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RURAL DEVELOPMENT PROGRAMS FOR ADAPTATION FROM COMILLA, BANGLADESH

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"...The crucial feature of traditional agriculture is the low rate of return to investment in agricultural factors of the type that farmers have been using for generations, ... in order to transform this type of agriculture a more profitable set of factors will have to be developed and supplied. To develop and to supply such factors and to learn how to use them efficiently is a matter of investment--investment in both human and material capital."1/--T. W. Schultz

I. INTRODUCTION AND BACKGROUND

Introductory material and background on the Academy for Rural Development in Comilla and the methods used in developing rural programs are presented first. The paper then briefly describes essential elements of six rural development programs organized at Comilla. Detailed analysis follows of two of these programs: improvements in rural government, and development of new agricultural cooperatives. Conclusions about the potential of these programs for adaptation in other nations are presented in the final section.

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The social and economic transformation of low income developing societies is dependent upon the continuous flow into agriculture of investments in modern technology with high economic returns. Upon this economists are in general agreement.

Less emphasized in the literature about economic growth from traditional agriculture, are the associated institutional changes required in this transformation. The elaboration of a large number of new or modified institutions accompanies rapid economic growth. These non-marginal economic changes are in the public, quasi-public and private sectors. In Pakistan, a major change required of the governmental system was to shift from primary emphasis on law and order, and tax collecting, to major focus on developmental activities. How to modify or create effective governmental and other institutions at the local level for more rapid economic and social development was the task facing Pakistan and the Academy in the late 1950's.

An exceedingly complex set of questions are involved in determining how to go about changing institutional arrangements and accelerating farmers' investments in modern technology in the varied cultural, economic and technical environments in different parts of the low income world. One extreme strategy is to attempt to assure that highly productive agricultural technology is available in the society and let entrepreneurs come forward and make the investments which will result in accelerated growth. Another extreme strategy is based on the assumption that government knows best how to and is able to rapidly develop agriculture.

This approach has often involved the complete reorganization of rural society into large collective or communal farms such as in the well known cases of the USSR, Yugoslavia, and Mainland China.[2/] These two extreme strategies have had serious shortcomings from an economic as well as other points of view. The well documented less extreme national strategies for accelerating agricultural growth in small farm agriculture in Japan, Taiwan, India and earlier in Denmark have had considerable success.[3/]

Currently in the developing nations,a number of carefully worked out approaches and experiments are underway attempting to accelerate the economic and social transformation of rural society without the mistakes of attempting to directly transplant foreign models. The rural development programs developed at the Academy for Rural Development in Bangladesh are one set of these experiments. The Swedish aid work on the Chilalo Agricultural Project in Ethiopia is another.[4/] A different approach was followed in the Puebla Project in a rainfed area of Mexico.[5/]

A. The Nature of the Academy and its Environment

Details of the history of the Academy for Rural Development in Comilla are generally well described by Raper.[6/] In brief, the Academy is government training and research institution,which commenced operating in 1959. It was a new type of institution in Pakistan charged with providing in-service training to members of the Civil Service for improved performance in development activities in rural areas. In 1959, its staff of professionals consisted of 10 individuals,only two

of whom had Ph. D.'s. The Academy faculty's expertise was predominately in social science fields--education, psychology, sociology, economics, and political science, etc.

Illustrative of its training program is the following list of training courses given in 1968-69: rural development courses for East Pakistan Civil Service Probationers, for Circle Officer Probationers, and for Civil Service of Pakistan Probationers; job training courses for project and deputy project officers for district rural development programs; specialized job training courses for fertilizer inspectors of the East Pakistan Agricultural Development Corporation, Circle Officers, Thana Irrigation Officers, and Thana Agricultural Officers, managers and model farmers of irrigation groups under the Thana Irrigation Program; courses for students from the Social Welfare College of Dacca, from the Department of Journalism, Dacca University, and from the Agricultural University Mymensingh; plus various specialized programs for international participants sponsored by the United Nations and AID for a total number of participants in courses of 3,930.[7/]

Numerous research and evaluation studies have been published by the Academy. Major studies are listed in the selected bibliography. A complete list of publications of the Academy through 1971 is forthcoming.[8/]

In evaluating the impact of the activities of the Academy for Rural Development, it is important to know the major official and unofficial linkages between the Academy and the government of Pakistan. In the original scheme for the Academy proposed by the Government of

Pakistan, a high-level Board of Governors was specified to provide policy and broad managerial guidance for the research and training activities of the Academies. An early decision also determined that the Director of the Academy should be a person of considerable seniority and of sufficient status to be able to undertake the training of Civil Service of Pakistan officers at the level of Division Commissioners and Secretary of Government. From 1962 on, the Academy at Comilla had a Board of Governors headed by the Chief Secretary of the Government of East Pakistan with members representing the Central Ministry of Finance, the Establishment Division, the Provincial Secretary of Finance, Agriculture, Basic Democracies and Local Government, Education, Register of Cooperatives, the Vice Chancellor of the University of Dacca, and two non-officials appointed by the Governor. The Director of the Academy was member-secretary. The membership of the Board was therefore representative of the major users of the teaching and research services of the Academy. 9/

In addition to the strong formal institutional inter-linking of the Academy with government through the Board of Governors, the personal characteristics of the first Director, Akhter Hameed Khan, further strengthened these interrelationships. For he, as a former Indian Civil Servant, knew personally and had equal status with many of the major figures in the Civil Service of Pakistan. Thus, the design of the institutional linkages between the Academy and the other relevant departments, and the status and individual characteristics of the

first Director all provided the crucial linkages for the exposure of government personnel in relevant departments to the pilot and research programs of the Academy.

With respect to financial and personnel resources, the Ford Foundation provided capital grants for the Academy buildings. Financial support for the annual expenses of the Academy were shared by the Central Government and the East Pakistan Government. In 1969, these annual expenses were at a level of $181,000.[10/] These funds supported the Academy facilities and administrative personnel and a professional staff of 18 instructors and 21 research assistants. Technical assistance, mostly in the form of advisors, was provided by the Ford Foundation through a contract with Michigan State University from 1959-71. This included an initial training period for the 10 original staff members of the Academy at Michigan State, and the provision of a total of 7 resident advisors at Comilla, as well as 6 short-time consultants. Additional support was provided by Peace Corps volunteers and experts from the Danish Government, the British Government and the Japanese Government. Additional research and other funding was provided to the different experimental programs from various other sources. These are detailed in the Academy reports and by Raper.

The physical environment of the Academy is presented in detail in a number of studies including that by Muyeed[11/], as well as in many other Academy research publications. The salient features of this environment are small owner-operated rice farms with an average landholding

of 1.46 acres. The overwhelmingly dominant rice crop is grown in three seasons under a tropical monsoon climate with an extensive summer rainy season involving flooding of much of the land and a rainless winter season. Rice occupies about 90% of the cropped acreage. The average cropping intensity was 1.6 in 1968.

The general ideological environment provided by the Government of Pakistan was officially termed Islamic Socialism. However, little direct ideological influence was felt at the Academy. A more important governmental influence on the Academy's activities were factors related to the nature of the Pakistan Government which was dominated by the heritage of a colonial civil service. The "Iron framework" of Pakistan had generally been trained to focus on the limited problems of law, order and taxation. There is consensus that the high-ranking officers of this civil service were highly intelligent and well educated individuals. Most of them, however, had urban biases and little knowledge of rural development needs and programs.

Methods Used for Developing Pilot Programs

Bold experimental and pilot field programs were fundamental to the wide ranging impact of the Academy. The six rural development programs discussed below were the result of pilot activities conducted by the Academy for Rural Development in one Thana (county) in East Pakistan containing 107 square miles and in 1961, 217,297 people. These rural development programs are strategies for the involvement of all the people of the area. They were designed to provide a way in which farmers

and others gain increasing access to meaningful economic, political, and social activity. The activities have been the result of careful experimentation in the local cultural environment. Continuing research and evaluation of program operations are undertaken.

These development programs are limited largely to improved organizational activities focused on the supply of more profitable new technology to farmers, including the provision of training--to insure the required investment in human capital for productive use of the new technology. In this process, Comilla programs have undertaken a great deal of local testing of crops and farm equipment. The Academy, however, was not assigned the task of developing new and more profitable agricultural technologies.[12/]

The methods used in the Comilla Rural Development Programs developed out of a need of the Academy at its establishment in 1959. In an early statement, Akhter Hameed Khan, the first director of the Academy and dominant figure in the development of the programs at Comilla, said, "Our training activities have been formulated around these rules: that training should be supported by research; that training should be supported by experimental efforts to test theories and find workable procedures;..."

"When we began work, the first serious problem was that the instructors had no experience in rural development. Whatever knowledge they had was of an academic nature. The instructor in rural business management had only the experience of having managed to get himself out of the village! Our ignorance could not be removed by reading books. The number of surveys of this part of the world is very small and most of these are about India. But even these only described things as they exist. We were here to try to discover things as they should be and then plan the training accordingly."[13/]

As a result of this view of the Academy's training problem, a major portion of faculty energies were immediately channeled toward undertaking and analyzing pilot experiments in rural development. These experiments were essential to provide the faculty with useful materials for use in the classrooms with the civil servants.

In 1960 experimental and pilot activities were facilitated when Comilla Thana was designated as a developmental laboratory in which programs and administrative experiments could be undertaken by the Academy. Although villagers were the primary target group of the experimental programs some urban citizens in the city of Comilla were benefitted, particularly by the cooperative credit activities.[14/]

With respect to the overall goals of the Academy, Dr. Khan's view was:

> "What we are trying to evolve here is a pattern for the future administration of East Pakistan at the Thana level. This is our primary aim. We are not engaged in a little experiment. It is by no means an academic exercise or simply a research project. It is an attempt to find out what can be done to bring about the soundest and quickest economic and social development all over East Pakistan."[15/]

The Pakistan Academy for Rural Development at Comilla, lead by Dr. Khan, was thus the initiating institution for various experiments and programs in rural development. In the rest of the paper, the focus will be placed on individual programs initiated by the Academy.

II. THE STATUS OF SIX MAJOR PROGRAMS

We now consider briefly six major programs developed by the Academy: agricultural cooperatives, the Thana Training and Development Center, the Thana Irrigation Program, the Women's Program, Rural Education Experiments, and the Rural Public Works Program.

Agricultural Cooperatives. Early in 1960, experimental efforts led to the organization of a number of village-based cooperative societies. The Comilla type cooperatives had sustained growth in all three cooperative development efforts. (Table I). In view of the dismal history and the great difficulties faced by cooperatives in developing societies, this record of sound growth is perhaps unequalled over the first eleven years in any developing society. The government of Pakistan recognized this achievement in the Fall of 1970 by undertaking to implement the organization of Comilla type cooperatives throughout the province of East Pakistan. Analysis of this program is undertaken later in this paper.

Thana Training and Development Center. A second major program was the experimental activity began in 1960 directed toward the organization of the Thana Training and Development Center. A Thana (county) is one of 413 administrative units into which East Pakistan was administratively divided. This program is examined in detail below.

Table 1

Status of Comilla Type Agricultural Cooperatives, 1970

	Coop Societies Per Thana	Coop Members Per Thana	Average Shares and Savings Per Member	Average Loan Issued Per Member	Per Cent Overdue Loans Over Total Loans
	Number	Number	$	$	%
Comilla Thana A.C.F. 1960/61 - 1968/69	301	11,673	28.98	52.71	(2.0% more than 1 year)
Three External Thanas 1963/64 - 1968/69	229	5,873	10.34	57.75	4.4% (2.5% more than 1 year)
Seven Comilla District Thanas 1965 - Nov. 1970	196	5,620	19.53	54.60	9.5% (default)
Total for all 11 Thanas	2,360	68,632			

Source: A New Rural Cooperative System for Comilla Thana. Ninth Annual Report. Pakistan Academy for Rural Development. 1970. And, Khan, A. H. Tour of Twenty Thanas. Pakistan Academy for Rural Development. 1971.

In summary, the Thana Development and Training Center Program was accepted in 1964 as a province-wide program in East Pakistan. Funds were allocated for the construction of developmental centers in all of the non-urban thanas in East Pakistan, based on the Comilla model.[16/] Currently most thanas in the province are using a development center similar to that experimented with at Comilla.

Thana Irrigation Program. The two season monsoon climate in Bangladesh presents major problems of water control. In Comilla, which is representative of most of Bangladesh, the dry winter season has less than 2 inches of rain per month during the four months of November - February, requiring irrigation for the production of most crops. In contrast, the five very heavy rainfall months of May, June, July, August, and September include 10 inches of rain per month. An annual average of 94 inches falls on Comilla. As yet, the immense problem of harnessing and controlling the gigantic Ganges and Brahmaputra River systems and of providing drainage during the rainy season have only begun to be faced. In relation to this immense national task, relatively few major river and flood control works have been completed.

Given this water situation, the Academy early concluded that it might be able to undertake some local activities which would reduce flooding during the monsoon season. It also saw a major opportunity in local irrigation activities in the dry winter season. The approach involved use of the accumulated water in the ponds and rivers through

low-lift mechanical pumps and secondly, experimental activity in the use of tubewells for the provision of a greater quantity of water, for it was soon recognized that available surface water was quickly used up in the dry season. Basic problems here related to how to reduce the costs of the tubewells, how to assure their continuous operation and repair, and how to assure payment for installation and operation. The cooperative system proved a solution to the managerial problems. The early attempts to develop mechanical pump irrigation in the Thana are provided in a number of reports.[17/] The growth in irrigation activities and the problems faced are documented in the annual reports of the Academy and by Raper.

On the basis of the experiments at Comilla, decisions were taken early in 1968 to launch a province-wide Thana irrigation program. In 1968-69, the first year of this province-wide irrigation program, the target was distributing and operating 11,500 low-lift water pumps for irrigation and 700 tubewells of 6-inch diameter to be sunk by the East Pakistan Agricultural Development Cooperation. The 1969 evaluation report states that 10,852 low-lift pumps were used by groups in the 1968-69 season, and 638 tubewells were sunk, of which nearly 200 went into operation during the year.[18/]

These data convey very little of the immense training achievement these figures represent. For example, 8,000 individuals were trained in the operation of the low-lift and the tubewell pumps. Also, the activity required to assure payment for the use of the pumps involved

was an immense effort. The first recommendation of the 1969 evaluation report was "that the program should continue and expand in future years."[19]

Women's Program and Family Planning

> "One cause of our misery and poverty is that we keep our womenfolk at home guarded over constantly. We keep them indoors. We have almost imprisoned them. We do not educate them, and because they are confined, they cannot educate themselves; so they are nearly all illiterate. They are timid. And so long as the women are uneducated, development can hardly be expected in our country."[20] A.H. Khan

> "The women's program is intended to bring women out from the physical and psychological seclusion that has withheld their productive energies from the mainstream of development. They are to learn how to get about independently and with dignity, how to earn small sums of money through a variety of economic activities convenient to their household obligations, and how to enrich the health and social life of their families."[21]

In attempting to provide some solution to this problem, exploratory activity by Academy staff in the villages in conversation with both men and women resulted in the decision to develop a series of training programs at the Academy for women. These commenced on January 1, 1962. These experimental training and other activities for women at the academy have continued. Content of the training classes includes child care, maternity diseases, family planning, literacy, sewing, spinning, poultry raising, gardening, sanitation, first aid, and silk screen printing. More specialized training programs were also developed for midwives. The development of economic activities for women commenced with the provision of hand-spinning machines in 1963. Other activities included sewing and weaving, rice-hoeing, the use of wheat in the diet

which led to development of training in family nutrition. The amount of participation by women is indicated by the following figures for the 1968-69 year: 13 training groups involving 304 women in classes of 7 to 50 days.[22/] In 1969, women's programs patterned after those at Comilla were begun in three experimental farm project areas in different parts of East Pakistan by the Agricultural Development Corporation.

Associated with the women's program, an experimental family planning activity was undertaken in July, 1962 with support from the Provincial Department of Health. This rural pilot family planning program was laid out in three parts: action, promotion, and research. During the 1960's, considerable experimental program activity and research was carried out at Comilla. The research was partly supported by the Population Council and included technical assistance by a number of researchers from overseas. As a result of this pilot and experimental activity, a number of valuable lessons were learned with respect to the response of villagers to different approaches to providing both materials for family planning and for the communication of the goals and knowledge about how family planning devices are used. This research was of particular value in a Moslem rural society where considerable uncertainty about the acceptability of family planning ideas existed.

Effective promotional techniques developed at the Academy included the creation of songs about family planning which are sung in local markets as well as broadcast over government radio.

Action parts of the family planning program were integrated with the national scheme for family planning in 1965, under the administrative control of the Thana Family Planning Officer. Research and experimental program activities have continued with a view to keeping the family planning activity in Comilla Thana as a model for the rest of the province.[23/]

Rural Education Experiments. As in many developing countries, the educational system in Pakistan is largely a legacy of the colonial rulers. In Pakistan, an urban and clerical bias predominated. In 1959, in Comilla Thana only one-fifth of the population over 5 years of age was literate. Given this educational environment, the Academy undertook experiments in education beginning in 1961. The four main programs are: (1) introduction of a "rural bias" (farm life related education) in all of the rural schools in Comilla, Thana through a pilot school project; (2) the "feeder schools" programs (one teacher village schools for small children and adult illiterates), started in early 1963 in the villages with cooperative societies; (3) the training of the village women to teach literacy classes in the villages and to teach small children in government primary schools; and (4) the school plant improvement project launched in early 1964 as a part of the Public Works Program.[24/]

The status of these programs in 1969 was as follows: The pilot school project evolved into the operation of youth clubs in all of the 69 primary schools in the Thana, with a membership in 1968-69 of 5,720 students. Teachers, however, were apparently reluctant to participate

In the youth club programs without additional pay.

The feeder school program has become an Imam (religious leader) teacher program. These religious leaders were given training in literacy methods at the Academy. They taught 135 classes to 4,227 students in 1968-69. In addition, they operated literacy classes for adults in which 2,875 persons attended. The women's program also included 68 female literacy classes in which 2,375 women were enrolled.

School plant improvement became part of the Rural Works Program which is discussed below. As a result, a large number of classrooms were repaired and built in the Thana.[25/]

To conclude, the experiments in rural education in Comilla Thana have had some success and are continuing; however, as of 1970, the Department of Education or other units of the government of Pakistan had not seen fit to adopt any of these activities as models for broader programs. Whether this is due to the limited success of these experiments in Comilla, or to a lack of understanding of the usefulness of these programs on the part of the Department of Education and other government officials is not clear.

Rural Public Works Program. As Academy personnel interacted with the other government officials of the Thana and the villagers, they became more directly aware of the extent of the effect of floods on the crops and how this affected the ability of farmers to repay credit. Raper indicates that in one area south of Comilla town, for five years in succession prior to 1961, the spring rice crop had been severely

damaged and the late summer rice crop often had to be transplanted two or three times before the seedlings could keep ahead of the rising flood waters. There was, therefore, continual pressure to do something about the flooding.

In 1961, Richard B. Gilbert of the Harvard Advisory Group asked the director of the Academy whether he could organize Public Works Programs in the villages to increase employment and income, using wheat as part payment for their wages under the PL 480 Program. Discussion in the Thana Council in October, 1961, resulted in the approval of a proposal for Thana-wide pilot public works program. Twenty-one schemes for irrigation and drainage and three schemes for flood control were submitted by 11 union councils early in 1962. By the end of the program for that year, 35 miles of canals had been cleared and 14 1/2 miles of embankments and roads had been constructed to help control floods. This included the construction of two water regulators and twenty-three culverts.[26/]

As a result of the success of this pilot program, the Department of Basic Democracies and Local Government authorized funds for a program to be carried out in many parts of East Pakistan in 1962-63. The Academy participated in the training of government officials for this expanded operation. This included writing a Manual for Rural Public Works explaining the procedures used in the rural works program. The Academy also provided evaluation reports.[27/]

Thereafter, the works program was increasingly supported by the government in East Pakistan and later this rural works program model was transferred to West Pakistan.

Thomas has provided a summary of the Rural Works Program accomplishments for the years 1962-1968 as follows: roads, hard surfaced and dirt, new 21,895 miles, repaired 118,371 miles; embankments, new 3,743 miles, repaired 7,595 miles; drainage and irrigation canals, new 9,031 miles, repaired 9,966 miles; community buildings including schools, 9,584. The rural works activity is estimated to have created 173 million man-days of employment. The total works program allocation for the six years was 196 million dollars.[28/]

This brief description of six programs originating at Comilla provide perspective on the types of activity undertaken by the Academy and the varying success of these programs. We turn now to a more intensive analysis of two programs of particular interest; experiments in the development of more effective rural government, and the establishment of new type agricultural cooperatives.

III. IMPROVING RURAL GOVERNMENT--THE TRAINING AND DEVELOPMENT CENTER

A) Introduction and Problem Situation

Just as the returns to investment on farms are dependent upon the level of management performance at the Thana or county level, the quality of government program operations and management greatly influences the return to government programs. Involved here are issues of institutional or non-marginal change in an administrative system as well as marginal change. The return to program investment is dependent both on the productivity of the project activity and on the rate of adoption.

This analysis is focused on factors affecting the rate of adoption of programs at the Thana level. Such factors include: confusion and conflict among programs, lack of necessary coordination especially in insuring availability of required program supplies, also "Perhaps part of the trouble was that the nation building departmental officers (agriculture, irrigation, forestry, etc.) were not yet ready to plan with the local people and to report to them directly."[29/] An additional major difficulty was that departmental officers were not able to gain needed participation by villagers in programs.

Government program performance at the Thana level in East Pakistan was generally poor when the Academy began its work, consisting primarily of independent government departmental activities (agriculture, coops, water, etc.) which in a large number of cases provided low or negative returns. In the early exploratory analysis of these problems, the Academy concluded that a solution required three kinds of coordination: of different departmental programs at the Thana level; of departmental efforts with those of the next lowest level of government, the Unions; and among the different unions.[30/]

At about the time the Academy was undertaking its exploratory analysis the Ayub Khan, government of Pakistan established the five-tiered basic democracies system of government in October, 1959. (Table 2). From the point of view of improved governmental management at the local level, the five-tiered Basic Democracies system was a significant departure from the past history of governmental organization in which

Table 2

The Five-Tiered Basic Democracies System

of Government in East Pakistan, 1959-71

Level	No. of Units	Average Population 1961	Title of Administrative Officer
(1) Province	1	50,840,000	Governor
(2) Division	4	12,710,000	Commissioner
(3) District	17	2,402,353	Deputy Commissioner
(4) Thana	411	123,698	Circle Officer
(5) Union	4,053	12,544	Chairman
Villages (Not in Basic Democracies System)	64,523	788	(No recognized head)

Sources: Robert D. Stevens, Institutional Change and Agricultural Development". East Lansing, Michigan: Michigan State University, Department of Agricultural Economics, AER #64 1967 P.M. and Raper, Rural Development in Action, Ithaca, New York: Cornell University Press, 1970, p. 101.

the lowest effective governmental unit was the District,with an average population of more than two million. The new five-tiered governmental system included at the lowest level an elected Union Council. Unions had an average population of 12,544 persons in 1961. It also established a Thana Council at the next highest level of government to be composed of the elected Chairman of each Union Council plus 25 percent government officials and 25 percent appointed members.31/

Since in previous government organization the next highest level of government, the District, particularly in the person of the Deputy Commissioner, retained most of the decision making power and control of funds and personnel, the question was posed as to what powers and activities were appropriate for these two new lowest levels of government. As it turned out, the Rural Works Program became one major successful activity of the Thana and Union Councils,with 71% of the Works Program allocations going to these levels of government in 1966-67.32/ The Works Program demonstrated that certain kinds of activities,such as road building and earth works for water control,could be effectively carried out by these two new levels of government. These types of infrastructure building activities also aided agricultural development activities.

B) Experimental Pilot Activities in Rural Government

In spite of the successful public works activities there remained many questions particularly at the Thana level about how to greatly improve the management of government programs. The history of the Academy's activities in government are contained in six annual reports on Comilla Rural Administration Experiments.[33/] In summary, the participant observation activities by the Academy faculty in Comilla Thana government led to a proposal in 1963 for a Thana Training and Development Center. In 1964, this concept was accepted for application in the rest of East Pakistan. Modifications of the Thana Training and Development Center were, however, still being explored by the Academy until the 25th of March, 1971. Analysis of the Thana Training and Development Center concept and its reusits to date follow.

The concept of a Training and Development Center at the Thana or county level includes the following major elements:

(1) A single physical location at the Thana level for all major nation-building department offices

(2) A small adjacent adaptive research and experimental farm

(3) Housing for government officers sufficiently attractive to encourage them to stay in the Thana for many years

(4) Physical facilities for adult and farmer training classes--The Training Center

(5) Enough land for additional activities as needed--such as warehouses, machinery repair shops, a bank, etc.

(6) An effectively functioning Thana Council including elected representatives from the Unions and representatives of the nation-building departments

(7) A central Cooperative Association to serve farmers

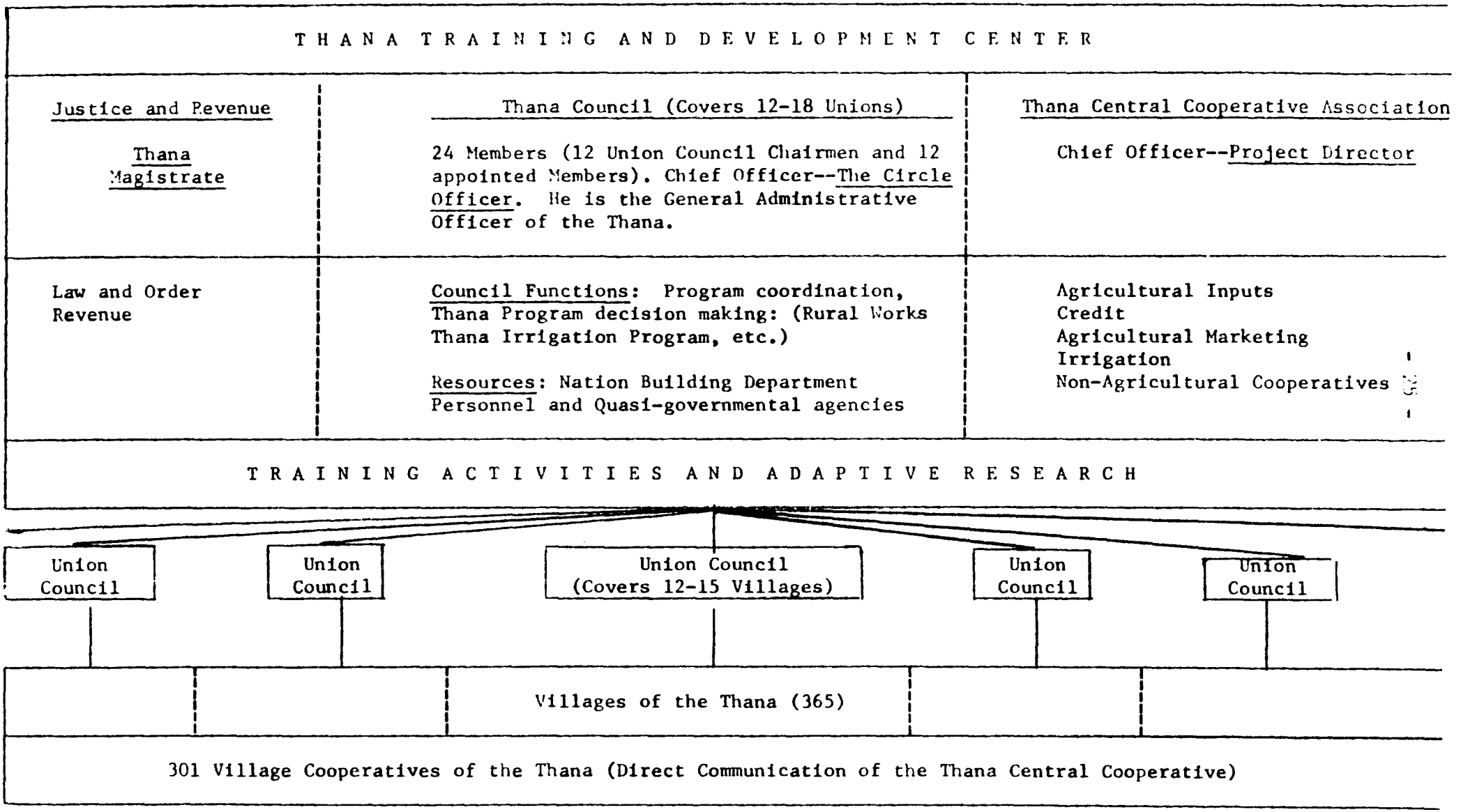
The first five objectives of a physical nature were relatively easy to accomplish once decisions had been made to allocate the needed Works Program funds to purchase and build. In Comilla Thana the last of these five objectives, the staff quarters, was finished in 1966. The more difficult task of establishing an effectively functioning Thana Council and a sound agricultural cooperative organization has required years of experimental and pilot activity. (Fig. 1)

A primary challenge in the Thana has been to achieve effective cooperation in developmental programs between the members of the Thana Council under the leadership of the General Administrative Officer of the Thana--The Circle Officer. A second challenge has been to activate the training component of the Center. Examination of five specific problems and the results achieved in Comilla Thana through June 1969 provide an evaluation of the success of developing government at the Thana level using this approach.

1) The Problem of Lack of Funds under the Control of the Thana Government

Two recently developed province wide programs, the Rural Works Program and the Thana Irrigation Program have provided funds to the Comilla Thana government (in 1968-69 $46,025). All Thanas in the Province have also received funds from these sources during the last few years.[34/]

Fig. 1. Model of the Thana Training and Development Center System, Comilla, East Pakistan



2) The Problem of Lack of Participation by the Nation Building Department Officers in the Coordination Activity of the Thana Council. The Thana is the lowest level of government in which most of the nation building departments are represented. The role of the Thana Departmental officers is,therefore,vital for developmental programs, especially with respect to (a) coordination of the different programs in the Thana, (b) providing instruction to farmers and others, and (c) ensuring the availability of services and supplies. In Comilla Thana, major participation in Thana Council deliberations by the nation building department officers has been achieved with considerable effort. For the first time, the Basic Democracy order required these officers to report their activities to the Thana Council as well as through the usual hierarchy to their departmental superiors. However, despite the participation which was achieved, the 1968-69 Report of PARD concludes that attendance in the Thana Council by these officers leaves much to be desired and that up to June 1969 the Circle Officer had no administrative control over the Departmental Officers in the Thana.[35] Mohsen commented earlier, "Activating the departmental officers seemed to be more difficult than mobilizing the people."[36]

3) The Problem of Lack of Coordination between Unions. The success of the Thana Council in providing a forum for effective coordination of the programs in the different Unions became very clear in the development of rural works program plans. Instead of receiving comprehensive plans drawn up in District or higher offices that have little possibility of implementation and no genuine support from local leaders, the new

approach started the planning process for Works Programs from the village level. Finally, after many meetings including appropriate departmental officers and other technical experts, a Thana rural works plan was agreed to with implementation steps included, which could be carried out. Preventive health and crop and animal disease plans were developed in a similar manner. Through use of this new planning process, the required coordination of activities in different unions was achieved.

4) Problems in the Implementation of the Training Center Concept.

In Comilla, as the new activities and programs were undertaken, the need for various types of adult training was continuously apparent. Training activities were,therefore,carried out including the following types: one day training for Union Council members on the functions of the Union Council and the duties of members; Rural Works Program training for 200 village leaders in measurement of earth moved, accounts keeping, and maintenance of laborer roles; one day training for union councilors on each of the following: budget preparation, role of the council members in solving village problems, organization for pump irrigation, the Union taxation system, conciliation court procedures, and administration of Muslim Family Law; training of masons and brick layers for the public works program; classes for village cooperative managers in cooperative organization and management; training for model farmers in all manner of agricultural subjects; women's classes in health, food and family planning; and classes for religious leaders who teach literacy to primary school students and to adults. The 1968-69 report indicates that 49 courses with a total

attendance of 2226 were organized in the Thana for rural development workers and rural leaders.

An important step in the training activities was the use of departmental officers. Their new role of teacher increased their involvement and contact with the people they were charged with serving.

5) The Problem of Uncertainty in the Circle Officer's Leadership Role in the Thana. In addition to the problem of how the Thana Circle Officer was to achieve coordination between the nation building department officers without administrative control of personnel or an appreciable budget, the Circle Officer faced two other potentially powerful individuals in the Thana, the Thana Magistrate, and the newly instituted position of Project Director of the Cooperative Federation. Some agreement as to the roles and the working relationships between these individuals was required for productive government management.

In the 1960's, the Cooperative Project Director in many Thanas was senior in government rank and age to the Circle Officer. In Comilla Thana the Cooperative Federation has also involved more people, had a larger payroll than the Thana government. Mohsen in the 1963 Organization Chart for the Thana Training and Development Center envisaged the Project Director as superior to the Circle Officer.[37/] By 1966, however, the Comilla Circle Officer reported that a weekly meeting between the Circle Officer and the Cooperative Project Director provided the only link between the two organizations, implying that both officers were at least on an equal footing.[38/] By 1970, the Circle Officer had apparently

been accepted at least in principle,as the chief administrative officer in the Thana.[39/] However, within the nation building departments, Thomas reported in 1971 that "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."[40/] In particular, he points out that the Department of Agriculture opposes the concept of an integrated training and development center and is rapidly expanding the standard type extension system.

The Thana magistrates who are responsible for law and order and revenue functions often have equal or superior civil service rank to the Circle Officer. In his 1971 study, Dr. Khan reports, "The concept of the Thana Training and Development Center is in danger of being submerged by the old obsessive pattern of magisterial control." [41/] In two Thanas, magistrates had been given overall charge in the Thana, including being made Chairmen of the Thana councils.

C) Evaluation of Developments in Rural Government

How does one evaluate the increased returns (economic, social and political) at the Thana level to the use of government funds as a result of improved organizational and institutional relationships? In Comilla as in most areas, a number of major variables have changed along with changes in government organization. The joint products are difficult to separate. Little data on performance levels is available, and experimental controls are not possible. The following judg are,therefore,made.

In economic terms, the success of both the Rural Works Program and the Thana Irrigation Programs, were dependent upon the Thana Development and Training Center Organization and Concepts. The Rural Works Program was judged remarkably successful by Thomas. It created an average of 40 million man-days of employment annually which produced a major increase in infrastructure facilities in rural areas. In benefit-cost terms,Thomas estimated a 57 percent return.[42/] Without the Thana level organization and training the works program either would have failed completely or provided a much lower return.

In like fashion, the Thana Irrigation Program which was initiated on a province-wide basis in 1968-69 had by 1970-71 placed 26,000 operating pumps in the field able to irrigate 1.3 million acres. Without the Thana level organization and training approach used farmers would not have paid part of the cost of irrigation, because previously water had been free. The magnitude of this success is better gauged by the fact that the East Pakistan water agency in 20 years had only been able to irrigate 94,563 acres at an immense cost. The nine-year effort of the Agricultural Development Corporation had only fielded 3,900 pumps.[43/]

In social terms, the most important result has been the new and improved relations between government officers and villagers. "Undoubtedly, the most wholesome influence is that of the new relationship between officers and villagers....There is guidance and supervision without undue subordination. There is trust arising from mutual knowledge.... They have now a realistic view of government and its agencies....but as

human agencies with limited resources, established for their benefit, and solicitous of their loyalty."[44/]

At the international level, the World Bank in its recent East Pakistan Action Program supported the Comilla rural development model.[45/]

In summary, the Academy Director and Faculty, through participant observation in the Thana Council Meetings, the Union Council Meetings, and interaction with departmental and administrative officers, greatly influenced the operating procedures of local government and greatly increased its effectiveness. The model of the approach used by the Academy in improving governmental performance is of more general interest than the specific changes made.

IV. NEW TYPE AGRICULTURAL COOPERATIVES

The first objective in this section is intensive analysis of the organizational methods and program content of Comilla type cooperatives. A second objective is to provide,to the extent possible, measures of the economic, social and political changes which have resulted from the cooperative activity.

A. Organizational Methods and Program Content

The general methodological approach of the Academy to organizing cooperatives in Comilla was fundamental to the success of the program.

> "From August, 1959, the Academy has been closely observing the working of plans and programs in the 80-square mile Comilla Thana V-AID area. We have attended regularly the fortnightly conferences of the V-AID workers and listened attentively to their views and the view of the officers. We have also invited selected groups of successful farmers, teachers, officer bearers of the cooperatives, artisans and others. We have made case

studies of all these groups and carefully recorded their opinions and suggestions and published these in the shape of small monographs.

"The Academy has taken this area as a laboratory for social and economic research and experiments because we believe that such experiments and researches are necessary in order to put substance into our training programs and make them realistic. It is also the best use of the talents of the team of experts at the Academy...

"We think that we are now in a position to initiate an experiment in agricultural and economic development which may be very significant. Briefly the chief objective of this experiment would be to promote the formation of small cooperative groups of farmers who would adopt improved methods, implements and machines. A small group cooperative would aim to become self-sustained. The members would learn to save and collect their own capital and invest it in better farming."46/

The first tentative plan for a cooperative pilot project included these important points:

"(1) The Academy would sponsor a central cooperative;

(2) The central co-operative would have sets of improved implements and machines like power pumps, small tractors, etc.;

(3) It would undertake the demonstration of these implements in various villages, and run training courses for the farmers;

(4) On receiving requests from farming families, it would help in the organization of small co-operative groups, who would buy the implements on a hire-purchase basis;

(5) The central co-operative will carry on an intensive educative programme stressing the need for saving and investment in farming and the learning of better methods for increasing production and the income of the members;

(6) If the habit of co-operation grows the members would learn to do their buying and selling jointly, as well as the planning of crops."47/

The organizational effort to implement cooperative pilot project began in early 1960 with the identification of leading farmers as organizational agents in the villages from which they came. These

individuals were paid a small amount of money to cover transportation to come to the Academy for training in extension methods and group organization. They were also given some training in improved methods of agriculture. Their task was to go among the villagers of their locality and try to organize groups interested in cooperative action."[48]

> "Even though these extension agents were not highly enlightened or highly trained people, they were interested and willing. This apparently was what was required because they did get groups together. Following the formation of a group, the special officer for cooperatives met with a group. Sometimes he went to the village. Sometimes the committee of villagers came to him."
>
> This special officer "...was always interested first in the group's intentions. Were they really interested in becoming a cooperative or were they perhaps more interested in some special compensation they might get?" He also "...looked into the reasons for organizing the group to see if the members could really afford a cooperative. If he became convinced that the group was a genuine one truly interested in working together and if it was large and homogeneous enough to develop into a viable social group then he proceeded to state the conditions under which the Academy would work with them."[49]

In summary, the conditions were as follows: (1) the group would have to organized itself into a formal group and elect officers. Later it would have to become a registered cooperative society. (2) Compulsory regular weekly meetings of all members would be held with records kept of the meetings. (3) Individual members would have to make regular weekly savings which would be deposited in individual accounts. (4) The group would have to agree to select an individual from their midst as an organizer who would go to the Academy for regular meetings

at least once a week. He would collect and carry their savings to the Academy and would bring back useful information to the group and teach it to them. The organizer would receive payment for his travel costs plus an additional small allowance. (5) The group would have to agree to keep good accounts. (6) The group would have to agree do to joint planning to improve their business to engage in joint efforts such as the joint use of a power water pump or the joint purchase of seeds. They would have to give up some of the privileges of acting as individuals and accept some of the burdens of acting as a group. The group would have to agree to adopt improved agricultural practices and accept training and improve their skills. The group would have to agree to join a cooperative federation for securing credit, purchasing and marketing services and educational materials. The group would also have to agree to engage in long periods of discussion where all members of the society were present and thus prevent the government of the cooperative by the managing committee only as had been the practice of so many societies in the past in East Pakistan.[50/]

Critical to the success of these cooperatives was the training of the individual chosen by the village group to be their village organizer or cooperative manager. Intensive training courses were operated at the Academy for these newly-chosen cooperative organizers or managers. Soon it was clear that this individual could not perform well both the functions of keeping the cooperative operating and of receiving the necessary training in agricultural practices to bring new technical knowledge back to the village. Thus, the village

cooperatives were asked to choose from among themselves a second individual to be a "model farmer", who would come to the Academy weekly to receive training in improved agricultural practices. The model farmer also was provided with transportation expenses and a small additional allowance. The third major officer of importance in the village cooperative is the Chairman of the Cooperative. This individual operates largely in an honorary capacity but also receives a small allowance.

In summary then, it should be stressed that the organizational approach consisted of the self-identification by a village group of individuals who were to be their leaders. These individuals then received training at the Academy. In this way, no outside individuals were arbitrarily injected into the village cooperative scene. Due to this approach, the Comilla cooperatives have been based largely upon natural social groupings.[51/]

From this organization approach a large number of cooperatives were developed, both in agricultural villages and among other groups. By June, 1969, in Comilla Thana, the village cooperatives were supported by a large central Agricultural Cooperatives Federation (Figure 2). Membership in this Federation included 11,673 villagers in 301 village cooperative societies, or an average of 37 members per society.[52/] A second large central cooperative had also developed to serve nonfarm citizens in the Thana, the Special Cooperative Societies Federation which in 1969 was composed of 87 primary cooperative societies with 3,888 members.

The Academy and the Central Cooperatives in Comilla Thana are entirely separate institutions. After the initial pilot organizing activity by the Academy faculty, in January, 1962, the first Central Cooperative in the Thana was registered with its own staff. Thereafter, the Academy faculty continued to observe, analyze, and from time to time provide some professional assistance to the cooperatives. But they no longer had management responsibility. However, during the whole period of this report, Dr. Khan continued as the dominant member of the Board of Directors of the Central Cooperatives in the Thana.

The program content of the agricultural cooperatives is focused on the provision of loans to farmers. This credit flow provides the primary source of income for both the Agricultural Cooperatives Federation and its village primary cooperatives. Loans for 1968-69 were 60 per cent for the purpose of producing four major crops: spring rice, fall rice, winter rice, and winter potatoes. (Table 3). A high proportion of the loans was for one year.

With respect to new technology, one of the basic parts of the agreement with the village cooperatives as stated above was that farmers would adopt improved agricultural practices and accept training. Experimental and pilot winter pump irrigation and other types of mechanization of agriculture were early objectives of the Academy.[53/] The new major technologies introduced by the cooperative organization include the following: (1) the effective introduction and operation of low-lift water pumps beginning in 1959;[54/] (2) the pilot development of

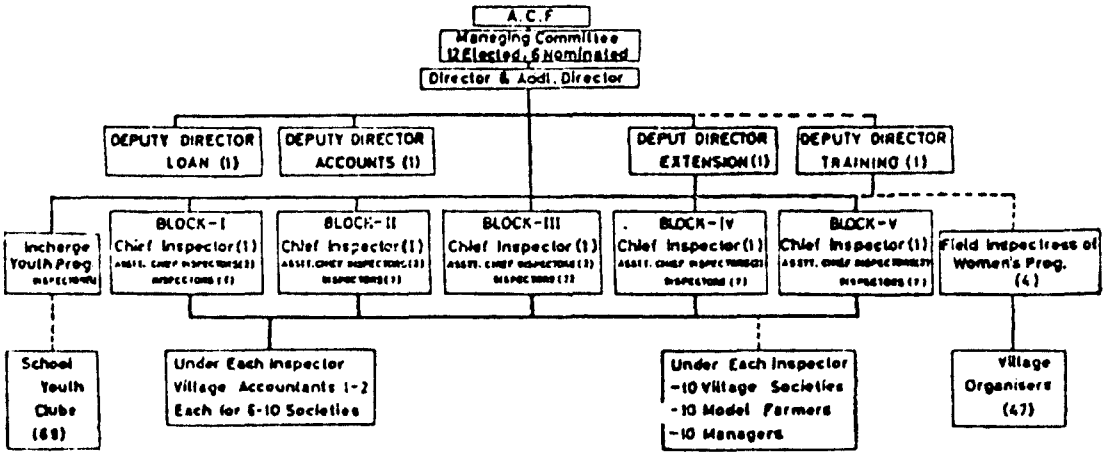


Figure 2: Organizational Chart of Agricultural Cooperatives Federation (A.C.F.), June, 1969.

SOURCE: Pakistan Academy for Rural Development, A New Rural Cooperative System for Comilla Thana, Ninth Annual Report, Comilla, East Pakistan, 1970. p. 5.

Table 3

Purpose of Loans, Agricultural Cooperatives Federation
Comilla Thana, 1968-69

Purpose	Rupees (00)
One-Year Loans	
Spring Rice (Aus)	486
Summer Rice (Amon)	368
Winter Rice (Boro)	756
Potatoes (Winter)	123
Land Purchase and Rental	543
Other	222
Total One-Year Loans	2498
Two-Year Loans	
Cattle, Cloth Dying and Other	72
Three-Year Loans	
Land Release and Purchase	295
Grand Total	2,865

Source: Adapted from Pakistan Academy for Rural Development, Ninth Annual Report, 1968-69. Comilla, East Pakistan, 1970. p. 27.

low-cost hand dug six-inch tubewells begun in 1962 including necessary operational supervision procedures, maintenance and repair, and parts supply. This intermediate technology development is the most outstanding original technical contribution of the Comilla Programs;[55] (3) Pilot and adaptive research beginning in 1960 on the use of 4 wheeled, 35 horsepower tractors for rice and other crops. In the ten years of experience with these tractors a great deal has been learned. But it is fair to say that,although by 1969, 6154 acres were cultivated by 17 tractors, a solution had not yet been found to the economic operation of this size tractor in agriculture in the Comilla area;[56] (4) Adaptive research and testing of new crop varieties and animals with the assistance of Japanese (1960 on), Danish (1966 on), and United States technicians. Starting in 1966, the first IRRI varieties of rice became available for use in East Pakistan. They were tested and promoted by the Cooperatives;[57] (5) Adaptive research, supply and promotion of agricultural inputs including particularly chemical fertilizers, pesticides, and improved seeds.[58]

The successful work of the Cooperatives in adaptive testing and promotion of new technology points to an important weakness in the original concept of the Academy. Social scientists working in rural areas of developing nations are at a great disadvantage if they lack easy access to high quality agricultural and other technical knowledge. This is because productive new technology is central to most effective rural development programs whether in agriculture, nutrition or health. Due to the organizational requirements of these various technologies, considerable knowledge of the appropriate technology is essential

for effective work in the social sciences in rural areas. Therefore, an institution either requires a few highly competent individuals trained in appropriate fields of technology on its staff, or a workable way of gaining regular and easy access to such persons located in another institution.

B. Evaluation of Cooperative Activity

Analysis of the socio-economic impact of the agricultural cooperatives federation is undertaken here. First, focus is placed upon the economic impact on farmers and secondly, on analysis of agricultural credit from the point of view of the cooperative federation and the national economy. Finally, the social and political impact of the agricultural credit program is explored.

1. Economic Impact on Farmers. The extent and amount of economic effect of the agricultural cooperative society on farmers in Comilla, Thana and the other thanas with this type of cooperative is inevitably difficult to measure because of the joint relationships between the credit activities and the other activities for the supply of modern inputs to agriculture. Thus, although the results which are presented below are not all due to the agricultural cooperative society activity alone, there is little doubt that a major share of the economic impact is due to the cooperative program. In the following paragraphs, the impact is measured by the participation of farmers and by the effect of cooperative activities on production and income. Some concluding comments focus on employment, income distribution and land tenure issues.

Estimates of the proportion of farmers who are members indicate that in 1969, 37 percent of the farmers in Comilla Thana were members. An average of 22 percent of the farmers were members after five years of cooperative activity in seven other Thanas of Comilla District. (Tables 4 and 5).

Economic benefits should be measured indirectly in terms of changes in inputs and yields, due to the lack of comprehensive farm management studies which would provide estimates of net income gains. A detailed analysis of winter rice by Faidley and Esmay is available. They conclude the following: that within five years almost all farmers, both coop and non-coop had adopted high-yielding Winter rice varieties which, on the average, more than doubled rice yields for both groups.[59/] Earlier studies of the costs and returns of winter irrigated crops by Mahman (2 reports) and Hoque (1 report) demonstrated greatly increased net farm income from the use of additional pumped irrigation water obtained through the cooperatives.

The growth of purchased inputs of commercial fertilizer and pesticides has been significant for winter rice. The Faidley and Esmay study shows that, in 1966, cooperative members used commercial fertilizers at the rate of about $4.00 per acre on non-improved rice varieties. While in 1970, with almost 100 percent use of improved rice varieties, commercial fertilizer increased to more tha $16.00 per acre among cooperative members. It is particlarly significant that non-cooperative farmers also were able to purchase from the central cooperative and use almost the same amount

Table 4

Growth of Cooperative Membership and Land Ownership in Comilla Thana, 1964-1969

Item	64-65	65-66	66-67	67-68	68-69
No. of agricultural coops	152	158	225	251	301
No. of coop members	4910	5161	8462	11,518	11,673
% of families who are coop members	15.7	16.5	27	36.7	37.3
Land owned by coop members (acres)	10,100	11,700	19,150	26,050	26,410
% of total land owned by coop members	19.6	22.7	37.2	50.5	51.2

Source: LeVern Faidley and Merle L. Esmay. "Introduction and Use of Improved Rice Varieties: Who Benefits?" Department of Agricultural Engineering, Michigan State University, 1970. (Mimeo).

Table 5

Membership in the Seven Thana Expansion of the Cooperative Project (1965-1970), Comilla District

	Thana	1961 Rural popu. (approx.)	Estimated small farm families	Cooperative members	Percentage
1.	Laksom	3,16,000	37,000	8,298	22.4
2.	Chandina	7,32,000	15,000	4,592	30.6
3.	Sarail	1,30,000	15,000	6,022	40.0
4.	Hajiganj	2,36,000	27,000	5,313	19.6
5.	Quasba	1,86,000	22,000	3,445	15.6
6.	Brahmanbaria	2,64,000	31,000	6,723	21.6
7.	Chandpur	3,05,000	35,000	5,053	14.4
	Total:	15,69,000	1,82,000	39,446	21.7

Source: Khan, Akhter Hameed. Tour of Twenty Thanas. Pakistan Academy for Rural Development. February, 1971, p. 13 and p. 18 (as of November, 1970).

of commercial fertilizer per acre. Thus,although cooperative membership comprises less than 40 percent of the farmers, the benefits of the cooperative activity are widespread among farmers in the Thana.

Increased pesticide use is indicated by the fact that,in 1966, only 15 percent of the non-cooperative families used pesticides,while in 1970, 98 percent of them used pesticides. The agricultural cooperative had a large role in making the chemicals and applicators available.60/

The more specific issue of the distribution of benefits from cooperative activity by farm size is of major interest. This question was examined by Faidley and Esmay by considering farm size in relation to cooperative membership, adoption of new variations, and yield. They found that cooperative membership was fairly evenly distributed in farms larger than one acre representing 54 per cent of the rural population. For the thirty percent of the population with farms less than one acre,only 15 percent belonged to the cooperatives. Of particular significance is the fact that 43 percent of the cooperative members had farms in the one to two acre range. The landless rural population (about 15 percent) is little served by the cooperatives directly. (Table 6).

With respect to the adoption of improved varieties,(regardless of farm size)adoption rates of winter rice were about the same, with cooperative members beginning earlier. The very much higher yields of

Table 6

Distribution of Total Population and Cooperative Membership by Farm Size

Farm size in acres	% of total rural population with given farm size	% of cooperative members with given farm size	% of rural population with given farm size who are coop members
nil	15.3	2	5
.01-1	30.5	12	15
1.01-2	24.2	43	68
2.01-3	14.4	18	47
3.01-5	10.6	16	56
over 5	5.0	8	60

Source: Faidley and Esmay. "Introduction and Use of Improved Rice Varieties: Who Benefits?" Department of Agricultural Engineering, Michigan State University, 1970.

the new winter rice varieties show no overall correlation with farm size. Thus, farms under one acre were apparently able to gain access to the necessary fertilizer, pesticides, irrigation water and other inputs.[61/]

Other evidence of economic gains by farmers follows. In an attempt to assess the effect of cooperative activity on farms, Rahim conducted two comparative sample survey studies in 1964 and 1969 of Comilla cooperative farmers and farmers in a nearby Thana where there had been no cooperatives until after 1965. Unpublished data from this work shows that, by 1969, Chandina Thana farmers had increased yields by only 10 percent as compared with 98 percent for Comilla Cooperative farmers. An estimate of net family assets showed an increase of 19 percent for Chandina with an increase of 61 percent among Comilla cooperative members.[62/]

An estimate of direct benefits to cooperative members as a result of shifting one quarter of an average farmer's debt from a 60 percent interest rate to a 17.4 percent interest rate indicate an annual increase in income of some thirteen dollars.[63/] For farmers with per capita incomes in the one hundred dollar range this is an appreciable gain.

In conclusion, there is little doubt that in Comilla Thana the small village cooperatives and the Thana level cooperative federation have together had considerable economic impact on most of the villagers. We turn now to the economics of these cooperatives.

2. Economics of the Cooperative Federation. After ten years of development, by 1970 the Comilla type cooperatives had demonstrated their administrative and financial stability. In this section, after a brief outline of the credit arrangements, focus will be placed on financial progress and problems.

The credit system operates in the following way. Loans are obtained by the members of the village cooperatives on the basis of specific plans for the use of the credit for agricultural production. An interest rate of 10 percent is charged plus a service charge of 5 percent per annum for a total of 15 percent. Of the 10 percent interest, 2 percent is paid back to the society concerned to build its own fund, 4 1/2 percent is paid to the financing bank as interest and 1 percent is paid to the village cooperative manager as his commission. The Thana level association retains 2 1/2 percent to meet its own expenditures.

The five percent service charge is used for the salaries of the village accountants to maintain the accounts of the primary societies and to provide the traveling allowances to the village cooperative managers, the village model farmers, and the chairmen of the primary societies, as well as to members of the managing committee of the central association. Allowance to the Thana officers for teaching classes is also paid from the service charge.

With respect to the required purchases of shares equal to the five percent of the loan, a 5 percent dividend was declared in 1968-69. A fixed 4 percent interest is paid on any savings accounts of coop members.

The amount of money a village cooperative may borrow is dependent upon the sum of its savings and shares. In the 1968-69 accounting period savings and shares amounted to 35 percent of the loans.

From a financial point of view, central to any successful credit cooperative is the loan repayment experience. Comilla type cooperatives have had manageable amounts of overdue loans and bad debts (Table I). Although hard work is required to further reduce overdue loans, other data on the rapid growth of membership, savings accumulated by members, loans issued and realized all point to financial and organizational health. Financial success is indicated by continuing growth of assets. The profit and loss statement for 1968-69 shows a net loss of about one percent on the total income of the Agricultural Cooperatives Federation. The expenditures in this account include about five percent of total income for agricultural extension activities. Questions can be raised as to whether the cooperatives should have to carry this cost.64/

From the point of view of cost to the national treasury, the Comilla cooperative system was an immense step forward in Pakistan. Loans of the Toccavi type through the old type Union multi-purpose cooperative societies which had been mostly captured by notables, had annual loan repayment rates of 40 percent. No other organizations had been able to reach large numbers of small farmers with credit.

Strong evidence that the Comilla Cooperative system held promise came from the approval in the fall of 1970 of the Integrated Rural

Development Program by the central government of Pakistan. This program to be administered by the Department of Agriculture,was to establish Agricultural Cooperative Federations and village cooperatives on the Comilla model in all 411 Thanas within a nine-year period.[65/] The magnitude of the projected investment per Thana was $21,000 in annual recurring administrative and training costs and a disbursement of loan funds to the Thana of $210,000 for five years (Table 7). Complete repayment of the loan fund was planned for twenty-five years.

3. Social Impact. The social impact of the cooperatives, although difficult to document precisely,appears in a number of ways. In most villages the coops are too young (3-5 years) to have had influence on the social structure. However, the new role of manager of the village cooperative has had significant influence on villages. Bertocci states that in the village he studied,the cooperative manager was asked to participate in dispute-settling with the traditional leaders.[66/] Another example reported by one of the Academy instructors is that when villagers want to get things done, they go to the village cooperative manager instead of the traditional leaders or the elected Union councilors.[67/]

There is little question about the impact of the cooperatives on the agricultural information flow systems. Research in the Thana shows that village cooperative members adopt earlier and have higher proportions of adoption at any time. There are few sources of agricultural information in the Thana.[68/]

Table 7

Projected Annual Costs per Thana for the Establishment of Comilla Type Agricultural Cooperatives in All Areas of East Pakistan

1.	First-year capital grant (One Year Only) (Buildings, Transport and Office Equipment)		$42,000
2.	Annually recurring operating cost		$21,000
	a) Salary and Allowances for Cooperative Federation Project Officer, Assistant Project Officer and Accountant	$5,570	
	b) Training and Extension	$15,430	
3.	Annual loan fund build-up for Thana Cooperative Federation (for five years only)		$210,000

SOURCE: Adapted from Government of Pakistan, Planning Commission, P.C.I. form on the Integrated Rural Development Programme. 1970.

With respect to educational impact, the weekly training of the model farmers from the village cooperatives is a major educational input which is multiplied by the subsequent discussion held by these individuals in their villages,often aided by written lesson material. The cooperatives have also supported adult literacy classes for both men and women.

The impact of the cooperative activity has been positive on employment. Almost all the changes in agriculture have been employment creating, including particularly the major increase in winter crop acreage due to pump irrigation. The Faidley and Esmay and the cost and returns studies provide estimates of additional labor used with the new high-yielding varieties. There has been some displacement of hand irrigation by low lift pumps and of animal plowing by tractor plowing, but the net effect on employment of these changes appears at least neutral and it may well have been positive.

With respect to impact on values, Schuman,in a pioneering sociological study,found that Comilla Cooperative farmers had a significantly increased belief in their ability to control their destiny as compared with other farmers in other parts of East Pakistan.[69/]

4. Political Impact. The political impact up to March 25, 1971, of Comilla activities is hard to interpret. One reason is that, in the context of East Pakistan, the effect of the Comilla activities on government and politics should be considered together. The strong impact of Comilla activities on certain government programs such as rural works and irrigation

has been discussed above. Despite this, Monam Khan, the governor of East Pakistan during the mid-sixties, continued to take a negative view of the Academy and its activities.

In the political arena, because of the martial law rules of President Ayub Khan, parties were not permitted to operate until 1968. In the ensuing political activity, the Academy and its activities were not brought into political discussion in a major way. Bertocci, however, reports that after the Awami League's sweep of East Pakistan in 1970, it was seriously considering supporting the Comilla approach to rural development.[70/] Due to the eclipse of the political parties until 1968, one can conclude that during most of this period it was more important for the Academy to attempt to influence government programs than the political party positions.

V. CONCLUSIONS--SOME PROGRAMS FOR INTERNATIONAL ADAPTATION

The Academy for Rural Development in Comilla and a number of the programs it developed have had major impact on increasing the income of large numbers of small farmers during the last decade in Bangladesh. These widespread economic and social benefits have been shared by most groups of the population in rural areas. Of particular significance is the heavy local training component of these programs. The result has been a great increase in management and technical capacity by many different individuals from the villages.

In a recent seminar reviewing world experience in development strategies for small farmers, only a few major programs of promise were found; the IADP Program in India, The Puebla Project in Mexico, and the programs in Comilla. The important Taiwanese experience was not included in this seminar as it is well known. Therefore, the Comilla programs are advanced for consideration and use with appropriate modification in other developing nations.

Six major programs of the Academy of Rural Development in Comilla were examined as well as the nature of the Academy itself. The promising women's program and rural education experiments were presented briefly as activities which,up to 1971,had only had limited national impact. The Thana Irrigation Program and the Rural Works Programs were also only discussed briefly, as there is considerable literature available about these nationally adopted programs.[71/] Major focus in the paper was placed upon: 1) the nature of the Academy as a research, training and pilot program organization and upon two of the more complex major activities; 2) the improvement of rural government through the Thana Training and Development Center, and 3) the new type agricultural cooperatives. Conclusions about the possible usefulness of these three experiences for other nations follow.

The Academy for Rural Development--Ten years of successful experience with in-service training, research and pilot demonstrations by the Academy for Rural Development in Comilla provide an important model for similar institutions in other nations. With a basic annual expenditure of less

than $200,000, eighteen instructors and twenty research assistants have been able to make a significant national contribution. They have provided in-service training about rural development to members of the civil service, produced research and evaluations of important rural development activities, and succeeded in developing, operating, and supporting the expansion of pilot rural development programs. Fundamental to this success was a sound social science approach to rural problems and the establishment of a county size experimental area. Strong leadership by the instructors and Dr. Khan was an important factor in these activities. The following matters are of particular importance in considering the Academy model for application elsewhere.

1. Essential to success was an experimental open-minded approach on the part of the Academy staff and Academy director involving a great deal of interaction between Academy personnel and rural people.

2. The Comilla experience suggests that because of the interrelations between activities and the reinforcement of programs which results, as wide a range of subject matter activities should be carried on as feasible, including particularly those in agriculture, health and nutrition, women's programs, education, and family planning, and others.

3. A strong position for the essential social science disciplines in the competencies of the Academy faculty is essential. However, the experience in Comilla has pointed to the need for ready institutional access to personnel with deep knowledge of agricultural and other rural

technologies for the development of effective research, teaching and pilot programs in rural development. One alternative solution is to include,as members of the Academy,a small number of staff competent in agricultural and other rural technologies.

4. The research and evaluation functions of such an academy are essential both to document change and to analyze the status of programs and evaluate alternative program designs.

5. In establishing effective relationships between the Academy and government, of particular importance is a board of directors comprised of high level members from departments of government with major operations in rural areas who are potential users of the Academy training and other services. An associated need is for the director of the Academy to have sufficiently high status so as to be able to operate effectively with departments of government.

Improving Rural Government--The Training and Development Center--Early activity by the Academy focused on improving local government performance. The result was the acceptance by the East Pakistan Government in 1964 of the Thana Training and Development Center concept for the 411 Thanas (counties) in East Pakistan. The physical facilities for those centers had been completed in most Thanas by 1970.

Continuous effort by the Academy has been focused on the more difficult task of greatly improving the performance of government officials at the Thana level. Major successes were achieved in pilot activities which developed the Thana level Rural Works Program and the Thana Irrigation Program. The models developed were the basis for

province wide expansion of these programs, recognized nationally and abroad as significant contributions to rural development in Bangladesh. Without the changed concepts of rural government and the kind of organization for local development which these programs embody, these activities would either have been impossible or of much lower productivity. The World Bank in its East Pakistan Action Program of 1970 supported this rural development model for local administration.

In considering the approaches and programs of the Comilla Rural Training and Development Center for international use, the following points appear important:

1. An academy such as that at Comilla requires sufficient influence over governmental activities in an experimental rural area so that it may carry out and analyze pilot development activities.

2. A rural training and development center is required at a central physical site including all the agencies involved in rural development. The center should be as close as possible to a heavily-frequented market. In connection with the establishment of such a center, care is required that these services of lowest levels of governmental activity be located so that rural citizens may conveniently make a round trip by local transportation during one day to conduct their business.

3. Rural government should focus on activities which affect most rural residents directly and require joint action, such as roads, water control and schools. In the Comilla experience, rural government was

not effective in agriculture and other specialized sectors which involved only a portion of the population directly. Responsibility for these development activities should be clear and appear to require specialized organizations focused directly on their problems such as the agricultural cooperatives or the special cooperatives.

4. A training center should be an integral part of rural government. All significant institutional and program changes require certain amounts of training for different groups: farmers, women, government officials, etc. Also, the experience of having officers from the agriculture department and other agencies take on the new role of teachers of rural citizens has proved to be of considerable value to both groups, particularly in increasing communication and understanding.

5. Of particular value was the regular bringing together in the Thana Council for the first time of representatives of government agencies and valid representatives of rural people for discussions of plans and action programs. In this way, villagers gained much increased involvement in local government decision making. Improved program performance can result as representatives of government agencies have the needed technical expertise and control of the allocation of major funds and supplies, while rural leaders can obtain decisions from communities and mobilize people to participate in development.

6. In developing successful pilot programs, of fundamental importance is the early participation of agencies for which the pilot program may become a model. Joint planning and operation of pilot programs with

target agencies should be undertaken to as great an extent as possible so that the program if successful may more easily become adopted as the agency's own.

New Type Agricultural Cooperatives--Beginning with experimental pilot activities in 1960, new type village agricultural cooperatives were developed in Comilla Thana. By 1971, 301 agricultural cooperatives were registered in the Thana with 11,673 members. Loans overdue more than a year among this group was at a two percent level. Expansion of this cooperative system into ten other Thanas resulted in a total of 2,360 village cooperative societies with a total membership of 68,632 by 1971.

Evaluation of the efforts of these cooperatives in Comilla Thana indicate they have had major economic impact. A number of studies show rapid increase in input use, in the planting of high yielding varieties and in rice production. One comparative study estimates between 1964 and 1969, a ten percent increase in rice yields in an adjacent Thana where cooperatives have only recently been organized as compared with a 98 percent increase in rice yield in Comilla Thana. In 1970, in Comilla Thana where per capita incomes are in the $100 range, the Central Agricultural Cooperative Federation and its village cooperative societies operated a credit program with an average loan of $53 per member with per member shares and savings equal to $29. This cooperative system was financially stable with steady annual increases in loaning activity. Additional evidence of the promise of the system came from approval

In the Fall of 1970 for the expansion of these types of cooperatives to all 411 Thanas. Additional impact of the cooperatives in social and political areas has also been shown.

The following points are of particular importance in considering the development of new type village cooperatives in other areas.

1. The Comilla experience has demonstrated that small farmers in low income nations can be organized voluntarily into effective village cooperatives. This system, therefore, represents a viable rural institutional system for serving small farmers.

2. This cooperative approach includes: small primary units of up to sixty members based upon pre-existing social groups, a cost of credit to farmers approaching 15 percent, and a possible requirement particularly in the early stages of partial monopolies in the supply of new inputs to sustain the appreciable costs of serving small farmers.

3. Integral to the system is the self-selection of the leaders of the primary cooperatives coupled with their continuous training in cooperative management and new agricultural technology.

4. The combination within the cooperative of agricultural extension activities and the provision of credit is productive. Through local communication channels, the agricultural knowledge extended through the cooperative passes to all members of the village, hence, the national treasury may appropriately pay some of the costs of extension carried out by the cooperatives.

5. Vital to success of the system is the continuous access of the central cooperative organization to new, high return, agricultural technology.

VI. POSTSCRIPT ON THE ACADEMY AND THE COOPERATIVES THROUGH JUNE, 1972

On the night of April 25th, 1971 the savage attack by the West Pakistan military upon the civilian population, Dacca University students, and Professors in what was then East Pakistan set in motion irreversible changes which led to the invasion of East Pakistan by Indian forces in support of the Bangali gurrillas and the end of united Pakistan with the surrender of the Pakistan Armed Forces on December 17, 1972. Since that time the new nation of Bangladesh has been coping with the reconstruction, returning refugees, and food shortages. Determination of reorganized government agency and civil servant responsibilities continues at the time of writing.

Reports from the Academy fortunately have indicated that no loss of life among Academy personnel occurred and that there was relatively little damage to Academy classrooms, dormitories, the library, and other facilities.

During the current national reorganization period, the Academy has continued training and research activities. Government decisions are expected soon which will more clearly indicate the Academy's future roles.

The Cooperatives in Comilla Thana have continued to operate even during the fighting. As yet reports are not available to assess the losses incured and the levels from which the cooperative system will rebuild.

The Integriated Rural Development Program, intially approved in 1971, for the expansion of Comilla Type Cooperatives into all 413 Thanas of Bangladesh, remains in July, 1972, the major basis of current plans for rural program implementation.

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APPENDIX

SELECTED BIBLIOGRAPHY OF MAJOR WORKS ABOUT COMILLA RURAL DEVELOPMENT PROGRAMS

The following references are a selection of major works on the different rural development programs originating at the Pakistan Academy for Rural Development in Comilla, East Pakistan up to April, 1971. Excluded in this list are numerous statistical and technical agricultural reports such as those of the crop cutting yield surveys and the reports on potato and rice trials. References preceeded by an asterisk (*) are of primary interest. Unless otherwise indicated, all works were published by the Pakistan Academy for Rural Development, Comilla, East Pakistan. The academy is now officially The Bangladesh Academy for Rural Development.

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