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Report of the External Evaluation Team on Water Harvesting/Aquaculture

AID Project No. 938-0240

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EXECUTIVE SUMMARY AND CONCLUSIONS

The Water Harvesting/Aquaculture Project (WHAP) has been under implementation for three years pursuant to a Grant from A.I.D. acting through the Office of Private and Voluntary Cooperation and the Bureau of Science and Technology. The project supports the operations of the Joint PVO/University Rural Development Center (JC) at Western Carolina University (WCU) which coordinates the project activities. The major activity has been the provision of technical assistance and training in aquaculture from the International Center for Aquaculture of Auburn University (ICA) for operations in 14 developing countries by the six private voluntary agencies who are participants in the project. The project also has supported the development of a system to measure the impact of the field activities and the progress being achieved in accomplishing its purposes. Those purposes are: (i) to develop a collaborative management methodology involving PVOs and U.S. universities; (ii) to design and implement a series of nine field projects with approximately 26 sites which are directed at moving villages toward self-sufficiency in water for household use, stock watering, garden irrigation and, where appropriate, drinking water; and (iii) to implement and evaluate a process and strategy of development using water harvesting/aquaculture as a means or core intervention to achieve that process and strategy.

This report presents the conclusions and supporting discussion of a two-person team which reviewed the operation of the project in order to provide A.I.D. with suggestions on how the operation might be improved to better achieve its purposes and with its recommendation as to whether additional funding should be provided to the project for support of its continued operation during the next two years as was contemplated in the original proposal presented to A.I.D. by the JC.

The major conclusions reached by the review are:

1. Good progress has been made on implementing a system pursuant to which PVOs can obtain the assistance of university experts for their field operations in water harvesting and aquaculture and on fostering cooperation among the PVOs who participate in the project.

2. Since the assistance provided to the PVO activities has been overwhelmingly from ICA and directed at fish production, the project has not yet provided evidence that the collaborative methodology which it supports will be able to address broader topics and achieve the participation of other universities as was contemplated originally. Indeed, the PVO and A.I.D. field personnel generally are not aware of the availability of the other assistance potentially available under the project.

3. The technical assistance and training provided by ICA under the project has been excellent, and is highly praised by all participants in the project.

4. It is unlikely that the project as now being implemented will achieve the two purposes related to the nature and impact of the field activities which are to be supported. It does not appear that the participating PVOs, in fact, accept those purposes; and the system for identifying the activities to receive support from the project does not include standards or steps which would give emphasis to those purposes. The project is being implemented as a system for providing assistance on the technical dimensions of fish production. However, the field activities in themselves may well have favorable impact on their beneficiaries.

5. The evaluation instruments and system prepared by the JC with the collaboration of the participating PVOs is not being used, and appears to be unacceptable to most of the participants.

6. All participants agree that the project should continue to be coordinated by the JC, and that the location of that office in the Western Carolina University (WCU) is advantageous. The review team agrees.

7. More impact could be obtained from the project's resources if participating PVOs were asked to increase their financial support to the Joint Center and to the expenses of providing the technical assistance and training. Funds for the latter may well be available to the PVO field offices from sources such as counterpart allocations and operating grants from A.I.D. bilateral programs.

The review team recommends that A.I.D. continue to provide funding to the project during the next two years at at least the level originally comtemplated. We do so because of the progress achieved in implementing the collaborative methodology and because of the high esteem and demand for the assistance from ICA. However, the team also thinks that serious attention should be paid to the recommendations listed in Part V of this report; and that as a requisite to continue funding, A.I.D. and the participating organizations should clarify what are the purposes they expect to be served by this project.

I. Purpose and Methodology of Review

This report contains the conclusions and supporting discussion arising from a review of the progress made during the first three years of implementation of the Water Harvesting/Aquaculture Project being supported by A.I.D. through a Grant Agreement with the Joint PVO/University Rural Development Center (JC) at Western Carolina University (WCU). The Scope of Work for the review is given in Annex A. A major purpose of the review was to assist A.I.D. in reaching a conclusion as to whether additional funding should be supplied in support of the project. The review team was requested to provide any suggestions which it might have concerning the conduct of the project or modifications to it which would improve its implementation or make more likely the successful accomplishment of its purposes.

The review was to be of the overall system being supported by the project. It was not to be an evaluation of particular activities supported under the project. The time allowed for the review would not have permitted the conduct of such an evaluation. Thus the visits made to the field sites by the team were to get information and impressions on how the system was operating, but not to come to firm conclusions concerning the value or probable impact of the particular activities observed. Nevertheless, the information and impressions received during those field visits have been important to the conclusions reached by the team. Undoubtedly the review would have been better had it been possible to observe a wider selection of activities being supported by the project and the operation of the training sessions and the providing of technical assistance by the staff of ICA. However, that was not possible. We have tried to compensate for the narrowness of the scope of the review of field activities through conversations with representatives of the headquarters of all the PVOs involved in the project as well as of ICA and the JC.

The team was not asked to conduct an audit or management analysis of the operations of any of the organizations participating in the

project, and it did not attempt to do so. Its judgements rely to a great extent on the experience which the team members have had in A.I.D. in preparing and implementing activities involving techn cal assistance and training.

The following is a listing of the activities of the reviw team which consisted of Anson R. Bertrand and John R. Oleson - consultants working for Checchi and Company, which held the contract to conduct the review - and Nancy Blanks, Project Manager from the JC who served as facilitator for the team.

Initial activity consisted of a one-half day conference with representatives of the participating PVOs in December, 1986. The scope of work for the review was discussed, and it was recognized that another meeting would be necessary to reconcile differences of opinion as to the purpose and process of the review. A second meeting was held and a draft scope of work was agreed to by A.I.D. and the PVO representatives.

Mr. Bertrand and Ms. Blanks visited Auburn University and ICA for two days in January, 1987. They reviewed documentation and had discussions with university officials and ICA staff members who are providing training and TA for the PVO personnel in developing countries. These same persons also provide training for international students who participate in the training programs at Auburn. (See Annex B for further discussion.)

The review team spent two and one-half days in February, 1987 at WCU reviewing documents and having discussions with university officials and staff persons in the JC. (See Annex C for further Discussion.)

The review team and Ms. Blanks spent five days in Guatemala in February, 1987 reviewing the activities being carried out by CARE with cooperation from the U.S. Peace Corps and with financial support from U.S. AID/Guatemala. Technical assistance is being provided by ICA. (See Annex D for further discussion.)

The review team and Ms. Blanks spent a week in Indonesia in April, 1987 reviewing field activities being carried out by the International Cooperative Business Association with funds provided by Heifer Project International. ICA also is providing the TA requirements of the JC activities.

The final activity of the review team was a one and one-half day conference in April, 1987 with representatives from the six participating PVOs.

The team held extensive discussions with persons at every location visited to obtain information about a variety of things including, but not limited to, the following:

- attitudes toward the overall WHAP effort,
- attitudes toward PVO/university collaboration,
- effectiveness of WHAP in meeting the needs of PVOs,
- expectations for the future of PVO/university collaboration,
- needs not being met by WHAP,
- future needs for TA and training, and
- willingness to participate in project evaluation efforts.

The team devoted special attention to examining the effectiveness of communications, documentation, evaluation, technical assistance and training activities of WHAP at each location visited. The persons interviewed are listed in Annex I. In addition to viewing activities and examining documentation about the specific projects visited in Guatemala and Indonesia, the team reviewed the major documents concerning the project. They are listed in Annex J.

The team received full and open cooperation from the JC and ICA. The PVOs involved responded to any questions put to them, and were helpful to the team during its field visits.

II. Project Background:

A. Concept

The Water Harvesting/Aquaculture Project (WHAP) grew out of a common but under-addressed set of problems facing PVOs. These problems centered around the lack of appropriate technical assistance on effectively harvesting for multipurpose use the under-utilized water resources potentially available from rainwater run-off. PVOs lacked ready access to high quality technical assistance that could be applied flexibly to a diverse set of conditions and opportunities in a great number of developing countries. It was recognized that without appropriate technical assistance the required local capacity and skills to design and implement multipurpose water and rual development projects probably could not be developed.

In early 1978 representatives of Western Carolina University (WCU) and ten PVOs met to discuss the thesis that "there is some commonality in social and economic problems of the rural poor in Appalachia and the developing world, and that the proper kind of mechanism for an interface between concerned universities and PVOs would be extremely useful." The JC evolved from this concept. It was founded in 1979 at WCU with the purpose of encouraging and institutionalizing collaboration between PVOs and universities on the premise that together both communities could achieve more in international rural development than either could singly.

Continued dialogue between the JC, the PVOs and ICA led to the preparation of an unsolicited proposal to A.I.D. The conceptual basis of the resulting project (WHAP) as stated in the Grant Document is: "The project is based on the concept of using water harvesting/aquaculture applied as a core intervention for rural development and collaboration between PVOs and universities

as a means of complementing and enriching the development capabilities of both communities." The project was funded by A.I.D. using funds from S&T/AGR and FVA/PRE by Grant No. PDC-0240-G-SS-4085-00 effective July 1, 1984. The grant of $887,622 was for a three year period, and was made to the JC for a project whose goal is "to improve the quality of rural life in selected developing countries through introduction of improved technology in ways that will balance the real capacity for development with the total community needs and potentials." The original proposal requested funding for five years. A.I.D. provided funding for three years, and indicated that funding for the fourth and fifth years would be dependent on sufficient progress being made during the first three years. There was to be an evaluation of that progress during the third year to assist in making the decision as to whether further funding were warrented.

B. Relation to A.I.D. Strategy

The WHAP is in harmony with A.I.D.s overall purpose of addressing problems of economic growth, hunger, and disease in rural areas. More effective use of available water to produce food and marketable products such as fish could contribute to the overall development of communities and improve the health and lives of people. This project purports to address problems associated with a lack of water in convenient supply and its loss or inefficient use. Documentation of this problem and evidence of the need for its solutions are extensive. In 1981 it was estimated that only 11% of the rural population in 91 developing countries had an adequate water supply. The situation has not changed substantially during the past five years. At least a third of rural women's time is spent acquiring household water in many developing countries. Water scarcity and inefficient use have serious consequences for development of rural areas. There are adverse impacts on health, agricultural productivity, labor use, the production of food, including fish, consumption and income generating.

The project also is in harmony with A.I.D.'s policy of fostering greater involvement of U.S. universities and PVOs in international development. Problems related to water harvesting and water use in developing countries are serious. They are approprite to be addressed by the PVOs and U.S. universities working through a unified, collaborative effort.

C. Relationships to Other A.I.D. Programs

This project is jointly funded by FVA/PRE and S&T/AGR.

S&T/AGR has five other projects which are concerned with fisheries and aquaculture. These projects are aimed at developing and transferring technology that will increase fish production and/or capture. They involve nine U.S. universities and a private research institute. The activity most closely connected to WHAP is a cooperative agreement between S&T/AGR and Auburn University's ICA. Under it A.I.D. provides funds to ICA for TA and training as requested by the A.I.D. Missions. The existence of both that project and WHAP permit ICA to maintain greater overall capability to provide TA and training. WHAP also offers ICA a new channel (the PVOs) for reaching the small farmer which it was having difficulty in doing through its other activities.

WHAP is one of many of FVA/PRE's efforts to support the developmental activities of PVOs. Of particular interest to FVA/PRE is the testing of the effectiveness of cooperation among universities and PVOs to achieve impact on the target groups. Through WHAP PVOs are able to secure direct assistance for their field personnel from university specialists in aquaculture and other related areas.

WHAP enhances interaction between the U.S. Peace Corps, university technicians and the PVO personnel. It indirectly provides support to A.I.D. Mission programs which include funding for the activities of PVOs which are participating in the

project. Furthermore, the technical advice and other support of WHAP could be used to provide additional experience for the Missions' analyses of development problems and program approaches should Missions choose use it.

III. Project Desription

A. Overall Goal and Purposes

The goal of the project is to improve the quality of rural life through the introduction of improved technology in ways that will balance the local capacity for development with the total community needs and potentials.

The project has three major purposes:

(1) To design and implement a series of field projects each with multiple sites. These field projects are to be directed at moving villages toward self-sufficiency in water for a variety of uses including fish production for family consumption and marketing.

(2) To implement and evaluate a process and strategy of development using water harvesting/aquaculture as a means.

(3) To design, implement and evaluate a collaborative management methodology involving PVOs and universities in the development of new techniques and strategies for delivering technical, organizational and material resources for development.

B. Paticipants

The participants in WHAP are: Joint PVO/University Center for Rural Development (JC), Auburn University's International Center for Aquaculture (ICA) and six U.S. private voluntary organizations - CARE, Catholic Relief Services (CRS), Church World Service (CWS), Heifer Project International (HI), Luthern World Relief (LWR) and Save the Children Federation of the U.S.A. (STC). The grant is held by the JC.

The project is carried out by the six participating PVOs, the JC and ICA.

The International Center for Aquaculture of Auburn University (ICA) has a large staff of scientists and technicians with wide experience in international aquaculture development. (See Annex B for a detailed description of ICA). The ICA holds a subcontract from the JC to provide TA and training under WHAP. During the past two and one-half years ICA has devoted 515 man days to TA and training overseas under WHAP. Thirteen people from three other universities and one private foundation also have participated.

The Joint PVO/Univesity Rural Development Center (JC) is made up of 15 PVOs, 12 universities and two private foundations. The JC acts as a facilitator and catalyst to bring the PVOs and universities together to address water harvesting/aquaculture problems in developing countries. The JC has responsibility for utilizing the talents at member universities. To date most TA and training needs have been fulfilled by ICA. (For a detailed description of the JC and its organization and operation, see Annex C).

An Advisory Council (AC) composed of representatives from the headquarters of each participating PVO, Auburn University and the JC provides oversight for WHAP. The Council meets twice yearly to review progress, approve plans for TA and training and select recipients of the project support funds. The JC serves as the secretariat for the AC.

The criteria for participating in the project by organizations and for the selection of activities to be supported are set forth in Annex F. Each field project requests TA and training under WHAP through its PVO headquarters. Requests are forwarded to the JC for processing. Since most requests are for technical assistance in aquaculture, most requests are sent to the ICA.

Since the ICA staff is well known through-out the developing world, many requests are made directly to ICA which in turn notifies the JC which secures concurrence of the PVO headquarters to proceed. When a PVO requests and is going to receive TA from WHAP all other PVO project participants in the region are notified by the JC so they also can schedule TA visits in conjunction with the trip.

The total level of effort by all participating institutions not funded by the A.I.D. grant is shown in the following table.

SUMMARY OF TOTAL CONTRIBUTED VALUE OF TECHNICAL SERVICES, STAFF TIME, FACILITIES FROM PROJECT PARTICIPANTS TO WHAP 1984-85, 1985-86, 1986-87 (TO 4/1/87)

PARTICIPANTS	TOTAL LEVEL OF EFFORT (Months)	VALUE OF SERVICES
1. Joint Center/WCU Staff	35.2	$136,234[2]
2. ICA/Auburn University, University of Arkansas/ Pine Bluff	13.4[1]	59,841[2]
3. Center for Women in Development, Southeast Consortium in International Development	5.3	7,500[3]
4. Volunteer Services Contributed through Joint Center	6.2	25,400
TOTALS	60.1 Months	$228,975

[1] 12.1 Months Auburn
1.3 Months Arkansas/Pine Bluff

[2] Includes value of facilities

[3] Stipend plus travel costs

C. Major Program Activities

The major activities of WHAP are technical assistance, training and evaluation. The WHAP is primarily an enabling activity. Through collaboration it provides top notch, long-term technical assistance and training to PVOs working in grass roots development. Each PVO headquarters in the U.S. interacts with the JC and ICA to plan, review and oversee TA and training provided by WHAP to PVO field staff and developing country persons. The field staffs of the PVOs work with local organizations, communities and individuals to enhance water harvesting, aquaculture and rural development efforts in developing countries.

(1) Technical Assistance

Working under WHAP, ICA had contact with PVOs in 35 different countries during the first 24 months of the project. Technical assistance in response to specific requests has been provided by ICA in 26 countries (See Annex G). Prior to January 1987 the staff of ICA and four scientists from three other universities and one private foundation had spent 515 man days delivering TA for PVOs overseas. The TA normally consists of visiting field sites with the local PVO staff, the farmers and other interested local people. Based on observations and on-the-spot analysis, the ICA experts give advice to the PVO representative. In addition to on-sight recommendations, the experts prepare trip reports which are shared with collegues at ICA, JC, PVO headquarters and PVO representatives concerned in the developing countries. These trip reports and semi-annual and annual activity reports by ICA document the activities and the TA delivered. Follow-up visits are standard practice, and are done when possible while travelling in the region.

Although to date ICA has supplied most of the TA under the project, the JC is in a position to facilitate utilization of technical people from all JC member institutions. As WHAP moves more toward integrated agricultural production activities fully to utilize the harvested water, it is expected that the JC will draw more heavily on other member institutions for providing TA. To date the JC staff has devoted 173 person days to coordination and training activities in the host countries.

2. Training

Formal training activities such as the regional aquaculture workshops are jointly planned and executed by ICA, JC and the PVOs. Participation in WHAP takes place at the institutional and the individual field project levels.

The initial training activity undertaken by WHAP was a series of regional training courses. They were two weeks long, and were given at Auburn and in Panama, Indonesia, Cameroon and Rwanda. Trainees at these courses consisted of 69 field staff persons from PVOs who received training in the field and 39 who received training at Auburn. Several others were from the Peace Corps and host countries. Those who attended from host countries were mostly persons who have supervisory or technical responsibility for water harvesting/aquaculture activities in their country. Most of the persons who attended these training courses are actively involved in aquaculture in their home countries, and 40% are supervising water harvesting/aquaculture projects.

Apart from this project, persons from 17 developing countries have taken the four and one-half month training course at Auburn during the past two years. In addition to formal course work, the students planned projects and grew and marketed a crop of fish in a pond, doing all the work

themseves. Auburn also offers aquaculture training in its degree program. It offers both the MS and Ph.D in aquaculture/fisheries. As a result Auburn has aquaculture alumni throughout the world, and the ICA staff makes a special effort to keep in close contact with them and frequently uses them as instructions in short courses and workshops overseas.

3. Evaluation and Monitoring

The grant document calls for evaluation to be carried out at two levels both of which address the project goals of improving rural life through technology introduction and building local capacity for sustained development. The first is that of individual field project monitoring and evaluation. This is to be done by the PVOs using their regular processes adjusted to meet the project needs for standardized information. The second is that of a summative evaluation which relates to the purposes of the project

Responsibility for organizing and surpervising the evaluation portion of WHAP rests with the JC. In collaboration with representatives from the participating PVOs and an evaluation specialist form a member university, the JC has developed three instruments for use in the evaluation effort. They are addressed at: (a) project monitoring; (b) community inventories; (c) household surveys. Although representatives from participating PVOs had an opportunity to comment and make suggestions during the development of the instruments, they now consider the community and household survey instruments to be too complex for field use. This aspect of the project is discussed further in Part IV (C) below.

IV Major Issues and Concerns

A. Achievement of Project Purposes

As described in Part III above, the project has three main purposes: (i) to develop a collaborative management methodology involving PVOs and universities; (ii) to design and implement a series of nine field projects with approximately 26 sites which are directed at moving villages toward self-sufficiency in water for household use, stock watering, garden irrigation and, where appropriate, drinking water; and (iii) to implement and evaluate a process and strategy of development using water harvesting/-aquaculture as a means or core intervention to achieve that process and strategy. Significant progress has been made on implementing a collaborative management methodology. Little progress has been achieved on the other two purposes, and it is not clear that in fact the PVOs, and even the JC, really accept those purposes as important ones for the project.

(1) The Collaborate Management Methodolgy

As described in Part III, the project has supported the operation of the JC and the provision of technical assistance and training by the ICA. The system operating with the project's support includes semiannual meetings of an Advisory Council (AC) of the participating PVOs which provides guidance to the JC and participating universities - basically Auburn and the Western Carolina University as the JC's administrative support agent in the conduct of the project. The system is functioning, and all the representatives of the PVOs with which the team spoke praised it.

There was agreement that the PVOs could not have obtained the type of assistance which has been provided by the ICA nearly as effectively, or as economically, outside the

system; and many PVOs (including the large ones) said that they probably would not have sought such assistance directly from Auburn had the system not existed. The reasons for this appear to be that the PVOs find that the JC and the system give them equal footing with the universities so that they are able to indicate what they want rather than just be the recipients of assistance from institutions which present themselves as having all the expertise; and--especially for the smaller PVOs--that they in fact would not have known how to get the assistance from the ICA were it not for the project. (In the case of the program in Indonesia the availability of assistance from ICA was brought to the attention of the field personnel by representatives of HI, which is a member of the system; in the case of the program in Guatemala, CARE in that country learned of the availability of the assistance by participating in the regional training program supported by the project and brought to its attention by CARE's headquarters.)

It appears to be a generally held view that the location of the JC at Western Carolina University (WCU) is appropriate. It's somewhat out-of-the-way location is offset by the advantages of the support given to the JC by the WCU, and by the view of ICA, and the other participating universities, that the WCU can be an honest broker since it is not such a major university that it is likely to seek to obtain much of the work under the project for itself. Indeed, some faculty members of WCU complain that the JC does not even attempt to get them included in the roster of voluntary consultants. Thus, there apears to be a consensus that it would not be advisable to have the JC relocated to ICA. To do that would require that the ICA (presumeably with project support) increase its staff, and thus the move would not be a saving to the project of the present full costs of the operation of

the JC. More importantly, in the view of the PVOs, such a move would tend to dilute the importance of the PVOs vis-a-vis the ICA. Furthermore, it probably would mean that any effort to involve universities other than Auburn more strongly in the project would not be successful.

Many PVO representatives also commented that the project has brought them to consult with each other in ways that had not happened before, and that would have been unlikely to have happened in the absence of the project. This cooperation is the result of several activities--the meetings of the Advisory Council, the regional training sessions to which several PVOs send representatives and the mutual planning and scheduling which the ICA and the JC must carry out with several PVOs for each major trip by the technical advisors. It could be that this habit of cooperation could continue in the water/aquaculture sector without the existence of the JC; however, several PVO representatives expressed the fear that the cooperation would diminish without additional reinforcement, and that for the immediate future it is important to have a JC in operation.

Another indicator of the strength of the collaboration methodology is that the JC has seven additional project activities under preparation with various PVOs and assistance agencies. These possibilities are listed in Annex H. None of them are yet formally approved. However, their existence so early in the Joint Cener's work under the project is encouraging.

Of course there are still weaknesses in the implementation of the methodology. Under the project the participating PVOs do not have to contribute significantly to the financial costs of the JC or to the providing of services by the JC or the participating universities. (Each

participating PVO pays only $200 per year to the JC, and makes no contribution to the costs of travel or providing the technical assistance. The field offices of the PVOs do pay the travel and subsistence costs of the people they sponsor for regional training, but do not contribute to the costs of preparing and giving the training.) Thus, one cannot conclude that the project really is testing the PVOs' dedication to the methodology. On the other hand, both in Guatemala and Indonesia the representatives of the participating PVOs said that they would be willing to pay for the services of ICA if they had to do so, and several representatives of PVO headquarters indicated that they thought their organizations would be willing to devote additional resources to the operation of the JC if it were necessary to do so. Nevertheless, at this stage of the project it really would be venturesome to conclude that the JC and the collaborative methodology would be able to sustain themselves without the support of A.I.D. or some similar donor organization since at present the JC is dependent overwhelmingly (88% not counting donated office space and office help) on the A.I.D. grant for its operation of the water harvesting/aquaculture activity and the collaborative methodology.

Another weakness is that the experience under the project has been limited in large to obtaining the services of ICA for the participating PVOs. Auburn University is world famous in the field of water harvesting and aquaculture, and highly dedicated to work in that field. Thus obtaining its effective cooperation is not a difficult task. Much more difficult would be bringing about the participation of other universities which are associated with the effort; and that, in large, the JC has not achieved. With encouragement the JC may be able to bring about such active participation. However, until it does so, one must consider that the

success so far of the collaborative methodology may owe more to ICA's place in the field than to the appropriateness of the methodology.

Another weakness of the experience is that the collaboration so far has not included anything such as commom programing or evaluation. (See C below for a discussion of evaluation.) Rather, it has been limited to providing training and technical assistance to activities of the PVOs as requested. Nor has the system provided and utilized standards of eligibility except for technical considerations expressed by the staff of ICA. This approach may be the appropriate one. However, success in implementing it would not be predictive of success in using this methodology as a way of achieving a focused program objective.

In the opinion of the review team there has been enough progress made on the implementation of the collaborative methodology to justify continued support to the JC. The issue facing the project is how to develop the methodology further--should it be pushed in the direction of including programing, evaluation and other non-technical aspects or rather continued to be focused on providing technical assistance and training on technical aspects as requested by PVOs? In any event, it would seem that to be successful the methodology should show that it can achieve the participation of more university resources than those of ICA, and that the PVOs are willing to provide more than the nominal financial support they currently give.

2. Moving Villages Toward Self-Sufficiency in the Use of Water

The project's documentation expresses the intention that the field activities supported by the project will foster the

self-sufficiency of participating villages in the use of water. The project does not seem likely to achieve this purpose. Although some PVO representatives expressed the belief that over the long term the project would foster the better use of available water resources, there did not seem to be any plan to bring that about; and the field activities observed did not contain any elements which would serve that purpose. Activities under the project have been overwhelmingly focused on the production of fish. It would seem that A.I.D. must reassess whether, in fact, it expects the activities under the project to seek to accomplish this purpose. It if does, then major changes will be necessary in the way the project is now being implemented.

3. Water Harvesting/Aquaculture as a Core Intervention

The project proposal and subsequent documentation place great importance on the use of water harvesting/aquaculture activities as being key to and part of a more comprehensive development effort. It is specifically stated that the activities will emphasise work through local PVOs; utilize cooperative organizations; pay attention to the role of women in the activities; and seek an equitable distribution of the benefits arising from the activities. The project looked to an expansion of agriculture production as well as fish production. Project activities were to be undertaken in a village only after an analysis had been made of the development situation of the village. Although not entirely clear, it seems as if it were the understanding that the project activities would be carried out pursuant to, or at least in connection with, a comprehensive development approach for each participating village.

None of this seems to be happening. The standards issued by the JC for guiding participants in the project are really standards for deciding when activities are technically desirable. (See Annex F.) They do contain some general language about giving emphasis to situations in which the activity will be important as a "core intervention" or catalyst for rural development. However, the team did not find any indication that importance was given to that aspect in the selection of activities. Indeed, the persons responsible for the operation of the activities in Indonesia indicated that they did not have such purposes in mind. Several of the representatives of the headquarters of the PVOs stated that they viewed the project as a way of obtaining technical advice for their activities, and did not subscribe to a broader purpose. They did not want the project to seek to influence their approach to development programs, and considered that any attempt for it to do so would be counterproductive. It is difficult to know whether this attitude is universally held by the participating PVOs, but it does seem to be widely held. Its existence probably is a factor in the negative reception given to the evaluation instruments proposed by the JC which assume that a comprehensive developmet effort lies behind each activity and in the lack of demand for assistance aside from the technical expertise of ICA.

One certainly should not conclude that the activities being supported by the project will not have beneficial impact on the population with which they are working or that the activities are inconsistent with the overall development of these areas. Certainly the field operations which the team visited appear to be in the hands of persons who are dedicated to and knowledgeable about the areas in which they are working, and there appears to be a good deal of local participation in the preparation and conduct of the activities. However, there is little if any evidence that

the project has had any impact on the overall development thinking of the participating agencies or that the process leading to the selection of activities to be supported by the project has included discussion of the role of the activities in comprehensive development programs.

It would seem that this situation poses a fundamental issue for the conduct of the project. A.I.D. and the participating PVOs should clarify what, in fact, is the expectation of the project as to the impact of the activities as "core interventions." As of now it appears that the project will not be able to demonstrate any significant impact of its activities as core interventions bringing about more comprehensive development or any serious effort on its part to achieve such impact.

If this purpose is to be retained as important to this project substantial changes will need to be made in the way the project is being conducted. More concrete standards probably are needed to guide the participants in deciding what activities are eligible for support under the project. Given that there are only two years left in the life of the project it is unlikely that new starts will give observable results, and thus it would seem that the only way to achieve impact on comprehensive development under the project would be to expand the scope of existing activities. The project might limit the use of its resources during the next two years to support of those activities which undertake to serve a wider development purpose. Such a change in the operation of the project probably would not be welcomed by the participating PVOs, and is not certain to produce useful results. However, without it the project is unlikely to demonstrate that a collaborative methodology between the PVOs and universities can lead to more than ad hoc technical support for on-going PVO activities.

B. Utilization of Resources

(1) Nature of the Resources

The resources available for WHAP include: the PVO headquarters staff; the PVO field staff; the Joint Center's staff; Auburn's ICA staff; the financial support by A.I.D.; and the financial and in-kind support by PVOs, the JC, Auburn, and the host countries.

Support by PVO headquarters staff consists of the part-time service of the person who serves as the link between WHAP and the PVO field staffs. He/she also serves on the Advisory Board which guides activities undertaken by WHAP. The value of this support can only be estimated, but one PVO stated that in its own case it is between $15,000-$18,000 for the first three years of the project.

The JC's staff is described in Annex C. These persons manage and carry out the day-to-day operations of the project. This staff also has access to technical resources at the member institutions including the volunteer Expert Roster.

The ICA staff is described in Annex B. It includes the part-time services of 30 PhD scientists and six technicians who are available on-call to PVOs to provide TA and training under the sponsorship of WHAP. The WCU, Auburn and other participating organizations also are providing salary supplements and in-kind (housing, utilities, etc.) support to WHAP without reinbursement from the grant. (See Table in Part III.)

Financial support by A.I.D./W consists of the grant from A.I.D./W. Some of the field projects being carried out by the PVOs and for which WHAP provides technical assistance are heavily supported financially by U.S.A.I.D. Missions as

well. This was the case in both programs observed in the course of this evaluation.

The PVOs' field missions, using funds from various sources, are supporting field projects in water harvesting/-aquaculture with money and staff time. The JC does not have data on the value of that support.

(2) Budget

The budgets for years one through three of the project are shown below. Under current plans the magnitude and composition of the budget for the final two years of the project would be similar.

WATER HARVESTING/AQUACULTURE PROJECT THREE YEAR BUDGET (ICA)

Cost Element	84-85 YEAR I	85-86 YEAR II	86-87 YEAR III	TOTAL
Admin. Direction + Support	54,349.	89,905.	71,652.	215,906.
Technical Assistance	00.	18,000.	10,500.	28,500.
Training	5,294.	28,000.	15,050.	48,344.
Evaluation	15,294.	29,376.	36,485.	81,130.
Documentation & Information	9,334.	19,251.	16,283.	44,868.
Subcontract (ICA)	72,316.	96,360.	100,000.	268,676.
Project Support Fund	00.	50,000.	50,000.	100,000.
Indirect Costs	18,764.	42,537.	38,897.	100,198.
TOTAL	175,326.	373,429.	338,867.	887,622.

Although no audit was conducted, a review of the financial resource management procedures being used indicated that standard accounting and fiscal control procedures are being used both at the JC and at ICA.

Without specifically identifying each input and following its utilization, the team probed as to how various activities are supported and the adequacy of support for the various activities. The team concluded that resources are minimal for the undertaking, and are being used reasonably and effectively. In the event the allocation of funds by A.I.D. has to be reduced for years four and five, the team recommends that the allocation to evaluation be reduced by one-half to two-thirds and if further reductions are required that the project support grant funds be eliminated.

(3) Level of Funding by ICA

Additional funds could be used for the subcontract with Auburn that provides training and TA from ICA. The requests from the PVOs in the field are growng rapidly, and the ICA staff is limited and over-extended. Additional funds for at least one more junior staff member at ICA are greatly needed. The review team recommends that if funds are added to currently planned levels or are released by restructuring of the evaluation effort as recommended in the following section, they should be used to augment the ICA staff. The project support grants are important and permit some exploration and innovation in the program. The current allocation of $50,000 is the minimum that can effectively be utilized. A smaller amount would not be worth the effort of the JC and AC to receive and evaluate proposals and administer the funds.

(4) Training

Training is delivered by Auburn's ICA staff which is highly competent and effective. All have overseas development experience, and are highly motivated and enthusiastic about international aquaculture development. It is recommended that A.I.D. continue to provide resources through the JC to be used by ICA to participate actively in water harvesting/aquaculture training for PVO field staffs and host country people.

(5) Broadening the Source of TA and Training

An area of concern mentioned earlier in relation to the budget is that the ICA has limited staff resources to meet the rapidly growing demand for TA and training. By mid-January 1987 the ICA had received 27 requests for TA and others were arriving almost daily. More funds to use in acquiring additional staff persons and greater use of water harvesting/aquaculture expertise from other member universities would help alleviate the strain on the ICA staff, but even that probably would not be enough to meet the demand. Since Auburn has a large number of former

students in developing and developed countries that are competent to assist in TA and training activities, it seems logical to the review team that greater use could be made of that alumni to deliver TA and training for the project. Therefore, it is recommended that the JC and the ICA develop and implement a plan to utilize more fully the talents of the alumni. That would permit the ICA staff to devote less time to specific field projects and more effort to the training of trainers. In the long run, the overall cost of TA and training might be reduced for the PVOs because less intenational travel would be required.

Furthermore, although use of Auburn has been an efficient and effective method of providing support for the PVOs, one can ask if this is meeting the objective of fostering lasting collaborative relationships between the PVOs and U.S. universities. Auburn's training and TA has been almost exclusively on water harvesting and fish production. The JC has access to a very wide knowledge base in other universities that have potential to assist PVOs in many subject matter areas such as hydrology, economics, engineering, sociology, anthropology, soil science, animal husbandry, agronomy and water science. It is the opinion of the team that more use of persons from other universities would enhance development of lasting collaborative relationships between the U.S. university community and PVOs. It also appears that the broader overall developmental objectives of the WHAP project would be better addressed by involvement of a wider segment of the university community and persons from a wider spectrum of disciplines. Thus, it is recommended that the JC make a greater effort to encourage the PVOs to request and use experts in a variety of fields related to WHAP's objectives and that technical resources be drawn more frequently from other JC member universities. However, because the PVOs are uniformly enthusiastic about their relationship with ICA, care must be taken not to harm this relationship as efforts are made to broaden the base of support for the PVOs.

Since the Auburn ICA staff persons are well know throughout the world and they deliver specific TA and training in the field, it is natural that field people equate ICA with WHAP. It was evident to the review team both in Guatemala and Indonesia that PVO field people, host county personnel and even A.I.D. Mission personnel did not fully understand WHAP, and did not know of the other resources it could provide for PVO projects. For example, they were not aware that WHAP could provide expertise in hydrolog economics or sociology or other fields to address issues related to, but broader than, fish production. Thus, it is recommended that all persons delivering training or TA be careful to explain the overall WHAP effort, the resources available, and the roles that other entitities have in WHAP.

C. Evaluation and Monitoring

(1) Evaluation

The grant document calls for evaluation to be carried out by the JC and participating PVOs at two levels. The first is that of individual field project monitoring. This was to be done by the PVOs using their regular processes adjusted to meet the project needs for standardized information. The second is that of a summative evaluation which relates to the subgoals of the project: i.e., (1) to design, implement, and evaluate a process strategy of multipurpose rural development, using water harvesting/aquaculture as a core intervention to accelerate development, (2) to design, implement, and evaluate a collaborative managemet methodology involving PVOs and universities in the development of new rural development strategies and techniques for delivering technical, organizational, and material resources for development.

Responsibility for preparing and guiding the evaluation work lies with the JC. In collaboration with representatives from the participating PVOs and an evaluation specialist from a member university the JC developed three instruments for use in project monitoring and the conduct of community inventories, and household surveys. Ideally, the community inventories and household surveys would have been done prior to the initiation of the field work. This was not done. Instead project support activities were undertaken while the JC employed a part-time person who had experience in evaluation and hired a consultant from a member university to develop the survey instruments. They held a series of meetings with various persons from A.I.D. and the participating PVOs to design and field-test the documents. After many modification the documents were delivered last November to the PVOs who had responsibility for the data collection. Although these PVOs had participated - at least to a limited extent - in the preparation of the survey instruments, they now find the instruments to be too complex for use in the field; and four of the six PVOs refuse to use them. It is not clear whether the other two will.

Since project resources are very limited, and it is not feasible for the JC staff to collect the baseline information on its own, it would seem that no further effort should be made to develop, refine or use the instruments designed for community and household surveys. Given the short time left in the project this is probably adviseable even if the project were to continue to have as a purpose the fostering of more comprehensive development.

Because evaluation is an area of activity in which most PVOs have a need for assistance in improving their systems, the JC might utilize its available evaluation expertise to assist the PVOs to improve their own evaluation methodologies, and to analyze progress reports and other sources of information to develop a summative evaluation to

determine the effectiveness of the collaborative process. The product of such an effort would be a "lessons learned" document. Any excess resources resulting from restructuring the evaluation effort should be used to provide more staff support for the ICA.

(2) Monitoring

To be able to be responsive at all to the requirement for a summative evaluation of the project, field activities must be monitored on a systematic basis. Although some PVO personel see the instrument developed by the JC for project monitoring as being quite complex, it does seem to us to be usable by field personnel. In fact, all six participating PVOs have agreed to use the instrument to provide standardized data for use in a summative evaluation at the end of the project. If there are project sites that do not provide standard data, the JC should work with the relevant PVO to get as near complete project data as possible.

Documentation of project activities and progress is occurring at many places in the field, at PVO headquarters, at the JC and at ICA. There are many valuable documents which chronicle expenditures, activities, and progress (e.g. fiscal records at the JC and ICA and the annexes to the 1985-86 annual report). The project should be complemented for keeping records where the activities occur. However, there is a great need for an easily accessible central documentation system. The JC should accelerate efforts to develop and implement a computer-based project documentation system.

(3) Work Plan

The ICA has developed and follows an annual schedule of activities which it reviews with the Advisory Council. However, the JC has overall project activities projected for only six months. It would seem that a longer term plan of work would enhance project management and increase efficiency in the use of project resources. Therefore, it is recommended that the JC develop a comprehensive work plan on a yearly basis as well.

D. Communications

The project involves many parties--PVC and S&T in A.I.D./W, USAID Missions, six PVO headquarters, 14 PVO field offices, potentially 12 universities and the JC. All have an important interest in the project and a right to be consulted about steps taken in its implementation. The possibilities for misunderstanding and slippage are very great. Constant effort is necessary to make the system work. On balance, the experience has been positive. The representatives of the headquartes of the participating PVOs were uniformally positive about the actions of the JC and of ICA. They also were highly supportive of the Advisory Council as a means of fostering collaboration among the PVOs, providing guidance to the participating organizations and settling competing interests of those organizations. Several representatives stated that if there had been communication problems they were between the headquarters staff and the field activities of each PVO.

Certainly the system of communications among the parties is not without problems. Indeed, preparations for and the scheduling of this evaluation were quite difficult, and evidenced several failures of communication. However, the main problem of communication has been the failure of the system to make known effectively to the field operations what the project intended to accomplish and what assistance it could provide beyond the

technical services and training from ICA. This situation is undoubtedly due in part to other factors which have been discussed above and its correction will require that the parties in fact conclude that they want more of the project that the provision of those services. Nevertheless, the parties should devote more attention and resources to achieving better communication to the field on what is expected and available through the project.

E. Relationship to A.I.D.

The relationships between A.I.D. and the participating PVOs in the field appear to be good. The Mission personnel are familiar with and approving of the activities, and the personal contacts between the A.I.D. and PVO offices appear to be cordial. In both countries visited by the evaluation team the USAID Missions were providing very substantial financial support for the PVO activities in water harvesting/aquaculture. (See Annexes D and E for further details.)

However, in neither country visited by the evaluation team were the PVO activities an integral part of the Mission's development program. In Indonesia the Mission seemed to view the activitiy as aimed at a different level (outreach to individual farmers) than its own intended focus in agriculture (improvement in research capability). It seems to us that, in fact, the activity could be of use to the Mission's focus; and that it would be worthwhile for the Mission to establish closer working relationships with the activity. In Guatemala the Mission participated with CARE in preparing a proposal for Mission funding and saw itself as having influence over CARE's planning. However, there did not seem to be linkages between the activity and the rest of the Mission's program. It also should be noted that neither Mission understood that the project was aimed at development impact beyond aquaculture or that it purported to be able to provide support and resources beyond the technical and training assistance from ICA, but that the Missions were positive in their comments about that assistance.

The relationship between AID/W and the headquarters staff of the participating PVOs and the JC are less close than those in the field. It appears that until fairly recently AID/W did not devote much attention to how the project was being conducted. The PVOs for their part did not seek more involvement by A.I.D., and were happy to let the JC act as a "buffer" between them and A.I.D. The JC appears not to have been entirely clear as to what AID/W expected of it in the way of informal contacts and background information. More important, as noted previousy, there does not seem to be clarity between A.I.D. and the Joint Center as to the importance of two of the three stated purposes of the project. Furthermore, the process for deciding whether to continue funding for the final two years of the five year life of the project appears to have caused a significant feeling of tension on the part of the JC and the PVOs about A.I.D.'s actions and motives.

Should A.I.D. decide to seek modifications to the conduct of the project along the lines suggested in this report the tension between the PVOs and A.I.D. may well increase. Thus, it is important that the parties to this project seek even closer working relations. The A.I.D. staff may have difficulty in finding the time to devote to that effort. If it does, it probably would be better not to try to modify the way the project currently is operating.

V. Summary of Major Recommendations

A. Achievement of Project Purposes

(1) A.I.D., the JC and the participating PVOs should clarify what are the purposes which are to govern the operation of the project.

(2) If the purposes as now expressed in the grant agreement are retained, the JC and the participating PVOs should:

(a) prepare a new set of criteria of eligibility of activities to be supported which will give importance to the non-technical aspects of the field activities and the intention to achieve comprehensive development impact through them; and

(b) consider limiting future assistance under the project to activities already underway which have the most chance of resulting in that more comprehensive development impact.

B. Resource Utilization

(1) The JC should make greater efforts to encourage the PVOs to request and use experts in a variety of fields related to WHAP's objectives and technical resources from member institutions besides ICA. All persons delivering training and TA on behalf of WHAP should make a greater effort to inform field people of the overall WHAP effort, the resources available under it and the roles that other intities have.

(2) The JC and ICA should develop and implement a plan to utilize more fully the talents of Auburn's alumni in delivering TA and training to PVO and host country people in the field.

(3) If funds in excess of currently planned levels become available or if funds are released by the restructuring of project activities, such funds should be used to augment the ICA staff to permit a higher level of assistance to field activities.

(4) In the event that allocation of funds by A.I.D. for years four and five have to be reduced, the amount for the evaluation activity could be reduced by one half to two thirds. If further reductions are required, the Project Support Grant could be eliminated.

C. Evaluation and Monitoring

(1) No further effort should be made to develop, refine or use the instruments designed for the community and household surveys.

(2) The JC should continue to monitor WHAP activities using the monitoring instrument it developed. If there are project sites that do not provide standard data, the JC should work with the PVO concerned to get as nearly complete project data as possible.

(3) The JC should utilize available evaluation expertise to: (i) assist the PVOs to improve their own evaluation procedures as requested; and (ii) analyze progress reports and other sources of information to develop a summative evaluation to determine, to the extent possible, the effectiveness of the collaborative processes used by WHAP.

(4) The JC should prepare a comprehensive plan of work for periods of at least one year.

(5) The JC should accelerate efforts to develop and implement a computer-assisted, project documentation system.

D. Relationships with A.I.D.

(1) PVC should make sure that the A.I.D. Missions in all countries in which WHAP is active are aware of the scope of the project and the types of technical assistance and training which are available under it.

(2) PVC should seek to provide closer monitoring of the project to encourage the JC and the participating PVOs to follow-through on seeking the accomplishment of the purposes of the project once they are clarified. This might include attendance at meetings of the Advisory Council if the PVOs were willing to permit it.

(3) A.I.D. should try to provide funding at at least the levels originally comtemplated for years four and five of the project.

SCOPE OF WORK

ARTICLE I - TITLE

Mid-Term Evaluation of the Water Harvesting/Aquaculture Project (WHAP), 938-0240

ARTICLE II - OBJECTIVE

The objective of providing technical support and training from university-based water harvesting and aquaculture specialists to PVOs to expand or improve their rural development programs is an innovative effort. The major purpose of the mid-term evaluation, therefore, is to assess progress toward stated project goals and purposes as a basis for decisions concerning: a) continued funding of WHAP, and b) changes in the design and implementation of the project which will increase its likelihood of achieving its stated goals and purposes.

The goal and purposes of Water Harvesting/Aquaculture Project (WHAP) are:

1. Project Goal

   The goal of the project is to improve the quality of rural life in selected developing countries through the introduction of improved technology in ways that will balance the local capacity for development with the total community needs and potentials.

2. Project Purpose

   The purpose of the project is threefold. First, it will design and implement a series of nine field projects with approximately 26 sites. These field projects will be directed at moving villages toward self-sufficiency in water for household use, stock watering, garden irrigation, and where appropriate, drinking water. From this new resource, villagers will have the potential to develop fish production for family consumption and marketing.

   The second purpose of the project is to implement and evaluate a process and strategy of development, using water harvesting/aquaculture as a means to do this. Villages with field projects will be evaluated to determine the stage of development that they have attained prior to project implementation, and appropriate field project design will be planned to accelerate development from that point. Results of this process and strategy will be evaluated for future use in development efforts.

The third purpose of the project is to develop a collaborative management methodology involving PVOs and universities. This will also be evaluated.

The principal users of the evaluation findings and recommendations will be the Joint PVO/University Rural Development Center at Western Carolina University and the AID/Washington project managers in the S&T and FVA Bureaus.

ARTICLE III - STATEMENT OF WORK

An evaluation team will focus on the following issues and questions:

a) Technical Assistance to PVOs and Rural Villagers

- What evidence is there that the technical assistance and training provided through WHAP is more accessible and directly useful to the participating PVOs - e.g., is the assistance oriented to the practical needs of PVO field staff and counterparts; are the types of interventions suggested by the technical advisors feasible in light of PVO budgets and technical capabilities; are these interventions adapted or consistent with the social and cultural systems of the client communities with which the PVOs work?

b) Implementation and Evaluation

- What has been the progress to date toward establishing practical evaluation and information systems for WHAP; have the systems been used and how well do they work (e.g., costs, reliability of data); are the systems responsive to the needs and capabilities of those who are supposed to use them; and what alternative approaches/systems might be preferable?

- Are the outputs of these systems necessary and useful in achieving the goals and purposes of the project, and what changes are warranted?

- What evidence is there that the WHAP strategies as applied by the PVOs are likely to benefit the target population; that the benefits from the interventions will be realized equitably across the community (e.g., men and women both contribute to and benefit from the activity); that costs incurred by the villagers (e.g., labor, capital) will be borne equitably, and if negative effects are probable (e.g., increased incidence of illness), what could be done to improve the socio-economic benefits of the activities?

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c) Collaborative Management Methodology

- What progress has been made in establishing mechanisms necessary for collaboration between University staff and PVO field staff and what might be done to improve the performance of this mechanism?

- What are the advantages of providing technical assistance to PVOs through these mechanisms as compared to alternative strategies for providing assistance?

- To what extent have USAID missions and host country officials participated in or shown interest in the activities of WHAP; is more cooperative necessary or desirable, and if so, how might this be accomplished?

- Given progress and costs to date, how likely is it that these mechanisms for providing this type of collaborative assistance will be sustainable upon completion of WHAP, and what can be done to increase the probability of sustainability?

4. Methods and procedures

The evaluation team will review all project agreements, reports and related documents to gain an understanding of the objective and current status, including levels of inputs and outputs, of WHAP. The evaluation team will spend up to three work days at the Joint Center reviewing pertinent information and discussing the project with WHAP staff. Approximately two work days will be required to meet with PVO staff at appropriate sites. Up to two work days will be spent for a visit to Auburn. An additional work day will be spent in Washington, D.C. reviewing the evaluation component of WHAP.

The second phase of the evaluation will consist of field interviews with PVO field staff working at project sites, host country personnel who have received training or support from WHAP advisors, villagers who have participated in the water harvesting and aquaculture activities, and appropriate AID country mission staff. Information on the project will be obtained from village leaders and selected residents (men and women) through informal interviews. Criteria in country selection include the following: at least two countries will be included with at least one country having no established tradition of water harvesting and aquaculture; countries containing multiple project sites would be preferable. The Joint Center, in consultation with the PVOs and AID project managers, will select the countries and sites.

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ARTICLE IV - REPORTS

The draft report consisting of evaluation findings (i.e., evidence supporting the answers to the evaluation issues and questions), and conclusions based on these findings, and recommendations about continued funding and/or changes to the design and implementation of the project will be submitted for review by AID and the Joint Center within six weeks following the completion of the field work. **The consultants will be paid five working days for this effort.** AID and the Joint Center will prepare their responses in writing within 10 work days of receiving the draft report or forfeit their opportunity to comment. The evaluation team will revise the draft in response to these comments as the team members deem necessary and submit a final evaluation report **within three work days of receiving comments on the draft. The contractor will provide 12 finished and bound copies of the report within five workdays.** The final report will include as appendices a scope of work, a list of documents reviewed, a list of individuals interviewed (including villagers), and a brief description of the evaluation methods and procedures followed. AID project managers will be responsible for completing and submitting the AID Evaluation Summary to the appropriate AID/Washington offices with copies of the evaluation report.

Annex B

AUBURN UNIVERSITY'S INVOLVEMENT IN WHAP

Because of the continuing interest of faculty leaders at Auburn University, its International Center for Aquaculture (ICA) joined with the Center for the Improvement of Mountain living at Western Carolina University (WCU) and several PVOs to develop and present to A.I.D. a proposal to form a Joint University/PVO Center (JC) at Western Carolina University to provide TA, training and assistance on water harvesting and aquaculture to PVOs in developing countries. The proposal envisaged the JC as the expediting entity and ICA as the chief provider of technical support with assistance from other university members of the JC. The project as approved is known as the Water Harvesting/Aquaculture Project (WHAP).

A. Department of Fisheries and Allied Aquaculture and the International Center for Aquaculture

The Department of Fisheries and Allied Aquaculture and International Center for Aquaculture at Auburn, University provide most of the technical support to WHAP. Assistance provided includes consultation visits to WHAP sites in developing countries, responses to requests for technical information (TA) and training programs.

The Department of Fisheries and Allied Aquacultures and the International Center for Aquaculture at Auburn consist of 30 professors and six research associates. The Department serves teaching, research, and extension requirements of the extensive aquaculture industry in Alabama. It has both an undergraduate and graduate program in fisheries and aquaculture. It awards B.S., M.S. and Ph.D. degrees. Currently about 100 graduate students are

enrolled. More than one half of them are from developing countries, and several are from developed countries other than the U.S. Two PVOs (the Near East Foundation and HI) recently have hired Auburn graduates for their in-country staffs. Furthermore, the Department has a large cadre of former students who are working in fisheries and aquaculture in developing countries. These former students form a valuable and knowledgeable resource in many developing countries.

Many of the Department's professors are associated with ICA which has developed a reputation for providing outstanding technical assistance and training for developing countries. ICA has been the principle provider of TA in aquaculture for A.I.D. for many years. ICA holds a continuing Cooperative Agreement with AID/S&T/AGR to provide training and TA for developing countries. Thus, it is logical that ICA should be the chief provider of technical support on aquaculture for WHAP.

Auburn University maintains a firm commitment to serving international aquaculture; and its President, Dr. James Martin, expressed a strong commitment to continued service to international aquaculture including teaching, research and technical assistance. State appropriated funds are used partially to support ICA. Since the Department has programs in teaching, research, extension, and international aquaculture and draws funds from state appropriations as well as grants and contracts, it is able to integrate activities using multiple funding sources and thereby effect a much more diverse and effective program then would be possible with a smaller staff and fewer funding sources. This results in an individual grant or contract such as WHAP getting a relatively high return on investment in terms of both quality and quantity of output.

B. ICA Effort

Using the funds shown in Attachment 1, ICA has provided TA, training and information to PVOs in 35 different developing countries as requested. During 24 months (January 1985 - December 1986) the ICA provided 515 man days of TA to PVOs in 26 developing countries. (See Attachment 2 for a list of the short-term work). Twenty seven requests for TA in 22 countries have been received in 1987. ICA is responding to these requests. During 1985-1986 ICA responded to 46 requests for information. In addition to the fisheries and aquaculture specialists at Auburn, technical specialists in Economic, Engineering, and Horticulture (home gardening on occassion) were utilized to provide TA. To date the ICA has attempted to respond to all requests by PVOs for TA. Most requests come from countries where Auburn graduates work. Threfore, they are considered legitimate and worthy of response. It is likely that in the future, requests for TA and training will exceed the capacity of the ICA staff. Procedures must be developed to meet the needs without the ICA staff having to respond directly to each request.

Training activities conducted by ICA under WHAP include: individual and small group consultations and workshops, short courses given for PVO staff and residents in developing countries, and longer term training at Auburn. In addition, under its program otherwise supported, trainees at Auburn receive four and one-half months of training during which they actually produce and market a crop of fish doing all of the planning and work required. During the period January 1985 - December 1986, 17 countries representing all three A.I.D. regions sent trainees to ICA at Auburn.

C. Visits and Activities of ICA Staff

During the team's visit of January 15 and 16, 1987 individual trip reports and staff reports concerning TA and training efforts of

ICA were reviewed. All reports were well written and appeared to provide useful information.

In addition the following persons were interviewed:

Dr. James Martin, President, Auburn University
Dr. M.E. Marvel, Director, International Programs
Dr. E.W. Shell, Professor and Head, Department of Fisheries and Allied Aquacultures and International Center for Aquaculture
Dr. B.L. Duncan, Associate Professor, International Fisheries
Dr. J.H. Grover, Professor, Aquatic Ecology
Dr. L.L. Lovshin, Professor, Aquaculture
Dr. D.D. Moss, Professor, International Fisheries
Dr. R.D. Phelps, Associate Professor, International Fisheries
Dr. H.R. Schmittou, Professor, Aquaculture
Mr. Alex Bocek, Research Associate, Aquaculture

Only Dr. Duncan and Mr. Bocek receive part of their regular salary from WHAP funds. All persons interviewed, except the first two listed above, have traveled to developing countries and provided TA on behalf of WHAP. WHAP paid offsetting salary costs and travel and subsistence for the time worked.

In addition to a group meeting with the ICA staff, private discussions were held with several staff members who have participated in TA for WHAP. Drs. Shell and Moss gave assurance that Auburn will continue, if funds are available, to participate enthusiastically in WHAP; and that Auburn desires a long-term relationship with PVOs. They think that assistance provided to PVOs by ICA is needed and effectively used.

Dr. Duncan, project leader for ICA, is a highly dedicated and capable project leader who is providing outstanding technical and administrative support for WHAP. The project leader at the Joint Center (Ms. Nancy Blanks) and Dr. Duncan have an effective working

relationship. No major problems are apparent. Dr. Duncan has an intimate knowledge of the PVO aquaculture activities in developing countries because of his frequent field visits. The fact that he is called on so frequently for TA indicates that he is both respected and needed by the PVOs in developing countries where aquaculture work is underway. Since requests for TA frequently come directly to Auburn it is essential that the ICA and the Joint Center have free and open communications so that the Joint Center can be effective in drawing technical resources from other member universities.

Dr. John Grover, Professor of Aquatic Ecology, described recent trips to provide TA in Bangladesh and Sri Lanka. In Bangladesh CARE had requested examination of a proposal for a new effort. After on-sight review, Dr. Grover advised against the proposal because it was not technically feasible and field staff was deamed inadequate to carry it out. Save the Children in Sri Lanka had requested a review of one on-going activity and one proposed activity. The on-going activity (a fish hatchery) was not as productive as it should be. Dr. Grover gave advice on how to correct the problems. He will follow up as needed. The proposed new activity was judged not feasible because of inadequate water supply.

Dr. Ronald Phelps, Associate Professor of International Fisheries, and the ICA staff specialists for Latin America, described activities in Panama, Guatemala, Bolivia, Honduras, Equador and Peru. He thinks that WHAP has been an effective instrument to sensitize PVOs and host country leaders to the potential of water harvesting and aquaculture. ICA has provided TA to CARE and CRS as requested in countries where they are active. Emphasis has been placed on community development and training.

Dr. L.L. Lovshin, Professor of Aquaculture, was requested by CRS in Egypt to review the CRS/Alexandria Food Authority joint efforts to increase fish and duck production using large ponds and canals.

This effort to increase food production on a large scale requires expertise that CRS does not have at this time. Dr. Lovshin will continue to work with CRS to increase staff capabilities while providing technical information on an on-going basis to those who have responsibility for the project in Egypt.

D. Conclusion

It is evident that ICA is providing a needed service for the PVOs. Because the level of competence of PVO and host country staffs is constantly improving, it is important that the PVOs and Auburn decide where and what kinds of TA and training are needed in the future. The TA should be tailored to meet local needs. The breadth, competence and versatility of the ICA staff together with the institutional commitment apparent at Auburn seem to indicate that a continuing relationship between Auburn and the PVOs is desirable.

Attatchment 1

Funding and expenditures for WHAP activities by ICA from October 1984 through December 31, 1986:

U.S. $

	BUDGET	EXPENDITURES AS OF 12/31/86	BALANCE AVAILABLE
SALARIES AND WAGES	111,593.00		
Faculty		86,539.65	
Student Wages		856.20	24,197.15
Benefits	24,581.00	16,726.57	7,854.43
Other op exp	71,940.00		
Domestic travel		3,654.29	
Foreign travel		49,622.49	
Other direct costs		1,936.89	16,726.33
INDIRECT COSTS	60,562.00	45,294.34	15,267.66
TOTAL	268,676.00	204,630.43	64,045.57

Attachment 2

SHORT-TERM WORK CARRIED OUT BY STAFF OF THE INTERNATIONAL CENTER FOR AQUACULTURE FOR WHAP

Date	Country	Staff	Project	Days
2/14/85-2/22/85	Peru	R.P. Phelps	Joint-PVO	08
2/21/85-3/1/85	Panama	R.O. Smitherman	Joint-PVO	09
2/21/85-3/1/85	Panama	B.L. Duncan	Joint-PVO	09
2/22/85-3/1/85	Bolivia	R.P. Phelps	Joint-PVO	08
3/2/85-3/10/85	Guatemala	R.O. Smitherman	Joint-PVO	08
3/2/85-3/10/85	Guatemala	B.L. Duncan	Joint-PVO	08
4/8/85-5/4/85	Indonesia	B.L. Duncan	Joint-PVO	28
4/22/85-5/4/85	Indonesia	T.L. Popma	Joint-PVO	13
5/4/85-5/8/85	Thailand	B.L. Duncan	Joint-PVO	04
5/4/85-5/17/85	New Guinea	T.L. Popma	Joint-PVO	14
6/16/85-6/29/85	Dominican Republic	R.P. Phelps	Joint-PVO	14
6/3/85-6/15/85	Dominican Republic	R.P. Phelps	Joint-PVO	13
7/8/85-7/22/85	Rwanda	B.L. Duncan	Joint-PVO	14
7/8/85-7/22/85	Rwanda	M.C. Cremer	Joint-PVO	14
7/15/85-8/3/85	Bolivia	R.P. Phelps	Joint-PVO	20
7/1/85-7/13/85	Rwanda	M.C. Cremer	Joint-PVO	13
7/14/85-7/27/85	Egypt	M.C. Cremer	Joint-PVO	14
7/14/85-7/17/85	Bolivia	R.P. Phelps	Joint-PVO	14
7/27/85-8/5/85	Peru	R.P. Phelps	Joint-PVO	10
7/1/85-7/12/85	Rwanda	B.L. Duncan	Joint-PVO	12
7/13/85-7/19/85	Tanzania	B.L. Duncan	Joint-PVO	07
11/19/85-12/7/85	Nepal	J.R. Snow	Joint-PVO	19
1/6/86-1/19/86	Indonesia	B.L. Duncan	Joint-PVO	13
1/20/86-1/24/86	Thailand	B.L. Duncan	Joint-PVO	04
1/21/86-2/2/86	Bolivia	R.P. Phelps	Joint-PVO	13

1/25/86-1/31/86	Sri Lanka	B.L. Duncan	Joint-PVO	06
3/4/86-3/18/86	Cameroon	B.L. Duncan	Joint-PVO	14
3/4/86-3/18/86	Cameroon	F.H. Meriwether	Joint-PVO	14
3/19/86	Kenya	B.L. Duncan	Joint-PVO	01
3/19/86	Kenya	F.H. Meriwether	Joint-PVO	01
3/20/86-3/25/86	Sudan	B.L. Duncan	Joint-PVO	05
3/20/86-3/25/86	Sudan	F.H. Meriwether	Joint-PVO	05
5/12/86-5/28/86	Senegal	B.L. Duncan	Joint-PVO	17
5/26/86-6/3/86	Bolivia	R.P. Phelps	Joint-PVO	09
6/15/86-6/28/86	Kenya & Zimbabwe	R.P. Phelps	Joint-PVO	14
7/1/86-8/2/86	Uganda, Kenya, Congo	R.E. Brummett	Joint-PVO	33
7/27/86-8/2/86	Egypt	L.L. Lovshin	Joint-PVO	06
8/11/86-8/25/86	Somalia	K.H. Yoo	Joint-PVO	14
8/15/86-8/25/86	Bangladesh	J.H. Grover	Joint-PVO	11
8/25/86-9/13/86	Sri Lanka	J.H. Grover	Joint-PVO	20
9/1/86-9/14/86	Indonesia	B.L. Duncan	Joint-PVO	14
9/14/86-9/19/86	Thailand	B.L. Duncan	Joint-PVO	07
11/19/86-11/29/86	Guatemala	L.U. Hatch	Cooperative Agreement	11
11/20/86-11/29/86	Guatemala	R.P. Phelps	Joint-PVO	09
12/02/86	Ecuador	T.J. Popma	Joint-PVO	01

Annex C

Joint PVO/University Rural Development Center

The review team held discussions with the Joint Center (JC) staff and officials of Western Carolina University (WCU), and reviewed project documents at the JC headquarters on February 4,5 and 6, 1987.

The Joint Center

The concept of the JC began at a meeting during the spring of 1978. Representatives of Western Carolina University (WCU) and of ten private voluntary organizations (PVOs) met to discuss the thesis that "there is some commonality in social and economic development problems of the rural poor in Appalachia and the developing world, and that the proper kind of mechanism for an interface between concerned universities and PVOs would be extremely useful". The Joint PVO/University Rural Development Center evolved from this thesis. It was founded in 1979 with the purpose of encouraging and institutionalizing collaboration between PVOs and universities on the premise that together both communities would achieve more in international rural development than either could singly.

Specific assumptions underlying its creation were:

- Poverty problems in rural Appalachia have a great deal in common with third and fourth world rural development issues. Understanding of these problems would directly benefit PVOs and universities.

- A number of PVOs as well as universities have a commitment in the rural development field. Both have a great deal to contribute to and learn from each other.

- A mechanism is needed to bring the two parties together.

- Interested institutions in this joint undertaking should share information, and apply it to their own situations.

- Programs should proceed on a peer relationship basis, thereby creating a true partnership.

- Specific programs of mutual benefit should be established, including information sharing, applied research, training and publications.

- New knowledge would be developed to assist the rural poor.

The JC includes twelve universities and seventeen PVOs. (See Attachment 1.) An independent, nonprofit organization, it is staffed by the International Division of WCU's Center for Improving Mountain Living (CIML). Its present personnel are:

Executive Secretary and Program Director

Communications Specialist

Rural Development Specialist (1/2)

Administrative Assistant (1/2)

The half-time Rural Development Specialist is project-funded; all others are base staff.

Policy guidance and overall governance of the JC is provided by a ten member board which is self perpetuating. Board members were selected for individual competence, not as institutional representatives. The Board meets twice a year. It is assisted by designated representatives, one from each member institution. The institutional

representatives usually meet with the Board in a non-voting capacity. Institutional membership is limited to those universities that have capability and interest in participating with PVOs in development activities related to water harvesting/aquaculture. Each member institution pays an annual fee to the JC. The amount is established by the Board, as are the criteria for institutional participation.

The organizational goal of the JC is to achieve sufficient financial stability over a five-year period to permit innovative program initiatives, effective project management and coordination, and flexible responses to the mutual needs and interests involved in PVO/university collaboration. The strategy for attaining this goal is to design projects to serve as building blocks-each with adequate overhead included to allow for institution building.

The current projects of the JC fall into four categories: (1) core interventions; (2) member specific activities; (3) professional development; and (4) information services. Core intervention projects are those which promote wider, integrated activity and create multiple opportunities for development. WHAP is considered a core intervention activity.

WHAP

Participating in the WHAP project are Auburn University (ICA), CARE, Church World Service (CWS), Catholic Relief Services (CRS), Heifer Project International (HI), Lutheran World Relief (LWR), Save the Children (STC) and the Joint Center (JC). The goal of the project is to provide new water resources to rural villages in the developing world and to encourage and support development efforts which grow from this intervention. The approach used in WHAP is to provide training and TA in water harvesting, aquaculture and integrated agricultural activities to PVO development efforts. ICA provides the technical assistance and training in water harvesting and aquaculture, while all field projects are funded by the PVOs themselves. The JC is responsible for management of the overall project, fiscal matters,

implementation of all sub-contracts and preparation of all project reports. It operates under the overall supervision and with the administrative support of WCU.

Advisory Council

An Advisory Council (AC) consisting of representatives of each participating PVO, the JC and Auburn University meets semi-annually to determine the specific activities to be undertaken. Decisions relative to training and traininig locations, the TA to be provided and the allocation of WHAP project support funds are made by the AC. The JC coordinates the activities of the AC.

Each participating organization has assigned a staff member to actively participate without expense to the project except for travel. These staff members are responsible for providing direction and decisions for the project. The AC members also act as an information channel to their projects and activities in developing countries. For example, when regional training is to be carried out the council member sees that field staff are fully informed of the training and encouraged and supported in their participation. If technical assistance is needed by a field project of a PVO or counterpart agency, the staff member receives the request and sends the request on to the JC for scheduling and logistical support. Usually the JC turns to the ICA to provide the TA. (Other member universities could be called on by JC, but to date most requests have been made to ICA.) It is standard operating procedure that when a PVO requests and is going to receive TA in the field all other PVO project participants in the region are notified by the JC so that they may also schedule a TA visit by the expert in the region if needed.

Coordination

The staff of the JC devotes major attention to liaison and facilitation activities including such things as:

- facilitating and taking part in training activities in the U.S.;

- facilitating and taking part in training activities overseas;

- explaining and interpreting needs of one project participant to another.

The entire staff of the JC devotes some effort to the activities listed above. However, they are the primary responsibility of the Project Director. Her skills as a liaison person and expeditor are highly developed, and this essential function is being carried out effectively. A complex project such as WHAP requires constant and vigilant efforts to ensure that all the parts work together harmoniously and cooperatively toward the common goals.

Documentation and Information

The JC's documentation and information activities include:

- providing documentation, analysis, information and referral services to the network of PVO and university participants and other international organizations;

- ensuring that the flow of day-to-day communications and information exchange between PVOs, Auburn University, AID/Washington and the JC runs smoothly;

- providing staff support for the WHAP Advisory Council;

- processing and maintaining monitoring and other project related information;

- maintaining the Volunteer Consultant Pool and assisting in locating and placing specialized technical assistance personnel requested by the PVOs; and

- publishing and distributing the quarterly newsletter, "Ponderings".

These activities at the JC are the primary responsibilities of the Communications Specialist. The Project Director also devotes considerable effort to communications. The JC also is responsible for submitting periodic and annual reports to A.I.D. Reports have been rendered in a satisfactorily and timely manner.

Monitoring and Evaluation

The project authorizing documents require major efforts by WHAP in monitoring and evaluation. These documents require continuing efforts to monitor and evaluate the methodology used and the effectiveness of the activities being supported. The monitoring and evaluation responsibilities of the JC require it to:

- develop and evaluate tools to assess water harvesting/aquaculture as a catalizing core intervention in rural development and the effectiveness of collaborative management methodology involving PVOs and universities;

- develop baseline surveys and assist in their implementation;

- assist in developing field monitoring methodologies;

- analyze survey data and monitoring reports to assess impact of WHAP; and

- disseminate project analysis and evaluation reports.

Realizing that the WHAP is somewhat unique in that it's success is dependent on collaboration between PVOs and universities to an extent not heretofore tried, the original project documents require major efforts to monitor and evaluate the program as it progresses. The aim is to learn from experiences, to develop methods the PVOs can use in

monitoring and evaluating development activities and to provide information required for A.I.D.'s use in evaluating the overall activity.

The JC has primary responsibility for monitoring and evaluation and has utilized a one-half time person plus some consultant assistance to develop documents to be used for:

- baseline surveys to determine the status of communities prior to and after WHAP intervention;

- household surveys to develop baseline information about family life prior to and after WHAP intervention; and

- monitoring on going (six month) progress of projects.

The instruments for monitoring progress in field projects have just been completed, and are to be utilized in 1987. There has been great controversy among the WHAP participants over the form and content of the survey instruments. Some participating PVOs feel that the proposed survey instruments are too complex, and insist on using their existing methods. Four PVOs have declined to use the baseline survey instruments developed by the JC. However, all participating PVOs have agreed to participate in data gathering. Costs and known returns for WHAP monitoring and evaluation efforts to date indicate a relatively high investment with little to show in returns.

Budget

Western Carolina University (WCU) is the holder of the A.I.D. grant, and has fiscal responsibility for the project. Actual implementation and accountability have been delegated to the JC. The JC currently receives funds from four sources as shown below in Table 1:

TABLE 1

JOINT PVO/UNIVERSITY RURAL DEVELOPMENT CENTER

INCOME SOURCES

1986 - 1987

	FUNDS AVAILABLE	PROJECTED EXPENDITURES	BALANCE
* University Funds	$ 14,642	$ 14,642	$ 0
Memberships	9,044	5,000	4,044
Carnegie Foundation	24,651	24,651	0
* Water Harvesting	338,867	338,867	0
TOTAL	$387,204	$383,160	$ 4,044

* University support also includes housing for the JC, clerical support and budget and fiscal assistance.

The WHAP's three year budget is shown in Table 2 below:

TABLE 2

WATER HARVESTING/AQUACULTURE PROJECT

THREE YEAR BUDGET ($)

COST ELEMENT	84-85 YEAR I	85-86 YEAR II	86-87 YEAR III	TOTAL
ADMIN. DIRECTION & SUPPORT	54,349.00	89,905.00	71,652.00	215,906.00
TECHNICAL ASSISTANCE	.00	18,000.00	10,500.00	28,500.00
TRAINING 5,294.00	28,000.00	15,050.00	48,344.00	
EVALUATION	15,269.00	29,376.00	36,485.00	81,130.00
DOCUMENTATION & INFORMATION	9,334.00	19,251.00	16,283.00	44,868.00
SUBCONTRACT (for ICA)	72,316.00	96,360.00	100,000.00	268,676.00
PROJECT SUPPORT	.00	50,000.00	50,000.00	100,000.00
* INDIRECT COSTS	18,764.00	42,537.00	38,897.00	100,198.00
TOTAL	175,326.00	373,429.00	338,867.00	887,622.00

* Established by HHS

The allocation of funds under the subcontract at Auburn is shown in Table 3 below:

TABLE 3

ICA THREE YEAR BUDGET

	84-85	85-86	86-87	Total
Salaries	$33,642.00	$37,905.00	$40,046.00	$111,593.00
Fringe Benefits	7,105.00	9,476.00	8,000.00	24,581.00
Travel and Per Diem	15,761.00	10,322.00	26,000.00	52,083.00
Other Direct Costs	.00	17,578.00	2,279.00	19,857.00
Total Direct Costs	56,508.00	75,281.00	76,325.00	208,114.00
Indirect Costs	15,823.00	21,079.00	23,660.00	60,562.00
TOTALS	$72,331.00	$96,360.00	$99,985.00	$268,676.00

The Project Support item in Table 2 merits special comment. This fund is used to provide small grants to field projects that require funds to start or to maintain a worthwhile activity. These funds are granted to field activities based on applications from the field. The JC is responsible for:

- informing participating PVO headquarters and field staff of the Project Support Fund (PSF), the criteria for use of the fund and the method to apply for funds;

- reviewing and making recommendations to the WHAP Advisory Council for funding of project proposals received from the field;

- monitoring the use of the PSF funds; and

- providing assistance to PSF grant holders as required.

This PSF fund seems to be useful in broadening the base of activities and permitting worthwhile activities that could not otherwise be undertaken. The JC is discharging it's responsibility with the PSF satisfactorily.

Collaborative Management

The JC was essential during the formative stages of WHAP. It expedited communications and assured that all of the components for an effective WHAP were in place and working harmoniously. The JC interacted regularly with the PVOs, Auburn University, A.I.D. and field locations participating in the project. It took the lead in organizing and conducting regional training courses ensuring that key developing-country technical and decision making persons attended and learned about the potentials of water harvesting/aquaculture.

In addition to the responsibilities discussed above, the JC is charged with working with the PVOs and subcontractors to develop programs

consistent with and contributory to the goals and purposes of WHAP. This responsibility is discharged through involvement and interaction with PVO headquarters, ICA and program activities in developing countries. The staff of the JC is very knowledgeable about the needs, desires and capabilities of each collaborator.

The JC also is active in the development of long range program projections and catalyzing activities which could spin off from the WHAP effort. (See Annex H to the main report for details.)

The concept of the JC as a nucleus for effecting collaboration between the PVOs and U.S. universities is unique. The fact that the JC is not, in and of itself, a technical resource seems to permit it to act as an honest broker to involve other universities in providing TA to the PVOs. The ICA has utilized experts from four other universities in addition to the Auburn staff for training and TA in developing countries. In practice, however, the JC has interacted primarily with Auburn University to secure technical assistance for the PVOs. Auburn's ICA holds a subcontract with the JC to provide TA and training under sponsorship of WHAP.

During the two and one-half years since the project began technicians at Auburn and representatives of the six participating PVOs have learned to work together and are doing so harmoniously. Therefore, as far as Auburn and the six currently participating PVOs are concerned, the JC probably is not essential for continuing to capture water and use it in a variety of ways only one of which is fish production. Henceforth, there will be an increasing need for technical expertise for which ICA does not have exclusive capability. Thus, the JC will need to secure participation of experts in a vareity of fields from other member universities to effect development of "integrated" projects in the field. By involving other university resources besides Auburn, the JC would strengthen the technical support base available to the PVOs.

Attachment 1

JOINT PVO/UNIVERSITY RURAL DEVELOPMENT CENTER

Institutional Members

November 1986

Universities	Private Voluntary Organizations
Auburn University	CARE
Center for Health Services, Research and Development (East Carolina University)	Catholic Relief Services
	Christian Children's Fund
	Church World Service
Center for Rural Women (Pennsylvania State University)	CODEL
	Heifer Project International
Drexel University	Helen Keller International, Inc.
Mississippi State University	Lutheran World Relief
North Caroina A&T State University	Meals for Millions
University of Arizona	Opportunities Industrialization Centers International, Inc.
University of Georgia	
University of Maryland	Pan American Deveopment Foundation
Virginia Polytechnic Institute and State University	Phelps Stokes Fund
	Project Concern International
Virginia State University	Save the Children Federation
Western Carolina University	Technoserve, Inc.
	Volunteers in Technical Assistance
	Winrock International Institute for Agricultural Development

Guatemala-CARE

A. Summary

The evaluation team visited Guatemala during the period Febrary 8 until February 14. During that time it spoke with representaties of the USAID Mission, the U.S. Peace Corps, the Office of CARE in Guatemala and DIGESEPE, and the Government of Guatemala's entity with which CARE works. During that time the team visited integrated fish ponds in three separate sites and one fingerling production center being run by the Guatemalan Government. The purpose of the visit was to observe an example of activities being supported by the WHAP project and to ascertain how that support was viewed by the people involved in the activities and what impact that support appeared to be having. The purpose was not to evaluate the conduct of the CARE activity or to come to firm conclusions about the probable outcome of that activity, but rather to get a sense of whether they were likely to further the project's purposes.

The major conclusions reached by the review team are:

1. CARE and the USAID Mission are positive about the training and technical assistance which were provided by Auburn University's International Center for Aquaculture (ICA) under the WHAP, and would like to receive further assistance from it in the future.

2. CARE and the USAID Mission were not aware that WHAP could provide assistance or training apart from that involved in the technical aspects of aquaculture addressed by the ICA and in the effort to achieve better monitoring and evaluation. The project probably would benefit from assistance which WHAP purports to be able to provide-namely, in livestock and agriculture production techniques, planning for the use of credit, strengthening of producer associations, training of extension agents and economic analysis.

3. The CARE Family Fish Pond Extension Project in Guatemala which ran through 1986 was the result of a merger of previous activities by the Peace Corp and funding from CARE most of which came from the USAID Mission. Both CARE and the Peace Corp themselves were major participants in that project. Neither considered the project to be the result of WHAP's efforts or that activities under WHAP had had significat influence on the purposes or structure of the project. However, ICA had encouraged the use of integrated fish ponds.

4. The current CARE project--Integrated Aquaculture Extension--is being funded by the USAID Mission. It builds on the Family Fish Pond Extension Project; continues to work with a Government of Guatemala counterpart agency; and aims at improving that agency's operations so that it can take over the effort at the completion of the project in 1989. CARE does not aim for a self-sustaining effort, but seeks to improve the operation of the fish ponds built under the previous project. CARE thinks that ICA can help it with technical advise and periodic evaluation of its conduct.

5. The CARE project does not see itself (nor is it viewed by the USAID Mission) as part of a comprehensive development effort or being aimed at improving the harvesting and use of water resources for multiple purposes.

6. The CARE project is being funded at a level which would permit it to obtain the services of WHAP on a cost reimburseable basis.

B. Nature and Development of Program

In 1979 the Govenment of Guatemala wanted to increase its attention to aquaculture and approached the U.S. Peace Corps in Guatemala for assistance. Using a few volunteers in country who happened to have background in aquaculture and some additional volunteers requested for

this purpose, the Peace Corp analyzed what was feasible to be done. However, when the results of that analysis were available the Government of Guatemala did not have the financial resources to put them into action. The Peace Corp therefore turned to the Penny Foundation for financial support. The program, which was implemented for about three years, was based on the use of an experiment station and rural promoters working out of it. When the political violence enveloped the area in which the program was operating the Peace Corp Volunteers had to be withdrawm, and the program collapsed.

When the local conditions again permitted undertaking a program the Peace Corp approached CARE/Guatemala for financial support. USAID/Guatemala agreed to provide support to CARE for that purpose, and the program was renewed in 1983. The main difference from the previous program supported by the Penny Foundation was that the Government of Guatemala also was envolved and the program consciously sought to train and support the rural promoters of the government so that they could replace the Peace Corp Volunteers as the latter completed their tours with the program.

During the course of 1983 through 1986 the program achieved a coverage of 26 communities having 565 fish ponds involving 1059 families. The program was active in widely dispersed areas of east-central and central Guatemala. During the early years the program was content to foster the construction of as many family-managed ponds as possible. It did not put much emphasis on technifying production or supporting any collateral activities. Then in 1985 the CARE person in charge of the program attended a WHAP training program in Panama. While there she established contact with representatives of ICA, and became aware of the possibility of integrating animal raising and fish production. ICA was invited to send representatives to Guatemala to review CARE's program with the idea of making suggestions toward introducing the integrated approach. The assistance began that same year, and steps to carryout the recommendations were undertaken throughout 1986.

CARE/Guatemala with the assistance of USAID/Guatemala prepared a new project--the Integrated Aquaculture Extension Project--for the years 1987-1989 to carryout this effort. The project will put emphasis on improving the utilization of existing fish ponds, fostering the integrated approach, preparing government personnel to take over the program introducing the use of credit rather than donations for the participating farmers, and fostering producer organizations to support the aquaculture activities. USAID/Guatemala has agreed to fund the project. The Government of Guatemala will continue its support as well. This consists of providing fingerlings, paying the personnel of the experimental stations and the 27 rural promoters and providing gasoline and maintenance for the vehicles used by the promoters and the 24 Peace Corp Vounteers. To help in carrying out this more complicated and diversified program CARE has added a person to its staff who has professional experience in aquaculture.

C. CARE's Use of WHAP Resources

CARE/Guatemala was high in its praise of the assistance which it had received from ICA. That assistance has consisted of the regional training in Panama which was attended by a CARE representative, visits by experts to provide advice on the program, two evaluations of the program being carried out by CARE (one of which was used to justify the new program being support by USAID/Guatemala), and advice on modifying the evaluation and monitoring systems to be followed by CARE.

1. Technical Assistance

ICA has provided 35 days of expert assistance to CARE/Guatemala during the course of 1985 and 1986. The assistance was delivered by a team of two experts on two separate trips. The teams produced the evaluation reports described below. In the process they visited the sites of many ponds and gave advice as they went. All who came into contact with them were favorably impressed.

The technical assistance did not cover areas other than the techniques of production and suggestions for categories of data collection for evaluation. The experts did not seek to orient CARE and the USAID Mission on the availability of assistance under WHAP from entities other than the ICA although their reports pointed out weaknesses in or at least needs for greater attention to, aspects of the program broader than problems of production techniques.

2. Training

CARE/Guatemala has a staff person whose responsibility is to facilitate training and extension of advanced technology in fish production. He is a qualified aquaculture specialist who attended the WHAP regional training in Panama, as did the overall Project Director. The Associate Project Director is a native Guatamelan and an Auburn graduate in Fisheries/Aquaculture. The team was told of plans for a series of one week regional short courses which were to begin the week following the team's visit. Persons expected to attend the training are DIGESEPE Fish Promotions, Aquaculture Extension specialists, Peace Corps volunteers, and others who have supervisory responsibility for water harvesting/aquaculture activities. Although the team did not observe the training, it was given the course outline which appeared adequate and appropriate including limited considerations of economics and marketing. Actual extension to farmers of the information presented at the series of training sessions is the responsibility of those attending the training. CARE/Guatemala does not intend to undertake direct extension activities. That function is left to the government's extension organization.

CARE/Guatemala has not sought assistance from WHAP in preparing or conducting its training. The only support for training from WHAP has been the regional training referred to above.

3. Evaluations

Four experts from ICA have reviewed the CARE project. Two technical reports have been prepared. They are:

(a) Review of CARE/GOG/Peace Corps/U.S.A.I.D., Family Fish Pond project in Guatemala, R.O. Smitherman and B.L. Duncan, March 1985.

(b) Evaluation of CARE Family Fish Pond Extension Project in Guatemala, Ronald Phelps and Upton Harch, November 1986.

The reviewers traveled extensively in Guatemala visiting farmer's fish ponds and Guatemalan Fish Extension Stations which are used to demonstrate and extend fish production information. Both reviews largely addessed technical issues. The following summary of the recommendations and CARE's response to them indicated that, in general, CARE is accepting and responding to them.

Recommendations	CARE's Response to Date
That marketing data forms developed by CARE/Peace Corps be used	Forms are being used by the PCVs
That the PCVs who are to complete the marketing records be trained by an Economist from the Joint Center	Not done to date
That a SECID representative be asked to assist in social and nutritional impact studies	Not done to date

That an Economist from the Joint Center be used to assist in collection and analysis of economic and social impact data.	Not done to date
That fish production promoters be trained and retained in communities as Extension Aquaculture Specialists	Working toward this
That government fish stations be used to evaluate and demonstrate integrated aquaculture systems	Plans are under way
That fish station managers share experiences with PCVs, promoters and farmers	Being done
That DIGESEPE technicians, PCVs and promoters be trained at fish stations	Some already done, more is is planned
That funds be used only for ponds larger than 200 sq. m.	CARE is generally following this policy, but some ongoing ponds are smaller
That regular (six month) and partial (four month) harvests be standard procedure	This is generally followed
That red tilapia not be used	Not being used
That Koi strain of carp not be used carp	Some ponds still have Doi

IV

That improved data on stocking rates and feeding systems for various	Data are begin gathered and will be analyzed with locations be sought ICA's assistance
That the stocking rate of carp be reduced	Being done
That PCVs use the following data collection categories:	Data collection forms have been developed and are being used

- Fish pond input
- Fish pond output
- General pond description
- Pond production-monthly
- Animal input/output-monthly

In addition to the reports, ICA personnel have made some recommendations concerning the way in which CARE is gathering data for monitoring under the WHAP, and the Joint Center sent CARE the instruments developed for use in evaluation and monitoring of activities supported by WHAP. CARE planned to have one of its staff members go to ICA for further training in data collection and management, but had not had a chance to review the proposed evaluation and monitoring instruments before the team left the country.

D. Field Visits

1. Fish Production and Extension Station

The team visited a DIGESEPE Fish Production and Extension Station at LaFraqua in Zacapa. This station is one of ten in Guatemala. It serves the information needs of fish farmers in the region. The station consists of a complex of 12, one half to one ha. ponds for producing fingerlings and for brood stock. Fingerlings of

Tilapia and Carp are produced and distributed free to Peace Corps Cooperators. Approximately 20,000 fingerlings are distributed monthly to Peace Corps Cooperators, and approximately 6,000 are sold to non-Peace Corps Cooperators.

The physical plant of this station has been recently upgraded with funds provided by CARE. It is now a near model facility for the production and growing of fingerlings. Future plans include construction and operation of a model integrated fish-livestock production unit. This unit will include a grow-out pond with adjacent livestock production units to utilize the water and provide feed for fish. Key personnel who operate the station are trained in aquaculture. Most have M.S. degrees. The station manager attended the WHAP sponsored training in Panama.

Fish production extension persons--known as DIGESEPE Fish Promoters--who work in the region regularly visit the Fish Station to receive training and obtain specific technical information needed in their work. The Fish Promoters are employed by DIGESEPE. They each serve 10 to 30 fish farmers. Most are working as counterparts to a Peace Corps Volunteer who also works directly with the fish farmers. Most of the expenses incurred by the Peace Corps Volunteer in assisting fish farmers is met by CARE. For example, CARE will help financially with building and equipping a fish pond on a farmer's land if he agrees to follow the guidance of the Peace Corps Volunteer and the Fish Promoter. The Volunteer and the Promoter get most of their technical information through the Fish Stations and directly from CARE technicians who rely heavily on WHAP to provide the technical backstopping necessary to ensure that the farmer's efforts are rewarded with high yields of fish.

2. Cooperative Organization

The team briefly observed a meeting at which the local farmers were forming a cooperative to provide supplies and a marketing

mechanism for their fish. Twenty three farmers were present. A Peace Corps volunteer had arranged the meeting. The CARE/Guatemala staff person whose responsibility is to help form cooperatives of fish farmers was also present. Howver, CARE was unable to arrange a meeting for the team with that staff person. We have the concern that the effort at organizing farmers is still quite weak.

3. Community Visits

On its first visit the team visited one and a half ha. farm in which a 130 sg/m fish pond had been constructed. The pond was stocked with Tilapia, and had a chicken coop with 30 laying hens over it to supply food for the fish. The farmer had planted fruit trees and vegetables surrounding the pond thereby utilizing excess water.

Based on technical advice provided by Auburn's ICA staff during four visits to Guatemala this farmer and others in the area had stocked their ponds with the recommended fish species. The pond design, stocking rate, havest schedule and use of chickens to provide fish food was as recommended. The farmer was very enthusiastic about his aquaculture project, and indicated appreciation for the advice and assistance he is receiving.

The overall impression drawn from the visit to this community was that water harvesting/aquaculture is viewed as an important enterprise for farmers, and that they are following sound technical advice. However, there was no evidence that any economic analyses had been made or even considered necessary.

The second site visited was a cooperatively-managed, integrated fish production unit at Samac in Alta Veropaz. The cooperative consists of 500 members most of whom live in a village setting in a mountainous area six km. from the nearest town where markets exist. The cooperative is engaged in a variety of production and

marketing activities including coffee, chickens, pigs, turkeys, and fish. The cooperative is about 12 years old. Some fish ponds existed prior to the intervention of the Peace Corps, CARE and WHAP. Using technical guidance provided by ICA via CARE the cooperative has renovated old ponds, constructed others and launched a vigorous effort to maximize the use of harvested water. Following technical guidance provided through WHAP the cooperative has increased the water depth of ponds, improved the flow system through the ponds, improved the design of impoundments and constructed several new ponds. Advice given by ICA relative to fish species, stocking rate, harvest schedule, feed source and marketing methods is being followed. Every pond has adjacent livestock, (chickens, pigs, turkeys) to provide food for the fish and additional income. The team observed the harvest of one pond from which large fish were removed and fingerlings of both Carp and Tilapia were being separated and moved to grow-out ponds, in accordance with technical guidance provided by a ICA technician who had recently visited the site.

The team observed a third site which is a cooperative effort by seven farmers who are harvesting water and using it for a 200 sg/m fish pond in which they are growing carp for household use and sale. This is an integrated site with pigs to supply fish food and gardens and fruit trees to use excess water. Although this pond was well designed during construction a porous soil condition now has been encountered. On the recommendation of the ICA technician the farmers had lined the pond with plastic to reduce seepage rather than abandon the pond.

Annex E

Indonesia--Heifer Project International

A. Summary

The evaluation team visited Indonesia during the period April 2-10, 1987. During that time it spoke with representatives of the USAID Mission, the Office of the Cooperative Business International (CBI), the major cooperative organizations with which CBI works and the Indonesian Government department which deals with cooperative organizations. During that time the team visited two experimental fish and shrimp production stations run by CBI and its cooperative organization, PUSPETA, in different parts of the country. The purpose of the visit was to observe an example of activities being supported by the WHAP. It was not to evaluate the conduct of the activities being carried out by CBI with funds provided through Heifer Project International (HI), but rather to get a sense of whether they were likely to further the project's purposes.

The major conclusions reached by the review team are:

1. CBI and the USAID Mission are positive about the technical assistance which was provided by AUBURN University's International Center for Aquaculture (ICA) under the WHAP. CBI would like to receive further technical assistance from ICA.

2. CBI and the USAID Mission were not aware that WHAP could provide assistance or training apart from that involved in the technical aspects of aquacultue addressed by the ICA. The CBI project might benefit from assistance in planning for the extension phase of its project.

3. Although CBI had decided to undertake aquaculture activities before becoming aware of WHAP, it has sought assistance from ICA; and it has been relying on ICA's advice in its experimental work.

4. CBI considers its programs to be profit and commercially oriented. It does not see itself as concerned with community development or even broader development impacts than income generation through employment generation and improved production practices. It does not want to become involved in an evaluation effort aimed at measuring the impact of aquaculture activities on those broader development concerns.

5. The CBI activities being assisted by WHAP have not reached a stage which would permit a judgment as to what is likely to be their impact on the target population.

6. CBI is receiving substantial financial support from the USAID/Indonesia program for its several activities including aquaculture. It probably could obtain the services of WHAP on a cost reimburseable basis.

B. Nature and Development of Program

CBI and its predecessor organization, the Cooperative League of the U.S. (CLUSA), has been working on the planning and development of cooperatives with the Government of Indonesia's Directorate General of Cooperatives for several years in carrying out programs with PUSPETA in Java. The PUSPETA project operates 23 non-government subsidized business activities including feed production, marketing and credit for beef and dairy cattle, poultry and freshwater aquaculture, small farmer production, improved variety grain seed production and distribution, consumer cooperative supply and distribution and handcraft input supply and marketing. The focus of CBI is on creating self-sustaining businesses. It is not aimed at achieving community development or at mounting programs of general development which require government intervention and support.

CBI decided that it should include aquaculture activities in its programs, and began to experiment with approaches to do so. However, since CBI did not have funds for this additional activity it turned to HI for support. This was granted at the very end of 1984--$156,450 for the PUSPETA Livestock, Poultry and Aquaculture Demonstration and Training Project in Java and $99,750 for the FCC-Luwu Aquaculture Training and Demonstration Project in South Sulawesi. The Java project was to be integrated in the sense that both fish and livestock production were included. It involved fresh water fish production. The South Sulawesi project was to include the production of milkfish and prawns in the same ponds of brackish water. Both projects used the approach of experimental stations run by or under the close supervision of CBI to develop technical packages which then could be passed to individual farmers or cooperatives for their use in mounting production for sale. Both project documents mentioned the availabilty of training and technical assistance from Auburn University's International Center for Aquaculture (ICA).

In 1985 CBI presented a proposal to USAID/Indonesia for the utilization of PL 480 funds in support of its program in Indonesia. It included both of the activities being supported by HI. The Mission is providing support for the program.

The current state of operations of these projects is described under Field Visits below. In general, they are six to nine months behind their original schedule.

C. CBI/HI's Use of WHAP Resources

The personnel of CBI were very positive in their comments on the assistance which they had received from the experts of ICA under WHAP. That assistance was given during visits to Indonesia by those experts both to provide regional training and to visit the activities of several PVOs involved in WHAP. The personnel of CBI were not aware of the other sources and types of assistance potentially available under

WHAP, and did not seem to think that they would be of interest to them. However, they were interested in continuing to receive help from ICA.

1. Technical Assistance

During 1985 and 1986 ICA personnel spent 68 person days in Indonesia during three separate trips. So far in 1987 they have spent 22 person days there during one trip -- of which about 10 person days were spent in working with CBI in both Java and South Sulawesi. The assistance was focused entirely on technical matters of pond construction and production techniques. At this stage of the CBI activity all work is being done by either CBI personnel or by persons under CBI's close supervision. Extension work with farmers or groups of producers has not yet been undertaken. CBI is still in the process of experimenting in order to develop technical packages which it feels confident in extending to the farmers. Particular technical aspects of the activities are mentioned in Part D below.

2. Training

ICA personnel have given regional training on aquaculture program development at PUSPETA's facilities in Java and with USAID/Indonesia support. However, apart from the informal training occuring during the technical assistance visits, neither ICA nor any other entity sponsored by WHAP has given or been asked to give training to CBI-related persons. Furthermore, CBI has not asked WHAP for any advice or assistance in preparing the training which it will be providing to farmers during the extension of its activities or to the persons who will be providing the training and technical assistance to those farmers. CBI representatives see their actitvity as still in the phase of testing various production approaches, and thus not yet ready to undertake training. However, the extension phase is to begin within a year; and yet no particular thought seems to have been given as to how

it will be conducted. It does seem that WHAP might be useful in the preparations for that next phase.

3. Evaluations

CBI has not requested any assistance from WHAP on monitoring and evaluation. In fact, the CBI representative sent back the evaluation instruments developed by WHAP having concluded that they would be too time consuming to follow and addressed aspects of general development impact with which CBI's activities were not concerned. CBI is satisfied that its own and HI's monitoring and evaluation systems meet its needs for information on the costs and probable revenues to be generated by its activities -- including aquaculture.

D. Field Visits

1. Fresh Water Site-Java

One part of the project is being carried out in a very densly populated (2,300 per sq/kl) area of Java. The objective of the project is to capture and utilize water for uses alternative to traditional rice and sugar cane which are in surplus in Indonesia. Fish production is a reasonable alternative, and CBI has undertaken to develop a methodology for fresh water fish production which can be adapted by small farmers in the area. The field work is still in the technology testing stage. It is thought that after one more crop of fish from the experimental ponds CBI will have a technology package sufficiently proven to recommend to farmers in the area. The project's aim is to develop a commercially viable technology package for fresh water aquaculture. The plan appears to be to deliver such a package to the existing aquaculture extension specialists in the area for them to deliver to farmers. There are to be training sessions for those extension specialists based on what has been learned during

the experimental stage. However, a formal extension program has not yet been designed.

The field site visited in the fresh water area, which is supervised by a CBI technician, consists of a set of six ponds of about 600 sq/m each which are being used to produce Tilapia. Fresh water for the ponds comes from a large spring which furnishes water for rice and other fish ponds in the area. Following technical advice by ICA technicians the ponds were constructed, stocked, and managed to produce maximum yield of marketable Tilapia. Carp was included in early trials, but a decision was made to use only Tilapia because of the hardy nature of Tilapia and because of higher local market potential.

The ICA technicians have recommended a design that would supply all food needs for the fish from chickens housed over the ponds. One pond had a chichen coop over it for supplying some of the food requirements of the fish. However, the project manager, wishing to maximize yeilds, has opted to use commercial fertilizer and manure from a nearby livestock operation to supply food for the fish. To this extent the project manager has deviated from the technical advice given by ICA. During the extension phase, which will begin in about six months, the possibility of using chichens to supply all food needed for the fish and thereby reduce labor requirements will be presented to farmers as an alternative operating method.

2. Brackish Water Site-South Indonesia

The second site examined by the team was near Polopo in South Sulawesi. This is a tidal basin fish farm which has been modified to develop a series of nine production ponds and one nursery pond. This site modification was carried out to the specifications of technicians from ICA, and represents a major investment in time and effort to clear and build external and internal dikes with necessary control gates for an area of 13 sq. ha. Construction has been completed, and the site has been stocked accordingly to

recommendations of ICA technicians who have carefuly examined the site to determine its production potential.

Both Milkfish and shrimp are stocked in the ponds. A full time CBI technician supervises all activities-which are carried out by the owner-farmer-and monitors the ponds. The owner-farmer is totally involved and highly enthusiastic. Food for the fish is provided with rice bran as prescribed by ICA. This site is just now (April 1987) completing its first production cycle. There is evidence that t' . soil disturbance during the dam construction may have resulted in lowering the Ph of pond water below the threshold for satisfactory production of shrimp. The ICA technicians have visited the site and made recommendations for correcting the problem. Modifications will be made between the first and second cycle of production. After the second cycle of production, the fish/shrimp production system developed and tested on this site will be recommended to other farmers in the area if the productivity of the system is as high as predicted.

ANNEX F

PARTICIPATION CRITERIA FOR WATER HARVESTING/AQUACULTURE PROJECT

Introduction

Participation criteria for the Water Harvesting/Aquaculture project fall into two broad categories: 1) criteria for institutional participation, and 2) criteria for field project evaluation. In one sense, the criteria for institutional participation are more critical than criteria for individual field projects. Collaboration between institutions is extremely important because of the need for information and resource sharing and a considerable integration of activities. Unless an institution is thoroughly committed to the collaborative concept and to this kind of interaction, it will not be a successful partner.

Participation in the Water Harvesting/Aquaculture project implies the willingness and ability on the part of the PVO to accept primary financial responsibility for their projects. Resources supplied by the core project should be considered as a means to enhance or expand an existing project or a project under consideration rather than a primary funding source.

Individual field projects will be developed by a variety of PVOs or participating local organizations using many different approaches. Rigid criteria will not be imposed because of the variables in each field project. This individual design feature is one of the strengths of this effort. With the provision of technical assistance, we hope to strengthen the unique approach of each PVO. In other words, the individual design of each field project will be strengthened and supported by the inputs available from the core project, but control remains with the PVO.

It should be kept in mind that projects may not, in the main, be fully formed when the decision on participation is made. In fact, it is felt that some of the projects will be nothing more than an initial idea backed up by sufficient understanding of the process to establish that there is some potential. In other situations, a water harvesting/aquaculture component may be added to an existing project. If the Joint Center provides technical assistance in the form of project identification and design, there is really no question about the project being acceptable. Only if the PVO involved fails to accept the basic technical recommendation could the project be denied acceptance.

Criteria for Institutional Participation

Participating institutions should be willing to:

1. Accept technical direction as related to water harvesting/aquaculture;
2. Serve on the advisory council;
3. Share information;
4. Participate in summative evaluation; and
5. Submit semi-annual reports.

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Criteria for Evaluating Field Projects

The following are criteria that should be used by the PVO to ascertain the appropriateness of a field project for inclusion in the core project. The PVO should:

1. Evaluate the water harvesting activity in terms of its importance as core intervention or catalyst for rural development. Emphasis should be on projects where water is an underdeveloped resource, where its development has been identified as a felt need, and where the project will contribute to the development process and improve the quality of life in the region, with special concern for women.

2. Ascertain that there is a village or regional focus and determine that there is some local organization either in existence, or there is a potential for forming such an organization which will provide the necessary local participation and control.

3. Evaluate the field project using the following technical criteria:

   a. Land

      1) Sufficient area must be available.

      2) Topography must be suitable for construction of ponds at reasonable cost.

      3) Soil must have adequate water retention qualities.

      4) Road access to pond area and availability of transport will be necessary for projects designed for external marketing and/or those requiring substantial inputs from outside the area.

      5) The land-use/ownership situation should be amenable to the projected use.

   b. The water source should be of good quality and sufficient quantity to permit year-round maintenance of pond water level, and situated so as to permit gravity-flow into the pond.

   c. If aquaculture is an important intended use of the pond water supply, a source of nutrients (e.g., agricultural by-products, animal manures, etc.) for fish feed/fertilizer should be available, or made available, as part of project implementation.

   d. If aquaculture is an important intended use of the pond water supply, fish species suitable for aquaculture should be available locally, or conditions should prevail permitting importation of suitable fish species.

   e. If aquaculture is an important intended use of the pond water supply, the intended project beneficiaries should in most cases exhibit agricultural skills and practices sufficiently sophisticated to permit successful management of the more complex aquacultural production system.

ANNEX G

WATER HARVESTING/AQUACULTURE PROJECT
FIELD PROJECT SUMMARY
December 1986

A. FIELD PROJECTS - Substantial technical assistance and/or project support funds provided, more TA planned, significant initiatives taken by PVOs.

	COUNTRY	PROJECTS	SITES	PROJECT TYPE
1.	Bolivia	Care	3	new
2.	Egypt	CRS	2	improved
3.	Guatemala	CARE	multiple	improved
4.	Indonesia	HPI (2)	multiple	1 improved; 1 new
5.	Nepal	CARE, SCF (2)	2 plus	new
6.	Senegal	CWS	multiple	new
7.	Thailand	HPI	1	improved
8.	Panama	CRS (2)	multiple	improved
9.	Zimbabwe	SCF	1	improved
10.	Honduras	CRS	1	improved
11.	Tanzania	LWR	multiple	improved

B. FUTURE FIELD PROJECTS - Technical assistance given, project development underway, requests for WHAP assistance expected in the near future.

12.	Bangladesh	SCF	3	new
13.	Kenya	CARE	multiple	improved
14.	Somalia	CARE, SCF	2	new

C. POSSIBLE FIELD PROJECTS - Initial technical assistance given, further WHAP assistance not anticipated in the near future.

15.	Congo	CARE
16.	Dominican Republican	CRS
17.	Equador	CRS
18.	Papua New Guinea	LWR
19.	Peru	CRS
20.	Sri Lanka	CARE
21.	Sudan	SCF
22.	Uganda	HPI

JOINT CENTER ACTIVITIES

1. On Farm Seed Production in Sub-Saharan Africa

This project was funded by Aid with Winrock as the lead institution, and involves the Joint Center and institutional members, Mississippi State University, Catholic Relief Services, Christian Children's Fund and Lutheran World Relief The first two countries to participate will be Senegal and The Gambia. This may expand later to include other West African countries. This grant grew out of a Seminar on seeds held at the Joint Center on September 15/16 1986.

2. Dominican Republic Development Training

The Joint Center in collaboration with Phelps Stokes and the USDA Graduate School is bidding on an Aid R.F.P to carry out a business training development project. Phelps Stokes will be the lead institution. The Joint Center will be responsible for the placement of a number of students in degree programs in the U.S. These students will be placed principally in member institutions. This proposal has been submitted to USAID-Dominican Republic.

3. Haiti Watershed Project

The Joint Center will be bidding with VITA and Development Alternatives Inc. to respond to a R.F.P. on Watershed Management for USAID-Haiti.The R.F.P. has just been issued.

4. Togo/ Ivory Coast Project

The Joint Center is working with Opportunities Industrialization Centers International Inc. and Auburn University to develop two national training centers. These training Centers would train participants in Water Harvesting/Aquaculture and Integrated Agricultural technology. This proposal is in it's preliminary stages. Funding is being sought from a variety of sources.

5. West African Seminar

The Joint Center is planning to hold a Seminar on June 11/12 1987 in Cullowhee. The purpose of this seminar is a PVO/University collaboration strategy for West Africa. The seminar will be funded by the Carnegie Corporation of New York.

6. World Bank Natural Resource Management

At the request of the World Bank, the Joint Center is developing a project involving a variety of natural resource managements in Burkina Faso. This project will involve indigenous and international NGO's working in Burkina Faso; the University of Ouagadougou and at least three U.S. Universities with expertise appropriate for project implementation.

7. Bikini Island Education Initiative

The education director of Bikini Atoll in the Marshall Islands has requested assistance in the development and implementation of a U.S. based support program in higher education for students from Bikini. This project is under development.

Annex I

Persons Interviewed by Review Team

Dr. Kenneth Osborn, Fisheries/Aquaculture Advisor, S&T/ACR, A.I.D./W.
Mr. Shane McCarthy, Project Office, PVC/FVA, A.I.D./W.

Auburn University

Dr. James E. Martin, President, Auburn University
Dr. M.E. Marvel, Director, International Programs
Dr. E.W. Shell, Professor and Head Department of Fisheries and Allied Aquacultures and International Center for Aquaculture
Dr. B.L. Duncan, Associate Professor, International Fisheries
Dr. J.H. Grover, Professor, Aquaculture
Dr. D.D. Moss, Professor, International Fisheries
Dr. L.L. Lovshin, Professor, Aquaculture
Dr. R.D. Phelps, Associate Professor, Aquaculture
Dr. H.R. Schmittou, Professor, Aquaculture
Mr. Alex Bocek, Research Associate, Aquaculture
Dr. Warren Brandt, V.P for Academic Affairs, Auburn University, Western Carolina University
Mr. F. Merton Cregger, Director, Center for Improving Mountain Living (CIML), and Joint PVO/University Rural Development Center
Ms. Nancy Blanks, Project Director, Water Harvesting/Aquaculture Project
Ms. Ann Loughlin, Administrative Assistant, WHAP
Mr. Ralph Montee, Evaluation Specialist, Joint Center
Dr. Fredrick L. Bates, Professor of Sociology, University of Georgia, Consultant for Evaluation
Dr. H.F. Robinson, Chancellor Emeritus, Western Carolina University
Ms. Joyce Moore, Information Specialist, WHAP
Dr. James Dooley, Vice President for Programs and Finance
Ms. Violet Vassian, Budget Officer, Joint Center and CIML

GL

PVOs in New York

Mr. Robert Bush, Senior Advisor for Program and Policy and Activity Director for Arizona Mid-East, Luthern World Relief
Dr. James Worstell, Project Officer, Save the Children
Ms. Nancy Nicalo, Development Officer, Church World Service
Mr. Tom Zopf, Director Program Support, CARE
Mr. Peter Van Brunt, Director for Latin America, CARE
Mr. Ray Victurine, Project Officer, Catholic Relief Services
Mr. Alden Hickman, Executive Director, Heifer Project International
Mr. Neil Brenden, Luthern World Relief

Guatemala

Ms. Corinne M. Seltz, Project Manager, Integrated Aquaculture Extension, CARE
Ms. Silvana Castillo, Program Coordinator, Inegrated Aquaculture Extension, CARE
Mr. Mike Clark, Fisheries Training Officer, Integrated Aquaculture Extension, CARE
Dr. Thomas Ivens, Agriculture Officer, U.S.A.I.D., Guatemala
Mr. _____, Director, Fish Production and Extension Station LaFragua, Guatemala
Mr. _____, Peace Corps Volunteer (Fisheries Specialist), LaFragua, Guatemala
Mr. _____, Peace Corps Volunteer (Fisheries Specialists), Samac, Guatemala
Ms. _____, Peace Corps Volunteer, (Animal Husbandry), Samac, Guatemala
Mr. _____, Farmer LaFragua, Guatemala
Mr. _____, Manager, Fisheries Cooperative, Samac, Guatemala
Mr. Jose Allizurez, Associate Director for Aquaculture Programs, Peace Corps

Indonesia

Mr. Robert Pooley, PVO Program Director, U.S.A.I.D.

Dr. Kenneth Randolph, Program Officer, Aquaculture and Fisheries, U.S.A.I.D.

Mr. William Fuller, Mission Director, U.S.A.I.D.

Mr. Sam Filiaci, Program Director, ICBA/HPE Program, Java

Mr. F. Fitriadi, Manager, PUSPETA, Cooperative, Java

Mr. John Batz, Project Manager, PUSPETA, Fisheries Project, LUWU, South Sulawesi, Indonesia

Mr. _____, Regional Fisheries Extension Director, Plolopo, Region

Mr. Andarais Giling, Project Technician, LUWU, PUSPETA, Fisheries Project

Mr. _____, Project Technician, Klaten, PUSPETA, Aquaculture Project

Annex J

Documents Reviewed

A.I.D./W

1. Report of second Annual Review of WHAP
2. Grant Document No. PDC-0240-G-SS-4005-00, dated August 1984
3. Water Harvesting/Aquaculture, An Integrated Approach to Rural Development, a Proposal submitted to A.I.D.
4. A.I.D. Annual Progress Review, 1985-1986. (October 1986)
5. Work order #3. PDC-0085-I-00-6097-00, Mid Term Evaluation of WHAP (938-0240)
6. Memoradum - to Leonard Yaeger S&T/A.I.D. from J.S. Robins, S&T/FA-Subject comments on Joint PVO/University Project Proposal: Water Harvesting/Aquaculture, an Integrated Approach to Rural Development.

Auburn University

1. Report to East African Training for WHAP
2. Brochure - Concerning Auburn Fisheries/Aquaculture Alumni
3. Trip Reports and Progress Reports as a result of ICA Staff visits to: Senegal, Boizia, Congo, Bangladesh, Kenya, Nepal, Egypt, Thailand, Sumalia
4. Galley of a new Manual in Water Harvesting and Aquaculture for Development
5. Table showing Country, No. of Projects, Sites and Project Type served by ICA staff for WHAP
6. Budget documents for WHAP/Auburn

Joint Center for PVO/University Center, Rural Development

1. Records of WHAP training activities
2. Budget document of WHAP

3. List of Consulants used by the JC
4. Minutes of meetings of the WHAP Advisory Board
5. Joint PVO/University Rural Development Center, By Laws
6. Criteria for Membership in the JC
7. List of names and addresses to all trainees and project personnel in field locations associated with WHAP
8. Abstract descriptions of field projects in WHAP
9. Progress Report on WHAP project in Panama
10. Cables from U.S.A.I.D.'s in Senegal, Panama, Indonesia, Nepal concerning WHAP
11. WHAP quarterly newsletter "Ponderings"
12. Statement of Rule of the Joint PVO/University Rural Development Center in WHAP
13. Conceptual Approach to Organization and Development of the JC
14. Articles of Incorporation of the JC
15. Criteria for participation in WHAP
16. WHAP Progress Report forms and instructions for completing
17. WHAP Annual Report, 1985-1986, with attachments
18. WHAP Household Interview Schedule with instructions for use
19. WHAP Community Inventory Documents with instructions for use
20. List of contributions to WHAP by JC member institutions
21. Report of Training and TA conducted under WHAP, level of effort
22. Estimate of time allocated by JC staff to WHAP
23. Summary of WHAP program costs for West Africa training
24. Summary of total contributions in technical services, staff time, facilities by JC member institutions to WHAP
25. Summary of Western Carolina Universitie's contributions to WHAP
26. Value of technical and support staff and other contributions by Auburn University and the University of Arkansas at Pine Bluff to WHAP

PVOs in New York

1. Lutheran World Relief, Project Systems Manual
2. Lutheran World Relief, Policy Statement
3. Church World Services, Project Application guidelines

Guatemala

1. Project Proposal for Integrated Aquaculture in Guatemala from CARE to U.S.A.I.D. Missions for 1987-1989
2. Review of CARE Family Fish Pond Project by R.O. Smitherman and B.L. Duncan, 1985
3. Evaluation of CARE Family Fish Pond Extension Project in Guatemala by Ronald Phelps and Upton Hatch, 1986
4. Draft Plan for Training of DIGESEPE Extension Personnel

Indonesia

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