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THREE RURAL DEVELOPMENT MODELS FOR
SMALL FARM AGRICULTURAL AREAS IN LOW
INCOME NATIONS - SOME RESULTS FROM
COMILLA, BANGLADESH

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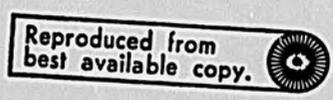
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THREE RURAL DEVELOPMENT MODELS FOR SMALL FARM AGRICULTURAL AREAS IN
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Robert D. Stevens**

I. Introduction

Discouragement often runs high among professionals, aid officials and national planners about how to accelerate the development of small farm agricultural areas. Low income nations are littered with dead small farm development programs, testifying to the difficulties of designing productive programs for small farms. The current concern about rapidly increasing rural unemployment has once again emphasized the part small farms can play in economic development, and the importance of effective programs to increase income on these farms.

Few successful programs for small farmers in developing nations have been analyzed in detail. Outside the extensive literature on the Japanese and Taiwanese experience^{1/} little is available. In a recent seminar on small farmer development strategies^{2/} the reports on successful experience were limited to the IADP Program in India^{3/} and the Puebla Project in Mexico^{4/} in addition to the Comilla experience. Important additional

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knowledge is being gained from the recently established (1968) Chilalo Agricultural Development Unit in Ethiopia (CADU) with support from S. O. I. A. government.^{5/}

This paper provides an outline and analysis of three effective models of programs for small farm agricultural areas based upon ten years experience in Bangladesh. The models are for (1) effective agricultural cooperatives, (2) the improvement of rural government, and (3) for a social science institution which conducts pilot operations, training, and research in rural development.

The problem situation in Comilla in 1959 when the Academy for Rural Development commenced its development work can best be described as very small farm owner operated traditional agriculture. Average acres cultivated per farm were 1.7 in 1961. Summer monsoon rice crops represented about 90 percent of the acres of crops with a cropping intensity of 1.7. During the dry winter season only about 5 percent of the land was cropped. High local uncertainty in rice production was due both to variability in the time of onset and cessation of the monsoon and to variable flood levels in this immense river delta. Little new agricultural technology or modern inputs were available from a government still largely focused on the historic problems of law, order and taxation. The usual high interest rates of 40-100 percent from moneylenders prevailed in Comilla agriculture. The Thana (County) in which the pilot operations were carried out had a rural population of 163,000 in 1961.

For critical analysis of development programs economists would like a display of data including the internal rate of return of the program, a measure of the increase in farm income and measures of indirect effects. Economic analyses of these types however are not available for the Comilla projects nor for most rural development programs.^{6/} The research problems of how to assess the benefits and apportion joint costs as well as the low availability of economists able to carry out and analyze sample surveys largely explain this lack. This paper is limited to evidence of the economic impact of the three rural development models and data on the extent of adoption of the models.

In a broader social science framework, development programs require analysis in the framework of cultural and economic change. The role of models such as the three analyzed here is to provide ways to accelerate change at a productive rate toward desired goals. A greater number of available models will provide an opportunity of improved program performance through choice of the best models for the situation appropriately modified. These successful Comilla Models are therefore offered for international testing, modification and use.

Before turning to detailed analysis of the three models, the relationship between the Academy for Rural Development at Comilla and the credit and rural government programs should be made clear. The Academy for Rural Development was set up in 1959 as an in-service training and research institution. As a result of the research and pilot programs undertaken by the Academy faculty, a number of rural development programs

have been adopted by government departments for use throughout the nation. This paper focuses on two of these programs, the cooperative credit program and the program in rural government, as well as upon the Academy itself as a model.^{7/}

II. A MODEL FOR EFFECTIVE CREDIT COOPERATIVES AMONG SMALL FARMERS

A. Introduction

Beginning with experimental activity by the Academy in 1959 in villages of Comilla Thana (county) in what was then East Pakistan, a new organization system for cooperatives was developed to take the place of the largely defunct Union cooperatives. As a result of this activity, in 1970 there were 301 village agricultural credit cooperative societies with a membership of 11,673 in Comilla Thana. The average loan issued per member was nearly \$53 while savings and shares per equalled approximately \$30. This was achieved in an agricultural area where per capita incomes are estimated at the \$100 level. This cooperative system was financially healthy with only approximately 2% of the loans overdue more than one year.^{8/} Expansion of this system to other Thanas resulted by 1970 in 2,360 village cooperative societies being formed with a membership of 68,632.^{9/}

The following paragraphs outline the cooperative model which made possible this achievement. Later, the economic and social impact of these cooperatives on farmers and the government treasury is analyzed.

B. Outline of the New Type Cooperative System

The two-tier cooperative system designed by the Academy, consists of primary village cooperatives with a maximum of sixty members and a Thana (county) central cooperative.

Village groups self-selected their leaders who are responsible for credit operations and the flow of new technology and inputs into the village.

The program focuses on the provision of credit, new agricultural technology and required inputs with some marketing.

The credit flow provides the primary source of income for the cooperative system. Loans during the 1968-69 fiscal year were 60% for the purpose of producing 4 major crops: Spring Rice, Fall Rice, Winter Rice, and Winter Potatoes. Of the total loan fund 67 percent was used for one-year loans.

New technology promoted through the Cooperative System included the introduction and operation of low-lift pumps for the winter dry season beginning in 1959 and the development and digging of low-cost hand-dug 6-inch tubewells which began in 1962 for the dry season. This activity included the necessary operational supervision, maintenance and repair, and parts supply. Other technological developments were the use for the first time in the area of the custom services of 4-wheeled 35 hp tractors for cultivation of rice and other crops on small farms, adaptive research and demonstration of new crop varieties, including

the IRRI varieties, demonstration and supply of agricultural inputs, including particularly chemical fertilizers and pesticides as well as improved seeds.

C. The Economic Impact on Farmers

Focus is placed first upon the impact of the cooperatives on farmers and later on the national treasury. Although the magnitude of the economic impact of changes in any one cluster of variables is always difficult to separate, the following information is evidence of this impact.

By 1969, a significant proportion of farmers in the Thana, some 37 percent, were cooperative members. They owned 51 percent of the land. Detailed estimates of the increases in income cooperative membership made possible are not available as no studies of farm income on an annual basis have been made. Data on changes in yields and inputs are known, however. Faidley and Esmay concluded that within 5 years, almost all farmers, both cooperative members and non-cooperative village farmers, had adopted high-yielding winter rice varieties which on an average more than doubled rice yields for both groups.^{10/} Earlier studies of the costs and returns of winter irrigated crops by Rahman and Haq had demonstrated greatly increased net farm income during the winter crop season from the use of additional pumped irrigation water obtained through the cooperatives.

Growth in the use of commercial fertilizers and pesticides has been significant for winter rice. The Faidley and Esmay

study showed cooperative farmers increased their expenditure on commercial fertilizers from \$4.00 per acre in 1966 to \$16.00 per acre in 1970. Non-cooperative members were also able to purchase fertilizer at the Central Cooperative and used approximately the same levels. Thus, in these villages, although the cooperative membership comprised less than 40% of the farmers, the benefits of Cooperative activity were widespread among the farmers in the Thana. Pesticide use increased from 15% in 1966 for non-cooperative farmers to 98% in 1970. The availability of the pesticides in these villages was largely the result of cooperative activity through the sale of chemicals and applicators.

Of particular interest is the distribution of benefits from cooperative activity by size of farm. Faidley and Essay found that cooperative membership was fairly evenly distributed in farms larger than one acre, representing 54% of the rural population. For the 30% of the population with farms less than 1 acre, only 15% belonged to cooperatives. Forty-three percent of the cooperative members had farms in the one to two acre range.^{11/}

Adoption rates for improved varieties of winter rice were not influenced by the size of farm. Also, the much higher yields of the new winter rice varieties show no overall correlation with farm size. Thus, although farmers under one acre were not usually cooperative members, they were able to gain access to

the necessary fertilizer, pesticides, irrigation water and other inputs for increased yields.

Additional evidence of economic gains by village farmers were obtained by Rahim in a study which compared Comilla Thana farmers with farmers in a nearby Thana where there had been little cooperative activity until 1966. Unpublished data from this study shows that in 1969, Chaudina Thana farmers had increased yields by only 10% as compared with 98% for Comilla Cooperative farmers. An estimate of net family assets showed an increase of 19% for Chaudina with an increase of 61% among Comilla Cooperative members.^{12/}

Other evidence of the benefits of participation in these cooperatives shows that a conservatively estimated shift of one quarter of an average farmer's debt from a 60% interest rate to a 17.4% interest rate would increase annual income by some \$13.^{13/} For farmers with per capita incomes in the \$100 range, this is an appreciable gain.

In conclusion, there is little doubt that in Comilla Thana, the village cooperatives and the Central Agricultural Cooperative Federation together had considerable economic impact on most of the villagers.

D. The Impact of the Cooperative System on the National Treasury

Financial health of a cooperative is essential to low drain on the national treasury. High loan repayment is central to this goal.

Comilla type cooperatives have had manageable amounts of overdue loans and bad debts amounting to 2% overdue longer than 1 year in 1970. The rapid growth of membership, savings accumulated by members, loans issued and realized, all point to financial and organizational health. In the 1968-69 accounting period savings and shares amounted to 35 percent of the loans. Financial success is also indicated by continuing growth of assets.^{14/}

From the point of view of cost to the national treasury, the Comilla cooperative system was an immense step forward in Pakistan. Previous loans of the Toccavi type to farmers through the old type Union multi-purpose cooperative societies which had been mostly captured by local notables, had annual loan repayment rates of 40 percent. No other organizations in Bangladesh had been able to reach large numbers of small farmers with credit. In the Comilla system repayment rates were 98 percent.

Additional evidence of confidence in the Comilla Cooperative system came from the approval in the fall of 1970 of the Integrated Rural Development Program by the central government of Pakistan. This program to be administered by the Department of Agriculture was to establish Agricultural Cooperative

Federations and village cooperatives on the Comilla model in all 411 Thanas within a nine-year period. The magnitude of the projected investment per Thana was \$21,000 in annual recurring administrative and training costs and a disbursement of loan funds of \$210,000 per Thana for five years. Complete repayment of the loan fund was planned for twenty-five years.

Thus, in 1970 at the end of ten years of development and growth the new type cooperatives system in Comilla had had major economic impact on a large number of farmers and was a stable credit system with growing loans and assets and no subsidy from the central treasury. The income of cooperative members and non-members in affected villages had been greatly increased by the cooperative activities.

III. A MODEL FOR THE IMPROVEMENT OF THE CAPACITY OF RURAL GOVERNMENT--
THE TRAINING AND DEVELOPMENT CENTER

A. Introduction

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

returns to government activity include confusion and conflict among programs and lack of necessary coordination, especially in insuring availability of required program supplies. Government program performance at the Thana level in East Pakistan was generally poor when the Academy began its work. Activities consisted of independent programs of different departments including agriculture, coops, livestock, water and power, etc., which in a large number of cases provided low and negative returns. "Part of the trouble was that the nation-building departmental officers (agriculture, irrigation, forestry, etc.) were not yet ready to plan with the local people and to report to them directly."^{15/}

In the exploratory analysis of these problems, the Academy concluded that a solution required 3 kinds of coordination: (1) Coordination of different programs at the Thana level; (2) Coordination of departmental efforts with those of the next lowest level of government--The Union; and (3) Coordination of programs between the different Unions.^{16/}

Until the establishment in 1959 of the 5-tiered basic democracies system of government, the district level of government with an average population of more than 2 million persons had been the lowest significant level of government activity. With the establishment of the Thana with an average population of 124,000 in 1961 at the next lowest level, the question was posed as to

what duties and responsibilities this new lower level of government should take on.

B. Outline of the Training and Development Center

Participant observation by the Academy faculty in Comilla Thana government led to a proposal in 1963 for Thana Training and Development Center. The following elements are contained in this model of the local government center: (1) a single physical location in each Thana 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 next lowest level of government and representatives of the nation-building departments; and (7) a Central Cooperative Association to serve farmers.

C. Evaluation of Results

Three major developments in rural government activity were forthcoming from the pilot development work with the Rural Training and Development Center. First, the Thana Training and

Development Center model itself proved very useful in Comilla Thana and as a result was adopted in 1964 for all 413 Thanas in East Pakistan. Illustrative of the level of training activity of the Center in Comilla Thana is the following from the 1968-69 report: 49 courses taught to 2,226 persons. The groups reached by these instructional sessions include the following: Union Council members on such subjects as Union Council operation, pump irrigation, taxation, conciliation court procedures, and the administration of Muslim family law; village cooperative managers, model cooperative farmers; women's classes and classes for religious leaders who teach literary classes.^{17/}

In the rest of East Pakistan by 1970 most Thanas were using a Training and Development Center based on the Comilla Model.

The second major development was the Rural Public Works Program. It was modeled on early pilot activity of the Comilla Thana Training and Development Center under the leadership of the Thana Council. Evidence of the effectiveness of the pilot Rural Public Works Program was demonstrated by its adoption in 1962 as a provincial program in East Pakistan. Later this Works Program model was transferred to West Pakistan. In a detailed evaluation of the Rural Works Program in East Pakistan, Thomas concluded that the internal rate of return of the program during the period 1962-68 was 57 percent.^{18/}

After a number of years of pilot activity in Comilla, the third major development was the Thana Irrigation Program. The program was initiated on a provincewide basis 1968-69. By 1970-71, this program had placed 26,000 operating pumps in the field able to irrigate 1.3 million acres. The magnitude of this success can be gauged by the fact that the East Pakistan Water and Power authorities had in twenty years only been able to irrigate 94,563 acres at an immense cost. Also, the 9-year effort of the Agricultural Development Corporation had only fielded 3,900 pumps.^{19/} The success of both the Rural Works Program and the Thana Irrigation program was dependent upon the Thana Training and Development Center organization and concepts. Without this Thana level organizational and training, these programs would either have failed completely or provided much lower rates of return. In particular, without the Thana level organization and training approach used, farmers would not have paid part of the costs of irrigation, because previously water had been provided free.

At the international level, the World Bank in its recent East Pakistan action program has supported the Comilla rural development model.^{20/}

The Training and Development Center approach to rural government made possible much more effective local government. In particular, a number of new effective programs were developed in the Thana including the rural works program and the Thana irrigation program.

To accomplish these objectives required increased coordination between different government agencies, units of government and representatives of the people.

IV. A MODEL OF AN INSTITUTION TO CONDUCT PILOT OPERATIONS, TRAINING AND RESEARCH

A. The Nature of the Academy for Rural Development

The third model is of an Academy or Institution for rural development. This is the institution which made the initial analysis of rural development problems, set up the pilot programs such as the new type cooperatives and the Training and Development Center, and conducted evaluations and research studies of these and other programs. An outline of this institution is provided first followed by an evaluation of its work.

In 1959, the Academy for Rural Development at Comilla was set up as a government training and research institution. It was a new type of institution in Pakistan charged with providing in-service training to members of the Civil Service for improved performance in development activities in rural areas. In 1959, its staff of professionals consisted of 10 individuals, only two of whom had Ph. D.'s. The Academy faculty's expertise was predominantly in social science fields including particularly education, psychology, sociology, economics, and political science.

The following major official and unofficial linkages between the Academy and the Government of Pakistan existed: a high-level board of governors provides policy and broad managerial guidance for the

research and training activities of the Academy.

From 1952, the Board of Governors was headed by the Chief Secretary of the Government of East Pakistan with members representing the Central Ministry of Finance, The Establishment Division, The Provincial Secretary of Finance, Agriculture, Basic Democracies, and Local Government, Education, Cooperatives, the Vice Chancellor of the University of Dacca, and two non-officials appointed by the Governor. The Director of the Academy was member secretary. The membership of the Board thus represented major users of the teaching and research services of the Academy.^{21/}

An early decision also determined that the Director of the Academy should be a person of considerable seniority and of sufficient status to be able to undertake the training of the civil service of Pakistan officers at the high level of Division Commissioner and Secretary of Government.

The personal characteristics of the first director, Akhter Hameed Khan, fitted these criteria and strengthened the needed inter-relationships, for he as a former Indian Civil Servant, knew personally and had equal status with many of the major figures in the Civil Service of Pakistan. Thus, the design of the institutional linkages between the Academy and the other relevant departments and the status and individual characteristics of the first director all provided the crucial linkages required for the exposure of the government personnel in relevant departments to the pilot and research programs of the Academy.

The methodological approach of the Academy was based upon the social sciences and was limited largely to improved organizational activities focused on the supply of more profitable new technology to farmers including the provision of training to insure the required investment in human capital for productive use of new technology. In this process, the Academy undertook a great deal of local testing of crops and farm equipment. The Academy was not assigned the task of developing new and more profitable agricultural technology. However, certain activities were of this nature, particularly the development at Comilla of low-cost hand-dug tubewells and research in dairy supported by Danish technical assistance.

Fundamental to the success of the Academy were "the basic principles of the Comilla program" as outlined by Akhter Hameed Khan in 1963²². "...The training should be supported by research, experimental efforts to test theories and find workable procedures..." Experimental pilot activities were facilitated after 1960 when Comilla Thana was designated as a developmental laboratory.

With respect to the overall goals of the Academy, Dr. Khan said, "What we are trying to evolve here is a pattern for the future administration of East Pakistan at the Thana level. It is our primary aim. We are not engaged in a little experiment. It is by no means an academic exercise. It is not simply a research project. It is an attempt to find out what can be done to bring about the soundest and quickest economic social development all over East Pakistan."^{23/}

The financial and personnel resources used to carry out the Academy programs were modest. The Ford Foundation provided capital grants for the Academy buildings. Financial support for annual expenses of the Academy were shared by the Central Government and the East Pakistan Government. In 1969, these annual expenses were at a level of \$181,000.^{24/} These funds supported the Academy facilities and administrative personnel and a professional staff of 18 instructors and 21 research assistants. Technical assistance mostly in the form of advisors was provided by the Ford Foundation through a contract with Michigan State University from 1959-1971 at an average annual level of one advisor per year. The technical assistance also included an initial training period for the 10 original staff members at Michigan State University. Graduate training was provided to 5 instructors from the Academy at Michigan State University. Additional support to the Academy was provided by Peace Corps volunteers and experts from the Danish Government, British Government, and Japanese Government. Some additional research and other funding was provided to different experimental programs. These are detailed in the Academy Reports and by Raper.

B. Evaluation of the Impact of the Academy for Rural Development

This summary evaluation is based on examination of the scope of activities carried out and upon their impact.

First with respect to pilot operations, the development of the new-type cooperatives and the Thana Training and Development Center have been discussed above as well as the Thana Irrigation Program and the Rural Works Program. Important additional pilot programs have been in rural education and in women's programs including family planning, and in cooperatives for non-farmers and in agricultural mechanization. More detail is provided on these programs by Raper and the Annual Reports of the cooperative system and of the Academy. As shown above, a number of these pilot projects have become national programs with wide impact throughout Bangladesh.

Turning to research evaluation activities of the Academy, the list of completed reports is long and varied. An average of 17 per year were produced during the last ten years. They have ranged widely over most of the problem areas in rural development. A number of the studies including particularly Rahim's "Diffusion and Adoption of Agricultural Practices" have had impact internationally among professionals.

In the third area of the Academy, training also had considerable impact. During the period under review there was no other institution in East Pakistan where civil servants could obtain detailed instruction on how rural development programs work. The scope of the training activities is illustrated by the courses given in 1968-69: Rural development courses for East Pakistan civil service probationers, for Circle Officer probationers and for Civil Service of Pakistan probationers; job training courses for Project and Deputy Project

Officers for District Rural Development Programs; and more specialized training courses for fertilizer inspectors, Circle Officers, Thana Irrigation Officers, and Thana Agricultural Officers, managers, and model farmers of irrigation groups under the Thana Irrigation Program; courses for students from the College of Social Welfare, Dacca, from the Department of Journalism, Dacca University, and from the Agricultural University, Mymensingh. Various specialized programs were also arranged for international participants sponsored by the United Nations and AID. The total number of participants in courses at the Academy in 1968-69 was 3,930.^{25/}

In summary, the Academy for Rural Development in Comilla had the necessary linkages to government, a sound experimental approach to social science problems, vigorous leadership and a good faculty which effectively carried out its research, pilot operation and teaching functions.

V. CONCLUSIONS

1. The self-sustaining new-type cooperatives at Comilla are a important model for greatly accelerating the flow of new technology and other resources through credit to small farmers in developing nations. The system is based on small primary societies in pre-existing social groups with a strong central organization providing local testing, of new technology, input supply and credit at 15%. In ten years 68,632 farmers joined 2,360 new type village cooperatives in order to obtain the significant increases in income these cooperatives provided.

2. The Comilla Training and Development Center Approach to Improving the performance of rural government provides a major model for more effective rural government. Fundamental to the approach is the bringing together of government resources at one physical location and developing an improved communication and coordination system among government units and among representatives of the people. As a result of this approach to rural government three new highly productive nationwide rural government programs were established, the setting up of training and development centers in all 413 thanas (counties) of Bangladesh, the carrying out of major rural works programs with an estimated internal rate of return of 57 percent and the rapid increase in dry season pump irrigation through the Thana irrigation program.

3. The local testing of new government programs in pilot form, especially if there are major new elements or operating concepts, will greatly increase the returns to government resource allocation, through preventing large ineffective programs from being undertaken and by helping to increase the effectiveness of sound programs.

The sound experimental and cultural change approach taken by the Academy resulted in four major pilot programs becoming adapted in the nation. Other pilot programs in education, women's activities and health may yet evolve into major national programs.

Either operating agencies or special institutions for training and research can run pilot operations and conduct the associated

research and evaluation which is crucial to sound decision making about the returns to the program and its future expansion. Major training activities are usually essential for rapid and effective expansion of programs. An Academy for Rural Development such as the one at Comilla is one way to accomplishing these pilot operation, research and training functions.

Important questions relate to whether such an Academy should be physically close to a major agricultural research and teaching center, and whether it might best be a separate unit of such an institution.

4. The three models discussed here from Bangladesh have been effective in one socio-economic environment. Adaptation and pilot testing of these models in other developmental environments would help determine their general usefulness in solving some of the immensely difficult rural problems of developing nations.

5. As the Green Revolution sweeps forward, the social science problems of development are becoming recognized as equally fundamental as agricultural production problems in meeting the aspirations of rural people, particularly as related to employment, mechanization, income distribution, health, nutrition, and education. Serious consideration should be given to a greatly increased commitment of resources to the rural social sciences to aid in solving these problems. For effective action in pilot operations, research and evaluation, and training in the rural social sciences in the developing world, the magnitude of resources required approach those allocated to agricultural technology in the five research institutes supported by the Rockefeller

and Ford Foundations.

VI. FOOTNOTES

^{1/} See, for example, Bruce F. Johnston, "Agriculture and Economic Development: The Relevance of the Japanese Experience", Food Research Institute Studies, Vol. VI, No. 3, 1966, Stanford University, Stanford, California, Ogura Takakazu (ed.), Agricultural Development in Modern Japan, Tokyo, Fujii Publishing Co., 1966. T. H. Shen, The Sino-American Joint Commission of Rural Reconstruction, Cornell University Press, 1970, and Richard L. Hough and Gary D. Ness, "The JCR: A Model for Internationally Induced Development", International Development Review, Vol. X, No. 3, (September, 1966), pp. 14-17.

^{2/} The Research and Training Network Seminar on "Small Farmer Development Strategies" led by Dale W. Adams at Ohio State University September, 1971, by the Agricultural Development Council, Inc.

^{3/} Carl C. Malone, "Improving Opportunities for Low-Income Farm-Occupied People: Some Indian Experience", paper presented at the Seminar on Small Farmer Development Strategies, Ohio State University, September, 1971, and Carl C. Malone and Sherman E. Johnson, "The Intensive Agricultural Development Program in India", Agricultural Economics Research, 23: 25-35, April, 1971.

^{4/} Delbert Myren, "Key Elements of a Development Strategy: Experiences in the Puebla Project", paper presented at the Seminar on Small Farmer Development Strategies, Ohio State University, September, 1971, (Duplicated) The Puebla Project, 1967-1969, Progress Report of a Program to Rapidly Increase Corn Yields on Small Holdings, International Maize and Wheat Improvement Center (CIMMYT), 1970, and Delbert T. Myren (ed.), Strategies for Increasing Agricultural Production on Small Holdings, International Maize and Wheat Improvement Center (CIMMYT) Mexico, D. F., Mexico, 1971.

^{5/} Bengt Nekby, CADU--An Ethiopian Experiment in Developing Peasant Farming. Prisma Publishers, Stockholm, 1971.

^{6/} Exceptions include "Cost-Benefit Analysis of the Puebla Project by Jairo Cano" and Delbert T. Myren in Strategies for Increasing Agricultural Production on Small Holdings, Op. Cit. and United Agricultural Development Unit (CADU)--Project Description, CADU, P. O. Box 3376, Addis Ababa, Ethiopia, 1971.

^{7/} A history of the development of the Academy and its programs is available in Arthur F. Raper, Rural Development in Action, Ithaca, New York, Cornell University Press, 1970. An up-to-date detailed analysis of the status of Academy programs is provided in Robert D. Stevens, "Rural Development Programs for Adaptation from Comilla, Bangladesh", AER-215, Department of Agricultural Economics, Michigan State University, July, 1972, pp. 66. The Annual Reports of The

Pakistan Academy for Rural Development (1960-1970) and the Annual Reports entitled A New Rural Cooperative System for Comilla Thana, (1961-1970) provide more details and analyses. Numerous reports and publications about the work of the Academy are listed in "Selected Bibliography on Comilla Rural Development Programs" by Robert D. Stevens, Staff Paper No. 72-12 (Limited to 67 major items) and in Bibliography of Publications Relating to the Pakistan Academy for Rural Development in Comilla, 1961-71, Asian Studies Center, Michigan State University, (forthcoming).

8/ A New Rural Cooperative System for Comilla Thana--Ninth Annual Report, Pakistan Academy for Rural Development, 1970.

9/ Robert D. Stevens, "Rural Development Programs for Adaptation from Comilla, Bangladesh", Op. Cit., p. 11.

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