

PRELIMINARY REVIEW AND RECOMMENDATIONS
RELATING TO JICA/AID TECHNICAL COOPERATION WITH THE
INSTITUTE FOR POST-GRADUATE STUDIES IN AGRICULTURE
WITHIN THE SYSTEM OF
HIGHER EDUCATION IN AGRICULTURE
IN
BANGLADESH

BY

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ABBREVIATIONS

ADC	Agricultural Development Council
AID	Agency for International Development (USA)
BARC	Bangladesh Agricultural Research Council
BARI	Bangladesh Agricultural Research Institute
BAI	Bangladesh Agricultural Institute
BAU	Bangladesh Agricultural University
BRRI	Bangladesh Rice Research Institute
CDSS	Country Development Strategy Statement
GOB	Government of Bangladesh
IADS	International Agricultural Development Service
IPSA	Institute for Postgraduate Studies in Agriculture
JICA	Japan International Cooperation Agency
MOA	Ministry of Agriculture
MOE	Ministry of Education

EXECUTIVE SUMMARY

The capacity of higher education in agriculture in Bangladesh for granting degrees has progressed steadily. It began with the establishment of an agricultural faculty at the University of Dhaka in 1938, advanced to a new phase with the establishment of the Bangladesh Agricultural University (BAU) in 1961, continued with the founding of the Patuakhali College of a few years ago, and moved into its latest stage beginning with the operation of the Institute for Postgraduate Studies in Agriculture (IPSA).

By some measures, the Bangladesh system of higher education in agriculture can point to successes: The capacity to train agriculturalists has increased significantly over the past 45 years; degree opportunities exist at the graduate and postgraduate level; while perhaps lacking in some respects, a nevertheless commendable physical plant exists; and a substantial number of teachers in the system have postgraduate degrees, many of them Ph.D.'s. By some other measures, however, higher education in agriculture has not progressed, and may have regressed. Included in these areas is an inadequate capacity to train high quality postgraduates, particularly at the Ph.D. level, and a stagnated curriculum.

Recognizing the above short-comings, the Japanese Government has indicated an interest in continuing and assisting IPSA in a project which has as its objective to impart training to postgraduate students leading to M.S. and Ph.D. degrees through basic and applied research in the various disciplines of agriculture. The technical assistance phase follows one during which the Japanese Government provided physical facilities to the newly established IPSA.

Additional technical assistance is required in the areas of curriculum development, extension, social sciences, and general administrative support. This additional need for technical assistance has been expressed to AID through discussion with leadership in the MOA, BARI, and BARC. In turn, AID and JAJCA reviewed the possibility of technical assistance to IPSA through cooperative efforts between the governments of Bangladesh, Japan, and the United States. Favorable responses from the various concerned and affected parties and AID's own favorable assessment led to the conclusion that AID should participate in a well targeted, albeit modest, cooperative technical assistance project at IPSA.

It is proposed that AID provide two long-term advisors for a period of three(3) years each. These long-term advisors will be part of a larger technical assistance team operating under the leadership of a Japanese long-term advisor. The two long-term advisors will have major responsibilities in curriculum development and in extension. It is further proposed that the AID technical assistance component include provisions for some participant trainees, for up to seven PM short-term consultancies, and for commodities for improvement of the library.

The proposed technical assistance effort contains an implicit dimension which is unique and which can have attractive long-term benefits for IPSA in particular and Bangladesh higher education in agriculture in general. If, as is recommended, the U.S. and Japanese long-term advisors are (senior) members of U.S. and Japanese universities, it is to be expected that long-term relationships will develop between these three universities which will be beneficial long beyond the duration of the technical assistance projects. Benefits will not only accrue to IPSA, but also to the U.S. and Japanese universities involved.

The proposed technical assistance is consistent with the AID/Bangladesh Country Development Strategy Statement.

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relating to JICA/AID Technical Cooperation with the
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I. PROJECT OBJECTIVES

This report describes activities and findings of a consultancy which had the following objectives:

1. To conduct a preliminary review of the curricula of institutes involved in higher agricultural education in the light of GOB's agricultural development objectives.
2. To develop two sets of terms of reference for the following effort:
 - a) an in-depth review and assessment of the relevance of existing curricula of IPSA, BAU, and BAI in terms of the nation's needs for agricultural professionals, and development of recommendations for strengthening curricula which will more effectively satisfy these national needs.
 - b) six person years of USAID-financed assistance at IPSA to address the institute's needs in the areas of curriculum development, social science, and agricultural extension as

part of the coordinated effort under the proposed IPSA-JICA Phase II effort. Identification of the specific composition of the six person-year level of effort in terms of the exact number of professionals, disciplines, duration and phasing.

II. BACKGROUND

The capacity of higher education in agriculture in Bangladesh for granting degrees has progressed steadily. It began with the establishment of an agricultural faculty at the University of Dhaka in 1938, advanced to a new phase with the establishment of the Bangladesh Agricultural University (BAU) in 1961, continued with the founding of the Patuakhali College a few years ago, and moved into its latest phase with the beginning of operations of the Institute for Postgraduate Studies (IPSA) in 1984.

The physical facilities for the new IPSA campus have been provided with assistance from JICA. According to a masterplan developed by JICA, there is still need for additional facilities and land purchases. But the basic structure is in place, and the first class of M.Sc. students is in session.

The campus is ideally located within the Agricultural Research and Training complex of BARI, BRRI, and CERDI. As a result, it offers excellent potential for integrating academic training with applied research and extension. No institutional model for such an integration currently exists in Bangladesh. Therefore, technical assistance to develop an integrated approach to education, research, and extension has been requested. Japan, through JICA, has indicated commitment to continue to finance needed physical plant development and technical assistance, particularly as it relates to start-up activities in the research area. Additional technical assistance is required in areas of curriculum development, social sciences, extension, and general administrative support. This additional need for technical assistance has been expressed to AID through discussion with leadership in the MOA, BARI, and BARC. In turn, AID and JICA reviewed the possibility of technical assistance

to IPSA through cooperative efforts between the governments of Bangladesh, Japan, and the United States. AID's own assessment of the likely significant benefits to the agricultural sector, along with favorable responses from JICA, BARI, BARC, and the MOA has led to the request for a preliminary review of the curriculum for higher education in agriculture in Bangladesh and recommendations for appropriate technical assistance. This report provides such a preliminary review and recommendations.

III. THE SITUATION

1. General

The Bangladesh higher education system for agriculture includes four institutions, namely, the Bangladesh Agricultural Institute (BAI), the Bangladesh Agricultural University (BAU), the Patuakhali College and the Institute for Post-graduate Studies in Agriculture (IPSA). Until recently, BAU was under the MOE. This was changed, and all agricultural colleges, universities, and technical institutes now report to the MOA. The BAU reports directly to the MOA, whereas the BAI, IPSA, and the Patuakhali College do so through BARI.

There are discussions regarding potential additional faculties of agriculture in the universities of Rajshahi and Chittagong. A proposal to establish an agricultural faculty at Dhaka University has apparently been rejected.

The existing agricultural institutions of higher learning are to varying degrees linked. BAI and Patuakhali are affiliated institutions to BAU, and IPSA has a conditionally affiliated status. The basic linkage is that currently all agricultural institutions of higher learning are obligated to offer the curriculum developed and offered by BAU. Additionally, the admission of students to IPSA is through the respective Departments and the committee for advanced studies at BAU. Similarly, all Post-graduate examinations are to be held at and by BAU. This arrangement with IPSA goes beyond "linkage", but effectively usurps essentially all academic authority from the faculty at IPSA. This is not in the best long run interest of either the students or either of the faculties.

Until recently, students wishing to attend BAI applied directly to BAI, where decisions regarding admission were made. In February of 1985, BAI was informed by BAU that the latter is seeking a ruling to the effect that admission of students to BAI should be through BAU. A decision regarding such a ruling is pending before the Ministry of Agriculture. BAI was recently affected by another ruling which prevents it from being a residential campus for post-graduate studies. Consequently, BAU remains as the only institute of higher education in agriculture which offers both graduate as well as post-graduate degrees. BAI and Patuakhli offer only graduate (baccaloureate) degrees, and IPSA will, at least in the near future, offer only post-graduate degrees.

Largely because of disruptive student strikes and university closings, the number of students admitted and graduated fluctuates substantially from year to year. Approximate average numbers of B.Sc. degrees conferred are 500 for BAU, 100 ;for BAI, and 50 for Patuakhali. A recent study has shown that approximately 85 percent of these graduates have employment when they graduate, and the remainder has no great difficulty finding employment within a reasonable period after graduation. However, this differs between the various areas of specialization. Graduates with specialization in fisheries, animal husbandry, and agricultural economics seem to have considerably more difficulties finding employment than graduates from other faculties. Throughout the information collection process concern was expressed about employment opportunities for agricultural graduates in the future. Apparently, the job market has tightened up considerably during the past two years, and many expect this trend to continue. Therefore, previously developed manpower assessments must be updated.

Various reports and interviews with employers of graduates from the agricultural institutions of higher learning indicate that graduates are not well prepared to enter the job market. Two major factors seem to be responsible for this: First, the largely urban background of the students, and second, the de facto nature of the curriculum (to be discussed below).

Prior to the ruling that BAI will no longer qualify as a resident campus for post-graduate studies, BAI granted about 100 post-graduate (M.Sc.) degrees. None of these were passed out during the past several years. Since its establishment in 1961, BAU has granted well over 1,000 M.Sc. Degrees. Post-graduates do not appear to have difficulties obtaining employment. However, the pay differential between holders of B.Sc. and M.Sc. degrees seems to be so small as to discourage graduates from entering post-graduate studies or they drop out before completing the requirements for the M.Sc.

BAU, so far the only institutions authorized to offer Doctorate degrees, has granted four such degrees, all of them between 1973 and 1980. About 15 doctoral candidates are currently enrolled. Employment prospects are judged to be good, particularly as scholarships for pursuit of doctoral studies abroad diminish.

2. The Curriculum

Establishment of a college, university, or system of higher education is an undertaking not only of substantial magnitude but also one that requires much attention, scrutiny, and modification over time. To expect quick results is unrealistic, and to be satisfied with the status quo leads to a deterioration in quality of education. Viewed from this

prospective, the Bangladesh system of higher education in agriculture can point to successes by some measures: The capacity to train agriculturalists has increased significantly over the past 45 years; degree opportunities exist at the graduate and post-graduate level; while perhaps lacking in some respects, a nevertheless commendable physical plant exists; and a substantial number of teachers in the system have post-graduate degrees, many of them Ph.D.'s. By some other measures, however, higher education in agriculture has not kept pace, and may have regressed. Thus, for progress to continue and for the clearly existing promises of the future to come to fruition, some major challenges must be met. One of these challenges is a thorough evaluation and subsequent modification of the curriculum.

This consultancy made possible only a very preliminary assessment of the curriculum for institutions of higher education in agriculture. This assessment was accomplished through interviews with administrators of educational institutions, faculty, and employers of graduates. Written documents on curriculum requirements, course syllabi, and previous reports on curricula were also reviewed. Needless to say, such an approach coupled with limited time prevents an in-depth analysis of the curriculum course by course or even discipline by discipline. However, a number of observations and conclusions can be offered.

As indicated above, there is only one curriculum for all institutions of higher education in agriculture. Each course in the curriculum is supported by a syllabus. The curriculum and concomittant syllabi are developed and are controlled bny BAU. The rationale for having only one curriculum appears to be the goal to achieve quality and uniformity. The goal to achieve quality education and perhaps even uniformity is

commendable, and in theory this might be achieved by way of a single curriculum which is developed and controlled by one institution. In reality, however, neither uniformity nor quality are assured by this approach. As regards quality of education, it is determined by a number of variables other than and in addition to a tightly structured and controlled curriculum. Such factors include quality of faculty, teacher evaluation by students and peers, support libraries and other facilities, relevance of course content to students' future careers, etc. It was neither possible nor within the intended scope of this assignment to evaluate all of these variables. But relevant available information suggests that attention to these variables is significantly less than attention to a highly structured and uniform curriculum.

As regards uniformity, it is-in fact-considerably less than a uniform curriculum would suggest at first glance. First, many of the syllabi are overly ambitious. This forces the professors to pick and choose what should be emphasized. Different professors will make different decisions on what should be emphasized. Second, due to frequent and often prolonged university closings and other disruptions of the orderly teaching process, professors simply are unable to cover all the materials specified in the syllabi. Once again, decisions will differ from professor to professor as to what should be covered and what should be omitted. Third, no matter how a syllabus is written, it leaves room for a certain amount - often a considerable amount of interpretation. Unless there is a significant amount of faculty interaction, interpretation of syllabi may differ greatly from institution to institution. Such faculty interaction does not exist.

Our own evaluation as well as reports of previous evaluators with expertise in different disciplines suggest that the curriculum and syllabi tend to be on the ambitious, perhaps unrealistic, side in terms of the breadth of topics which can be covered as well as the level at which they can be covered. The result will be that the student will obtain a superficial knowledge of many subjects but will not master any of them - a condition which was confirmed by employers of graduates. While this situation is not desirable at any degree level, it becomes particularly undesirable at the post graduate level, where specialists with in-depth knowledge in their disciplines are expected.

The curriculum is highly and tightly structured to prevent the student from exploring areas of particular interest in his own field in more depth, to become acquainted with subject matter outside his own field of specialization, or to tailor a program to his own career interest. To be sure, departmental, faculty, and disciplinary boundaries are crossed to some degree. For instance, several faculties require their students to take extension courses (taught outside these faculties). Other faculties (e.g. Agricultural Economics and Rural Sociology) require their students to take some course work in more than one other faculty. But by any measure such cross fertilization is very limited. And to the extent it does take place it is still highly structured, i.e., it is required and other or additional choices are not possible.

A curriculum should be designed so as to best prepare the student for the professional career he embarks upon after graduation. As career requirements change over time, so must a curriculum if it is to remain relevant. When we inquired as to what changes had been made in the curriculum during the past decade or so, we were again and again informed - and without exception - that no significant changes were made in the curriculum since its initial establishment some 20 years ago. This statement must be tempered somewhat, as some syllabi were officially

modified and as some possibility exists for professors to modify course content within existing syllabi and course structure. Nevertheless, a curriculum that does not undergo any significant changes in over 20 years is not likely to provide for the best possible education of students.

The difficulty of the process of getting significant curriculum changes approved and implemented appears to be the main deterrent to changes in the curriculum. Curriculum changes have to be approved by, among other bodies, the Academic Council. Rightly or wrongly, the perception is that the Academic Council would not have come to an agreement on significant changes in the curriculum in the past, and there is doubt that it is ready to do so now. Nevertheless, there is considerable sentiment towards the need for a major overhaul of the curriculum, perhaps even some of its conceptual foundations. According to Vice-Chancellor Dr. A.K.M.A. Haque, a task force is currently evaluating post-graduate curricula at various universities in other countries in order to provide a background for potential changes in post-graduate study requirements at BAU; at least two faculties at BAU are reported to be in the process of preparing proposals for significant changes in their curricula; the newly established IPSA has great interest in developing and implementing an improved post-graduate curriculum; and major employers of graduates have expressed a keen interest in assisting the institutes of higher education in agriculture in the development of improved curricula (indeed, one such employer has recently provided funds to enable a conference for formal discussion of the present state of and future possibilities for curricula). Thus, the time appears right for a major review and subsequent modifications of the agricultural education effort in Bangladesh. While the agricultural education system has served Bangladesh well in the past,

it is necessary that major steps be taken to keep the system current so as to assure its continued relevance and effectiveness.

IPSA is in a unique position to contribute to progress with respect to relevance and effectiveness of the curriculum of higher education in agriculture. Firstly, it is located within "working distance" of BARI, BIRRI, and CERDI, thus affording opportunities for participation of students in these institutes (as part of their formal training), and in turn, offering opportunities for staff from these institutes to participate in the education process. Second, the IPSA is new, and therefore not looked into a traditional sequence of educational offerings. Opportunities clearly exist to develop an imaginative and effective program, a program which will focus on IPSA but is likely to have much broader benefits. This proposal for technical assistance is designed to assist IPSA in capitalizing on its unique opportunity.

IV. TECHNICAL ASSISTANCE TO IMPROVE HIGHER EDUCATION IN AGRICULTURE

1. Japanese Technical Assistance to IPSA

IPSA has been established in place of the previously contemplated Bangladesh College of Agricultural Sciences (BCAS). The physical facilities of BCAS, now IPSA, were provided by the Japanese Government. Further technical and financial assistance to IPSA is being contemplated by the Japanese Government. Negotiations between the Japanese and Bangladesh Governments are nearly complete with respect to the IPSA/JICA-Phase II project. Upon completion of the agreement, the Japanese Government, through JICA, will assist IPSA in a project which has as its objectives to import training to post-graduate students leading to M.S. and Ph.D. degrees through fundamental and applied research in the various disciplines of agriculture, organize short courses for research scientists and extension personnel and conduct basic research to the extent required for backstopping applied research of various crop research institutes. To assist IPSA in achieving this objective, the Japanese Government is prepared to provide technical assistance in form of expert services and the construction or modification of additional physical facilities.

2. Proposed U.S. Technical Assistance to IPSA

a. Relationship to IPSA/JICA-Phase II: The proposed U.S. technical assistance to IPSA is intended to be in support of and complementary to the IPSA/JICA-Phase II effort. Its purpose is to provide a limited amount of resources and expertise. These will be in areas where JICA has supported the Bangladesh officials' request that AID provide resources to augment the JICA/Bangladesh program to achieve the objective of imparting improved training at the post-graduate level.

The proposed U.S. long-term advisors will work as members of a

larger technical assistance team, with one of the Japanese long term advisors serving as the team leader. The Japanese and U.S. experts will conduct their activities in a cooperative manner in accordance with the relevant records of discussion and/or scopes of work. Nevertheless, all team members shall conduct their activities under Japanese leadership. This means that, among other things, a signature of approval from the Japanese team leader is required before submission of any official reports or documents to Bangladesh authorities.

It is recommended that prior to, or immediately after, the arrival of the Japanese and U.S. long-term advisors a letter of understanding be exchanged at the appropriate levels of authority to state the understanding between all parties concerned (Bangladesh, Japan, U.S.) regarding use of official vehicles (provided by the Japanese Government), periodic report preparation, selection of short-term consultants, resolution of conflicts, selection of candidates for fellowships, etc.

b. General Description of Proposed U.S. Technical Assistance to IPSA: The proposed technical assistance is modest (and small relative to the Japanese effort), but is expected to have a significant impact on the development of IPSA along and in conjunction with support from IPSA/JICA-Phase II and from the GOB. USAID assistance is expected to have four components: (a) Long-term advisors (2, for 3 years each), (b) short-term consultants (up to 7 PM), (c) participant training, and (d) commodities.

c. Scope of Work: Curriculum Planner: The curriculum planner's primary responsibility will be to assist the Director of IPSA in the development of an up-to-date curriculum for post-graduate studies in those subject matter areas where IPSA is authorized to grant degrees. While the curriculum planner's responsibilities are focused on IPSA, any curriculum

development must be closely coordinated and carried out in concordance with BAU. Similarly, while the focus is one the development of curricula for post-graduate studies, the nature of existing and potential future undergraduate curricula must be taken into account.

As part of the curriculum planning effort, the curriculum planner will be responsible for organizing two major activities. One of these is a review of different university systems in 3-4 other countries (i.e. India, Japan, England, United States) to assess the merits and possible relevance of their curricula for Bangladesh. This review should include site visits by the curriculum planner along with 2-4 representatives of higher education in Bangladesh and a Japanese long-term advisor. Another major activity to be organized by the curriculum planner is the in-depth assessment of educational needs for agriculture in Bangladesh (see below: IV. 3. In-Depth Assessment of Educational Needs).

A secondary responsibility of the curriculum planner is to assist the Director of IPISA in all aspects of development of an effective and efficient administrative structure. The curriculum planner will, to the extent other time commitments permit, also assist the faculty in teaching in his area of specialty. Finally, he will work with the extension specialist (see below), the Japanese counterparts, and the IPISA faculty in the development of library holdings and an administrative as well as research computing capability.

The director of IPISA or his designee shall be the counterpart to the curriculum advisor, whose assignment to IPISA will be for a duration of 36 months.

d. Qualifications: Curriculum Planner: The curriculum planner must have a Ph.D. degree in an agricultural discipline. Formal training in agricultural economics or rural sociology is desirable.

The curriculum planner must have extensive experience in university administration. Experience as departmental administrator with varied and broad university-wide involvement is essential; college/school level administrative experience is preferred. The incumbent must have some experience in developing countries, and should be able to communicate at the professional level with a wide range of disciplines and academic activities, including agronomy, agricultural economics, horticulture, genetics and breeding, plant pathology, animal husbandry, entomology, soil science, agricultural engineering, research, extension, and others. He should be a senior member of an agricultural college/university.

e. Scope of Work: Extension Specialist: The extension specialist's primary responsibility will be to assist the faculty in IPSA's Department of Extension in the development of an effective program. This will include the development of a curriculum, writing of course syllabi, preparation of teaching materials for the class room and field, and conducting research to identify the most effective extension methods for Bangladesh conditions. The extension specialist will work with students, staff, extension agents and others to develop and teach proper extension methods, including use of demonstration sites, state of the art visual aids, various communications technologies, farmer field days, among others.

As a secondary activity, the incumbent will work with the Director to establish appropriate linkages to extension, and will work with the curriculum planner (see above), the Japanese counterparts, and the IPSA faculty in the development of the library holdings and an administrative as well as research computing capability.

f. Qualifications: Extension Specialist: The extension specialist must have at least an M.S. degree in one of the agricultural disciplines. He must have experience as extension agent/ specialist in the field, and

should have significant administrative experience. He should be a senior member of an agricultural college/university. Some experience as extension specialist in a developing country is required. The incumbent must be able to communicate at the professional level with a wide range of disciplines and academic activities, including agronomy, agricultural economics, horticulture, genetics and breeding, plant pathology, animal husbandry, entomology, soil science, agricultural engineering, research, teaching, and others. The extension specialist's counterpart shall be the Head of the Department of Agricultural Extension.

g. Short-Term Consultants: Curriculum planning, extension program planning, as well as library and computing capacity development cover and require a wide range of expertise of often specialized nature. It cannot be expected that all of this expertise can be provided by the two resident U.S. advisors, and it may not be available from either the IPSA faculty or the Japanese counterparts. Therefore, this proposal for technical assistance provides for up to seven (7) PM of short-term technical consultancies. The nature of these consultancies is further described below (Section IV, 3: "In-Depth Assessment of Educational Needs.")

h. Participant Training: Advanced degree training for (future) faculty members is recommended. The nature and discipline of training is to be decided in a coordinate with the consent with the Director and the Japanese team leader. These decisions must be made during the first year so that participant training can, at least to a major extent, take place during the life of the activity.

i. Commodities: Provisions are made for commodity procurement for the development of IPSA. Such procurement is confined to the development of the library and extension capability (and does not include any construction).

j. Scheduling: The two U.S. long term advisors should arrive in Dhaka during the first month of the fall semester 1985 (or within about one month after the arrival of the Japanese long-term advisors). If this is not possible, the persons identified as long-term advisors should come to Bangladesh on a short-term assignment prior to starting their long-term assignment. Enroute to Bangladesh the long-term advisors should visit JICA/Japan and Kyushu University for briefings. Short term consultants should be scheduled by the long term advisors (and their Bangladesh and Japanese counterparts) as needed throughout the subsequent 3-year period.

3. In-Depth Assessment of Educational Need

This activity is an integral part of and fundamentally important to the technical assistance effort to IPISA. However, implications and results are very likely to be much broader. Because of this, this activity is discussed separately.

a. Purpose: It is the purpose of this assessment to identify the nation's needs for agricultural professionals, to assess the adequacy of existing educational institutions to meet these needs, and to design a program (or alternative programs) of assistance to remove existing constraints.

b. Approach and Scope: The assessment will have four distinct phases: (1) a projection of manpower needs in agriculture; (2) a review and assessment of the capabilities of existing institutions of higher education in agriculture, as well as related institutions (i.e., extension, research, and certain private institutions); (3) identification of constraints which prevent existing institutions from meeting projected manpower needs; and (4) design of a program of specific activities which will remove the constraints identified in (3) above.

This approach will pay considerable attention to the nature and relevance of existing curricula. But to accomplish the purpose, a number of

additional issues and policies will have to be evaluated. These issues and policies include faculty policies (incentives, promotion, professional improvement plans and opportunities, work loads); administrative structure of institutions of higher education in agriculture; relationships between research, teaching, and extension; student policies (admission, grading, scholarships, tuition); physical facilities (libraries, laboratories); and national policies (agricultural price and support policies, research, extension, education).

c. Output: The above approach is expected to provide the following outputs:

1. Manpower needs projections,
2. A descriptive and analytical assessment of the existing institutions' capabilities to meet the needs,
3. A strategy statement for improving the capacity of the Bangladesh system of higher education in agriculture to train high level technical manpower, and
4. A program of specific activities and a schedule for implementation which will permit realization of the objectives within the recommended strategy.

d. Level of Effort: Successful completion of the assessment described above will require inputs from the GOB, JICA, and AID. The estimated requirements for each are as follows:

1. GOB
 - a. Team co-leader
 - b. Team of experts to function as counterparts to AID inter-disciplinary team (see below),

- c. Support staff (typist, administrative assistant),
- d. Support budget for travel, subsistence, supplies, etc., for Bangladesh members of team.

2. AID

a. Interdisciplinary team

Agricultural university administration and management, Team co-leader (same as curriculum planner - see above) 4 PM

Agricultural extension specialist/administrator (same as extension specialists - see above) 2

Other short-term consultants as needed (up to 7 PM) 7

13(7)

- b. Support budget (travel, subsistence, report reproduction, communications, local personnel services) for short-term consultants.

3. JICA

- a. Team co-leader (a long-term advisor)
- b. Plant scientist (possibly a long-term advisor)
- c. Support budget for travel, subsistence, supplies, etc. for Japanese members of the team.

e. Scheduling: This assessment could commence within six months of arrival of the two long term U.S. consultants in Bangladesh and should be completed within 4-6 months after its initiation.

4. Building a Three-Way Institutional Relationship

The proposed technical assistance effort contains an implicit dimension which is unique and which can have attractive long-term benefits for IPISA in particular and Bangladesh higher education in agriculture in

general. If, as is recommended, the U.S. and Japanese long-term advisors are (senior) members of U.S. and Japanese universities, it is to be expected that long-term relationships will develop between these three universities which will be beneficial long beyond the duration of the technical assistance projects. Benefits will not only accrue to IPSA, but also to the U.S. and Japanese universities involved.

5. Relationship of Technical Assistance to Country Development Strategy Statement (CDSS)

The Mission's CDSS recognizes that increasing agricultural productivity is a principal component of the development strategy. Bangladesh is favorably endowed with agricultural resources. Nevertheless, the country is not producing sufficient food to feed itself, nor is it producing surpluses necessary for sustained overall economic growth. This is in part a reflection of a severe lack of trained manpower necessary to exploit the agricultural potential of the country. Scientists are needed in large numbers to generate and adapt the new crop varieties and management practices which can transform traditional agriculture. Extension agents are needed to bring the new technology to farmers. Administrators, economists, and social scientists are required to design, plan, and implement policies and projects needed to increase the pace of agricultural modernization. The proposed technical assistance is directed at strengthening the major educational and related institutions in Bangladesh which are responsible for meeting the manpower requirements needed in line with the Mission's CDSS.

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INTERNATIONAL AGRICULTURAL DEVELOPMENT SERVICE

ANNEX A

TERMS OF REFERENCE

FOR

DR. LUDWIG M. EISGRUBER

1. To conduct a preliminary review of the curricula of institutes involved in higher agricultural education in the light of BGD's agricultural development objectives.
2. To develop two sets of terms of reference for the following effort:
 - a) an in-depth review and assessment of the relevance of existing curricula of IPSA, BAU, and BAI in terms of the nation's needs for agricultural professionals, and development of recommendations for strengthening curricula which will more effectively satisfy these national needs.
 - b) six person-years of USAID-financed assistance at IPSA to address the institute's needs in the areas of curriculum development, social science, and agricultural extension as part of the coordinated effort under the proposed IPSA-JICA Phase II effort. Identification of the specific composition of the six person-year level of effort in terms of the exact number of professionals, disciplines, duration and phasing.

ANNEX B

INDIVIDUALS INTERVIEWED

1. Ministry of Agriculture
S.A. Mahmood, Secretary of Agriculture
2. Embassy of Japan
T. Ohashi, First Secretary
Y. Okada, Second Secretary
3. Japan International Cooperation Agency
M. Ezaki, Resident Representative
Y. Yshida, Deputy Resident Representative
N. Miyashita, Deputy Chief, Technical Cooperation Division
4. Bangladesh Agricultural Research Council
E. Ahsan, Acting Chairman
5. Bangladesh Agricultural University
A.K.M.A. Haque, Vice-Chancellor
A.M.M. Hussain, Dean, Agricultural Economics and Rural
Sociology
Md.A.Ali, Head, Agricultural Statistics
L. Rahman, Head, Agricultural Finance
Dr. Akramuzzaman, Head, Rural Sociology
S. Md. M. Murshed, Head, Agricultural Economics
M. Ahmed, Dean, Agriculture
Md. A. Rahman, Dean, Veterinary Medicine and Acting Coordinator,
Committee for Advanced Studies and Research.
6. Bangladesh Agricultural Research Institute
M. M. Rahman, Director-General
7. Bangladesh Agricultural Insitute
M. Rahman, Principal
8. Institute for Post-Graduate Studies in Agriculture
S. H. Khan, Director
A. Hamid, Faculty Member

9. Ford Foundation
 - A. Bottrall, Project Manager
10. Agricultural Development Council
 - G. Gill, Resident Representative
 - D. Nygard, Vice President
11. International Agricultural Development Service
 - D. Daugherty, Chief of Party
12. Bangladesh Rural Advance Committee
 - J.P. Kay, Consultant
13. Agency for International Development (US)
 - W.Joslin, Acting Director
 - J.Hale, Food and Agriculture
 - C.C.Lu, Food and Agriculture
 - H.P.Peterson, Chief, Office of Food and Agriculture, and
Acting Chief Director

ANNEX C - FOR MISSION USE ONLY

BUDGET (Preliminary)

TECHNICAL ASSISTANCE TO IPS

Budget Item	Year 1	Year 2	Year 3	Total for period
	- dollars (US) -			
A. Personnel-Bangladesh				
Curriculum planner	58,000	58,000	58,000	174,000
Extension specialist	50,000	50,000	50,000	150,000
Other payroll expenses (Ope-30%)	32,400	32,400	32,400	97,200
Secretary (Local)	<u>1,200</u>	<u>1,200</u>	<u>1,200</u>	<u>3,600</u>
Sub-total A	141,600	141,600	141,600	424,800
B. Personnel-short-term				
Person months - 7 @\$5,000	20,000	15,000	-	35,000
Other payroll expenses	<u>6,000</u>	<u>4,500</u>	<u>-</u>	<u>10,500</u>
Sub-total B	26,000	19,500	-	45,500
C. Personnel-Home office back stopping				

Budget Item	Year 1	Year 2	Year 3	Total for period
- dollars (US) -				
D. Allowances				
Post diff. & Sunday work (30%)	32,400	32,400	32,400	97,200
Housing	24,000	24,000	24,000	72,000
Education(incl.intl.travel)(3)	<u>36,000</u>	<u>36,000</u>	<u>36,000</u>	<u>108,000</u>
Sub-total D	92,400	92,400	92,400	277,200
E. Travel and per diem - international				
Long-term advisors (+spouses)	8,500	8,500	8,500	25,500
Short-term advisors (6 RT)	12,000	12,000	-	24,000
Admin.(Asian and other educ. review)	15,000	10,000	-	25,000
R&R	9,000	9,000	-	18,000
Medical emergency	<u>3,000</u>	<u>3,000</u>	<u>3,000</u>	<u>9,000</u>
Sub-total E	47,500	42,500	11,500	101,500
F. Travel and per diem - Bangladesh				
Long-term advisors	5,000	5,000	5,000	15,000
Short-term consultants				
Dhaka - 100 days	4,300	4,300	-	8,600
Outside Dhaka - 100 days	<u>1,300</u>	<u>1,300</u>	<u>-</u>	<u>2,600</u>
Sub-total F	10,600	10,600	5,000	26,200
G. Commodities				
Books, Journals	15,000	15,000	15,000	45,000
Library equip.(duplicator etc)	36,000	-	-	36,000
Miscellaneous	<u>5,000</u>	<u>5,000</u>	<u>5,000</u>	<u>15,000</u>
Sub-total G	56,000	20,000	20,000	96,000

Budget Item	Year 1	Year 2	Year 3	Total for period
	- dollars (US)-			
H. Shipping				
Commodities	15,300	4,000	4,000	23,300
Automobiles(L.t.advisors)	6,000	-	6,000	12,000
Household (L.t.advisors)	6,000	-	6,300	12,300
Airfreight	6,400	-	6,400	12,800
Storage	<u>3,000</u>	<u>3,000</u>	<u>3,000</u>	<u>9,000</u>
Sub-total H	36,700	7,000	25,700	69,400
I. Logistics, other expenses				
Logistical expenses	15,000	15,000	15,000	45,000
Miscellaneous operating	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>30,000</u>
Sub-total I	25,000	25,000	25,000	75,000
J. Participant Training (2 for four years each)				
Travel & per diem	-	4,000	-	4,000
Tuition/fees	-	24,000	-	24,000
Allowances, Stipends	<u>-</u>	<u>139,400</u>	<u>-</u>	<u>139,400</u>
Sub-total J	-	167,400	-	167,400
K. Indirect cost (at 20%: A,D,portion of F,I)	52,800	52,800	52,800	158,400
L. Indirect cost (at 30%: B,C,E, portion of F,H, portion of J)	44,870	75,540	21,310	141,720
Sub-total (A - L)	567,270	688,140	429,110	1,684,520
M. Contingency - 10% (of L.)	56,700	68,800	42,900	168,400
N. Inflation - 10% (of L+M)	<u>-</u>	<u>75,694</u>	<u>47,200</u>	<u>122,894</u>
TOTAL (L-N)	<u>623,970</u>	<u>832,634</u>	<u>519,210</u>	<u>1,975,814</u>
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