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AGRICULTURAL PRODUCTION, EQUITY AND RURAL ORGANIZATION

IN EAST PAKISTAN *

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Introductory Note

The course of events in East Pakistan since March, 1971, has altered conditions and prospects of that Province in important but still undetermined ways. Although this paper was written after that time, it is based on research conducted and conclusions reached before then. In writing this paper, an attempt has been made to adjust its findings to the new reality of civil war and rural insurgency. However, from this distance and at this time, it is impossible to judge with any accuracy how these events will alter the course of rural development in East Pakistan. While the general thesis of this paper and its application to heavily populated areas is not altered, the specific conclusions on East Pakistan must be interpreted in the light of the uncertainty which recent events cast upon them.

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AGRICULTURAL PRODUCTION, EQUITY AND RURAL ORGANIZATION

IN EAST PAKISTAN*

"Organizing into peasant associations is the first great achievement of the peasants."

Mao Tse-Tung

The 1960's was widely acclaimed the decade of the "green revolution." The failure of industrialization to accelerate the rate of growth in the low income countries during the 1950's led to the widely accepted conclusion that agriculture must be the leading sector of a developing economy.^{1/} The concurrent advances in seed technology, particularly wheat and rice, combined to make possible a number of important agricultural successes, and their impact was greatest among Asian countries where the problem of poverty is most serious. In response to these production successes, a green revolution was seen by some as transforming the developing nations. Important as these successes were, many who acclaimed them overlooked a wide variety of problems which followed

* My thinking on rural organization has been greatly influenced by Akhter Hameed Khan. Many of the ideas expressed in this paper originated with him.

^{1/} Two of the best statements of this position are Bruce F. Johnson and John W. Mellor, "The Role of Agriculture in Economic Development," American Economic Review, September, 1961, and William F. Nichols, "An Agricultural Surplus as a Factor in Economic Development," Journal of Political Economy, February, 1963.

in the wake of agricultural success and the important geographical and social limits of its incidence.^{2/}

This paper is focused on how those limits to agricultural development can be reduced or eliminated. The central thesis of the paper is that the accepted model of rapid increase in agricultural production omits an important factor, rural organization. If effective means can be found for organizing farmers in areas still operating under a subsistence agriculture equilibrium as well as the poorer farmers who have not benefited in those areas where production has risen rapidly, widening income disparities can be diminished and the dimensions of the agricultural revolution can be greatly increased.

This analysis will focus on East Pakistan, which represents one of the most extreme examples of agricultural growth thwarted by rural poverty and where considerable thought and action have gone into rural

^{2/} Walter P. Falcon's "The Green Revolution: Generations of Problems," American Journal of Agricultural Economics, December, 1970, is the best analysis of the series of problems raised by rapidly increasing agricultural production and the nature of its limitations. One of the reasons for the disappointment with the results of the green revolution is that the analysis of the role of agriculture in economic development was generally very short run. It correctly saw the need to put immediate priority on increasing agricultural production, but it did not go on to analyze the role of the agriculture sector in a developing economy over time. Comparative historical evidence shows that as national output rises, the role of the agricultural sector declines from one which produces over 50 percent of GNP and employs an equal proportion of the labor force to one which generates 10 to 15 percent of GNP and employs a similar percentage of available labor. The fact that this historical transition was not dealt with in early analyses of the role of agriculture left an important gap in the thinking on the subject and caused many to overlook the inevitable longer run adjustments in the agricultural sector once increases in production were achieved.

organization. This paper will analyze the reasons for the area's failure to increase agricultural production according to the standard prescription. It will discuss and evaluate the related efforts at rural organization and will analyze those factors which may determine their success or failure. In conclusion, some generalizations will be made as to what can be learned from East Pakistan's experience and its relevance for other areas and nations which experience the same limits on agricultural development.

1. A Paradigm of Agricultural Development

The rapid growth that is taking place in a number of developing countries is based on a major transformation of the technology of agriculture. This transformation takes place with the coordinated application of a package of modern agricultural inputs. These inputs are fertilizer, pesticides, new dwarf varieties of high-yielding seeds highly responsive to fertilizer, and the controlled application of water. Much attention has been given to fertilizer and seeds, but a controlled and reliable water supply is increasingly recognized as an essential prerequisite for the successful application of the package. For instance, in West Pakistan, a major agricultural success, "water is the key input in the [Indus] basin region which produces about 80 percent of the total provincial [agricultural] output."^{3/} The optimum returns are obtained

^{3/} W. P. Falcon and C. H. Gotsch, "Lessons in Agricultural Development -- Pakistan," in Gustav F. Papanek, ed., Development Policy: Theory and Practice, Cambridge, 1968, p. 273.

only when these inputs are applied in carefully balanced quantities.

The view that traditional farmers act in an economically rational manner to maximize the return on their agricultural activities within their risk structure has been a fundamental tenet of agricultural development. This view provides the basis for utilizing the market system to disseminate the new technology, for the farmers will invest in the inputs as soon as their merits are demonstrated. Experience has generally confirmed this view.

Given the farmers' desire to increase production, most countries have proceeded to develop agricultural extension and demonstration systems that will show the farmers the benefits of employing the new technology and provide them with the technical assistance needed to utilize it correctly.

Having developed the technology, or at least imported it, and arranged to make the inputs widely available in the rural areas, nations have depended upon the farmers to invest in the new agricultural supplies. These have on occasion been subsidized to make the investment even more attractive. Almost universally, however, governments have depended upon the farmer to make the investment decision and to use his available surplus to obtain the needed agricultural inputs. Many countries have also supported this with agricultural credit programs, which have been remarkably naive in conception and unsuccessful in their operation.

Finally, reliance has been placed on the price system, frequently bolstered by a price support system to provide the incentives to invest, and on the market system to manage the increased levels of output. In

many countries there have also been efforts to increase storage, processing and transportation capacity to maintain the market.

The problems that have grown out of the rapid development of agricultural output fall in two general classes centering on the market system: (1) the reliance on the farmers' capacity to purchase seeds, fertilizer, pesticides and water even at subsidized rates through the market system has meant that the larger, wealthier farmers could take advantage of the potential of the new technology to rapidly raise incomes while the small subsistence farmers could not provide the investment capital to purchase the technology or bear the risk of employing it; (2) the market and price system frequently proved inadequate to cope with the rapid increases in production that resulted from the application of the new technology. The focus of this paper is on the first of these problems only.

2. The Agricultural Development Program of East Pakistan

The Government of Pakistan has placed high priority on agricultural growth. One result of this has been the outstanding performance of West Pakistan's agriculture which had a 5.5 percent compound annual rate of growth between 1965 and 1970 and a 4.6 percent rate during the entire 1960's.^{4/} The nation's commitment to the strategy of growth was expressed in 1965 in the Third Plan which listed among the "principal objectives"

^{4/} Pakistan Central Statistical Office's data, cited in the World Bank economic report on Pakistan, 1970. Statistical appendix, Table 2.4.1.

of the Plan,

"To accelerate the transformation in agriculture which is now taking place by placing the highest priority on measures to increase acre yields and by maintaining strong farm incentives, and subsidies to ensure maximum realization of the farmer's resources."^{5/}

The performance of agriculture in East Pakistan stands in sharp contrast to both the performance of West Pakistan and the stated objectives of the Plan document. Over the 1960's the rate of growth of the two principal crops was nominal and per capita foodgrain production declined. This was particularly serious in an area that had a food deficit even before the 1960's. Table 1 shows the annual production and rate of growth of rice and jute, the two principal agricultural crops, which account for nearly 80 percent of total agricultural output.

The failure of the accepted model of agricultural growth in East Pakistan is clear. The rate of agricultural growth stagnated during the 1960's just at the time the new technology was being perfected and the high yielding varieties of rice seeds were becoming available.^{6/} This decline also took place at a time when the Government was putting high priority on agricultural growth and during which the same policies and strategy were meeting with remarkable success in West Pakistan.

^{5/} Government of Pakistan, The Third Five-Year Plan (1965-70), p. 39.

^{6/} A crash program adopted in 1967, aimed at achieving food self-sufficiency by 1969-70 on the basis of the new seed varieties and intensive use of other inputs, has now mercifully been forgotten. A few copies of Programme for Attainment of Self-Sufficiency in Food Production in East Pakistan by 1969-70, Department of Agriculture, Dacca, 1967, still exist as a reminder of the hazards of crash programs based on insufficient evidence and experience. This program predicted production of 13.5 million tons of rice in 1969-70.

TABLE 1

Growth of Agricultural Production and Population in East Pakistan

	<u>Rice (cleaned, tons 000)</u> ¹	<u>Jute (Bales 000)</u> ¹	<u>Population (million)</u> ²
1960-61	9,519	5,625	55.3
1961-62	9,465	6,968	57.2
1962-63	8,730	6,300	59.2
1963-64	10,456	5,875	61.3
1964-65	10,337	5,328	63.4
Five-year annual growth rate	1.6	-1.0	3.4
1965-66	10,334	6,693	65.6
1966-67	9,424	6,400	67.7
1967-68	10,995	6,670	69.9
1968-69	11,165	5,754	72.0
1969-70	11,710	7,021	74.1
Five-year annual growth rate	2.5	0.9	3.2
1970-71 est.	10,650		

Source: ¹Agricultural Production Levels in East Pakistan, Bureau of Agricultural Statistics, Dacca.

²Statistical Fact Book, USAID to Pakistan, Rawalpindi, Table 1.1.

Yet East Pakistan's very survival depends on raising incomes. Rapid population growth, combined with a generally stagnant economy, has resulted in growing annual requirements for food imports and unacceptable levels of subsistence living on the part of a large portion of the population. Recognition that the area is well advanced toward becoming an international welfare case has increasingly focused attention on how to accelerate development. It is clear to those concerned with East Pakistan, whether aid donor or Pakistani, international consultant or academic, that agriculture is the dominant sector of East Pakistan's economy.

Of the Province's population of 74 million, over 90 percent^{7/} lives in the rural areas, and most of these derive their incomes from agricultural activities. Eighty-five percent of the labor force is in the agricultural sector.^{8/} There are no important natural resources yet known, other than agricultural land. Since 58 percent^{9/} of Gross Provincial Product is derived from agriculture and 95 percent^{10/} of the Province's export earnings is from agricultural products, the dominant role of agriculture in the economy is apparent. If economic growth is to take place, it must, in the short run at least, come from agriculture.

Recognition of this fact came early in East Pakistan's history, and agricultural growth has always been an important part of the Province's development plans. The program of agricultural development can be

^{7/} The 1961 census of Pakistan indicated that 94.6 percent of East Pakistan's population was rural. This is assumed to have declined somewhat in the intervening ten years.

^{8/} Statistical Digest of East Pakistan, 1968, Table 3.3, p. 40.

^{9/} I.B.R.D., Current Economic Position and Prospects of Pakistan, July, 1970, Table 2.3.2.

^{10/} Economic Survey of East Pakistan 1969-70, Table 19, p. 24.

classified in four general categories, Agricultural Research, Extension, Irrigation and Supply.

(a) Agricultural Research has been part of East Pakistan's agricultural development efforts since independence. The Agricultural Research Institute and Farm at Tejgaon just outside Dacca, founded in 1965, has been the center of this research effort. Independent research institutes have been established for specific crops such as sugarcane, jute, and tea. The centers have made marginal contributions to East Pakistan's agriculture. The most important improvements, of which rice seeds are particularly significant, have been imported. The new varieties of seeds developed at the International Rice Research Institute (IRRI) in the Philippines have had some impact on agricultural production and promise more. With the support of IRRI and the Ford Foundation, a new Rice Research Institute has been established at Joydevpur near Dacca. At present, its primary role is testing the suitability of IRRI seed varieties for local conditions. As its staff develops, hopefully it will begin independent research. Despite the establishment of research centers, the state of East Pakistan's agricultural research was summarized in the Department of Agriculture's submission for the Fourth Plan, "Research on crop production in East Pakistan was never assigned the priority it deserved and work in this field has languished despite sporadic attempts to improve it."^{11/}

(b) Agricultural Extension was also an early part of East Pakistan's attempts to promote agricultural production. By the mid-fifties

^{11/} Outline for the Fourth Five-Year Plan: Agriculture, Department of Agriculture, Dacca, August, 1969, p. 83.

there were over 4,400 agricultural extension workers in the field. In the 1960's the extension system was reorganized and the position of Union Agricultural Assistant established. By 1968 there were over 6,300 extension workers, and the Fourth Plan envisaged a large increase in their numbers. The concept behind the extension program has been to get workers as close as possible to the village level where they can demonstrate agricultural techniques to farmers, visit farmers' lands and advise them in the improvement of agriculture.

The biggest problem for the agricultural extension system has been the lack of trained personnel available and willing to undertake extension work. Training centers for extension workers, giving six-month to one-year courses, have been established, yet without a broader educational background or much experience in agriculture, the extension worker has limited effectiveness, his technical knowledge is minimal, and he has very little capacity to analyze or prescribe in new situations or when encountering problems for which he was not specifically prepared. Perhaps even more serious is the fact that with little or no direct experience in actual farming and particularly not in the area where he is assigned to work, he frequently is less capable than local farmers in actual agricultural practices. This proves to be a serious shortcoming when he is required to cultivate demonstration plots. A USAID agricultural extension review team which visited East Pakistan in 1968 concluded that

"The Union Agricultural Assistant, the spokesman for extension at the local level, is not regarded as an educational leader by farm people. He is looked upon instead as one to perform certain regulatory

and service functions. His present activities do not tend to develop the people themselves."

The report goes on to point out the necessity of more training and better salaries but points out that

"many employees are of such quality that they are not underpaid even with present low salaries. To raise salaries without personnel changes will not greatly improve the efficiency of extension."^{12/}

Such problems could be cited for almost any developing country. Nevertheless, it is also necessary to conclude that agricultural extension has not made much impact on agricultural output in the Province.

(c) Irrigation was recognized early in East Pakistan's existence as one potential means of increasing agricultural production. Despite a monsoon climate that inundates East Pakistan annually from June through September, during the rest of the year there is little rainfall. Water is available year round, however, in the many rivers and canals that flow through deltaic East Pakistan into the Bay of Bengal. In the dry season, from November to May, little is grown, but if water could be lifted from the Province's numerous rivers or underground storage, a third annual crop would be possible. To this end the large multi-purpose Ganges-Kobadak project was begun in 1954, as well as the Power Pump Irrigation scheme in 1958, the Thakurgaon Tubewell Project and the Dacca-Demra multi-purpose project in 1960. In 1962 the Comilla experimental tubewell scheme was initiated. There have been other development projects which

^{12/} Agricultural Research and Extension in East Pakistan, submitted by the Agricultural Research and Extension Review Team, USAID, September, 1968, pp. 5 and 6.

were to provide irrigation benefits, but these were the ones from which irrigation was to be the primary benefit.

The results of these projects, with the exception of the Comilla tubewells, have been very disappointing. Despite expenditure of over Rs. 700 million (\$147 million), approximately 200,000 acres have been irrigated. Some projects experienced major technical design difficulties, but what they all had in common was a failure to organize and train farmers for irrigated farming. (These problems were eventually solved at Thakurgaon by bringing in trained agricultural organizers for Comilla, but only three years after the completion of the project.) This failure of demand for irrigation water, resulting from insufficient concern for organizing and training farmers, has meant that huge investments in water development works have produced very little increase in agricultural production or benefit to the economy.

(d) Agricultural Supplies have been the primary focus of the agricultural development program. In 1962 the East Pakistan Agricultural Development Corporation (EPADC) was established as a semi-autonomous government body with the primary purpose of acting as an agricultural supply agency unimpeded by the normal procedures of the government. EPADC has been responsible for the import and distribution of fertilizer, the import of pesticides, although their application is carried out by the Bureau of Plant Protection, the import of power pumps and tubewell supplies, the installation of some tubewells and seed multiplication.

The growth in both fertilizer distribution and pesticide application is impressive as Table 2 indicates.

TABLE 2

Fertilizer and Pesticide Consumption in East Pakistan

	<u>Fertilizer</u> ¹ (in thousand nutrient tons)	<u>Pesticides</u> ² (in thousand acres sprayed)
1960-61	22.5	591
1961-62	22.5	957
1962-63	27.0	2,121
1963-64	49.0	2,263
1964-65	45.0	4,209
1965-66	54.2	4,946
1966-67	75.8	6,919
1967-68	100.6	7,534
1968-69	106.2	7,000 est. ⁴
1969-70	104.0 ³	

¹Source: A. von Peter, Fertilizer Marketing in Pakistan, F.A.O., 1968, Table 1, and IBRD, Current Economic Position and Prospects of Pakistan, Vol. II, Table 7.9.1, July, 1970.

²Source: "Statement Showing Cropwise Area Treated," Director of Agriculture, Dacca, mimeo.

³Estimate given to author by Director of Supply, ADC, Dacca.

⁴Due to an extended delay in the allocation of foreign exchange to East Pakistan, the import of pesticides in late 1967 and 1968 was greatly reduced. This explains the reduction in area treated in 1968-69, and the reduction undoubtedly affected 1969-70 as well, although no estimates are available.

The fertilizer statistics, while indicating substantial growth, indicate that only a small percentage of the optimum dosage is being used. Roughly calculated, the figures suggest that the fertilizer sales are 8 to 10 percent of the amount that East Pakistan's 28 million cropped acres might profitably utilize. This means that either 8 to 10 percent of the farms are getting adequate fertilizer or that fertilizer is widely used in less than minimum dosages and yielding little benefit.^{13/} This low utilization is despite the fact that as an incentive to farmers to utilize fertilizer, the Government provides a subsidy equal to about 50 percent of the cost. Despite this, fertilizer sales for 1969-70 of 106,200 nutrient tons were way below the Government's unrealistic target of 200,000 tons for that year.

The pesticide figures are suspect. The official figures provided represent about 25 percent of the total cropped acreage of 28 million acres. Pesticide is provided free of cost to farmers and 80 percent is applied by Departmental field workers with knapsack-type sprayers and the remainder by aerial spraying. Since there is no charge for pesticide, it is difficult to check on the performance of the sprayers. As a result it is a standing joke in East Pakistan that the grass under the shadiest trees gets the benefit of more pesticide than do the rice fields. It would appear that a system in which some charge was made for pesticides would be in the interest of both the farmers and the Government.

^{13/} A study of fertilizer usage in five southern districts of the Province indicates that in those areas fertilizer is being used on only 32.5 percent of the cropped area. The study further indicates that it is used primarily on low yielding, marginal land, presumably because it produces the most visible results in this use. Tarafder Rabiul Islam, A Short Study on the Use of Fertilizer in the Southern Districts of East Pakistan, mimeo, 1967.

Finally, on the supply side is the provision of the new, high yielding varieties of rice seeds. In 1964 the IR-5 and IR-8 varieties were introduced in East Pakistan. Subsequently, a number of other high yielding varieties were introduced, Taipei 177, Panjom-2, a variety called "Chinese rice" and others. Most of these varieties were suitable only for cultivation in the dry or boro season where irrigation water was available. Although they helped raise the average boro per acre yield from 12.5 maunds (82.2 pounds) to 18.2 maunds by 1970^{14/} and boro production from 6.4 percent of total rice production in the Second Plan period to 15.5 percent in 1970, this represents only a small percentage of total production. Farmers show little interest in altering established farming patterns to utilize the new varieties in other seasons. Thus by 1970 only 9.7 percent of rice acreage was planted in high yielding varieties. As a result, during this period research was concentrated on finding a rice variety that could stand the tremendous variations of the amon season (August to November) which encounters high and widely variable water levels in its early stages and relatively dry, cool weather shortly before harvest. By late 1969 the IR-20 variety had shown promising results. As a result in early 1970, seeds to plant 200,000 acres of IR-20 in the 1970 amon season were imported from the Philippines and the "Accelerated Rice Production Program" was formulated to achieve rice self-sufficiency at 15 million tons by 1975 primarily on the basis of IR-20 seed. Floods and cyclones damaged portions of the crop and amon production fell 600,000 tons below the production of 1969. However, observers claim that the IR-20 areas not affected by natural calamity performed very well. However, this represents very preliminary evidence. Unfortunately, the

^{14/} Agricultural Production Levels in East Pakistan, op. cit.

"Accelerated Rice Production Program" was formulated almost exclusively in the Government Secretariat and depends on the same principles to produce growth and contains the same overly optimistic targets as the self-sufficiency program of the late 1960's. As a result, it was difficult to be optimistic about its prospects even before the military intervention in East Pakistan which will preclude any immediate exploitation of the small advances made so far.

Why have these programs failed to bring agricultural development? The East Pakistan Government's performance in the agriculture sector has been mediocre. Yet, with the exception of irrigation, those familiar with agriculture in Pakistan would judge that the East Pakistan Government's efforts to supply the inputs to agriculture, the research and the extension workers have not been of a dramatically lower caliber than those of West Pakistan which has experienced agricultural growth. In addition, public sector funding for agriculture between 1960 and 1970 amounted to Rs. 2966 million for West and Rs. 2932 million for East Pakistan.^{15/} The inevitable question is, why the difference in production? There are two primary reasons: first, a difficult environment for sustained agricultural development in East Pakistan, and second, levels of poverty in which private investment in agriculture was only a fraction of that of West Pakistan with the result that the farmers could not obtain the new technology and the market system was an unsatisfactory vehicle for its distribution. Before proceeding, this analysis of the failure of East Pakistan's agriculture to grow rapidly requires more background knowledge of conditions in East Pakistan.

^{15/} Statistical Digest of East Pakistan, 1968, East Pakistan Bureau of Statistics, Dacca, Table 10.10, p. 404.

3. The Environment of Agriculture in East Pakistan

Per capita income in East Pakistan was estimated at Rs. 308 (US\$65) in 1970.^{16/} Per capita incomes in the rural areas are obviously lower than the Provincial average, probably between Rs. 200 and Rs. 250. Agricultural land holdings, which average 2.7 acres per owner, are fragmented. Only 7 percent of the land holdings are not fragmented and 67 percent of the land holdings are subdivided into four or more parcels.^{17/}

The population of the rural areas in 1970 was approximately 67 million. Of this population, approximately 20 percent, or 13 million, own one acre or less and can be classified as landless. Above this group is the small farmer who owns between one and seven acres of land, 70 percent or 47.3 million, fall in this category. The final 10 percent, or 6.8 million, own more than seven acres and can be classified as large land holders. This group also comprises the commercial sector of the rural population, which frequently controls rural credit, trading and the processing of agricultural products. However, small farmers hold 62 percent of the total cropped land so that there will be no major increase in agricultural output without their involvement.

Water is another major ingredient of agriculture in East Pakistan. Eighty to one hundred inches of rain fall in the Province during the monsoon from late May through September annually.^{18/} During the monsoon

^{16/} Economic Survey of East Pakistan, 1969-70, Table 1, pp. 102-3.

^{17/} Government of Pakistan, Census of Agriculture, Vol. I, East Pakistan, pp. 26 and 86.

^{18/} East Pakistan Water and Power Development Authority, Master Plan, Vol. I, p. 81.

30 percent of the total land area regularly goes under water and an additional 10 percent is subject to frequent flooding.^{19/} Yet from December to May it is dry, few crops can be grown and agricultural unemployment soars.

Rural unemployment is a major destabilizing force and a source of poverty. As the figure for landless labor already cited implies, there is a high rate of underutilization of labor. Unemployment was estimated at 7.9 million man-years in 1970.^{20/} This also has a very seasonal dimension, for in the dry season more than 60 percent of the agricultural labor force is unemployed. Any program of development in rural East Pakistan must be broader than just agriculture. What is required is a program of rural development which is designed to meet the needs of the rural landless and to enable the small farmers to increase their production.

4. Rural Organization in East Pakistan

The necessity for transforming East Pakistan's low-productivity, subsistence farming to a high-output, modern agriculture is clear. Yet because of unique physical, demographic and economic conditions that exist in the Province, major improvements in agricultural technology can promote agricultural development only if supported by a strong program of rural organization. The primary objectives of such an effort are: first, to organize small farmers so that they can take advantage of modern agricultural technology; second, to mobilize underutilized labor to construct the

^{19/} Calculated from Ibid, Vol. I, p. 88.

^{20/} Economic Survey of East Pakistan, 1969, p. 18.

physical facilities, primarily roads, drainage channels, and irrigation channels needed for a productive rural economy; and third, to provide a more equitable distribution of income and related social benefits.

The East Pakistan Academy for Rural Development at Comilla has been analyzing rural problems and carrying out an experimental program in farmer organization and rural development since its establishment in 1960. The model of rural development which has been established at Comilla has been widely acclaimed a success. There is increasing documentary evidence to support this claim. Comilla District is one of the poorest and, second only to Dacca, most densely populated in the Province, yet in 1969-70 the average boro per acre yield in Comilla Thana was 46.4 maunds per acre, while the Provincial average was 18.2 maunds.

More definitive is data gathered by S. A. Rahim which compares cooperative farmers in Comilla Thana with farmers in the neighboring Chandina Thana in 1964 and 1969. The results are contained in Table 3.

The pattern of rural development is clear in this table. Agriculture production has risen by 58 percent and per acre yields by 96 percent among Comilla cooperative farmers while in the neighboring thana, production and yield have only grown 10 percent. Net family assets in Comilla have grown 61 percent in constant prices while in the non-cooperative area, growth has been only 19 percent. This evidence of accomplishment over a five-year period indicates a degree of success in raising agricultural production and farmer incomes not experienced elsewhere in East Pakistan.

TABLE 3

An Economic Comparison of Comilla Cooperative Farmers and Chandina Farmers

	Comilla Cooperative Farmers N = 122			Chandina Farmers N = 30		
	<u>1964</u>	<u>1969</u>	<u>% change</u>	<u>1964</u>	<u>1969</u>	<u>% change</u>
A. Agricultural Production per family						
Land cultivated (acres)	2.39	2.15	-10	2.21	2.20	0
Paddy produced (maunds)	46.9	74.2	58	59.6	65.3	10
Paddy production (per acre)	17.6	34.5	96	27.0	29.6	10
Paddy sold (per family)	3.4	15.0	337	7.1	7.6	7
B. Average Family Assets *1 (Rs. in current prices)						
Land	11,782	22,943	95	10,872	17,795	60
Houses	751	1,473	96	675	1,080	60
Livestock	294	441	50	219	322	47
Agricultural Implements	21	40	90	18	22	22
Household items	214	575	169	124	292	135
Capital goods and business stock	10	240	2,300	26	51	96
Liquid assets	<u>331</u>	<u>2,184</u>	<u>559</u>	<u>210</u>	<u>383</u>	<u>82</u>
Total assets	13,403	27,896	108	12,144	19,945	64
C. Average Family Liabilities (total in Rs.)						
	726	1,755	141	397	628	58
D. Net assets						
	12,677	26,141	106	11,747	19,317	64
E. Social Indicators						
Family size	6.6	7.4	12	7.0	7.2	2
Percent literate	14.7	30.7	107	14.6	23	58

*¹The wholesale price index in East Pakistan has risen 45 percent over the same period.

Source: Data provided to author by S. A. Rahim, Director of Research, P.A.R.D., Comilla. (Permission to use this data requested, must not be quoted or copied without permission of S. A. Rahim.)

The Comilla model is based on five basic conclusions about rural development in East Pakistan.

1. Creation of employment opportunities for landless laborers is essential. This can be accomplished through widespread, labor intensive projects to develop rural roads and water management facilities.

2. Because individual farmers are, for the most part, so poor and have such small holdings, a way must be found to form them into units that are economically viable.

3. An effective level of administrative organization must be identified for the purpose of establishing supply, service and training systems for agriculture and for rural organization.

4. Any system of irrigation, drainage and water control must begin at the farm level and must contain the following elements:

- a) a means of planning and implementing the construction and maintenance of small local drainage, irrigation and flood protection works.
- b) a means of collecting information developed at the local level and aggregating it at the Provincial level for use in planning large-scale works.
- c) a means of organizing farmers for collective use of irrigation water before the water distribution system is created.

5. Leaders chosen by the local people and supported by the technical knowledge, financial resources, supplies and services of the Government must inform and mobilize the rural population in development efforts.

The programs which follow from these principles are mutually supportive with the new agricultural technology and when applied with that technology hold the promise of real rural and agricultural growth for East Pakistan.

The Rural Works Program

The East Pakistan Rural Works Program is designed to employ unskilled labor in construction of facilities essential in increasing rural productivity. Under the Works Program, funds were allocated to local councils to enable them to implement labor intensive construction projects in the area of their jurisdiction. The Local Government Department which administered the program limited the types of work that could be carried out to the construction of roads, drainage canals, flood embankments and a limited number of local government office buildings. Detailed administrative and technical instructions were given to the local councils, and a system of public information and government audits was instituted to minimize misuse of funds. Table 4 indicates the accomplishments of the program from its inception in 1962 through 1968.

The Program has been remarkably successful. The physical accomplishments represented a major increase in the facilities of the rural areas. An average of 40 million man-days of employment are created annually by the Program. The employment created sharply curtailed the rise in rural unemployment and helped raise rural wage rates in the slack season. Over all the Works Program proved a very economic investment of development funds. On the basis of one study which quantifies the benefits of the roads, drainage and embankments constructed under the Works Program, it is calculated that it yielded a 57 percent rate of return.^{21/}

The Works Program has proven a necessity to improve conditions for the

^{21/} See John Woodward Thomas, "The Rural Public Works Program in East Pakistan," G. F. Papanek and W. P. Falcon, eds., Development Policy II: The Pakistan Experience, Harvard University Press, (in press, 1971), for a discussion of the economic benefits of the Program.

TABLE 4

Summary of Accomplishments, East Pakistan Works Program1962 - 1968^{a/}

Hard Surfaced Roads (in miles)		Dirt Surfaced Roads (in miles)		Embankments (in miles)		Drainage Irrigation Canals (in miles)		Acres Benefitted by Columns				Community Buildings	Employment Created (in 000 man-days)	TOTAL Alloca- tions (in mln.)
New	Repaired	New	Repaired	New	Repaired	New	Repaired	5.	6.	7.	8.			
1	2	3	4	5	6	7	8	9				10	11	12
Totals 1962-68 ^{b/}														
970	3,160	20,925	115,211	3,743	7,595	9,031	9,966	7,191,403				9,584	172,958	Rs. 925 \$ 196

^{a/} Source: Performance Reports on Rural Works Program, 1962 through 1968.

^{b/} 1967-68 is the latest year for which official figures are available for all categories.

rural landless and unemployed and is adding to the productive capacity of the rural sector.

Despite its economic contribution, the Works Program encountered difficulties. From its inception to 1967, it was a remarkably effective instrument of development policy. By 1967 the political leadership had come to see the Works Program as an instrument for gaining political support and had succeeded in removing most of the obstacles to political control over the Program. During this period political loyalty rather than economic performance became the basis for the allocation of Works Program funds in many areas. The result was that from 1967 on, less new work was carried out, maintenance was neglected and the Works Program acquired a reputation for corruption.

With the change of government in 1969, direct political intervention in the Works Program stopped, but a reorganization and revitalization to insure priority on the most productive works is needed. The Program has demonstrated that its methods provide the most efficient means of creating employment and building rural infrastructure. Rural roads of the type built by the Works Program are essential to the movement of agricultural inputs and produce if agriculture growth is to take place. Small local drainage systems are the heart of a Provincial water management program, and local flood protection works will eventually form a part of a large flood control system. A works program of this nature is a tested component of effective rural development.

Thana Level Administration

The concept of the Thana as a unit of development administration is an innovation of the 1960's that was implemented along with the Works

Program. Prior to 1960 the Thana, with an average size of 125 square miles and a population of 160,000 was only a unit of police administration. In experiments at Comilla, however, the Thana proved to be the most effective unit for the organization of rural programs. The reasons for the effectiveness of the Thana level organization are three-fold. One, size -- the Thana is sufficiently large to make planning and implementing of projects within its boundaries technically efficient, and the technical agencies of Government concerned with development such as Agriculture, Education or Family Planning can afford to assign an officer with skill and experience to it. Two, communication -- it is sufficiently small that any Thana resident can easily travel to Thana headquarters and return home in a day and is small enough that a broad spectrum of the people of the area can participate in Thana activities and identify with its work. Three, economic organization -- it is the established unit of economic and commercial activities. The Thana headquarters is normally the site of the principal market of the area; other markets in the Thana are small and feed this one. It is also the location of whatever commercial services and supply outlets there are and the transportation center of the area.

At the Thana, a council, comprised of elected members from the Constituent Unions and the officers of Government Departments assigned to the Thana, is the chief policymaking body. The Government officers are headed by a Circle Officer (Development), a member of the Civil Service who is responsible for coordinating the work of Government officers in the Thana and for overseeing the planning and implementation of the development program in that Thana.

In 1964 the concept of the Thana Training and Development Center was introduced. The physical plant was constructed with Works Program funds. The Thana center contained offices for Government officials, class and meeting rooms. Subsequently, adjacent to the center, workshops for maintenance of irrigation pumps, fertilizer and seed warehouses have been constructed. Residences for Thana level officers have also been constructed to make assignment to the rural areas more attractive. As a result, for the first time, Thana level offices, services and supply facilities are available at a single location.

Most important is the fact that the Thana center represents a concept of adult education and farmer training that is very different from the standard agricultural extension approach. Instead of placing extension workers in each village or Union, villagers, model farmers, cooperative managers and other village leaders are brought to the Thana center for training. Each village irrigation group and agricultural cooperative elects a model farmer and a manager who attend classes one day a week at the Thana center. Here officers trained in general agriculture, irrigation, plant protection, and animal husbandry are all available to participate in the teaching. Management courses for cooperatives, literacy, health, family planning and rural midwifery courses can all be held at the Thana center. When there is a critical shortage of trained personnel, the possibility of finding 413 well-qualified officers for assignment to the Thanas is obviously much higher than finding 4,000 workers for the Union level or 45,000 for assignment to the villages. Furthermore, a strong case can be made that farmers have a much higher credibility among their neighbors than do government workers from another area.

If they can demonstrate on their own plots the superiority of specific inputs or practices, the effect on other farmers will be much greater than the exhortations of an extension worker. With the Thana training approach, a few well-qualified agriculturalists can be used to train farmers with considerably greater effectiveness than a large number of less well-qualified extension workers.

At present the role of the Thana is in controversy. It has been highly successful as a center of government offices and services. In the minority of areas where irrigation groups or cooperatives exist, model farmers come to the Thana center for weekly training. However, the Department of Agriculture opposes the concept and its application and is rapidly expanding the extension system while providing minimum support for training activities at the Thana level.

The Thana Irrigation Program

Unlike previous water development programs which began by investing in the creation of a water supply and then sending extension agents to attempt to create demand for water and to get the farmers to dig distribution channels, the Thana Irrigation Program began by organizing farmers to demand water. Farmers with contiguous plots of land totalling 40 to 50 acres can form an irrigation group. Such a group must elect a manager, a model farmer, and a pump driver, all of whom will be trained at the Thana center. They must also agree to meet a graduated schedule of fees and the fuel costs if they are provided a low-lift pump or tubewell. Once the group is formed and these conditions met, they may apply for a water supply.

The Program attempts to provide water in the simplest and least expensive manner. For that reason most of the efforts have focused on

lifting surface water from the Province's numerous rivers, canals and swamps to irrigate adjacent fields. In 1970-71, 26,000 low-lift pumps were fielded. It is estimated that there is surface water for up to 40,000 low-lift pumps. As the number of low-lift pumps expands and the limits of available surface water approach, attention is being directed toward tubewell development. Low-cost tubewells have been the basis for the extensive dry season irrigation at Comilla, and a variety of techniques for installing wells are scheduled to be tried around the Province.

The Thana Irrigation Program's success can be measured by its rapid expansion. It was first initiated on a Provincewide basis in 1968-69, and by 1970-71 it had placed 26,000 pumps in the field capable of irrigating 1.3 million acres. This is the principle reason why boro rice production grew from 830,000 tons in 1967-68 to 1,650,000 tons in 1970-71.

The Program is also important because it was the first time that farmers have ever shared in the cost of irrigation in East Pakistan. Under a seven-year scale of diminishing subsidies, farmers bear a growing proportion of the cost of water as their capacity to pay grows along with their production. In 1968-69 Rs. 1,574,100 was collected for pump rentals. Another Rs. 6,296,400 was paid to pump operators. In addition, pump groups purchased 2,771,543 gallons of diesel fuel at Rs. 1.38 per gallon, thus paying Rs. 3,833,009 for fuel. Of this, 55 percent, or Rs. 2,108,154, represented duties and taxes and was thus repaid to the Government indirectly. Therefore, farmers paid a total of Rs. 11,703,507 (excluding their contribution in constructing all the field channels) for the Program while the Government's expenditure was Rs. 60,000,000. The fact that farmers bore 16.3 percent of the Program cost in the first year is of importance

because it is the first time that East Pakistan's farmers have made any financial contribution to a water development project. This begins the reversal of a long-term tendency toward paternalism on the part of the Government which diminished rural participation and created a pattern of depth rather than breadth in public investments with the resultant reduction in benefits.

Another important benefit of winter irrigation is its contribution to employment. It has already been noted that unemployment is concentrated in the winter or dry season. With irrigation, additional demand for agricultural labor is created. A study of rural unemployment by the University of Dacca^{22/} indicated that one acre of rice in one crop season requires 60 man-days of labor. Calculating from this, the Thana Irrigation Program in 1970-71 created over 75 million man-days, or 312,000 man-years, of recurring agricultural employment. These employment opportunities will grow as the Program and other projects to provide water irrigation expand. The 40,000 low-lift pumps the Government intends to field by 1972 will create 480,000 man-years of additional annual employment in agriculture, plus the operating and maintenance jobs necessary for the Program.

Compared with other efforts at irrigation, the Thana Irrigation Program has been highly successful. The ADC's power pump cultivation program was able to field only 3,900 pumps between 1958 and 1967. The projects of EPWAPDA and of its predecessor agencies in their 20 years of effort have added only 94,563 acres of land to that under cropping through irri-

^{22/} Bureau of Economic Research, Dacca University, The Pattern of Agricultural Unemployment, Dacca, 1962.

gation. The cost of this, if 25 percent of water development cost for the three Plan periods is attributed to irrigation, has been Rs. 720.2 million, and the farmers have borne none of this cost. The economic comparison is clear: if the cost per acre of land brought under cultivation by irrigation through the large WAPDA-type projects is compared with that of the Thana Irrigation Program. Government cost in the Thana Irrigation Program amounted to Rs. 141.24 per acre irrigated while large project irrigation costs Rs. 7,609.26 per acre. These figures are in no way indicative of future WAPDA irrigation costs since they include some very expensive and presumably educational failures. They do, however, indicate that the Thana Irrigation Program has been the most successful irrigation effort launched by the Government.

It is important to analyze briefly why the Thana Irrigation Program was so successful. Two factors stand out: One, it began by insuring that farmer demand for water existed. No water was provided until the farmers themselves took the initiative to obtain it and agreed to meet a portion of the cost. Two, the technology of the Program was simple, the technical details were carefully worked out in advance and the system was something the farmers could understand and control themselves.

The future potential of the Thana Irrigation Program is high. The possibility of groundwater exploitation through tubewells has already been indicated. The important fact is that the Program has developed an effective way to organize farmers. This can now be used for other types of water projects. This has already occurred in Thakurgaon, where WAPDA obtained rural organizers from Comilla who organized farmers in the tubewell areas and converted an unsuccessful project into a successful one. If the lessons of the Thana Irrigation Program or the structure of the Program itself are incorporated in future water projects, their prospects

for success will be immeasurably higher.

The Comilla Agricultural Cooperative System

The Comilla agricultural cooperative model has a two-tier structure, with primary societies formed at the village level supported by a Thana Central Cooperative Federation. Between 1965 and 1970 these cooperatives have been initiated in the twenty Thanas of Comilla District. Although there has been a Provincewide cooperative structure with Union multi-purpose societies as the basic unit, these were widely recognized to have been taken over by the large farmers and operated for their own benefit. As a result, they were to be replaced by the Comilla-type cooperatives under the Integrated Rural Development Program, a nine year program to extend this cooperative system across the Province. The Integrated Rural Development Program was initiated in early 1971 and was to include a total of 50 Thanas before the end of the year. But civil war has now intervened and the future of the program is uncertain.

The cooperative system is the critical element for increasing small farmers' production. The village agricultural cooperatives form small farmers into farming units of an economically viable size. Their objective is not commercial farming but a cooperative sharing of agricultural inputs and economic resources and functions. In its initial phases the cooperative system would concentrate on establishing an effective system of agricultural credit and savings. Subsequently, the village and Thana association may begin storage, marketing and processing operations.

Traditionally, East Pakistan has had three sources of agricultural credit. First taccavi loans, from the Agricultural Department, which were tantamount to relief grants handed out in limited quantities by

agricultural officers and repaid only in about 20 percent of the cases. Second, loans through the Provincial Cooperative Bank to Union Multi-purpose Cooperative Societies, generally controlled by one or more wealthy rural citizens with loans rarely repaid. Third, the Agricultural Development Bank which lends primarily on commercial terms and whose natural and appropriate constituents are the large farmers and agricultural businesses. Even the ADB has had a record of 30 percent default on loans. As a result there is no widespread, reliable system of agricultural credit for the small farmer, and without repayment, the Government cannot extend it.

Knowledge of Comilla's success has spread widely around the Province, and there is considerable interest in forming village cooperatives. Initially irrigation groups in existence will be encouraged to become cooperatives. The Integrated Rural Development Program will also assign cooperative organizers trained at Comilla to assist village groups form cooperatives.

Cooperatives, once formed, will be required to begin a program of regular savings. In the 20 Thanas of Comilla District where cooperatives have been started, savings average an amount equal to 35 percent of loans outstanding. Credit is provided by the State Bank through the Thana Cooperative Federation. Most of the credit is production loans but a few loans are made for other specifically stated purposes such as mortgage loans on lands, loans for agricultural equipment or animals. The farmers pay 13 percent for the credit, of which 5 percent is paid to the State Bank and 8 percent is a service fee to meet the costs of the village and thana cooperative. It is proposed that the State Bank's loans to each Thana be

made on a 25 year term with a five-year grace period.

After the cooperatives are firmly established and the operations function effectively, if cooperatives follow the pattern which has emerged in Comilla, they will begin to expand their operations into storage, processing and marketing. In this, economies of scale make the Thana the effective level of operation. In Comilla the Thana association began by milling and storing rice produced by its constituent village cooperatives then selling it at a time when they could take advantage of seasonal price fluctuations. They have also developed cold storage and rapid marketing arrangements so that farmers could produce vegetables for urban markets. Comilla has also gone into poultry and dairy production, tubewell installation and mechanized cultivation. There are numerous possibilities and they will naturally vary from place to place depending on the production traditions and capacities of the area.

In the storage, processing and marketing activities, the savings of the village cooperatives will be of importance. As rural incomes rise, cooperative savings are one of the least onerous means of mobilizing resources for further investment. By strictly enforcing the savings discipline, these rural surpluses can be captured and the activities of the cooperative extended to other rural small industries.

The extension of cooperative efforts into these areas will be just as critical as the establishment of effective credit operations. Large landowners commonly control rural credit and the storage, processing and marketing of agricultural produce. The control of these functions by one powerful person insures that he, rather than the small farmer/producer, reaps the benefits of an increased production. This pattern is clearly prevalent in the jute trade. It has served to hold the grower's price

for jute at a low level, far below the Government's established minimum price for growers, and thus to stifle jute production. Unless this economic nexus can be broken, the small farmers have little chance of obtaining the full benefits of agricultural development and little incentive to increase production.

Since it is basically a program to establish a new set of rural institutions, the Integrated Rural Development Program will take time and continuing supervision and assistance to become effective. Its success will be measured in terms of rising agricultural output and growth of rural incomes over the full range of rural residents.

The cooperative program is essentially a small farmer's program. Without cooperatives only the large farmers will be able to afford the new technology. The large farmers do not at the present time hold enough land to make any major breakthrough in production possible. Yet if they were the only ones who had funds to purchase the new technology, their incomes would rise rapidly while those of the small farmers would stagnate. The large farmer's surplus would undoubtedly be invested in land purchased from the more marginal farmers. The result would be larger land holdings on the part of the well-to-do 10 percent and a growing group of landless. This would have serious social, political and economic consequences.

5. The Prospects for Effective Rural Organization in East Pakistan

Establishing an effective system of rural organization around the various programs described will be a difficult but critical process for East Pakistan. One fact that has become clear to those concerned with

rural development is the critical inter-dependence between the four components of the system just described. Rural works are essential if the landless are not to be excluded from any development that takes place in the rural areas. Works are also essential to build the infrastructure of roads, water control, drainage and irrigation channels that are all essential elements in a productive rural sector. The thana level organization is essential if the technical assistance the Government must provide if it hopes to increase output is to be effectively made available to the farmers. The Thana center is also essential as a location of supplies and services. The Thana Irrigation Program is crucial for its direct productive results. If the rural development system does not provide the means to increase productivity, it cannot hope to succeed over time. The small farmers' cooperatives are the key to the entire system since they provide the economic basis for increasing small farmer productivity. Credit makes the new technology available, and savings make possible processing, storage and marketing which in turn make production profitable. Cooperatives also promote and develop the managerial and technical skills which are necessary for these enterprises. However, the cooperatives are equally dependent upon the other programs to provide the benefits described. Farmers whose lands are not served by roads, protected from floods, drained or irrigated will not be able to increase their incomes despite cooperatives. Works, irrigation, technical services and cooperatives provide an integrated system that must function as a whole supported by adequate Government investment if rural development is to succeed.

The cooperative portion of the system, as well as being the most productive link, is the most difficult to establish. Recognition of this fact caused the Comilla leadership to refuse to allow the cooperatives to be duplicated when other portions of the Comilla model were being extended across the Province. They were convinced of the necessity to have the cooperative design tested for as long a period as possible and then expanded to other areas only gradually. This caution was fully justified.

The program of rural organization outlined has important social and economic effects. The large farmers will recognize that it challenges their control over the rural economy. Their opposition will take many forms, and it will be difficult to overcome if it is overcome at all. In Comilla, opposition took the form of overt attempts to gain control of cooperatives and pump groups, attempts to undermine confidence in cooperatives, outright threats and a system of intentional defaulting on loans. Despite these attempts and because of close control and supervision, the majority of Comilla cooperatives are succeeding. Undoubtedly this opposition will be repeated in every Thana in which cooperatives are begun and others may not have the close supervision and strong leadership that existed in Comilla.

Akhter Hameed Khan in a tour of the twenty Comilla thanas that now have a Comilla-type cooperative system reports:

"The problem of wilful and mischievous defaulters is specially alarming. Historically, the old cooperative system was captured by influential people and they castrated it by wilful default. The same sort of people want to perform the same operation on the new cooperative system. They are powerful and well informed. They know that the old sanctions are now dead, and they can repudiate their obligations

"with impunity. If the new cooperatives are to be saved, the other members, the majority of small farmers for whom cooperative credit is the only means of escape from the clutches of the moneylender-traders, must create new sanctions. They must learn to control disrupters by developing a new set of rules of 'bichar' and 'shasti,' a kind of members court. Similar sets of rules need to be evolved for non-members refusing to pay for irrigation water."^{23/}

All the problems encountered at Comilla and many new ones will emerge elsewhere. To impose this type of cooperative from above would be to vitiate it. It will take confidence and determination on the part of the small farmers, the most able leadership at the Thana level and strong support and discipline from the Provincial level if the gradual readjustment of economic power is to take place in the villages.^{24/}

It is interesting to speculate on the nature of this conflict. The large farmers who will be the principal source of opposition are outnumbered 9 to 1. Yet their sources of power are great; however, the power which has traditionally been of most importance, large holdings let out to tenant farmers, is of lesser importance in East Pakistan. Other questions arise, such as whether the landless and the small farmers will be able to work together against the large farmer or have the confidence to oppose the large farmers, which will have to be answered. On product of involvement in cooperatives noted by a sociologist studying the effects of

^{23/} Akhter Hameed Khan, Tour of Twenty Thanas, PARD, February, 1971, p. 15.

^{24/} China's experience in attempting a much more total rural revolution suggests that the process is long and arduous. It has taken at least twenty years to establish the communes which have only recently given evidence (as yet not fully documented) of success. This process is carefully documented in Chao Kuo-Chan, Agrarian Policies of Mainland China: A Documentary Study (1949-56), Harvard University Press, 1957, and described in great detail in William Hinton, Fanshen, Vintage Books, New York, 1966.

the Comilla experience on villagers is their sense of "efficacy" in dealing with their world.^{25/} This sense of efficacy may be crucial if enough of it can be developed before a showdown with the large farmers occurs.

Another unknown element in the situation is the impact of the military action which has now spread across the entire countryside. The conflict has caused millions to leave their homes, villages to be burned and widespread killing. This wholesale violence in the countryside will have long-term effects on the rural people. Unlike past changes in Government which have been primarily urban in impact, military action and rural-based insurgency may well initiate a process of rural revolution more on the basis of China's model than Comilla's.

While the success of cooperatives and rural organization in the countryside is uncertain, the commitment of the Government, both Central and Provincial, is also considerably less than total. Government has approved and funded the Works and Thana Irrigation Programs, accepted some elements of the Thana level of administration and has approved the Integrated Rural Development Program. Despite this official sanction, it is clear that there are important groups and agencies at the Provincial and National level which have little real understanding of or sympathy for the type of rural organization which has been discussed here.

The attitudes at the Provincial level toward the Comilla rural development system vary according to how each group is affected. The civil service is inclined to be skeptical because of the implications of decentralization which it implies. However, many individual officers have

^{25/} Howard Shuman, Economic Development and Individual Change: A Social-Psychological Study of the Comilla Experience in Pakistan, Harvard University, Center for International Affairs, Occasional Paper No. 15, February, 1967.

strongly supported the Comilla ideas. The opposition of the Department of Agriculture is predictable. They see in it a serious challenge to their expanding extension network. EPWAPDA has been irritated by the fact that the performance of the Thana Irrigation Program showed up their inadequacies, but they are too powerful in their own sector to feel challenged. They have, however, learned something of the lesson of farmer organization and are attempting to develop organizational skills within their own agency. The Cooperative Director has been in bitter opposition to Comilla, with good reason. The decision to abandon the Union Multi-purpose Cooperative System has left them with only minimal legal responsibilities for cooperatives. The ADC leadership has been sympathetic and has occasionally acted as a Provincial level sponsor for rural programs. This, however, has brought them into sharp conflict with the Department of Agriculture. The Local Government Department has been Comilla's strongest supporter, but it has become an increasingly weak agency itself. The foreign aid donors have supported the Comilla concept, and P.L. 480 funds have regularly gone into the Works and Thana Irrigation Programs. The World Bank's East Pakistan Action Program enunciated clear support for the creation of a rural development system on the Comilla model. Finally, there has been no strong political commitment to any particular approach to rural development. While past regimes have tended to give administrative support to the Comilla-type programs, they have looked to the large farmers for political organization and backing. Clearly, if confronted with a conflict, they would have supported the large farmers.

In summary, there is considerable support for the establishment

of the Comilla system or it would not have gotten the degree of acceptance which it has received. Nevertheless, it has powerful opponents and it does not have the total benefit of sponsorship or even total support of any powerful provincial agency. This rather tentative commitment to rural organization suggests that all the problems may not be at the village level since success in this strategy will require firm determination at the Provincial level as well as at the village level.

6. The Relevance of East Pakistan's Experience to Other Areas

Why is the East Pakistan experience important despite its present uncertain status? Rural organization has long been a critical input to successful agriculture. In Karl Wittfogel's historical study of the civilizations of the Near East, India and China which he characterizes as "hydraulic agricultural societies," success was based on the "key organizational device: cooperation."^{26/} Only recently when a new agricultural technology was developed which promised great increases in production was the organization of agriculture neglected. Now that the initial gains of the new technology distributed through the market system have been exploited, leaving in their wake serious problems of distributional equity, it is important to focus on the organization means of further extending the benefits of that technology.

Many other areas, particularly of Asia, the island of Java in Indonesia, West Bengal and Kerala States in India, central Luzon in the Philippines, to name the most prominent, are faced with roughly similar

^{26/} Karl Wittfogel, Oriental Despotism, Yale University Press, 1957, (paperback edition, p. 25.)

conditions and whose populations combined with East Pakistan's exceed 200 million. Agriculture growth in these areas requires farmer organization as an additional input to agriculture.

Unfortunately, there is no universally applicable model of farmer organization. Attempts such as the community development programs of the 1950's to create a universal pattern of organization failed. Rather, it is necessary, borrowing where possible from others' experience, to develop the necessary program for economic, social and political conditions in the area where it is to be used.

It is possible too that farmer organizations could play an important role in extending the benefits of modern agriculture to small farmers in areas such as West Pakistan where large farmers have already benefited greatly from agricultural growth. Although private investment has produced many satisfactory levels of growth, it has created growing problems of equity. Rural organization is needed in these areas as well to extend the means of increasing production to those previously left out. Only in this way can the growing problem of inequities already visible in West Pakistan be diminished.

It is essential that those concerned with the equitable growth of incomes in the poorer nations focus their attentions and efforts on the creation of effective rural development systems. This is the next step in modernizing agriculture. Unless this is done, some of the pessimistic predictions about the destabilizing effects of rapid agricultural growth may prove correct.