AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523

BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY

1. SUBJECT CLASSIFICATION

A. PRIMARY: Social Sciences

B. SECONDARY: Development Planning

2. TITLE AND SUBTITLE

Comilla rural development programs; results from East Pakistan for international testing

3. AUTHOR(S)

Stevens, R. D.

4. DOCUMENT DATE	5. NUMBER OF PAGES	6. ARC NUMBER
1971	59 p.	ARC

7. REFERENCE ORGANIZATION NAME AND ADDRESS

The Agricultural Development Council, Inc., 630 Fifth Avenue, New York, New York 10020

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)

(Presented at Seminar on Small Farmer Development Strategies, Columbus, Ohio, 1971)

9. ABSTRACT

This paper describes the rural development program conducted in the Comilla District of East Pakistan. The program was begun in 1961 by the Pakistan Academy for Rural Development to provide training and to stimulate development of organizational resources for establishing agricultural cooperatives, irrigation programs, women's education programs, and rural public works programs. Two major programs discussed in detail by the author are the Thana (county) Training and Development Center and the Agricultural Cooperatives program. The Training and Development Center played a crucial role in developing a rural works program which created an average of 40 million man-days of employment annually. The work produced a major increase in infrastructure facilities in rural areas. Without the Thana-level organization and training, the works program would have failed completely or provided a much lower return. Similarly, the Thana Irrigation Program, which was initiated on a province-wide basis in 1968-69, had by 1971 placed 26,000 operating pumps in the field. These were able to irrigate 1.3 million acres. By comparison, the East Pakistan water agency had been able to irrigate only 94,563 acres in 20 years and at great cost, and a nine-year effort by the Agricultural Development Corporation had fielded only 3,900 pumps. Over a period of years, the Agricultural Cooperative Program has financially benefited small farmers by providing low-interest loans, training programs, and technical assistance. Strong evidence that the Comilla Cooperative system held promise for all of East Pakistan came from approval in 1970 of its Integrated Rural Development Program by the central government of Pakistan.

10. CONTROL NUMBER	11. PRICE OF DOCUMENT
PN-AAB-906	
12. DESCRIPTORS Project evaluation Utilization Comilla?	**13. PROJECT NUMBER** **14. CONTRACT NUMBER** CSD-2813 GTS **15. TYPE OF DOCUMENT**

AID 590-1 (4-74)

SEMINAR ON SMALL FARMER DEVELOPMENT STRATEGIES

Comilla Rural Development Programs-- Results From East Pakistan For International Testing

by

Robert D. Stevens
Associate Professor

Department of Agricultural Economics
Michigan State University

The Agricultural Development Council and
The Ohio State University
Columbus, Ohio
September 13-15, 1971

COMILLA RURAL DEVELOPMENT PROGRAMS

RESULTS FROM EAST PAKISTAN FOR INTERNATIONAL TESTING

August, 1971

COMILLA RURAL DEVELOPMENT PROGRAMS
--RESULTS FROM EAST PAKISTAN FOR INTERNATIONAL TESTING*

By

Robert D. Stevens

"...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/]

I. INTRODUCTION AND BACKGROUND

After some introductory and background material, this paper briefly describes essential elements of the Comilla Rural Development Program. Analysis of project methods and results follow of two major programs at Comilla, the Thana Training and Development Center Program and the Agricultural Cooperatives Federation. Generalizations for international testing are in the final section.

*Presented at the RTN Seminar on "Development Strategies for Low Income Farmers". Ohio State University. September 14, 1971.

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

However, an exceedingly complex set of questions are involved in how to go about 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 the high productivity technology is available in the society and then let entrepreneurs come forward and make the investments which will result in the accelerated growth. Another extreme strategy is based on the assumption that government knows 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, China, etc. Both these extreme strategies have had serious shortcomings in most cases 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 and earlier in Denmark have had considerable success.

Currently in the developing nations various approaches and experiments are underway attempting to accelerate the economic and social transformation of rural society without making the mistake of attempting to transplant a foreign model. The rural development program at Comilla in East Pakistan is one of these experiments.

For clarity it should be pointed out here that the Comilla Rural Development Program is limited largely to organization activities focused on the supply of more profitable sets of factors to farmers including the provision of training for the required investment in human capital for productive use of the new technology. The Comilla program to date has been relatively little involved in the development of more profitable agricultural technologies.[2/]

II. PROJECT DESCRIPTION--METHODS AND OUTLINE OF PROGRAMS

The Comilla Rural Development Programs are a strategy for the involvement of all the people of the area. They provide a way in which farmers and others can gain increasing access to meaningful economic, political and social activities. The benefits of the programs are widespread within the villages. These activites have been the result of careful experimentation in the cultural environment in which the programs are to be applied, and has included a number of different types of evaluations.

The background and development of the activities in Comilla is generally well described by Raper.[3/] In brief, the Comilla rural development program is the result of experimental pilot activities conducted by the Pakistan Academy for Rural Development in one Thana (county) in East Pakistan containing one-hundred and seven square miles and in 1961, 217,297 people.

The Academy commenced its training and experimental work in 1959. It was a new type of institution in Pakistan charged with training members of the government administration for improved developmental performance in rural areas. In 1959, its staff of professionals consisted

of 10 individuals, only two of whom had Ph. D's. The Academy faculties expertise was predominantly in social science fields (Education, psychology, sociology, economics, political science, etc.).

The ideological perspective of the government was officially Islamic Socialism. Little direct influence of this was felt at the academy. The more important environmental factors related to the nature of the Pakistan government which was dominated by the heritage of a colonial civil service. This civil service, the 'iron frame' of Pakistan, had generally been trained to focus on problems of law and order, and taxation. Most concede that the high-ranking officers of the Civil Service are highly intelligent and well-educated individuals. Most, however, have urban biases.

The developmental environment of the project is well documented by many Academy publications. The salient features being small owner-operated rice farms with an average land holding of 1.46 acres.[4/] The overwhelmingly dominant rice crop is grown in three seasons in a summer tropical monsoon climate with extensive annual flooding. Rice occupies about 90 percent of the cropped acreage. The cropping intensity is 1.6.

The relations between the programs at Comilla and overall development programs in East Pakistan will be discussed in a number of sections below. In short, the Comilla Rural Development Program includes both individual program elements focused on solving particular farm and other problems and the more general objective of providing the necessary organizational infrastructure which will make possible the increased productivity of other programs.

A. Methods and Resources for Developing Pilot Programs

This section will provide a brief outline of the methods used in the Comilla Rural Development Programs, and the resources committed. The methodological approach in the Comilla programs developed out of a need of the Pakistan Academy for Rural Development 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;..." He continues:

"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."5/

As a result of this view of the training problem, a major portion of faculty energies were channeled toward undertaking and analyzing pilot experiments in rural development. These experiments provided the faculty with the materials for the classroom sessions with civil servants, the officially mandated activity of the Academy.

In 1960 experimental activities were facilitated when the Thana was designated as a developmental laboratory in which programs and administrative experiments could be undertaken by the Academy. The primary target group of the experimental programs was the villagers of rural East Pakistan, and in particular, the citizens of Comilla Thana. It also turned out that some urban citizens in the city of Comilla were also benefitted, particularly by the cooperative credi work.

With respect to goals, I can do no better than to quote Dr. Khan, "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."[6/]

With respect to financial and personnel resources, details are provided by Raper.[7/] In summary, the Ford Foundation provided capital grants for the Academy buildings. Financial support for the annual expenses of the Academy have been shared by the central government and the East Pakistan government.In 1968, they were at a level of $178,500. The Ford Foundation also contributed support for the technical assistance contract with Michigan State University from 1959 to 1971. In addition, the funding of different pilot experimental programs has been obtained from various sources which are

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.

B. The Nature and Status of Major Programs

We consider here briefly the major programs initiated by the Academy.

Agricultural Cooperatives. Early in 1960, experimental efforts lead to the organization of a number of village-based cooperative societies.[8/] Detailed analysis of these cooperatives is presented later in the paper. The present status of the Comilla type cooperatives indicates sustained growth on the basis of three different cooperative development efforts. (Table 1) In view of the dismal history and the great difficulties faced by cooperatives in developing societies, this record is an incredible performance for voluntary cooperatives over an 11-year period 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.[9/]

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

Table 1

Status of Comilla Type Agricultural Cooperatives

	Average Number of Coop Societies Per Thana	Average 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)

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

In summary, with respect to current status, 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.[10/] Most thanas in the province are currently using a development center similar to that experimented with at Comilla.

Thana Irrigation Program. With East Pakistan's two-session monsoon climate, major problems of water control ensue. The dry winter season with less than 2 inches of rain per month during the four months of November-February require 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 each month. A total annual average of 94 inches of rain 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. Thus, in relation to the task relatively few river and flood control works have been completed.

Given this water situation, the Academy early concluded that it however might be able to undertake some local activities which would reduce flooding during the monsoon season. A major opportunity was seen in local irrigation activities in the winter dry 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. The early experience with attempts to develop mechanical pump irrigation in the Thana are provided in a number of reports.[11]

The growth in irrigation activities and the problems faced are documented in the annual reports of the Academy and by Raper. Basic problems in this program related to how to reduce the costs of the tubewells, how to assure the continuous operation and repair of the tubewell pumps, and how to assure payment for the installation operation of the pumps and wells. The cooperative system proved to be a solution to the managerial problems.

On the basis of the experiments at Comilla decisions were taken in early 1968 to launch a full-fledge province-wide Thana irrigation program.[12] In 1968-69, the first year this province-wide irrigation program focused on the target of 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. With respect to achievements, the report states that 10,8.2 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.[13]

These cold numbers convey very little of the immense training achievement that these figures represent. For example, 8,000 individua 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."[14]

The Thana Irrigation Program is a delivery system for new technology for the control and distribution of water for agricultural purposes. As such, the program is fairly amenable to the more usual benefit-cost analysis. It is thus of somewhat less analytic interest than the cooperative project and the Thana Training and Development Center Project.

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."15/

In brief, "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."16/ 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 up through 1968. Content of the training classes included 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 lead to development of training in family nutriton. 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.[17/] 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 experimenta 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

ncertainty about the acceptability of family planning ideas existed.

Effective promotional techniques developed at the Academy involved the creation of songs about family planning which are sung in local markets as well as broadcasted over government radio.[18/]

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 activity have continued with a view to keeping the family planning activity in Comilla Thana as a model for the rest of the province.[19/]

Rural Education Experiments. As in many developing countries, the educational system in Pakistan is largely a legacy of the colonial rulers with an urban and clerical bias. It was estimated by the Academy in 1959 that in Comilla Thana only 1/5 of the population over 5 years of age was literate. Given this 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.[20/]

The status of these programs in 1969 is as follows. The pilot school project has 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 for this activity.

The feeder school program has become an Imam (religious leader) teacher program. These religious leaders were given training in literacy methods at the Academy and then they taught 135 classes to 4,227 students. 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 this Thana.[21]/

In summary, to date the experiments in rural education in Comilla Thana have had some success and are continuing; however, as yet, the Department of Education or other units of the government of Pakistan have 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 the Academy personnel interacted with the other government officials of the Thana and the villagers,

on the crops which 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.[22/]

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.[23/]

Thereafter, the works program was increasingly supported by the government in East Pakistan and later a rural works program was undertaken in West Pakistan.

Thomas has provided a summary of the Rural Works Program accomplishments in East Pakistan 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. This activity is estimated to have created 173 million man-days of employment. The total works program allocations for the period were 196 million dollars.[24/]

The brief description provided above of programs originating at Comilla should provide perspective on the types of activity undertaken by the Academy and the varying success of these programs. We turn now to more intensive analysis of two of the projects which are of particular interest, The Thana Training and Development Center and the Agricultural Cooperatives. Our attention will be limited to these two programs in the next session.

III. TWO MAJOR PROGRAMS

Intensive analysis follows of two major programs undertaken at Comilla, the Thana Training and Development Center Program, and the Agricultural Cooperatives Federation. These are dealt with separately because they have separate organizations and somewhat different objectives.

A. Thana Training and Development Center

1) Introduction and Problem Situation

Just as the returns to investment on a farm 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. 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 were not yet ready to plan with the local people and to report to them directly,"[25/] and, 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, consisting primarily of independent government departmental activities (Agriculture, Coops, Water, etc.) which in a larger number of cases provided low or negative returns. In the early exploratory analysis of problems in the Thana, the Comilla Academy concluded that a solution to these problems required three kinds of coordination: coordination of different departmental programs, coordination of departmental efforts with those of the next lowest

level of government, the Unions, and coordination between the different unions.[26]

At about the time the Academy was undertaking its exploratory analysis the Ayubthan 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 the lowest effective governmental unit was the District with an average population of more than two million.[27] The new five-tiered governmental system included an elected Union Council at the lowest level of government a unit with 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.

Since in previous government organization the District level, 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 the two new lowest levels of government. As it turned out, the Rural Works Program became one major area of successful activity of the Thana and Union Councils with 71% of the Works Program allocations going to these levels of government in 1966-67.[28] The works program demonstrated that certain kinds of activities such as road building and water control earth works could be effectively carried out by these two new levels of government. These types of infrastructure building activities also aided agricultural development activities.

Table 2

Five Tiered Basic Democracies System

of Government in East Pakistan

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 Commissione
(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 Raner. Op. Cit. p. 101.

2) 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 experimental activities for the development of improved rural administration is contained in six annual reports.[29/] In summary, the participant observation activities by the Academy faculty in Comilla Thana government lead 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 1961. Analysis of the Thana Training and Development Center concept and its results to date follow.

The concept of the Thana Training and Development Center includes the following major elements:

(1) One 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.

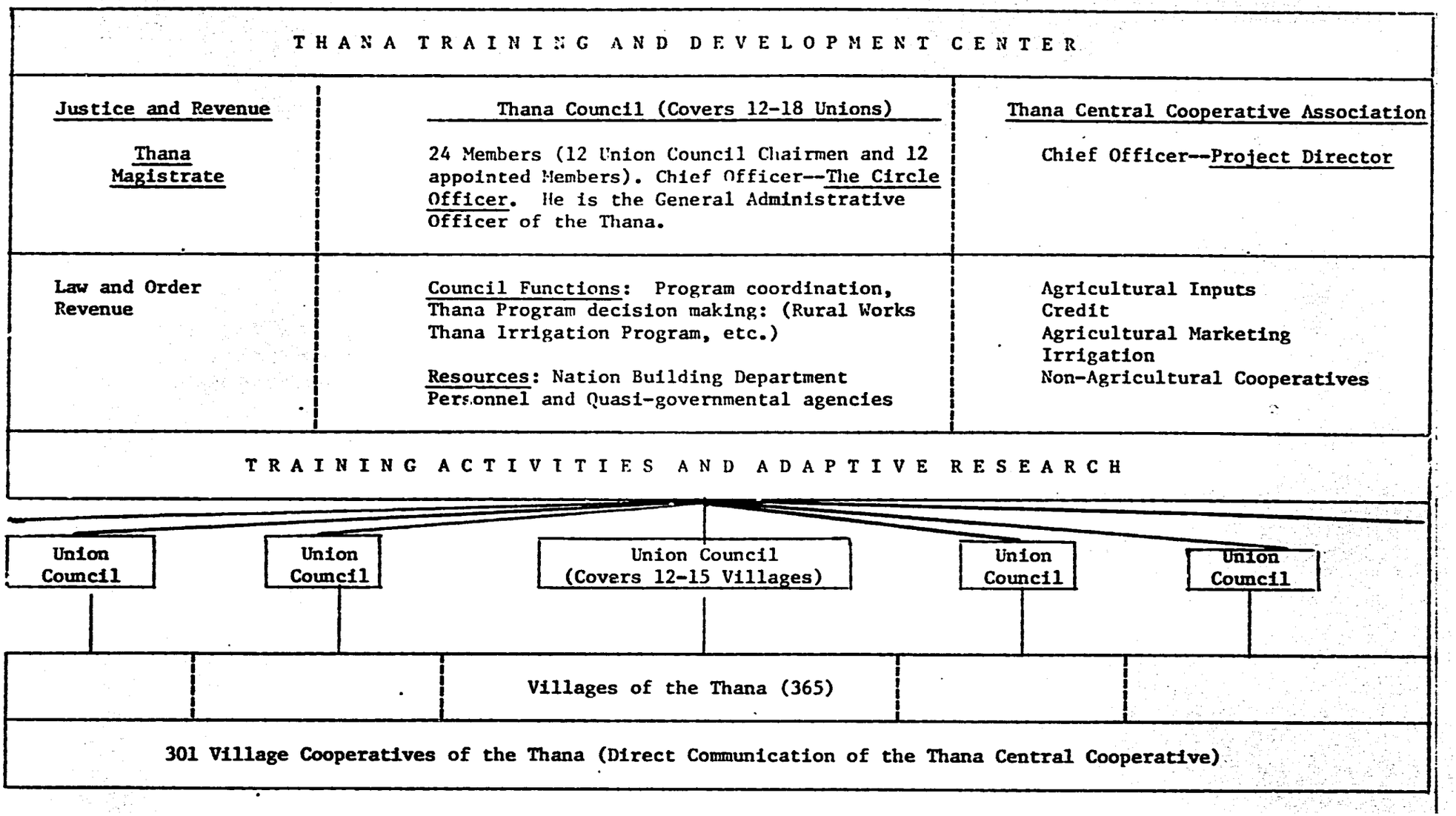
(7) A central Cooperative Association to serve farmers.

The five physical objectives were relatively easy to accomplish once decisions were 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. As the cooperatives are discussed below focus here is on the Thana Council. (Fig. 1).

A primary challenge in the Thana has been to achieve effective cooperation in developmental programs between the members of the 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.

1) Problem: Lack of funds under the control of the Thana Government. Two recently developed provincewide 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 the last few years.

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



2) Problem: Lack of participation in the coordination activity of the Thana Council by the nation building department officers. The Thana is the lowest level of government in which most of the nation building departments are represented; thus the role of the Thana Departmental officers is of vital importance for developmental program, especially with respect to (a) coordination of the different programs in the Thana, (b) providing instruction to farmers and others, (c) ensuring the availability of services and supplies. In Comilla Thana, considerable participation in Thana Council deliberations by the nation building department officers has been achieved. The Basic Democracy order required for the first time that these officers report their activities to the Thana Council as well as through the usual route to their departmental superiors. However, despite the participation which was achieved the Tenth Annual 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.[30/] Mohsen commented earlier, "Activating the departmental officers seemed to be more difficult than mobilizing the people."[31/]

3) Problem: 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, crop and animal disease plans were developed in a similar manner. In this way, 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. Illustrative training activities carried out are: 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, 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 subject, women's classes in health, food and family planning, classes for religious leaders who teach literacy to primary school students and to adults.

In many of these training activities the departmental officers assumed

The 1968-69 report shows that 49 courses with a total attendance of 226 were organized for rural development workers and rural leaders.

5) Problem: Uncertainty of 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 Project Director of the Cooperative Federation and the Thana Magistrate. Some agreement as to the roles and the working relationships between these individuals was required for productive government management.

The Cooperative Project Director in many Thanas has been senior to the Circle Officer in government rank and age. 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.[32/] By 1966, however, the Comilla Circle Officer reported that a weekly meeting between the Circle Officer and the Cooperative Project Director provided the only formal link between the two organizations, implying that both officers were at least on an equal footing.[33/] By 1970, the Circle Officer had apparently been accepted at least in principle as the chief administrative officer in the Thana.[34/] However, within the nation building departments, Thoma reports 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."[35] In particular, he points out that the Department of Agriculture opposes the concept 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. Recently, "The concept of the Thana Training and Development Center is in danger of being submerged by the old obsessive pattern of magisterial control."[36] In this study, Dr. Khan reports that in two Thana, magistrates had been given over all charge in the Thana, including being made Chairmen of the Thana councils.

3) Evaluation

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 judgements are therefore made on a province-wide basis.

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.[37] 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 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 immense cost and the nine year effort of the Agricultural Development Corporation had only fielded 3,900 pumps.[38]

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."[39]

Turning to the political impact, national and local levels may be considered. Nationally due to the recent history of Pakistan, political parties have had halting development. The Awami League's sweeping success in the 1970 elections raises the question as to its view of the Thana Training and Development Center approach to rural

development. At the international level, the World Bank in its recent East Pakistan Action Program supported the Comilla rural development model.[40]

B. Comilla Type Agricultural Cooperatives

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

1. 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."[41]

This letter continues with the first tentative plan for a cooperative pilot project. Important points were that:

"(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."[42/]

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 some groups interested in cooperative action."[43/]

"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 the 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."44/

The conditions in summary were as follows: (1) The group would have to organize 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 recieve payment for his travel costs plus additional small allowance. (5) The group would have to agree to keep good accounts. (6) The group would have to agree to do 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.

all from village < Mgr. Model farmer Chairman

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.[45]

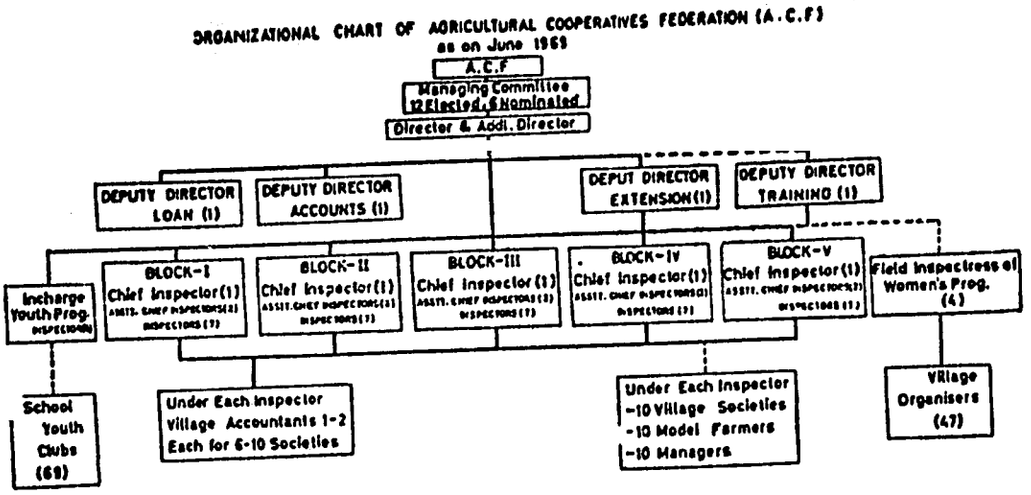
Critical to the success of these cooperatives was the training of the individual chosen by the village group to be their village organizer or cooperative manager. Intensive training courses were operated at the Academy for these newly chosen cooperative organizers or managers. Soon it was clear that 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 was 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 in the village cooperative scene. Due to this approach, the Comilla cooperatives have largely been based upon natural social groupings. Detailed evidence of this was provided by Bertocci.[46/]

From this organization approach a large number of cooperatives were developed, both in agricultural villages and among other groups. By June, 1969, the village cooperatives had a separate complex 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.[47/]

The cooperative program content is focused around the provision of loans to farmers which provide 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 were for one year. The important item of land purchase, land release and rental bears further exploration as to what is occurring. Is this re-purchase of land loaned out to others as security and thus the reduction of interest rates or is it the purchase and rental of additional land by coop members from non-coop members?

Figure 2



Source: PARD, A New Rural Cooperative System for Comilla Thana Ninth Annual Report. 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.

Turning to the new technology content of the cooperative programs as stated above, one of the basic parts of the agreement with the village cooperatives was that they 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.[48] 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;[49] (2) The pilot development of 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;[50] (3) Pilot and adaptive research beginning in 1960 on the use of 4 wheeled 35 horsepower tractors for rice and other crops. In ten years of activity 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;[51] (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, when the first IRRI varieties of rice became available for use in East Pakistan, they were tested and promoted;[52] (5) Adaptive research, supply and promotion of agricultural inputs including particularly chemical fertilizers, pesticies, and improved seeds[53]. These activities demonstrate that although the Academy as a social science institution was lacking in technological expertise, it succeeded through the cooperative

project foreign assistance and other approaches to obtain a number of technically competent individuals.

This experience 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. An institution of this nature either requires a few highly competent individuals trained in fields of agricultural technology or a workable way of gaining regular and easy access to such persons located in another institution.

2. Program Results

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, analysis of the agricultural credit activity from the point of view of the cooperative federation and the national economy. Then dimensions of the social and political impact of the agricultural credit program will be explored.

a. 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 involved 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 societies. In the following paragraphs, the impact is measured in terms of the coverage of farmers by the cooperatives and the effect of cooperative activities on production and income. Some concluding comments focus on employment, income distribution and land tenure issues.

When examining the economic impact of the cooperative program on farmers in the villages care must be taken to distinguish Cooperative members from others. Estimates of the proportion of farmers who are members indicate 37 percent membership in Comilla Thana and an average of 22 percent after five years of cooperative activity in seven other Thanas of Comilla District. (Tables 3 and 4).

Economic benefits have to be measured indirectly in terms of changes in inputs and yields, due to the lack of farm management studies in the Comilla area. 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.[54/]

The growth of purchased inputs of commercial fertilizer and pesticides has been significant for Winter rice as this study demonstrates. In 1966 cooperative members used commercial fertilizers at the rate of about $4.00 per acre on non-improved rice varieties. In 1970, with almost 100 percent use of improved rice varieties commercial fertilizer increased to more than $16.00 per acre among cooperative members. It is particularly significant that non-cooperative farmers also were able

Table 3

Growth of Cooperative Membership and Land Ownership in Comilla Thana

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 4

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

I. Membership

	Thana	1961 Rural popu. (approx.)	Estimated small farm families	Cooperative members	Percentage
1.	Laksom	3,16,000	37,000	8,298	22.4
2.	Chandin	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. PARD. Feb., 1971. p. 13 and 18.

to purchase and apply almost the same amount of commercial fertilizer per acre for this crop. Thus in spite of the fact that cooperative membership is limited to less than 40 percent of the farmers, other farmers are benefitting greatly from the cooperative activity.

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.[55/]

Distribution of Gains by Farm Size

The distribution of benefits from the cooperative activity within the villages is of major interest. This question is examined by considering farm size in relation to cooperative membership, adoption of new varieties and yield. Faidley and Esmay found that cooperative membership was fairly evenly distributed in farms larger than one acre representing 54 per cent of the rural population. (Table 5). 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 is little served by the cooperatives directly.

With respect to the adoption of improved varieties of Winter rice Faidley and Esmay concluded that regardless of farm size adoption rates were about the same, but cooperative members began earlier.

Table 5

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 populat with given farm si who are coop membe
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 very much higher yields of 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.[56/]

Other evidence of economic gains by farmers follows. In an attempt to assess the effect of cooperative activity on farms Rahim has conducted two comparative sample survey studies of Comilla cooperative farmers and farmers in a nearby Thana where there had been no cooperatives until after 1965. Unpublished data from this work show that by 1969 Chandina 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 per cent of Chandina with an increase of 61 per cent among Comilla cooperative members.[57/]

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.[58/] 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 their Thana level cooperative federation organization have together had considerable economic impact on most of the villagers. We turn now to the economics of operating these cooperatives.

b. 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 at an interest rate of 10 percent plus a service charge of 5 percent per annum. 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 is own expenditures.

The five per cent 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 shares purchased, a 5 percent dividend was declared in 1968-69. A fixed 4 percent interest is paid on the 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 (See Table 1.) Although there is hard work to be done to further reduce the 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. There is a question as to whether the cooperatives should have to carry this cost.[59/]

From the point of view of the national treasury cost, the Comilla cooperative system is 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 small farmers with credit.

Strong evidence that the Comilla Cooperative system held promise for East Pakistan 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 413 Thanas within a nine-year period.[60/] 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 6). Complete repayment of the loan fund is planned for twenty-five years.

c. Social Impact

Social impacts of the cooperatives, although difficult to document precisely, appear 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 village cooperative manager was asked to participate in dispute settling with the traditional leaders.[61/] A further development reported by one of the Academy instructors is that when villages want to get things done, they go to the village cooperative manager instead of the traditional leaders or the elected Union councilors.[62/]

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 other sources of agricultural information in the Thana.[63/]

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 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.

Table 6

Projected Annual Costs per Thana for the Establishment of Comilla Type Agricultural Cooperatives in 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	$5,57	
	b) Training and Extension		
3.	Loan fund build-up for Thana Cooperative Federation (for five-years only)		$210,000

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

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 irrigation. 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 cultivation but the net effect on employment of these changes may well have been positive.

With respect to the 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.[64/]

d. Political Impact

The political impact of the Comilla activities is hard to interpret. One reason is that, in the context of East Pakistan, the impact of the Comilla activities on government and politics needs to be considered together. The strong impact of Comilla 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 Owami League's sweep of East Pakistan

in 1970, it was seriously considering supporting the Comilla approach to rural development[65]. Due to the eclipse of the political parties until 1968, one can conclude that it was more important for the Academy to attempt to influence government than the political parties. In the area of government programs, the Academy had notable success.

IV. CONCLUSIONS AND GENERALIZATIONS FOR INTERNATIONAL TESTING

Experimental and pilot activities at Comilla have evolved a number of development strategies which resulted in increased incomes for the majority of small farmers. The two groups least benefitted were the very small farmers, approximately 20 percent of the village families with less than one acre of land, and the landless laborers, representing some 10 percent of the families. Through the Thana Training and Development Center under the Basic Democracies system of elections, and the Agricultural Cooperatives, villagers have gained much increased political and social involvement in planning and local decision making. As a result economic and social benefits of the Comilla programs have been widespread.

Attempted generalizations for international testing about the experience at Comilla are in three parts--those about the experimental and training activity of the Academy, those related to the development of rural government and those focused on agricultural cooperatives. Comments on research needs follow later.

Less emphasized in the literature about economic growth from traditional agriculture are the associated institutional changes required in this transformation. A large number of new or modified institutions

are essential for 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 main governing system was to effectively shift from primary attention on law and order, and tax collecting activities to major focus on developmental activities. How to modify or create effective government and other institutions at the local level for more rapid economic and social development was the task facing the Academy at Comilla in 1959.

The following points about the Academy activity are of value for international testing:

1. An Academy such as the Pakistan Academy for Rural Development in Comilla can conduct a whole range of exceedingly valuable pilot and experimental activities in rural development at relatively small cost to the treasury. These activities strongly support its training function.

2. The relationship of the Academy to government and the types of personnel at Comilla are appropriate for this task with the exception of the need to build into the institution ready access to agricultural and other rural technologies.

3. An experimental, open-minded approach, involving a great deal of interaction with rural people is essential to success.

4. A wide range of subject matter activities, including agriculture, education, roads, women's programs, health is desirable because of the interrelations between these activities and the reinforcement of programs which results.

5. As successful experiments move to the pilot stage, the target agency for the operation of the wider program must continually be kept in mind and brought into the planning and operations as soon as possible.

6. The evaluation and research function is essential to this type of academy, both to document change and to review the status of programs.

Rural government developments in Comilla have the following international implications:

1. Rural government may be made more effective if a way is found to regularly bring together representatives of the nation-building departments and valid representatives of rural people for discussions of plans and action programs. In this way, rural people are brought into the decision making process. The departmental representatives have the technical expertise and often control over funds and supplies while rural leaders can get decisions from communities and mobilize people for action programs.

2. For greatest effectiveness care is required in the decision about the lowest level of major rural governmental activities. Round trip travel time during one day by local transport should be a major guide.

3. A central physical site close to a heavily frequented market center for all nation building and other offices which work with rural citizens will greatly facilitate developmental activity.

4. Responsibility for development activity should be clear and these activites separated from law and order, and taxation functions.

5. Rural governmental activity should be focused on areas which require joint action and relate to all people, such as roads and schools. Rural government was not effective in agriculture and other specialized sectors. These require specialized organizations.

6. A training center should be integral to rural government, for all institutional and program change requires training. In the end the effectiveness of the institutions depend upon training of the personnel operating them. Having departmental officers change roles and become trainers of rural citizens has been valuable for both.

Agricultural Cooperatives in Comilla suggest the following generalizations:

1. Using the Comilla approach small farmers in low income nations can be organized into voluntary credit cooperatives.

2. The approach includes: small primary cooperatives of up to sixty numbers based upon pre-existing social groups, high credit costs to farmers of up to 15 percent, and may require partial monopolies, such as for the supply of new high return inputs to sustain the appreciable costs of serving small farmers.

3. Self-selection of the leaders of the primary cooperative and regular continuous training of these men in cooperative management and new agricultural technology is integral to the system.

4. The Central Cooperative Federation must have continuous access to new high return agricultural inputs and may, as in Comilla,

have to conduct a considerable amount of adaptive research.

5. Agricultural Extension Training activities are very productively combined with cooperative credit activities. Through village communication channels, this knowledge benefits more than the cooperative members; hence, the central treasury may appropriately pay some of the cooperative extension costs.

Priority research needs related to the Comilla experience include:

1. An analysis in a benefit-cost framework of the returns to cooperative activities at Comilla.

2. Farm management studies which would provide knowledge of the economics of representative farms throughout the years. To date, only cost and returns studies for individual crops are available for the Comilla area.

3. Economic studies of the returns to new technology on the farm and in marketing activities.

4. Policy-oriented studies in villages focused on questions of changes in employment, landholding, and income distribution resulting from economic growth.

I cannot conclude this paper without comment on the tragic events in East Pakistan. The future of the Academy and these projects is uncertain due to the attack on March 25, 1971 by the West Pakistani's military on the Bengali population. This savage action appears to have set in motion irreversible forces leading to the establishment of an independent Bangla Dash. Until this issue is settled, rural development activities will at best be greatly hampered.

FOOTNOTES

1. T. W. Schultz. Transforming Traditional Agriculture. New Haven: Yale University Press. 1964. p. 8.

2. Possible exceptions to this statement are the development at Comilla of low cost hand dug tubewells. See K. Azharul Haq (Workshop Paper), and adaptive research in dairy supported by Danish Technical Assistance and the crop trials aided by Japanese and U. S. technician.

3. Arthur F. Raper. Rural Development in Action. Ithaca, New York: Cornell University Press, 1970.

4. Abdul Mayeed. "Strategies Involved in a Development System of Planned Social Change in Rural East Pakistan". Ph. D. Thesis, Michigan State University. 1969.

5. Akhter Hameed Khan, "The Basic Principles of the Comilla Program". Mimeo. February, 1963.

6. Akhter Hameed Khan. Op. Cit. p. 12.

7. A. F. Raper. Op. Cit. p. 35.

8. Henry W. Fairchild and Shamsul Haq. A New Rural Cooperative System for Comilla Thana. Pakistan Academy for Rural Development. 1961.

9. For details of this development, see "Integrated Rural Development Program", Government of Pakistan, Planning Commission. P.C.I. Proforma for Development Projects. (Mimeo).

10. Pakistan Academy for Rural Development Fifth Annual Report, Comilla, East Pakistan, 1963, p. 67.

11. S. A. Rahim. Voluntary Group Adoption of Power Pump Irrigation in Five East Pakistan Villages. Technical Publication No. 12. Comilla, East Pakistan: Pakistan Academy for Rural Development. 1961. The Comilla Pilot Project in Irrigation and Rural Electrification, Comilla, East Pakistan: Pakistan Academy for Rural Development. 1963. And, Mahmoodur Rahman, Irrigation in Two Comilla Villages. Comilla, East Pakistan: Pakistan Academy for Rural Development. 1964.

12. A. K. Mohsen. Evaluation of the Thana Irrigation Program in East Pakistan--1968-69. Comilla, East Pakistan: Pakistan Academy for Rural Development, 1969. p. 21.

13. A. K. Mohsen. Loc. Cit.

14. A. K. Mohsen. Op. Cit. pp. 112-121.

15. Akhter Hameed Khan. The Role of Women in a Country's Development. (Translation of a talk in Bengali, March 5, 1963, Comilla East Pakistan: Pakistan Academy for Rural Development. As quoted from Raper, R. F. Rural Development in Action, Ithaca, New York: Cornell University Press, 1970, pp. 157.

16. Nicholas G. M. Luykx. "The Comilla Project, East Pakistan", a chapter in Change in Agriculture. London: Duckworth, 1970.

17. PARD, Tenth Annual Report. 1970. And, Jahrunessa Ahmed. Women's Education and Home Development Program. Comilla, East Pakistan: Pakistan Academy for Rural Development. Fourth Annual Report for 1966-68 dated 1969.

18. Major references on family planning work in Comilla include: (1) Raper, Arthur F. Rural Development in Action. Ithaca, New York: Cornell University. 1970. pp. 172-185, Pakistan Academy for Rural Development, Tenth Annual Report. Comilla, East Pakistan. 1970. "Family Planning Project", pp. 85-88. And, M. A. Manan. The Comilla Pilot Project in Family Planning, Fifth Progress Report, PARD, 1968.

19. Arthur F. Raper. Op. Cit. pp. 186-209

20. Pakistan Academy for Rural Development Tenth Annual Report. Comilla, East Pakistan. 1970. pp. 75-81. And, Abdul Mayeed, School Works Program, PARD, 1966, and A. A. Bhuiyan, Imamas as Teachers, PARD, 1968.

21. A. K. M. Mohsen. Report on a Rural Public Works Program. PARD, Comilla, East Pakistan. 1962.

22. A. T. R. Rahman. An Evaluation of Rural Public Works Program. East Pakistan. 1962-63 and ibid. 1963-64. Comilla, East Pakistan: Pakistan Academy for Rural Development. 1965. And K. M. Tipu Sultan (ed.), The Works Program in Comilla Thana: A Case Study 1962-66. PARD, 1966.

23. J. W. Thomas. "Agricultural Production Equity and Rural Organization in East Pakistan." Draft for the Research Workshop on Rural Development in Pakistan, Michigan State University. July, 1971.

24. A. K. M. Mohsen. The Comilla Rural Administration Experiment. 1963. p. 16.

25. A. K. M. Mohsen. The Comilla Rural Administration Experiment--History and Annual Report 1962-63. PARD, Comilla, East Pakistan, 1963. p. 12.

26. A summary history of Rural Government in East Pakistan, see Elliott Tepper, "Rural Development in East Pakistan", paper presented at the Research Workshop on Rural Development in Pakistan, July 1971.

27. Tepper, op. cit.

28. PARD, The Comilla Rural Administration Report, 1963, 1964, 1966, 1967, 1968, 1969.

29. PARD, Tenth Annual Report, 1970. pp. 44-50.

30. PARD, Tenth Annual Report, 1970. p. 50.

31. A. K. M. Mohsen. The Comilla Rural Administration Experiment. 1963. p. 18.

32. A. K. M. Mohsen. The Comilla Rural Administration Experiment. 1963. Appendix A.

33. PARD. Comilla Rural Administration Experiment, Third Annual Report, 1964-65. 1966. p. 53.

34. R. R. Faruqee, C. S. P. Personal Communication.

35. John W. Thomas. "Agricultural Production, Equity and Rural Organization in East Pakistan". Preliminary Draft presented to Research Workshop on Rural Development in Pakistan. July, 1971.

36. Akhter Hameed Khan. Tour of Twenty Thanas. PARD, Comilla, East Pakistan, 1971. p. 6.

37. John W. Thomas. "The Rural Public Works Program in East Pakistan" in G. F. Papanek and W. P. Falcon (eds.), Development Policy II: The Pakistan Experience. Harvard University Press (In press 1971), and J. W. Thomas, "Rural Public Works and East Pakistan's Development". Doctoral Dissertation, Harvard University, 1968.

38. John W. Thomas. "Agricultural Production, Equity and Rural Organization in East Pakistan". Op. Cit.

39. Akhter Hameed Khan and M. Zakir Hussain. A New Rural Cooperative System for Comilla Thana. Third Annual Report. 1963. p. 15.

40. John W. Thomas. "Agricultural Production, Equity and Rural Organization in East Pakistan." Op. Cit.

41. Akhter Hameed Khan, Letter to Chief Secretary of East Pakistan. Dated Comilla, January 15, 1960, as printed in Mohsen, A New Rural Cooperative System for Comilla Thana, 1st Annual Report, PARD, 1961.

42. A. H. Khan, Loc. Cit.

43. Pakistan Academy for Rural Development. A New Rural Cooperative System for Comilla Thana. First Annual Report, 1961. p. 19.

44. Mohsen. Op. Cit., p. 20.

45. Mohsen, Op. Cit., p. 21.

46. Peter Bertocci. "Elusive Villages: Social Structures and Community Organization in Rural East Pakistan". Ph. D. Thesis, Michigan State University, 1970.

47. Pakistan Academy for Rural Development. A New Rural Cooperative System for Comilla Thana. Ninth Annual Report, 1970. p. 18.

48. Mohsen. A New Rural Cooperative System. First Annual Report. Op. Cit. p. 65.

49. S. A. Rahim. Voluntary Group Adoption of Power Pump Irrigation in Five East Pakistani Villages. PARD Technical Publication No. 12, 1961, and R. D. Stevens, "Institutional Change and Agricultural Development - Some Evidence from Comilla, East Pakistan", Department of Agricultural Economics, Michigan State University, Agricultural Economics Report Number 64, 1967.

50. PARD, The Comilla Pilot Project in Irrigation and Rural Electrification 1963. Revised edition 1966 and M. K. A. Mohsen, Evaluation of the Thana Irrigation Program in East Pakistan, 1968-69. PARD, 1969.

51. PARD, A New Rural Cooperative System, Ninth Annual Report, 1970.

52. See the Annual reports of the New Rural Cooperative System and other technical reports including Fazluh Bari, "A Comparative Yield Trial with Different IRRI Selections" (Mimeo) PARD, 1969 and Q. H. Kazi, Potato Research Project Report, PARD, 1969.

53. See the Annual reports of the New Rural Cooperative System.

54. LeVern W. Faidley and Merle L. Esmay. "Introduction and Use of Improved Rice Varieties: Who Benefits?" Department of Agricultural Engineering, Michigan State University, 1970. p. 9.

55. Faidley and Esmay. Op. Cit. p. 12.

56. Faidley and Esamy. Op. Cit. p. 15.

57. John W. Thomas. "Agricultural Production, Equity and Rural Organization in East Pakistan". Draft paper for the Research Workshop on Rural Development in Pakistan. July, 1971.

58. Robert D. Stevens. "Notes on Project Costs and Gains to Cooperativ Farmers, Comilla Thana, East Pakistan". Unpublished draft, 1967.

59. Details are available in PARD, A New Rural Cooperative System for Comilla Thana, Ninth Annual Report, Comilla, East Pakistan, 1970.

60. Government of Pakistan, Planning Commission. "P. C. I. Form on the Integrated Rural Development Programme". 1970.

61. Personal Communication.

62. Personal communication with Anwarul Hoque.

63. Major research on diffusion at Comilla includes: S. A. Rahim, Diffusion and Adoption of Agricultural Practices, PARD, 2nd Ed., 1963; S. A. Rahim, Communication and Personal Influence in an East Pakistan Village, PARD, 1965; S. A. Rahim, Collective Adoption of Innovations by Village Cooperatives in Pakistan, Department of Communication, Michigan State University, 1968.

64. Howard Schuman, Economic Development and Individual Change: A Social-Psychological Study of the Comilla Experiment in Pakistan. Harvard University Center for International Affairs, Occasional Paper No. 15. February, 1957.

65. Personal Communication.