: Tax Structure Change During Development



Code:

R: Current government revenue

Other than tax revenue

F: Taxes on foreign trade

D_T: Traditional direct taxes

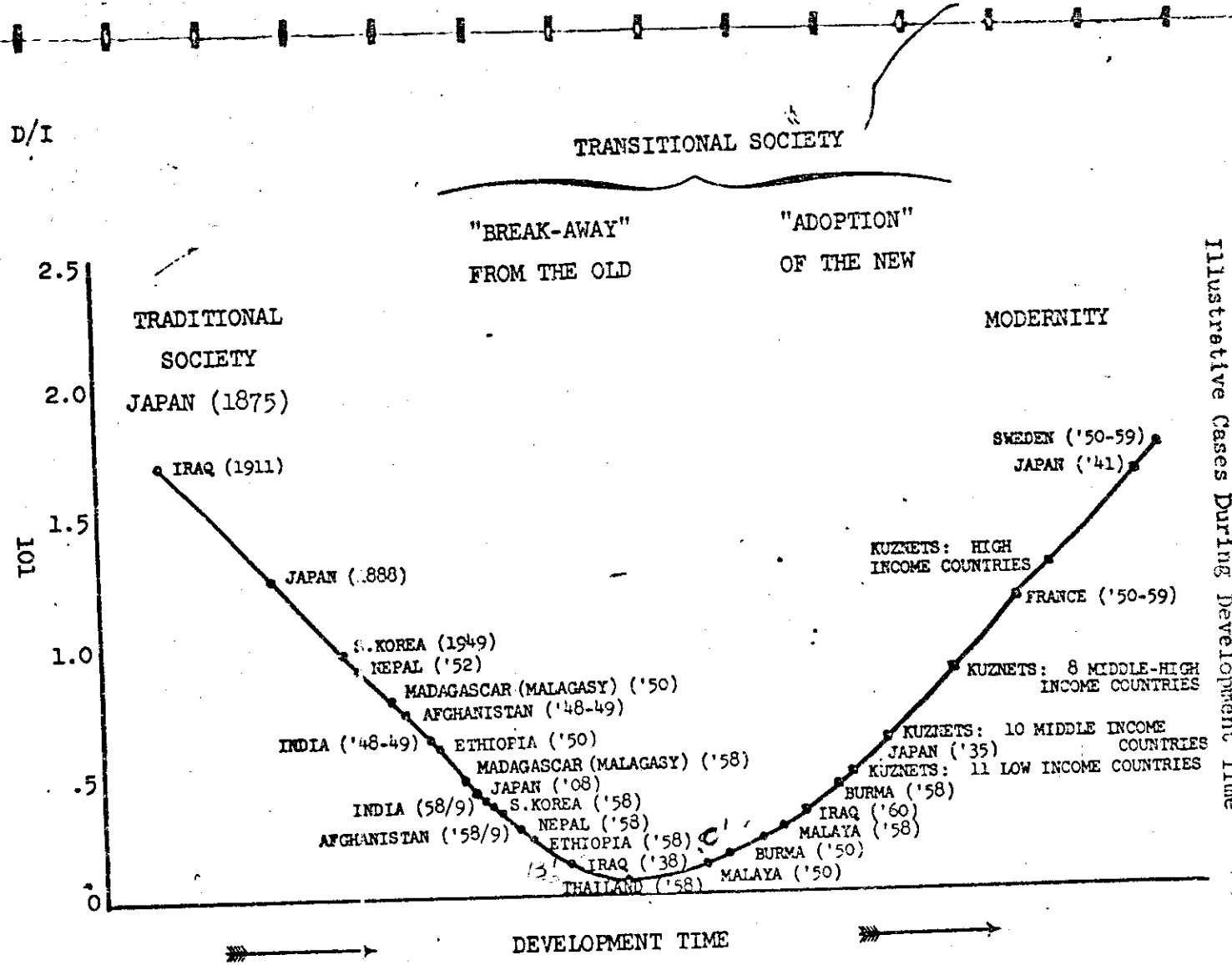
I_I: Internal indirect taxes

D_M: Modern direct

Source: See early chapters for regression analysis, tax profile, AFRD-Asian trends.

29

SOURCE: HINRICHS. A GENERAL THEORY OF TAX STRUCTURE CHANGE DURING ECONOMIC DEVELOPMENT. (THE LAW SCHOOL OF HARVARD UNIVERSITY, CAMBRIDGE, 1966)



Illustrative Cases During Development Time

SOURCE: HINRICHS - A GENERAL THEORY OF TAX STRUCTURE CHANGE DURING ECONOMIC DEVELOPMENT. (THE LAW SCHOOL OF HARVARD UNIVERSITY, CAMBRIDGE, 1966).

III. Ag. Tax Experience in Selected Developing Countries.

In discussing the role and need of agricultural taxation in the economic transformation one cannot but mention the importance of Japanese and Taiwanese models. Both these countries have high population pressure on land, small holding of land per capita and have been primarily agricultural countries. They provide successful examples of emergence into modernized economies through heavy taxation on agriculture. Despite the cultural and institutional difference and the difference in time horizon and initial conditions, East Pakistan can gain considerably from some of their experiences.

(a) Japanese Experience:

Japan though started as a late comer has emerged within decades as one of the leading industrial countries of the world. This process of quick development was aided by two important factors. The first one was the development of agricultural sectors and the second the relationships established between agriculture and other sectors during the development process. Unlike Western countries Japanese economic growth was not proceeded by an agrarian revolution, rather the agriculture and non-agriculture sectors grew rapidly and simultaneously. The period from 1878-82 to 1913-17 is an epoch making era in the history of Japanese economic development. During this period land productivity (net output/arable land) and labor productivity (net output/labor force) rose from 100 to 180 and 100 to 236

(taking 1878-82 = 100).[23/] Government direct investment for this spectacular growth was quite heavy in building infrastructures, research, irrigation, setting up of network of experiment stations and extension and education. The extensive use of fertilizers, irrigation water, and improved strain varieties by the farmers were equally responsible. Though government invested for development of agriculture at the same time it taxed quite heavily for investment in non-farm sectors. Some one-third to one-half of total Japanese investment in the late 19th and early 20th centuries was directly in the public sector. Land taxes provided the major share of this investment fund. Ohkawa and Rosovsky present detailed data in their study of the Japanese economic development vis a vis the contribution of agricultural taxation.

The table presented below shows the proportions of land tax in the total revenue and the ratio between agricultural and non-agricultural taxes to the GNP generated in these sectors.

23/ Ohkawa and Rosovsky, "The Role of Agriculture in Modern Japanese Economic Development," eds. Eicher and Witt, Agriculture in Economic Development, Mcgraw Hill 1964. pp. 46-47.

Table: 6.

Proportion of Agriculture Taxes to the Total tax Revenue and Ratio of Agricultural and non-Agricultural Direct Taxes to GNP.

Year (Average)	Land Tax as % of total Tax Revenue	Ratio (%) of Land Tax to GNP.	Direct Tax on Non-Agriculture Sector as a Proportion of GNP
1888-92	85.6	15.5	2.3
1893-97	80.4	12.4	2.0
1898-02	63.2	12.1	3.2
1903-07	55.8	11.2	5.4
1908-12	42.9	12.5	6.4
1913-17	37.6	12.9	4.5
1918-22	18.3	9.2	5.4
1923-27	15.5	10.5	5.2
1928-32	15.8	9.7	4.3
1933-37	10.7	7.8	4.2

Source: Ohkawa & Rosovsky, "The Role of Agriculture in Modern Japanese Economic Development," in Eicher and Witt, 1964, from Tables 14 and 15, p. 63.

The above table demonstrates clearly that during the critical stage of economic development in Japan, the land tax was the main source of government revenues.

As compared to non-agricultural sector the direct tax ratio on farm sector remained quite high during development. In terms of total tax revenue we also find the changing role of agriculture as development gained momentum. However, inspite of the declining share of taxes agriculture remained the main source of revenue for fairly long period which government siphoned off from the rural sectors and transferred to the urban sector. From the same study of Ohkawa and Rosovsky we find that throughout the entire period the secondary and tartiary sectors were the

main recipients of government subsidies. Between 1891 and 1941 the range of subsidies for secondary and tartiary sectors varied from 58.8 to 10.8 and 2.3 to 40.9 (total =100). Until the 1920's practically no subsidy was given to agriculture sector, mainly perhaps it was one of the major sources of surplus in the economy. It is interesting to note that despite the heavy taxes on agriculture during the Meiji Restoration until World War I productivity/acre and worker/ per capita maintained a spectacular growth rate which implies that heavy taxation had no deleterious effect on willingness to work and invest.

(b) Taiwanese Experience.

The agricultural development in Taiwan started under the Japanese colonial rule. The social and economic transformation was commenced under the colonial government in the early stages of occupation. Government investment in building infrastructures like irrigation, experiment stations, research and extension and creating farm organizations shows the great role of public finance in the development of national economy in Taiwan. The colonial government made several cadastral surveys, rather it became a feature of every five years to ascertain the land productivity and assess land taxes. Throughout this period of colonial rule from 1895 to 1945 Taiwanese farm economy grew rapidly but went through a process of "agricultural squeeze." Agriculture sector was heavily taxed to provide for investible funds

both for agriculture and non-agriculture sectors directly and indirectly. Deliberate unfavorable terms of trade, high fertilizer price, government procurement of rice at low prices, etc. contributed to the net outflow from agriculture to non-agriculture sector. Even after independence though land reform has taken place, government taxing and levies direct, indirect and hidden have been increased considerably.

Lee's study [24] of intersectoral capital flows in Taiwan shows how agriculture provided the investible funds to the non-farm sectors as well as increased the overall tax revenues from 1896 to 1960 that he examined. The net outflow of capital from agriculture (annual average) between 1896-1900 and 1956-60 increased from T$14.00 million to T$948.00 million. [25]

It would be useful to present the total direct tax burdens in the agricultural and non-agricultural sectors. The figures presented in the following table are five-year averages. It can be seen that the average direct tax burden in agriculture sector until 1913 was much higher than the average tax burden in non-agriculture sector. It again rose during the early post-war period perhaps due to the war the reconstruction of the non-farm sector lagged for sometime. But as industrial development took place, the share of agriculture direct tax contribution declined from 74.4 percent in 1900-1904 to 37.7 percent in 1957-60.

24/ T.H. Lee, "Intersectoral Capital Flows in Economic Development of Taiwan, 1895-1960," an unpublished dissertation, Cornell University, June 1968.

25/ Ibid., op. cit., pp. 241-242.

Table: 7.

Total Tax Burdens in the Agricultural and non-agricultural Sectors From 1900-1960 (Five years Annual Average)

Period	Direct Tax Burden in Agriculture (%)	Direct Tax Burden in Non-agriculture (%)
1900-04	74.4	25.5
1905-09	77.0	23.0
1910-14	64.9	35.1
1915-19	43.9	56.1
1920-24	44.9	55.1
1925-29	42.8	57.2
1930-34	39.8	56.2
1935-39	32.0	68.0
.		
.		
.		
1952-56	44.4	55.6
+1957-1960	37.7	62.3

+ = 4 years average.

Source: T.H. Lee, "Intersectoral Capital Flows in the Economic Development of Taiwan, 1895-1960," Ph.D. Thesis, Cornell University, 1968. (Adapted from his table 6.11, pp. 263-264).

Apart from the indirect taxes which accounted for 69 to 79 percent from the above table, we can conclude that as the major direct taxes in the early period were land local taxes, higher tax burdens on agriculture indicates the transfer of capital from agriculture. 26/

In discussing the agricultural taxes as ratio to total tax revenues, Lee points out the importance of land tax in the total tax revenue from 1896-1943. From the following table we can see that until World War II, the proportion of agriculture tax revenue to total revenue was about 28 percent and then during the war period it declined abnormally.

26/ Ibid., p. 267.

Table: 8.

Importance of Land Tax in the Total Tax Revenue, Taiwan, 1896-1943 Shown in %.

Year	%
1896	37.0
1903	24.1
1904	34.7
1905	38.9
1918	30.9
1919	28.3
1934	24.5
1935	27.6
1943	6.5

Source: T.H. Lee, 1968, p. 251.

This table testifies that during the process of economic transformation the direct incidence of taxes on the agriculture sector was quite heavy.

In addition, Lee's study further shows how agriculture sector was squeezed by government procurement policy, Barter exchange, other collections through loans, land price repayment in kinds at a low price.[27/]

In terms of per capita direct tax burden on agriculture and non-agriculture sectors Lee asserts that until 1933 the burden of agriculture/per capita was higher. And during the post-war period until 1955 this burden of agriculture/per capita maintained higher ratio.

These policies of high agricultural taxation apparently had the effect of increasing income instead of a substitution effect. Taiwanese farmers worked harder, raised their production and fully utilized the yield increasing innovations of the new package of inputs.

27/ Ibid., pp. 170-190; pp. 265-266.

Any tax policy which does not prove to be deleterious to incentive to work, invest and save is a good fiscal measure. The following table from TH. Lee's study presents a clear picture of increased agricultural productivity, savings, consumption and investment during the period 1920-1960.

This testifies to the income effect of the high agricultural taxation which many developing countries need to consider very carefully.

Table: 9

Index Numbers (Base year 1911 = 100)

Year	Ag.productivity per worker	Consumption Per Capita	Savings per Capita	Investment per Capita
1920	110.3	102.4	111.5	134.7
1930	165.4	144.9	196.2	308.0
1940	185.8	155.3	384.6	408.0
1950	178.2	162.7	480.8	466.7
1960	246.8	156.0	884.6	874.7

Source: Lee's Thesis, 1968, p. 20. Adopted from Table 2.1.

The table presented above shows spectacular increase in productivity per worker, savings per capita and more spectacular is the investment which until 1930 is even more than savings. After 1950 savings and investments are quite substantial. On the other hand consumption per capita did not rise so much compared to productivity which helped farms to save and invest.

From all this evidence we can comment that Lee's study of intersectoral capital flows in Taiwan stresses the importance of increasing agricultural productivity and output/per worker in making possible the net transfer from agriculture to non-agriculture.

But to take lessons from these two models and translate them into practice, Government policy, political and rural leadership and bold steps from the administrative machinery are necessary. It appears from the records that direct agricultural taxes form a very low percentage compared to other taxes and when compared to Japanese and Taiwanese direct agricultural tax burdens during the early decades of their economic transformation the direct agricultural taxes in East Pakistan are abnormally low. Gandhi in his study on agricultural tax burden in India argues that the agricultural sector in India and many developing country is undertax./ed./ 28/ This seems to be corroborated with facts from East Pakistan too. But it is difficult to arrive at conclusion with regard to agricultural contribution to total tax revenue unless the indirect and hidden taxes that agriculture pays are taken into account.

28/ Gandhi, Tax Burden on Indian Agriculture (Cambridge: Harvard Law School International Tax Program, 1966).

3. Review of Agricultural Taxes in East Pakistan.

A. Background.

Land revenue or agricultural taxation is perhaps as old as human civilization. In Indo-Pak subcontinent Shershah in early part of the 16th Century for the first time attempted to survey the lands. He categorized them according to productivity and assessment was made on this basis. But it was during the time of Akbar in the latter part of the 16th Century that the system was rationalized. All lands were measured by a uniform standard, classified into four categories according to soil and fertility. One third of the gross produce based on previous year's gross produce and computed in money terms on the basis of previous 19 years average prices was collected. Direct collection was found to be difficult so the intermediary group emerged who collected revenue and submitted it to the King's treasury. They usually collected more than what they used to pay and thus the tenants were usurped.

The East India Company introduced permanent settlement in 1793. The main features of the permanent settlement in East Pakistan were briefly as follows:

(i) The right of collection of land revenue was conferred on Zaminders who were declared proprietors of the areas over which their rent collection extended.

(ii) The assessment fixed on land was to remain in force in perpetuity and the government specifically did not increase the demand in consequence of the improvements of the estates of the Zaminders or expansion of cultivation.

(iii) The assessment of land revenue was fixed primarily at 10/11th of what the Zaminders received in the form of rent from the cultivators leaving the 1/11th with the Zaminders as collection charges.

(iv) While the permanent settlement gave the government the advantage of having assured regular inflow of land revenue and also led to expansion of cultivation, the main beneficiaries were the intermediary Zaminders. The State was deprived of additional revenue on account of extension of cultivation realized by the Zaminders. The cultivators were also severely exploited.

Present system: After Independence in 1947 the following changes have taken place in the land revenue system in East Pakistan.

The government of East Pakistan acquired all intermediary interests in 1950 under the State Acquisition and Tenancy Act, 1950. The cultivating tenants are now designated as Maliks (owners) and directly pay taxes to the government. The act provides for the rationalization of taxes of agricultural land on the basis of classification of land and the productivity of the soil.

According to these provisions the rate of rent per acre for any class of land is not to exceed 1/10th of the total value of the produce per acre of such land by multiplying the normal yield by the average price of the crops grown. The following are the factors which are considered in setting the tax:

(i) Nature of soil and its productivity.

(ii) Normal yield per acre to be determined in the prescribed manner.

(iii) Average prices of crops grown calculated on the basis of the average prices of such crops prevailing during the last 20 years excluding the years of abnormal prices.

(iv) Means of irrigation, drainage or any other special facilities available for cultivation.

(v) The result of any work of agricultural improvement provided by the government.

The increase in rent should be spread over in such a way that it does not exceed 50% in a particular year of the preceding year. "When the rent of a Malik (owner) has been settled under the afore said provisions, it cannot be enhanced for a period of 20 years or reduced within the said period except on the ground of deterioration of the soil due to natural causes or due to the breakdown of the arrangements for irrigation, or drainage or maintenance of embankments existing at the time when the rent was settled."

Pending the rationalization of the land tax rates the government of East Pakistan has increased the land rent by 25 percent as development levy on ad hoc basis.[29]

B. Current Sources of Taxes in East Pakistan.

Agriculture holds a very prominent position in the social and economic structures in East Pakistan. The contribution of agriculture to GDP. was 56 percent in 1967/68. From our past experience we have seen that agriculture has been and will continue to be the main source of public revenue directly and indirectly. The Fact Finding Committee on agriculture taxation set up by the government of Pakistan, Ministry of Finance, in 1966 examined the various contributions to the public exchaquer made by agriculturalists. This Committee classified these contributions under the following heads:[30]

a) Direct taxes and

b) Indirect taxes

c) "Disguised" or hidden taxes

Direct taxes are those taxes which are levied on the income or property of the tax payers and are not assumed to be shifted forward. There are varieties of direct agricultural taxes and cesses. These are:

1. Land revenue.

2. Rates and cesses on land.

3. Agricultural income tax.

4. Water rates.

29/ Report of the Fact Finding Committee on Agricultural Taxation, Government of Pakistan, Ministry of Finance, 1966, pp. 26-27.

30/ Ibid., p. 41

Indirect taxes are those which are paid initially by the producer, the trader, the wholesalers, retailers and the burden of tax is likely to be shifted to the ultimate consumers depending on the elasticities of demand and supply. The major indirect taxes are:

1. Import duties
2. Excise duties (central and provincial)
3. Sales tax
4. Export duties.

The disguised or hidden tax elements may be involved in the followings.

1. The official exchange rate.
2. Statutory procurement prices.
3. Comparatively higher prices of domestically produced industrial goods. These different taxes will now be considered in turn.

i) Direct Taxes :

Land taxes are the major sources of revenue to the government of East Pakistan. The aggregate contribution of the agriculture sector to the public exchaquer is given in the following table. Tax rate is 1/10 of the total value of the produce (gross) per acre plus 25 percent tax increase on ad hoc basis as development levy.

Table: 10.

Land tax and agricultural income tax collected by the Govt. of East Pakistan from 1955/56 to 1967/68.

(In million of current rupees)

Year	Land Revenue	Agricultural Income Tax	Total
1955/56	50.8	9.8	60.6
1956/57	51.5	10.1	61.6
1957/58	67.5	14.5	82.0
1958/59	130.5*	19.2	149.7
1959/60	93.5	12.5	106.0
1960/61	108.3	15.0	123.0
1961/62	145.5	10.4	155.9
1962/63	76.6*	10.8	87.4
1963/64	130.0	16.4	146.4
1964/65	121.5	14.6	136.1
1965/66	134.3	15.8	150.1
1966/67	146.9	18.1	165.0
1967/68	160.0	15.9	175.9

Source: Economic Survey of East Pakistan, 1967/68. Planning Department, Govt. of East Pakistan, 1968, p. 76.

It can be observed that land tax revenues have increased in absolute terms after the abolition of the Zamindari system. The high figure in 1958/59 is due to the collection of 15 months and the effect of martial law, the low figure in 1962/63 was due to severe flood damage. In contrast to the land revenue, the agricultural income taxes remain almost stagnant. Agriculture income tax is levied on net annual income of Rs. 3,000/- after making allowances of land rent, cesses and cost of cultivation. Holdings up to 30 acres are in any way exempted under the present system.

According to the Fact Finding Committee on agricultural taxation of 1966, the aggregate direct taxes on agriculture constituted over 60 percent of the purely provincial tax revenues until 1964.

The following table will explain the share of agricultural taxes.

Table: 11.

The Contributions of Direct Agricultural Taxes to the Total Tax Receipts of the Government of East Pakistan. (in Million Rupees).

Year	Land Revenue	Agricultural Income Tax	Total	Purely Prov. Tax Revenues	4 as % of 5	Total Tax Revenue	4 as % of 7
1	2	3	4	5	6	7	8
1956/57	51.5	10.1	61.6	116.2	53.0	213.6	28.8
1957/58	67.5	14.5	82.0	139.0	59.0	244.7	33.5
1958/59	130.5	12.2	149.7	238.1	62.9	391.6	38.2
1959/60	93.5	12.5	106.0	193.6	54.8	315.3	33.6
1960/61	108.3	15.0	123.0	209.5	58.7	399.4	30.8
1961/62	145.5	10.4	155.8	246.8	63.1	441.3	35.3
1962/63	80.0	10.4	90.4	177.6	50.9	551.2	16.4
1963/64	145.0	10.4	155.4	243.5	63.8	634.5	24.5

Source: Report of the Fact Finding Committee on Agricultural Taxation, Ministry of Finance, Government of Pakistan, 1966, page 451.

Thus it can be said that agricultural taxes are one of the important sources of revenue for the provincial Govt. The contribution of agricultural taxes to the total provincial tax revenues which include the share of the province from the centrally collected taxes such as income tax, corporation tax, sales tax, export duties on jute and central excise range between 30 percent to 35 percent from 1956/57 to 1961/62. If we take the provincial total revenue receipts of 1955/56 and 1967/68, we find a phenomenal increase in the provincial revenue. In 1955/56 the total revenue receipt was Rs. 399.5 millions and in 1967/68 it jumped to Rs. 1380.7 millions which is a rise by over 245 percent.

This total revenue receipts includes provincial (land revenue, stamp duty, court fees, registration, provincial excise, agricultural income tax) and central (customs, central excise, income tax, sales tax, wealth and estate duty). Of the total revenues of these two periods direct land revenues including agricultural income tax stand at Rs. 60.6 millions and Rs. 175.9 millions in 1955/56 and 1967/68 respectively. This increase by about three times in absolute terms, of course, does not necessarily mean the relative increase in the share of tax revenues from agricultural taxes. The increase in direct agricultural taxes has been due to the abolition of the Zamindary system, partly due to the better collection procedure, partly due to some additional taxes imposed by the government from time to time like 25 percent ad hoc development levy and other fees.

It should be mentioned here that agriculture sector contributes directly to the union councils in the forms of taxes on buildings and lands, rate for village police, hearth tax, local rates, etc. These taxes have not been included here because these figures are not available. But from the poor financial conditions of the local governments it can be said that the tax yields are not of any significant magnitude.

ii) Indirect Taxes:

The central government has the authority to collect the main indirect taxes. These comprise excise duty, import duty, sales tax, export duty and sales tax on export.

The contributions of this province to the central exchequer can be seen in the following table.

Table: 12.

Central Taxes Raised in East Pakistan
(in million rupees)

	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65
1. Income and Corporation Tax	53.0	54.6	56.4	58.3	60.0	61.5
2. Excise Tax	88.4	90.8	93.2	95.7	98.1	100.5
3. Sales Tax	67.8	73.0	78.4	83.9	89.4	94.6
4. Customs Receipts	182.6	186.2	189.8	193.5	197.2	200.9
TOTAL	391.6	404.6	417.8	431.4	444.7	457.5

Source: E.P. Planning Dept. An analysis of the financial resources and development potential of East Pakistan. 1963. /-GOEP. Stat. Digest of East Pakistan, 1966, No. 4,p. 240/

From the above table, it may be observed that there has been a continuous rise in the tax takes at current prices. If we exclude income and corporation tax, then in 1964/65 the total indirect tax take from East Pakistan by the central government comes to Rs. 396.0 million. During the same period GOEP received Rs. 147.5 million as revenue sharing out of the collection. This shows a net transfer of resource from agriculture to other sectors which agriculture contributed indirectly considerably.

In order to ascertain the incidence of indirect taxes on agriculture sector, the total indirect taxes have to be distributed over the agricultural population in proportion to their demands of consumer goods such as cloth, sugar, salt, K.Oil, tea, soap, diesel oil, some agricultural equipment, etc. There is no separate data on those items for East Pakistan as such.

The study and findings of the Taxation Enquiry Committee is based on whole Pakistan basis have been used.

1. The Pakistan Taxation Enquiry Committee made a rough estimate of various indirect tax burdens on rural sector amounted about 30 percent of the total indirect tax revenue.
2. According to the findings of the Fact Finding Committee on Agriculture the share of the agriculture sector in 1963/64 comprised 47.4 percent of the total receipts.

iii) Hidden or Disguised Taxes:

The most important disguised or hidden tax on agriculture sector is the deviation between the official exchange rate and free market exchange rate on exported agricultural commodities. According to the Third Plan Document agriculture sector earns about 53 percent of Pakistan's foreign exchange. Another source from which disguised tax arises is the government rice procurement policy at a price lower than prevailing in the domestic and international market and sell them to the selected statutory urban areas at subsidized rate. Similarly, the industrial goods produced domestically are sold to the rural consumers at a high price which could have been imported at a cheaper price. Tax elements are also hidden in Bonus Scheme particularly in jute when the manufacturing sectors earns the bonus at the cost of the jute growers. Thus we find that the amount of hidden taxes that agriculture sector pays may

not be negligible. The Fact Finding Committee of Agricultural Taxation, 1966, estimated the amount of hidden taxes that agriculture sector paid taking 5 years average foreign exchange earnings from 1956/57 to 1960/61 and average differential between the official and scarcity value of foreign exchange as follows:

1. Total Foreign Exchange Earned in the agriculture sector--1207.3 million.
2. Average differential -- 52.84 percent.
3. Hidden tax element -- 637.9 million.

This is an overall Pakistan picture. East Pakistan as the higher foreign exchange earner during this period, and having larger rural population and agricultural exports had contributed more. Considering the overall contribution of agriculture sector both direct and indirect, hidden or disguised, the Fact Finding Committee on Agriculture Taxation of 1966 was of the opinion that there was no scope for additional taxation in the agriculture sector. This Green Revolution has altered the situation. Farm income has increased and logically there will be scope for additional taxes from agriculture sector.

Lewis in his recent analysis of Domestic Resources and Fiscal Policy in Pakistan's Second and Third Plans suggests that "improvements in the means of imposing relatively equitable income elastic taxes in the agriculture sector command even greater urgency than they did in 1960."[31/]

31/ Lewis, S.R., Jr., "Domestic Resources and Fiscal Policy in Pakistan's Second and Third Plans," Pakistan Development Review: 5, pp. 461-95, Autumn, 1965.

He reviewed Pakistan's development since 1954 and concluded that the impressive rate of economic growth during 1960-65 was due to the considerable increase in the average and marginal rates of savings and taxation. His assertion that the third plan projection for higher rates of savings, investment, economic growth depend on the appropriate steps taken to realize "the potential for additional taxation out of rapidly rising income in sectors like agriculture."

Lewis' analysis is based on the economy of Pakistan as a whole. But his argument is in complete agreement with the Japanese and Taiwanese models that have been examined and leaves support that for economic transformation the predominant sector like agriculture has to be taxed heavily for its own development as well as other sectors which are really interdependent for mutual growth.

iv) Collection Rates and Costs.

From economic point of view it would be worthwhile to look at the collection rate and cost of land taxes in order to judge the net direct contribution of agriculture to the provincial exchequer.

It is common experience in East Pakistan that inspite of the strong revenue collection machinery actual collection falls short of the budget estimates. The natural calamities such as flood, cyclone and drought may be responsible for low collection of taxes. Of course, every year it is not expected that such things will happen yet

there is difference in the budgeted amount and actual collection. This may be ascribed to peasants' behavioral pattern in tax payment and slackness on the part of the revenue collecting officers at the lower levels. To prove this hypothesis one needs a few years data. Unfortunately such data are not available. As a representative case only one year's data is mentioned as a sort of evidence. In the provincial budget estimates of 1968/69, budget estimates on account of land revenue for 1967/68 and revised estimates for the same year have been given. The budget estimate from land revenue for 1967/68 was Rs. 180.00 million. Against this the revised estimate was Rs. 160.00 million which shows a shortfall of Rs. 20.00 million. 32/ This is not uncommon in East Pakistan land taxes.

32/ Detailed estimates of revenue and receipts for the year 1968/69, GOEP., Finance Department, p. 2.

In respect of collection and cost, it is interesting to note that collection cost is quite high compared to total revenues from land taxes. This can be seen from the following table.

Table: 13.

Collection and Collection Costs of Land Tax and Agricultural Income Tax (in million of rupees).

Taxes	Total Collection	Cost of Collection	Cost of Collection As % of total Collection
1. Land Revenue.			
1962/63	76.6	35.3	46.0
1963/64	127.6	39.0	30.5
1964/65	121.5	96.6*	79.5
1965/66	134.4	91.7*	68.2
1966/67	143.7	101.2*	70.4
2. Agricultural Income Tax.			
1962/63	9.7	0.6	6.1
1963/64	17.7	0.7	3.9
1964/65	14.6	0.8	5.5
1965/66	15.8	0.8	5.1
1966/67	13.5	0.8	5.9

N.B. --*Including compensation and all others.

Source: Adopted from Statistical Digest of East Pakistan, 1966, No. 4, E.P. Bureau of Statistics, GOEP, Dacca, p. 237.

As of 1966 from the point of view of net return the land tax to government was not an important source of income.

Foot note :

Dr. Menderchied and Dr. Sorenson observed that what would happen particularly to supply response if the Govt. could collect same amount of taxes through only agricultural income tax by replacing land revenue. In another question it was asked that other things remaining the same what would happen if the tax was raised. Theoritically it was demonstrated that the optimum out put before and after the enhancement of the tax rates would remain the same. But in practice, the empirical evidence shows that there may be out put effect in the sector like agriculture. The out put is likely to increase as a result of the increased tax.

4. Potential for increased revenue from agriculture during the Green Revolution.

In this part of the paper major attention will be given to the potential for increased revenue from agriculture on the basis of the impact of the high yielding varieties of rice (henceforth, HYV) in a few selected areas. To harness the full potential of the Green Revolution over the entire province will take time, require heavy investment on irrigation, flood control, drainage, extension, research and other auxiliary services. But the dramatic result that has been achieved, though limited, can indicate direction and magnitude of the future possibilities for the rationalization of increased agricultural taxes.

Before coming to the green revolution and its impact some salient features such as farmers economic situation, income and expenditure pattern, their indebtedness and productivity on a macro/micro basis as exists today are discussed.

Farm size may be important in respect of its efficient operation and ability of the farmers to obtain optimum benefit from the imporved facilities. According to the agricultural census of 1960, there were 613,948 farm holdings in East Pakistan. The average farm size was 3.5 acres of which 3.1 were cultivated, 51 percent of the farms comprising 61 percent of the cultivated land, were under 2.5 acres. The farm size distribution and average farm size is presented in the following table.

Table: 14.

Number of farms classified by size in East Pakistan.

Size (in acres)	Farms (numbers)	% of Total	Average Provincial Farm Size (acres)
Under 0.5	802,630	13	
0.5 to under 1.0	689,840	11	
1.0 to under 2.5	1,677,410	27	
2.5 to under 5.0	1,615,020	26	
5.0 to under 7.5	698,450	12	
7.5 to under 12.5	442,360	7	
12.5 to under 25.0	187,790	3	
25.0 to under 40.0	21,370	+	
40.0 and over	4,610	+	
East Pakistan	6,139,480	100	3.5

+ percent less than 0.5

Source: Government of Pakistan, Ministry of Food and Agriculture, Pakistan Census of Agriculture, 1960 Vol. 1, East Pakistan (Karachi, Government of Pakistan Press, 1962) p. 5.

It appears from the above table that about 80% farms fall below 5.0 acres and 90% of the farms are of the size below 12.5 acres.

With the growth of the population the average size of holding has been reduced. According to the estimate of the Master Survey of Agriculture in East Pakistan (1964/65) the rural population has increased from 48.2 million in 1961 to 53.5 million in 1964/65. The average household consists of about 5.5 persons. Of this 53.5 million, 16.3 million or about 30.4 percent are agriculturists directly engaged in agriculture for the maintenance

of them and their families, 5.6 percent are engaged either in some jobs and/or trades. The rest 64 percent are dependents not engaged in any gainful occupation. This may be seen in the following table.

Table: 15

Classification of the Members of Rural Households by occupational Status.

Agriculturalists:	Non-Agriculturalists				Other Professions			
	Persons in service & business	Persons in household industries	Wage earners	Total	House wives	Dependents	Beggers	Total
30.1	3.1	0.9	1.6	5.6	20.3	43.1	0.6	64.0

Source: Master Survey of Agriculture in East Pakistan (Sixth Round) East Pakistan Bureau of Statistics, GOEP, 1964/65, p.26.

In 1964/65 the total area of land under possesion of the rural households was 22.0 million acres. Of this, 7.7 percent comprised homestead, 1.0 percent current fallow, 3.0 percent wasted land, 88.3 percent of the land was cultivated of which 67.1 percent was owner cultivated and 21.2 percent was on borga (share cropper) and Khaikhalasi (rent free). This means the average farm holding was reduced to 2.3 acres from 1960 census figures of 3.5 acres. Taking multiple cropping the cropped acreage for the same year stood at 29.1 million acres, 3.0 cropped acres per household, giving a cropping intensity of 150 percent.

Although an average household owns land of about 2.3 acres, we find a lot of difference in the size of holding when looked upon by individual households.

Nearly 3.6 percent of the households are landless but of the same precentage of households own on an average more than 10 acres which constitutes 1/5 of the total land available. About 2.7 percent of households own average holdings between 5 to 7.5 acres which is 1/10 of the total land. One-eighth of the households with an average holding of about 3.5 acres own about 1/5 of the total land. The remaining households belong to the categories whose average holdings will fall below provincial average. (For details please see Tables 1, 2, & 3 in Appendix). 74.6 percent (gross) of the cropped area is accounted for paddy, 6.7 percent for jute, 6.7 percent for pulses and remaining 12 percent for various other crops like vegetables, sugar cane, oilseeds, tobacco, etc. 33/

Now let us turn to the income and expenditure pattern of the farm family. The income and expenditure pattern as presented in the following table represents the income and expenditure for an average family of 5.4 members in East Pakistan.

33/ Master Survey of Agriculture, East Pakistan (Sixth round) E.P. Bureau of Statistics, Dacca, GOEP, 1964-65, pp. 12, 25, 29-31, 35.

Table: 16

Monthly Income and Consumer Expenditure

Income expenditure by items	Second round			Third round		
	Per household	Per capita	Percent	Per household	Per capita	Percent
Average monthly income (Rs.)	131.10	24.80	100.0	153.40	28.40	100.0
Expenditure:						
Total (Rs.)	121.90	23.00	100.0	152.70	28.30	100.0
Food (Rs.)	86.90	16.40	71.3	102.20	18.90	67.0
Clothing & footwear (Rs.)	6.30	1.20	5.2	9.60	1.70	6.3
Housing (Rs.)	14.00	2.60	11.50	22.10	4.30	14.4
*Miscellaneous(Rs)	14.70	2.80	12.0	18.80	3.40	12.3

Source: National Sample Survey, Second Round 1960, Third Round 1961, Central Statistical Office, Government of Pakistan.

* Includes expenditure as personal care, medical services, transportation, travel, education, entertainment, servants salary, jewelery, charity, legal expenses, etc.

The above table shows that an average family spends Rs. 1832 per year or Rs. 399 per capita. The distribution of these expenses are : 67 percent for food, 6.3 percent for clothing and footwear, 14.4 percent for housing and 12.3 percent for miscellaneous goods and services. Family income amounted to Rs. 1840 per year. Expenditure on the food is the most predominant in the consuption pattern. In another farm management study in Dinajpur district in July 1965, the net annual income on an average was found to be Rs. 1526 per holding in the low group, Rs. 2154 in the medium group and Rs. 4050 in the high group. Subtracting expenses on taxes, wages on hired labor and interest on loan from the net income,

farm and family incomes were Rs. 682, Rs. 1468 and Rs. 2831 respectively for each group. The average size of holdings of the 55 farms that were studied for the low medium and high groups were 7 acres, 8.41 acres and 12.95 acres respectively. 34/ When computed on per acre basis the average net incomes for these three groups are Rs. 97.4, Rs. 161.4 and Rs. 218.6 respectively. The net income shown here include income from all sources, land, livestock, poultry, etc. The annual average net income per cropped acre only amounted to Rs. 124.37.

With regard to farm cost of production and return per acre gross and net, a sample survey of Mahmudur Rahman in Comilla District may be cited as an example. The boro crop and shaitta crop which he has studied are the existing local varieties used in East Pakistan.

Mr. Rahman took a sample of 20 plots to study the costs and returns on boro crop. The average yeild/acre of paddy was found to be 23.80 mds. (paddy) and that of straw 12.65 mds. The price of paddy and straw was taken @ Rs. 17.0 per maund and Rs. 3.0 per maund respectively. The average net return/acre was found to be Rs. 242.48, if family labor and inputs are included then the net return/acre came out as Rs. 129.44. For Shaitta he took a sample of 31 plots, the average yields/acre of paddy and straw were found to be 18.46 mds. and 9.92 mds respectively. The prices for paddy and straw were Rs. 15.00 and Rs. 3.0 per maund respectively. The average net return/acre was

34/ Farm management Research in Pakistan, Report on Dinajpur Project, July, 1965, Department of Marketing Intelligence and Agricultural Statistics, Ministry of Agriculture and works, Food & Agriculture Division, Rawalpindi.

Rs. 173.14 when family inputs were included the net return/acre amounted to Rs. 32.40. 35/

The average costs and returns/acre on these two varieties are presented in the following table.

Table: 17.

Average Costs and Returns/acre of Boro (22 plots) and Shaitta (31 plots). 1965 Boro Crop.

Plots	Total cost of purchased inputs	Total cost of family inputs	Total cost of all inputs (purchased & family) (2+3)	Total gross returns (from both paddy & straw)	Net returns (5-2)	Pure net returns (5-4)
1	2	3	4	5	6	7
Boro 22	199.85	115.27	315.12	442.34	242.48	129.44
Shaitta 31	130.37	143.96	274.33	306.74	173.14	32.40

Source: Adopted from Mahmoodur Rahman's Cost and Return, Technical Publication No. 19, A Study of Irrigated Crops in Comilla Villages PARD, 1965 (Tables 7 & 8, pp. 51, 67).

The detailed farm operation cost of both off farm and on farm inputs for these two crops can be seen in Table 4 in Appendix which will provide an idea about the magnitude of cost on different inputs.

This study covers only one crop grown during winter. To get annual net return on the basis of the average gross return (AGR) and average gross cost (AGC) of these two varieties and multiply both the AGR and AGC by 2½ times, the figure comes to Rs. 259.55 per acre.

35/ Mahmoodur Rahman, "Cost and Return" A Study of Irrigated Crops in Comilla Villages, Technical Publication, No. 19, Pakistan Academy for Rural Development Comilla, East Pakistan (PARD), Oct. 1965 pp. 51-67.

The assumption here is two rice crops and another cash crop. Though this is lower as compared to the HYV still higher than the pure traditional agriculture shown above in Dinajpur study the average of which was around Rs. 134.37 per acre. The average figure or per capita figure may not of course, give a true picture where 50 percent of the households have holdings less than provincial average. As a matter of fact, the rural indebtedness in East Pakistan is not negligible and the higher percentage goes for family consumption rather than investment on farm which can be seen in the next paragraph.

The amount of money borrowed by farmers, its use and repayment are the valuable index of the economic position of the farmers. The National sample survey (second round), 1960 shows that about 6.4 percent of the cultivators inherited some debts from their ancestors. How the borrowed money was spent is shown below based on the same survey.

Purchase of seeds	2.6%
Tools and equipment	1.1%
Fertilizers	0.4%
Livestock, purchase, health, feed	16.1%
Construction of storage families	1.4%
Land development	12.3%
Household expenditure	66.1%

The most revealing fact is that more than half of the credit is used for household expenditures. Today the picture is likely to be changed because the farmers are now using more fertilizers, irrigation water, better seeds, etc. than in 1960.

According to the agricultural census, 1960, there were 61,39,480 farms in East Pakistan of which 30,15,720 were found to be in debt i.e. 49 percent of the farms was in debts. On the basis of the weighted average the amount per indebted farm was Rs. 295.7. When computed on the basis of total farms the average amount (weighted) was Rs. 145.3 per farm. 36/ The current figures are not available but from the personal experience it may be assumed that the need for farm credits is likely to increase considerably because all the modern inputs are off farm inputs which are to be purchased by the farmers. The new approach involves also higher cost per unit although net return is also much higher per unit than the traditional farming. In this section so far the farmers economic situation, income and expenditure pattern and farm income etc. have been dealt with. Nothing has been said about agricultural tax. In the next section the projection of tax revenues from different sources prepared by the Bureau of Economic Research, University of Dacca under the Chairmanship and direction of Dr. Nurul Islam is presented before we examine the potential for increased revenues from agriculture in the light of the green revolution.

II. Revenue Projection of the Bureau of Economic Research University of Dacca.

In this revenue projection the expected taxes that would be raised by provincial and central governments from different sources has been shown.

36/ Pakistan Census of Agriculture, Vol 1., East Pakistan Ministry of Food and Agriculture, Government of Pakistan, 1960. p. 245.

This projection is based on the sectoral growth rates of agriculture and non-agriculture during the period under review. The projections of the revenues are conditional in a sense that the changes will take place upon changes in different variables of the economy, growth pattern of agricultural and non-agricultural income, production and growth rate of exportable and importable items. Different elasticities for different sources have been calculated on the basis of past trend and future growth. For land revenue no major increase has been shown because a fixed tax rate on land was assumed. Tax elasticities for agricultural income was assumed to be 2.00, for excise 1.00, for custom .50 and other sources 1.00 respectively. 15.75 percent increase in personal and corporation taxes and 40 percent increase in sales taxes have been assumed over the plan periods.

Table: 18.

Projections, Provincial receipts, Annual Average for Five Year Period (In millions of Rupees)

	1959/60 (Actuals)	1960-65	1965-70	1970-75	1975-80
1. Land revenue	93.5	114.8	136.1	147.7	156.7
2. Agricultural Income Tax	12.5	17.1	21.2	31.6	45.6
3. Other Taxes	87.6	112.8	157.5	231.0	339.5
Sub total	193.6	244.7	314.8	410.2	540.9
Non tax revenue	55.0	71.8	100.3	128.8	157.3
Total (A)	248.6	316.5	415.1	539.1	698.2
Central taxes raised in East Pakistan					
1. Income and Corporation tax	53.0	59.1	66.6	77.0	87.8
2. Excise tax	88.4	113.4	158.9	233.0	342.4
3. Sales tax	67.6	112.1	192.5	330.7	568.1
4. Custom receipts	182.6	210.8	242.4	275.1	313.6
Total (B)	391.6	495.8	660.4	915.8	1311.9
Grand Total (A+B)	640.2	812.3	1075.5	1454.9	2010.1

The primary concern of this paper is the Land and Agricultural Income tax projections. The comment about land tax in their projection is partially true that there does not exist much scope of more taxes from this head unless upward revision of tax rate is made. Though agricultural growth was assumed, there has been a gulf of difference between 1963 and today in the development of new technology in agriculture that this projection may not hold true. In fact the direct land revenue has reached the level of the projection for 1975-80 by 1968 which can be seen in the table presented below.

Table: 19.

Table showing revenues collected from the land and agricultural income taxes at current prices (in million Rupees)

Year	Land revenue	Agricultural income tax
1960-61	108.30	15.00
1961-62	145.50	10.40
1962-63	76.60	10.80
1963-64	130.0	16.40
1964-65	121.50	14.60
1965-66	134.30	15.80
1966-67	146.90	18.10
1967-68 (revised estimate)	160.00	15.90

Source: Adopted from Economic Survey of East Pakistan 1967-68. Planning Department. GOEP (1968) p. 76.

Agricultural income tax is lagging behind the projection but this level can be achieved provided a new system could be followed. This will be discussed later in the paper.

III) The Green revolution, its impact on cost and on farm income.

In this section the green revolution, its impact on cost and on farm income will be discussed. On the basis of the success stories the possibility of taxing increased farm income will be explored. The approach is pragmatic based on evidences.

"The application of science and technology to traditional agriculture has begun to produce dramatic results, above all in Asia. The rapid expansion of certain food grains in the developing world is being particularly widely heralded, and justly so, as the Green Revolution." 37/ There emerges from this green revolution two views:

(1) that the race between population and food is almost over and

(2) this may be opening the Pandora's box, as well much more problems will be associated and unless properly and timely checked, it may bring an explosive situation politically, socially, economically and internationally.

However, the technical innovation involving the key elements like

(1) higher yielding varieties of seed (2) increased use of fertilizer (3) controlled and required irrigation water supply (4) pesticides is the key to the success of the green revolution. The small holdings are no major barriers for the success.

37/ Clifton R. Wharton, Jr., The Green Revolution: Cornocupia or Pandora's Box? Foreign Affairs, An American Quarterly Review, April, 1969, p. 464.

While discussing the Green Revolution in the context of East Pakistan we must keep in mind the revolution in rice production, the present situation and future prospect. Has there been any Green Revolution in Pakistan? The answer will probably be yes when one considers the surplus of wheat in West Pakistan, even a grand success in rice also in West Pakistan. But if we look at East Pakistan we would say, there has not been any Green Revolution in East Pakistan as yet, but a beginning has been made and the prospect is high, provided the irrigation system is developed, flood control and drainage system is implemented and research and extension are geared up.

Without delving further into the topics of Green Revolution as such let us come back to the question what has been achieved even to a limited scale so far through the use of high yielding IRRI varieties coupled with fertilizers, irrigation by low lift pumps, Tubewell and major irrigation projects, extension and modern approach with a view to shifting away from the traditional fixed land taxation to link the taxation to higher productivity and other development effects or externalities. This will provide a rationale for higher taxation today and for tomorrow.

Introduction of HYV in East Pakistan was limited to about 1 million acres in 1968. With more irrigation water 2 to 2.5 million acres could be devoted to HYV. Food grain shortage is estimated annually at 1 million tons and an annual increase of 46,000 tons of rice is needed to merely keep up with the population increase. 38/ The biggest limitation to the increasing use of HYV is the irrigation.

The FAO indicated the irrigation potentials of East Pakistan as 2.87 million acres by 1975, 7.66 million acres by 1985 and 11.61 million acres as the ultimate limit.39/ There has not been detailed survey on the irrigation potential of East Pakistan both from the availability of surface water as well as ground water. There were various sporadic study and guestimation but nothing is full proof. The U.S. geological Survey Team is currently negotiating with the Govt. of East Pakistan about the survey. The optimum usable capacity of surface water and ground water may emerge after the survey is completed. But from the past experience and from different expert opinions it can be assumed that 5 to 9 million acres can be irrigated by 1985 without any adverse effect on the navigation, fisheries, river regim and hydralogical system. During monsoon that is for growing Aus, and Aman, availability of water for irrigation is no problem. The rainfall is not evenly distributed, may be late and not well spread for the crop requirement.

38/ AID Spring Review of the New Cereal Varieties, May 13-15, 1969. Global Crop Paper Rice.

At this time there is abundance of surface water and irrigation water could be supplied. The critical period is the winter when there is no or little rain. Irri has highest yield during this season as Boro and irrigation is the most important crucial factor at this time. By low lift pumps using waters from the rivers, swamps, haors and innumberable "beals" and creeks, gravity flow irrigation by WAPDA. G.K. project, Chandpur project, Dacca Demra pump project, and Tubewell projects, Comilla projects all taken together, between 7 to 9 million acres can be irrigated by 1985 during the Winter season for growing IR-8. This additional irrigation will dramatically change the agriculture sector. The yields/capita or per acre are expected to be more than double. Consequently, farm income will rise. Part of this increase in income can be taxed away by the Government. However, before we come to this tax question the evidence of the impact of HYV of rice as revealed from various sources are presented below.

The accelerated Rice Research Institute set up in collaboration with the Ford Foundation and International Rice Research Institute in Phillipines received 303 strains of improved rice varieties from the IRRI, Phillipines in 1966. Of these 303 varieties, 20 were found suitable on various experimental stations.

39/ IWP For Agricultural Development, 1965-85 Survey of Irrigation Potential in South Asia, Water resources and Irrigation Branch, land and Water Development Division, FAO, Rome, March, 1969.

Out of these 20, two varieties of dwarf strong strains IR-8-288 and IR-5 were distributed amongst the farmers, the former for Boro and Aus seasons and the latter for Aman season.[40] The average yield on experiment stations in these three seasons as compared with local varieties under the same controlled conditions of cultivation is shown in Table 20.

The yield figures show an increase in yield of IRRI varieties over local varieties per acre by 127 percent in the case of Aus, 72 percent in the case of Aman and 145 percent in the case of Boro. After obtaining this miraculus results at the experiment farms in all these three crops, in 1966-67 these seeds were distributed to 4000 farms to test on the farmers fields for Aus, Aman and Boro, under the direction and supervision of the extension agents. The average yield for all these three crops was found to be 41.10 mds in terms of cleaned rice. The yield was not as high as on experiment stations obviously the fault was not with the seeds but with lack of efforts, knowledge and other conditions as compared with the experiment stations.[41] In 1967/68, the new varieties were grown on about 300,000 acres by farmers under the guidance of the extension agents. The average yield was 62.20 maunds per acre in terms of paddy (41.67 mds. in terms of cleaned rice).[42]

It is true that the yield at the initial stages will be higher than at later stages. Wharton has also said this.

40/ Alim, A. Rice Improvement in East Pakistan (Department of Agriculture, Govt. Printing Press,Dacca, 1968), pp. 6-12.
41/ Ibid., p. 12.
42/ Ahmed, Rais, Economics of IRRI Rice Cultivation in East Pakistan, Planning Department, Dacca, 1968, pp. 5-6.

Keeping in mind this factor when this will be adopted in large scale in East Pakistan the GOEP has concluded that for projection the average yield of 1.461 tons per acre (40.18 mounds) would be the reasonable yield for all acres under new varieties. 43/

Table: 20

Average yield of Irri and local Rice Varieties in theree Crop Seasons on Experiment Plots, East Pakistan (1966/67). (Yields in mounds per acre).

Varieties	Aus season	Aman season	Boro season
IR-8-288	92.5 (61.98)	-	115.28 (77.24)
IR-5	-	111.76 (74.88)	-
Local	40.71 (27.28)	65.19 (43.68)	47.21 (31.63)

Source: Alim, A. Rice Improvement in East Pakistan (Deptt. of Agriculture, Government Printing Press, Dacca, 1968) pp. 6-8.

Note: Figures in parenthesis are in terms of cleaned rice the conversion ratio being 0.67.

In the Report of the World Bank Mission, November, 1967 the profitability of the IRI-8 variety over the local varieties for Boro crop only has been shown while determining the economics of irrigation by low lift pumps. Although very high yield of the new varieties are found in East Pakistan their assumption was that while such yields were not impossible in individual instances, this would be reasonable to take on average a lower figure.

43/ East Pakistan, Program for Food Self-sufficiency, p.10.

The new varieties involve higher cost per acre but the output input ratio is higher, as such average per unit cost is also lower over the other varieties. In order to show the comparison of cost of production per acre a comparative table is presented.

Table: 22.

Average Total Cost of Cultivation of IR-8, Boro and Shaitta.

Structure of costs	Purchased input cost	Family input cost	Total
	IR-8		
1. Operating	323.21 (61.8)	88.80 (17.0)	412.01 (78.8)
2. Overhead	7.23 (1.4)	103.76 (19.8)	110.99 (21.2)
Total	330.44 (63.2)	192.56 (36.8)	523.00 (100)
	Boro		
1.	176.79 (48.4)	108.15 (29.6)	284.94 (78.0)
2.	2.81 (0.7)	77.77 (21.3)	80.58 (22.0)
Total	179.60 (49.1)	185.92 (50.9)	365.52 (100)
	Shaita		
1.	139.51 (38.8)	132.06 (36.7)	271.57 (75.5)
2.	1.39 (0.4)	86.79 24.1)	88.18 (25.5)
Total	140.90 (39.2)	218.85 (60.8)	359.75 (100)

Source: Anwarul Huq Costs and Returns, A Study of Irrigated Winter Crops, PARD, Comilla, East Pakistan, pp. 26-37, 47)

(Figures in the parenthesis represent percent of total cost of cultivation)

From the above table certain important features are revealed.

Per acre cost for IR-8 is Rs. 523.00, for Boro Rs. 365.00 and Shaitta Rs. 359.00. Purchased inputs costs of IR-8 constitute over 63 percent, family input cost is the lowest of these three but for other two varieties the family input costs are relatively higher than purchased input costs. It is clear from this study that the new innovative technology requires more investment on account of the off farm inputs like more fertilizer, water, better seeds, etc.

As compared to this let us now examine the comparative returns from each of these operations. From the same study the average per acre yield of IR-8 paddy and straw was found to be 44.7 mds. and 18.1 mds. respectively. Compared to this the per acre yield of Boro and Shaitta and straws were 22.3 mds. paddy, 14.1 mds straw and 21.37 mds paddy and 13.33 mds straw respectively. The per acre yield of IR-8 appears to be double of the local varieties under similar cultural conditions. In respect of net return per acre it has been found that IR-8 ranks at the top. Per acre net return from IR-8 is Rs. 982.80, from Boro Rs. 289.87 and from Shaitta Rs. 298.69. More than three times net return of IR-8/acre is partly contributed by the higher price of paddy per md. over other varieties which in the long run may not prevail.

To provide an overview of the comparative advantage of IR-8 over other varieties an account is presented in the following table briefly.

Table: 23.

Average net income from IR-8, Boro and Shaitta (in rupees)

Crops	Average cost/acre (all inputs)	Return over the input cost/acre	Output Input ratio	Average cost/ md.	Return over the input cost/md.
IR-8: Total (operating and overhead)	523.00	982.80 (757.93)	1.88	11.68	20.74
Boro: Total (operating and overhead)	365.52	289.87	0.79	16.37	11.07
Shaitta: Total (operating and overhead)	359.75	298.69	0.83	16.86	12.08

Source: Adopted from Anwarul Huq's Cost and Returns A Study of Irrigated Winter Crops, PARD, Comilla, East Pakistan, 1968.

Note : The figures in parenthesis are adjusted figures to Boro prices which was Rs. 27.44 per md.

This table delineates the net return per acre, higher output/input ratio and lowest per unit cost and highest per unit profit of IR-8 over the other two varieties.

This represents only winter crop. On the basis of this study it is difficult to project the total annual net return of the selected irrigated areas. Three rice crops Boro, Aus and Aman cannot be grown on every plot because of the time constraints with existing technology.

At best two rice crops can be grown, Boro and Aus or Boro and Aman. The farms may grow some other crop in between. The yield of Boro and Aus or Aman will not be the same. Moreover, when IR-8 will be grown at large scale both the yield and price will fall. The net income per acre as shown in the table 20 at Rs. 982.80 or even Rs. 757.93 will be reduced depending on the demand and supply co conditions. If we assume 40 mds. average output per acre for both crops and assume the price to be Rs. 20 per md. instead of Rs. 32.42 as shown in Huq's report the gross annual income from rice becomes Rs. (80 X 20) = 1600.00 per acre. Assuming the same total cost per acre at 523.00, for two operations total cost stands at Rs. 1046.00. The net annual profit then becomes Rs. 554 per acre. Another Rs. 150 net profit from straw and other crops may be added which brings the total annual profit to Rs. 704.00 per acre. This is just a guestimation taking into consideration that all farms in East Pakistan under irrigated areas will not give the result as shown in Comilla over a long period of time. But at present there has been a dramatic impact on the farm income and even in future the farm income will rise considerably over the present situation of the province. If East Pakistan can gain a comparative advantage amongst the rice producing countries, then the surplus could be exported. The lower price is likely to be compensated by the higher valued crops like vegetables, potatoes and jute and other Rabi crops and livestock raising on the land that

could be withdrawn from Rice cultivation due to higher yields. The cropping intensity from the present 150 percent could be increased to around 300 percent by 1985 and the marketable surplus of present 16 percent could be more than double.[45/] A study made by the planning Deptt. GOEP shows that the HYV give more than the double net income per acre than the local varieties. [46/] However Dr. Witt takes a different approach and argues that no real cost for a particular crop can be obtained.[47/] Traditional method of cost and return calculation will have little relevance to relate such profitability with rate of adoption by farmers. By drawing upon T.W. Schultz's concept of purchasing a stream of income, i.e. to ask how much income can a rupee's worth of new inputs buy, Witt calculated the incremental costs and returns from new and local varieties grown in Comilla Thana in 1966/67. It has been shown that added income by one rupee of expenditure of purchased inputs was Rs. 4.50 in case of IR-8. Added income by one rupee of expenditure of total inputs was about Rs. 5.25 for IR-8. [48/]

From all these studies and the exercise the writer has done so far prove beyond reasonable doubt the profitability and higher farm incomes due to the Green Revolution on per acre or per farm household basis.

45/ Raquibuzzawan--Marketable surplus of agricultural products in East Pakistan (Pakistan Development Review, PIDE, Karachi, March, 1966).

46/ Ahmed Rais. Economics of IRRI Rice, 1968. p. 5.

47/ Witt. L. Cost of production and All that.(Islamabad, Pakistan, Ford Foundation, 1969). p. 4.

48/ Ibid. p. 6.

This higher income provides for the rationale for raising direct agricultural taxes, land revenue and agricultural income tax. The people or the areas which have been benefited, part of the increased income or wealth should be captured by the Government in the form of higher taxes. If we recall the legal position discussed earlier in the section of current situation, we find that the land rate cannot be changed for 20 years and for agricultural income tax, holdings over 30 acres with net income exceeding Rs. 3,000/- are taxed at a rate ranging from 6.25 percent to 31.25 percent.

The legal provision of 20 years needs to be amended. A cadastral survey is suggested and on the basis of this survey land tax can be rationalized and reassessed.

The exemption of 30 acres of land which does not fall within the ambit of net annual taxable income of Rs. 3,000/- according to existing provisions does not hold true for the acres where HYV produces more than double net income per acre at deflated price. The evidence cited above about the success of HYV suggests that the provincial government can raise the revenue from the source of agricultural income tax by reducing the limit from the 30 acres. This is an area where an investigation is necessary to provide for the rationale for agricultural income tax base under changed conditions.

Taxation policy should be flexible so as to adjust with the dynamic situation and also variable as long as natural calamities in East Pakistan remain uncontrolled.

Land taxes and agricultural income taxes are specifically discussed below for their impact on output and other social effects. A possible future approach is also suggested under changed conditions.

(a) Land Tax: Upward revision of the land tax is suggested in view of the increase in income per acre of land in the selected areas where the green revolution has taken place. Land tax generally has strong incentive effect as such if based on potential output the large land owners will use their land for more productivity, use more complementary inputs and employ surplus unemployed labor to meet the extra tax burden. This is perhaps not very much applicable for East Pakistan where land is already extensively and intensively used and land distribution pattern is not very widely dispersed. But still there are some big land owners who have kept the land under benami (different title ownership amongst members of the family). Another alternative is the progressive tax rate which increases with the size of holding. This is closely related to the principles of ability to pay and both vertical and horizontal equity. The impact of the system will be to increase efficiency. It may also force the land owners to sell part of their land thus indirectly reducing concentration and facilitating distribution.

The other effect may be the elimination of absentee ownership which in some districts like Khulna, Kushtia, Rajshahi and Dinajpur is still prevalent. The writer suggests that the land tax progressivity may be introduced in East Pakistan which is analogous to income tax on the principle of equity.

One important aspect of land taxes in respect of administration and compliance from cost point needs to be mentioned here. East Pakistan has a very large land revenue administrative bureucracy from the top East Pakistan Secretariat down to the union level. The higher structure which was created during the British rule when land tax was the only important source of revenue should still continue now under the changed circumstance is a matter to be investigated. But relevant point to be mentioned here is that the raising of additional taxes from the land will involve very little marginal cost because of the well-organized administrative set up. The increase in land tax will increase the marginal product per unit of revenue personnel.

(b) Agricultural income tax: This tax as said earlier appeals to the principles of ability to pay and equity. There has been and will be increase in real wealth due to HYV and technological change. Administrative difficulty, corruption, no record keeping and non-monetized nature of economy, sales and purchase in small quantities to a multiplicity of buyers and sellers, substantial home

consumption etc. mingled together lead to large-scale evasion. Thus though there is great potential to increased tax take from this source, the cumbersome system does not provide the use of the full potentiality. One alternative may be to merge it with general income tax the administrative machinery of which is much more efficient, the Central Government officials will assess and collect on behalf of the provincial government. Alternatively may be replaced by personal taxes recently publicized by Hicks (1961) and Due (1963). They involve a family by family assessment of income and income earning units, made by local officials.[49/] These taxes could be delegated to local governments like the Thana Councils and/or Union Councils. The plight of these local authorities for lack of funds is beyond description. As such these taxes will be most effective when tied to local expenditures where benefits are obvious to local tax payers. This will have also salutary effects to move persons from non-monetized sector to market economy. Local roads, schools and small canals, etc. will facilitate marketing of agricultural produce, education and increased output. The isolated villages will be connected with the rest of the economy physically and vicariously due to these benefits. This may also provide further base of user taxes of these public services and utilities which is equitable from benefit point of view i.e. on the principle of "quid-pro-quo". Any way this procedure may provide for a more sophisticated tax procedure in the future.

49/ S.R. Lewis. Agriculture taxation in developing economy Southworth & Johnston. Agriculture Dev. and Economic Growth, Cornell University press. Ithaca, New York, 1967.

(c) Betterment levy, Water rates and other effects.

The state can safely appropriate a large share of the increase in income directly atrributable to its own capital projects. The effective way of doing this is to levy betterment taxes and prices charged for these services. Irrigation system, flood control, drainage, roads, improvement of river channels in East Pakistan typically increases the yield of the lands and their valuation they serve. The discounted value of the expected increase in yield of the land tends to be capitalized in the value of the land. 50/ The people who are served gain a windfall gain because government finance them from general revenue and loans and aids, so on ground of equity the state is justified to levy betterment tax, water tax or other user taxes from the direct beneficiaries. This will not cause hardship, the increased yield will cover the tax if he retains the land, or if he sells the land the price will reflect the capitalized value of the land. Here land tax is shifted forward.

Government of East Pakistan passed the legislation making "the East Bengal Betterment Fees Rules, 1954", "East Bengal Embankment and Drainage Act, 1952 and Ammendment East Pakistan Ordinance No. VII of 1962" and East Pakistan Irrigation (Imposition of Water rate) ordinance No. VII of 1963. All these acts extend to the whole of East Pakistan.

50/ Richard Goode, Morgan, Betz and Choudhay-- Readings in Economic Development. Wordworth publishing Co.Inc. Belmont, California, 1963.

We have already noted that the GOEP has already imposed a 25 percent betterment levy on ad hoc basis in addition to the land revenues. The Embankment and drainage act provides for realization of the full cost from the direct beneficiaries in 20 years.

The East Pakistan Irrigation Act provides inter alia, that a particular project has to be declared complete, then assessment of gross returns prior to and after the supply and regulation of water. "The water rate intended to be imposed shall not exceed 10 percent of the gross increased benefits accruing to the owner or occupier of the land as a result of the supply or regulation of irrigation of the water and shall be determined in the prescribed manner." 51/

The last two acts involve several stages before they can be implemented. Either too much complex or too much democratization are involved as such no tax either from embankment already completed and/or irrigation projects fully or partially completed is being collected. As a matter of fact, these projects are being maintained and operated out of the development expenditure provided in the annual development plan dragging these schemes as incomplete thus, limiting the scope and definition of the development expenditure. These laws could be made straightforward and as simple as possible so that direct beneficiaries could be taxed to meet the operation and maintenance cost and part of the capital cost.

51/ EPWAPDA Master Plan, Supplement C, Economics, December, 1964, pp. CVII-17, CVII-19, CVII-31.

Finally, the green revolution will not only save the foreign exchange on the import of food but also earn foreign exchange by diversification of cash crops for export. The income generated in the farm sector is likely to change the consumption pattern which in turn may increase the demands for industrial goods. The indirect taxes like sales and excise can be important and growing souces of taxes. Thus the farm sector can help promote the non farm sector directly and indirectly. The green revolution also provides employment to more people this help reduce the pathological growth of urban slumps.

It may be argued that the contention of the Fact Finding Committee Report that agricultural taxation cannot be further increased does not hold true in the context of the green revolution. If proper tax measures are not adopted the green revolution may be followed by the "Red Revolution". In Tanjore, South India the landless laborers attacked the landlords who got the fruits of the green revolution and it caused the death of 42 persons. 52/ On August 3, 1970, it was published in the News Week under the heading "The Land Grab War" that for months, ragtag mobs of landless peasants had been marauding through the Bengalese countryside, murdering landlords, looting their homes and siezing the lands. This brought Prime Minister Mrs. Gandhi to Calcutta and she said "we shall do all we can" and promised "to establish a socially equitable and just land tenure system".

52/ Brown, L.R. Seeds of Change, Praeger and Publication, 1970, p. 77.

The Cornucopia of the Green Revolution may be a Pandora's Box--the green revolution may turn in an angry shade of red. Therefore, the government fiscal, administrative and political policies should be oriented to income distribution, land reform, employment, progressivity and equity. This is in concurrence with principles of welfare of a growing economy imbedded with modern ideas.

5. Revised Revenue Projection from Agriculture.

The revenue projection in this section may be considered as revised from the 1963 revenue projection of the Dacca University Bureau of Economic Research.

In this section a revised projection of revenue from direct agricultural taxes is made. The projection is for a period of 20 years starting from 1965/66 to 1984/85. From the discussions throughout the paper it has been observed that the yield increasing potential of HYV provides sufficient support for increasing the amount of taxes that can be obtained from agricultural sector.

The annual compound rate of growth in GDP during Second Plan was 5.4% in East Pakistan.[53/] The Second Plan annual average GDP was Rs. 16703.00 million which is higher than projected in the model discussed earlier which projected revenue for the years 1960/61 to 1979/80. From the past trend of the growth rates and since agriculture sector is expected to grow faster than in the second plan due to HYV a revised estimate of the revenues from agriculture sector and revised estimates of GDP from the period 1965/70 to 1980/85 is presented below.

The following assumptions have been made for this projection:

(1) The annual compound growth rate for the Third plan (1965/70), Fourth, Fifth and Sixth plans are 6%, 7%, 8.1%, 7.5% respectively.

53/ The Third Five Year Plan, 1965-70, Planning Commission. Government of Pakistan, June 1965. p. 12.

(2) Agricultural output/acre will continue to grow at an increasing rate until 1980.

(3) .82% of GDP in 1970, .95% of GDP in 1975, 1% of GDP in 1980 and 1985 to be obtained from land revenue.

(4) .24% of GDP in 1970, .34% of GDP in 1975, .50% of GDP in 1980 and 1985 will be obtained from the agricultural income tax.

Revenue projection from agriculture as % GDP does not seem to be the correct approaches. The correct approach would have been revenue as a function of agricultural growth rate. For lack of data this simple method has been adopted. The rate of growth in GDP will be more contributed by the non-agricultural sector. The projection of revenue from agriculture is assumed not to exceed 1% of GDP beyond 1985.

Table: 24.

Revenue Projection : The GDP, Rate of Growth of GDP (%), Land Revenues and Agricultural Income Taxes

	Annual Average for Five Year Period (in million of Rupees)				
	1965	1970	1975	1980	1985
	(Actuals)	22352	31350	46277	69585
1. GDP.	16703.0	22352	31350	46277	69585
2. Growth rate (%)	5.4	6	7	8.1	7.5%
3. Land Revenue	116.4	183.29	297.83	462.77	695.85
4. Ag. Income Tax	13.4	53.64	106.59	231.39	347.93
Total of 3 & 4	129.8	236.93	404.42	694.16	1043.78

From the above projection it may be concluded that the annual compound growth rate of direct revenue from agriculture from 1965 to 1970 is 12.8%, from 1970 to 1975 is 11.3%, from 1975 to 1980 is 11.5% and from 1980 to 1985 is 8.5%. Over the 20 year period the growth rate is 11% per annum. The increase in direct agricultural taxes due to the upward revision of tax rates is phenomenal in so far as the tax revenue of the government is concerned but in respect of magnitude the growth rate seems to be viable without creating any undue burden on the farm sector. It is therefore unlikely that there will be any bad effect on willingness to work and to invest thereby affecting output/acre and output/worker.

Conclusion.

1. Role of taxes from agriculture sector in Economic Transformation:

The agriculture sector in an economy like East Pakistan must play a leading role in the economic transformation of the country. To meet the growing needs of the development process the growth of the public sector has become a crucial factor. To support this essential growth of the public sector higher tax intakes and mobilization of more resources must be accomplished. The public sector must capture part of the increased income resulting from economic development in order to meet the growing costs of the projects that serve agriculture directly and indirectly and also for the growth of the non-farm sector.

2. Examples of agriculture taxes in Taiwan and Japan:

Both Taiwan and Japan provide sufficient evidence of how the economic transformation can be achieved successfully by developing agriculture and nonagriculture sectors simultaneously. The net contributions of taxes from agriculture for the growth of the nonagriculture sector for a fairly long period were key factors. Agriculture was an engine of growth in Taiwan and Japan. As compared to the direct agricultural taxes of these countries,taxes in East Pakistan had never even reached the lowest level of taxes per unit.

In Japan between 1882-92 and 1933-37 the land tax varied from an early high of 85.6% to low 10.7% of the government total tax revenues. With respect to the direct agricultural tax ratio to income produced it varied from 22.1% in 1882-92 to 7.8% at the end of the period. 54/ In Taiwan the land tax varied from 37% to 6.5% of the total tax revenue between 1896 and 1943. 55/ The lowest per capita direct agricultural tax incidence in per capita GDP in 1959 and 1960 was 2.2% and 2.4% respectively. 56/ Compared to this the ratio of direct agricultural taxes to GDP between 1950/60 and 1967/68 varied between .92% and .86% respectively. 57/ East Pakistan policy makers can learn a great deal from examination of the experiences of these countries.

3. Current situation in East Pakistan.

a) Present agricultural tax rates.

The present land tax is a fixed tax of 1/10th of the Gross Agricultural product assessed in 1950/51. This rate was fixed by law in 1950/51 after the Estate Acquisition Act of 1950. The land tax law provides that once the rates are fixed the rates cannot be changed unless it is found absolutely necessary.

54/ Ohkawa and Rosovsky, The Role of Agriculture in Modern Japanese Economic Development in Eicher and Witt, Agriculture in Economic Development. McGraw Hill Book Company 1964. p.63.

55/ T.H. Lee, "Intersectoral Capital Flows in the Economic Development of Taiwan, 1895-1960", Ph.D. Thesis, Cornell University, 1968. p. 251.

56/ Ibid., p. 266.

57/ Economic Survey of East Pakistan, 1967/68, Planning Dept. GOEP. p. 76.

Holdings less than 30 acres are exempted from the income tax. Pending the rationalization of the land tax rates, the government of East Pakistan has imposed additional 25% as development levy on areas benefiting from development projects.

b) Share of E.P. taxes from agriculture presently.

In respect of tax revenue as a share of total tax revenues the direct land tax is one of the lowest as seen in the preceding section. As a percentage to GDP the direct agricultural taxes were below 1% both in the past and recently until 1968.

c) Improvements to increase tax revenue under present rules.

Correct assessment on the basis of the current yields and enforcement of the assessment will bring in more revenue to the public treasury. Another way to increase taxes is better enforcement of the East Bengal Embankment and Drainage Act of 1952 and as amended in 1962, East Bengal Betterment Fees Rules, 1954 and East Pakistan Irrigation Act, 1963. These regulations should be made simpler. Taxes should be collected from the direct beneficiaries to meet the annual operation and maintenance cost, and to pay for at least part of the capital cost.

d) Proposed changes.

In view of the technological innovations in increasing growth in agriculture the land tax rates should be revised upward. The exemption limit of 30 acres for

Agricultural income tax should be reduced. Land tax system should be more flexible to adjust with the dynamic process. Atleast every 10 years reevaluation of land taxes on the basis of the yields should be undertaken.

A progressive land tax system needs to be seriously considered. Besides fitting with the principle of ability to pay, progressive taxes are likely to have an income increasing effect because land and labor will be encouraged to be more optimally used in order to meet the increased tax costs. In this way excess land would be sold out to persons who would cultivate it intensively. In addition this is likely to reduce the concentration of land holdings. From society's point of view, a progressive system of land tax has the merit to be considered as an equitable approach. Collections problems may prove a major barrier however, agricultural income tax collection and use could be delegated to local government units either Union or Thana. These units whould then be in a better position to assess the tax from house to house than from a far distant centrally controlled system. People would also be more willing to pay taxes when they enjoy locally the benefits of their money directly.

On the basis of the revised revenue projection the additional revenue due to the increased rate that could be collected over the period is appreciable. The additional tax that could be collected from the farm people would seem to be fair also.

It would be about 8.4 times higher by 1985 than the base period in 1965. The annual growth rate on an average over 20 years is found to be 11%. The average annual growth rates for the Third Plan, Fourth Plan, Fifth Plan and Sixth Plan are 12.8%, 11.3%, 11.5% and 8.5% respectively. This modest revision is likely to raise the tax intake from Rs. 129.8 million in 1965 to Rs. 1043.78 million in 1985 which may be considered as the optimum revenue that could be collected from the agriculture sector without any disincentive effects.

TABLE 1.

PATTERN OF LAND-UTILISATION.

According to our survey		Land cultivated during the year				Current fallow	Waste-land	Total land in-possession
		Homestead land	Own land including orchard	Barga, Khaikhalashi etc. @	Total			
1964-65	Per household (in acres)	0.18	1.51	0.48	2.00	0.02	0.07	2.26
	Estimated Provincial total (in million acres)	1.7	14.7	4.7	19.4	0.2	0.7	22.0
	Percentage.	7.7	67.1	21.0	88.3	1.0	3.0	100
1963-64	Per household (in acres)	0.13	1.51	0.45	1.96	0.05	0.07	2.26
	Estimated Provincial total (in million acres)	1.7	14.8	4.4	19.1	0.5	0.7	22.1
	Percentage	7.87	66.77	19.81	86.58	2.25	3.30	100

SOURCE: MASTER SURVEY OF AGRICULTURE IN EAST PAKISTAN (SIXTH ROUND.)
EAST PAKISTAN BUREAU OF STATISTICS. GOEP, DACCA - 1966.

@ Barga- Share cropping

Khaikhalashi- Rent free land.

TABLE 2

AVERAGE INTENSITY OF CROPPING.

		Land cultivated (Net)	Total cropped area	Land cropped more than once	Intensity of cropping (percentage)
1963-64	Province	19.1 Million acres	27.8 million acres	8.7 million acres	145.5
	Average household	1.96 acres	2.85 acres	0.89 acres	145.5
1964-65	Province	19.4 million acres	29.1 million acres	9.7 acres	150.0
	Average household	2.0 acres	3.0 acres	1.0 acres	150.0

SOURCE: MASTER SURVEY OF AGRICULTURE IN EAST PAKISTAN (SIXTH ROUND)
EAST PAKISTAN BUREAU OF STATISTICS. GOEP, DACCA - 1966.

TABLE 3.[illegible]

DISTRIBUTION OF LAND HOLDINGS AMONG RURAL HOUSEHOLDS

Size of holdings	Cumulative percentage of households		Cumulative percentage of land in possession	
	1963-64	1964-65	1963-64	1964-65
Landless	x	3.6	x	x
Less than 0.25	29.4	32.2	0.7	1.3
0.25 and less than 0.75	42.1	42.5	2.3	3.3
0.75 and less than 1.25	50.9	51.5	4.6	7.5
1.25 and less than 2.00	62.2	61.9	9.5	15.3
2.00 and less than 3.00		73.2		27.9
3.00 and less than 4.00		81.3		41.5
4.00 and less than 5.00	100.0	86.6	100.0	51.7
5.00 and less than 7.00		94.0		71.3
7.50 and less than 10.00		96.7		81.3
10.00 and above		100.0		100.0

SOURCE: MASTER SURVEY OF AGRICULTURE IN EAST PAKISTAN (SIXTH ROUND)
EAST PAKISTAN BUREAU OF STATISTICS, GOEP, DACCA, 1966.

APPENDIX

Table 4. (Boro) Total of Averages of Man Days and Cost of All Inputs Purchased and Family Owned Per Acre.

Operation	Man Days (No.)	Cost (Rupees) Labor	Materials	Total Cost (Rs.)
Ploughing and Laddering	6.61	15.76	33.30	49.06
Irrigation	2.73	6.40	40.00	46.40
Fertilization	5.69	13.11	61.53	74.64
Transplantation	21.50	51.10	31.41	82.52
Weeding	3.79	9.10	0.24	9.34
Spraying	1.10	2.58	1.18	3.76
Harvesting	12.26	29.08	0	29.08
Threshing	4.02	9.50	9.94	19.44
Total	57.70	136.63	177.60	314.23
(Shaita)				
Ploughing and Laddering	8.86	21.74	33.91	55.65
Irrigation	3.46	8.42	40.00	48.42
Fertilization	5.90	14.32	32.66	46.98
Sowing	2.10	4.89	26.78	31.67
Weeding	4.77	11.89	0	11.89
Spraying	0.73	1.73	0.62	2.35
Harvesting	13.82	33.33	0	33.33
Threshing	3.68	8.80	8.12	16.92
Total	43.32	105.12	142.09	247.21

Source: Mahmoodur Rahman, Cost and Return, A Study of Irrigated Crops in Comilla Villages. Technical Publication No. 19. PARD, Comilla, East Pakistan, pp. 47 and 65.

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