

**TERMINAL REPORT
ON
“INTRODUCTION OF MECHANIZED FARMING IN
COMILLA ON A CO-OPERATIVE BASIS”
1961—1966**

PAKISTAN ACADEMY FOR RURAL DEVELOPMENT,
COMILLA
June, 1967.

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This terminal report was prepared by Dr. N. G. Luykx, Advisor, PARD, for Mr. Haldore Hanson, Representative of the Ford Foundation in Pakistan.

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June, 1967.

INTRODUCTION

The Ford Foundation grant of \$ 8,10,000 for the introduction of mechanized farming on a cooperative basis in Comilla was a major contribution to the core component of a broad-scoped project. The grant was made in 1962 to the Kotwali Thana Central Co-operative Association. It was made on faith at a time when little was known about rural conditions in East Pakistan, about institutions for the organization of rural people, or about institutions for the development and dissemination of new technologies. Further, little was known at that time about the priorities with which the various mechanical, agronomic, financial, educational and other technologies should be applied in the development process in East Pakistan.

The necessary answers were to be obtained only through study and through experimentation. Without the grant from the Ford Foundation the requisite inquiries and trials could not have been made on the scale or at the pace required. In effect the grant purchased time, and joined with other factors in influencing the total Comilla programme.

The grant agreement was concluded in 1962. The antecedents of most events of consequence are long and intertwined with the specific situations that bring the chief participants together. The events leading up to this grant, involving as they do so many different people, are beyond thorough exploration in a report of this scope. Some aspects of the Comilla Academy's early interest may, however, be noted.

The Academy, from the very start of its active work in 1959 had as one of its objectives the organization of small pilot projects in rural development. By January 1960 authorization requested from the Chief Secretary of the Government of East Pakistan for the use of Comilla Thana as a development laboratory was received. With four months of preparatory discussions already behind it the Academy staff prepared a proposal outlining an organized cooperative system built around the utilization of small scale mechanization. At this early date the need for foreign exchange to cover imports was recognized and it was suggested that the Ford Foundation be invited to participate in this aspect of the proposed work. In the course of the ensuing discussions a PC-I form was prepared, under the procedures of the Planning Commission of the Government of Pakistan, outlining a five-year pilot project on mechanized farming on a cooperative basis. Planning Commission approval was obtained on 11 January, 1962. On this basis the grant was finally launched.

Formally, the Ford Foundation responded to a written request from I. U. Khan, Central Secretary of Agriculture, dated 17 January 1961. The request was for Rs. 38,53,000 in foreign exchange (approximately \$ 810,000) to support the foreign exchange costs of the scheme. This request was granted. The first payment of \$ 4,00,000 to cover the first two years of the five year project was made by the Ford Foundation on 18 April 1962. The final payment of \$ 110,000 was made on 17 November 1965.

The Ford Foundation grant carried with it few stipulations. It was given pursuant to the project plan approved by the Planning Commission, and pursuant to related correspondence exchanged between officials of the Government of Pakistan and the Ford Foundation.

For its part the Ford Foundation requested (1) an annual financial report covering the use of funds in the period under report, the plans for the use of funds in the coming period, and lists of machinery, equipment, building materials and lubricants purchased with grant funds; and (2) a narrative report of progress under the project.

It was envisioned that there would be a revolving fund for machinery operations equivalent to \$ 80,000 (approximately Rs. 3,76,000) the full sum of which was intended to remain in permanent use; the expenditures being recovered in machinery rentals.

Annual financial statements have been submitted to the Ford Foundation together with listings of materials purchased with these funds. A series of annual reports of the Co-operative Project were published by the Academy and copies of these were submitted as annual progress reports. The Ford Foundation accepted these reports.

The Central Co-operative Association maintains fixed deposits at five per cent interest with the United Bank. These fixed deposits are well in excess of the amount of the revolving fund. During the experimental period involving

machine utilization a sizeable subsidy was required to encourage initial trial and acceptance. During this period rental income was slight. Depreciation of the equipment has been fully covered by the fixed deposits.

The purpose of the present report is to review the impact which the utilization of this grant has had on training, research and programme development related to rural development in Pakistan. It will not attempt to recapitulate the materials contained in the annual reports of the Co-operative Project and the other documents published by the Academy relevant to this project (see the listing following the section on Research). It will, however, include a summary financial statement on the utilization of grant funds. It should be kept in mind that only a portion (albeit a major portion) of the components of the Comilla effort were financed out of the Ford Grant. The Cold Storage Plant, the Rice Mill, Dairy Farm and Poultry Farm received practically none of their direct support from these funds. However, without the impetus provided by the grant funds these facilities would not have been developed. This is because the basic experimental approach and systems of organization, training, servicing and control were the product of ideas tested with grant support.

The project involving the Ford Foundation machinery grant terminated in 1967, but the project itself does not terminate at that point. It was an on-going project at the time the Ford Foundation initiated the grant in 1962. It will continue

even after the Ford Foundation funds are finally expended.

A measure of the impact of the grant is a comparison of the activities and organization in 1967 with the rudiments which existed in 1962.

IMPACT ON TRAINING

The Comilla pilot project is a model, or illustration which a large number of people can come and see -- for varying lengths of time and at varying depths of analysis. For instance, the irrigated villages had a tremendous impact on men who could not otherwise imagine what was happening.

Training in Comilla has several aspects. It includes the training of **those workers in the pilot projects such as** tractor drivers, pump operators, mechanics, store-keepers and other staff. It includes the training of farmers, midwives, **Iran** teachers, and others who are responsible for carrying the various kinds of innovations to the ultimate beneficiaries of the programme. It includes the training of government officers in the theory, history and practice of rural development in its various aspects. It includes the explanation of the organization and programme at Comilla to visitors, many of whom are highly placed government officers or foreign specialists. Finally, it includes the presentation of the published results of the pilot experiments to policy makers through various means, including seminars, conferences, and discussions at their offices.

Training by the Central Cooperative Association

The following is excerpted from the Sixth Annual Report of the Cooperative 1/:

Training of staff for the administrative, organizational and operational activities of the Central Association and the village **primary societies** was one of the main proposals in the five year plan. Moreover the objective set before the Central Association was that it should develop itself as a training and educational centre for staff for similar projects elsewhere. The output of the trained personnel over the last 5 years had been as follows:

<u>Category/Field</u> <u>trained in</u>	<u>No. of personnel</u> <u>trained in 5 years</u>
Primary society manager	262
Model farmer	129

Village accountant	171
Inspector (came from seven thanas under district programme)	14
Tractor driver	150
Pump driver	159
Mechanic	40
Driller	17

Outside mechanic	43
Project director (came from seven thanas under district programme)	8
Deputy project director (came from seven thanas under district programme)	7

1/ A. Aziz Khan, "A New Rural Co-operative System for Comilla Thana: Sixth Annual Report, Rural Co-operative Pilot Experiment", May, 1967, pp. 49-51.

Among the Accountants and Inspectors trained in their job some demonstrated high degree of organizational and administrative ability. Such personnel were promoted to hold various positions of the Central Associations as (a) Project Director (b) Deputy Project Director (c) Administrative Officer (d) Accounts Officer (e) Loan Officer (f) Audit Officer (g) Movement Supervisor and Foreman (h) Marketing Inspector and (i) Chief Inspector of Agricultural Extension. They were direct recruits mostly from rural circles.

The Agricultural Extension activities of the Central Association are carried out by the Field Supervision Section. Training materials are prepared both by FARD and by KTCCA specialists. These are used in classes for managers and model farmers. Demonstrations are also organized and followed up in the villages.

Training by the Pakistan Academy for Rural Development

The FARD offers a variety of in-service training to government officers and technicians. The major course is the four-week Rural Development Course offered about four times a year to approximately 30-40 trainees. The trainees are mostly representatives of the nation building departments -- from section officers to district and thana level officers. During the Rural Development Course the trainees study the lecture materials, published reports, and field situations of the pilot experiments and, based on these, prepare structured reports evaluating specific pilot projects. The lectures build on theory and history to provide information on current experience in Pakistan and elsewhere in Asia.

A more intensive two-week course of similar design is offered annually to groups of probationers of the Civil Service, Foreign Service and Police Service of Pakistan.

A week-long course is offered on a seminar basis to 35-40 EPWAFDA engineers each year. This provides an opportunity to discuss pilot project findings with specialists who themselves have field experience and a direct interest in the experimental results.

Numerous specialized courses are developed on an ad hoc basis according to the needs of particular groups. For instance in September 1966 a short course was offered to batches of farmers from 14 thanas outside Comilla. This was planned in conjunction with the training of Thana Agricultural Officers, ADC Unit Officers, and Circle Officers (Dev.) from these same areas. The immediate objective was to prepare the trainees for the complex of activities associated with the introduction of two new varieties of rice seed, Taipei-177, and IR 8. As another example of a similar specialized course, training in irrigation was given to farmers selected from 10 thanas outside Comilla. Upon return to their home villages, these farmers were joined by outstanding model farmers from Comilla Thana who acted as temporary extension agents. This led to the "Irrigation Group" concept for the rapid expansion of irrigated agriculture under a Thana Irrigation Plan, part of the Irrigation Works Programme now under consideration by Government.

Each year a number of major Seminars and Conferences are held at Comilla and to a greater or lesser degree involve a consideration of the pilot project experience. Annual

conferences of Circle Officers (Dev.) take up topics such as roads and irrigation under the Works Programme. A Works Programme Seminar was held in March 1967 involving key officials of East and West Pakistan in a consideration of the means of more efficiently organizing the Works Programme effort in both wings.

In July 1966 the Pakistan Economic Association held its annual meeting at Comilla, giving this large group of influential individuals a chance to see the pilot projects at first hand. The Institute of Engineers held its annual meeting at Comilla in March 1967, and involved themselves, in part, in a discussion of small-scale irrigation on the Comilla model.

Each year about 200 visitors are recorded. That is, they occupy the staff in local touring and discussions on the Comilla Programme. About sixty per cent of these are Pakistan and the rest are foreigners. In addition, there are numerous other casual visitors.

INFLUENCE ON RESEARCH

Organization of Research at Comilla

The Comilla pilot projects are heavily documented. Each machine has a record kept of its utilization. Tractors have log books recording their use, consumption of fuel and lubricants, repairs and maintenance, and the like. The operations of each pump are noted in a log book kept by the pump operator. Similarly, each other machine has a record kept of its operations and costs.

Each section of the KTCCA has detailed accounts coordinated by the Accounts Officer and the Director of Budget and Costing

Records are also kept of training, financial transaction, processing operations and the like.

Oral and written reports are submitted by KTCCA directors and section heads in connection with the weekly coordination meeting. At the monthly management meetings of KTCCA all heads of sections go through their monthly performance records in comparison with budgeted plans.

In such a way a form of workaday research is conducted on the progress of KTCCA's operations, and remedial action flows from these findings. In addition, records accumulate. In order to preserve old records in an orderly fashion a "Documents Section" has been established at the Library at PARD with a Library Assistant specifically in charge. These records are available for future research.

Among the fields represented by the faculty of the PARD (as distinct from the KTCCA) are Agricultural Economics, Business and Cooperative Administration, Agricultural Extension, Public Administration, Education, Social Psychology and Communications, Sociology, Family Planning and Women's Programme.

Each faculty member prepares an annual plan of his activities including research, training, reporting on action programmes and other activities. The bulk of the research work is directed at evaluating aspects of the pilot

experiments. Certain background studies aimed at describing existing conditions are also made. Certain other research studies are carried on in cooperation with outside agencies in attempts to adapt technologies and local conditions to each other. The reports on the action programmes are designed principally to give only a complete description and evaluation of "What happened" in a particular field program during the year, or other period under report.

Without claiming that all research at FARD involves priority issues in rural development, or that the analyses conducted are at a level which provides definitive answers to development problems, there is nonetheless a broad research and reporting effort made to bring out useful information on the Comilla experience under the project to introduce mechanized agriculture on a cooperative basis. This involves a complex of directly and indirectly related activities. A list of publications most related to the project is attached.

The Annual Reports of the Cooperative Project

These annual reports, of which there are now six, are the most widely requested publications on the work at Comilla. They provide both narrative and numerical information on all aspects of the project. This includes the organization and performance of the units of KTCCA, the primary cooperative societies and the intervening federations of agricultural and non-agricultural societies. Among the KTCCA services

reported on are machine rentals and servicing, irrigation and rural electrification, training, credit and banking, financial control, extension of new technologies, and the organization of and assistant to the management of primary cooperatives.

In these reports may be found the essentials of what has been learned about the means by which irrigation, mechanization, improved crop varieties, and other technologies have been introduced into local agriculture through the organization of farmers, their training and education, the formation of capital via personal savings and share purchases, and the availability of credit geared to production. On its side the KTCCA provides the supporting organization for this effort. It trains drivers, other machine operators and mechanics. It runs a machine station with its movement and maintenance sections and keeps a large stock of spare parts. KTCCA also has its training programme for selected farmers, a publicity programme, its banking and accounting procedures, its processing units for agricultural commodities, and its complex of supervisory activities.

Machinery and Irrigation

Most of the data on mechanization and irrigation are contained in the annual reports of the cooperative project. The programme emphasis has been on putting machines in the hands of farmers in a form they can use, of organizing and training farmers in machine utilization, and in keeping the machines in operation.

Little has been done on research from the engineering point of view. There is a backlog of data on the economics of tractor, pump, and other machine operations which have yet to be analyzed. These records are preserved in the "Documents Section" of the Library at PARD.

With farm machinery it has been found that the development of an efficient organization is paramount. A central tractor station offers economics of scale and a convenient location for parts storage and repair services. A heavy investment is needed in building up and maintaining a supply of spare parts; and in training operators, mechanics and storekeepers. It takes about three years to train a driver and about four years to train a mechanic. Because of the bottlenecks that exist in monsoon agriculture, the demand for tractors goes up as irrigation becomes available. Instead of relying on the rains for the timing of operations, scheduling of tractor use becomes easier when there is control over the water supply. A curious phenomenon has been discovered concerning the demand for tractors. Initially there is a heavy demand for tractor use but as farmers become more solvent they buy **bullocks** for the feeling of security and independence it gives them. Cultivation only accounts for thirty per cent of tractor use. The remainder of the time tractors are used for hauling and husking. When such supplementary uses exist, it is possible to maintain a tractor station economically. Small tillers have been found to be too expensive and too difficult to maintain. They require too many trained people. They are

hard to allocate from a central station because of the difficulty in moving them over even short distances. The tillers cannot be left with farmers because of the need for regular care and maintenance. The performance characteristics of tillers are limited in comparison with four-wheeled tractors; and breakdown of tillers is more frequent. A trained driver for the tiller would be underemployed because the machine is not adapted to continuous use.

Irrigation has been recognized as the key factor in modernizing a monsoon system of agriculture. Initially, it had been thought that machinery was the priority factor. In order to implement irrigation, farmers have had to be brought into organizations for the management of the facility. In Comilla Thana the cooperatives have provided such organization and as such linked the farmers to the complex of required services.^{1/} The central organization provides servicing. The necessity of village organization has been demonstrated in that utilization of the tubewells and pumps has stopped where there have been breakdowns in the organization. There is

^{1/} In recent experiments associated with the "Irrigation Works Program" proposal (discussed on page 16) a less comprehensive method of organization (but one including all the elements discussed here) through special purpose "Irrigation groups" has been found feasible for rapid expansion within the Province.

about a one year demonstration period in irrigation; the effect of which demonstration is felt over a wide area. One tubewell village can influence many. By the second year irrigation is firmly accepted in the areas which attempt it. A six inch, (1.5 cusec) tubewell is generally employed on only about 30 acres in its first year of operation. In the second, third and subsequent years the average area covered is sixty to seventy acres. With high yielding crops and increasing prices there is a rapid return on the investment in a tubewell. Surface water irrigation is, of course much less costly, although sources of surface water are available in relatively few locations, and these are all along rivers, streams, canals, and the like. Apart from the published reports containing information on tubewells a three year series of data on tubewell economics is soon to be published. During the second year of data collection the figures indicated a very high per acre cost for tubewell water. This was due to the shutting down of twenty-two wells in societies which were blacklisted for various mismanagement incidents. These societies have since been rehabilitated, leading to irrigation utilizations over much wider acreages. This has led to a sharp drop in per acre costs of water.

Processing Industries

Most of the profits are in marketing services. Hence it is essential for the producer to own the processing and marketing facilities. Owning the facilities makes it possible to compete with the middlemen. There are several methods

that can be instituted to benefit the producers (who are also the owners of the units). Credit can be linked to marketing, repayments can be made in kind, and premiums of two to three rupees per maund can be offered to producers. Such linkage with credit, and the premiums offered, spur the pace of crop release by farmers, permitting economies to the processing units. The seed program of the Academy has been materially benefitted by these measures which induce farmer participation. The Dairy Plant has shown that we cannot avoid modernization. A new Dairy Plant has been constructed and fitted out with efficient equipment imported under the Ford grant. By and large the processing units have required intensive village organization. This has led to a healthy cycle of producer owned units, integrated with other services available through the Central Association. For instance, with haulage and transport facilities in short supply in East Pakistan the transport trade is booming. Owning transport permits integration and self-realization of profits that would have been paid to others. Tractors have easiest access to villages and a one ton trailer can be operated easily and economically in most cases. Few data on the processing units have been the subject of separate reports. Most of the information is contained in the annual reports of the cooperative project. Data on loans, repayments, purchases, processing efficiency, inventory and sales have been recorded and preserved. These are still to be analyzed.

Agronomy and Extension

Under the auspices of the Colombo Plan a Japanese team of rice production specialists has been provided to the Academy. Their work has been mostly in the organization and use of crop demonstrations as part of the extension work with farmers under the scheme for mechanization of agriculture on a cooperative basis. The activities of this team, and their findings on local agriculture are contained in their annual reports.

A series of crop-cutting surveys was initiated in 1963 as a means of estimating average yields of rice during the three growing seasons (Boro, Aus, and Aman) each year. These studies differentiate between farmers who are cooperative members and those who are not; and the findings show generally higher yields for cooperative members and those who adopt new methods.

Case material on the introduction of new varieties of rice into Comilla Thana and the circumstances of their adoption have been developed as training manuals for other farmers.

Although an early attempt was made to survey the extent and pace of adoption in a separate report, this work is being continued through the crop cutting surveys.

Rice varietal tests and fertilizer trials are being conducted in cooperation with the Ford Foundation and the International Rice Research Institute. Three other institutions in East Pakistan are also participating with similar tests. The results of these trials have been reported for each season. With the availability of expert technical assistance through

the Ford Foundation the quality and sophistication of this work will steadily improve. Early results, combined with tests of promising varieties on farmers' fields have led to the initiation of a seed multiplication and selection scheme that will serve as the foundation of a seed certification programme.

Rural Administration and Works Programme

The Rural Administration Experiment has involved a number of activities necessary for the effective spread of machine utilization, irrigation, and other new technologies in agriculture. Strong thana and union councils were developed through early experiments with activities appropriate to their composition and jurisdictions. One of the most effective of these experiments in local responsibility has been the Rural Works Programme. Another has been the development of the Thana Training and Development Centre. Both of these have been accepted by Government and spread throughout East Pakistan. The Works Programme has been spread throughout West Pakistan as well. Discussions have been undertaken in conjunction with the Government of West Pakistan concerning the possibility of introducing a thana level organization into the government set-up together with the institution of a centre for training and other development services.

The Works Programme was a pre-requisite to the machinery project. Without roads providing access to market there was little stimulus for the adoption of new, high yielding crops. Without access to the Machine Station there would be no means of making tractors and other equipment available in the

villages. Works Programme roads, bridges and culverts have had to be built to the requirements of machine traffic.

The Works Programme approach has been taken with respect to aspects of rural development needs other than roads, drains, bridges and culverts. An experiment was conducted in Comilla to provide school buildings and other facilities using a similar approach. It also included the idea of forming local school boards attached to the thana councils. The reports of this experiment covering two successive years were presented to Government but were rejected. A Works Programme approach has recently been taken with regard to irrigation, calling for the formation of "Irrigation groups" under a Thana Irrigation Plan. The experiment was conducted successfully in ten thanas. A scheme using this model to introduce 40,000 pumps into East Pakistan over a five year period has been prepared and presented to Government. It is now under consideration.

Annual Reports of the Pakistan Academy for Rural Development

As noted at the beginning of this section on research, the faculty members of PARD participate in directing and evaluating the Comilla action programmes. The annual reports of PARD are divided into sections covering different areas of specialization within the Academy. This includes agricultural extension, the machine station, irrigation, rural electrification, and cooperatives. These areas of involvement deal with activities in participation in the action programmes, in research and in training, for each faculty member.

COMILLA RESEARCH REPORTS AND OTHER DOCUMENTS
Relevant to Mechanization Through Co-operatives.

Cooperative Project Annual Reports

1. H. W. Fairchild (with Shamsul Huq), "A New Rural Cooperative System for Comilla Thana: First Annual Report, 1961" 68 pages, 1961.
2. H. W. Fairchild and M. Z. Hossain, "A New Rural Cooperative System for Comilla Thana: Second Annual Report, 1962", 108 pages, 1962.
3. Akhter Hameed Khan, "A New Rural Cooperative System for Comilla Thana: Third Annual Report, 1963" 80 pages, 1963.
4. A. Aziz Khan, "A New Rural Cooperative System for Comilla Thana: Fourth Annual Report, 1964", 110 pages, 1964.
5. A. Aziz Khan, "A New Rural Cooperative System for Comilla Thana: Fifth Annual Report, 1965", 109 pages, 1965.
6. A. Aziz Khan, "A New Rural Co-operative System for Comilla Thana: Sixth Annual Report, 1966", 118 pages, 1967.

Tractors and pumps

7. A. Z. Khan, "Introduction of Tractors in a Subsistence Farm Economy" 63 pages, 1962.
8. Howard F. McColly, "Special Report: On Introducing Farm Mechanization in Comilla Cooperative Project", 28 pages, 1962.
9. Mahmoodur Rahman, "Irrigation in Two Comilla Villages," 41 pages, 1964.
10. Mahmoodur Rahman, "Cost and Return: A Study of Irrigated Crops in Comilla Villages", 136 pages, 1965.
11. Mahmoodur Rahman, "Costs and Return: Economics of Winter Irrigated Crops in Comilla, 1965-66", 132 pages, 1967.
12. (M. A. Mannan, "Knowledge and Interest of Farmers in Winter Irrigation, 19 pages, 1966.)
13. PARD, "The Comilla Pilot Project in Irrigation and Rural Electrification". (Revised Edition), 74 pages, 1964.
14. Md. Azimuddin, "Sonaichuri Irrigation Project", 9 pages, 1965.
15. E. A. R. D., "How to organize Village Groups for Pump Irrigation, 63 pages, 1966.

Agronomy and Extension

16. Isao Matsuda, "Annual Report of the Japanese Experts: Jan '61 - Feb 62," 72 pages, 1963.
17. Japanese Experts, Unpublished manuscripts of annual reports in successive years (may be in files of Agricultural Extension).
18. PARD, "Yield of Boro Paddy in Comilla Kotwali Thana: 1963-64," 8 pages, 1964.
19. S. A. Rahim, "Yield of Aus Paddy in Comilla Kotwali Thana: 1964," 11 pages, 1964.
20. Farkhunda Akhter, "Yield of Amon Paddy in Comilla Kotwali Thana: 1964," (with S. A. Rahim), 8 pages, 1965.
21. Farkhunda Akhter, "Yield of Boro Paddy in Comilla Kotwali Thana: 1965," 19 pages, 1965.
22. Farkhunda Akhter, "Production of Aus Rice in Comilla Kotwali Thana: 1965," 7 pages, 1965.
23. Farkhunda Akhter, "Production of Amon Rice in Comilla Kotwali Thana: 1965," 12 pages, 1965.
24. A. Z. Khan, "Introduction of Taipei 177 in Comilla Kotwali Thana," 21 pages, 1965.
25. S. A. Rahim, "Partial and Full Adoption of Improved Practices in Comilla Cooperatives," 9 pages, 1964.
26. A. Zaman Khan, "Extension Training on Taipei 177 and IRRI Rice Seed Multiplication," 17 pages, 1966.
27. A. Zaman Khan, "Trial of 302 IRRI Varieties of Rice, Aus 1966, Abhoy Ashram Farm," 31 pages, 1966.
28. A. Zaman Khan, "Trial of 187 IRRI Selections of Rice, Amon 1966, Abhoy Ashram Farm," 43 pages, 1967.
29. A. Zaman Khan, "Effect of NPK Fertilizers on the Yield of IR8-288-3, IR9-60, and Nigershail Rice Selections, Abhoy Asram Farm, Amon 1966," 17 pages, 1967.
30. A. K. M. Mohsen, "The Comilla Rural Administration Experiment: History and Annual Report: 1962-63," 109 pages, 1963.
31. A. K. M. Mohsen, "The Comilla Rural Administration Experiment: Annual Report: 1963-64," 48 pages, 1964.
32. A. Z. M. Obaidullah Khan, "The Comilla District Development Project," 59 pages, 1964.

Agronomy and Extension (Continued)

33. K. M. T. Sultan, "The Comilla Rural Administration Experiment: Third Annual Report, 1964-65," 56 pages, 1966.
34. P.A.R.D., "A Manual for Rural Public Works", 50 pages, 1962.
35. A. K. M. Mohsen, "Report on a Rural Public Works Programme," 47 pages, 1962.
36. PARD, "An Evaluation of the Rural Works Programme, East Pakistan, 1962-63," 145 pages, 1963.
37. P.A.R.D., "An Evaluation of the Rural Works Programme, East Pakistan, 1963-64, 124 pages, 1964.
38. K. M. T. Sultan (Editor), "The Works Programme in Comilla: A Case Study," 174 pages, 1966.
39. Abdul Muyeed, "School Works Programme: Comilla Kotwali Thana, 1963-64," 83 pages, 1965.
40. Abdul Muyeed, "School Works Programme: Comilla Kotwali Thana, 1964-65," 83 pages, 1966.

Annual Reports of the Pakistan Academy for Rural Development

41. PARD, "First Annual Report : June 1959-May 1960"
42. PARD, "Second Annual Report : June 1960-May 1961"
43. PARD, "Third Annual Report : June 1961-May 1962"
44. PARD, "Fourth Annual Report : June 1962-May 1963"
45. PARD, "Fifth Annual Report : June 1963-May 1964"
46. PARD, "Sixth Annual Report : June 1964-May 1965"
47. PARD, "Seventh Annual Report : June 1965-May 1966"
48. PARD, "Eighth Annual Report : June 1966-May 1967," (in preparation)

IMPACT ON PROGRAMME

The impact of the Ford Foundation machinery grant made itself felt very rapidly on the development of the work under the Central Cooperative Association. As the pilot experiment was expanded -- first to three thanas in other districts, and then to seven other thanas in Comilla District the work in mechanization expanded with them as an integral component. The natural object of these pilot projects is to influence the Government of Pakistan to adopt feasible methods of technical innovation in rural development as demonstrated under the programme. The departments most affected have been Basic Democracies and Local Government, Agriculture, the Agricultural Development Corporation, and the East Pakistan Water and Power Development Authority. Through these agencies there has been some indirect impact on the programme interests of the World Bank and of the United States Agency for International Development.

Development of the Central Cooperative Association

As noted earlier, the work at Comilla was already in progress at the time that the Government of Pakistan approved the five-year pilot project and the Ford Foundation granted its financial support. The Central Cooperative Association had already been formed by that time. The potential dimensions of KTCCA were sketched in rapidly. During the second year following the grant (the third year of the project) the Works Programme had already reached national proportions and the model of the Thana Training and Development Centre was ready for replication. Managers of primary cooperative societies

and model farmers were receiving regular training. Feeder schools were planned and Imam teachers were recruited sufficient to serve 120 such schools. A Women's Programme was launched covering fourteen pilot villages. Plans were laid for a rice mill and a cold storage plant. The loan operations were conservative but succeeding, and a gradual liberalization of some of its policies was being planned. A scheme linking credit to marketing was under test involving the construction of storage facilities in cooperative villages.

But in the core area of mechanization the experimental results were perplexing. The use of farm machines had fallen well behind expectations. The Comilla staff was just beginning to appreciate that top priority did not belong to mechanization. Its pre-requisite needs had to be seen to first. Tubewells were initiated in areas where perennial water sources were not at hand for adequate water supply control on a continuous basis. Roads were provided by the Works Programme. Workshops were established for the maintenance and repair of equipment, and mechanics were trained. A stock system for spare parts was developed, and store-keepers were trained. Hopes were pinned on a Rural Electrification Programme to provide cheap power.

A two year forward perspective was adopted to let the newly learned lessons on priorities sink in, and to develop the institutional stability needed in the village cooperatives for the diffusion of these technologies.

The subsequent development of KTCCA has been a maturation of this trend.

Expansion Program

Even before the date of the Ford Foundation grant questions were raised about the tempo at which the year-old Comilla pilot experiment might be expanded beyond Comilla Thana. The Comilla staff tended to discourage expansion until the organizational pattern and the technological mix could be worked out for Comilla Thana. Nonetheless highly placed policy makers had been impressed with initial progress and kept thinking ahead.

By 1962 a recommendation was made for three new projects to be set up at Natore, Gouripur, and Gaibanda, with their headquarters each to be located at the V-AID Training Institutes in these areas. The basic features of the Comilla organization and approach were to be instituted at these locations, and each project was to be allowed latitude for further experimentation and local adaptation. Each had a machine station and workshop under a central association serving the entire thana. Educational and training activities were to be undertaken through a training centre working in conjunction with the Thana Council. Other services such as banking, supervised credit, storage and marketing were to be provided by the Central Association, which in turn was to be served by technical advisors in various fields. Expenditure on these expansion programme pilot projects was made entirely by Government of Pakistan.

A CSP Officer was deputed to Comilla to oversee the expansion programme. He prepared the scheme in consultation with the Comilla staff.

After four years of experimental operation in Comilla Kotwali Thana and one year of testing in the three new areas it was felt that the Comilla procedure for rural development had demonstrated its relevance in general terms.

The next step was to start projects in seven of the other thanas in Comilla District during 1965-66. These were established along the lines of the Kotwali Thana operation but, again, with freedom to adapt to the specific needs of each area. As with the three early expansion areas these seven new projects were financed by Government of Pakistan.

In 1967, The Agricultural Development Corporation accepted responsibility on behalf of the Government for the expansion of the Comilla-style rural development approach into the remaining thanas of Comilla District. ADC also accepted responsibility for the supervision of the seven on-going projects already expanded in Comilla District beyond Kotwali Thana.

Impact on the Department of Basic Democracies and Local Government.

Through the fortunate circumstance that the Secretary of B.D. & L.G. was a dedicated and imaginative officer, a partnership of several years duration existed between the Department and the Academy in the development of several institutions of the utmost significance. These include a strengthened Thana Council, the Thana Training and Development Centre, and the Rural Works Programme.

The Thana Council was an integral part of the Basic Democracies System prior to the time of the Ford grant. It was, however, a new institution, one providing officers of the nation-building departments at a lower administrative level than previously. Formerly the thana was solely the site of the local police headquarters; and the officers of the nation building departments served primarily from headquarters at the district level.

As noted earlier, research at Comilla showed that the works programme was a prerequisite to the development of viable village cooperatives associated with modern agricultural technology. Roads and flood control were vital. The experience given to local councils in managing the (PL 480) funds allocated to them, in planning the specific projects, and in organizing the required labour force was fundamental to the development of these local governing units. At a critical time in their evolution these institutions were given enormous responsibilities and demonstrated a large measure of success in coping with them. This was training of the most realistic kind for council members, and provided them with invaluable experience.

The Thana Training and Development Centre grew out of the joint experience of the Thana Council and the Cooperative pilot project in Comilla. The TTDC brought the offices of thana level officers of the nation-building departments together into a single location. This facilitated their

contacts with visiting farmers. It also made it easier for the Circle Officer (Dev.) to exercise his coordinating responsibility. The Central Association of the Cooperatives and its supporting service units also became a part of the TTDC. The government officers provided technical instruction to model farmers and managers selected within the village cooperatives. The Thana Training and Development Centre has been replicated throughout East Pakistan, primarily as an efficient means of organizing the thana level of government and of facilitating the flow of services to farmers. Only in relatively few TTDC's at present is there a cooperative organization to provide an integrated extension arm.

The Irrigation Works Programme, discussed earlier, is organized so that the Department of Basic Democracies and Local Government will work jointly with the Department of Agriculture and ADC in carrying out the programme.

Influence on the Department of Agriculture

The participation of the Department of Agriculture in the Irrigation Works Programme has already been noted. It is possible that the Secretary of Agriculture may become responsible for overall coordination of the programme.

Rice varietal tests and fertilizer trials are being conducted by the Directorate of Agriculture, under the Department, as well as at the Abhoy Asram Farm of the KTCCA. Especially in the early stages of this programme, the Comilla Academy stimulated the work undertaken elsewhere, particularly at the Comilla Rice Research Sub-Station of the Directorate of Agriculture. However, this is only indirectly associated with mechanization.

Influence on the Agricultural Development Corporation

The ADC is receiving the help of the Academy in organizing its Agricultural Development Estates ("Green Belt") along Comilla lines. The Academy's Instructor in Agricultural Extension has been deputed to the ADC as manager of the Estates. The scheme for these Estates was prepared with the help of the Academy and includes many of the organizational and technical features of the pilot projects. All the ADC personnel in these projects are being trained at the Comilla Academy.

The ADC is envisioned as a major cooperator in the Irrigation Works Programme, noted earlier.

The Comilla District Project is now in the hands of Government, under the general control of the Agricultural Development Corporation. The Vice-Chairman of KTCCA has been appointed Additional Director of Agriculture with supervisory responsibility for the programme. He was involved in revising and updating the original five-year plan for the District Project. He is organizing the six months training course for the thirteen new project directors to be recruited under this scheme. The training will take place at Comilla.

Influence on the East Pakistan Water and Power Development Authority

Two chairmen of EPWAPDA paid repeated visits to Comilla and to other project areas. They saw lessons in the relationship between the technical services and the Participating farmers, and in the organizational arrangement

which brought machines and equipment into the hands of cultivators. WAPDA requested the Comilla Academy to take over their scheme in Thakurgaon Subdivision as a project area. This was declined, but instead the Academy staff helped WAPDA prepare a revised scheme. The new scheme called for the organization of Thakurgaon farmers into cooperatives associated with the existing tubewells. A project director for extension was sent to Thakurgaon from the Academy staff. This gave WAPDA its first hope of anything approximating full utilization of the 300 wells drilled in the Subdivision.

As noted earlier, the WAPDA Engineers' Seminar is an annual affair at Comilla.

Influence on International Agencies

The projects in Comilla have demonstrated an unparalleled absorptive capacity for investments in development. This is due to the effectiveness of the organization of the participating farmers, and of the backstopping servicing units of the Central Association. However, the Academy has actual control over only one thana. The link with international agencies such as the World Bank and US-AID is only indirect.

US-AID is interested in supporting the Agricultural Development Corporation in the development of cold storage plants. It has obtained from Comilla information on the place of a cold storage in a potato and rice seed programme. US-AID has been interested in promoting the Rural Works

programme through the Department of Basic Democracies and Local Government. It has also been interested in promoting irrigation through ADC. In connection with these interests it has kept itself informed on the Comilla findings. Further, US-AID has sent trainees from other countries in Asia to the Comilla Academy for training in rural development.

The link with the World Bank is generally through ADC. At one time the IBRD representative insisted that the Comilla District Programme be presented to the World Bank for support. The proposal was submitted but was stagnated in IBRD Offices; while the programme continued its development beyond the point where World Bank participation would be appropriate.

Through an IDA loan to the Agricultural Development Bank the KTCCA has taken a loan sufficient to cover the costs of 100 tractors and 100 tubewells over a period of several years during which Comilla Thana will be fully organized.

It is still hoped by the Comilla Academy that the IBRD will perceive that in connection with the major schemes it supports, the IBRD will see the priority need for a number of features including powerful local organizations (in terms of resources and imaginative leaders) which can train workers and leadership; the need for training; the need for supportive servicing institutions; and for supervisory procedures.

SUMMARY FINANCIAL STATEMENT

Two financial statements are attached. One is a list of equipment and other materials purchased under the grant since the last report which carried up to 31 March 1965. The other is a statement for the period 1961-1966 indicating assets and training expenditures of the Comilla project. The amounts indicated are in excess of the amount of the Ford grant. This is due to the fact that other funds were used to supplement purchases. However, it is impossible to distinguish those items that were obtained exclusively with Government of Pakistan funds.

A sum of approximately \$ 100,000 remains of the Ford grant. This has been retained for the purpose of obtaining spare parts.

Statement of Assets & Training Exp.
from 1961-66 as per Balance Sheet

Sl No.	Heads of A/C	1961-62	1962-63	1963-64	1964-65	1965-66	Total
1	2	3	4	5	6	7	8
1.	Land	Nil	93,263/00	40,357/00	3,44,122/00	44,236/00	5,22,028/00
2.	Buildings and Godowns	4,317/00	65,906/00	16,958/00	1,63,808/00	1,01,918/00	3,52,307/00
3.	Agri. Machinery & Equipments	3,68,020/00	1,82,608/00	1,57,276/00	1,17,663/00	(36,011/00)	4,75,004/00
4.	Workshop Tools & Equipment	5,389/00	Nil	9,327/00	42,812/00	23,692/00	84,220/00
5.	Transports vehicles	Nil	42,649/00	18,280/00	81,192/00	24,750/00	1,66,871/00
6.	Pumps & Rafts	Nil	5,578/00	1,678/00	4,260/00	Nil	11,516/00
7.	Office Equipments, Furniture and Lab. Equipment	4,611/00	11,022/00	8,104/00	35,010/00	55,261/00	1,14,008/00
8.	Investments & Plants	Nil	Nil	8,46,431/00	79,645/00	11,50,869/00	20,76,945/00
9.	Cash & Bank (Deposits A/C.)	8,05,807/00	5,45,063/00	14,16,240/00	(2,90,469/00)	5,440/00	24,82,081/00
10.	Spares & other inventories	35,138/00	1,33,922/00	12,25,028/00	(2,99,864/00)	4,29,933/00	15,24,157/00
	Total ...	12,23,282/00	10,79,411/00	34,25,127/00	2,78,179/00	18,03,138/00	78,09,137/00
11.	Tubewell Installation against Basic Democracies grants	-	-	-	8,29,397/00	3,95,071/00	12,24,468/00
12.	Boring Rigs and other Boring Equipments*	-	-	-	2,08,000/00	1,57,141/00	3,65,141/00
	Total ...	-	-	-	10,37,397/00	5,52,212/00	15,89,609/00
13.	Education & Training Exp.	25,936/00	1,51,815/00	2,64,193/00	(2,99,864/00)	4,29,933/00	5,72,013/00

* Loan from Government of East Pakistan.

Machinery, Equipment & Spare Parts Imports

S U M M A R Y

Machinery	...	Rs. 7,36,846.82
Spares	...	Rs. 2,83,251.11
Equipment	...	Rs. 12,021.18
Letters of Credit Machinery.		Rs. 43,139.37
Spares	...	Rs. 17,534.11

M A C H I N E R Y

Date	Particulars	Total
1	2	3
		Rs.
31-8-65	Tyre fitting jack pump	3,347.75
31-5-66	Lower General Parts	5,050.58
30-9-65	Lambretta Tri wheeler 10 Nos.	54,543.71
31-8-65	Hunda Motor cycle 15 Nos.	16,968.37
31-8-65	Hunda Motor cycle 32 Nos.	36,294.57
31-8-65	1½ pipe 1,00,000 rft.	95,249.26
28-2-66	6" pipe 10,000 rft.	1,17,318.45
30-6-66	Parts for Willys jeep	44,694.37
30-9-65	Fubico pump 100 sets	57,624.02
31-11-65	Bed Ford chassis (Truck)	1,10,305.29
31-7-65	Lyo Khanua Tyres & Tubes	20,537.03
28-2-66	2" dia G. I. Pipes	73,084.88
28-2-66	Bed Ford chassis (Truck 2 Nos.)	57,623.46
28-2-66	Pipe cutter	4,664.18
30-11-65	Universal cutter grinder	4,196.08
21-6-66	Creamery Equipment	11,514.13
18-6-66	6 Nos. Vespa	23,830.69

Rs. .. 7,36,846.82

SPARE PARTS

<u>1</u>	<u>2</u>	<u>3</u>
30-9-66	Wrinch (loser tools)	4,778.28
28-2-66	Haffman bearing	610.36
18-6-66	Workshop equipments and spares	12,996.73
31-8-65	Machinery tools	6,122.29
31-7-65	Sato Tractor Spare Parts	4,040.82
22-6-66	Diesel Maintenance Equipment	834.38
31-7-65	Deutz Spare Parts	14,450.33
30-4-66	Spare Parts for M. F. Tractors	12,544.46
30-9-65	Lighting Fixtures	7,336.25
30-9-65	Tractor Spare Parts	1,852.95
21-6-66	M/F Tractor Spares	23,422.71
22-6-66	M/F Tractor Spares	2,781.91
31-11-65	Echigen Type Hamer with Motor	4,132.16
31-11-65	Pipe Bender	5,757.64
31-11-65	Heen Type Hallo Chisal Motishar	3,671.92
30-11-65	Meekasa Vibraton Appliances	2,596.64
31-1-66	Welding Parts	8,198.31
22-6-66	Tractor Parts	13,524.46
31-10-65	Honda Parts	15,232.91
18-1-66	Motor Tools	2,912.41
18-6-66	Spare Parts for Pumps	12,695.99
30-11-65	Accessories for Machines	6,460.08
31-3-66	Spare Parts for Motors	63,954.27
22-6-66	Spare Parts - Pipes for Els	21,605.60
21-6-66	60 Sets Bottle Type Jack & 30 Sets Chelin Pipes.	27,737.25
		<u>Rs, 2,83,251.11</u>

EQUIPMENT

1	2	3
21-6-66	Cold Store E. Equipment	6,936.27
31-3-66	Intertele Communication	5,084.91
		<u>12,021.18</u>

Letters of Credit opened
1965-66

Machinery

Land Rover	..	11,876.13
2 Nos. series II 88 wheelbase land . roller fitted with Diesel engine.	..	24,432.23
3 H. P. Cross Type Boiler	..	7,831.01
		<u>43,139.37</u>

Spares

Oil Injector	..	105.30
Oil Injector	..	1,429.32
Wore Steel Rope	..	106.25
Spare Parts for full per land engine.		2,743.97
Disintegrator	..	49.12
Amonia Gass	..	6,320.46
Lembretta Parts	..	95.50
Hunda Spares	..	75.04
Spares	..	6,609.15
		<u>17,534.11</u>
		<u>60,673.48</u>

