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A Farmer-To-Farmer Training Program for Afghanistan

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Nathan Associates Inc. and
Louis Berger International, Inc.
A Joint Venture

A Joint Venture of Robert R. Nathan Associates, Inc. and Louis Berger International, Inc.
1301 Pennsylvania Avenue, NW Washington, DC 20004
Phone: 202-393-2700 Telex: 248482 NATC UR Facsimile: 202-393-4548

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Robert E. McCorkle and Clyde Hostetter

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ABBREVIATIONS

AARRP	Afghanistan Agriculture Relief and Rehabilitation Program
AIG	Afghanistan Interim Government
AMDC	Agricultural Media Development Center
ARS	Agriculture Rehabilitation Scheme
FFTP	Farmer-to-Farmer Training Program
MOA	Afghanistan Interim Govt. Ministry of Agriculture
MSU	Mobile School Unit
PTF	Pakistan Training Facility
SVF	Selected Village Farmer

PREFACE

The establishment and growth of a viable agricultural private sector in Afghanistan is required to provide a bridge to self-sufficiency and prosperity from the current environment in which much support for food and shelter must be obtained from donor agencies. Technical agricultural education can play an important role in the reestablishment of the nation's agricultural sector as the essential base for future national development.

The Mobile School concept is a system designed to reach farmers where they live. It provides education without the need for literacy. It allows education to occur at a variety of locations that may be separated by great distances. It encourages a farmer-to-farmer multiplier effect because it stimulates learning and discussion in the agricultural heartland. It is a concept whose time has come for Afghanistan.

ACKNOWLEDGEMENTS

The close cooperation and friendly assistance of many persons are appreciated, particularly since the team's brief visit took place during a holiday period which included two weekends and two major national Afghanistan and Pakistan observances as well as Christmas. Persons whose official and personal empathy helped make things easier include Jack Miller, Gary Lewis, Phillip Church, and Andrew Rude within A.I.D.; Mir M. Sediq, Chief of Party of VITA, and his capable staff; the Deputy Minister of Agriculture, Dr. Hashmatullah Mojadidi; and Dr. Azam Gul of The Agricultural Survey of Afghanistan (The Swedish Committee). Also appreciated are the informal and unstinting assistance of Tony Babb, Chief of Party for DAI; and Dr. Jerry Boardman, Chief of Party of the University of Nebraska team who have helped restore a functioning educational system to Afghanistan. And a special thank-you to Marcella Oneida, who worked logistical wonders routinely at the A.I.D. office in Peshawar.

EXECUTIVE SUMMARY

The recommendations in the report that follows this summary are based on interviews and investigations conducted by Robert E. McCorkle and Clyde Hostetter during the period between December 16 and December 29, 1989, in Islamabad and Peshawar, Pakistan. The team was charged with investigating agricultural rehabilitation needs in Afghanistan and the role that agricultural training within the country could play in solving the nation's severe food shortage.

The team also was directed to examine two agricultural training projects sponsored by A.I.D. in past years in Guatemala — a Mobile School program which carried agricultural training to farmers where they lived and farmed, and a Basic Village Education project designed to test the effectiveness of several radio broadcasting approaches in persuading farmers to improve agricultural practices and production. [1] It was hoped that lessons learned in Guatemala might be useful in helping solve Afghanistan agricultural training needs.

Finally, the team was charged with developing a "farmer-to-farmer training program for testing in Afghanistan in the spring of 1990." It was determined early on that no effective in-country training program for farmers existed in Afghanistan.

The AIG, through mujahideen resistance forces, controls more than 85 percent of the country's land area, with the Soviet-backed government in Kabul restricted to control of only a few urban areas. A fledgling agricultural extension program had existed before the Soviet invasion, but a limited number of extension agents had been adequately trained. Few of the 1300 persons listed by the AIG Ministry of Agriculture as being at least potential extension workers have finished high school.

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[1] Both team members were familiar with the Guatemalan projects through their positions as faculty at California Polytechnic State University, the institution which was actively involved in both projects.

No formal out-of-country AIG program at the college level exists to train Afghanistan extension agents, although a small group of hand-picked younger Afghans, most of them mujahideen, are being given intensive short courses in agriculture by VITA (Volunteers in Technical Assistance) as a part of the A.I.D. Agriculture Sector Support Project. Interviews with members of the group confirmed formal reports by The Swedish Committee for Afghanistan, among others, that many villages had been razed by the Soviets and Kabul forces, that half of the country's draft animals had been destroyed, and that many irrigation systems developed over many centuries were in total disrepair after ten years of fighting.

One-third of Afghanistan's population are refugees living in border camps in Pakistan and Iran. It is estimated that current agricultural production in Afghanistan is capable of feeding only those still living in the country. There also is extensive evidence that illiteracy in many farming areas of Afghanistan is as high as 90 percent, increasing the difficulty of reaching Afghan farmers with practical information on ways to increase in-country food production so that the refugee populations can return. Further complicating the problem is the fact that many young mujahideen have progressed from childhood to adulthood fighting the Soviet invaders and have missed learning how to farm through a traditional father-to-son relationship.

It became evident that a delivery system would have to be developed that could carry practical farming information into Afghanistan, using methods that would both inform largely illiterate farmers about efficient agricultural practices and also persuade them to adopt those practices. Interviews with AIG officials provided detailed information about wishes of the MOA to offer 30-60 day short courses in agriculture at a Pakistan-based facility in Peshawar. They proposed choosing 500 young farmers in groups of 50 on a carefully balanced basis from all areas of Pakistan. During the year, ten such groups would receive intensive training in all aspects of agriculture, primarily in the classroom.

In accordance with its charge, the team concentrated on methods of reaching farmers in Afghanistan rather than those brought into Pakistan for training. These methods adapted Mobile School techniques developed in Guatemala, in which the trainers went to the farmers instead of the farmers coming to the trainers. Details are provided in the report that follows.

A central part of the Farmer-to-Farmer program that was devised is the establishing of an Agricultural Media Development Center. The AMDC will develop, test, and perfect learning media that will be effective in training illiterate farmers in the field. The principles and methods used to produce such materials are described in the report.

The team found that radio dissemination techniques tested in Guatemala as part of the Basic Village Education project would not be effective for Afghanistan. In Guatemala the most effective radio-dissemination mode was one in which weekly meetings were presided over by farmer-leaders who met each week with Ministry of Agriculture extension agents and were briefed on special agriculture programs that would be broadcast all day during the week over several radio stations operated solely for that purpose. All meetings were held within a day's journey of the national capital, where extensive production facilities and staff were available for backup support. Additionally, in the Guatemalan project a more limited number of crops were raised and there were fewer seasonal variations within the country. None of these conditions exists today in Afghanistan. It was decided to concentrate on media which could be used by Mobile School Unit trainers during three-day on-site visits to various farming areas throughout the year.

An important aspect of media development is its preliminary testing and refinement. Persons who are representative of target audiences are used to provide feedback on effectiveness of the materials.

Two development approaches were considered. One described in the report was to work with the teachers and 500 trainees of the short-courses proposed by the MOA. Teachers of the courses would be part of a media production team that would prepare media materials used in the courses. Then, based upon trainees' responses, the materials would be refined and used by Mobile School Units.

Another approach that has proven to be effective is to test the effectiveness of the materials in informal consultation with very small groups of persons representative of target populations. Such persons could be either current farmers in the targeted geographic area or farmers living full-time or part-time in Pakistan refugee camps. Only minimal funds would be required to underwrite the expenses of such small representative groups.

Two budgets were prepared and are contained in the report. One includes MOA cost estimates for operating the 500-student training program; the other has no budget for operating such a program, but includes provision for subject-matter teachers to work with AMDC media specialists in developing the materials. The equivalent of three such full-time teachers has been budgeted in the latter case, with the expectation that more than that number of teachers would be involved from time to time on a part-time basis. Intermediate costs for operating a less extensive Pakistan Training Facility than that proposed by the MOA can be interpolated from the 500-student cost estimates provided by the MOA. See Annex B for budget information.

Start-up and operational costs of both the Agricultural Media Development Center and the initial two Mobile School Units should be evaluated with an understanding that the proposed Farmer-to-Farmer

program is conceived as the initial step in what would become a nationwide program in Afghanistan after the 1990-91 testing phase. Economies of scale are central to nearly all educational-media development, and mass-production reduces per-unit costs enormously. These economies would become evident as materials developed for the initial Mobile School Units were mass-produced for expanded in-the-field use by additional MSUs and perhaps by other governmental and volunteer organizations as well.

Technical advisors from out of country will be required for the first year of operation. A full-time advisor will be needed to provide counterpart support for the full Farmer-to-Farmer program. Another adviser will be needed in a similar role for operation of the Agricultural Media Production Center. Six man-months of agricultural subject-matter advisers have been budgeted for short-term assignments of a few weeks each by a variety of out-of-country agricultural specialists.

No estimates have been made for overseas travel costs, housing, and perquisites for advisers working on the program. Administrative overhead for the contractor directing the program also has not been estimated.

Thirty days of intermittent time, with logistical support, has been budgeted for a Media Researcher based in the United States, one of whose functions during the year will be to seek out existing international media resources that can be adapted by AMDC staff to Afghanistan needs. This position should substantially reduce in-country developmental costs and improve operational efficiency, not only by accumulating media resources for AMDC use but also by being able to respond immediately to a variety of AMDC special requests for materials or services not available on-site.

In general, costs have been budgeted so that the AIG will be responsible for staffing, with A.I.D. underwriting equipment costs. An exception has been made in the case of AMDC staff to help ensure A.I.D. selection of completely qualified persons for those critical positions. The AIG also has been given the responsibility for providing office space and general administrative support services. Except for MOA estimates included in its Pakistan Training Facility budget the cost of space and support services has not been included as part of the AIG contribution to the program. During the limited time that the team was in Pakistan it was not possible to obtain accurate estimates of such costs. Refer to tables B-1 and B-2 in Annex B for detailed budgetary estimates.

INTRODUCTION

The Soviet invasion in 1979 was devastating to Afghanistan agriculture, leaving the land ravaged. Before the beginning of Communist rule Afghanistan had finally achieved self-sufficiency in grain production. Today half of the nation's draft animals are dead, five million Afghans have been forced to leave their homes and fields, and the achievements of centuries of patient irrigation and tillage are in ruins. The nation's fields and groves can feed fewer than two-thirds of the Afghan people. The devastation of the nation's agricultural resources has provided an opportunity for Afghanistan to make a quantum leap into a new era of bountiful harvests. The agricultural practices of the past must be supplanted by more effective agricultural practices.

The Farmer-to-Farmer Training Program offers a way for Afghanistan's farmers to improve their agricultural practices. The program brings the ways of modern agriculture to farmers in the fields. It also facilitates the transfer of agricultural wisdom from elder farmers to young farmers who have had to spend the past ten years liberating their country instead of learning from their fathers in the field. Finally, it establishes a national center for the production of learning materials to educate both literate and non-literate farmers on modern agricultural practices.

Goals and Objectives of the Project

Major Goal

The Farmer-to-Farmer Training Program will develop a pilot program of Farmer-to-Farmer Training in selected areas of Afghanistan to demonstrate effective ways of engaging farmers in the improvement of economic productivity, to raise the levels of living of their families and communities, and to create the conditions for a self-generating process of rehabilitation and agricultural sector development.

Specifically the project will:

- Facilitate the transfer of practical farming knowledge from older experienced farmers to younger individuals who may be entering the field for the first time.
- Select and train personnel capable of effectively generating and supporting the Farmer-to-Farmer Training Program inside Afghanistan.
- Develop a training program for Afghan farmers in which appropriate methodologies and materials may be tested for later use in Afghanistan.
- Assist farmers in identifying and solving their problems.
- Educate and guide mujahideen and farmers in the principles and application of new agricultural techniques.
- Increase agricultural productivity of both crops and livestock that will provide conditions conducive to the repatriation of refugees.
- Document, analyze, and evaluate the pilot experience and draw inferences for further planning.

The Farmer-to-Farmer Training Program

The Farmer-to-Farmer Training Program (FFTP) is based on a training plan that begins with a series of 20-to-30-day courses offered to trainees in Pakistan at one or more Pakistan Training Facilities (PTFs). The PTF groups are used to pretest learning materials developed at the Agricultural Media Development Center in consultation with the instructors who teach the courses. Revised media materials then are produced for use by Mobile School Units (MSUs) that present learning programs to farmers in Afghanistan. The materials then can be mass-produced for the anticipated expansion of the MSU concept to all of Afghanistan. At each stage farmer participants benefit, initially at the PTFs, later at programs presented by the MSUs, and ultimately through use of media materials and village presentations throughout the nation.

The first stage of the FFTP will begin with subject-matter specialists preparing short refresher courses for those individuals selected to serve as

Ministry of Agriculture field representatives in the program. [2] Concurrently the organization of the AMDC and hiring of the media staff will begin. The AMDC staff initially will provide media support for the PTF courses and later will refine developed materials for use in the field. [3] Selection of PTF farmer participants and organization of MSU course content also will begin concurrently, in accordance with the outlined principles and applications described in the pages that follow. Site selection and logistical planning for MSU operations will also proceed at the same time, with in-country programs beginning as soon as planning is complete and pretested media from the AMDC are available. [4]

Pakistan Training

The proposal presented by the Afghanistan Ministry of Agriculture's Extension Department to provide training at a site or sites in Pakistan to young farmers from Provinces near the Pakistan border would be useful in establishing the proposed MSUs inside Afghanistan.

The establishment of one or more Pakistan Training Facilities (PTFs) during the initial stages of the project forms the first segment of the Farmer-to-Farmer Training Program. It allows time for a grouping and training of staff. It permits time for the gathering of critical information, the production of media and other instructional materials, the testing of the materials on PTF participants, the sorting out of in-country educational sites, and the creation of a central place from which to launch the Mobile School effort. The opportunity to work with all phases of agricultural industry that is in a functioning state is critical to the development of complete educational packages and appropriate support media.

Course subjects taught by Afghan subject-matter specialists at the PTF would parallel subjects to be presented later within Afghanistan. Refresher course work for MOA field representatives would be offered that would support the FFTP.

Wheat, corn, rice, barley, alfalfa, and clover are important Afghanistan field crops. Grapes, apples, apricots, pears, peaches, almonds, and walnuts

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[2] It is assumed that the 1300 persons presently identified by the MOA as present or potential agricultural extension agents will be among those considered for selection.

[3] Details of the AMDC rationale, operation, staffing, equipment and budget are given later in this report.

[4] Details on MSU operations follow the pages that discuss the PTF operation.

are important fruit and nut crops grown in-country. Improved production practices related to a few of these selected crops and vegetables would form the basis for the majority of the course work in the initial program. In the long-term, all areas of production will need to be covered; however, in the start-up phase only a few select topics can be addressed with the limited number of staff initially available.

Land preparation and use of tillage equipment in that process would also be important topics. The operation and maintenance of equipment would be extremely important in the face of the critical shortage of oxen. However, animal husbandry practices and animal health will continue to be essential. Since irrigation is of such importance to agriculture in Afghanistan, the teaching of selected topics relating to repair and design of systems, methods of irrigation, pumping of water, and related soil problems would all be appropriate. The recognition of insects, pests, rodents, and some practical ways to deal with the problems that they cause would also be very helpful.

Outline Points

Argument for Initial Training Exercise to be Developed at Pakistan Training Facility

Opportunity to:

- Identify and organize training and support staff
- Identify and acquire equipment required to support training project and staff in Pakistan and while in the field
- Develop appropriate and practical educational units including practical media support materials
- Try out units and materials on farmer clients, receive feedback and modify before extending into the field
- Train the trainers in a practical approach in form and content as well as delivery system
- Take advantage of farmer population located in refugee camps who still farm in Afghanistan
- Identify extension personnel by type of expertise and location where they will be working

- Develop contacts with village councils and bring in farmer leaders and trainers in a non-threatening way
- Test response of village interest and participation in future programs
- Provide opportunity to bring extension agent and farm-area leader together in a secure area; and establish a relationship to build upon later in the provincial area
- Work with field plots planned to provide demonstration of select agricultural activities such as
    - Proper methods of tilling soil
    - Fertilizer-response demonstrations
- Photograph activities for reference and use in developing educational materials

Selection of Farmer Leaders for Pakistan Course

Farmer leaders selected to attend the training course in Pakistan form an important core group upon whose shoulders rest the later success of the extended agricultural education effort in Afghanistan. The selection of farmers for the Pakistan course is important for the following reasons:

- as the test group for presentations and media materials to be delivered later in the field
- to provide insight into problems at the village level and for direction for beneficial interjection
- to articulate information about the status of agriculture in their local area
- to provide a vital communications link with the villages that will make up the MSU audience in liaison with the agricultural extension agent

Farmers selected to participate in the Pakistan course should be motivated, active, experienced farmers with some knowledge of reading and writing. Age should not be a particularly limiting factor so long as the individual has an open mind for learning and is willing to support the

concepts of the Farmer-to-Farmer Training Program. S/he should be selected in the customary way in which village people select leaders. A mix with some villagers now residing in the refugee camps would be acceptable, provided assurance could be given that refugee-camp participants would be returning to their land in Afghanistan.

Pakistan Training Facility (PTF)

Use of the Animal Holding Facility at Peshawar would seem to be appropriate for the initial PTF. Feeding and housing facilities are available on the premises, as well as rooms suitable for instruction. A second PTF could be established at Quetta, although it would not be practical to draw on training experiences at the Quetta site on a day-to-day basis to modify media materials developed by the AMDC at Peshawar.

Pakistan Training Facility equipment will provide for operation of the stationary training facility, but will be essentially of the same form as the Mobile School Unit (MSU) equipment, so that it can be moved quickly to a different site as a direct backup to the MSU equipment or pressed into service as a third MSU depending upon the evolution of the project.

If for instance one of the MSU double-seat pickups were to experience a serious breakdown, a PTF vehicle could be activated to replace the disabled unit and to move media materials, avoiding disruption of the MSU schedule. Once a schedule for a mobile school is begun, it is extremely important that equipment breakdowns do not interrupt that schedule. See Table B-3 in Annex B for detailed budgetary information regarding equipment for the Pakistan Training Facility.

Each Pakistan Training Facility should have at its disposal two 10-hectare land plots. One of these plots should be devoted to the production of a variety of horticultural crops. Farmer trainees could be exposed to and participate in growing trials. Produce could be sold or consumed at the PTF. The second 10-hectare land plot could be devoted to cereal crop production. Both plots would provide locations for machinery education.

The Swedish Committee has offered use of its facilities at Peshawar on a limited basis. The facilities include 45 hectares of land available for cultivation. Two sets of field equipment are advised. One set could be on the road at all times. The second set would serve the PTF, act as a backup to the first, and support the second Mobile School Unit if both were doing tractor oriented programs at the same time. A second ten-ton truck would need to be purchased if both sets were to be in the field at the same time on a regular basis.

Stubble disks are encouraged, because they likely will be able to deal with the woody-type plants that have crept back into Afghan farmers' fields. Heavier 375 Massey Ferguson (75hp) tractors and disks may be more appropriate than the 240 Massey Ferguson (45hp) tractors for reclaiming land. Mouldboard plows are encouraged to promote a deeper seedbed, which will better retain moisture and would substantially increase wheat yields.

A complete line of equipment will allow for demonstration of correct tillage practices and the complete usage of the tractor. Research indicates that 70 percent of tractor time is devoted to power take-off operations, pumping water and threshing.

Small tools and equipment are critical to the small farmer. Their availability to farmers and their proper use will facilitate the cleaning of irrigation works and removal of weeds and woody plants. The delivery of these tools directly to farmers accompanied by a sound educational message of the MSU would be of great benefit.

Proper tree shaping, winter spraying, thinning practices, and irrigation of mature plantings will have to be carried on in existing vineyards and orchards. Nursery work might take place on one of the 10-hectare plots.

A commuter bus could be rented, but if the HIACE commuter van were available on a daily basis, it would encourage the movement of students out of the classroom and into the field. Farmers need more practical in-field educational experiences and less formal classroom lectures. Farmer trainees must be transported to small-scale irrigation projects, to fruit orchards, to vineyards, to poultry and animal production farms, to rangeland trials, and to suppliers and processor premises if a complete education package is to be offered.

The Mobile Agricultural School Concept

The Mobile Agricultural School concept is an educational model which could easily be adapted to deliver a variety of agricultural training messages inside Afghanistan. The concept was pioneered in Guatemala by staff of California Polytechnic State University (San Luis Obispo) during 1967-70 while under contract with A.I.D.

The Mobile Agricultural School was established primarily to raise the level of agricultural production in rural Guatemala. Parallels of need can be drawn with the desperate need of Afghanistan to increase agricultural production.

Results of the Agricultural Survey of Afghanistan that was conducted in 1987 and published by the Swedish Committee indicate that present

agricultural production is insufficient to support the existing in-country population, let alone a large number of refugees that will be returning as the political situation stabilizes further. Production currently is projected at little more than 50 percent of prewar levels.

With disruption of normal farming practices through the killing of oxen, destruction and disrepair of irrigation systems, disruption of input supply infrastructure, and disruption of former agricultural education practices, models other than the standard agricultural extension model can be more useful in reaching large numbers of farmers. Contact can be accomplished first through group meetings, and those individuals so contacted can be utilized to extend messages further to their neighbors creating a mushrooming effect.

The Mobile School concept is meant to be a portion of the MOA extension effort, providing direct support to field representatives. Specialists can provide within a limited time high-quality educational messages to fairly large numbers in an organized program. A main objective is to help farmers farm the land more intensively and efficiently, and raise their output per unit of labor and land input.

Specific objectives of the Mobile School would be to:

- teach modern methods and new practices to farmers
- encourage agricultural diversification, and
- disseminate agricultural information by encouraging Mobile School "graduates" to teach their neighbors.

The Mobile Agricultural School would be organized as an integral part of the extension service of the Ministry of Agriculture. The MOA field representative would be a key person in the program. Through village shuras s/he recruits the farmer-leaders for the course, s/he instructs at the Mobile Agricultural School and carries on a follow-up program with the Mobile Agricultural Unit graduates. Lacking a trained and organized MOA extension staff, Agricultural Rehabilitation Scheme (ARS) project staff or other qualified individuals would need to assist in this effort.

The number of Mobile School Units that could be in session at different locations each week throughout the year in Afghanistan would be limited by the numbers of staff, support specialists, and vehicles devoted to the task. Two MSUs would be suggested at the outset, with heavy equipment demonstrations being shared between the units and demonstrated at different times of the year.

The support of equipment dealers is welcomed. If they were to provide demonstration machines and training staff the overall cost of the training effort could be cut substantially.

Curriculum

Table B-4 in Annex B outlines an example of classes that could be taught by instructors assigned to teaching with the Mobile School Units (MSU). The example is for one series of classes (one 4-session period) at two different locations carried on by the same MSU. The lectures and demonstrations could be varied for other locations, and other instructors could present other combinations of subjects. The more standard the series presented, the better able the media production people will be able to provide appropriate materials.

Another MSU could be working in another area with a different set of staff providing a similar or an entirely different set of courses depending upon support staff, equipment, and type of agriculture found in the provincial area.

Each MSU would have an appropriate mix of classes designed for a particular quarter of the year. This would provide for classes relating directly to field operations in progress at the time or soon to be coming up. This should allow for 8 weeks in the field of each 13 weeks in the quarter. Eight site locations for each MSU should be planned, for a considerable amount of time will have to be allowed for material preparation, repair of equipment, planning for the next quarter, and scheduling in staff. Fifty village leaders would be a maximum to plan for; 35 on hand would be ideal. Each MSU would be processing 200 to 400 students per year.

Instructors and/or extension agents assigned to the MSU must be well prepared ahead of the actual class. Since these classes will be carried out in the field, conditions will not be ideal. A variety of things could go wrong such as materials left behind. A system of instruction is encouraged as follows:

- a short lecture of perhaps 30 minutes is given;
- students adjourn to the field to carry out the portion of the instruction which would include a demonstration;
- each student should participate in the activity that had been demonstrated by the instructor; and

- each student should be invited to give in his own words to a small group a summary of the lecture or what he had learned. This experience would help students feel comfortable and increase their effectiveness in sharing their new knowledge later with family and neighbors.

The MSU would start classes on Tuesday mid-morning at a selected site.[5] After an hour of registration and orientation, instruction should begin. On the first day there would be about five hours of classes — one in the morning and four in the afternoon. After the evening meal, the Coordinator of the MSU could stage an evening program for the students of the School and the people of the community. This program would be partly educational and partly recreational. Following the evening program the students would retire to their sleeping quarters. In addition to providing meals the MSU should provide cots and blankets at the school location for the students. Schools or similar facilities in the area should be used if available.

The second day of instruction could last for eight hours. The subjects covered would be appropriate to the area and the time of year. Educational and recreational activities would again be staged during the evening hours.

The third day could be devoted to some new material, but would also provide an excellent opportunity for review and discussion, as well as reinforcement of the students' role as leaders of their communities in spreading the knowledge to their neighbors. As appropriate, time would be provided in each day's schedule for prayers.

At the end of each three-day session students would be presented with such items as non-verbal educational materials (drawings, picture booklets, etc.), seeds, small tools, batteries for portable radios, or other items that would be of real value to them and that would encourage them to return to future sessions. These farmer kits would serve to enhance the image of the MSU as will as enabling participating farmers to share their newly gained information with fellow farmers. After completing a four-quarter course, each farmer-leader would receive a signed diploma. Ideally each participant would be documented by village, area, etc., for follow-up by MOA field representatives.

Recognizing the difficulties of travel and of organizing materials in the first year, a slightly less rigorous schedule than the one outlined above may well be in order. For instance, instead of eight sites one might choose only six, or instead of each site being visited four times one might decide upon

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[5] The schedule could be shifted to include a Friday program if religious preferences made this appropriate.

two or three. The overriding considerations at all times should be: Does the professional staff have in hand a practical useful program that farmers can use and are willing to take time away from other activities to attend at an MSU session? Success will be judged by the numbers of farmers returning to subsequent training courses and, ultimately, by their success in applying what they have learned.

Course Subject Matter

The Agricultural Survey of Afghanistan conducted by the Swedish Committee for Afghanistan provides valuable insights into each province's problems as perceived by those farmers interviewed. The Volunteers in Technical Assistance (VITA) project also is developing a series of profiles of areas in which VITA has been working. When the series has been completed it will provide useful detail on the status of rural conditions in each of the areas, including roads and communications, agricultural activities, and the present location of normal residents of each area — either on the land, in refugee camps, or elsewhere.

These two sources together provide information to form a base from which to start planning educational messages to be utilized by an MSU assigned to an area. Additional on-site inspection will have to precede any in-country activity and serve as the final determinant of those messages to be delivered.

For example, planners could review conclusion excerpts from the Swedish study which follow concerning rehabilitation of South-East Paktia: The use of tractors before the war by larger farmers, the increase during the war by farmers who stayed, and the proximity to the Pakistan border, all indicate that any intervention to support tractor use would be well founded. The introduction of stationary threshers would release existing oxen from the mid-summer power peak between the wheat harvest and the showings of maize or rice. Farmers regard the farm power problem as one of their biggest. Irrigation water availability, and the availability of fertilizer also rank high.

Irrigated wheat, the major commodity produced in the area, is grown by 75 percent of the Paktia farmers and maize by 52 percent. Commodities providing feed for draft animals are grown by the following percentages of farmers: Alfalfa hay 16 percent and clover and barley 5 percent. Other commodities grown are rice by 14 percent of farmers, grapes by 8 percent, and rainfed wheat and potatoes by 2 percent.

From these excerpts, planners could deduce that the major educational messages to be developed for this area should center around farm power and machinery, irrigated wheat, and maize production. Water delivery

problems, pumping and water use should also be addressed. Flexibility of educational messages can be achieved by simply substituting lectures and/or instructors. Animal care, feeding, training and production of feed stuffs should form a portion of the curriculum but may not necessarily be appropriate in the location where tractor power is presented. The same might be said for grapes, as they are probably grown in limited areas.

Course Content

The content of each course will have to be carefully thought through with the aim of keeping it very simple, practical and area-specific. The practices that will provide the greatest impact on production with the smallest capital outlay by the average farmer should be emphasized. Subject matter specialists, with input from field representatives, extension staff and informed farmers, will have to design lectures, informational materials, and farmer kits with these ideas in mind. The farmer kit should contain visual materials understandable by illiterates so that each farmer participant will have reference materials to share with family members and other villagers not in attendance. Kits will strongly enhance the farmer-to-farmer multiplier effect that is the heart of the FFTP and the mobile school concept.

Agronomic detail of each crop to be addressed will have to be assembled, as will data related to source of on- and off-farm inputs. The coordinator of an MSU will want to schedule farmer presentations to maximize farmer benefits with limited resources of time, equipment, and input from support staff.

Other considerations to be reviewed in preparing MSU training programs could include the following: Where enough water is available, instruction should be given on growing legumes and vegetables to bolster the diets of a hungry population. Wheat, the predominate crop and staple food of the Afghan, will have to be addressed in most educational packages.

Messages prepared for farmers on what they would need to consider in production practices, related to the following:

- Seed — Improved seed is one of the main requirements for increasing wheat production in Afghanistan. A major constraint is its lack of availability, primarily because of lack of a good delivery system.

- **Land preparation** — A weed-free seedbed can be obtained through proper tillage of the soil. Deep plowing is important because it allows water and root penetration into the lower levels of the soil, promoting plant growth.

- **Timelines of Planting** — Wheat planted too late will produce substantially reduced yields because of heat stress. Different climatic zones will have different optimum planting dates, affecting MSU presentation schedules.

- **Sowing** — Important points to emphasize are the advantages of drilling versus broadcasting, the importance of proper soil moisture content, and properly adjusting seed planting depths to differing soils (3 to 4 cm in heavier soils and deeper in light soils).

- **Rates of seeding** — Seed rates will differ by region according to temperatures and the availability of water. Low temperatures demand high seeding rates than warmer temperatures because colder temperatures kill young plants. Too high a plant population in rainfed areas will pinch kernel development and will result in lower quality and smaller yields.

- **Fertilizer** — There are substantial advantages of animal manure and green manure. Both add organic matter to the soil. Proper storage of manure and the timing of its application are important. Chemical fertilizers require knowledge of proper quantities to apply, how to apply in a timely manner. There can also be problems in securing adequate quantities.

- **Irrigation** — Points to be emphasized include appropriate timing of irrigation and the importance of providing sufficient moisture to the plant between flowering and grain formation.

- **Weed control** — Seed should be free from weeds and other varietal mixtures. The seedbed should have been plowed at suitable intervals to ensure that weeds were killed. Weeds should be destroyed after pre-irrigation and before planting of wheat. Crop rotation is one of the cheapest and most effective

ways of controlling weeds. Use of agricultural chemicals to control weeds should be a last resort.

- **Harvesting** — Timeliness in harvesting at maturity will prevent a loss in grain from shattering that occurs in late-harvested fields.

Because an MSU will be returning to a site location more than once during a cropping year, different segments of a production package can be emphasized in the educational program at each visit. In this way, farmers will have new information available to apply as they require it.

Site Assessment and Selection

Site suitability assessment of alternative villages within districts of those Provinces in which the MSU will work is critical to the success of the project. The Ministry of Agriculture may want to collaborate with other Ministries in the investigative study of alternative sites. Base-line data on the areas' agricultural activities are important to determine which locations should be chosen, and against which to judge the later evaluation effort. Village farmer interest and cooperation will be required to make the training a success.

Interagency meetings should be held to reach agreement on practical forms of collaboration needed at various levels in support of the project. These discussions should start from an inventory of each agency's activities and services (on-going or planned) relating to the site areas. Firm agreements should then be reached at the central level as to the type of help each agency is prepared to give on a continuing basis (technical staff, materials, supplies, transport, etc.) to strengthen the site effort. It is recommended that sites be selected initially where the Afghanistan Agriculture and Rural Rehabilitation Project (AARRP) is already working, including the Agriculture Rehabilitation Scheme (ARS) that is part of AARRP. Much of the baseline data already have been prepared for those areas.

Criteria for Mobile School Site Selection

Location of Training Support Base (TSB)

Nearness to the support base of activities (TSB) is essential in the early operation of the Mobile School. Logistical support in the provision of supplies to staff and provision of farmer kits of various types will be required. The variability of educational activities, numbers of farmers participating, and Mobile School sites to be visited on a given safari will

dictate the distance from the TSB that can be undertaken.

Farmer Interest and Experience

Ideally a farmer leader would have participated in the 20-to-30-day educational program carried out at a PTF. In addition, an extension agent would have completed refresher-course work. Together they would have laid the groundwork for local farmer interest and participation.

Security for Participants

Mines should have been cleared from access roads and from the area of instruction. There should be no current serious intergroup strife within the village area. The mujahideen in the area should be in the information loop and in agreement with the activity. There should be little threat from the government in Kabul.

Accessibility by Participants

The road should be open to four-wheel-drive vehicles and trucks for a greater portion of the year, to allow for return visitations of the Mobile School at different times to present pertinent crop-practice data and support materials.

Intended Beneficiaries

The majority of the male residents at the village site should be engaged in agriculture. Preference should be given to villages which are within close proximity of other villages. The intent of the Mobile School would be to enlist local farmers as spokesmen to carry the educational messages back to their individual nearby villages.

Commodities Produced

Educational messages to some extent will be commodity specific. Immediate practical application of knowledge and provided materials is important to gain the trust of farmers and to encourage their return for the next session later in the crop cycle.

Training Tailored to Local Needs

Courses to be delivered will have to be tailored to the farmer villager interests in each area. Wheat production may be the primary commodity around which a course may be built and presented in one area. In another area, apricots specifically and fruits generally might be the subject matter. Clustering sites with similar agricultural interests would reduce the variance

of the educational messages to be presented during a given Mobile School circuit.

Adequate Resources for Field Training

Farmers attending the Mobile School classes are not expected to have a high literacy level, making it doubly important to have practical demonstrations and hands-on field activities that will promote learning through doing.

Selected Village Farmers

An essential element in the proposed project will be the Selected Village Farmer (SVF). This farmer ideally will have attended one of the 20-to-30-day training sessions at a PTF. There should be at least one SVF selected from among the project villages that comprise an MSU site. S/he will work in association with the MOA field representative for the area.

Criteria for selecting SVFs should include the following:

- One year's residence within the village as recently as possible.
- The trust and respect of all segments of the village population, as evidenced by their selection in the customary way in which village people select leaders.
- Understanding and support of the goals and objectives of the Farmer-to-Farmer Training Program.
- The flexibility to be able to travel to a central place for periodic training.
- If possible, the ability to read and write simple Dari or Pushtu and to do some basic arithmetic.

Adequate remuneration should be provided for SVFs in view of the fact that they will be devoting long hours to their assignment, both independently and in association with the MOA Extension Agent.

General Administration

Project Director

The Project Director will confer with appropriate MOA staff on all matters relating to the development and functioning of the FFTP. S/he will coordinate with subject-matter specialists and extension personnel in developing and initiating the training program. The Project Director will work closely with an expatriate Technical adviser experienced in managing programs similar to the FFTP.[6]

The Project Director's responsibilities will include, but not be limited to, the following:

- Selection of personnel to staff the program
- Selection of, and ordering of, equipment
- Organization of procedures for, and selection of, training sites
- Working with trainers to ensure trainee participant involvement
- Scheduling of subject-matter specialists to appropriate MSU farm training presentations
- Supervision of all day-to-day operations
- Design of plan for evaluation of Farmer-to-Farmer Training Program.

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6 See Annex A for listing of recommended technical assistance.

Table 1. Mobil School Unit Staffing List

Position	Annual Salary ($)
Unit Coordinator	$3,500.00
Asst. Coordinator	$3,000.00
Cook & Kitchen Workers (3)	$3,000.00
Drivers (3)	$4,500.00
Guards (2)	$2,000.00

Unit Coordinator

The Unit Coordinator will have overall responsibility for the organization of the MSU schedule. This will include site selection and coordination with the local extension agent and Selected Volunteer Farmers. S/he will liaise with the Project Director making sure specialists will be available for presentations. S/he will also make sure that appropriate records are kept to allow for later evaluation of the project.

Assistant Coordinator

The Assistant Coordinator will be in charge of all logistical arrangements, and will supervise the provisioning of the MSU. S/he will be in charge of an on-site setup and will see that equipment works. S/he will supervise the crew that is made up of drivers, guards, cook and kitchen workers.

Cook

The Cook will be in charge of food provision and meal preparation with the help of the kitchen workers.

Drivers

The Drivers will see to the vehicles and help with loading, unloading, and camp setup.

Guards

The Guards will be responsible for security within the Unit's area of operation.

Supply costs would be dependent upon distances traveled, sites covered, and numbers of farmer participants.[7]

Equipment for Mobile School Unit (MSU)

A variety of equipment will be necessary for each MSU to ensure that everyone is fed, housed and cared for. Sites should be sought where buildings exist, particularly during inclement times of the year. The following is a suggested list of equipment with an explanation of the need for each:

Table 2. Equipment for MSU

Item	Cost(US$)
1 Seven-ton truck	23,000.00
1 Double-seat pickup 4 x 4	15,000.00
1 4 x 4 Jeep-type vehicle	14,000.00
1 Radio transmitter set	2,000.00
1 Set of portable kitchen and dining supplies, including mess tent	10,000.00
1 Set of portable sleeping supplies 60 cots and blankets	
Staff tent	7,000.00
TOTAL	71,000.00

Note: Media presentation equipment is included in the Agricultural Media Production Center budget.

The seven-ton truck will be utilized to carry mess gear, including portable kitchen equipment, food, water, generators, extra fuel, and farmer kits. Since some farmers will be gathering at a location some distance from

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[7] Procurement of supplies will be handled through normal Ministry of Agriculture procurement channels.

their homes, they will be in need of accommodation for sleeping. Cots and blankets to sleep participants and staff should be made available if required. The double-seated pickup will be utilized to carry professional staff from the Pakistan Training Facility. It will be outfitted with a specially padded removable watertight and dustproof crate to carry media presentation equipment. The 4 x 4 jeep-type vehicle will be utilized by the MSU Coordinator to move around as required to pre-arrange sites, do follow-up studies, move support staff, and take care of unforeseen problems that will occur.

Agricultural Media Development Center Prepatory Note

It has been suggested that production of the media required for the Farmer-to-Farmer Training Program might be achieved by sharing facilities that already exist within the Ministry of Agriculture of the AIG.

The difficulty with this suggestion is that the production anticipated to implement the Mobile Training Unit concept is so extensive that it could not be carried out in facilities provided on an "as-available" basis. Literally hundreds of drawings and photographs will need to be produced immediately and converted to the training media recommended for the initial program that has been proposed. Production then will need to be expanded substantially as the initial program is broadened to include all of Afghanistan. Organization and expansion of this production effort cannot be achieved within limited facilities shared through the generosity of programs that have other priorities.

The only period in which sharing would be feasible would be in the interval between the hiring of staff and ordering of equipment and the delivery and installation of the equipment in separate assigned space.

The added capabilities of the Agriculture Media Development Center could be a useful backstop on an emergency basis in developing needed educational media for the Ministry of Agriculture and other ministries within the AIG. This proved to be the case in the Basic Village Education project in Guatemala, which relied heavily on the use of non-verbal media for a largely illiterate population. A major earthquake required the immediate production of media materials to inform citizens on how to cope with the emergency. The media production unit of the BVE project was able to respond at once because an experienced production staff and facilities already were in place.

Premises of the AMPC

(1) Materials produced by the AMPC will be used primarily in conjunction with oral presentations made by Mobile School Unit

agricultural experts — extension agents, subject-matter specialists, agricultural faculty, etc. — during three-day short courses at rural sites inside Afghanistan.

(2) The great majority of those attending the short courses will not be literate.

(3) Materials to be produced will include flipcharts, slides, filmstrips, narrative scripts to accompany the filmstrips, audio cassettes, overhead transparencies, posters, wall charts and perhaps models and mock-ups. They also will include take-home materials for participants, such as illustrated booklets and pamphlets, that are based upon materials used during the Mobile School Unit short courses and that do not require literacy for understanding. All materials will be designed for use in environments where there is no local source of electricity and no local repair facilities for electrical or electronic equipment.

(4) Development and pretesting of the materials will be in conjunction with a series of Pakistan-based 20-to-30-day agricultural courses. Each course will be attended by a group of no more than 50 persons selected by the Ministry of Agriculture of the Afghanistan Interim Government from a variety of locations within Afghanistan. Some participants may be selected from the refugee camps.

(5) Subject-matter specialists who conduct the Pakistan courses will work with AMPC specialists to select appropriate media and ensure its technical accuracy.

(6) The developed materials eventually will be used nationwide within Afghanistan.

Media Production Process

- Determination of educational objectives
- Determination of initial skills and knowledge of participant
- Task analysis or determining the intermediate instructional steps needed to attain the educational objectives
- Determination of media needed for each step*

- Preliminary production of media needed*
- User testing or consultation
- Revision based on user testing*
- Final review before final media production*
- Final media production
- Use of media in Mobile School Unit presentations
- Feedback from initial Mobile School Unit presentations, with revision as required for further Mobile School Unit use*

Those items followed by an asterisk (*) indicate those with joint participation by instructor and media staff.

Media Production Procedures

Effective and efficient media development requires a close working relationship between PTF subject-matter specialists and/or teachers and the AMPC staff. The former can determine what information needs to be conveyed; the latter can determine the best ways in which to select and produce media that will help achieve that end. The cooperation must begin well before the time that the media are needed, so that AMPC staff can be involved in a task analysis of the goal to be achieved, i.e., the intermediate steps in bringing learners from their beginning knowledge, skills and attitudes to the level of knowledge, skills and attitudes which the teacher has determined is necessary.

Initial AMPC involvement might include preliminary discussions between the AMPC Production Chief and the PTF teacher or instructional supervisor. At such a meeting an understanding could be reached on the approximate commitment of AMPC resources necessary to achieve instructional goals. For example, the Production Chief might recommend a particular mix of media and estimate the number of staff man-hours, the amount of media materials required, and the date when the completed media would be required for class use. When general agreement was reached on these points the Production Chief would call in the Media Coordinator to supervise the day-to-day interaction of AMPC staff and teacher within the general resource parameters agreed upon.

If field photography were required for slides or as reference for technical drawings, the Photographer and Graphic Artist under the supervision of the Media Coordinator would work with the teacher to determine slide or drawing content. When the work was completed it then would be reviewed for accuracy or suitability by the teacher and Media Coordinator. If suitable it would then be approved by the Production Chief for production; if unsuitable it would be revised. Differences of opinion between AMPC staff and the PTF teacher on suitability would be resolved with the help of the Media Coordinator or, if necessary, the Production Chief. Writing and recording scripts for audio cassettes would be carried out in a similar way, with the AMPC Writer consulting with the teacher on the suitability and accuracy of the message.

Production of completed materials would vary, with some produced in-house and others through contract. Photography, drawings, and sound-recordings would be produced in-house, to keep the creative process as close as possible to the final user. Some largely mechanical processes would be contracted, such as silk-screening, the making of multiple filmstrip copies, and the printing of posters and wallcharts, and of picture booklets for distribution to Mobile School Unit students.

In most cases contract work would be carried out from completed master copies prepared by AMPC staff. For example, the master negative for a filmstrip would be photographed and processed by AMPC staff, then turned over to a professional film laboratory for printing. (This would require out-of-country services; however, shipping costs would be modest because of the extremely light weight per filmstrip). The pages of a picture booklet would be prepared in camera-ready form by AMPC staff for delivery to the contract printer, in some cases including the preparation of offset negatives and "flats" from which offset printing plates would be produced. Final layouts for silkscreen printing would be prepared by AMPC staff and then given to a silkscreen printer for silkscreen preparation and printing.

Adequate advance time for development of media materials is essential for success. The amount of advance time required would be agreed upon by the Production Chief and PTF teacher in their initial discussions, based upon educational priorities and available AMPC staff time.

Careful scheduling is also essential. At any given time as many as a dozen sets of materials might be in the process of development, each of them requiring as many as a hundred different photographs and drawings adapted to three or four types of media in order to teach four or five different agricultural topics.

After initial start-up and pretesting of the materials in the PTF 20-to-30-day courses staff time would also be required for revision before final production and field use by Mobile School Units within Afghanistan.

The AMPC staff must be hired, trained, moved into production facilities, and organized to respond to teacher needs well before the first 30-day Pakistan classes begin because of the lead time required for development of media materials. For that reason equipping the AMPC and hiring and training AMPC staff should be a top priority in implementing the Afghanistan Farmer-to-Farmer program.

A media production specialist with experience in organizing and directing a media production center will be required for six months to assist in the purchase and installation of media production equipment and to work with the Afghanistan production staff in developing efficient production procedures. (See technical adviser information in Annex A).

Also useful would be a U.S. media resource person to assist in identifying and forwarding internationally-produced Third-World media materials suitable for adaptation and use within Afghanistan. This service could substantially reduce the amount of AMPC staff time required for graphic art development. (See technical adviser information in Annex A).

Development of Learning Materials

Choice of Media

Learning media for use in Mobile School Units will be produced at the Afghanistan Media Production Center for use in the following conditions in Afghanistan:

- No local electricity
- No convenient support services for electronic equipment
- No enclosed and roofed waterproof structures
- No rooms that can be "blacked out" completely for projection of slides and filmstrips.

Mobile School Unit media materials and equipment, to be carried in a van or truck, will need to include a self-contained power generator that produces at least one kilowatt and can be used either to power media equipment requiring 220V (110V?) or to charge batteries that will power the equipment. (Slide and filmstrip projectors are available which can be operated with rechargeable batteries for adequate nighttime viewing by groups).

These parameters will make possible the use of the following media at Mobile School Unit sites:

- Cloth flipcharts
- 35-millimeter slides (photographs or diagrams, etc.)
- Single-frame or double-frame filmstrips
- Audiotape cassettes
- Overhead transparencies
- Models
- Printed pamphlets and instructional picture books (for giving to farmers)
- Sample materials — grains, fertilizer, etc.

Preliminary Development and Testing

The site for development and testing of learning materials will be the PTF site in Pakistan that is most convenient to the AMPC. Persons on whom the materials will be tested will be a series of groups of young mujahideen and others elected from a range of provinces within Afghanistan and brought to the Pakistan Training Facility for a learning period of 20 to 30 days. Learning will be a combination of classroom instruction, field trips, and hands-on experiences.

Learning materials for several topics could be tested during the PTF classes. Each such set of tested and revised materials on a single topic would then be available for adaptation and use in Mobile School Unit sessions within Afghanistan. (Such sessions typically would be for two to three days at each site).

Development of new materials would continue as the one-month PTF classes continued. Development of materials related to the annual agricultural cycle would proceed as the seasons progressed. Whenever possible the PTF classes would "lead" the seasons, so that materials developed for the PTF classes could then be adapted for use a month or so later at in-Afghanistan Mobile School Unit sites.

Materials tested in the PTF could use more advanced media resources available in Pakistan. For example, projectors using city power sources could be used to project individual 35-millimeter color slides in blacked-out PTF

classrooms; the slides could then be transferred to a much more compact filmstrip format for projection with a battery-operated projector in the evening at Mobile School Unit sites. A filmstrip containing the equivalent of 100 slides could be stored in a waterproof plastic capsule weighing less than two ounces.

Similarly, taped narration for the filmstrips, derived from PTF lectures, could be transferred to an audio cassette weighing less than four ounces. The cassette could be played back on a portable cassette player that could be used by itself when filmstrips were shown to groups of five or six persons or could be connected to a portable public-address system for presentation to groups of up to 100. (Taped narration would be available as a backup or reference by Mobile School Unit staff; normally it would be preferable to have narration for the filmstrips given by on-site staff, if qualified to do so).

Flipcharts could be drawn in preliminary form on paper or cardboard sheets for use in PTF classes or reproduced as overhead transparencies, then revised after testing in the classes and produced as cloth flipcharts and posters (and paper handouts for farmers) to be used in the Mobile School Units.

Table 3. First-Year Budget for AMPC

Capital Expenditures	Cost (US$)
Equipment (f.o.b. suppliers)	
AMPC	53,380.00
Pakistan Training Facility	5,240.00
Two Mobile School Units @ $5,035	10,070.00
Annual Expense	
AMPC Staffing	23,000.00
AMPC Contract Services	16,000.00
AMPC General Support Costs	28,000.00
Total Initial Outlay	135,690.00

Budgeted funds above not only provide for development of media materials to support instruction at the Pakistan Training Facility and two Mobile School Units but also underwrite the costs of beginning the mass-production and nationwide distribution of materials produced by the AMPC during its first year of operation. At the end of the year, the nation of Afghanistan will have an experienced team of media specialists ready to meet the nation's needs for agriculture learning materials, and the Agricultural Media Development Center will be in place to fully support the Agricultural Extension Service and all other branches of the Ministry of Agriculture. See Table B-5 for full cost estimates for the media production equipment and the media production center. See Annex C for staff descriptions for the media production center.

ANNEX A

Technical Adviser Staffing

Introduction

During an initial two-year operation of the FFTP several expatriate Technical advisers would be required to work in association with Afghan counterparts, as follows:

Farmer-to-Farmer Training Program
Budget Year 1

Position	Estimated Salary
Agricultural Education Adviser - Chief of Party (Counterpart for Project Director)	$65,000.00
On-Site Media Production Adviser (Counterpart for AMPC Production Chief)	$60,000.00
Subject-Matter Specialists (Up to six man-months)	$32,000.00
U.S. Media Researcher (Approx. 30 days @ $200/day plus domestic travel and miscellaneous expense)	$10,000.00

Note: Salaries for all staff except the U.S. media researcher does not include overseas travel, housing, perquisites and other in-country support services as appropriate.

The Agricultural Education Adviser would be experienced in the design of educational training programs and materials utilized in training farmer audiences. S/he presumably will have had experience in managing projects in Third World settings. This adviser will have overall responsibility for direction of the Farmer-to-Farmer Training Program in collaboration with Afghan counterparts. S/he will work with subject-matter specialists, media production personnel and the Afghan Project Director in developing personnel and materials to carry out the FFTP in Afghanistan.

The On-Site Media Production Adviser would be experienced in the production of multimedia learning materials, including a basic knowledge of videotaping production methods; and in administering the production of those materials. Working experience in Third World countries would be highly

desirable. Probable recruiting sources: University media-production facilities and non-profit organizations experienced in producing educational media for Third World countries. (Examples: California Polytechnic State University and World Neighbors).

Subject-Matter Specialists in various areas of agriculture will be short-term employees from out of country who have strong agricultural education backgrounds. They would be used to provide support in specialized agricultural training and insight into specific media development. This expertise would be invaluable in support of MOA and MTU staff.

The U.S. Media Researcher would have a background similar to that of the On-Site Media Production adviser, plus a knowledge of, and access to, international media resources available for adaptation to Afghanistan needs. A majority of contractual time and travel would be expended during the first six months of the project to accumulate media resource files that would be used by AMPC staff as the AMPC became operational.

A local-hire Secretary and Clerk would be required to support the overall team effort. They would be provided through the MOA, as would Afghan subject-matter specialists and instructors.

ANNEX B

Tables

Table B-1. Farmer-to-Farmer Budget
One Year (1990-91)

	Afgh. (Rupees)	Afgh. (US$)	A.I.D. (US$)	Other (US$)
	(all currencies in 1000s)			
Afghanistan Ministry of Agriculture				
Agricultural Media Resource Center				
Subject-matter teaching specialists (Equivalent of three full-time)	216.00	10.00	--	--
Mobile School Units (2)				
Unit Coordinators (1/unit)	151.00	7.00	--	--
Asst. Coordinators (1/unit)	129.00	6.00	--	--
Cook & kitchen workers (3/unit)	129.00	6.00	--	--
Drivers (3/unit)	194.00	9.00	--	--
Guards (2/unit)	86.00	4.00	--	--
Agricultural Trainers (Various subject areas, and equiv. of 3 persons/unit)	452.00	21.00	--	--
Clerical Support Staff				
One Secretary and one Clerk	86.00	4.00	--	--
Total Afghan. Contribution	1,442.00	67.00	--	--
A.I.D. Support				
Mobile Training Units (2)				
Field Equipment	--	--	142.00	--
Media-Presentation Equipment	--	--	10.00	--
Afghanistan Media Production Center (1)				
Staff	--	--	23.00	--
Equipment	--	--	53.00	--
Supplies & non-contract services	--	--	12.00	--
Contract services	--	--	16.00	--
Contractor Services				
Administrative overhead	--	--	--	variable
Technical Advisers (out-of-country)				
Agricultural Education Adviser	--	--	--	65.00
Media Production Adviser	--	--	--	60.00
Agricultural Specialists (equivalent of six man-months)	--	--	--	32.00
Overseas travel, housing, etc., Technical advisers	--	--	--	variable
Media Researcher (U.S. based)	--	--	--	6.00
Travel, etc., for Researcher	--	--	--	4.00

Table B-1. Farmer-to-Farmer Budget (continued)
One Year (1990-91)

	Afgh. (Rupees)	Afgh. (US$)	A.I.D. (US$)	Other (US$)
	(all currencies in 1000s)			
Afghanistan (AIG)				
Total Contribution	--	$67.00	--	--
A.I.D. Total Support	--	$256.00	--	--
Contract Management Expense (plus overseas support and administrative overhead)	--	$167.00	--	--

Notes: (1) Does not include Pakistan Training Facility
(2) 21.5 Rupees equals 1 U.S. Dollar
(3) The other category includes management expenses.

Table B-2. Farmer-to Farmer Budget One Year (1990-91)

	Afgh. (Rupees)	Afgh. (US$)	A.I.D. (US$)	Other (US$)
	(all currencies in 1000s)			
Afghanistan Ministry of Agriculture				
Pakistan Training Facility (1)				
Director (1)	72.00	3.00	--	--
Teachers (6)	432.00	20.00	--	--
Administrators (5)	180.00	8.00	--	--
Drivers (4)	120.00	6.00	--	--
Cook & kitchen workers	102.00	5.00	--	--
Field workers	144.00	7.00	--	--
Guards	144.00	7.00	--	--
Rent (offices, classrooms, dorms)	600.00	28.00	--	--
Teaching aids, office equipment and supplies	800.00	37.00	--	--
Utilities	72.00	3.00	--	--
Stationery	150.00	7.00	--	--
Telephone & telex	250.00	12.00	--	--
Pocket allowance (students)	144.00	7.00	--	--
Food & dormitory expenditures	2190.00	102.00	--	--
Transportation of students and teachers to/from Afghanistan	600.00	28.00	--	--
Student travel for field trips	180.00	8.00	--	--
Misc. and contingency	200.00	9.00	--	--
Sub-total	6,380.00	297.00	--	--
Mobile School Units (2)				
Unit Coordinators (1/unit)	151.00	7.00	--	--
Asst. Coordinators (1/unit)	129.00	6.00	--	--
Cook & kitchen workers (3/unit)	129.00	6.00	--	--
Drivers (3/unit)	194.00	9.00	--	--
Guards (2/unit)	86.00	4.00	--	--
Agricultural Trainers (Various subject areas, and equiv. of 3 persons/unit)	452.00	21.00	--	--
Clerical Support Staff One Secretary & One Clerk	86.00	4.00	--	--
Sub-total	1,226.00	57.00	--	--
Total Afghanistan Contrib.	7,606.00	354.00	--	--

Table B-2. Farmer-to-Farmer Budget (continued)
One Year (1990-91)

	Afgh. (Rupees)	Afgh. (US$)	A.I.D. (US$)	Other (US$)
	(all currencies in 1000s)			
A.I.D. Support				
Pakistan Training Facility (1)				
General Facility Equipment	--	--	63.00	--
Field Equipment	--	--	65.00	--
Small Tools & Equipment	--	--	3.00	--
Media-Presentation Equipment	--	--	5.00	--
Mobile Training Units (2)				
Field Equipment	--	--	142.00	--
Media-Presentation Equipment	--	--	10.00	--
Afghanistan Media Production Center (1)				
Staff	--	--	23.00	--
Equipment	--	--	53.00	--
Supplies & non-contract services	--	--	12.00	--
Contract services	--	--	16.00	--
Contractor Services				
Administrative overhead				
Technical Advisers (out-of-country)				
Agricultural Education Adviser	--	--	--	65.00
Media Production Adviser	--	--	--	60.00
Agricultural Specialists (equivalent of six man-months)	--	--	--	32.00
Overseas travel, housing, etc., for Technical Advisers				
Media Researcher (U.S. based)	--	--	--	6.00
Travel, etc., for Researcher	--	--	--	4.00
Afghanistan (AIG)				
Total Contribution	--	$354.00	--	--
A.I.D. Total Support	--	--	$391.00	--
Contract Management Expense (includes overseas support and administrative overhead)	--	--	--	$167.00

Notes: (1) Includes Pakistan training facility
(2) 21.5 Rupees equals 1 U.S. dollar.
(3) Other category includes management expenses.

Table B-3. Equipment for Pakistan Training Facility

	Facility	Cost ($)
1	Double-seat pickup	15,000.00
1	4 x 4 jeep-type vehicle	14,000.00
1	Toyota HIACE commuter	14,000.00
1	Portable kitchen & dining supplies	10,000.00
1	Set portable sleeping supplies	7,500.00
1	Radic transmitter set	2,000.00
	Total	$62,500.00
	Field Equipment	
1	Ten-ton flatbed truck	35,000.00
2	Massey Ferguson 240 45 hp tractors	16,000.00
2	Two-furrow mouldboard plows	800.00
2	Nine-tine tillers	850.00
2	Stubble disks	2,400.00
2	Tractor trailers	4,000.00
2	Wheat threshers	2,400.00
2	Low-lift water pumps	1,000.00
	Misc. maintenance supplies & spares	2,050.00
	Total	$64,500.00
	Small tools and equipment	
10	Backpack sprayers (18 liter) @ $30	300.00
50	Shovels @ $7	350.00
50	Hoes @ $7	350.00
50	Mattocks @ $3.50	175.00
50	Picks @ $3.50	175.00
4	Grain scoops @ $7	28.00
4	Hay forks @ $15	60.00
50	Pruning shears, two-ft. handle @ $7	350.00
50	Pruning shears, hand @ $7	350.00
50	Pruning saws, 18-inch @ $7	350.00
	Total	$2,500.00

Table B-4. Mobile School Site Locations

	August	October	January	June
Site One	7-8-9	9-10-11	8-9-10	6-7-8
Site Two	14-15-16	15-16-17	15-16-17	13-14-15
Instructor				
Mr. Carlos	Tractor Oper./Maint.			Tractors Pumps
Mr. Jalaludin	Tool Adjust. & Maint.	Planting Methods		Thresher Operation
Mr. Abdul	Land Preparation	Mechanical Weed Control		
Mr. Azam	Wheat Seeds & Production		Wheat Irrigation	
Mr. Mohammad	Fertilizers	Planting Materials	Fertilizers	
Mr. Sujano		Weeds		Maize
Mr. Reyes		Animal Care		Animal Fodder
Mr. Wadwood			Tree Fruit	Tree Fruit
Mr. Albert	Raisins		Grapes	
Mr. Khan			Vegetables	Vegetables
Mr. Habib			Irrigation	Irrigation

Table B-5. Media Production Equipment for Media Production Center

		Unit ($)	Total ($)
Camera and Studio Equipment			
2	35mm single-lens reflex	300.00	600.00
2	Auxiliary lens sets Macro 70mm-125mm zoom Wide angle 250mm	500.00	1000.00
2	Standard-weight tripods	45.00	90.00
2	Light-weight tripods	35.00	70.00
2	Portable copy stands	150.00	300.00
2	On-camera flash units with recharge batteries	60.00	120.00
2	Battery rechargers	40.00	80.00
2	Off-camera flash units	40.00	80.00
4	Equipment cases	60.00	240.00
8	Recharge battery spares	15.00	120.00
2	Copy stands & lights	350.00	700.00
1	Slide-duplication unit	1,500.00	1,500.00
2	Portable slide-dupe unit	120.00	240.00
2	Light stands & reflectors	75.00	150.00
2	Cable releases - 25cm	10.00	20.00
2	Camera shoulder bags	60.00	120.00
2	Field jackets with lens pockets	60.00	120.00
2	Exposure meters	70.00	140.00
4	Pocket slide viewers	15.00	60.00
2	Bulk-film loaders	25.00	50.00
50	35mm cartridges	3.00	150.00
2	Carousel-type projectors	450.00	900.00
2	Twenty-foot slide-changing extensions	15.00	30.00
20	Carousel-type slide trays	15.00	300.00
2	Slide stack-loaders for Carousel-type projectors	30.00	60.00
1	Slide filing cabinet with viewer and 4000-slide storage capacity	1,700.00	1,700.00
2	Filmstrip-adaptor units for Carousel-type projectors	60.00	120.00
2	Combination slide, single-frame and double-frame projectors	600.00	1,200.00
2	Six-foot projection screens with stands	90.00	180.00
2	Audio cassette heavy-duty recorder/players	350.00	700.00
Total		11,140.00	11,140.00

Table B-5. Media Production Equipment for Media Production Center (cont.)

		Unit ($)	Total ($)
Darkroom Equipment (for black-and-white processing)			
2	Film-processing tanks for four 35mm reels	35.00	70.00
10	Processing reels - 35mm	15.00	150.00
4	Photo thermometers	10.00	40.00
6	Solution storage tanks	20.00	120.00
1	Enlarger (35mm to 2 1/4") with short and long lenses	600.00	600.00
1	Adjustable enlarger easel	75.00	75.00
2	Pre-set easels	25.00	50.00
1	Darkroom timer	65.00	65.00
1	Voltage stabilizer	150.00	150.00
4	11" x 14" trays	10.00	40.00
4	16" x 20" trays	15.00	60.00
4	8" x 10" trays	6.00	24.00
2	24" x 30" wash trays	20.00	40.00
2	Washing siphons	20.00	40.00
9	Tray tongs	4.00	36.00
4	8" x 10" safelights	45.00	180.00
4	Safelight filter sets Red (ortho), yellow (contact paper) Yellow-green (enlarging), dark green	60.00	240.00
1	Electric print dryer	150.00	150.00
4	12" squeegees	15.00	60.00
1	Revolving darkroom door	1,500.00	1,500.00
1	Lightproof ventilation fan	150.00	150.00
1	Refrigerated sink other temp. control	5,000.00	5,000.00
1	Instant-stabilization print processor	1,500.00	1,500.00
Total		10,340.00	10,340.00
Art and Graphics Equipment			
1	Photocopier with enlargement/reduction capability & voltage reg.	7,000.00	7,000.00
1	Overhead-transparency duplicator	1,000.00	1,000.00
1	"Lacey-Lucy" camera	4,500.00	4,500.00
1	Tracing/stripping table	1,500.00	1,500.00
2	Drafting/drawing table	500.00	1,000.00
2	Drafting machines	700.00	1,400.00
1	Draftsman's chairs	60.00	120.00
2	Slide-editing consoles	800.00	1,600.00
	Assorted brushes, pens, etc.		500.00
Total		18,020.00	18,020.00

Table B-5. Media Production Equipment for Media Production Center

		Unit ($)	Total ($)
Sound Recording and Editing Equipment			
1	Reel-type sound recorders	1,200.00	1,200.00
1	Sound mixer	400.00	400.00
3	Microphones Cardioid Unidirectional Omnidirectional	100.00	300.00
2	Lavolier-type microphones	125.00	250.00
1	Boom-type microphone stand	150.00	150.00
1	Microphone floor stand	100.00	100.00
1	Microphone desk stand	60.00	60.00
1	Reel-to-cassette recorder	300.00	300.00
4	Headsets	40.00	160.00
2	Portable cassette recorders	60.00	120.00
2	Cardioid microphones for portable cassette recorders	70.00	140.00
1	Reel-to-reel editing unit	450.00	450.00
1	Audio cassette duplicator	500.00	500.00
	Assorted coaxial cable, etc.	--	1,000.00
Total		5,130.00	5,130.00
Word-Processing Equipment for Script Production			
2	Typewriters with Arabic characters	500.00	1,000.00
1	Computer (hard-disk) with Arabic characters	3,000.00	3,000.00
	Computer software & disks	1,500.00	1,500.00
1	Laser printer	2,500.00	2,500.00
1	Dot-matrix printer	600.00	600.00
	Assorted cables	--	150.00
Total		8,750.00	8,750.00
GRAND TOTAL (f.o.b. suppliers)		--	$53,380.00

Notes: (1) Above lists are intended to be representative and are not all-inclusive. No consumable supplies are included, nor are tables, chairs, filing cabinets, and other normal office equipment. Prices are estimates, and could vary approximately 10 percent either way, depending upon source of purchase, duties levied, etc. No shipping or installation costs are included.

Notes continued:

(2) Transportation for the AMPC staff is to be provided from the motor pool of the Pakistan Training Facility or the MOA.

(3) Production space would require an office for the Production Chief and Production Assistant, an office for the Media Coordinator, an office for the Writers, an office for the Graphic Artists, a studio room with desk for the Photographer, a room for the Sound-Recorder and Narrator, a small sound-insulated room for sound recordings, and a lightproof room with plumbing, sink, ventilation and air-conditioning for the photographic darkroom. It would also be useful to have a small lightproof room for film loading, developing-tank loading, etc.

Table B-6. Agricultural Media Production Center
Media Presentation Equipment for Training Sites
Peshawar Center

		Unit($)	Total($)
2	Carousel-type projectors	450.00	900.00
2	Twenty-foot slide-changing extensions	15.00	30.00
10	Carousel-type slide trays	15.00	150.00
2	Slide stack-loaders for Carousel-type projectors	30.00	60.00
2	Filmstrip-adaptor units for Carousel-type projectors	60.00	120.00
2	Combination slide, single-frame and double-frame projectors	350.00	700.00
2	Seven-foot projection screens with stands	290.00	580.00
2	Overhead projectors	400.00	800.00
2	Audio cassette heavy-duty recorder/players (synch)	525.00	1,050.00
2	Flipchart easel stands	125.00	250.00
2	48" x 72" writing board	300.00	600.00
TOTAL			$5,240.00

Table B-7. Agricultural Media Production Center Presentation Equipment for Training Sites Mobile School Unit

		Unit($)	Total($)
1	Power generator	800.00	800.00
1	Carousel-type projector	450.00	450.00
1	Twenty-foot slide-changing extensions	15.00	15.00
5	Carousel-type slide trays	15.00	75.00
1	Slide stack-loaders for Carousel-type projectors	30.00	30.00
1	Filmstrip-adaptor units for Carousel-type projectors	60.00	60.00
1	Combination slide, single-frame and double-frame projectors	350.00	350.00
1	Twenty-foot slide-change cord for comb. projector	20.00	20.00
1	Six-foot projection screens with stands	225.00	225.00
1	Overhead projectors (portable, with case)	500.00	500.00
1	Audio cassette heavy-duty recorder/player (bat./AC)	350.00	350.00
1	Sound amplifier and speaker	600.00	600.00
1	Battery filmstrip projector with rechargeable battery	275.00	275.00
1	Sunlight recharger	85.00	85.00
2	Flipchart easel stands	125.00	250.00
1	35mm camera, SLR, with 50mm f/1.4 lens	250.00	250.00
1	Portable bullhorn with rechargeable battery	200.00	200.00
	Miscellaneous cables, etc.	200.00	200.00
	Tailormade waterproof crate	300.00	300.00
TOTAL		--	$5,035.00

Table B-8. Agricultural Media Production Center Staffing List

Position	Annual Salary ($)
Production Chief	3,500.00
Production Assistant	2,000.00
Media Coordinator	3,000.00
Senior Writer	2,800.00
Writer	2,500.00
Photographer	2,500.00
Senior Graphic Artist	3,000.00
Graphic Artist	2,500.00
Sound-Recorder (quarter-time)	600.00
Narrator (quarter-time)	600.00
TOTAL	$23,000.00

NOTE: Positions may be combined. For example, a writer or graphic artist might also serve as photographer, and the narrator might also serve as sound recorder. A well-trained production staff will share skills and work closely together.

Table B-9. Agricultural Media Production Center Annual Services

	Total ($)
Contract Expenses	
General Maintenance (photocopier, etc.)	2,000.00
Printing (picture booklets, posters, charts)	5,000.00
Silkscreening (flipcharts, charts, etc.)	3,000.00
Photo Lab (color film developing)	2,000.00
Filmstrips (prints from filmstrip negatives)	4,000.00
Sub-total	16,000.00
Non-contract Expenses	
Graphic arts (paper, paints, overhead transparencies, model materials)	2,000.00
Photography film, chemicals, batteries, photographic paper, photo flood lights, batteries	4,000.00
General Administrative such as utilities, telephone, supplies including wordprocessing	6,000.00
Subtotal	12,000.00
Total Annual Support Costs for AMPC	$28,000.00

ANNEX C

Staff Descriptions

Sound Recorder

Records narration prepared by writer and voiced by narrator. Records appropriate background sounds or music and mixes with narration when appropriate. Adds audible "beep" to final tape to indicate when to advance to next frame of filmstrip or to turn to next flipchart. Uses master tape to produce duplicate audio cassettes.

Narrator

Narrates taped recordings for use with slides, film-strips, or flipcharts. A professional voice that commands respect and builds credibility is important for this purpose.