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SUBJECT - Agricultural Universities Development PROP

REFERENCE -

Attached is Revision No. 1 of the AUD PROP. It requests authority to fund this project for four additional years (FY 1972 through FY 1975) and to carry out project activities as specified in the PROP for five additional years (FY 1972 through FY 1976). We believe that this document is responsive to the general and specific questions raised by AID/W since the original PROP was approved on an interim basis in September, 1969. Highlights:

1. The PROP contains USAID's accelerated phase-out schedule (in comparison with the first PROP). According to present estimates, the project purpose will have been achieved at PAU and UPAU by June 1973; at MUAS by June 1974; at AIADU by June 1975; and at JNAU, OUAT, U of U and probably MPKV by June 1976.

2. USAID's policy on requests from the GOI for assistance to additional agricultural universities is clearly stated in Section V and is in conformity with AID/W guidance on the subject.

3. The outputs expected from this project are spelled out in section IV in considerably more detail and precision than in the previous PROP. This reflects -- and will assist -- our more rigorous current evaluation efforts.

4. The state-by-state analysis of activity under this project should facilitate and assist AID/W's review of past and proposed

Attachment: AUD PROP Revision No.1

PAGE 1 OF 3

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assistance at the various agricultural universities. It is hoped that this will provide a solid basis for an analysis of all-India needs.

5. Missouri's decision on AAU (STATE 92321) does not affect the substance of this PRDP -- we plan to ask ICAR immediately for the names of several American universities with which they would like AID to initiate negotiations for a contract for the AAU sub-project.

6. The most immediate issue in this PRDP is the proposal for assistance to Haryana. For several years, USAID assisted the Hissar campus of Punjab Agricultural University in the fields of veterinary medicine and animal science. Although the state of Punjab divided into the states of Haryana and Punjab in 1956, the university did not split in two until 1970, at which time there was considerable shifting of faculty and students and consequent disruption and weakening of both PAU and the Hissar campus of PAU, which became Haryana Agricultural University. A formal GOI request for assistance to HAU was received on June 26, 1970, which specifically requested: "In the interest of our long-term plans for the development of agriculture universities in India, steps may kindly be taken to entertain a separate contract with the Ohio State University for assistance to the Haryana Agriculture University."

This PRDP proposes a modest, Phase I, two-year contract with Ohio State University to assist HAU with organizational and planning issues, including assistance in the development of a long-range plan. HAU has the potential of developing much more rapidly than most of the other agricultural universities: its leadership and state financial support are very good; its facilities are better at this initial stage than were those of most of the other agricultural universities. In view of the potential rapid growth in agriculture in Haryana, an investment in agricultural university development in this state would have a substantially larger payoff than in most other states.

HAU meets the criteria for assistance spelled out in Sections II and V of the PRDP. The general question of duplication of facilities is addressed in Section II. In the particular case of Haryana, it is the carefully considered judgement of ICAR and the GOI, of the Government of Haryana, and of USAID that the long-run manpower needs of Haryana (whose 1971 population is estimated at 10 million) require the establishment and development of a strong state agricultural university. Although Punjab has a similar agricultural university, the facilities of PAU would not be adequate to produce all of the graduates needed by Haryana. In addition, in view of the continuing tension between these two states resulting from their separation, close cooperation is not anticipated in the near future. It is the present view of HAU, ICAR, the GOI, and USAID that outside technical assistance will be necessary to accelerate development at HAU. This issue will be examined in more detail during the proposed Phase I, when other sources of assistance -- both Indian and foreign -- will be explored and coordinated with a possible USAID proposal for long-term assistance.

As suggested by AID/W (see Blume to Oechali letter dated March 16, 1971), we intend to break out from the PAU contract the small amount of continuing assistance to HAU. We have sent to AID/W a separate advance PIO/T for HAU and have requested negotiation of a separate contract, effective July 1, 1971, for this continuing assistance. Implementation of the proposed new activities as a new sub-project could take place as soon as this PRP is approved. We presume that the Congressional Presentation is phrased in such a way as to allow this to happen. This approach was confirmed by Mr. Young and Mr. Ford during the AUD/AP budget sessions in the last week of March 1971.

This leads to the question of timing: It would be most desirable for the two proposed specialists to arrive in Hissar by October 1971. Their arrival must be preceded by a ProAg amendment and PIO/T, contract negotiations, and selection and orientation of the specialists. A decision on the PRP by late June would seem to be necessary to achieve this schedule. At least, we request AID/W to communicate its separate approval of this 2-year input at HAU by late June to make possible initiation of the proposed new activities by October.

AID/W has
~~you have~~ raised a number of questions regarding possible forms of post-project assistance. This has been the subject of separate messages to AID/W and of continuing discussions with the GFI.

STONE

Attachment to TOAID A-351

NON-CAPITAL PROJECT PAPER (PROP)

Country : India

Project No : 386-11-110-281

Submission Date : June 8, 1971

Revision No. 1

Project Title : Agricultural Universities Development

U.S. Obligation Span : FY 1964 through FY 1975

Physical Implementation Span : FY 1964 through FY 1976

Gross Life-of-Project Financial Requirements:

U.S. Dollars : \$ 29,098,000

U.S. Owned Local Currency : \$ 1,573,000
(Equiv. of Rs. 11,955,000)

Cooperating Country : \$ 12,651,000
(Equiv. of Rs. 96,148,000)

Fourth Five Year Plan Outlay : Not available

Total Cost : \$ 43,322,000

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I. Summary Description

This PROP relates this project to USAID's program in the agricultural sector, which is designed to assist India to achieve an average increase in agricultural production of 5% per year. It identifies those assumptions which must be met in order to make possible the achievement of the sector goal. The purpose of the project is to assist in establishing and developing service-oriented state agricultural universities which will increase the number and quality of personnel trained in agricultural sciences to serve the agricultural needs of the state, integrating this training with state-wide programs of research and extension education. The GOI policy is to eventually establish one agricultural university in each state. This PROP identifies the criteria required to be met before U.S. assistance is extended. Major developments in agricultural education since 1947 are cited and problems, procedures and policies which are obstacles to this development are identified.

The project is designed to assist the Indian Council of Agricultural Research in encouraging and developing State agricultural universities and to strengthen the Indian Association of Agricultural Universities. It provides for an evaluation of progress at each state agricultural university and, based on these evaluations, adjustment of plans for future action to strengthen weak areas or phase out U.S. assistance. It proposes to introduce greater flexibility in project implementation and relates the activities under this project to other technical assistance activities of the Office of Agricultural Development.

This PROP also identifies the results expected to be achieved before the termination of the project and describes the basic organization of a service-oriented institution adapted to Indian conditions.

The Course of Action outlines the principles that guided the development of land grant universities in the United States as applicable to the Indian situation. It describes a three-phase plan for technical assistance which will lead to the development of institutions having a self-sustaining growth and capacity to plan and administer State-wide programs of agricultural education, research and extension education. It identifies the stage of development of the institutions participating in the program and describes the level of development and the technical assistance plan for each. It also describes plans for assisting new universities and phasing out of the more advanced.

The financial resources of this project are identified (\$29.1 million and Rs.108.1 million from FY 1964 to FY 1975) and the attached tables summarize the personnel inputs (147 man years of long-term specialists and 137 short-term consultants for a total of 414 man-months) and the participant training (249 degree participants for a total of 8,964 man-months and 121 non-degree participants - post doctoral and practical experience - for 1089 man-months) to be provided from FY 1972 through FY 1976.

II. Setting and Justification

The rationale of USAID's program in the agricultural sector is given in each year's CFS. The rationale, in summary form, is that one of the basic goals of the United States is to assist India to achieve rapid economic growth. An essential component (and prerequisite) of such growth is an increasingly productive agricultural sector. Accordingly, the program goal of USAID in the field of agriculture is to assist India to achieve an average increase in agricultural production of 5% per year. Sub-elements of this goal include:

1. Help achieve adequate supply and distribution of essential agricultural inputs, accompanied by the appropriate production practices.
2. Help develop the indigenous institutions, technical skills and management capability necessary to assure the full application of these inputs.
3. Help develop appropriate processing, marketing and distribution mechanism for the agricultural products.

USAID and the Government of India are becoming increasingly concerned with problems of employment and income distribution. We are considering expansion of the focus of this goal to include elements of rural employment, poverty and equity.

In order to assist India to achieve this goal, the following assumptions regarding the environment within which USAID's agricultural activities function must be met; our marginal inputs will not by themselves accomplish the agriculture sector goal.

1. Future GOI Five Year Plans will continue emphasis on agricultural production.
2. GOI policies and administration will be directed toward encouraging and facilitating foodgrain production.
3. An adequate number of trained agricultural scientists will be available to supply the demand.
4. Inputs to support agricultural production will be available.
5. Normal weather conditions over the long-term will prevail.

One of USAID's technical assistance projects which contribute toward the achievement of the agricultural sector goal is the Agricultural Universities Development Project. This project will assist in the establishment and development of service-oriented state agricultural universities to the point where they have the capacity for planning and administering a fully integrated state-wide program in agricultural teaching, research and extension education.

In order to sustain a high rate of growth in agriculture, it will be necessary to have a continuing flow of new technology

adapted to local conditions. Growth in agricultural production must come from modernization and intensification of agriculture. This requires an expansion in numbers of people trained in agricultural services to staff an adequate research program, a more effective extension program and a vastly expanded system of rural services, including credit, input supplies, plant protection services, land development, irrigation facilities, power and machinery rentals and maintenance.

Additional trained personnel, alone, will not suffice; these must be mobilized and organized into an integrated system. The United States "Land Grant University" system provides the basic concept which is being adapted to the social, political and economic conditions of the Indian states. The research programs are being oriented to solving practical problems of farmers. These studies are providing more relevant material for improved teaching programs. Extension education programs are being developed to interpret and convey results of research to the field and to refer problems of the farmers back to the research station for solution. Linkages are also being established through other USAID and GOI activities with credit institutions, input manufacturers and distributors and product processors to provide mutual support in modernizing agriculture and thus achieving and sustaining a high rate of growth in agriculture production. The establishment of such service-oriented universities will be one major step in ensuring the achievement of a growth rate of 5% in Indian agricultural production.

The GOI policy of establishing one agricultural university in each state has been a guiding principle for over one decade. It is clear, in view of the vast size of the Indian states (with populations averaging 35 million), that one high-level agricultural university in each state will not produce more graduates than can be absorbed, provided they are trained in functional areas which need substantially more specialists. Personnel trained in agricultural sciences are increasingly needed in the inputs distribution network, processing, marketing, and credit agencies. A short-term excess of graduates in a particular field should not, accordingly, be allowed to cloud judgments regarding India's long-term needs. Provision of similar facilities and services in the States, particularly at the undergraduate level, has not been a major concern if the university produces graduates needed by the State. At the post-graduate level, the ICAR is using its influence and resources to minimize duplication and develop centers of excellence, with USAID encouragement.

In the past, ICAR and USAID have assisted each of the Indian agricultural universities which met the following criteria when they applied for assistance:

1. The State has passed appropriate legislation.
2. Adequate budgetary provisions are made each year to support the staff and to develop and maintain necessary facilities.

3. The university is employing necessary administrative and professional personnel.
4. The university is taking adequate steps to integrate teaching, research and extension education programs under university direction and to increase their relevance.

If, in the judgment of USAID, an agricultural university falls below these criteria after assistance has been initiated, a careful review will be made to serve as a basis for alerting all concerned parties of the barriers to progress. The resulting action may include terminating assistance if these barriers cannot be overcome. Such a review was conducted at Orissa University of Agriculture and Technology in 1969-70, and is currently being conducted at the University of Udaipur, (Rajasthan).

USAID's policy on assisting additional agricultural universities is discussed in Section V, below.

India has supported the development of agricultural education since independence, in 1947. Soon thereafter, the Government established the Indian University Education Commission, headed by Dr. S. Radhakrishnan, which was charged with responsibility for preparing a report outlining the agricultural education needs of India. The Commission report compared the food shortages, poor training facilities and lack of coordination of teaching, research and extension education in India

with the type of education provided in the United States.^{1/} The Commission recommended developing Indian agricultural education on a pattern similar to the "land grant" concept of the United States.

A joint Indo-American team in 1955 expressed the hope that U.S. institutions of higher education would provide guidance for strengthening agricultural colleges in India.^{2/} The team's recommendations were accepted by the GOI and steps were taken to implement the program during the Second Five Year Plan.

A regional agricultural education and research program, involving five U.S. land grant universities, was initiated in 1955. The various U.S. field teams assisted the Indian colleges of agriculture and veterinary science, state departments of agriculture and animal husbandry and other concerned agencies in fourteen states.

In 1959, a Second Indo-American team on agricultural education, research and extension developed a long range plan for the Third Five Year Plan which reviewed the progress of work done in the preceding five years and made additional recommendations for strengthening

^{1/} The Report of the University Education Commission: (1951), Government of India, New Delhi.

^{2/} Report of the Joint Indo-American Team on Agricultural Research and Education (1955), ICAR, New Delhi.

agricultural education, research and extension.^{3/}

As a result of the recommendations of the First and Second Joint Indo-American teams, interest grew in several of the states for establishment of agricultural universities in which teaching, research and extension would be integrated and coordinated and, thereby, responsive to farmers' needs. The Government of India appointed a Committee to examine the university development proposals received from the various state governments and to help local officials develop proposals and review possible draft bills, using the "Hannah" blueprint for an agricultural university.^{4/}

The first agricultural university was sanctioned during the Second Five Year Plan. The Uttar Pradesh Government passed enabling legislation in 1958; six additional agricultural universities were established during the Third Plan period. They were: University of Udaipur, Rajasthan (June 1962); Orissa University of Agriculture and Technology (August 1962); Punjab Agricultural University (October 1962); Jawaharlal Nehru Krishi Vishwa Vidyalaya, Madhya Pradesh (February 1963); University of Agricultural Sciences, Mysore (May 1963); and Andhra Pradesh Agricultural University (December 1963).

^{3/} Report of the Second Joint Indo-American Team on Agricultural Education, Research and Extension (1960), ICAR, New Delhi.

^{4/} Blueprint for a Rural University in India by Dean H.W. Hannah, University of Illinois.

Kalyani University (West Bengal) was also established in 1963; however, it failed to meet the criteria (see above) established by the Indian Council of Agricultural Research and the USAID as being essential before USAID assistance could be extended. More recently, five additional agricultural universities have been established by their State Governments: the Maharashtra Agricultural University (1967); Assam Agricultural University (1968); Bihar Agricultural University (1970); the Haryana Agricultural University (1970); and the Himachal Pradesh Agricultural University (1970).

These universities, except for the Uttar Pradesh Agricultural University, which was an entirely new institution, brought under one administration the agricultural and veterinary colleges in their respective states which had been receiving very limited USAID assistance for varying periods since 1955.

The historical development of agricultural education and research in India has been well presented in a book "A History of Agricultural Universities" by K.C. Naik;^{1/} the second edition is in press and will bring the history up-to-date.

^{1/} A History of Agricultural Universities, 1971. K.C. Naik, Oxford Press, New Delhi.

The Land Grant College concept, which was first adopted in India in 1960 at the Uttar Pradesh Agricultural University, has had only ten years to grow and develop. The present university development assistance program envisions a cohesion of the several separate colleges into integrated universities. This has required changes in traditional attitudes to incorporate coordinated research and cooperative extension education with improved teaching programs.

Many problems relating to traditions, religion, motivation, economy, and governmental practices and policies have been apparent since the USAID program in agricultural education began in 1956. While some of these still remain obstacles to achievement of the purposes of this project, there have been significant improvements.

Traditions relating negatively to improved education are eroding rapidly. Even the older traditional colleges and universities are discussing changes in patterns of education;

Religious beliefs will continue to impede progress in animal agriculture, though there is evidence that even this way of life is slowly changing;

Motivation is tied with opportunity and rewards. Increased agricultural prices and availability of improved technology have rapidly changed the attitude toward work and work capacity;

The economic conditions of India are improving. As a consequence, the GOI is providing more funds for the development of the state agricultural universities. Several states, notably Uttar Pradesh,

Punjab, Andhra Pradesh and Mysore have given much better support to their universities in recent years. Some of the poorer states -- Rajasthan, Orissa and Madhya Pradesh -- are still not adequately supporting their institutions' need. The officials of Haryana, Maharashtra and Assam have shown evidence of giving adequate financial support to their new universities.

Cumbersome governmental procedures and policies continue to plague the program. Many have been problems since the beginning of the project. They are:

1. Clearance of contract personnel and participants on a timely basis;
2. Early and orderly procurement of repair and replacement parts for imported equipment; and
3. Early and orderly release of Center and State funds, including delays in concurrence in Trust Fund rupee projects.

Many of the administrative problems are inherent in the system. The universities are autonomous institutions of states that enjoy considerable independence. Yet all external assistance must, under this project, be approved and coordinated by the Department of Economic Affairs of the Ministry of Finance and by the concerned technical ministry, in this case by ICAR and the Foreign Aid Section of the Ministry of Food and Agriculture. On our side, of course, there are

complexities involved in working through contracts with American universities, which often present problems in communications.

USAID is working with the GOI on revised procedures and attempting to set up long-range plans, with some success, so that when the longer range program is approved, clearances of routine papers relative to the program can be processed quickly within ICAR.

III. Strategy

Since this project is now well underway and is generally making good progress, a discussion of alternative approaches to achieve the stated project purposes is not appropriate at this time. But we have reached a point where we must re-define and, to an extent, re-direct our efforts. This PROP proposes the following strategy for the next five years:

1. Efforts should be made to strengthen the capacity of ICAR to: (a) catalyze and coordinate the development of a strong, productive state agricultural university system in India; (b) stimulate development of recognized centers of excellence in a limited number of post-graduate departments among the state agricultural universities; (c) promote increasing mobility of post-graduate students and faculty members among the agricultural universities; and (d) assist the development of new agricultural universities with increasing amounts of Indian assistance

- and decreasing amounts of external assistance.
2. Efforts should also be made, as opportunities present themselves, to strengthen the Indian Association of Agricultural Universities, to make it an effective instrument for improving the standards of education and cooperation among the institutions.
 3. An assessment should be conducted at each agricultural university of the university's responsibilities for agricultural development in its state, its progress in meeting these responsibilities and the projected needs, as a basis for meaningful long-range development plans. While this should be largely an internal exercise, the assessment team should also include external members who can utilize their experience to compare the level of quality attained at other institutions. On the basis of the long-range development plans, technical assistance needs for three to five years can be projected more realistically and jointly agreed upon by the GOI and USAID.
 4. Greater flexibility in project implementation will be necessary. Where the institution is dealing with a problem having multiple facets, a team of scientists may be needed. Some of these may be long term and some for shorter terms. The total number should be flexible.

There are times when needs arise as the project progresses; there should be provision made to cover these situations. With such flexibility the contractor can do a better job and complete the project more quickly.

5. After the more advanced agricultural universities are phased out of this project, various types of relationships between them and USAID should be considered.

See Section V for a discussion of this question.

While we believe the above strategies will generally find support from the GOI, the agricultural universities and the contracting American universities, questions will arise. In respect to point 1, above, the contractors may question the role of technical assistance direct to ICAR vis-a-vis their role in the states. We must ensure that we use USAID assistance to ICAR to supplement and support the efforts of the teams at the universities.

Regarding the second point, ICAR and the Ministry of Agriculture will understandably be concerned about a strong Association of Agricultural Universities, particularly if it develops effective pressure to influence legislation and allocation of funds. If it is seen as a mechanism for weakening the ability of ICAR to make important policy decisions it will not be readily tolerated. On the other hand, if it develops as an enlightened voice of the universities, expressing their needs and aspirations as institutions promoting agricultural

development in their states, the Association can be of great assistance to ICAR in developing sound policies and better programs. Some of the current Vice Chancellors are interested in making the Association a mechanism for better cooperation among the universities, not as a weapon to intimidate ICAR. Unfortunately, a few of the Vice Chancellors have not so far taken any active, positive interest in the Association. Although there has been little follow-up to last year's first annual conference of the Association, the second conference, held in April of this year, generated a higher level of interest and focused attention on specific actions required to make the Association an effective agent for the state universities.

The concept of a comprehensive assessment and long-range planning has been accepted in principle by ICAR and most of the Vice Chancellors. Difficulties in implementation arise out of the lack of time on the part of the few people who are suitably qualified to serve on such evaluation teams. We have explored possibilities of providing consultants for this purpose but we agree with ICAR that this should be primarily an Indian team involving participation of the senior staff of the universities. It will, therefore, take at least two years to complete these evaluations and plans at all the universities.

The need for flexibility in assignment of technicians is appreciated at the university level but current procedures for coordination and clearance of positions and nominations at the center now impede more

flexible arrangements.

This is one of several USAID projects to help India achieve the target 5% growth rate in agriculture; each focuses on a particular aspect of the agricultural sector. The Agricultural Production Project attempts to speed up the successful adaptation and adoption of new high yielding varieties and associated improved technology by developing and strengthening linkages between the departments of agriculture and the State agricultural research facility and with the input suppliers. An attempt is being made to establish and institutionalize a pattern of cooperation in which the agricultural research facility will become more directly involved with the department of agriculture and its field staff in agricultural development.

The Soil and Water Management Project also attempts to develop close relationship between the agencies involved in soil and water management work in the states and the state agricultural universities. Staff and facilities of the agricultural universities are used in evaluating resources and determining appropriate practices for the pilot demonstration areas, and problems encountered in the pilot areas are being researched by staff and graduate students at the universities.

The Agricultural Economics Division of the Office of Agricultural Development undertook a long range analysis of adjustments needed in Indian agriculture. This involved the departments of agricultural economics of the agricultural universities in a series of seminars and

stimulated the initiation of related work at these institutions under an all-India coordinated research project to be financed through ICAR.

The Agricultural University Development Project has also developed important linkages with programs related to other USAID objectives. For example, a project for collaboration in research between the University of Illinois and its two host universities in India has focused on various aspects of soybean production, processing and marketing. The result has been a promising start in introducing and developing a soybean industry that can help greatly in providing better nutrition at low cost.

IV. Outputs

At each assisted agricultural university it is expected that the following results will have been achieved before the termination of the project:

1. Integration of extension education, research and teaching is operating at the department level.
2. A long range development plan is used as the basis for program implementation.
3. Public financial support is adequate.
4. The University is staffed with adequately trained personnel.
5. Curriculum is relevant to need of students for employment.
6. A sound, state-wide research program meets the research needs of the state.

7. An active, relevant extension education program is underway throughout the state.
8. The university is responsive to the needs of the state's populace and has its support.
9. Buildings and physical facilities are adequate for current needs and are planned to meet future needs.
10. Effective professional linkages with Indian and foreign agricultural institutions are established.
11. Administrative performance is effective.

For a detailed and quantitative breakdown and time-phasing of these outputs for each agricultural university, see Section V, below and the relevant FIPs and PARs.

To develop an advanced, self-sustaining agricultural university normally should require ten years, depending upon the initial quality and numbers of trained staff, to what degree the ACT creating the institution provides autonomy, the amount of public budget support and the physical plant available at the start. A rapid rate of development requires sound, enlightened leadership, delegation of authority within the university, budget support for essential activities, ability to recruit quality staff, and an enlightened board of management. This board should have full responsibility and authority supported with required funds to implement meaningful on-campus academic programs as well as state-wide research and extension education programs.

The Indian agricultural universities were developed on the same principles that guided development of the Land Grant Universities in the United States. These principles were: (a) autonomy of operation; (b) learning with purpose; (c) public service-oriented education for the masses, with agriculture as the key service; (d) research directed to solving relevant problems; and (e) a coordinated approach to resident teaching, research and extension education in one institution.

The model Act, as recommended by ICAR, provides that an agricultural university should consist of five colleges: agriculture, agricultural engineering, basic sciences and humanities, home science and veterinary medicine. Within each of the colleges the following basic departments or disciplines are suggested:

Agriculture: Agronomy, Soils, Animal Husbandry, Dairy, Poultry, Horticulture, Entomology, Plant Pathology, and Agricultural Economics;

Agricultural Engineering: Farm Power and Machinery, Water Management, Rural Electrification, and Farm Structures;

Basic Sciences and Humanities: Botany, Zoology, Microbiology, Genetics, Mathematics, Physics, Chemistry, Geology, Economics, Sociology, Physiology, Psychology, Ecology, Modern Languages, Speech, and History;

Home Science: Foods and Nutrition, Clothing and Textiles, Family Economics, Family and Child Development, and Home Science Education;

Veterinary Medicine: Anatomy, Physiology, Pathology, Parasitology, Public Health, Surgery, and Medicine.

The model Act provides that other colleges may be established as the needs arise. Departments may be combined or split to fit the needs and staff of the university. Minimal strength, as specified in the Act, requires that each department should have thirteen staff members, including one professor, two associate professors and four assistant professors. All professional staff should have at least a masters degree and at least 40 per cent should have a Ph.D. degree. Each department should have a head or chairman responsible for the programs in resident teaching, research and extension education and for coordination of these functions. Each college should have a dean, administratively responsible to the Vice Chancellor. These minimum requirements represent goals in numbers of staff toward which the universities should be working. They should, moreover, strive to improve the quality of the staff and the quality of research, teaching and extension education programs. Improvement within the staff is easily measurable. The quality of research programs can be measured in terms of the relevance and design of research projects, the publication of results and their acceptance and adoption by the farmers, and the interest of the public in the university program. Progress in the extension education program can be measured by the number and quality of field demonstrations, publications and other information materials, and the number and quality of programs for training field staff.

V. Course of Action

In broad, general terms, the scenario of USAID technical assistance from the establishment of a new agricultural university to its achievement of an advanced, self-sustaining level would look as follows:

Phase I - covers the initial two years in which general university administration and organization is serviced with experienced specialists. This includes budget, research, resident teaching and curriculum, extension education and collaboration between the state university and the ministry of agriculture in field problems.

Phase II - includes continuing the development of activities initiated in Phase I while focusing efforts on strengthening individual departments and disciplines by training Indian staff to the needed levels, either in the United States or in India, and by using long term specialists and/or short term consultants to work with the Indian staff in strengthening the teaching, research and extension programs in the weak disciplines. Work in this phase should require from five to nine years collaboration.

Phase III - covers the period when progress has been made in overall university development and some departments and disciplines have reached a stage of excellence. The university has the strength to continue and improve its program with little if any outside assistance. The institution is ready to be phased out of this project. This should be completed within a two year period.

Attainment of the project outputs listed in Section IV, above, is necessary for self-sustaining growth and capacity to plan and administer service-oriented universities. The speed at which the various agricultural universities achieve these conditions will determine the dates on which we plan to phase them out of this project.

The following U.S. universities are assisting ten Indian agricultural universities:

- | | |
|-------------------------|---------------------------------|
| 1. PAU, Punjab | - Ohio State University |
| 2. UPAU, Uttar Pradesh | - University of Illinois |
| 3. MUAS, Mysore | - University of Tennessee |
| 4. APAU, Andhra Pradesh | - Kansas State University |
| 5. JNAU, Madhya Pradesh | - University of Illinois |
| 6. UoU, Rajasthan | - Ohio State University |
| 7. OUAT, Orissa | - University of Missouri |
| 8. MAU, Maharashtra | - Pennsylvania State University |
| 9. AAU, Assam | - To be determined |
| 10. HAU, Haryana | - Ohio State University |

The Punjab Agricultural University, established in October 1962, has made excellent progress in adopting land grant university concepts. The agronomic and agricultural engineering programs of the university are particularly strong, supported by a good College of Basic Sciences and Humanities. The College of Home Science has excellent facilities and an active program. An assessment of progress of the PAU was

completed by a joint Indo-American team in March 1970. The results of this assessment are being used by the University in identifying areas that need strengthening. The University was weakened by the bifurcation resulting when the Hissar Campus of the PAU became the Haryana Agricultural University. This bifurcation left most of the strength in animal science at the HAU, making it necessary for PAU to rebuild a program in this area. A high quality nucleus staff is located at PAU and physical facilities are under construction to reinforce this area of activity.

During the remaining two years of the project life at PAU, it is anticipated that four man-years of specialists services, ten consultants and training for 16 participants will be utilized in strengthening highly technical subjects of the university. The PAU will be a candidate as a center of excellence in the area of plant breeding, agricultural economics, agricultural engineering and home science.

The Uttar Pradesh Agricultural University, the oldest of the agricultural universities, having been initiated in 1958, has overcome many hurdles in development and is identified as an outstanding agricultural university, with certain exceptions. In spite of the significant work accomplished at UPAU, state-wide responsibilities for agricultural research and extension education programs has not been attained. (It should be noted that the state of Uttar Pradesh has a population of over 80 million). In addition, the university has

been forced to depend on its large commercial farm to generate funds for capital improvements and operating expenses. However, even with these serious limitations, the university is a good illustration of what can be done when teaching, research and extension education are integrated and a dependable flow of funds can be committed for implementing new activities. Without question, the performance of UPAU has had considerable influence on activities planned at many other universities. During the remaining two years of the project at UPAU, it is anticipated that nine man-years of specialists and six consultants will be utilized. This technical assistance will be focussed in the areas of water technology, horticulture, food processing, communications and other highly specialized fields. The UPAU can be considered a candidate for center of excellence designation in plant breeding, soil and water technology, animal husbandry and communications.

The Mysore University of Agricultural Sciences, established in May 1963, has been among the best in pre-planning the development of the university. This resulted in some delay in construction of the required physical facilities to provide a unified campus on a new site. Construction is now underway and the new site is being developed rapidly. The university has an outlying campus of the College of Agriculture at Dharwar and a new College of Fisheries at Mangalore. Special emphasis is being given to the development of the College of Fisheries to provide a within-India center for servicing the staff training requirements of the other agricultural universities and the fishery enterprise.

in India. During the remaining three years, it is anticipated that 13 man-years of specialists services, 12 consultants and training for 24 participants will be required to complete the project inputs. During this time special attention will be focussed on fisheries and veterinary/animal science. This university should be a candidate as a center of excellence in the areas of inland fisheries, marine fisheries, microbiology and plant pathology.

The Andhra Pradesh Agricultural University, established in December 1963, has three campuses, Rajendranagar, Tirupati, and Bapatla. Although the university has shown fair progress, politically associated disturbances have existed almost continuously since the university was formed. Recent developments indicate these disturbances are being brought under control with the result that progress should be more rapid. During the remaining four years, it is anticipated that 21 man-years of specialists services, 16 consultants and training for 46 participants will be utilized. The APAU should qualify as a center of excellence in dairy technology, irrigation, agrostology and dry land farming.

The Jawaharlal Nehru Agricultural University, was established in February 1963 as the agricultural university in Madhya Pradesh. Six colleges of agriculture and two colleges of veterinary science and animal husbandry became constituent units of the university at the time of the act was passed. In 1967, a college of agricultural engineering was added to the main university campus at Jabalpur.

The University was given state-wide responsibility for agricultural research and the research stations, numbering over a dozen, along with their staff were transferred in December 1964. An extension education and service program wing has also been created in the university. At present, the university has three faculties, viz. agriculture, agricultural engineering and veterinary science and animal husbandry.

Major attention has been given to reorganization and strengthening of the teaching program, to consolidation and coordination of research, to strengthening the extension education program, and to the integration of teaching, research and extension education in all fields of agriculture and allied sciences. Although lack of sufficient funds has reduced the rate of development of the university, significant progress has been made in improving the professional competence of the faculty. Considerable progress has also been made in providing additional field and laboratory facilities. Major problems still requiring specific attention are: (1) further consolidation of the academic program by conversion of branch campuses into several research-cum-training centers, (2) development of more effective and efficient infra-structure of supporting services, (3) resolving the status of basic sciences and humanities in the university's organizational structure and deciding the future of English as a medium of instruction, (4) development of a more job-oriented curriculum with more actual practical experience for under-graduates and perhaps for non-degree students, (5) revision of the statutes and the make up of the Board of

Management in light of experience and emerging needs and opportunities, (6) development of more continuity in staffing of key administrative positions, and (7) increasing faculty participation in planning and evaluation of programs and establishing institutional policies and priorities. It is anticipated that 25 man-years of specialists' services, 20 consultants and training for 56 participants will be required during the remaining five years to attain a reasonable level of competence and performance within the university. Special emphasis will be given to resolving the major problems previously listed.

The University of Udaipur was created in 1963 following revision of the original act to incorporate the original Rajasthan Agricultural University with the M.B. College of Basic Sciences and Humanities. Thus, at the time of reorganization in 1963, the university included a College of Agriculture, Udaipur, S.K.N. College of Agriculture, Jobner, College of Veterinary and Animal Science, Bikaner and the M.B. College of Basic Science and Humanities, Udaipur. A College of Technology and Agricultural Engineering was added in 1964 and the College of Home Science was authorized as a unit of the College of Agriculture during 1966. The university has plateaued at a moderate level of development. The semester system and internal grading has been adopted in the agricultural complex and some action has been taken to apply these practices to the College of Arts and Sciences (M.B. College). Staff members up-graded through participant training have

provided a foundation of adequately prepared faculty in the majority of the older agricultural departments. Only one of four research farms has been transferred to the university and the extension education program has been limited to a few districts adjacent to the university. Extension training centers remain under state control. Integration of teaching, research and extension has not been effectively implemented, faculty morale and productivity are low, fiscal management is weak and financial support is inadequate. The university's development has, without question, been hampered by many barriers outside the control of either the university or the USAID. Thus, USAID has temporarily withheld any additional assistance pending a resolution of several outstanding problems. Assuming that these problems are satisfactorily resolved, it is anticipated that 19 man-years of specialists services, 20 consultants and training for 54 participants will be required to attain a reasonable level of competence and performance within the university prior to planned termination of the project in 1976. Special emphasis will be given to research management, agricultural engineering (water/soil management), educational methods, research methodology, plant protection, marketing and home science.

The Orissa University of Agriculture and Technology, created by Act in 1962, has been among the slow starters even though the Government of Orissa took action in creating the agricultural university well ahead of most other states. The Act consolidated the existing college of agriculture and college of veterinary and animal husbandry, resulting

in a single campus university complex. Later, two additional colleges were added: (1) Agricultural Engineering and Technology and (2) Basic Sciences. Thus, the potential for a fine university exists with significant advantages most of the other developing agricultural universities do not have.

The progress of OUAT has been disappointing, yet significant steps have been taken in the past 12 to 18 months which set the stage for significant improvement. These include: (1) appointment of some well-qualified second-level administrators, (2) transfer of all qualified staff from the State Government to the university, (3) transfer of the bulk of the agricultural research program of the State to the University, (4) identification and transfer of a large state farm for research, (5) approval of amendments to the act and statutes through the Board of Management and (6) allocation of state funds in a block grant.

A long range development plan for OUAT was prepared in June 1970. Technical assistance planned for the future will be integrated with the OUAT long range plan. It is anticipated 23 man-years of specialists services, 18 consultants and training for 52 participants will be required prior to planned termination of the project in 1976 to attain a reasonable level of competence and performance within the university. Special emphasis will be given to research development, specialized fields of veterinary medicine, weak areas in agricultural engineering,

improvement of academic programs and refinement of administrative/ service functions.

Provision of assistance to Maharashtra Agricultural University, originally established in 1967, has been extremely complicated. Originally all colleges of agriculture and veterinary medicine in Maharashtra were made constituent colleges of the new university. In addition, the new university was to establish its central campus on a new site located at Rahuri. In 1970 the original act was superseded by a new act creating two agricultural universities to serve the state, namely: Mahatma Phule Krishi Vidyapeeth (MPKV) located at Rahuri and Punjabrao Krishi Vidyapeeth (PKV) located at Akola. USAID assistance has been restricted to the MPKV following the creation of two universities in the state. Within the agricultural universities development project, this sub-project is, without question, the most complicated and challenging. Careful attention is being focused on obtaining actions necessary to make most effective use of limited Indian resources through properly planned and coordinated development of the two agricultural universities at the state level. In addition, it is recognized that the simultaneous development of staff and construction of physical facilities at the MPKV site in Rahuri is of primary importance. Therefore, during the initial years of the project, technical assistance has been limited to two or three specialists supported by a few consultants and participant training.

As the campus develops at Rahuri, an increasing number of specialists can be used effectively. During the next five years, it is estimated that 21 man-years of specialists services, 19 consultants and training for 60 participants will be required. Specialists and consultants services will be needed in the general area of agriculture and animal husbandry, selected areas of basic sciences and humanities, agricultural technology, agricultural extension, post graduate curriculum development and general university administration. Specific needs will be dependent upon the competence of Indian faculty members being recruited for key positions in the university. Special efforts will be made to supplement participant training with recruitment of competent Indian personnel to obtain the faculty competence necessary for a sound university program. If additional assistance is needed after FY 1976, it will be justified in a separate PROP or PROP revision.

Beginning in FY 72, limited technical assistance will be provided to the agricultural universities in Haryana and Assam. This assistance will be provided over a two-year period for the specific purpose of advising these universities on organizational and educational issues and assist them to develop meaningful long-term development plans. During this two-year period, each university will be provided four man-years of specialists services plus up to four consultants on short-term assignments each year and the training of up to ten participants each year.

Plans for long-term development are expected to be complete by the end of the first year so that during the second year it could be determined what level of assistance would be feasible and appropriate to facilitate the continued development of the university. At this time, no commitment to provide assistance beyond the two-year period is being made. If it is determined that assistance over a longer period is appropriate, USAID will submit a PROP revision or new, separate PROPs, whichever seems more appropriate administratively to AID/W.

The assistance being provided to Assam Agricultural University will be an initial AID input. However, the Ohio State University provided limited assistance at the Hissar Campus of the Punjab Agricultural University before it became the Haryana Agricultural University. The limited assistance provided to date has been more along the lines of enhancing the competence of the technical staff in veterinary medicine and animal science rather than in the broader aspects of assistance in university-wide organization and planning.

Decisions regarding assistance to additional universities will be based on the criteria and preceding justification given on pages 8 and 9 in Section II, above. In addition, USAID will examine the extent to which other foreign donors, particularly the World Bank, and the more advanced Indian agricultural universities can provide the required technical assistance.

If USAID decides to explore assistance to an additional university, we would probably recommend an independent study team to help make preliminary plans. This may take the form of a Phase I approach, similar

to that included in this PROOP for Haryana and Assam, but proposed under a separate PROOP to be implemented under a separate ProAg. If a long term project proposal evolves, it would be developed as subsequent phases under the new project. In the foreseeable future, USAID's total inputs for agricultural universities development in India probably will not arise above current levels, given the phasing out dates specified above for the currently assisted universities and in view of the following state-by-state analysis of areas not presently assisted:

In West Bengal, as indicated in Section II, above, the university has not met the criteria for assistance and future assistance is not presently contemplated.

In Jammu and Kashmir, an agricultural university has not been established, and a request for assistance is not anticipated.

We plan to assist only one agricultural university in the Assam region. It is GOI policy that AAU would become the central agricultural university in this multi-state region (Assam, Meghalaya, Nagaland, Tripura, Manipur and NEFA at various stages on the path to independent statehood). This region has an estimated 1971 population of 19.4 million of whom 15 million are in the state of Assam.

Tamil Nadu, Kerala, Bihar and Himachal Pradesh established agricultural universities in 1970 and have subsequently appointed Vice-Chancellors. We may receive requests for assistance to some of these states. However, our reaction to such requests will be based on the guidelines outlined above.

Gujarat has passed enabling legislation but to-date has failed to

implement it. We will keep AID/W informed regarding developments.

The Council of U.S. Universities for Rural Development in India (CUSURDI), composed of representatives from each university contractor participating in this project, will continue to direct attention toward the long-run needs of the agricultural universities development program, serve as liaison between university contractors, participate in special studies for which an urgent need is indicated, assist AID in planning new and revising present programs, and develop and suggest solutions to problems of policy, programs and operations affecting the project. This project, under a separate contract, will fund the Council's activities and approved staff, which will include an executive secretary. An expansion of CUSURDI's role in this project is under consideration.

Before assistance to individual universities under this project is terminated an evaluation similar to the type carried out at the Punjab Agricultural University will be expected to be completed in order to determine if the project purpose and conditions expected at the end of the project have been accomplished. Re-planning and re-programming will be an option at that time. We do not propose to cut off abruptly all assistance to the advanced agricultural universities. It is expected that some arrangement will evolve that will permit university-to-university relationships in special fields to continue with funding either from 211(d) or other source dollars and U.S. uses rupees.

The U.S. universities working with the more advanced Indian agricultural universities are increasing their interests in developing closer and more permanent working relationships as the Indian

institutions near self-sustaining growth. We would hope that the relationship between the Indian and the U.S. institutions would develop to a point where these institutions would want to continue their relationship after the USAID assistance is discontinued by exchanging professors and graduate students supporting these with their own resources, eliminating the further need for external assistance.

We would expect that the Indian agricultural universities would increasingly direct their significant resources towards certain development goals which the GOI and the USAID have in common. In other words, we would be interested in these agricultural universities, not simply for the purpose of agricultural university development, but for the contribution which they could make to other Mission-wide and sector goals. For example, we might expect the U.P. Agricultural University to request assistance in soybean research which is related also to our nutrition goal or for assistance to its new Water Technology Center related to our soil and water goal. Punjab might ask for help in Home Economics related to our nutrition goal and the staffing requirements of other agricultural universities. Mysore might ask for assistance in Fisheries relating to either our agriculture (including development of staff competence at other universities) or nutrition goals. We would evaluate such proposals within the context of the goals and purposes developed for the various sectors.

VI. Inputs

The major resources for the development of agricultural universities in India are, obviously, Indian. During the Fourth Five Year Plan (April 1969 to March 1974), the GOI is planning to channel 220 million rupees (equivalent 30 million dollars) through the ICAR to the agricultural universities. In addition, a large portion of the annual ICAR budget of 100-150 million rupees (equivalent 15 to 20 million dollars) for all-India coordinated research projects is expended through these universities. Further, the state governments are making available varying amounts to the universities, averaging about 25 million rupees per university during this plan period.

In this context, the USAID input is marginal, but it supplies critical, missing elements which India presently would be hard pressed to secure elsewhere in view of its need to conserve foreign exchange and in view of its still thin reservoir of trained manpower in many highly specialized fields. It is expected that the level in numbers of long-term specialists provided under this project will be reduced over time, this being possible because of increased competence in the more developed Indian universities, whose staff may be made available to the lesser developed on a short-term basis, and the provision of specialists who would be assigned to the Indian Council of Agricultural Research and whose services would be made available to those Indian agricultural universities participating in the project. The cooperating

American universities are providing long-term and short-term specialists and consultants. These experts work closely with their counterparts in the fields of administration, teaching, research, and extension. Table I is a summary of man-months of long-term and short-term personnel which this project has provided and which this PROP proposes to provide until June 1976. Table II is a summary of the number of participants to be trained under this project until June 1976. In addition, this project will provide a small amount of dollar funds for the procurement of teaching and demonstration aids in direct support of the U.S. specialists. It will also provide about ten million rupees per year to cover project administrative costs and demonstration activities.

TABLE I
AGRICULTURAL UNIVERSITIES DEVELOPMENT PROJECT

TECHNICIANS/CONSULTANTS

INDIVIDUALS/MAN-MONTHS

Sub-Project	<u>FY 1964-69</u>		<u>FY 70</u>		<u>FY 71</u>		<u>FY 72</u>		<u>FY 73</u>		<u>FY 74</u>		<u>FY 75</u>	
	<u>Tech</u> <u>No/MM</u>	<u>Cons</u> <u>No/MM</u>												
PAU-OSU	18/308	12/35	4/36	4/14	2/26	4/12	3/26	5/15	2/24	5/15				
UPAU-ILL	18/455*	24/73*	7/80	7/17	7/83	3/13	9/69	3/9	4/42	3/9				
MUAS-TENN	13/323	9/25	8/80	6/15	7/69	1/3	7/45	4/12	5/60	4/12	5/48	4/12		
APAU-KSU	16/322	12/40	8/82	4/8	7/83	4/7	1/66	4/15	6/72	4/12	6/60	4/12	5/48	4/12
JNAU-ILL	10/219	22/60	7/76	6/14	6/72	3/7	6/48	3/9	6/66	3/9	6/72	4/12	6/60	5/15
OUAT-MO	10/290	3/5	3/30	2/12	3/35	1/1	5/36	3/9	6/60	3/9	6/72	4/12	5/60	4/12
JoU-OSU	12/313	4/9	5/56	3/8	4/39	0	5/36	4/12	5/48	4/12	5/48	5/15	4/48	4/12
MAU-PSU	3/24	5/15	4/27	3/9	4/27	1/3	5/42	2/6	6/60	4/12	6/72	4/12	6/72	4/12
HAU-OSU	-	-	-	-	-	-	2/12	4/12	2/24	4/12	**	**	**	**
IAU-MO	-	-	-	-	-	-	2/24	4/12	2/24	4/12	**	**	**	**
Total man- ars equiv.	95/2254 (187.7)	91/262 (21.8)	46/467 (39.0)	35/97 (8.0)	40/434 (36.3)	17/46 (4.0)	51/404 (33.7)	36/111 (9.0)	44/480 (40.0)	38/114 (9.5)	34/372 (31.0)	25/75 (6.3)	26/288 (24.0)	21/63 (5.3)

* Includes inputs of 5/111 tech. and 5/17 cons. services provided in earlier period of 1959-63.

** Level to be determined after completion of Lo Development Plan and justified in separate report or a PROP revision.

TABLE II
AGRICULTURAL UNIVERSITIES DEVELOPMENT PROJECT
PARTICIPANT TRAINING
(New Starts) 1/

Sub-Project	<u>FY 64-69</u>		<u>FY 70</u>		<u>FY 71</u>		<u>FY 72</u>		<u>FY 73</u>		<u>FY 74</u>		<u>FY 75</u>	
	Deg	N/Deg	Deg	N/Deg	Deg	N/Deg	Deg	N/Deg	Deg	N/Deg	Deg	N/Deg	Deg	N/Deg
PAU-OSU 2/	31	11	3	7	9	9	7	4	0	5				
UPAU-ILL	33	14	3	4	7	3	6	3	0	5				
MJAS-TENN	35	7	7	2	8	2	8	2	8	2	0	4		
APAU-KSU	29	16	5	3	8	3	10	4	10	4	8	4	0	6
JNAU-ILL	17	28	11	2	9	1	10	3	10	3	8	4	8	2
OUAT-MO	30	13	9	0	9	0	9	2	9	2	8	3	6	4
UoU-OSU	33	11	6	4	9	1	8	4	8	4	6	4	6	4
MAU-PSU	5		11	0	6	0	10	2	10	2	10	2	10	2
HAU-OSU							6	4	6	4	*	*	*	*
AAU-MO							8	5	8	2	*	*	*	*
							<u>82</u>	<u>33</u>	<u>69</u>	<u>33</u>	<u>40</u>	<u>21</u>	<u>30</u>	<u>18</u>

1/ Estimate: Non-Degree Average 6 man-months; Degree average 36 man-months per participant

2/ Includes participants from Hissar Campus (HAU) thru FY '71

* Level to be based on Universities Long Range Development Plan and justified in separate new PROPs or in a revised

TABLE III

AGRICULTURAL UNIVERSITIES DEVELOPMENT PROJECT

Non-Capital Project Funding (Obligation in \$000)

Country : India

Project No. : 386-11-110-281

Project Title : Agricultural Universities Development

Fiscal Years	APP	L/G	Total	Cont. ^{1/}	Personal Serv.			Participants		Commodities	
					AID	PASA	CONT	US Agen.	Cont.	US Agen.	Dir.& Cont.
Prior thru Act. FY'70	TC	G	15,031	14,788	236	-	10,112	7	3,347	-	1,329
Oper. Yr. FY 1971	TC	G	2,650	2,576	74	-	1,575	-	886	-	115
Budget Yr FY 1972	TC	G	3,432	3,400	32	-	2,113	-	1,243	-	44
Budget Yr +1 FY 1973	TC	G	3,106	3,074	32	-	1,872	-	1,167	-	35
All Subs. Yrs FYs 1974-76	TC	G	4,879	4,815	64	-	2,898	-	1,878 ^{2/}	-	39
<u>TOTAL LIFE</u>	TC	G	29,098	28,653	438	-	18,570	7	8,521	-	1,562

1/ Memorandum (non-add) column.

2/ A spill-over obligation of \$544,000 will exist after FY 1976 to complete the training of the degree participants initiated in FY 1975 and FY 1976.

TABLE IV

RUPEE OBLIGATIONS (IN \$000 equiv.)

Exchange Rate \$1.00 = Rs.7.60

Project No. : 386-11-110-281

Fiscal Years	AID-Controlled		Other cash contribution Cooperating country	Other Donor Funds (\$Equiv.)	Food for Freedom Committee		
	Local U.S. owned	Currency Country owned ^{1/}			Metric Tons (000)	CGC value & freight (\$000)	World Market (\$000)
Prior thru Act. FY 1970	1,573	5,343	-	-	-	-	-
Oper. Yr. FY 1971	-	1,463	-	-	-	-	-
Budget Yr. FY 1972	-	1,974	-	-	-	-	-
Budget Yr. +1 FY 1973	-	1,599	-	-	-	-	-
All Subs.Yrs. FYs 1974-76	-	2,272 ^{2/}	-	-	-	-	-
<u>TOTAL LIFE</u>	1,573	12,651	-	-	-	-	-

1/ Trust Fund Rupees

2/ A spill-over obligation of Rs.539,000 will exist after FY 1976 to complete the training of the degree participants initiated in FY 1975 and FY 1976.