PD ABB 386 6760004
67301 6760004

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR, AFRICA BUREAU

FROM: AFR/DR, John Withers

SUBJECT: Approval APID for A.I.D. Funding, from Sahel Drought Funds, of $118,000 for Fish Culture Extension Project in the Central African Republic, and Related Waiver of Vehicle Procurement Source/Origin Requirements and Environmental Examination Statement

Discussion: The joint Peace Corps/A.I.D. supported project will help re-establish four Government of the Central African Republic (GOCAR) fish stations. The project is described in detail in the attached Accelerated Project Implementation Document. (Annex A) The stations will provide fingerlings to local farmers who will then raise them to maturity for home consumption in their individual ponds. The project is part of the GOCAR effort to revive a program which had been successful during the 1950's under French auspices, but which deteriorated during the 1960's for lack of continued extension support. The Peace Corps is now providing volunteers to work with local extension agents in managing the stations and carrying out extension activities among the farmers. The A.I.D. funding will be for vehicles to transport fingerlings to the individual farmers and for renovation of the stations.

Project authorization under the Sahel Drought Assistance Program is sought now so that the project agreement can be signed in time to permit coordination of A.I.D. efforts with those of the Peace Corps, which is now engaged in training volunteers to go to the field this fall. A.I.D. funding should be made available shortly after the arrival of the new volunteers. Likewise, should A.I.D. funding not be made available, the Peace Corps should know prior to the arrival of their volunteers so they can make adjustment in their program which will go forward in any event.

The project proposal was originally reviewed by the Project Committee on April 28, 1976. At that time it was agreed that the project is technically and operationally feasible. Questions were raised, however, concerning (1) project economics, especially about the economic costs and benefits of fish culture, the possibility of saturating the market with fish, and the market structure; (2) the possibility of the farmers' ponds contributing to the spread of schistosomiasis; and (3) the potential for institutionalization of project activities by GOCAR.

The economic concerns were discussed subsequently, on May 13, with Dr. B.L. Ducan, an Auburn University fisheries consultant who originally examined the proposed project for A.I.D. in August 1975. Following that meeting the economic concerns were resolved per the paper of May 24, 1976 by Eric Witt, Agricultural Economist designate for RDO/Yaounde, which is attached. (Annex B)

11/1/76
Copy sent to Yaounde Bangui

Regarding the threat of increased infestation of humans with schistosomiasis as a result of the fish culture activities, expert opinion was requested from TA/Health and SER/ENGR to the effect that this project will not cause the spread of schistosomiasis nor will it have other harmful environmental effects. (Annex C)

GOCAR steps to institutionalize the project will be assured through covenants or undertakings in the project agreement. These will provide for the following: (1) As a condition precedent to Project Agreement the GOCAR will agree to officially establish a permanent office within the Ministry of Agriculture to be responsible for the fisheries program, it will assign competent personnel to manage the four Government fish stations, and it will assure that fisheries extension services will be an integral part of the duties of GOCAR extension agents working in the areas where individual fish ponds are located. (2) Within one year after signing of the Project Agreement the GOCAR will provide to A.I.D. a written plan for the continued maintenance, operation and management of the four Government fish stations and the program for providing services to the individual farmers after the project is completed.

One waiver of FAA policies is necessary for the successful implementation of this project: U.S. only source/origin restrictions for vehicle procurement are seen as creating insurmountable problems due to the total lack of U.S. vehicle maintenance facilities in the C.A.R. Attached is a request to waive this requirement. (Annex D)

Recommendation: The purpose of this memorandum is to request your decision concerning (1) approval of the C.A.R. Fisheries APID and (2) approval of the related waiver of vehicle procurement source/origin requirements.

Drafted:AFR/DR/CAWARAP:RSolem:bfc:10/27/76
Clearances:
AFR/DR/CAWARAP:GThompson(draft)
ACTION:Sue Major(draft)
SER/ENGR:JNeave(draft)
AFR/CAWA:RCrist
AFR/DP:CWard
AFR/DR:SKlein
GC/AFR:STisa
DAA/AFR:WHNorth

Attachments: a/s

(1) C.A.R. Fisheries APID

APPROVED
Disapproved
DATE 11/5/76

(2) Vehicle Procurement Source/ Origin Waiver

APPROVED
DISAPPROVED
DATE 11/5/76

ACCELERATED PROJECT IMPLEMENTATION DOCUMENT (APID) - CENTRAL AFRICAN REPUBLIC (CAR) FISHERIES

(I) Implementation agent: PC/CAR and the Ministry of Water and Forestr·, Hunting and Tourism of GOCAR.
(II) Activity Cost: $118,000 A.I.D. Input. Total Project Cost: $334,100
(III) Estimated Starting Date: July 1976
(IV) Estimated Completion Date: October 1978

Background France introduced fish pond culture to CAR in early 1950's with construction of fish hatcheries for fingerling production. Subsequently, construction of private ponds was strongly encouraged. Fish culture activity peaked in 1959, at which time an estimated 20,000 private ponds were in existence. In 1956, approximately 40 African extension agents were active under French supervision. Following independence in 1960, hatcheries were gradually abandoned, and an increasing number of private ponds fell into disuse due to lack of technical assistance and availability of fingerlings. In November 1974, five PCV's commended a program of renovation of existing fish station facilities and extension work, including counseling of rural farmers regarding pond construction and management techniques as well as dissemination of fingerlings. This program has been extremely successful. Individual private pond production has tripled and site production has increased five to ten fold during the first year of implementation. With additional material support, including vehicles, training materials, and more PC manpower, the beneficial effect already achieved could be substantially expanded.

Current Status In August 1975, through a task order under A.I.D. contract AID/ta-BOA-1152 with Auburn University, a U.S. agriculture expert reviewed the PC fisheries program during a month-long visit to CAR. In his report, the expert concluded: "Pond-cultured fish have a definite contribution to make in localized subsistence economics in the CAR as a source of high qualigy, low cost protein eagerly accepted by central Africans. Successes of the Peace Corps and UNDP/FAO-assisted fish culture extension projects demonstrate that central Africans can become successful subsistence fish farmers as a result of carefully planned and supervised extension education projects." The expert also identified four sites where expansion of the ongoing activities would be feasible. These sites are proposed for renovation in this APID.

Project Description A fish station is initially necessary to provide fingerlings for the first stocking of private ponds. Of the original five stations chosen as sites for the ongoing PC program, three were totally abandoned and two were only marginally operational. None of these five stations were providing any fingerlings to private farmers due to poor management of lack of transportation. The PCV's, within the first six months of the program, renovated a sufficient number of ponds at five stations to produce adequate fingerlings to stock 20 small farmer ponds (2,000 fingerlings) each month.

The additional four station sites proposed by the Auburn expert are presently abandoned and need renovation, modest office and toolroom facilities, and commodities such as shovels, nets, buckets, cement, and lumber. After five months, sufficient ponds will be renovated and stocked with fish at the four hatcheries to produce fingerlings to stock 20 small farmer ponds each month. The station also serves as a demonstration facility where explanations of fish management techniques are given to local farmers and extension agent trainees. In the first year of the PC program, approximately 400 private ponds were stocked from the five stations renovated by PC. The yearly production of these ponds is 10 metric tons of fish per year. The expansion of the project will yield, over the life of the activity, a seven fold increase both in the number of farmers affected and in tons of fish produced. An indeterminable amount of income not heretofore available will also accrue to the farmer.

Heretofore PCV's have experienced frustration in their inability to transport fingerlings (2-3 inch tilapia) more than 15 kilometers from station site due to lack of suitable vehicles. The GOCAR, with its extremely limited budget, cannot provide any vehicle support. Even the fisheries director in the Ministry of Forestry does not have an official vehicle. With three toyota land cruiser pick-ups (one for every three stations), the volunteers could transport a large number of fingerlings up to 200 kms. to rural areas where lack of protein is most acute. After stocking, the volunteer would visit the ponds monthly to educate the farmers on pond management. After six months, a pond is harvested and the fish sold. One benefit from Tilapia as a culture fish is the reproduction obtained which allows the sale of fingerlings to adjacent ponds. The objective, thus, is the establishment of self-sufficiency on the part of the farmer, thereby allowing the program to continue without the assistance of the volunteer.

Project Goal The project goal is to increase the availability of protein to the rural population as well as augment the income of the farmer. This activity proposes to establish 2,800 self-sufficient fish farms in nine regions of the CAR. Cooperating farmers, as a result of the activity, should be able to continue the management of their fish ponds and offer surplus fingerlings for sale to other farmers.

Project Purposes and Outputs (A) To augment the amount of protein available to the rural population. The proposed project expansion will increase fingerling production from 2,000 to 10,000 per month, the number of stations from five to nine, and the number of recipient farmers from 400 to 2,800. The PCV's and CAR counterparts will also instruct rural farmers in management techniques so that fish raising activities can continue at the end of the project. (B) To develop within the Ministry of Water and Forestry sufficient numbers of fish stations and extension personnel to continue the program after departure of the volunteers. The project proposes a 3-week traveling seminar to train new personnel in station management and extension techniques.

The principal thrust of this program is the establishment of a self-sustaining system placing first priority on the training of farmers to function, if necessary, without the assistance of government extension agents. Notwithstanding, the proposal also provides for the training of government extension agents. It is expected that such training will enhance the existing fish pond culture activity while providing the basis for further expansion.

The Ministry of Water and Forestry, under which the beginning stage of this program has been carried out, will continue to provide labor for the stations, gas for volunteers' motorcycles and housing and furnishings for volunteers. In addition, the salaries of nine counterparts will be paid by GOCAR. In the past year, GOCAR has provided $6,000 for this program. GOCAR will more than double their contribution during FY 1977. The degree of local interest in the project has been typified by the example of the Boda station, where local officials provided $215 in 1975 and voted $500 in 1976 towards materials and labor to run the fish station in their area.

Project Inputs

A. A.I.D.

| | | |
|---|---|---|
| 3 Toyota land-cruiser one-ton pick-up trucks and spare parts | | $ 34,000 |
| POL and maintenance for Toyota trucks | | 20,000 |
| 9 motorcycles (Yamaha AG 175) and spare parts | | 14,000 |
| Materials for four new stations | | 20,000 |
| Training seminar for GOCAR employees | | 5,000 |
| | Total | $ 93,000 |
| | Contingency | $ 10,000 |
| | Inflation | $ 15,000 |
| | GRAND TOTAL | $118,000 |

B. Peace Corps

| | | |
|---|---|---|
| 9 volunteers at $5,200/MY/2 years | | $ 93,600 |
| The training of volunteers | | 31,500 |
| | Total | $125,100 |

C. GOCAR

| | | |
|---|---|---|
| Gasoline for motorcycles | | $ 4,000 |
| Labor | | 7,000 |
| Housing for PCV's | | 10,000 |
| Counterparts salaries | | 10,000 |
| Logistical support | | 2,000 |
| Ministerial salaries directly related to program | | 8,000 |
| Fish station facilities | | 50,000 |
| | Total | $ 91,000 |

D. Total program input for 27 months:

| | |
|---|---|
| A.I.D. | $118,000 |
| Peace Corps/CAR | 125,100 |
| GOCAR | 91,000 |
| GRAND TOTAL | $334,100 |

Description of How Proposed Activity Meets AIP Criteria This project meets all criteria established to govern selection of projects for inclusion under the AIP umbrella. It is in response to drought problems, small, not overly complicated, quickly implementable and controllable by local officials. Likewise it lies in the area of low cost agricultural technology, will result in increased income for primary producers, should improve rural health through better nutrition and should also enhance the overall productive capability of farmers affected. (See attached briefing paper for detail on AIP criteria.)

Relevance to development needs in food crop production The Peace Corps has demonstrated that it can put into full production an abandoned fish station, within six months, capable of providing fingerlings to 20 farmers a month. Most of these fingerlings are then distributed by the PCV and his counterpart extension agent to farmers living within 15 kms. of the station. Using lightweight motorcycles, a volunteer can transport up to 300 fingerlings at a time. Under this proposed project, the PCV will be able, using a four-wheel drive vehicle, to transport 3,000 fingerlings at one time within a radius of 200 kms. The planned three-week training and demonstrations are intended to train GOCAR personnel to serve as counterparts to the PCV's. The traveling seminar will center on practical application of fish culture extension and pond management principles by means of demonstration visits to fish stations and to successful farmer sites. Requested funds ($5,000) will cover per diem of trainees, transportation costs and training materials.

Addressing development problems of neediest groups CAR is a country whose development potential is severely hampered by the extremely low level of developed manpower, both skilled and semi-skilled, and by a very weak infrastructure. These constraints need to be addressed over the long term under the auspices of traditional development mechanisms. An example of this approach is the RAO fisheries project. The modest, ongoing PC program has been successful in relying only to a limited extent on government extension agents to carry out the fisheries extension program. PCV's have placed their main emphasis on making sure fish farmers themselves learn from their initial mistakes over a one to two-year period. The farmers are becoming (after 18 months into the PC activity) self-reliant and able to grow, harvest and reproduce fingerlings on their own. They then become de facto extension agents, teaching fellow villagers the techniques which have contributed to their success. The PCV's ability to get fingerlings initially from the fish stations to the rural farmer has been limited to a radius of 15 kms. because the fingerlings travel poorly on motorcycles at about 300 per trip. The vehicles

provided under this proposed project will eliminate this constraint and permit services to at least ten times the number of people presently being served. A regular, longer-term development project would obviate these manpower and infrastructure constraints. This activity proposes an approach which emphasizes putting abandoned fish stations back into operation so that the maximum number of farmers can be served and be taught to become self-reliant without further dependence on government intervention. This method has proven successful and, with the additional inputs proposed, can be applied to a far greater number of needy people.

Project implementation The activity can commence immediately on arrival of vehicles, which should be purchased locally and should thus be available within a few weeks of ordering. Assuming average lead times for approval of this APID, preparation and negotiation of agreement and implementation documents with the GOCAR, we estimate the main activity can start about Dec. 1, 1976. Eight new volunteers (four for the additional fish stations and four to replace departing PCV's) will arrive at Bangui o/a August 1. After three months' training, PCV's will report to their stations, and, in the case of new sites, set about renovating ponds with materials locally procured under this project and making use of local labor supplied by GOCAR. This will take three to four months (November 1976 to February 1977). As each pond at a site is renovated, brood fish will be stocked, having been provided at no charge from fish stations already renovated or from the FAO-sponsored Landjia fish station outside Bangui. (Each station contains an average of seven ponds.) Within two months, fingerlings produced by brood fish can be transported to farmers' ponds. At the same time, PCV's and extension agents will travel to farmers in outlying regions to show that a station is able to produce enough fingerlings to stock 20 ponds a month. Thus, if new stations are fully operational by March 1, 1977, each station providing enough fingerlings to stock 20 ponds a month will have stocked 320 ponds by the end of the project (16 months to May 31, 1978). Farmers will have perfected techniques of pond management and harvesting and will be self-sufficient in fish production, so that as has been shown already, a steady supply of high-protein and acceptable food is being provided.

Implementation Schedule:

| | |
|---|---|
| October 1976 | A.I.D./Washington approves project. |
| November 1976 | Grant agreement signed with GOCAR. |
| November 1976 | P.O. for vehicles issued. |
| December 15, 1976 | Vehicles delivered. |
| (July 15, 1976 | Eight PC trainees begin training status.) |
| August 1976 | Trainees arrive Bangui, commence in-country training. |
| November 1976 | PCV's arrive at sites, commence renovation of ponds, training of GOCAR agents and extension services to farmers. |
| March 1977 | Fish station ponds begin supplying fingerlings to farmers. |
| April 1977 | All fish stations renovated and operational, each one stocking 20 ponds monthly. |
| May 1978 | Fish station personnel trained; fisheries extension service |

| | |
|---|---|
| | operational; seven fold increase in fish farmers reached. |
| October 1978 | Project completed. |

End of Project Status (EOPS):

(1) 9 fish stations renovated and supplying fingerlings to outlying farmers.
(2) Each station supplying fish to an average of 240 new farmers a year.
(3) 2,800 farmers trained in intermediate techniques of pond management, water source protection, and harvesting.
(4) 70 metric tons of fish produced during a two-year period.
(5) Each farmer able to provide production in excess of his own family's needs for sale to other villagers, thus increasing average family cash income.
(6) 9 central African extension agents trained.

# BRIEFING PAPER
# ACCELERATED IMPACT PROGRAM

## Background

The traditional A.I.D. project may take two to three years to plan and design, and at least that many years to implement. It is usually in the multi-million dollar range and requires heavy inputs of U.S. commodities and technical services. This characterization is appropriate for development projects in those countries at the upper end of the underdeveloped scale which already have a significant capital and institutional infrastructure in place. In some parts of the underdeveloped world, however, particularly among the least developed twenty-five - most of which are in Africa - simpler, smaller and less costly development projects, and projects which can be designed and implemented in a more rapid fashion are more appropriate to local needs and absorptive capacity.

## "R&R" History

During the recent drought in the Sahel, the Congress provided $110 million of special drought assistance. This appropriation which was made without regard to the whole array of traditional, legislative strictures, spurred A.I.D. into the creation of a new technique of providing assistance in a more expeditious manner. Specifically, during the years of drought assistance, a new form of assistance introduced was called "Recovery and Rehabilitation (R&R)". The essential characteristics of this aid was that it:

-- was directly related to immediate, readily observable needs of the rural populations to assist them to recover from the drought and withstand future drought,

-- was small in size - not over $1 million - during the life of the project,

-- did not require extensive feasiblity studies and could be designed with the skills and knowledge locally available,

-- could be implemented by local contract or government services within a 12 to 24 month period.

-- could be supervised, controlled, and accounted for by local government officials.

## Early Evaluation

In early calendar year 1975, a series of external audits and internal evaluations were carried out of the R&R program by A.I.D. (see AIDTO CIRC-A-347), by the Auditor General (see Report No. 3-625-76-8) and the Inspector General (See IGA dtd 11/16/75). While all agreed that the new form of assistance met the unique developmental needs of the Sahelian states recovering from the

drought, suggestions were made for improvement in monitoring and financial management. During July-December 1975, SFWA circulated these evaluations to the field, appointed a three man task force including one representative from SER/FM and SER, to develop a new and improved system, presented it to the Second SFWA Workshop in Niamey, and on December 5, 1975, received approval of the new system from Mr. Murphy on a pilot basis.

Accelerated Impact Program

In December 1975, SFWA circulated the new system to the field and set aside $5 million remaining under the drought emergency appropriation for the new program. This modified system, called the Accelerated Impact Program (AIP) incorporated the suggestions of the evaluators and auditors and added selected additional criteria. Specifically, the projects

-- must be relatively small but in no case exceeding $500,000 over the life of the project,

-- must be within areas of interest to A.I.D.'s long-term development scheme for the region, that is

- development of low-cost agricultural technology,
- expansion of income of small, primary producers,
- promotion of rural health measures,
- enhancement of the capability of the rural population to prepare themselves to carry out productive activities relative to the above.

-- can be of a pilot or experimental nature at the initial phase of a longer term, regular development project.

Experience Under the FY 1976 A.I.P. Program

Sahel posts submitted approximately 40-45 A-PIDs during the last five to six months - the A-PID being the first step in the AIP request and approval process. As of June 30, 1976, not a single AIP activity had completed the review and approval process leading to an actual obligation. Attached to this paper is a list of 28 AIP projects which had received some form of approval as of June 30. During July and August, nine AIP activities with a total value of $1.4 million were obligated.

The Evaluation Prior to the FY 1977/78 A.I.P. Program

The Africa Bureau proposes to continue the AIP program and has included $8.5 million in our FY 77 Congressional Presentation for this purpose, and $10.0 million in FY 78 Budget Request. However in accordance with our

agreement with Mr. Murphy, no obligations can be made under the FY 77 program until an evaluation has been completed of the FY 76 pilot effort. Because regular development funds are being requested in FY 77 and 78 rather than a special appropriation, some modification of the program will be required. Specifically, it will be necessary to

-- meet Section 611 design and planning strictures, or waive them as appropriate,

-- increase the use of U.S. commodities and services.

Also, it is already apparent from the FY 76 experience, that the revised criteria and streamlined review process, must be restated and clarified to assure a more expeditious review and approval process.

AFR/SFWA:IRosenthal:9-17-76

# Central African Republic Fish Culture Extension Program

A review of the Central African Republic Fish Culture Extension Program project was held on 28 April 1976. At the meeting concern was expressed about the economic costs and benefits of fish culture, the possibility of saturating the market with fish, and the market structure. The following comments are directed to these concerns and are based upon the following sources: 1. B. L. Duncan, "Review of Peace Corps Fisheries Program in the Central African Republic," September 30, 1975. 2. Yaounde 0445 and 3. Meeting held on May 13, 1976 with PPC/DPRE, H. Sharlach; AFR/CWR, B. Bahl; TAB/AGR, E. Witt; and Auburn University, Dr. B. L. Duncan.

The CAR Peace Corps fish culture extention program has reached 400 small farmers and during the next two years an additional 2400 farmers are projected to be participating in fish culture production. The average size of the producers' ponds is 100 $m^2$ (approximately 33' x 33'). This is a small pond but is a realistic size for a rural subsistence farmer in the CAR and conforms well with the Agency's interest in the rural poor.

The only pond production figure available is based upon one pond harvest that Dr. Duncan was able to document of a rate of 1568 kg/1a/yr. For the average size pond of 100 $m^2$ the annual yield of fish would be 15.7 kg or 34.5 pounds. This yield reflects the small size of the ponds, the lack of a tradition of animal husbandry, and the utilization of agricultural waste products for pond fertilization and fish feed.

The only cash outlay that a producer may incur is for the purchase of fingerlings. The fingerlings are sold at a cost of .005¢ each and, at a stocking rate of two fingerlings per square meter, the cost of stocking a 100 $m^2$ pond will be $1.00. Various agricultural wastes are used for pond fertilization and fish feed and include manioc leaves, cotton seed, coffee pulp, manure, and other vegetation and are readily available to the producer. Many of the ponds being utilized in the project were constructed at an earlier time and require some renovation. The care of the fish during the growing period will require only limited time each day for the collection of agricultural waste products for feeding purposes. The value of the annual fish production from one pond of 100 $m^2$ will be $11.78 based on a selling price of .75¢/kg.

The production from one pond - 15.7 kg - should be considered at a subsistence level and will serve to augment the protein intake of a CAR producers' family. Aggregated, the production from 2800 producers' ponds will be about 44 metric tons (based on an average 100 $m^2$ pond). It is likely that this will augment subsistence food needs and will not be marketed through a more formal, institutionalized market structure. Therefore, it is unlikely that fish will saturate the CAR market.

TA/AGR/ESP:ENWitt:mmb:5/24/76

# INITIAL ENVIRONMENTAL EXAMINATION

Project Location: Central African Republic (CAR)

Project Title: CAR Fish Culture Extension Program

Funding (Amount): A.I.D. $118,000; Peace Corps $125,100; GOCAR $91,000; Total $334,100

Life of Project: Two years

IEE Prepared by: SER/ENGR, Weyburn D. Davies Date: 10/7/76

Environmental Action Recommended:
Negative determination, See Page 8

Concurrence:

Graham Thompson
Signature

Oct 21, 1976
Date

Assistant Administrator's/Director's decision:

Approve

Disapprove

Signature

11/5/76
Date

CAR Inland Fisheries Project:

## Initial Environmental Examination (IEE)

I. Examination of the Nature, Scope, and Magnitude of Environmental Impacts

A. Description of the Project

The Project Information Document (PID) describes the project as one which is designed to continue and expand an ongoing fish culture program started by the Peace Corps in cooperation with the Ministry of Water, Forestry, Hunting and Tourism of the Central African Republic (CAR). The project, under the auspices of Peace Corps through the assignment of five Peace Corps Volunteers (PCV's), continues the activity of rebuilding and reestablishing six fish fingerling hatchery sites for the breeding and distribution of Tilapia species fingerlings to farmers within a 15 kilometer radius of the hatcheries. In addition, extension service is provided for the re-establishment and upgrading of existing and/or previously abandoned rearing ponds.

France introduced fish culture to the CAR in the early 1950's with construction of fish hatcheries for fingerling production. Construction of private rearing ponds was encouraged and approximately 20,000 private ponds were rearing fish when the program peaked in 1959. With independence in 1960 and the accompanying diminution of French administrative influence and financial support, hatcheries (and concurrently private ponds for lack of a source of fingerlings) fell into disrepair and many were abandoned.

In connection with the PC rehabilitation and extension program, a review of the potential was conducted in 1975 under A.I.D. Contract AID/ta-BOA-1152, by a fisheries expert who concluded that "pond-cultured fish have a definite contribution to make in localized subsistence economics in the CAR as a source of high quality, low cost protein, eagerly accepted by Central Africans. Successes of the PC and UNDP/FAO-assisted fish culture extension projects demonstrate that Central Africans can become successful subsistence fish-farmers as a result of carefully planned and supervised extension education projects."

Fish culture, as presently practiced and as prescribed by the methods and techniques incorporated in this project, consists of hatcheries, operated and supported by the government, which produce fingerlings (2-3 inches) of the Tilapia species of fish. These fish are herbivorous and grow quite rapidly, reaching marketable size (approximately 1-1/2 pounds) within six months of stocking of the farmer operated rearing ponds. These ponds are constructed by the farmers, following plans and specifications given them by the PCV's and CAR extension agents. Extension agents also provide on-site advisory services during construction. Ponds are usually

quite small, with a minimum size of approximately 100 square meters (10 x 10 m.) of surface area. They may be constructed by simply damming a nearby small stream, but are usually constructed by excavating the pond basin alongside such streams. This allows for more uniform construction and control of water supply in addition to minimizing the possibility of damage or destruction from flooding. Ponds are usually rectangular in shape with a depth of approximately 50 cm. at the upper or inlet end sloping to approximately 1.0 to 1.5 meters depth at the lower or discharge end behind the dam. Dams are built of material excavated to form the pond and incorporate an overflow and drainage structure of simple design which can be constructed of locally available materials. Drain structures are screened to prevent the egress of fish when the pond is drained for harvesting the fish crop. Once the pond is drained and the fish concentrated in a small pool behind the dam, harvesting is done by manual labor using buckets and sometimes nets. Fish are then transported to markets after the family has kept a quantity sufficient for its own needs. Extension agents also assist the family in techniques of preservation through salting and smoking of those fish which it retains for family use.

This project, as an extension of the PC activity, proposes the following: 1) continued renovation of PCV staffed hatcheries (Figure 1); 2) Renovate and re-establish four additional hatcheries thus providing coverage of nine regions of the CAR (Figure 1); 3) Procurement of four wheel drive vehicles to expand radius of stocking activities from present 15 km, (by motor bike), to approximately 200 km; 4) Purchase of necessary commodities, (shovels, nets, buckets, cement, lumber, etc.) for the renovation and operation of the hatcheries; 5) Establishment of extension programs by PCV's visiting each farm pond at least monthly, accompanied by counterpart CAR extension agent, such extension programs to provide training to both farmers and CAR employees in Tilapia breeding, fish culture techniques and public health aspects of fish culture; 6) Training of CAR fisheries technicians for hatchery operation and extension of work; 7) Establishing and/or renovating and stocking a total of 2,800 farm ponds (2,400 in addition to the present 400 established and stocked under the existing PC Project).

B. Identification and Evaluation of Environmental Impacts: (See evaluation form, Annex A)

1. Land use - the Project will have little effect on land use in that the following conditions pertain:

a. No increase in population or in concentration of populations is expected.

b. No natural resources (minerals, lumbering, etc.) extractive processes are incorporated or anticipated.

c. Little or no land clearing will be required since the project is aimed primarily at renovation of previously existing facilities, both at hatchery sites and on-the-farm rearing ponds. Only clearing of vegetation in and immediately surrounding these will be required. Since the hatchery sites average only about 1 to 2 hectares total and the on-farm ponds only 0.1 ha., the total lnad use involved is only approximately 290 to 300 ha. for the entire 9 regions (9 hatcheries at 1.5 ha. each and 2,800 ponds at 0.1 ha. each).

d. No change in soil character is required or anticipated.

2. No alteration in natural defenses is contemplated or expected.

3. No other land use if foreclosed by this project since total area is small and widely dispersed, plus the fact that present use if already established and, for the main part, only renovation and improvement of existing facilities is contemplated.

4. No jeopardy of man or his works is expected with the possibility of schistosomiasis disperson. This is treated under Health, to follow.

Water Quality:

1. Physical state of water will be changed little if any. Draining of ponds at time of fish harvest is the only discharge of water into present water courses. If all 2,800 ponds were drained simultaneously (very unlikely) the total discharge of pond water would only be approximately 280,000 cubic meters of drainage water dispersed over one-half to two thirds of the CAR, an area of 121,000 to 160,000 square miles.

2. Chemical and biological states would be practically unchanged. (See para. 1, above).

3. Ecological balance would remain unchanged.

Atmospheric - No air or noise pollution would result from this project.

Natural Resources -

1. Diversion, altered use of water. The only diversion of water will occur about twice yearly when the farm ponds are drained for fish harvesting and subsequently refilled. This, plus loss through evaporation (essentially equal to that of the stream from which the water is diverted) amounts to only approximately 560,000 c.m. per year.

in tropical areas in general. As health problems pertain to this project, only three potential diseases which are all associated with aquatic environments and the health problems encountered in the CAR seem applicable. These are: 1) Schistosomiasis, 2) malaria and 3) filariasis. Other parasites also associated here are the flukes of lung and liver, but these are considered as minimal given the known incidence and the cultural habits of the people. In order of possible problem areas of disease propagation:

a. Schistosomiasis - In general, the fish culture practices of the world have been implicated as playing a minor but measurable role in the transmission of schistosomiasis.* Basic contributing factors in schistosomiasis transmission are inherent in the operation of improperly constructed and maintained rearing ponds. These are or may be:

(1) There is a high incidence of S. mansoni and low incidence of S. haematobrium in the CAR (Ref. Water, Engineers, Development and Disease in the Tropics, McJunkin.).

(2) Water for filling the ponds and maintaining water levels during rearing period generally comes from nearby streams, many of which are probably infested with the snail vectors of Schistosomiasis.

(3) Improperly maintained ponds provide excellent habitat for snail vector breeding and maintenance of snail populations, i.e.: decaying organic matter and rich benthic zone, weed and water plant growth in shallow areas of ponds.

(4) Exposure of snail populations to infection by schisosomial myracidia, either through entry from natural waters or by discharge of ova from infected persons working in and around the ponds.

Factors which would tend to inhibit or prevent the spread of schistosomiasis in ponds properly constructed and maintained as proposed in this project:

(1) Most of the ponds are in existence and will only require renovation to restore them to productivity. Such renovation would require several procedures which would render the ponds less apt to serve as a favorable habitat for propagation and maintenance of vector snail populations than they are in their presently unkempt condition. Deepening and cleaning of rotting organic material, steepening slopes of sides and retaining structures thus reducing shallow areas, clearing of weeds and

*Proceedings of a Symposium on the Future of Schistosomiasis Control, Tulane University, 1972.

F. E. McJunkin: Water Engineers, Development and Disease in the Tropics, AID/csd-1888, July 1975.

growth in ponds, construction of proper, screened overflow and drainage structures, etc., would lead to less snail breeding and hence schistosomiasis transmission for those ponds selected.

(2) Training programs already undertaken for PCV's and to be instituted for native extension agents as well as the pond operators (farmers) themselves will incorporate concepts of management (proper construction, maintenance, and operation) which when applied routinely will greatly inhibit, if not eliminate, propagation and maintenance of vector snail populations (see item (1) immediately preceding). Such practices required for pond-culture and harvesting of fish as the following would be highly inhibiting to snail vector propagation:

(a) Periodic draining of the ponds for harvesting of fish. Drain structures are screened to prevent escape of fish but would also screen out adult snails from being carried to natural water courses and possibly downstream ponds.

(b) Removal of decomposed organic material (benthic layer) on bottom of ponds after harvesting fish for spreading on gardens as organic fertilizer would serve to remove a food source for snail populations as well as removing snails entrapped in this material.

(c) Periodic draining for harvest and post-harvest cleaning removes aquatic weed growths, both submergent and emergent, which serve as a habitat for snails and miracidia.

(d) Dehydration and compaction of bottom and bank soils (generally clay) after harvest draining and cleaning would further inhibit the survival of host snails, schistosomal eggs and miricidia which may have survived drainage and cleaning of ponds.

(e) The extension service with periodic visits (monthly) of extension agents (both PCV's and native Central Africans) would tend to reinforce the maintenance and operation techniques previously taught to farmers as outlined above.

(f) Propagation and spread of schistosomiasis from the hatcheries should be negligible if not nonexistent due to measures outlined above applied on a continuing day-to-day basis.

(g) The plan of a more or less complete food-chain cycle (fish ponds - livestock production - gardening) would or should include the raising of ducks which would have access to the pond and would serve as a partial control of snail vectors since snails form a part of the diet of these waterfowl.

(3) The aesthetics of these ponds would generally preclude their use for any purpose other than fish-farming. In order to provide sufficient flora for fish feeding, the ponds are heavily fertilized, primarily with animal manure, and this promotes a very heavy growth of both filamentous (slimy) and free forms of algae which provide both food and oxygen for the fish. The appearance of the ponds as a result of this practice is one which discourages their use for bathing, laundry, or other purposes of human personal hygiene; especially when one considers that there is usually a relatively cleaner (in comparison to the ponds) appearing stream or other nearby water source which would naturally attract people away from ponds for hygienic uses.

b. Malaria - This disease is also endemic to the CAR. Those conditions listed above for poorly managed fish ponds as contributing to the propagation and spread of Schistosomiasis also apply to the mosquito vectors of malaria.

In properly maintained ponds, the habitat of the mosquito larvae would be severely reduced by measures also similar to those applying to schistosomiasis control.

In addition, the project includes the stocking of the ponds with a small number of fish whose diet includes mosquito larvae and this would further reduce vector breeding.

c. Filariasis - While incidence maps indicate this disease as present in the southern parts of CAR, incidence is generally low. A combination of chemotherapy and vector control serves to keep the infection and spread of the parasite under reasonable control.

Vector control in terms of this project would again be greatly enhanced by the same management and maintenance methods which control schistosomiasis, as outlined above.

Since the mosquito vectors of filariasis prefer to breed in waters which have a high organic content (such as that encountered in managed fish ponds) other forms of vector control might be required in epidemic areas. Introduction of fish species that feed on mosquito larvae would serve, as in the case of the malaria vectors, to inhibit vector production. Monitoring of ponds for larvae in epidemic areas should be included in the extension activities of the project. Where indicated by monitoring operation, larviciding may be required.

2. No ecosystem element is changed to any measurable, hence significant, degree by this project.

General

1. No international impacts

2. No controversial impacts

3. No larger program impacts. However, it should be noted that this project is an extension or expansion of the concept previously introduced, not only in the CAR, but in other bordering countries. A flourishing and quite successful program in Cameroon provided the model and training arena for the PCV's presently engaged in this project in the CAR.

II. Recommendation for Environmental Action

In view of the very limited geographical and physical scope of the project, it is ascertained there will be no significant impact on the environment of CAR or neighboring areas. Land use, change in water quality, atmospheric effects, natural resource commitments, cultural and socioeconomic changes are minimal excepting for improved diets and income of the recipients. The potential for health problems does exist, especially as they pertain to schistosomiasis, if the project is operated haphazardly. Even in this event, which is highly unlikely given the previous effort and emphasis by the PC, the total contribution of the project to the overall schistosomiasis situation in CAR would not be significantly measurable. Every construction, operation and maintenance technique required to make fish raising an economically viable operation also has the built-in benefit of a well managed schistosomiasis control program as applied to these small ponds. It should be noted that other diseases and parasitic infections common to CAR would also be minimized within the scope of this project.

Therefore, the conclusion must be reached that this project has no significant harmful effect on the environment of the CAR or its neighbors and that a negative determination shall be made.

ANNEX A

IMPACT IDENTIFICATION AND EVALUATION FORM

| Impact Areas and Sub-areas* | Impact Identification and Evaluation** |
|---|---|
| A. LAND USE | |
| 1. Changing the character of the land through: | |
| a. Increasing the population | N |
| b. Extracting natural resources | N |
| c. Land clearing | L |
| d. Changing soil character | L |
| 2. Altering natural defenses | N |
| 3. Foreclosing important uses | N |
| 4. Jeopardizing man or his works | L |
| 5. Other factors | |
| _____ | _____ |
| _____ | _____ |
| B. WATER QUALITY | |
| 1. Physical state of water | L |
| 2. Chemical and biological states | L |
| 3. Ecological balance | L |
| 4. Other factors | |
| _____ | _____ |
| _____ | _____ |

*See Explanatory Notes for this form.
**Use the following symbols: N- No environmental impact
L- Little environmental impact
M- Moderate environmental impact
H- High environmental impact
U- Unknown environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM

C. ATMOSPHERIC

| | |
|---|---|
| 1. Air additives | N |
| 2. Air pollution | N |
| 3. Noise pollution | N |
| 4. Other factors | |
| _____ | _____ |
| _____ | _____ |

D. NATURAL RESOURCES

| | |
|---|---|
| 1. Diversion, altered use of water | L |
| 2. Irreversible inefficient commitments | N |
| 3. Other factors | |
| _____ | _____ |
| _____ | _____ |

E. CULTURAL

| | |
|---|---|
| 1. Altering physical symbols | N |
| 2. Dilution of cultural traditions | N |
| 3. Other factors | |
| _____ | _____ |
| _____ | _____ |

F. SOCIOECONOMIC

| | |
|---|---|
| 1. Changes in economic/employment patterns | L |
| 2. Changes in population | N |
| 3. Changes in cultural patterns | N |
| 4. Other factors | |
| _____ | _____ |

IMPACT IDENTIFICATION AND EVALUATION FORM

G. HEALTH

1. Changing a natural environment — M
2. Eliminating an ecosystem element — N
3. Other factors

_____ _____

_____ _____

H. GENERAL

1. International impacts — N
2. Controversial impacts — N
3. Larger program impacts — N
4. Other factors

_____ _____

_____ _____

I. OTHER POSSIBLE IMPACTS (not listed above)

_____ _____

_____ _____

_____ _____

See attached Discussion of Impacts

October 4, 1976

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR THE AFRICA BUREAU

FROM: AFR/DR, John Withers

SUBJECT: Procurement Source/Origin Waiver

Problem Request for procurement source/origin waiver from Geographic Code 000 (U. S. only) to Geographic Code 935 (Free World).

| | | |
|---|---|---|
| A. | Cooperating Country: | Central African Republic |
| B. | Nature of Funding: | FY 77 Funds Grant FN Funds |
| C. | Description of Goods: | Non-U. S. Manufactured Vehicles and Equipment. |
| D. | Approximate Number: | Three Pick-Up Trucks (Toyota) and spare parts, Nine Motorcycles (Yamaha)and Spare Parts |
| E. | Probable Source: | Japan |

Discussion Section 636 (i) of the Foreign Assistance Act of 1961, as amended, prohibits AID from the purchase or long term lease of motor vehicles unless such vehicles are manufactured in the United States. Section 636 (i) does provide, however, that "...where special circumstances exist the President is authorized to waive the provisions of this section in order to carry out the purposes of this Act." We are of the opinion that mobility requirements of the Central African Republic (CAR) Fish Culture Extension Program present special circumstances that justify the waiving of the origin requirement of Sec. 636(i) and the source requirements set forth in Chap.2 of Handbook 15.

In keeping with Agency policy, the cost of procuring three (3) one-ton pick-up trucks and nine (9) motorcycles and the necessary spare parts, will be charged to a grant to

the CAR Department of Natural Resources/Fisheries Division. The source of the procurement will be the local Toyota and Yamaha dealers in the CAR, which dealers are the only ones providing acceptable vehicle sales and services in the country.

Per Yaounde 3213 and per Lawrence-Solem memorandum of September 9 (both attached), provision of adequate and timely maintenance and repair services for U. S. vehicles is virtually impossible, but there are adequate facilities for the maintenance of Japanese Toyota and Yamaha vehicles in the CAR.

Vehicular transportation is the critical constraint to geographical expansion of the CAR Fisheries project, without which no substantial progress in this proven sucessful program can be made.

Recommendation That you determine that at this time special circumstances exist that justify the procurement of non-U. S. manufactured vehicles for timely execution of the aforementioned AID program and that you certify that exclusion of procurement from sources requested in this waiver would seriously impede attainment of foreign policy objectives and the objectives of the Foreign Assistance Program in the CAR.

Approved Stanley S. Scott

Disapproved _____

Date 11/5/76

Attachments

# Department of State TELEGRAM

UNCLASSIFIED 0883

PAGE 01 YAOUND 03213 311658Z

ACTION AID-31

INFO OCT-01 OES-06 EB-07 AF-08 SSO-00 /053 W
054432

O R 311620Z AUG 76
FM AMEMBASSY YAOUNDE
TO SECSTATE WASHDC IMMEDIATE 9481
INFO AMEMBASSY BANGUI

UNCLAS YAOUNDE 3213

AIDAC

E.O. 11652: N/A

SUBJECT: RDO/Y - C.A.R. FISHERIES PROJECT

ACTION TO: AFR/CAWA
DATE DUE: 9-3
DR DAC AA AP DB
SEP 2 - 1976
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

1. AFR/CAWA OR UR PLEASE ENSURE FOLLOWING MESSAGE IS PASSED TO JOE KIMMINS, PEACE CORPS DIRECTOR, C.A.R., FROM RDO KOEHRING. KIMMINS REMAINED IN WASHINGTON FOR CONSULTATIONS FOLLOWING LAST WEEK'S PEACE CORPS DIRECTORS' CONFERENCE.

2. PRIOR LEAVING WASHINGTON WOULD APPRECIATE YOU CONTACTING GRAHAM THOMPSON, AFR/D
. IN CONNECTION BYRON BAHL'S MEMORANDUM DATED AUGUST 9, 1976, ON C. A.R. FISHERIES APID. ATTACHED TO BAHL'S MEMO ARE NOTES FROM THE PROJECT COMMITTEE MEETING HELD ON APRIL 28; DRAFT MEMORANDUM FOR AA/AFR FROM DIRECTOR AF/DR AND ERIC WITT'S NOTE ON ECONOMICS OF PROPOSED FISHERIES PROJECT DATED MAY 24. THESE ATTACHEMENTS SHOULD ALSO BE DISCUSSED.

3. THREE POINTS OF PARTICULAR CONCERN COME UP IN THESE DOCUMENTS. FIRST, THE REFERENCES TO WAIVERS FOR VEHICLES IN THE C.A.R. AND EMBASSY USE OF, E.G., FORD PICKUP TRUCKS. THE COMMENTS ON WAIVERS ARE, IN MY VIEW, ALL ERRONEOUS AND EITHER WE HAVE MISLED AID/W OR THERE IS A TOTAL LACK OF UNDERSTANDING REGARDING REPAIR FACILITIES IN THEC.A.R. I CAN THINK OF HARDLY ANY COUNTRY IN AFRICA WHERE WAIVERS ARE MORE APPROPRIATE. SECOND, THE REFERENCES TO GOCAR

UNCLASSIFIED

INPUTS AND INSTITUTIONALIZING OF PROJECT ACTIVITIES BY GOCAR ARE DISTURBING BECAUSE WE HAVE GONE TO SOME LENGTHS TO ENSURE THAT THE PROJECT HAS AS LITTLE DEPENDENCY AS POSSIBLE ON CONTINUING CENTRAL GOVERNMENT SUPPORT. THE REALITIES OF DESIGNING AN ACTIVITY DEPENDENT ON GOCAR SHOULD BE FURTHER ELUCIDATED. AND, THIRD, THE QUESTION OF SCHISTOSOMIASIS WHICH CLEARLY MUST BE DEALTH WITH. I HAVE SEEN IKSTROM AND KNOW OF THE DISCUSSIONS WHICH TOOK PLACE AT THE PC DIRECTORS' CONFERENCE. I FIND THE REFERENCES TO SCHISTOSOMIASIS IN THESE DOCUMENTS A MIX OF VALID AND NOT SO VALID POINTS. IN NONE, HOWEVER, INCLUDING THE LAST SENTENCE OF BAHL'S MEMORANDUM, DO I FIND A COMPELLING REASON FOR TAKING A NEGATIVE POSITION ON FISH PONDS. I STRONGLY URGE THAT YOU TAKE A FEW EXTRA DAYS IF NECESSARY AND SEEK OUT SOME OF OUR EXPERTS ON SCHISTOSOMIASIS (THOMPSON SHOULD BE ABLE TO HELP WITH CONTACTS). INTER ALIA, WE HAVE HEARD OF A SNAIL INTRODUCED IN THE PHILIPPINES WHICH IS A PREDATOR OF THE SCHISTOSOMIASIS-BEARING SNAIL AND HAS HELD THE INCIDENCE OF SCHISTOSOMIASIS TO A MINIMUM.

4. FINALLY, WHEN YOU ARE ABLE TO DEPART WASHINGTON, YOU MIGHT WISH TO SOTP IN AYOUNDE FOR A DAY OR TWO ENROUTE TO BANGUI TO DISCUSS THESE AND OTHER MATTERS.
MITHOEFER

ACTION
WASHINGTON, D.C. 20525

FILE COPY

SEP 14 1976

September 9, 1976

MEMORANDUM

TO : Ray Solem

FROM : Jim Lawrence

SUBJECT : Waiver for purchase of American made vehicles.

The Peace Corps/Central African Republic inland fisheries program requires four wheel drive vehicles. Peace Corps/Central Africa Republic would like to purchase one ton Toyota Land Cruisers. A dealer and service facility for this vehicle is available in Bangui, Central Africa Republic. There are no dealers or repair facilities for an American made vehicle in the CAR, nor can the Embassy or USAID be of any assistance for the repair or maintenance of American vehicles. The Peace Corps therefore requests that USAID waive the requirement to purchase only American made vehicles.