



APPENDIX 1. PD/A CRSP HISTORY

The PD/A CRSP was initiated formally on 1 September 1982 as a Title XII program under the International Development and Food Assistance Act of 1975. The Consortium for International Fisheries and Aquaculture Development (CIFAD), Auburn University, and the University of California at Davis were chosen to participate in a tripartite management of the PD/A CRSP, and CIFAD was designated as the lead group in the management of the program, with Oregon State University serving as lead institution. CIFAD, no longer a functional entity, consisted of the University of Arkansas at Pine Bluff, the University of Hawaii, the University of Michigan, Michigan State University, and Oregon State University. Most of the CIFAD institutions continue to participate in the PD/A CRSP. However, beginning with this Grant and the dissolution of CIFAD, a new advisory structure allows greater equity among participating institutions and provides an effective mechanism for new institutions to be represented on the Board of Directors.

HISTORICAL OVERVIEW OF PROGRAM OBJECTIVES

In 1980, the First PD/A CRSP Preliminary Design Proposal was approved by the Joint Committee on Agricultural Research and Development (JCARD). The approach for designing the PD/A CRSP included a review and synthesis of the state-of-the-art of pond aquaculture, overseas site visits to determine research needs in cooperating countries, and negotiation of provisional administrative agreements with collaborating institutions. Findings from the literature and field surveys were translated into planning guidelines. The most important needs identified for improving the efficiency of pond culture systems were 1) the need for technological advances to improve the reliability of pond production and 2) the need for economic optimization based on local conditions. The common link was to improve the understanding of pond dynamics.

The 1980 Preliminary Proposal identified four systems which were considered to have the greatest potential for contributing to the supply of low-cost animal protein. These systems, listed in priority sequence according to the proportion of rural poor they would expect to serve, are:

- small, low-intensity tropical pond systems characterized by limited external inputs of feed or fertilizers;
- cooler-water (15-25°C) tropical ponds at medium to high elevations;
- brackishwater and hypersaline ponds, including those in tropical mangrove zones; and
- higher-intensity tropical pond systems, characterized by high external inputs of feed and fertilizers.

The main research objectives for the first five years of the PD/A CRSP (1982-1987 PD/A CRSP Grant) were:

- to compile a quantitative baseline of chemical, physical, and biological parameters for each work location, and to correlate responses of these parameters to various levels of organic and inorganic fertilizer applications to pond culture systems (referred to as the "Global Experiment");
- to compile a baseline of information on hydrology, locally available nutrient inputs, geography, and water quality in each participating country, utilizing available host country resources;
- to observe and document technical constraints limiting fry availability in each participating host country, and to test alternative fry production methods where appropriate;
- to develop models describing the principles of pond culture systems.

These objectives were modified in 1986 because of technical, geopolitical, and financial considerations. A data analysis and synthesis component (now referred to as Data Analysis and Synthesis Team or DAST) was added in 1987 with the following objectives:

- to statistically analyze data from the field experiments to describe global and site-specific variations in pond culture systems;
- to synthesize data from the Global Experiment and develop descriptive models of the physical, chemical, and biological processes that regulate the productivity of pond culture systems;
- to develop conceptual frameworks for one or more pond management models and develop operating instructions consistent with each conceptual framework;
- to compile a manual of operating instructions describing pond management procedures for optimizing yields, increasing the reliability and improving the efficiency of pond culture systems.

The 1987-1990 Continuation Plan addressed the most important objectives of the original plan, with the goal of synthesizing the results of the first three work plans as a staged progression into a conceptual model of pond aquaculture systems. This model was used to identify research needs which were prioritized and translated into objectives for field research projects specific for each host country.

The programmatic and operational objectives in the 1990-1995 Continuation Plan were:

- to continue to develop technology, through research, to overcome major problems and constraints affecting the efficiency of pond aquaculture in developing countries;
- to maintain or improve environmental quality through proper management of aquacultural systems;
- to stimulate and facilitate the processing and flow of new technologies and related information to researchers, to extension workers, and ultimately, to fish farmers in developing countries;
- to promote activities that encourage faculty and researchers to build and maintain linkages;
- to create opportunities for greater multidisciplinary research in aquaculture and to enhance the socioeconomic and ecological aspects of the PD/A CRSP;
- to encourage informational and data exchange among international agricultural research centers, universities,

the non-government research community, and AID centrally funded and mission-funded projects;

- to expand results derived from the site-specific research to regional recommendations through a global analysis of the data; and
- to use an ecosystem approach to arrange the research agenda and integrate technologies.

While many program objectives have been met over the past decade of PD/A CRSP research, the original program goal, that advances in pond aquaculture are based on greater understanding of pond dynamics, continues to be relevant. It serves as an effective organizing principle for new research that aims at resolving constraints facing farmers and commercial aquaculturists in the US and host countries.

August 1, 1998, marked the beginning of the PD/A CRSPs first year of operations under its fourth 5-year USAID grant (the *Continuation Plan 1996-2001*).

HISTORICAL OVERVIEW OF THE PD/A CRSP— AGREEMENTS WITH HOST COUNTRIES, 1982 TO 1995

With the initiation of the CRSP Grant in 1987, Host Country and US institutions renewed their Memoranda of Understanding. These Memoranda reflected the structural changes (i.e., the consolidation of the CRSP from seven countries to three) that had occurred since 1982. While several US universities collaborated at each country site, only one represented the US in each Memorandum. This structure provided for a more equitable arrangement with the Host Country institutions.

For example, The University of Michigan, a CIFAD member, had separate Memoranda with the Thai Department of Fisheries and the Asian Institute of Technology. The University of Michigan and the Thai Department of Fisheries acted as the lead US university and Host Country institution, respectively, in Thailand. This provided a focal point for the other institutions that worked on the CRSP project in Thailand. The University of Michigan in turn had informal subagreements with Michigan State University and the University of Hawaii.

Likewise, the Université Nationale du Rwanda (UNR) held a Memorandum of Understanding with Oregon State University, the lead US university on the Rwanda project. As lead, Oregon State University was the main contact for the Rwandan researchers and was responsible for overall coordination of US CRSP research activities in Rwanda. Auburn University and the University of Arkansas at Pine Bluff collaborated with Oregon State University in Rwanda.

In Honduras, Auburn University held a Memorandum with the Secretaría de Recursos Naturales (since renamed the Secretaría de Agricultura y Ganadería). In Egypt—a bilaterally funded project under USAID/Cairo—OSU held the Memorandum of Understanding with the Egyptian National Agricultural Research Project (NARP).

This hierarchical structure differed from the contractual arrangements among US universities and the Management Entity (ME). While all participating institutions had access to the services of the ME, past contractual agreements were made directly with Auburn University, the University of California at Davis, and CIFAD. CIFAD in turn had formal contracts with its member universities: The University of Michigan, Michigan State University, Oregon State University, the University of Hawaii, and the University of Arkansas at Pine Bluff. When CIFAD was dissolved, all institutions were elevated to the same contractual status. The hierarchical arrangement arrived at through the designation of lead US universities was seen to promote a greater degree of cooperation among US universities and greater involvement of the host institutions at the highest level. Certain programmatic and fiscal responsibilities were delegated to participating US institutions through subagreements from the ME. For the Egypt Project, the ME had formal contracts with each participating university.

CRSP MEMORANDA OF UNDERSTANDING, 1996 TO 1998

At the present time, Memoranda of Understanding are in place between the following participating CRSP institutions:

- International Center for Aquaculture and Aquatic Environments, Auburn University, and the Secretaría de Recursos Naturales, Republic of Honduras
- Southern Illinois University, Carbondale, and the Instituto de Investigaciones de la Amazonia Peruana and the Universidad Nacional de la Amazonia Peruana
- Oregon State University Fisheries and Wildlife Department and the Department of Fisheries, Ministry of Wildlife and Tourism, Kenya (the Department of Fisheries has since moved to the Ministry of Natural Resources)
- The University of Michigan and the Asian Institute of Technology, Thailand

Memoranda of Understanding are in process (or are being considered) between the following institutions:

- Oregon State University and the Universidad Juárez Autónoma de Tabasco, Mexico
- CRSP ME/Oregon State University and the International Center for Living Aquatic Resources Management
- CRSP ME/Oregon State University and Université Nationale du Rwanda

The PD/A CRSP also has formal agreements with the following organizations:

- West Africa InterCRSP
- CRSP Council

Many other informal agreements exist with nongovernmental organizations, private voluntary organizations, private industry, government agencies, universities, and other groups and organizations. A small sample of these linkages appears in Appendix 5.