

492-0266 (7)

Page 1 of 1 Pages

AID 133D-1 (9-70)

DEPARTMENT OF STATE  
AGENCY FOR  
INTERNATIONAL DEVELOPMENT

PIO/T

PROJECT IMPLEMENTATION  
ORDER/TECHNICAL  
SERVICES

1. Cooperating Country  
**Philippines**

2. PIO/T No.  
**492-266-3- 50050**

2.  Original or  
Amendment No. \_\_\_\_\_

4. Project/Activity No. and Title  
**492-11-180-266 Aquaculture Production**  
**PD-AAD-546**

DISTRIBUTION

5. Appropriation Symbol  
**72-11X1023**

6.A. Allotment Symbol and Charge  
**402-50-492-00-69-51**

6.B. Funds Allotted to:  
 A.I.D./W  Mission

7. Obligation Status  
 Administrative Reservation  Subobligation  
**Implementing Document**

B. Funding Period (Mo., Day, Yr.)  
From **1/20/75** to **2/1/75**

9.A. Services to Start (Mo., Day, Yr.)  
Between **Jan. 20, 1975** and **Feb. 1, 1975**

9.B. Completion date of Services  
(Mo., Day, Yr.)  
**Feb. 1, 1975**

10.A. Type of Action  
 A.I.D. Contract  Cooperating Country Contract  Participating Agency Service Agreement Other:

10.B. Authorized Agency  
**USAID/Philippines**

Estimated Financing		(1)	(2)	(3)	(4)
		Previous Total	Increase	Decrease	Total to Date
\$1.00 =					
11. Maximum A.I.D. Financing	A. Dollars		1,500		1,500
	B. U.S.-Owned Local Currency				
12. Cooperating Country Contributions	A. Cash/In-kind				
	B. Other				

13. Mission References

14. Instructions to Authorized Agent  
This PIO/T provides for the services, for a period of approximately 10 days, of a highly qualified and experienced aquaculture consultant to advise and assist the USAID and appropriate GOP officials develop a Project Review Paper (PRP) covering a proposed loan to finance the upgrading of the U.P. College of Fisheries. Dr. Edwin C. Smith, former Dean of the College of Agriculture of Auburn University, is considered to be eminently qualified and it is recommended that he be contracted to provide these services.

The PIO/T is comprised of the face sheet only.

15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.

A. The justifications in the scope of work are technically adequate

B. Funds for the services requested are available

C. The scope of work lies within the purview of the initiating office and approved Agency Program

D.

E.

F.

16. For the cooperating country: The terms and conditions set forth herein and hereby agreed to

17. For the Agency for International Development

18. Date of Signature

Signature and title: **B. G. VILLAVICENCIO**

Signature: **Robert Halligan**

**Feb. 18, 1975**

Title: **Director, External Assistance Staff**

Title: **Program Officer**

4920266 (8)

AID 1310-1 7-72	INTERNATIONAL DEVELOPMENT	1. Cooperating Country PHILIPPINES	3. <input checked="" type="checkbox"/> Original Amendment No.
		2. PIO/T No. 492-126-3-50055	4. Project/Activity No. and Title 492-11-180-266 Aquaculture Production

DISTRIBUTION	5. Appropriation Symbol 72-11X1023	6.A. Allotment Symbol and Charge 402-50-402-00-69-51	6.B. Funds Available <input type="checkbox"/> A.I.D./R <input type="checkbox"/> Voluntary		
	7. Obligation Status <input type="checkbox"/> Administrative Reservation <input checked="" type="checkbox"/> Implementing Document		8. Funding Period (Mo., Day, Yr.) From 3/1/75 To 9/30/75		
	9.A. Services to Start (Mo., Day, Yr.) Between March 1, 1975 and		9.B. Completion date of Services (Mo., Day, Yr.) 6/30/76		
	10.A. Type of Action <input checked="" type="checkbox"/> A.I.D. Contract <input type="checkbox"/> Cooperating Country Contract <input type="checkbox"/> Participating Agency Service Agreement <input type="checkbox"/> Other				
10.B. Authorized Agent AID/W					
Estimated Financing		(1) Previous Total	(2) Increase	(3) Decrease	(4) Current Total
11.	A. Dollars		85,500		85,500
	B. U.S.-Owned Local Currency				
12.	A. Counterpart		150,000		150,000
	B. Other				

13. Mission References

14. Instructions to Authorized Agent

The purpose of this PIO/T is to provide additional funding in the amount of \$85,500 for continuation of services under contract AID/ea 180 with Auburn University Amendment No. 5 to the contract expanded the scope of work and extended the contract to June 30, 1976. Consequently, this PIO/T provides additional funding only.

15. Clearances - Show Office Symbol, Signature and Date for all Necessary Clearances.

A. The specifications in the scope of work are technically adequate AD/AD Donald R. Mitchell	B. Funds for the services requested are available OC - Thomas A. Robinson
C. The scope of work lies within the purview of the initiating and approved Agency Programs	D.
E. Bureau of Fisheries and Aquatic Resources	F. U.P. College of Fisheries

16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to Signature and date: B. G. VILLAVICENCIO	17. For the Agency for International Development Signature: R. Halpern	18. Date of Signature March 6, 1975
Title: Director, External Assistance Staff	Title: Program Officer	

9/3/75

492-266 (9)

PRO AG  
SAID/P

**PROJECT AGREEMENT**  
 BETWEEN THE DEPARTMENT OF STATE, AGENCY FOR INTERNATIONAL DEVELOPMENT (AID),  
 AN AGENCY OF THE GOVERNMENT OF THE UNITED STATES OF AMERICA, AND  
 THE NATIONAL ECONOMIC COUNCIL (NEC)  
 AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES - PD-AAD-541

Under the terms of the Economic and Technical Cooperation Agreement signed April 27, 1951, and the Standard Provisions  Foreign Currency Standard Provisions  annexes attached; it is agreed to carry out a project in accordance with the terms set forth herein.

1. PROJECT NO. **492-11-180-266**      2. ORIGINAL       3. REVISION NO.

4. PROJECT TITLE: **Aquaculture Production**      AGREEMENT NO. **76-6**

5. ANNEX A PROJECT DESCRIPTION AND EXPLANATION

6. APPROPRIATION: **72-11X1023**      7. ALLOTMENT: **402-50-492-00-69-61**

8. AID FINANCING	PREVIOUS TOTAL (a)	INCREASE (b)	DECREASE (c)	TOTAL TO DATE (d)
PERSONNEL COSTS				
FICA				
Contract	135,775		24,025	111,750
PARTICIPANTS	43,000	760		43,760
COMMODITIES	30,000	23,265		53,265
OTHER COSTS				
AID Fund	1,225			1,225
Contract				
TOTAL (Contract)	210,000	24,025	24,025	210,000
US OWNED (Contract)				
COP FINANCING				
COUNTERPART				
Bureau of Fisheries	1,789,828			1,789,828
HSEA	830,000			830,000
D.P. College of Fisheries	262,935			262,935
CISU	186,586			186,586

10. REFERENCES AND REMARKS:  
 The purpose of this revision is to transfer \$24,025 from contract to commodities (\$23,265) and participants (\$760).

**CLEARANCES**

16. DATE OF ORIGINAL AGREEMENT: **November 25, 1975**      17. DATE OF THIS REVISION: **June 30, 1976**      18. EST. FINAL CONTRIBUTION DATE: **June 30, 1976**

14. GOVERNMENT OF THE PHILIPPINES  
 Signature: **B. G. Villavicencio**  
 Director, External Assistance Staff

15. AGENCY FOR INTERNATIONAL DEVELOPMENT  
 Signature: **James G. Ginnerly**

USAID/P

**PROJECT AGREEMENT**  
 BETWEEN THE DEPARTMENT OF STATE, AGENCY FOR INTERNATIONAL DEVELOPMENT (AID)  
 AN AGENCY OF THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND  
 THE NATIONAL ECONOMIC DEVELOPMENT & DISTRICTION ADMINISTRATION  
 AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES

Under the terms of the Economic and Technical Cooperation Agreement signed April 27, 1951, and the Standard Provisions  Foreign Currency Standard Provisions  annexes attached; It is agreed to carry out a project in accordance with the terms set forth herein.

1. PROJECT NO. **492-11-180-215** 2. ORIGINAL  3. REVISION NO.

4. PROJECT TITLE: **Aquaculture Production** AGREEMENT NO.: **76-5**

5. ANNEX A PROJECT DESCRIPTION AND EXPLANATION

6. APPROPRIATION: **72-11X1023** 7. ALLOTMENT: **402-90-492-00-69-51**

A. AID FINANCING	PREVIOUS TOTAL (A)	INCREASE (B)	DECREASE (C)	TOTAL TO DATE (D)
a. PERSONNEL COSTS FICA				
Contract	137,000		1,225	135,775
b. PARTICIPANTS	43,000			43,000
c. COMMODITIES	30,000			30,000
d. OTHER COSTS AID FICA		1,225		1,225
Contract				
e. TOTAL (Dollars)	210,000	1,225	1,225	210,000
f. US OWNED (Cash)				
g. COP FINANCING CLOS - Cash				
A. COUNTERPART Inst Fund - "A"				
- "B"				
<del>U.S.</del> Bu. of Fisheries	1,789,828			1,789,828
<del>USAID</del> USAID	830,000			830,000
<del>U.S.P.</del> U.S.P. College of Marine Fisheries	242,935			242,935
<del>USAID</del> MR CLSU	186,586			186,586

10. REFERENCES AND REMARKS:  
 The purpose of this revision is to transfer \$1,225 from contract to other costs component to provide funds for the services of a TDY Fisheries Soil Expert.

**CLEARANCES**

GOP: \_\_\_\_\_ USAID: \_\_\_\_\_  
 BFAR: \_\_\_\_\_ Project Manager: *[Signature]*  
 \_\_\_\_\_ Controller: *[Signature]*  
 \_\_\_\_\_ Other: \_\_\_\_\_

11. DATE OF ORIGINAL AGREEMENT: **November 25, 1975** 12. DATE OF THIS REVISION: **April 5, 1976** 13. SET FINAL CONTRIBUTION DATE: **June 30, 1975**

14. GOVERNMENT OF THE PHILIPPINES  
 Signature: *[Signature]* **H. G. VILLAVICENCIO**  
 for: External Assistance Staff

15. AGENCY FOR INTERNATIONAL DEVELOPMENT  
 Signature: *[Signature]* **Garnett A. Zimmerv. Director**

USAID/

**PROJECT AGREEMENT**  
 BETWEEN THE DEPARTMENT OF STATE, AGENCY FOR INTERNATIONAL DEVELOPMENT (AID),  
 AN AGENCY OF THE GOVERNMENT OF THE UNITED STATES OF AMERICA, AND  
 THE NATIONAL ECONOMIC DEVELOPMENT & DEVELOPMENT AUTHORITY  
 AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES

Under the terms of the Economic and Technical Cooperation Agreement signed April 27, 1951, and the Standard Provisions  Foreign Currency Standard Provisions  annexes attached, it is agreed to carry out a project in accordance with the terms set forth herein.

1. PROJECT NO. **492-11-150-266**      2. ORIGINAL       3. REVISION NO.

4. PROJECT TITLE: **Agriculture Production**      AGREEMENT NO. **76-6**

5. ANNEX A PROJECT DESCRIPTION:      EXPLANATION:

6. APPROPRIATION: **72-11X1023**      7. ALLOTMENT: **402-50-492-00-69-61**

AID FINANCING	PREVIOUS TOTAL (A)	INCREASE (B)	EXPENSES (C)	TOTAL TO DATE (D)
PERSONNEL COSTS				
CASH		137,000		137,000
PARTICIPANTS		43,000		43,000
COMMODITIES		30,000		30,000
OTHER COSTS				
CASH				
<b>TOTAL (CASH)</b>		<b>210,000</b>		<b>210,000</b>
US CASH (CASH)				
COP FINANCING				
COUNTERPART				
<b>NEW FINANCING</b>		<b>1,789,828</b>		<b>1,789,828</b>
<b>NEW NEEDS</b>		<b>830,000</b>		<b>830,000</b>
<b>N.P. College of Fisheries</b>		<b>242,935</b>		<b>242,935</b>
<b>PROCESSED SUGAR</b>		<b>587,065</b>		<b>587,065</b>
OTHER				

10. REFERENCES AND REMARKS:

11. DATE OF ORIGINAL AGREEMENT: **November 23, 1975**      12. DATE OF THIS REVISION:      13. EFFECTIVE COMMUNICATION DATE: **June 30, 1978**

14. GOVERNMENT OF THE PHILIPPINES:      15. AGENCY FOR INTERNATIONAL DEVELOPMENT

Signature: **Gerardo P. Sicat**      Signature: **Garnett A. Zimorly**  
 Title: **(Director-General)**      Title: **Director**

COPIES: **AFAR: Dir. Felix Gonzales**      **USAR: [Signature]**  
**WPC: Rofito Fernandez**      **Control**

W A I V E R

DATE: November 25, 1975

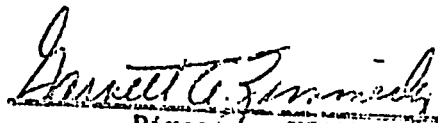
PROJECT: Aquaculture Production  
492-11-130-266

In accordance with the provision of Financial Management Handbook No. 19, paragraph 1, d.3.a., I hereby authorize obligation of \$200,000 without accompanying implementing documents.

The FIO/Is covering an estimated \$127,000 will be issued by June 30, 1976.

The FIO/Ps covering an estimated \$43,000 will be issued by June 30, 1976.

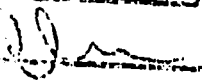
The FIO/Cs covering an estimated \$30,000 will be issued by June 30, 1976.

  
\_\_\_\_\_  
Director, USAID

Clearance:

FO: 

AS: 

AD/AD: 

DEPARTMENT OF AGRICULTURE BUREAU OF FISHERIES, SEACULTURE AND DEVELOPMENT ASSISTANT SECRETARY AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES	1. Project/Activity No. 42-11-200-280	2. Date of Report 76-6
	3. Project/Activity Title Aquaculture Production	

**I. Introduction**

This Project Agreement briefly explains the sector goal and project purpose for the Aquaculture Production Project and the course of action necessary for achieving the goal and purpose. It specifies a plan of implementation for FY 1976, including respective responsibilities for the parties participating in the project, and lists a series of targets or outputs to be accomplished during the course of FY76. A complete listing of all USAID and GOR inputs to the project during FY76 is also shown.

**II. Sector Goal and Project Purpose**

**A. Sector Goal**

The overall Philippine/USAID goal to which the Aquaculture Production Project will contribute is improved nutrition for the Philippine people. This will be accomplished by augmenting the total availability of fish protein through expansion of aquaculture (or inland fish) production and reduction of production costs. The specific target is to increase the availability of pond-raised fish from 3.0 kg. per capita per year (1.6 g. protein per capita per day) in 1973 to 6.4 kg. per capita per year (3.5 g protein per capita per day) in 1978.

**B. Project Purpose**

The purpose of the project is to increase aquaculture production and simultaneously reduce production costs, both by significant proportions. This will be accomplished by strengthening public sector research and extension capabilities, both for brackish-water and freshwater production. Extension efforts under the project will concentrate on milkfish production in brackishwater ponds since milkfish is the prime aquaculture species in the Philippines at present and has the greatest potential for major production increases and cost decreases. Various species of

For the Cooperating Government or Agency SIGNATURE: _____ DATE: _____ TITLE: _____	For the Agency for International Development SIGNATURE: _____ DATE: _____ TITLE: _____
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NATIONAL ECONOMICS AND DEVELOPMENT AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES	1. Project/Activity No. 400-12-580-200	2. Agreement No. 76-6	3. [X] Original or Revision No.
	3. Project/Activity Title. Aquaculture Production		
	INDEX A		

carp and tilapia will become important in terms of overall project objectives as improved technology and practices are developed and tested through research. A major freshwater research objective will be to develop and perfect technology to permit aquaculture species to be produced in conjunction with rice cultivation. Such a possibility is expected to economically and nutritionally benefit a large percentage of the country's small rice farmers by providing them an additional source of both income and food.

By the end of the project in FY78, the following targets are expected to have been attained:

1. Milkfish production will increase from about 120,000 tons in 1973 to 300,000 by the end of 1978;
2. Yields will increase from an average of 570 kg/ha in 1973 to 1300 kg. in 1978;
3. Production costs for bangus will decrease from P2.25/kg. in 1973 to P1.00/kg. by the end of 1978 (Rice index of March, 1973). It is recognized that the real cost of inputs, particularly fertilizer and fry have doubled since 1973.
4. Freshwater pond production of such species as tilapia, carp, and catfish should expand as follows:

	<u>1971</u>	<u>1978</u>
Total area under production	6,000 ha.	21,000 ha.
Yield/ha.	580 kg.	1,300 kg.
Production	3,500 tons	27,000 tons
Cost of Production/kg.	P2.25	P1.80

5. Rice - aquaculture production (primarily tilapia, carp, and catfish) should increase as follows from negligible amounts in 1973.

For the Cooperating Government or Agency

For the Agency for International Development

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

TITLE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

TITLE: \_\_\_\_\_



PROJECT AGREEMENT INTERNATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY  AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES	1. Project/Activity No. 192-11-00-016	FILE NO. _____
	2. Agreement No. 76-6	3. Original or Revision No. _____
	3. Project/Activity Title.  Aquaculture Production	

	1973	1978	1980
Total Area	-	15,000 ha.	200,000 ha.
Yield/ha.	-	100 kg.	125 kg.
Production	-	1,500 tons	25,000 tons
Cost of Production/kg.	-	P0.50	P0.50

### XII. Rationale and Background

Protein deficiency is a serious and persistent problem confronting the Philippines, with an estimated 70% to 80% of the total population consuming less than the recommended allowance of 50 grams a day. Low income classes comprise the vast majority of this protein-deficient group.

It is increasingly difficult to expect animal meat production to make a decisive contribution toward filling the protein gap. In fact, there is evidence that spiraling feedgrain costs are at present resulting in decreased consumption of beef, pork, and poultry among all income categories. In contrast, the fish sector holds great promise for alleviating protein deficiency in the Philippines because of the great potential which lies there and because fish meat can be produced more economically than animal meat. Within the fish sector, there is substantial agreement among fisheries experts that aquaculture holds great promise for significant production increases. The commercial (deep-sea) and municipal (coastal) fish sectors are approaching maximum production levels and over-fishing is a distinct possibility for both in the near future. Aquaculture production on the other hand is still in incipient stages with large areas of land in the Philippines suitable for brackishwater and freshwater cultivation and average production yields well below optimum levels. The Noncapital Project Paper (PROX) provides additional information and details on the aquaculture potential.

For the Cooperating Government or Agency

For the Agency for International Development

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
TITLE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
TITLE: \_\_\_\_\_

PROJECT DOCUMENT INTERNATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES ANNEX A	1. Project/Activity No. 692 14-286 206	PAGE 5 OF 11 PAGES
	2. Agreement No. 76-6	3. <input checked="" type="checkbox"/> Original or Revision No.
	3. Project/Activity Title. Aquaculture Production	

**IV. Course of Action**

**A. Strengthen Extension and Research Capabilities**

In order to increase aquaculture production significantly, both aquaculture extension and research capabilities will be strengthened. Project extension activities will concentrate on strengthening the Extension Service of the Bureau of Fisheries and Aquatic Resources in the Department of Natural Resources in order to disseminate existing knowledge and technology on fish production, especially milkfish production. Both brackishwater and freshwater extension will be covered. Brackishwater production is at the present time the most important sector of inland fisheries in the Philippines and is likely to remain so for the foreseeable future. While freshwater production is expected to increase significantly over the next few years in absolute terms, it will continue to be a minor portion of total inland fish production. Hence the need to strengthen both brackishwater and freshwater extension.

Research activities will, first, build on present knowledge of brackishwater fish production to address certain key constraints affecting milkfish production and, second, create a body of knowledge on freshwater production which essentially does not exist at the present time.

**B. Brackishwater and Freshwater Extension**

Research conducted under the GOP/USAID Inland Fisheries Project which terminated in FY 1973 demonstrated that significantly higher aquaculture yields together with lower production costs are attainable in the Philippines. What must now be developed and implemented is an effective program of dissemination of technologies to fishfarm producers through a strengthening of public sector extension services. Extension efforts in brackishwater production will focus almost exclusively on milkfish during FY 1976 and until extendable technology is developed for other brackishwater species through the research component of the project. Extension activities in freshwater production will focus primarily on pond and paddy field (rice fish) culture of carp and tilapia. To improve extension services, primary emphasis

For the Cooperating Government or Agency	For the Agency for International Development
SIGNATURE: _____ DATE: _____	SIGNATURE: _____ DATE: _____
TITLE: _____	TITLE: _____

PROJECT AGREEMENT NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES	1. Project/Activity No. AG-76-1-180-005	PAGE 1 OF 1 PAGES
	2. Agreement No. 76-6	3. <input checked="" type="checkbox"/> Original or Revision No. _____
	3. Project/Activity Title. <b>Aquaculture Production</b>	

will be given to: (a) extension worker training, (b) extension information, and (c) extension planning and programming.

To improve extension planning and programming, a four-phased extension campaign will be conducted in FY 1975 and subsequently until 1978 after an evaluation at the end of the first year. The four phases of the extension campaign are: (1) data gathering (2) training and orientation, (3) field implementation, and (4) evaluation. Pages 29-44 of the Aquaculture Production PROP describe in greater detail the implementation plan for the extension component of the project.

C. Research

1. Brackishwater Research

Brackishwater research will be conducted at the Brackish-water Research Center in Leganes, Iloilo, which is operated and supported by the University of the Philippines College of Fisheries (UPCF). Primary emphasis for brackishwater research will be accorded to: (a) further development and refinement of technology for milkfish production in order to attain a national average of at least 2,000 kg./ha./yr. at the fertilization level of management; and (b) development of cultural techniques for other fishes and animals such as mollusks in combination with and independent of milkfish culture. Extensive research data and findings exist for milkfish production; however, additional research efforts are required in such areas as artificial spawning and hatching techniques, suppression of mortality rates for wild fry, standardization of production techniques, and establishment of production ranges for different production techniques. A complete listing of the specific brackishwater research objectives identified under the project is shown below:

For the Cooperating Government or Agency

For the Agency for International Development

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
TITLE: \_\_\_\_\_

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TITLE: \_\_\_\_\_

PROAS NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES ANNEX A	PROJECT AGREEMENT BETWEEN AID AID NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY	1. Project/Activity No. 492-12-10-0000	PAGE 7 OF 7 PAGES
		2. Agreement No. 76-6	3. <input checked="" type="checkbox"/> Original or Revision No.
		3. Project/Activity Title. Aquaculture Production	

a. Milkfish Technology

- (1) Develop technology for artificially reproducing milkfish and develop effective hatchery techniques for mass production of fry.
- (2) Determine means of reducing the high mortality rates of milkfish during handling and culturing.
- (3) Determine various milkfish production yields resulting with the different food types - plankton, and lab-lab.
- (4) Determine the most effective and efficient types of fertiliser and rates of application in producing each type of food and each species and combination of species.
- (5) Determine the most effective and efficient stocking rates, including manipulations, of milkfish for pond with each type food.
- (6) Develop technology for polyculture of milkfish in various combination with species such as shrimp, mullet, tilapia, and sea bass.

b. Non-Milkfish Technology

- (1) Explore possibilities for polyculture of tilapia with predaceous fishes such as tenpounder and sea bass.
- (2) Begin selection of species of oysters and clams for culture and testing of different cultural techniques.
- (3) Determine safer, more effective means of controlling pond pests than now being employed.
- (4) Identify parasitic and other disease organisms and develop technology for their control.

For the Cooperating Government or Agency

For the Agency for International Development

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 TITLE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 TITLE: \_\_\_\_\_

ADDITIONAL PAGES CONTRACT NO. WEST ANEX. A	<b>PROJECT AGREEMENT</b> BETWEEN <b>NATIONAL ECONOMIC AND DEVELOPMENT          AUTHORITY</b>	1. Project/Activity No. 492-11-120-266	PAGE 8 OF _____ PAGES
	AN AGENCY OF THE GOVERNMENT OF <b>THE PHILIPPINES</b>	2. Agreement No. 76-6	3. <input checked="" type="checkbox"/> Original or Revision No. _____
		3. Project/Activity Title. <b>Aquaculture Production</b>	

(5) Develop improved designs and engineering technology for coastal fishponds that will facilitate management practices.

(6) Assess profitability of various combinations of production practices and their impact upon aquaculture investment incentives.

2. Freshwater Research

In contrast with brackishwater aquaculture, freshwater aquaculture is almost non-existent at the present time in the Philippines. In order to realize the significant freshwater potential, research must produce a body of technology and information which can be extended to producers. Of particular importance to small rice farmers will be the development of technology for rice-fish culture in small rice paddies which will provide small farmers an additional source of income. Freshwater research will be conducted at the Freshwater Research Station in Malolos, Nueva Ecija which is jointly operated and supported by UPOR and Central Luzon State University (CLSU). Freshwater Research efforts will center around such species of tilapia, mudfish, and Indian and Chinese carps. The specific freshwater research objectives which have been identified under the project are as follows:

- a. Develop for commercial application technology for combined rice-fish culture in small paddies.
- b. Develop, through transfer and applied research, technology for application of monoculture and polyculture of various combination of tilapia, mudfish, Indian and Chinese carps, freshwater shrimp and other aquatic organisms.
- c. Develop through transfer of monoculture and polyculture of various combinations of tilapia, Indian and Chinese carps and shrimp.
- d. Develop basic technology for hatchery production of predominantly monosex seedlings of tilapia species.

For the Cooperating Government or Agency

For the Agency for International Development

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 TITLE: \_\_\_\_\_

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 TITLE: \_\_\_\_\_

PROJECT AG  
CONTINUATION  
SHEET  
ANNEX A

PROJECT AGREEMENT INTERNATIONAL NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY	1. Project/Activity No. 492-11-180-250	PAGE 9 OF 10 PAGES
	2. Agreement No. 76-6	3. <input checked="" type="checkbox"/> Original or Revision No.
AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES	3. Project/Activity Title. Aquaculture Production	

- e. Develop basic technology for artificial spawning and hatchery techniques for mass production of seedlings of Indian and Chinese carps and catfish (Clarias species) and tilapia (including monosex tilapia).
- f. Determine the most effective and efficient types of fertilizer and rates of application in raising each species and combination of species.
- g. Identify parasitic and other disease organisms of each cultured species and develop technology for their control.
- h. Identify fishpond pests and develop technology for their control.
- i. Develop design and engineering technology for inland fishponds that will facilitate management practices.
- j. Assess economic consequences of various combinations or production practices.

V. Plan of Implementation for FY76

A. Brackishwater and Freshwater Extension

Phase II of the extension campaign referred to in Section IV.B will be undertaken in the course of FY76. Phase I was implemented in FY75 and covers the provinces of Aklan, Antique, Capiz and Iloilo (i.e. Panay Island) as well as the six provinces of the Bicol Region (Albay, Camarines Sur, Camarines Norte, Catanduanes, Masbate and Sorsogon). Before implementing brackishwater and freshwater extension programs in the provinces of Phase II, an evaluation will be made by USAID and the BFAR in December, 1975 to assess the impact of Phase I efforts both in terms of increased production and increased effectiveness of extension services. A BFAR Coordinating Committee chaired by the Director, will coordinate foreign assistance to assure complementarity of effort and to avoid undesirable overlap in specific areas.

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AID 1210-1A PRO AG CONTRACT NO. EMBT ANNEX A	PROJECT AGREEMENT NATIONAL ECONOMIC AND DEVELOPMENT AGENCY	1. Project/Activity No. 692-11-130-256	PAGE 10 OF _____ PAGES
	AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES	2. Agreement No. 76-6	3. <input checked="" type="checkbox"/> Original or Revision No. _____
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The freshwater extension program in Nueva Ecija and Pampanga will be implemented without a specific time frame for the first 6 to 8 months of operation. The planned schedule for the other provinces of Phase II is as shown below:

<u>No.</u>	<u>Date when activities expected to be initiated</u>	<u>Expected Accomplishments</u>
1	1/31/76	1. Preliminary survey data compiled and assessed. 2. Extension personnel selected, trained and deployed in respective divisions. 3. Necessary equipment purchased and distributed. 4. Introductory visits with local officials, bankers and businessmen. 5. Meeting places selected. 6. Extension literature, slide presentations etc. developed.
2	3/31/76	1. Seminar for local officials, bankers, and businessmen. 2. Introductory meeting with operators, caretakers, their families and interested neighbors. 3. Subject matter meetings. 4. Demonstrations at sites were set up during orientation program. 5. Group meetings. 6. Select cooperators. 7. Set-up demonstration/field trials.

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AID 1000-1A PRO AG CONTINUATION SHEET ANNEX A	PROJECT AGREEMENT BETWEEN AND NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY	1. Project/Activity No. 492-11-130-266	PAGE 1 OF 1 PAGES
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<u>No.</u>	<u>Date when activities expected to be initiated</u>	<u>Expected Accomplishments</u>
3	6/30/76	<ol style="list-style-type: none"> <li>1. Assistance to individual operators and prospective operators (33% of total farms visited).</li> <li>2. Demonstration with cooperators.</li> <li>3. Discussion groups become organized with leaders selected for each.</li> <li>4. Report and follow-up activities.</li> <li>5. All operators and caretakers (including families) and related business people contacted through congregation, group discussion, group or individual meetings where discussions held and all given literature - all given opportunity to see demonstrations - At least 33% of farms visited.</li> <li>6. Surveys brought up to date and analyzed.</li> </ol>

Training of BFAR extension workers and preparation of extension literature will also be undertaken.

**B. Research**

**1. Brackishwater Research**

During FY76, research work will be ongoing for all of the major objectives listed in section IV, C, 1. None of the brackishwater objectives, however, is scheduled to be accomplished by the close of FY76. Nonetheless, research work is progressing ahead of schedule in every area except

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AID 1530-1A PRO AG CONTINUATION SHEET ANNEX A	PROJECT AGREEMENT TECHNICAL AID AND NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY	1. Project/Activity No. 11-180-266	PAGE 12 OF 17
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that relating to the establishment of production ranges for milkfish production based on the two major foods (lab-lab and plankton).

2. Freshwater Research

Freshwater research will be undertaken in all the areas referred to in section IV, C, 2, and three major objectives will be attained by the end of FY76, as indicated below.

VI. Outputs

The following project outputs (or targets) are expected to be accomplished by June 1976.

A. Brackishwater and Freshwater Extension

1. Implementation activities of Phase I completed.
2. Phase II of extension campaign implemented.
3. Approximately 90 extension workers will have received special training.
4. Extension teams for Phase II provinces will be fully equipped in terms of equipment, materials, and literature.
5. Extension literature will be completed for all existing aquaculture technology.

B. Research

1. Freshwater

a. Technology will be improved for rice-fish (tilapia species and/or common carp) culture with yields at 100 to 500 kg/ha/yr.

b. Mono and polyculture technology will be improved for species of carp and tilapia with yields up to 3000 kg/ha/yr.

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AND 1533-1A (REV. 1-67) PRO AG CONTRIBUTION SHEET A ANNEX	PROJECT AGREEMENT BETWEEN AID AND NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY	1. Project/Activity No. 602-31-100-265	PAGE 13 OF 14 PAGES
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2. Brackishwater

- a. Technology for milkfish culture with lab-lab and plankton will be improved.
- b. Extendable technology will be developed for reducing or correcting acid conditions affecting brackishwater fishpond soils and waters.

VII. FY76 Project Inputs

A. USAID will finance the inputs shown below in this Project Agreement.

1. <u>Contract Services</u>	Amount <u>(\$000)</u>
Auburn University including 2 Research Advisors, 1 Extension Advisor, and 12 <del>em</del> Consultants	127
Evaluation Team (2 <del>em</del> )	<u>10</u>
Sub-total	137
2. <u>Participants</u>	
1 Aquaculture Research	8
1 Pathology	11
1 Fish Processing	8
2 Pond Construction/Aquaculture/Extension	<u>16</u>
Sub-total	43

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ADD FORM 1A PRG AG CONTRIBUTION SHEET ANNEX A	<b>PROJECT AGREEMENT</b> NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY AN AGENCY OF THE GOVERNMENT OF THE PHILIPPINES	1. Project/Activity No. 674-180-262	PAGE 14 OF 14 PAGES
		2. Agreement No. 76-6	3. <input checked="" type="checkbox"/> Original or Revision No.
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**3. Commodities**

**a. Research**

Laboratory Equipment	10
FURA	4

**b. Extension**

Jeeps (10)	3.5
Laboratory equipment	2.5
Field Equipment	3
Visual aid equipment	2
FURA	5

Sub-total 30.0

**B. GPP Inputs are as follows:**

**1. Research: Regular Government Revenues (P)**

**a. Brackishwater Station, Ilogos,, Iloilo**

	<u>MSDB</u>	<u>DP</u>	<u>TOTAL</u>
Personal Services	193,812	178,545	372,357
Maintenance and other expenses	253,960	20,000	273,960
Furniture & Equip.	37,000	-	37,000
Special Purposes	15,228	4,000	19,228
<b>Total</b>	<b>500,000</b>	<b>202,545</b>	<b>702,545</b>

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PRO AG CONTRIBUTION SHEET ANNEX A	PROJECT AGREEMENT NATIONAL ECONOMIC AND DEVELOPMENT AGENCY	1. Project/Activity No. 652 22-180-256	PAGE 15 OF _____ PAGES
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b. Freshwater Station, Muñoz, Nueva Ecija

	<u>NSDE</u>	<u>UP</u>	<u>CLSU</u>	<u>Total</u>
Personal Services	146,165	39,898	55,586	241,649
Maintenance & Operating Expenses	113,848	-	20,000	133,848
Facilities & Equip.	1,750	500	25,000	27,250
Special Purposes	18,237	-	-	18,237
Capital Outlay	<u>50,000</u>	<u>-</u>	<u>86,000</u>	<u>136,000</u>
<b>Total</b>	<b>330,000</b>	<b>40,390</b>	<b>186,586</b>	<b>556,984</b>

2. Extension: Bureau of Fisheries and Aquatic Resources

<u>Provinces</u>	<u>Total</u>	<u>Personal Services</u>	<u>Operation Expenses</u>			<u>Equipment Outlay</u>	
			<u>Travel</u>	<u>Supplies</u>	<u>Sundries</u>		
<u>Region III</u>							
Pampanga	553,800		327,600	18,720	12,480	358,800	195,000
Nueva Ecija	85,200		50,400	2,880	1,920	55,200	30,000
<u>Region IV</u>							
Quezon	369,200		218,400	12,480	8,320	239,200	130,000
Mindoro Cr.	127,800		75,600	4,320	2,880	82,800	45,000
Mindoro Occ.							
<u>Region VIII</u>							
Leyte	99,400		58,800	3,360	2,240	64,400	35,000
<u>Region V</u>	554,428	212,678	222,000	48,000	60,000	330,000	11,750
<u>Region VI</u>							
<b>TOTAL</b>	<b>1,789,828</b>						

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PRO AG CONTINUATION SHEET ANNEX A	PROJECT AGREEMENT BETWEEN AND NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY	1. Project/Activity No. 402-11-100-258	PAGE 16 OF 17 PAGES
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**VIII. Coordination with other donors**

It is understood that, under UNDP auspices, the FAO and the BFAR plan to undertake a program of assistance in aquaculture starting in FY76. The fundamental purpose of that project, as of the USAID-assisted project, is to increase aquaculture productivity and thereby total availability of fish for human consumption. Extension and training activities planned under this project and those being planned under the leadership of the BFAR.

**IX. Reporting and Evaluation**

An evaluation will be jointly conducted by USAID, UPCF and BFAR by March 1976 to assess the progress of the Project based upon the findings of the evaluation, the project will be modified to reflect any changes that may be necessary in achieving its objectives.

The evaluation team will include a representative from NEDA, a USAID Evaluation Officer and two consultants from AID/W (one an aquaculturist and an officer experienced in Agriculture Project Development). Working cooperatively with the evaluation team will be representatives of the BFAR and UPCF, USAID Project Manager and the Auburn University team Leaders. The evaluation will be based on accomplishments as anticipated in the Project paper approved in February 1974.

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1. USAID HAS CAREFULLY REVIEWED PARA 3 REFTEL WITH PCARR AND UPCF. AGRICULTURAL RESEARCH LOAN UNABLE TO SUPPORT ACID SULPHATE SOILS RESEARCHER SINCE LOAN LIMITED TO SHORT TERM TA ONLY. ALL PARTIES AGREE MOST SUITABLE SOLUTION IS SEAFDEC FUNDING RESEARCHER AND SEAFDEC HAS INFORMALLY CONSENTED TO FUNDING PSN.

2. REQUEST AID/W IMMEDIATELY PROCEED WITH APPROVAL REVISED PROP AND ADVICE OF CHANGE FOR APP TO ALLOW FOR PREVIOUSLY PLANNED DOLS 221,000 LEVEL FOR FY 78.  
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