

PROJECT APPRAISAL REPORT (PAR)

PAGE 1

1. PROJECT NO. 931-0120	2. PAR FOR PERIOD: TO 8/76	3. COUNTRY TAB	4. PAR SERIAL NO. E1
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8. PROJECT TITLE

International Center for Aquaculture

6. PROJECT DURATION: Began FY 70 Ends FY 77	7. DATE LATEST PRCP 5/14/75	8. DATE LATEST PIP NA	9. DATE PRIOR PAR 10/21/74
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10. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: \$ 1,100,000	b. Current FY Estimated Budget: \$ 278,000	c. Estimated Budget to completion After Current FY: \$ 3,378,000
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11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME	b. CONTRACT, PSEA OR VOL. AG. NO.
Auburn University	csd-2780

I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HCST		
			The following are specific actions growing out of the review which should be undertaken to strengthen the effectiveness of the current grant programs	
		X	1 Develop a statement which defines the long-range objectives and role and ICA in the international arena.	5-1-77
X	X	X	2 Develop plans for closer relationships with fisheries agencies and university fisheries departments in LDC's.	5-1-77
X	X	X	3 Develop better means of information dissemination	7-1-77
		X	4 Obtain full familiarity with the country, regional and global programs underway or proposed by FAC/UNDP.	7-1-77
		X	5 Explore possibilities of strengthening linkages between ICA and other AU facilities especially in the social sciences.	7-1-77
		X	6 Take steps to strengthen academic programs in genetics and to establish a course in genetics	7-1-77
			Additionally because further grant support to the ICA is contemplated the following actions are required to assure that ongoing activities will not be interrupted and that AID's needs will be met without undue confusion or delay:	
X			7 Full clearance and formal adoption of an AID fisheries strategy	1-15-77

D. REPLANNING REQUIRES

REVISIONS: NEW: PROP PIP PRO AG PLO/T PLO/C PLO/P

E. DATE OF MISSION REVIEW

PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE Philip M. Roedel 12/13/76
MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE [Signature] 12/15/76

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11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME Auburn University	b. CONTRACT, FASA OR VOL. AG. NO. csd-2780
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I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HOST		
	X		8 Articulate specific needs and objectives in international fisheries and aquaculture	4-1-77
		X	9 Prepare draft plans for continued core support beyond the 30 June 1977 termination date of both grants. The plans should include a consideration of country specific applications of the knowledge base.	1-15-77
		X	10 Develop plans for consortia to operate in the fields of small-scale fisheries and aquaculture as part of the post-1977 programs.	3-1-77
		X	11 Develop plans for increasing collaboration between the universities through such means as staff exchange, joint endeavors, etc.	7-1-77
	X		12 Develop a proposal for in-depth evaluation of past fisheries projects conducted by multi-lateral and bilateral donors to obtain a measure of the reasons underlying success and failure.	4-1-77
	X		13 Explore possibilities for including Auburn Universities as on IQC or for obtaining quick response services	6-30-77
	X		14 Develop and augment university and non-academic capacities in the US to provide additional response capacity for the future.	6-30-77

D. REPLANNING REQUIRES

 REVISED OR NEW: PROP PIP PRO AC PIO/T PIO/C PIO/P

E. DATE OF MISSION REVIEW

PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE

MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE

UNITED STATES GOVERNMENT

Memorandum

TO : TA/AGR, Dr. Leon F. Hesser

DATE: 16 November 1976

FROM : AFR/CAWA/*AS* Mr. Dalton A. Griffith

SUBJECT: Report of Mid-Extension Reviews of 211 (d) Grant Programs at
University of Rhode Island and Auburn University

The two grant reviews are considered herewith in a single consolidated report. When you have had an opportunity to digest the report, PARs should be prepared reflecting whatever timely actions need to be taken for each grant, pursuant to the review team's recommendations.

I think it would be useful to indicate the approach that was taken by the review team to these mid-extension reviews. We were of the opinion that a review, after the first year of a two-year grant revision/extension, would combine selected characteristics of the annual (one-year) management review and the comprehensive, fourth-year review that are specified in Handbook 13 for basic 211 (d) grants: first it would review a year's activities and accomplishments; second it would contemplate the extent of current and prospective need for utilization by AID and other development agencies of a grantee's expertise and capabilities under other than 211 (d) grant funding arrangements. Hence, a representative evaluation team was formed for the subject reviews, formal issues for the review were prepared and the reviews were conducted at the respective campuses -- as though in a comprehensive review.

Speaking for the members of the review team, I would like to express appreciation for the support to the team ably provided by Phil Roedel and the Grant Program Directors at Rhode Island and Auburn.

cc: TA/PPU:TEliot
TA/AGR:PROedel
TA/EUI:MCruit
NOAA:JStorer



**MID-EXTENSION REVIEW OF 211 (d) GRANTS TO THE
UNIVERSITY OF RHODE ISLAND AND AUBURN UNIVERSITY**

On July 29 and 30, 1976, a review of the AID 211 (d) grant to the University of Rhode Island (URI) for the development of a small scale fisheries program was undertaken. A similar review was conducted on August 2 and 3, 1976, of the AID grant to Auburn University (AU) for the development of an aquaculture program.

The review team was comprised of Dalton A. Griffith, AFR/CAWA, Chairman, Thomas Eliot, Grants Coordinator, TA/PPU and James Storer of the National Oceanic and Atmospheric Administration, Philip Roedel, Fisheries Advisor, TA/AGR, accompanied the team as executive secretary and Michael Cruit, TA/EUI, as observer. Thomas S. Estes of URI participated in the AU review as observer, and John Grover of AU participated in the URI review in the same capacity.

The objectives of the two grants are closely aligned, as certain work financed by the grants is being undertaken on a collaborative basis. Accordingly this report will cover both reviews.

University of Rhode Island

The initial 211 (d) grant of \$750,000 ran from May 1969 through May 1974. The grant was extended in three increments through September 1975 at an additional cost of \$175,000. Further funding amounting to \$400,000 was provided to extend the grant from September 1975 through June 1977. Accordingly, for the period May 1969 - June 1977 AID funding will total \$1,325,000. In April 1974, a comprehensive review of this grant was undertaken by URI and AID resulting in significant changes being made in objectives and methodology. A revised set of objectives was mutually agreed upon by the University and AID and is being carried out through a series of jointly approved work plans.

The objectives defined in the grant revision and extension (Sept 1975 June 1977) are designed to strengthen and mobilize the University's capabilities and competence in the field of small-scale fisheries in LDC's:

1. To develop and extend its knowledge base and research abilities with the redefined focus of small scale fisheries development;
2. To develop a more effective advisory response capability;
3. To develop a specialized educational and training capability; and
4. To develop and maintain an information capacity.

The fifth objective usually found in 211 (d) grants, the development of professional linkages and networks with other institutions is included under activities of the first objective. The extension and revision of the grant, while providing a means to reinforce the specialized institutional research capability at URI, emphasized extending the pertinent knowledge base to LDC's, international development agencies and U.S. institutions.

In order to provide a framework for the 1976 review of the 211 (d) activities, the University was asked to provide responses to seven broad questions prior to the grant review. These questions together with URI's responses are provided as Attachment A. In preparation for the review, URI prepared a preliminary 211 (d) annual report covering the period August 1975 - June 1976. This report is presented in its entirety as Attachment B. It provides a consolidated description of progress in connection with each of the work plans and against the objectives of the grant.

Auburn University

The initial 211 (d) grant of \$800,000 to AU ran from June 1970 - June 1975. This initial grant differed in some important respects from the grant made to URI in that it was designed to provide continuing financial support for ongoing activities requested by AID which had previously been financed by other means. Following a comprehensive review undertaken by AU and AID in April 1975, significant changes were made in the grant objectives and methodology. The grant was extended through June 1977 with additional AID financing of \$578,000. During the period June 1970 - June 1977 total AID expenditures of \$1,378,000 are contemplated.

The objectives funded by the grant revision and extension are designed to strengthen and mobilize the University's capabilities and competence in the field of international agriculture:

1. To provide education and training opportunities in inland fisheries and aquaculture related to international development;
2. To continue to develop and improve the knowledge base of Auburn including the development of a capability in production economics as related to aquaculture;
3. To develop a more effective capability for advisory services and actively promote its utilization;
4. To continue to collect, analyze, publish and disseminate information; and

5. To develop a strong professional network of linkages between Auburn and LDC institutions, international development agencies, and U.S. institutions.

As in the case of the URI review, AU was requested by AID to respond to seven general questions relating to its present capacities and capabilities. These questions together with AU's responses is provided as Attachment C.

AU had deferred preparation of its June 30, 1976 211 (d) annual report until the review was completed. In lieu of this report, AU provided the review team with a variety of documents detailing its efforts and activities during the review period June 1976 including the "List of Work Plans" which is provided as Attachment D.

GENERAL OBSERVATIONS

1. In general, the review team was highly satisfied with the implementation of the two grants. Both institutions demonstrated significant progress in reaching their grant objectives; displayed a high level of interest and effort in their grant activities; and evidenced an excellent spirit of cooperation with regard to the Team's activities and AID concerns.

2. The original 211 (d) grants to both institutions stressed general institutional development and had relatively little focus on specific objectives. The April 1974 evaluation, which reoriented both grants, narrowed their objectives and brought grant activities into a closer relationship with AID legislation. The objectives of both grants are now directed more towards the problem of increasing consumption of fish protein, the economic and marketing problems associated with fish harvesting and distribution, and the social and cultural conditions of the rural population engaged in fisheries activities. Further alteration of objectives at this stage is not deemed necessary.

3. In response to the objectives of the grants, international centers have been established at each university to serve as a focal point for small-scale fisheries and aquaculture programs and to provide a vehicle for advisory services -- The International Center for Marine Resource Development (ICMRD) at URI, and the International Center for Aquaculture (ICA) at AU. While these centers have continued to enlarge their capacities, the existing requirements of the 211 (d) grants and the requirements of AID for advisory services just about absorb present response capability. It must be recognized that at the conclusion of AID financing in June 1977 the total capacity of either center to serve the needs of AID will be limited.

4. A more serious concern relates to the capacity of both centers to maintain their resource base and response capacity after June 1977. Since their inception, the centers have relied primarily on AID through the 211 (d) grant mechanism to provide core financing. Without this type of support, it seems clear that after 1977 neither center will be able to sustain or expand their manpower base, or continue to attract the type of professional expertise needed to extend its knowledge base and research abilities.

As both URI and AU are state universities whose principal mandate is to furnish education programs pertinent to the needs of Rhode Island and Alabama, and whose budgetary resources are primarily derived from those state legislatures, it is not likely that the international centers of either university will receive substantial state budget support. Neither is it considered likely that major sources of non-AID support will be forthcoming in the near future. AID is, and probably will be for some time, the major consumer of the services of the centers.

5. The foregoing implicitly raises the question of URI and AU progress in achieving the objectives of the grant extensions. As indicated in the initial observation, the progress of both universities is highly satisfactory and entirely reasonable in terms of the magnitude of the grants and their thrust. The question of whether the objectives stated in the grant extension were entirely realistic either for AID or for the universities is open to some doubt. It would appear that the lack of international research funds and core support for institutions such as URI and AU might have dictated either more modest objectives or at least a recognition of the need for continuing financial support. It is also worth noting that the activities of both grants to date and the reorientation of their objectives have been accomplished in the absence of an AID policy on fisheries, a situation which is only now being remedied.

6. Lack of AID guidance in the conduct of the grants was brought out in prior evaluations. This appears to have been corrected as a result of the last evaluation through the redefinition of objectives, and, perhaps more importantly, through the establishment of work plans. There is no question that the reorientation of activities in the grant extensions was desirable and overdue.

7. The response capacity of the two universities is limited by a number of factors: availability of external financing, internal financing constraints, nature of research opportunities, teaching requirements etc. It seems clear that neither URI nor AU will ever be in a position of furnishing AID and possibly other consumers with substantial project implementation capability. Because of the nature of the ICA, AU is in a better position than URI to provide this type of response. However, AID will probably have to look elsewhere for fisheries experts to staff its projects. While both universities have compiled talent resource data,

there are relatively few individuals or firms that AID can turn to for this kind of personnel support. To the extent that the Agency contemplates an increasingly active fisheries program and can perceive requirements in this area, steps should be taken immediately to develop and augment both university and non-academic capacities in the U.S.

8. Given the thrust of present AID legislation, it appears that the development of fisheries projects will tend to be approached from the standpoint of how to increase the consumption of fish protein in the LDC's. This is not an approach that necessarily lends itself to analysis by marine or fresh water harvesting, nor to analysis by natural or controlled production. It appears that AID will have to approach the fish protein problem in LDC's on a wide spectrum of inquiry that includes an integrated examination of all fish protein potential (marine, fresh and brackish) and extends beyond the technical problems of harvesting (e.g. economic, commercial, social, cultural, educational etc.). The increased efforts being accorded by the grantees to this broad range of concerns is impressive. While few of the work plans have yet been completed, there is ample evidence that the two centers are making significant progress in developing an interdisciplinary approach as well as appropriate models for use in LDC's.

9. Neither of the revised grants provided in their state-of-the-art studies for any in-depth evaluations of past fisheries projects conducted by AID, FAO, other donors, etc. Because of the time-consuming and costly nature of this task, it is not believed that either grant should be modified at this time to provide for such analysis. However, it is apparent that the existing lack of understanding and knowledge of past fisheries projects is a real impediment to the state-of-the-art work now being undertaken.

COMMENTS ON THE URI GRANT

1. The ICMRD impressed the review team with the breadth of vision exhibited by the staff members taking part in 211 (d) activities, and by the University's willingness and desire to take an integrated systems approach to small-scale fisheries development. URI is making a very satisfactory effort in building its program, and is using its various disciplines and components effectively to make a reasonably integrated assault on relevant sector problems. One reason for the effectiveness of the ICMRD is that it has the full support of the entire Marine Resource Affairs Program of the University including the Fisheries Training Program, the Marine Affairs Program and the Law of the Sea Institute. The multi-disciplinary character of the center is extremely desirable and is directly reflected in the quality of the research being undertaken.

2. The team was impressed with the types of collaboration and linkages developed by the ICMRD. Particularly noteworthy is the establishment of Consortium for the Development of Technology (CODOT), a consortium of six universities working on problems in the field of food technology. Similarly organized consortia concerned with small-scale fisheries and aquaculture problems would appear to have merit. Additionally, staff members are working closely with a variety of institutions in ways that are of potential if not immediate use to AID -- for example, with the International Center for Living Aquatic Resource Management (ICLARM) and the East-West Center in Hawaii in developing training programs concerned with the management of artisanal fisheries in the developing world. Contacts and cooperation such as this are extremely valuable and will be more important in the future as training and other programs for coastal fisheries management and development are activated.

3. When the two-year extension of the grant was made in 1975, ICMRD proposed that all field work be done in Central America where the University already had many contacts and where logistics were less complex. AID asked that some of the work be done in other regions, and it was ultimately decided that certain elements could be carried out in Ghana. This geographic dispersion has the advantage, on the one hand, of broadening ICMRD's research base and obtaining some much desired contact with African countries, but on the other, of fragmenting the Center's systems approach to fisheries programs among both countries and continents. For reasons beyond the control of ICMRD, the Ghana project, "Under-utilization of Food Technology Resulting in Losses of Available Food", has been substantially delayed. It now appears that the project will move forward in a form much the same as was originally contemplated. But this dispersal of URI activities does not serve to augment and reinforce the comprehensiveness of its own research in Central America.

4. The fragmented locations of ICMRD activities and their purely research orientation raises the question of how the results of these activities will be applied to country-specific problems. As studies are largely still in progress, it is not possible to assess how the results may be integrated, transferred and applied in connection with LDC programs. The ICMRD appears to be making a concerted effort to deal with the problems of application, and this is encouraged.

5. ICMRD work plans do not include a comprehensive examination of the institutional constraints bearing upon small-scale fisheries. This lack is noted by the grantee; however, in view of the present progress of the grant, and the time and cost consequences of attempting to deal more fully with this problem, it is not considered desirable to expand this activity at this time.

6. At the time the grant extension was negotiated, the ICMRD budget estimate was reduced by about \$100,000 with commensurate reduction in the scope of activities. On the basis of the work accomplished to date, ICMRD recommended that the grant be increased by \$50,000 in order to include some additional research activities which are detailed in Attachment E. The basic rationale for this increase is that the additional work is expected to yield beneficial research outputs which should more than compensate for this relatively small expenditure. The concerned TA Bureau offices are addressing this question. On the basis of our discussion, the request seemed reasonable and acceptable.

7. The ICMRD, without a university budget or facilities of its own, is almost totally dependent upon external financing. Research in the state-of-the-art studies and a limited involvement in AID projects and other activities have largely engaged ICMRD staff capacities through mid 1977. As the culmination of the Center's research activities financed by the 211 (d) grant is within sight, it is felt that these efforts should not be interrupted and no change in existing work plans is proposed.

8. Current funding for ICMRD library facilities appears to be barely adequate. It appears that the objectives of the grant are being met, but not without considerable dedicated effort by the individual involved.

9. Specialized training has not been accorded a high financial priority under the terms of the grant. Little activity of note has occurred in this area. However, given the emphasis of ICMRD efforts and the progress to date, no particular changes are being recommended.

COMMENTS ON THE AU GRANT

1. The sustained effort at AU in fresh water tropical aquaculture has resulted in a highly competent, experienced and practical staff that has enabled the ICA to transfer successfully knowledge to a wide range of situations throughout the less developed world. There is no doubt of the Center's successful performance, nor of its continuing desire to be responsive to the needs of AID in providing technical assistance abroad. There is manifested throughout the entire staff an impressive sense of service to the world community. If anything, it may be that Auburn is too responsive to the demands of AID in terms of the most desirable long-term balance of its staff members, particularly with respect to their own research and career development. This is not meant, however, to be a criticism nor to detract from the very favorable record of practical performance that the Center has achieved.

2. Since ICA is organized as a discrete entity within the Department of Fisheries and Allied Aquacultures it has not developed a broad multi-disciplinary character nor a broad diversity of staff talent. For example, most ICA staff members are AU graduates. This situation stems in part from the relatively unique character of ICA activities and its orientation toward the problems of aquaculture. The aspect of broadening the overall intellectual and research base of the Center should be carefully considered by the staff, particularly if the center is to ensure retention of its leadership during the years to come. There will be new problems, and new solutions will have to be found, and many of these will presumably not be found in the narrow field of production and its related technical aspects that the staff has pursued so successfully to date.

3. There appears to be relatively little in the way of linkages between ICA and other AU facilities which might have an interest in addressing the problems of aquaculture in LDC's. For example, the current university catalogue indicates that a course is presently offered in international economic development. The professor of such a course might very well be capable of and interested in making a more practical application of his discipline. This may be the easiest and most effective way of broadening the intellectual base of economics and other social science inputs.

4. The development of new courses appears to be progressing quite well. "Aquaculture Economics" is now being offered as a formal university course; "Fish Seed Production" has been designed as a short course, but still requires university accreditation. Courses in "Fish Genetics and Breeding" were developed and offered in 1975. Unfortunately the associate professor who designed the courses has left AU and the courses are not being given this year. ICA is making an effort to reintroduce the courses in the next academic session. In view of the importance of fish genetics, there seems to be no alternative to developing competence in this area.

5. In training, ICA has made excellent progress. An "Aquaculture Training Program" has been designed and is being offered as a short course for foreign graduate students, and special purpose training programs for short-term visitors (such as Peace Corps Volunteers not enrolled in regular academic programs) are being carried out. Graduate student enrollment has grown to a total of 79 students of which 21 are foreign.

6. The Center expressed some concern about the utility of the state-of-the-art reports that it had been requested to undertake at the time of the last review. The ICA should keep in mind that one offshoot of such reports is that they enable the institution to assess what are likely to

be future needs in the further development of aquaculture, and what must be done to meet these needs. Given the spectrum of concerns with which AID must deal in developing and implementing fisheries projects in the LDC's, the state-of-the-art studies are considered to be important avenues of inquiry and ones with considerable practical value for the Agency. Target activities on the individual reports are by-and-large on schedule and work is progressing satisfactorily. No changes in the existing scopes of work are recommended.

7. The list of visitors to the Auburn campus by representatives from institutions at home and abroad and the visits of the Auburn staff to institutions around the world are impressive. One would still, however, encourage Auburn to do more with institutional linkages both in the United States and elsewhere for the intellectual stimulation that such linkages can provide, and also for extending the network of practical response capability that is available to meet the needs of AID and other assistance organizations.

8. In response to the recommendations of the last review, the services of a professional economist have been assigned full time to the grant programs to work essentially in micro-analysis. This is an encouraging step, and it is also encouraging that during the course of this review it was indicated by the ICA that further work in economics was felt to be desirable particularly in the application of macro-analysis.

9. ICA appeared to be doing an excellent job of publishing information resulting from 211 (d) activities through a variety of useful pamphlets, booklets, reports, etc. It appeared to have an active and effective program of disseminating these publications. As noted in the general observations, AID should explore ways by which 211 (d) information might be better disseminated to field personnel, other donors and LDC fisheries offices.

RECOMMENDATIONS

1. As AID is, and likely will be, the major consumer of the centers' services, the problem of continuing core support is one that the Agency must address with the universities. It appears that AID must be prepared to provide core support beyond 1977 through some mechanism or face up to the gradual decline of the research and response capability of the centers. To the extent that AID contemplates the development and expansion of active fisheries and aquaculture programs beyond 1977, steps should be initiated now by the universities and AID to deal with the problem of core support and avoid a hiatus which could well result in the loss of key personnel at the centers and an enormous loss of momentum. The Title XII program is a possible vehicle.

2. A precondition to developing post-1977 fisheries and aquaculture programs should be the formal adoption of an Agency fisheries policy. This policy is vital as a framework for the specific objectives which would be set for the centers, but more importantly as a means of focusing their post-1977 activities even more directly in line with AID legislative requirements.

3. In contemplating post-1977 programs for the two centers, greater concern might be directed toward country-specific applications of the knowledge base which has been developed under the grants. Such an orientation should facilitate the transfer of technology to the LDC's as well as directly assist AID in the design and development of fisheries and aquaculture programs.

4. In view of the skilled manpower and financial constraints to providing the response capability intended in the 211 (d) grants, consideration should be given to the centers establishing relationships with other universities working in small-scale fisheries and aquaculture. Some sort of consortium approach seems essential if significant expansion of international activity in these areas is contemplated by AID, other donors and developing nations. The team notes the excellent results ICNRD is getting through the food technology web of a half-a-dozen universities (CODOT) and suggests that other small-scale fisheries and aquaculture networks be patterned after it. Such arrangements should be explored by AID, URI and AU with such universities as Washington, Texas A&M, Miami (Florida), Delaware, Idaho and Hawaii.

5. Another set of relationships which should be explored and developed by the centers are linkages with fisheries agencies and fisheries departments in universities in the LDC's. Through such linkages the response capabilities of the two centers may be strengthened and the knowledge base of the centers enhanced. In addition, the intellectual and financial stimulation of academic centers in the LDC's by joint research efforts and programs is an objective which AID is directly pursuing, and one which would have a direct bearing on the problem of institutional development discussed below.

6. One problem that seems to have received relatively little attention under these 211 (d) grants is the institutional development of the fisheries establishments in LDC's. As the institutional capacity of many LDC's (for example in Africa) may be the prime constraint to the design and implementation of assistance programs, greater attention to this problem is thought necessary. Both AID and the centers should examine possible approaches to this problem in any post-1977 activities.

7. It appears that neither the centers nor AID are taking sufficient advantage of the work and experience of UNDP/FAO. Other areas where useful linkages relevant to the 211 (d) grant objectives might be developed are with those country, regional and global programs concerned with artisanal fisheries. While there is a practical limit to the extent of the linkages which the centers might develop, it is felt that opportunities exist for academic exchange and collaboration which should be explored.

8. A long-range focus for the ICNRD and the ICA needs to be developed and defined. It is difficult to perceive that either institution has a real concept of its role independent of AID financing. This is perhaps understandable considering their financial constraints and the paucity of external financial support. However, if the centers at URI and AU are to assume dynamic leadership roles in their respective disciplines, they must do their part to seek more financial support, more forceful university policy and a more precise definition of their roles and objectives in the international arena. AID, in turn, can facilitate this process by more clearly articulating its needs and objectives in international fisheries and aquaculture, and by working with the two universities on the continuing problem of core support.

9. Given the parallel thrusts of these 211 (d) grants, the interrelationships of the work being undertaken by each center, and the approach being taken by AID to the problem of increasing consumption of fish protein, it appears there are more opportunities for collaboration between the two centers than are being exploited. We encourage the two centers to take initiatives in extending their efforts in this area through staff exchanges, joint endeavors, increased dialogue, and cooperative ventures.

10. At this time AID does not have any contractual mechanism established with the centers which permits them to respond quickly and with a minimum of administrative work to AID requests for short-term consultants. While both centers want and usually have been able, to respond quickly to such AID requests, existing administrative arrangements requiring the use of intermediate IQC's, are not altogether satisfactory. The BOAs have proved to be slow and cumbersome. AID should take steps to include the two universities under direct IQC arrangements.

11. While the grants to both universities address the problem of information dissemination, it is doubtful that adequate attention has been accorded to this area. The mere publication and field distribution of research papers do not appear to be sufficient. If AID program needs and host country fishery offices are to be served, better mechanisms for communicating the output of these grants should be examined. Possible

avenues of approach are field seminars conducted by the centers for AID and LDC personnel, short programs held at the centers for AID staff, and possibly further work by AID in translating the findings and conclusions of the research already undertaken into program guidance designed for non-technical personnel concerned with assistance efforts in artisanal fisheries.