PD-ABC-808
71687

PROJECT PAPER
AMENDMENT 3

GAMBIA RIVER BASIN DEVELOPMENT PROJECT (OMVG) (625-0012)

November, 1984

AGENCY FOR INTERNATIONAL DEVELOPMENT

ACTION MEMORANDUM FOR THE DIRECTOR USAID/SENEGAL

THRU: RBDO, Vito Stagliano
FROM: RBDO, Lewis Lucke
SUBJECT: Authorization of an amendment to the Gambia River Basin Development Project (625-0012)

I. PROBLEM

Your approval is required to execute a grant of two million dollars ($2,000,000) from Section 121 of the Foreign Assistance Act of 1961, as amended, (Sahel Development Program) to the Gambia River Basin Development Project (625-0012). This amendment will increase AID's contribution from $14,894,000 to $16,894,000 and will extend the Project Assistance Completion Date (PACD) for 15 months from September 30, 1986 to December 31, 1987.

II. DISCUSSION

A. Project Description

Since approval in June 1981, the Gambia River Basin Development Project (625-0012) has assisted the Gambia River Basin Development Organization (OMVG) in developing an effective planning capacity. AID has pursued this purpose through several elements: (1) socioeconomic and environmental studies; (2) aerial photography and topographic maps; (3) technical assistance; (4) training; and (5) institutional development. A mid-term project evaluation report in May 1984 concluded that the project has been successful in its first phase, particularly given the magnitude and diversity of inputs, the logistical difficulties of studying the basin and the natural growth pains of a new institution like OMVG. However, the evaluation team recommended that in order for original project objectives to be met, additional technical assistance should be provided. The technical assistance team shall be increased to include a river basin planner, hydrologist, data management specialist and various short-term specialists.

B. Project Implementation

The amendment will add Conditions Precedent as follows:

(1) OMVG shall provide written evidence to AID that conclusions and data from the socioeconomic and environmental studies being prepared by the University of Michigan will, upon their acceptance by AID, be fully integrated into the OMVG Action Plan.

(2) OMVG and AID shall agree in writing as to the placement and responsibilities of the AID-financed river basin planner within the OMVG organizational structure.

(3) OMVG shall present evidence to AID of resolution of the problem of securing an acceptable office building, sufficient to accomodate personnel and activities planned this project as amended.

The amendment shall add Covenants as follows:

Covenants: (1) OMVG agrees that prior to the disbursement of funds for the OMVG Water Resources Laboratory, OMVG shall communicate to USAID the decision of the OMVG Council of Ministers of their intention to make available and fund via individual Member State contributions, or otherwise, to the OMVG, qualified technical personnel sufficient to maintain minimum staffing levels, as well as their salaries and operating

expenses for a period of at least five years after the termination of this AID project. In addition, OMVG will provide assurance to AID that the Member States will donate a building or buildings to be renovated and utilized as a suitable laboratory facility.

(2) OMVG shall covenant to undertake, with the assistance of AID, an integrative planning exercise to be applied to major water resource development decisions within one year after submission of the University of Michigan socioeconomic and environmental final report.

(3) OMVG shall agree to make available before June 1985 and for a duration of at least 3 years, the services of a documentalist/information resource specialist to work as a counterpart to the AID-financed data management specialist to be assigned to the OMVG.

The grantee implementing organization is the Gambia River Basin Development Organization (OMVG). As no individual procurement action will exceed $100,000, Small Value Procurement Procedures will be followed. One waiver of AID's source and origin requirement is requested to waive the ten per cent limitation on shelf item procurement allowing up to $150,000 in shelf item costs and to increase shelf item procurement unit value from $5,000 to $20,000.

C. AID/Washington Action

On October 23, 1984, the Assistant Administrator for the Africa Bureau concurred in a Delegation of Authority to the Mission to increase the life-of-project (LOP) funding by up to $2,000,000 and to extend the Project Assistance Completion Date (PACD) by fifteen months to December 31, 1987.

D. Project Committee Action and Congressional Apprisement

A Project Committee meeting was held on November 16, 1984. The Project Committee recommended that the Director authorize the project. An advice of Program Change was submitted to Congress on November 20, 1984. The waiting period expired without objection on December 5, 1984.

III. RECOMMENDATION

That you sign the attached Project Authorization Amendment and thereby authorize an increase in LOP funding by $2,000,000 and an extension of the PACD by 15 months to December 31, 1987.

Clearances

NAME	OFFICE	DATE	INITIALS
G. William Anderson	PDO	11/30/84	(Draft)
Campbell McCluskey	PRM		(Draft)
Matthew Horween	RCON	11-29-84	
Vito Stagliano	RBDO	11/30/84	
David Hunsberger	RBDO	11/29/84	(Draft)
Donald Keene	RLA		(Draft)

Drafted: Lewis Lucke, RBDO

PROJECT AUTHORIZATION AMENDMENT

Name of Country: Sahel Regional

Name of Project (OMVG) Gambia River Basin Development Project

Number of Project: 625-0012

1. Pursuant to Section 121 of the Foreign Assistance Act of 1961, as amended, the Gambia River Basin Development Project for the Organisation pour la mise en Valeur du Fleuve Gambie (OMVG) was authorized on May 21, 1981 and subsequently amended. The original Project Authorization, as previously amended, is hereby amended as follows:

a. The Project Assistance Completion Date (PACD) is extended for a period of 15 months from September 30, 1986 to December 31, 1987.

b. The total life of project funding is increased by a total of $2,000,000 from $14,894,000 to $16,894,000.

c. New conditions precedent are added as follows:

Prior to the disbursement for funds hereby provided:

1) OMVG shall provide written evidence in form and substance acceptable to AID, that conclusions and data from the socioeconomic and environmental studies being prepared by the University of Michigan, will be fully incorporated into the OMVG Action Plan.

2) OMVG and AID shall agree in writing as to the placement and responsibilities of the AID-financed river basin planner within the OMVG organizational structure.

3) OMVG shall present evidence to AID of resolution of the problem of securing an acceptable office building, sufficient to accommodate personnel and activities planned under this project as amended.

d) New covenants are added as follows:

1) OMVG agrees that prior to disbursement of funds by USAID for the OMVG Water Resources Laboratory, OMVG shall communicate to USAID the decision of the OMVG Council of Ministers of their intention to make available and fund via individual Member State contributions, or otherwise, to the OMVG, qualified technical personnel sufficient to maintain minimum staffing levels, as well as their salaries and operating expenses for a period of at least five years after the termination of this AID project. In addition, OMVG will provide assurance to AID that the Member States will donate a building or buildings to be renovated and utilized as a suitable laboratory facility.

2) OMVG agrees to undertake, with the assistance of AID, an integrative planning exercise to be applied to major water resource development decisions within one year after the submission of the University of Michigan socio-economic and environmental final report.

3) OMVG agrees to make available before June 1985, and for a duration of at least three years, the services of a documentalist/information resource specialist at OMVG to work as a counterpart to the AID-financed data management specialist to be assigned to the OMVG.

e) Waivers

The following waiver to AID regulations is hereby approved:

Based on the justification on pages 95 - 97 of the PP Supplement and pursuant to Section 18A4b of Handbook IB as well as Section 5D.5 of Africa Bureau DOA 140 (Revised), I hereby approve an increase in shelf-item procurement unit value from $5,000 to $20,000 and an increase in the total amount available for shelf item procurement under the terms of this Amendment to $150,000.

2. The authorization cited above, as previously amended, remains in force except as hereby amended.

3. Approval

S.J. Littlefield
Director
USAID/Senegal

Signature

15 DEC. 1984
Date

Clearances: As shown on Action memorandum.

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A = Add, C = Change, D = Delete — A

Amendment Number: 3

DOCUMENT CODE: 3

2. COUNTRY/ENTITY: SAHEL REGIONAL

3. PROJECT NUMBER: 625-0012

4. BUREAU/OFFICE: USAID SENEGAL — 06

5. PROJECT TITLE (maximum 40 characters): GAMBIA RIVER BASIN DEVELOPMENT (OMVG)

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 12 DD 31 YY 87

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 85 B. Quarter 1 C. Final FY 87

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 85 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total	1,104		1,104	2,000		2,000
(Grant)	(1,104)	( )	(1,104)	(2,000)	( )	(2,000)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country						
Other Donor(s)						
TOTALS						

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) SH	771	ENV		13,394		2,000		16,894	
(2) ST	771	710		1,300		-			
(3) SH	771	710		200					
(4)									
TOTALS				14,894		2,000		16,894	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To establish in collaboration with the donor community an effective Planning Division within the OMVG.

14. SCHEDULED EVALUATIONS

Interim MM 04 YY 84 MM YY

Final MM 12 YY 87

15. SOURCE/ORIGIN OF GOODS AND SERVICES

[X] 000 [ ] 941 [X] Local [ ] Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a 100 page PP Amendment.)

17. APPROVED BY

Signature

Title: DIRECTOR, USAID SENEGAL

Date Signed: MM DD YY 5 DEC. 1984

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY

AID 1330-4 (8-79)

PROJECT PAPER
AMEMDMENT 3

GAMBIA RIVER BASIN DEVELOPMENT PROJECT (OMVG) (625-0012)

November, 1984

AGENCY FOR INTERNATIONAL DEVELOPMENT

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1.0. RECOMMENDATIONS AND SUMMARY

1.1. Recommendations

Under Delegation of Authority 140 (revised) Section 4 A(2) B, the AA/AFR may delegate to the Mission Director of a Schedule A post authority to authorize project amendments in the field up to 50% of total life of Project funding, not to exceed 10 million dollars. This authority was delegated on October 2., 1984. (State 313775). Further, Mission Directors of Schedule A posts have the authority under Delegation of Authority 140 (revised) Section 4 (A) (3) to extend the Project Assistance Completion Date (PACD) by up to three years if the total length of project does not exceed ten years. It is therefore, recommended that the Gambia River Basin Development Project (625-0012) be amended to:

(a) increase LOP funding by $2.00 million, thereby increasing AID's contribution from $14,894,000 to $16,894,000 and

(b) extend the Project Assistance Completion Date (PACD) from September 30, 1986 to December 31, 1987.

1.2. Summary

The Gambia River Basin Development Project was authorized in 1981 at a budgetary level of $13.4 million. In June 1983, and consistent with original project design it was amended to add $1.3 million from the Support to Regional Organizations Project (698-0413.11) to extend project activities into Guinea. OMVG receives this assistance on behalf of its four member states (Senegal, The Gambia, Guinea, and its newest member, Guinea Bissau) in the form of technical assistance for river basin planning, comprehensive environmental and socio-economic impact assessment studies being conducted under contract with the University of Michigan, and detailed aerial photography and maps produced by Mark Hurd Aerial Surveys, Inc. It should be noted that the project purpose " to establish an effective planning division within OMVG" remains valid and unchanged. A Planning Unit exists at OMVG. To date its duties/functions have been primarily supervisory since the project has been in an initial, pre-investment phase of data collection and analysis. However, to achieve a fully operational status the existing unit must be capable of synthesizing all available data; developing investment options; and implementing a planning process that supports OMVG's decision-making structure. To accomplish this, the OMVG High Commission requires additional technical assistance, training, facilities, and equipment. (See Logframe, Annex C).

The project is now at mid-point in its implementation. Basin maps have been completed and the final drafting of the Michigan report is underway. The process of planning in OMVG will soon enter a synthesis/integrative phase, which over the next two and a half years will systematically refine and present options for river basin development investments and management to member states and potential donors.

It is widely believed that development of the Gambia River system will contribute substantially to stabilizing and increasing agricultural production in this drought-stricken area of West Africa.

Realizing its potential through large-scale water control investments and subsequent irrigated farming development, combined with improvements in rainfed agriculture and up-stream hydropower generation, will be costly and risky. Careful analysis of environmental, socio-economic and public health factors is a prerequisite to investment decisions. A mid-term project evaluation was undertaken in April-May 1984 to ascertain if the project has been successful to date and, particularly, if the professional capacity exists in OMVG to use the data base produced in the pre-investment phase.

The mid-term project evaluation found that the quality, timeliness of delivery and utility of the maps and socio-economic and environmental studies will be satisfactory. The maps are more detailed and of a higher quality than originally planned, and were completed at reasonable cost and within allotted budgets. For the socio-economic and environmental studies to be completed in their most useful form, considerable work remains to be done, to integrate findings from the four component elements dealing with socioeconomics, river resources, wildlife/vegetation and public health. This integrative process is presently underway.

However, the planning operation of OMVG, to which project technical assistance, training and equipment (computers, lab equipment, documentation) are devoted, while gaining in competence, has not reached the level of sophistication and vigor it will require from now on. Additional technical assistance (in river basin planning, hydrology, data and documentation management) will be provided and selected special studies undertaken under the terms of this amendment. This should assure that the <u>process</u> of planning -- the systematic consideration of investment alternatives and their costs, benefits and impacts on basin development -- will proceed as intended. The aim is to ensure that decisions are made which are based on rigorous analysis.

This amendment is intended to secure the institutional gains already made and to assure project success. Furthermore, it is recommended that AIL finance the establishment of an environmental monitoring laboratory for the Gambia Basin. The extension of the Project Assistance Completion Date (PACD) from September 30, 1984 to December 31, 1987 is necessary to complete all proposed work elements.

In summary, the Evaluation team concluded that the project has been successful thus far and well managed. Achievement of its original purpose -- establishment of an effective planning unit in OMVG -- is both desirable and possible. Events are moving quickly in the Basin: negative ones in terms of a declining agricultural economy, and positive ones with respect to government's and donor interest in new development initiatives. An intensification of the planning process within OMVG is critical at this juncture. The USAID/Senegal Mission Director, under DOA 140 revised Section 4 A(2)B, by authority granted on October 23, 1984, is therefore requested to authorize this PP amendment in the amount of $2.0 million and separately under Section 4 A(3) of the same DOA 140 (revised), to extend the PACD to December 31, 1987.

2.0. PROJECT BACKGROUND AND STATUS

2.1. General

When the Gambia River Development Project (625-0012) was conceived in 1981, the Organization pour la Mise en Valeur du Fleuve Gambie (OMVG) was in its infancy. AID, seeking to provide assistance to an organization which potentially could be of great benefit to the people of the two reparian states, Senegal and the Gambia, designed a project which sought to enhance the institutional development of the OMVG: "In conjunction with other donors to establish an effective planning division within the OMVG by December 1985". (Project Paper, Logical Framework, 1981, and Annex C).

At the present time OMVG's responsibilities involve the commissioning and supervision of baseline studies. Thus far no capital development projects are being implemented through or in conjunction with OMVG. OMVG functions as a development planning organization, constructing the analytical basis on which decisions will be made by the four riparian states to effectively use the resources of the Gambian basin.

For the institutional development of OMVG, assistance was foreseen by AID in the form of support for the creation of a planning unit, within the technical division of OMVG, to perform important functions in preparing the future direction of the organization. Outputs of technical assistance, trained host country personnel, maps and a large set of environmental and socio-economic studies were proposed to furnish the elements necessary to achieve the purpose of an effective planning unit.

2.2. Socio-Economic and Environmental Studies

Socio-economic and environmental studies, being conducted under a $6.2 million contract with the University of Michigan, are designed to measure the impact on people and natural resources of the infrastructure program proposed for the control and use of the Gambia River. The studies are intended as prescriptive - mitigative actions and their associated costs will be proposed in the final report. An integrated draft report, in English and French, is to be presented on March 30, 1985 by the University of Michigan. This will be reviewed by AID and OMVG. AID's review will be in the form of a Scientific Peer Review, probably held in the United States and possibly managed by the National Science Foundation. The final report from Michigan is due September 30, 1985. At that point, and in order to assure widespread understanding of study results, RBDO intends to contract for the development of a synthesized audio-visual presentation. This presentation, modeled after the "RAPID" one done for population programs, will be offered to OMVG technical and political leaders; to appropriate ministries of OMVG member states, and to all donors.

2.3. Aerial Photography and Mapping

Basin-wide aerial photography and mapping, provided under a $4.1 million contract with Mark Hurd Aerial Surveys, Inc., has been completed and all products will be delivered to OMVG by December 1984. Work has been achieved on-time and within budget and use of delivered aerial photos and maps has already resulted in substantial savings in other ongoing OMVG planning exercises. Configuration of the proposed Kekreti dam was changed as a result of the maps; reducing the height of the dam. Resulting savings for construction of Kekreti are calculated by OMVG at $25 to $30 million. These products will allow OMVG to identify potential structural sites and investigation areas, evaluate land use areas, and provide tools for analysis of livestock, forestry, transportation and environmental investments.

2.4. Technical Assistance

Original technical assistance plans called for AID to finance a civil engineer/river basin planner, an environmental specialist, a rural sociologist and a natural resource economist. The environmental specialist, sociologist and economist were provided as planned. The original U.S. economist resigned soon after arrival and has been replaced. The terms of reference for provision of this expertise was modified and an institutional contractor selected and installed to provide both long-term and recurrent expertise over a two-year period. The river basin planner was not provided by AID at the explicit request of OMVG which responded to UNDP's offer to fill this senior position. The technician provided by UNDP, however, is a transport engineer and his role is more narrowly defined than originally envisioned. OMVG has consequently reactivated its request for AID to fill this position with a U.S. trained river basin planner. The USAID financed technicians and their respective positions are:

Environmentalist: André DeGeorges

Rural Sociologist: Dr. Gordon Appleby

Resource Economist: Dr. James Webb

2.5. The OMVG

The Gambia River Basin Development Organization (OMVG) was created in 1976 by Senegal and Gambia to promote the physical exploitation of land and river resources of the Gambia River Basin. The OMVG is therefore responsible for coordinating planning and development activities in the Basin. Guinea became a member of the OMVG in June 1981 and Guinea Bissau in 1983.

The OMVG has four permanent bodies: (1) the Conference of Heads of State and Governments; (2) the Council of Ministers; (3) the High Commission; and, (4) the Permanent Water Commission. It is governed by the Conference of Heads of State and Governments. This supreme body of the OMVG defines the policies of cooperation and development and makes decisions concerning the political, economic, and general matters relating to the organization objectives. The next level of the organization is the three-member Council of Ministers, comprised of an individual of ministerial rank appointed by each State. The Council of Ministers defines the general policies for developing the Basin, for utilizing its resources and for enlisting cooperation between the member states; this Council exercises overall control of the organization. The Permanent Water Commission is responsible for defining the principles and methods for apportioning the use of the Gambia River Waters among the member states and among the various sectors using the water, including industry, agriculture, and transport. The Commission is directed by a High Commissioner appointed by the Conference of Heads of State and responsible for the general operations of the OMVG.

Organizational Structure of the OMVG

Conference of Heads of State:	The supreme body of the OMVG; responsible for defining policies of cooperation and development.
Members	Lansana Conté, Republic of Guinea, Abdou Diouf, Republic of Senegal, Sir Dawda Jawara, Republic of the Gambia Joao Bernardo Vieira, Republic of Guinea Bissau
Council of Ministers	Responsible for the conceptual approach and supervision of the OMVG, composed of tutelary ministries for each member-state; the key decision-making body in the OMVG.
Members	Senegal - Samba Yéla Diop, President Ministre de l'Hydraulique
	The Gambia - Omar Jallow, Minister of Water Resources and Environment.
	Guinea - Capt. Fode Camara, Ministère de la Coopération Internationale
	Guinea Bissau Flinto Barros, Ministry of Natural Resources and Industry.
The High Commission	The executive and implementing organ for the work program of the OMVG. It includes an executive office (The High Commissioner), a general secretariat, and two directorates, each comprised of four divisions.
High Commissioner	Malick John (The Gambia)
Secretary General	Nassirou Diallo (Guinea)
Director, Division of Technical Services	Mamour Gaye (Senegal)
Director, Division of Administration and Financial Services	Omar N'Jie (The Gambia)

Financial Support to the OMVG

The operating expenses to the OMVG are funded by contributions of the member-states. Funding responsibility is shared according to the following formula (annual contributions):

Senegal	37.5%
Guinea	37.5%
The Gambia	25%

The institutional development strategy adopted by the original project designers assumed that the creation of a planning unit and its staffing would be sufficient to assure OMVG's ability to plan a development strategy for the basin. The Project Paper, however, did not sufficiently articulate a concept or a process by which a planning capacity (as opposed to a planning office) would be forged. This conceptual void has slowed the evolution of the Planning Division - OMVG management in the absence of an institutional blue print has made ad-hoc decisions, concerning itself with tasks rather than processes. By the same token the development of the planning process at OMVG is not locked into a rigid structure and is therefore open to reform. It is clear that the opportunity exists for refocusing and enhancing planning activities in light of experience gained.

This Project Paper Amendment responds to the need for adjustment to the original project design. These adjustments, identified by project implementors, were verified by the evaluation team. The timing is also appropriate because OMVG has further defined its role and its scope of work, and knows more precisely what major tasks lie ahead, and what external assistance it will require to carry out its mandate.

OMVG has evolved a structure which follows the plans put forth in the preliminary UNDP-sponsored Action Plan (1982) and the AID Project Paper. At the present time it serves as the practical representation of a political union, and as a supervisory agency for the preparation of baseline studies aimed at developing the resources of the Gambia basin.

The various divisions under the Technical Director perform functions as assigned by him on an as needed basis. A rigorous planning system has not yet evolved but the need for such a system has been accepted by the OMVG leadership. In time, decisions regarding choice of infrastructure and accompanying development programs in the basin will require, as foreseen in the original AID design, a fully-operational planning unit. It should synthesize information, present developmental options and be capable of meeting technical information requirements from the other OMVG departments, and from the Council of Ministers.

The OMVG is emerging from its early skeletal staffing pattern of two years ago, to one which includes personnel in all divisions. A major share of the planning function is currently being assumed by the Principal Technical Advisor (PTA) provided by UNDP who reports directly to the High Commissioner.

The OMVG has been concentrating its supervisory efforts on technical decisions relating to the production of the engineering studies being prepared by European consulting firms and the AID-funded socio-economic, and environmental impact assessment studies being carried out by the University of Michigan. As these studies will be largely completed during 1984, new demands arise for a revision of the June 1982 OMVG Action Plan. The Action Plan, produced by the High Commission, and approved by the Council of Ministers is the operative blue print for Gambia basin development.

It is against this background that an assessment of OMVG capabilities and needs has been made. The planning function which USAID has decided to support within the institutional framework of the OMVG, is moving from a monitoring and supervisory role to one of direct analysis. Direct responsibility for analysis, synthesis, and articulation of development choices will be required.

The High Commission of OMVG has been asked by the Council of Ministers to give priority to the following tasks: (1) revising and updating the Action Plan; (2) integrating analyses of the upstream basin into its development strategy; (3) seeking coherence between national and regional development strategies; (4) testing the production impact of intensification of rainfed agriculture in relation to technology transfer rate increases; and (5) reviewing crop yields in the basin to take into account projected production increases in neighboring zones and river basins.

In addition to these major tasks, OMVG has been asked to seek donor support for expansion of its activities in the new member-state of Guinea Bissau.

In the immediate future the revision of the Action Plan, also called the Schema Directeur, will require significant, substantive work by OMVG. These revisions are presently underway by OMVG with the assistance of FAO and AID-financed economist. A major effort will have to be undertaken by a strengthened Planning Division to integrate into the Plan the results of the environmental and socio-economic studies being completed by Michigan. As individual team reports of the University of Michigan study become available in January 1985 (though not formally submitted in draft until March 30, 1985), it is necessary that integration of data into the Action Plan begins at that time. A major role of OMVG and RBDO during this coming period will be to assure the efficacy and completeness of this process.

2.6. Donors to the OMVG

Project	Duration Level of Effort	Start up	Cost (million)	Donor	Purpose	Delivery Date Final Report	Contractor
1. Impact Assessment Studies	31 months 1423 person-months	12/82	$ 6.2	USAID	-Environmental assessment -Socioeconomic impact -Recommend & Evaluate mitigations -Predict consequences of different development scenarios	9/85	University of Michigan (Ann Arbor, U.S.)
2. Aerial Photography & Mapping	38 months	11/81	$ 4.1	USAID	Map production for GRB 1:25.000 maps, 5m contours 1:10.000 maps, 1m contours	(maps) 8/83 12/84	Mark Hurd Surveys, Inc. (Minneapolis, U.S.)
3. Kekreti Storage Dam Site: Feasibility Study	29 months 117 person-months	11/81	$ 2.0	GTZ	-Engineering studies -Pre-impoundment studies	2/84	Agar und Hydrotechnik (Essen, FRG)
4. Final Design Studies: Antisalt barrage/bridge	15 months	1/83	$ 1.4	EEC	-Design bridge/barrage	5/84	Rhin, Ruhr Ingénieur GMBH
5. Balingho Ag Development Studies	12 months	4/83	$ .7	EEC	-Determine irrigable areas -Design 1,000 hec. pilot project	4/84	Land Resources Development Consultants (UK)
6. Guinea Dam-Site Reconnaissance	2 months	10/82	$ .25	FAC	-Review proposed sites -Propose water management scheme	12/82	FAC
7. Basin-Wide Pedological Studies	36 months	4/83	$ 1.4	FAO/PNUD	-Prepare basin wide soils maps -Survey soils in irrigable areas and prepare maps -Establish soils laboratory	6/82	FAO
8. Inatitutional Support to OMVG 1982-86	48 months	1/82	$ 1.5	UNDP	-River basin planner -Counterpart funding -Training	12/85	

Two of the above donors, UNDP and FAO, are ... upport to OMVG in areas that necessitate close coordination with A... ike AID, is providing institutional support to the organiza... the provision of a principal technical advisor, counterpart salari... ting expenses. USAID and UNDP/Dakar have been carrying out a cl... in recent months to assure that mutual plans with OMVG are comple... SAID and UNDP have agreed to work together particularly in providin... d technical assistance to OMVG, in coordinating inputs to th... n Plan and in planning coordinated donor review of the Action ... hnical studies prior to an OMVG Donors Conference planned for la...

FAO and UNDP are jointly funding a $1.4 mil... t to carry out basin-wide soils studies that, like this AID pro... enhance OMVG abilities to effectively plan future basinal de... ivities. Presently under implementation, these surveys wi... trated in priority irrigation zones covering 50,800 ha (1:50,000) di... follows:

-16,500 ha in The Gambia, upstream fr... ned anti-salinity barrage at Balingho;

-24,300 ha in Senegal, downstream fro... ed barrage at Kékreti, split into the areas: one o... in the Gouloumbou sector, one of 12,700 ha at Medina D... 7,200 ha on the Sandougou tributary;

-10,000 ha in Guinea, downstream from ... barrage and from Kougou Foulbé.

The following additional work will also be d...

-The zones which are most suitable for irri... be identified by systematic reconnaissance within each area, ... 0 pedological surveys prepared cordingly;

-A regular programme of soil surveys will be ... which, in the long term, will cover the whole Gambia River ... e surveys which are to be carried out in the above selected ... start the programme off;

-Special surveys relating to the problems of ... ls, drainage or soil consensus will be carried out.

3.0. RECOMMENDATIONS AND JUSTIFICATIONS

3.1. A river basin planner will be provided by AID as soon as possible, for two years. This person's primary responsibility will be to provide guidance to the OMVG and member state agencies for integrating and synthesizing available basin-wide data and formulating a comprehensive planning process at both sector and project levels. The river basin planner will be responsible for coordinating and developing Planning Division activities.

3.2. A hydrologist will also be provided to the Planning Division. Limited computer models have been developed for the feasibility study of the different dams, including:

- The Ross Model, a reservoir simulation water budget model, used to assess hydro-electricity, irrigation and other needs;
- Hydrodynamic and water balance models for the Balingho bridge-barrage;
- A Gambia River Estuary Model simulating the effects of the Balingho barrage on the tidal regime;
- The System II model used on the final design of the Balingho barrage;
- A Salinity Intrusion Model.

Yet, no complete hydrological model exists that takes account of the entire river regime. A general mathematical model of the river is fundamental to the rational assessment of various development options. The OMVG must have the independent capability to quantify and evaluate effects of water resource schemes. A hydrologist with technical experience and modeling skills will fulfill this need. A major objective of the hydrologist will be to set these models up within the OMVG, and train OMVG and Member States technicians in their use. It is anticipated also that particular emphasis will be placed on developing a system to produce reliable hydrological data in the Guinea portion of the Upper Basin. He/she will process the existing hydrological information on the river system and adapt a program to determine the effects and inter-actions of various proposals for storage, discharge regulations, and water budgets. This exercise will be a key step in developing the planning and management capability of the OMVG. It is anticipated that one year should be ample for the accomplishment of this task, however funds will be made available from the short-term technical assistance budget to supplement this time should one year prove insufficient.

3.3. A data base management specialist wil d for up to one year to set up a data management capability in co th the OMVG documentation center. This person will train t ntalist to access vast amounts of data produced by Michigan researc store information on a micro-computer system. He/she wi in other OMVG technicians in data access and analysis technique he integrative planning exercise (See Section 3.6.), the data ma cialist will be the coordinator of OMVG inputs. Following the in ercise, the data management specialist, in conjunction with other particularly the river basin planner, economist and hydrologist, wi ard the installation and integration of the resulting pla into the planning process.

3.4. Additional short term technical assist nned for in agricultural economics (two months), resource eco months), and environmental planning (four months). Furthermor management/planning, public health, and other exp een provided and will be available to the Planning Unit over the e of project.

3.5. Present contracts of OMVG's AID-financ ist and environmentalist will be extended to allow for the rt's return from long-term training in the U.S. and for a reasonabl overlap. A decision on the OMVG economist's extension, whose gan in October 1984, for two years, will be made as a result of h art's return date from the U.S.

3.6. An integrative exercise will be undert elop a multi-objective planning framework which can be ap jor water resource development decisions.

The University of Michigan final report will disciplinary document that will represent the first truly inte ment of a river resource system in Africa. Many aspects of the bi hysical, and social systems will have been addressed, and a ser mmendations regarding monitoring and mitigation measures will h. It is critical that such a study, complete with all its and recommendations, be only the beginning of the lon ss of planning, managing, and monitoring the basin effectively. T h this task it is important that a system be established to evaluate onships between all key sectors (hydroelectric power, agriculture, wildlife, sociology, economics, health), and that the syste decision-makers the tools needed to make rational decisions.

Development of such a system is not an easy task. It will take time and will require input from a wide range of institutions, both national and international. Above all it must maintain a high degree of flexibility. The Gambia River Basin is a complex system and there will always be considerable uncertainty regarding its reaction to change. As an understanding of the basin's biophysical system emerges, as the various feasibility studies are completed, and as a hydrological model is provided, it then becomes possible to "institutionalize" a planning process.

To maximize utilization of the data compiled during the impact assessment studies and to foster the development of a systematic planning methodology, within the OMVG, USAID/RBDO will design and implement a series of workshops designed to promote a greater awareness of natural resource management issues. The end-product of this process will be twofold: (1) the development of a multi-objective planning framework; and, (2) a basin-wide monitoring plan. The plans will serve as guidelines for managing the sustained development of the Gambia River Basin's resource base. The planning model will provide a decision-support system for OMVG policy makers faced with evaluating major water resource development decisions. OMVG and Member-State planners will be able to analyse various impacts to ascertain the highest net economic benefit, as well as assess the significance of other issues affecting a given management strategy's social, economic, and environmental viability. The monitoring plan will provide valuable data which will further illustrate the major dynamics of the basin ecosystem as analysed in the original impact assessment.

The planning exercises themselves will be structured to encourage involvement of both the private and public sector in the determination of development objectives and the specification of acceptable tradeoffs. OMVG technical and senior staff as well as representative Member-State technicians will participate in the entire process. The study process itself will be designed so that both the pertinent facts as well as explicit value judgements may be factored into the formulation and evaluation of basin-wide management objectives. Such an approach will enable decisions to be made regarding what are priority or highly-valued components of the ecosystem and therefore of such significance as to merit their inclusion in the OMVG Monitoring Plan (to be implemented by the Water Resource Laboratory).

The planning exercise will be implemented by a team of experienced natural resource management specialists. A request for technical proposals for this exercise will be issued upon authorization of the Project Paper Supplement. Selection will be made by the Project Committee.

3.7. Under this amendment, USAID will provide funds to establish a Water Resources Laboratory in the Gambia Basin. The laboratory will provide a facility to monitor changes in the ecosystem as downstream development occurs. Monitoring/surveillance and applied research programs set up at the laboratory can prove or disprove projections made during the University of Michigan environmental studies. This includes monitoring dynamics of basinal fish populations, estuarine fisheries, mangrove swamps, wildlife, etc. This capability, especially considering the complexity of Gambia river ecosystem and potential impacts on this ecosystem by planned development activities, makes the establishment of this facility both desirable and necessary. Further utility is derived in the use and continued training of member state scientists (some already trained by the University of Michigan), and in the use of scientific equipment left to OMVG by the departing Michigan team. (see Annex A for further justification and detail). This will establish the grounds for the initiation of integrated management of basin-wide natural resources. Prior to making funding available for the Laboratory (and satellite laboratory to be eventually located at Labé), OMVG will provide USAID with assurances that Member States:

(a) will provide increased annual contributions to OMVG for operation and maintenance costs of the laboratories, including personnel salaries;

(b) will provide qualified scientific personnel for assignment to the laboratory, preferably those individuals trained by the University of Michigan;

(c) will donate a building or buildings to be converted or renovated into a suitable laboratory facility, (see Section 6.0.);

3.8. AID will also finance appropriate storage facilities for photos and maps in Senegal and Gambia in addition to the already financed facility at OMVG. As SDP funds may not be expended for a similar facility in non-Sahelian Guinea, RBDO will encourage the bilateral AID mission in Conakry to undertake this activity. These facilities were taken into account only for OMVG in the original project paper. It is clear now that modest investments will be required to assure safe and proper storage of maps and photos in the member-states technical ministries as well. Preliminary plans will be drawn up with the responsible staff person and chief of service and will include shelves, tables, shutters, weather seals, air conditioning and leakage/flooding protection. An AID engineer will approve the plans and completed work.

3.9. The project will also finance a series of in-country end-user training seminars in photo and map interpretation. These will be held at OMVG for a 6-10 day period of afternoon sessions. The seminars will be conducted by an interdisciplinary, mixed panel of specialists with interpretation skills (livestock, water resources, demography/geography, forestry, etc.) and will consist of methods and techniques of photo/map interpretation used to obtain various types of sub-sectoral information. About 15-20 technical personnel directly involved in particular sub-sectoral analysis will be invited to participate in each seminar. The OMVG environmentalist will participate in planning and organizing this activity.

4.0. COSTS ESTIMATES

Table 1 below provides costing of the components of the requested AID LOP increase. No project funds have been disbursed to date through host-country managed local currency accounts. Given the increased maturity of OMVG, host-country contracts will be used to the maximum extent possible to procure goods and services approved in this amendment. Contracting processes will however be closely monitored by RBDO and disbursements to contractors will be handled directly by AID. No local currency accounts will, however, be established and as such a previously granted negative 121 (d) determination is still valid. The USAID Regional Controller's Office has reviewed and approved the project amendment implementation and payment plan. Contracts under this project as amended are subject to audit by D.D.C.A or other agencies as contracted or by USAID. Direct payment or procurement procedures are subject to audit by the Regional Inspector General's office (RIG). 611(a) certification is not necessary as construction/renovation costs total less than $100,000.

PP SUPPLEMENT BUDGET: $ 2,000,000 LEVEL — Date: 31 Oct 1984

	FY 85	FY 86	FY 87	TOTALS
LONG TERM T.A.				
RSPlanner (24 m)	60,000	180,000	120,000	360,000
Hydrologist (12 m)	45,000	135,000		180,000
Data Management (12m)	30,000	90,000		120,000
Sociologist (18m)	125,000	65,000		190,000
Environmentalist (18m)	125,000	65,000		190,000
SHORT TERM T.A.				
Resource Econ (2m)	15,000	15,000		30,000
Env. Mngmnt/Plan (2m)	15,000	15,000		30,000
Map Librarian (1m)	15,000			15,000
Inst/Org Dev (2m)	15,000	15,000		30,000
Public Health (2m)	15,000	15,000		30,000
Other (3.5m)	35,000	15,000		50,000
SUB-TOTAL	495,000	610,000	120,000	1,225,000
Contingency	49,500	61,000	12,000	122,500
TOTAL	544,500	671,000	132,000	1,347,500
TRAINING				
Int. Plan. Exercise	160,000			160,000
Photo Map Interp	40,000			40,000
Counterpart Tr.				
Hydrologist	30,000	30,000		60,000
Data Mgmnt	28,000			28,000
Short-term	35,000	10,000		45,000
SUB-TOTAL	293,000	40,000		333,000
Contingency (10%)	29,300	4,000		33,300
TOTAL	322,300	44,000		366,300
COMMODITIES				
A. US PROCUREMENT				
Lab Equip	35,540			35,540
Data Mngmt Equip	32,850	18,000		50,850
Vehicle Maint	6,500			6,500
Lab Maint Equip	6,130			6,130
Photo Interp.	19,840			19,840
Transport/Shipping	8,000	4,000		12,000
B. LOCAL PROCUREMENT				
Construct. Materials	45,000			45,000
Power Generation	17,132			17,132
Map Storage	10,000			10,000
Vehicle Operations	20,000	10,000	2,000	32,000
Office Equip	15,000	10,000		25,000
SUB-TOTAL	216,182	42,000	2,000	260,182
Contingency (10%)	21,618	4,200	200	26,018
TOTAL	237,800	46,200	2,200	286,200
GRAND TOTAL	1,124,600	761,200	134,200	2,000,000

10/29/84

PROJECT COSTS BY FINANCIAL CATEGORY

CATEGORY	Foreign Exchange	Local Costs	Shelf Item	Total
TECHNICAL ASSISTANCE				
Long term	1,040,000			1,040,000
Short Term	160,000	25,000		185,000
PARTICIPANT TRAINING	308,000	25,000		333,000
COMMODITIES				
Offshore Procurement	130,060			130,060
Local Procurement			130,122	130,122
SUBTOTALS	1,638,060	50,000	130,122	1,818,182
Contingencies (10%)	163,806	5,000	13,012	181,818
GRAND TOTAL ($)	1,801,866	55,000	143,134	2,000,000

FINANCIAL MANAGEMENT PLAN

MODE OF ASSISTANCE	CONTRACTING MODE	AMOUNT	METHOD OF PAYMENT	PRE-PAYMENT REVIEW
1. Technical Assistance				
a. Long-term	USAID/Direct	$1,040,000	Direct Reimbursement Direct Payment	USAID/RSDO USAID/RCON
b. Short-term	USAID/Direct	$165,000	Direct Payment	USAID/RSDO USAID/RCON
2. Training				
a. Participant	PIO/P	$133,000	Direct Payment	USAID/RSDO USAID/RCON
b. Seminars	USAID/Direct	$200,000	Direct Payment L/COM	USAID/RSDO USAID/RCON
3. Commodities				
a. Off-shore	USAID/RFQ + P.O	$130,050	Direct Payment	USAID/RSDO USAID/RCON
b. Local	USAID/RFQ + P.O	$130,122	Direct Payment	USAID/RSDO USAID/RCON

4.2. OMVG/Member State Contributions

Member State contributions to the project consist primarily of annual budgetary contribution to the OMVG, that directly or indirectly support project activities. FY 83-84' budget was as follows:

Guinea	52,500,000 CFA
Senegal	52,500,000 CFA
Gambia	35,000,000 CFA
	140,000,000 CFA = $333,333 ($1 = 420 CFA).

In addition OMVG has asked the Member States, through the OMVG Council of Ministers, to increase its annual contribution for FY 85 by $47,000, to accommodate the Environmental Laboratory's operation and maintenance expenses, estimated to rise to $92,000 annually by FY 86. Further, upon successful operation of the main environmental monitoring laboratory, a satellite laboratory shall be established in Labé, Guinea. It is planned that start-up costs for this satellite will largely be financed from PL-480 counterpart funds, thus most of the $70,800 total can be considered a contribution of the Government of Guinea. (Note: Guinea alone has already contributed $344,000 in local currency counterpart funds to the on-going Gambia River Basin Development Project).

5.0. IMPLEMENTATION - WORKPLAN

	Estimated Date	Action
5.1. Technical Assistance		
1. River Basin Planner		
- Terms of reference	Oct 84	OMVG/RBDO
- PIO/T prepared	Nov 84	RBDO
- Amendment to RONCO Contract	Jan 85	AID/W
- Contractor selection	March 85	RONCO/RBDO
- Arrival at OMVG	April 85 (2 yrs)	OMVG/RONCO
2. Hydrologist		
- Terms of reference	Nov 84	OMVG/RBDO
- PIO/T prepared	Nov 84	RBDO
- Amendment of RONCO Contract	Jan 85	AID/W
- Contractor selection	Feb- March 85	OMVG/USAID
- Arrival at OMVG	May 85 (12 m intermittent)	OMVG
3. Data Management Specialist		
- Contract review selection	July 84	OMVG/USAID
- Contract negotiated	Sept. - Oct. 84	OMVG/USAID
- Arrival at OMVG	Feb. 85 (1 yr)	
4. Additional Short-Term Assistance		
(a) management/planning specialist	85/86	RBDO/OMVG
(b) public health specialist	85/86	RBDO/OMVG
(c) other specialists (to be identified)	85/86	RBDO/OMVG
5) Sociologist and Environmentalist		
extension from April 85 - August 86 Contract amended	Feb 85	RCO, RBDO

5.2. Training

1. Integrative Exercise/Peer review

- Proposed received	Aug 84	Contractor, OMVG, RBDO, Member States
- Contract procedure evaluated	March-April 85	RCO, RBDO
- Contract negotiated/finalized	Aug 85	RCO, RBDO
- Seminar preparations	Oct 85	OMVG, Contractor, RBDO, U. Michigan

2. Photo/Map Interpretation Seminars

- Member State Agencies contacted	Dec 84
- Consultant Identified	April 85
- Seminars commence	June 85

5.3. Facilities and Equipment

1. Environmental Monitoring Laboratory

- Member States increase OMVG funding	Jan 85	OMVG
- Site agreed/identified	Dec 84	
- Renovation begins/equipment ordered	Nov 84	

2. Satellite Laboratory (Labé)

- Counterpart funds sought	June 84	RBDO
- Member State provide funding of recurrent costs	July 86	OMVG
- Renovation begins/Equipment installed	Jan 87	RBDO, OMVG

3. Member State Photo/Map Rooms

- Equipment ordered	June 84	RBDO
- Survey of facility undertaken/ plans formulated	Nov-Dec 84	OMVG, RBDO, MS Agencies
- Renovation/Installation	Feb. 85	OMVG, RBDO, MS Agencies

6.0. CONDITIONS PRECEDENT AND COVENANTS

6.1. Conditions Precedent: Prior to the disbursement of funds for this PP Supplement:

6.1.1. OMVG shall provide written evidence to AID, in form and substance acceptable to AID, that conclusions and data from the socioeconomic and environmental studies being prepared by the University of Michigan, will be fully integrated into the OMVG Action Plan.

6.1.2. OMVG shall agree in writing as to the placement and role of the AID-financed River Basin Planner within the OMVG organigram.

6.1.3. OMVG shall present evidence to AID of resolution of the problem of securing an acceptable office building, sufficient to accommodate personnel and activities planned under this Project as amended.

6.2. Covenants

6.2.1. OMVG agrees that prior to the disbursement of funds for the OMVG Water Resources Laboratory, OMVG shall communicate to USAID the decision of the OMVG Council of Ministers of their intention to make available and fund via individual Member State contributions, or otherwise, to the OMVG, qualified technical personnel sufficient to maintain minimum staffing levels, as well as their salaries and operating expenses for a period of at least five years after the termination of this AID project. In addition, OMVG will provide assurance to AID that the Member-States will donate a building or buildings to be renovated and utilized as a suitable laboratory facility.

6.2.2. OMVG shall covenant to undertake, with the assistance of AID, an integrative planning exercise to be applied to major water resource development decisions within one year after submission of the University of Michigan socioeconomic and environmental final report.

6.2.3. OMVG shall agree to make available the services of a documentalist/information resource specialist at OMVG to work as counterpart to the AID-financed data management specialist.

ESTABLISHMENT OF A WATER RESOURCES LABORATORY IN THE GAMBIA RIVER BASIN

The University of Michigan is in the process of conducting an integrated environmental assessment of the Gambia River Basin (GRB). A year's worth of baseline pre-impoundment field data has been collected to describe existing ecological conditions in the Basin. Future Gambia River Basin environmental impacts will be projected and, where feasible, mitigative and enhancement measures will be recommended. Additionally, a long-term monitoring, surveillance and applied research program will be developed.

In addition to the purely scientific phase of the above study, Michigan has undertaken a training program of host country nationals in the fields of water chemistry, fisheries, aquatic biology, forestry and wildlife. They are also leaving behind over 200,000 Dollars worth of sophisticated scientific equipment.

The momentum that has been built to date should be sustained. A mechanism is needed to continue where Michigan has left off. This can only be accomplished by the establishment of an water resources laboratory to house the research equipment and to employ the young Michigan-trained host-country researchers. Clearly a great natural resource possessed by the Member States is the talent pool of highly trained technicians returning from advanced study in Europe and the U.S. It is up to the OMVG to constructively utilize this talent -- a goal toward which establishment of an environmental laboratory is a beginning.

I. Justification of the laboratory can be made along the following lines:

A. The natural environment is extremely complex and dynamic. The University of Michigan Study is just beginning to delve beneath the surface of complex basinal ecosystems and to understand the interaction of such systems. For example, inter-relations between freshwater floodplains and fish production, wildlife, migratory water fowl, dry season forage for cattle and traditional agriculture are not well understood, and yet, there are plans to reduce these floodplains from the natural setting by converting a large percentage of them into high technology irrigated agriculture. During the first few years of the laboratory's operation, an intensive study of the role of the freshwater floodplains and mangrove estuaries, both ecologically and as a food source will likely take place.

B. The water resources laboratory, through a precisely defined monitoring and surveillance program, will prove or disprove projections made by the Michigan study. It is by actually monitoring these changes that management of the natural resources within the Gambia River Basin will begin.

Examples of such activities include:

- Monitoring changes in fish population dynamics upstream of all dams so as to better determine how they can best be utilized as an economic and nutritional resource;

- Monitoring changes in the estuarine fisheries following installation of the anti-salt barrage;

- Monitoring changes in the mangrove swamps, important to fishery production and bank stabilization, following installation of the anti-salinity barrage;

- Monitoring the effects of development on protected wildlife species such as the manatee, hippopotamus, sousa (a dolphin), and sitatunga;

- Monitoring the level of nuisance aquatic plants which can become navigational hazards, provide habitat for disease vectors, hasten eutrophication of reservoirs, result in large losses of stored water through evapotranspiration, etc.

In addition to such types of monitoring programs, the river will be divided into various sections and priority water uses by section will be determined. Such uses include :

- Irrigation
- Mining
- Hydroelectricity
- Potable water
- Agro-industry
- Freshwater fish production
- Saltwater fish production
- Wildlife
- Recreation

In turn, various development activities will be identified that could impact on the physical, chemical or biological make-up of the water. These development activities will be programmed over time and, as appropriate, various indicator parameters will be monitored downstream of these activities in order to determine water quality for identified uses. For example, upstream mining activities may result in acidification of waters, making them unsuitable for agricultural use. Monitoring allows the opportunity to identify problems before reaching a crisis stage and to deal with them before the effects are irreversible. Management of the basin and its natural resources can become a reality with such an environmental laboratory in place.

C. The Michigan study is global in scale; it covers a large area and, by its nature, very little is covered in detail. As an example, vegetational mapping is being conducted from 1:250,000 scale landsat photos rather from the 1:50,000, or 1:25,000 or 1:10,000 Mark Hurd photos. This is due to the size of the geographical area being studied and the time limitation placed on the study by the contract.

D. Currently, other regional organizations such as the OMVS are undertaking major river basin development activities which will greatly modify the hydrology, water quality, and associated natural resources. To date, the OMVS has no monitoring and surveillance capabilities. The OMVG laboratory can serve regionally, by periodically providing the OMVS and other organizations with field data in order to properly manage their renewable natural resources. Eventually, detailed environmental studies will be necessary. It is the recommendation of the OMVG environmental advisors that an accord be signed between the OMVG and the Member States in which environmental laboratory personnel would be required to assist agronomists in the choice of irrigated perimeters sites. This would require an accompanying environmental assessment, short but intensive in nature. Its goal would be to assure that development takes place with an acceptable minimum of change in the natural resource base. As an example, the placing of the LRDC experimental perimeter was modified due to the identification of an important water bird habitat in the area. Such assessments would be conducted at all phases of development.

Further discussions justifying the environmental laboratory are to be found in the Feasibility Evaluation for the OMVG Environmental Laboratory/Technical Center, April 1984, as prepared for USAID by Dr. Michael Falter.

II. Location of the Main Laboratory

Upon review of Dr. Falter's report, it is the view of USAID that the main laboratory should be located in Tambacounda. This recommendation is justified by the following:

a) The Taiwanese/Chinese compound originally proposed in Basse is no longer available. Buildings are readily available for renovation in Tambacounda.

b) Even after reparation of Basse's generator, electrical power tends to be available on an infrequent basis. Electricity is available on a continual basis in Tambacounda

c) Fuel shortages continue to be a problem in the Gambia. Fuel is readily available year round in Tambacounda.

d) Housing with running water and electricity for habitation by host country and expatriate researchers is very limited.

e) Basse is a small town with very few readily available services. Tambacounda is a large regional center . It is well supplied with hardware, electrical supplies and autosupplies to serve OMVG's environmental laboratory.

f) The Direction de l'Hydraulique, OMVG's regional representative is located in Tambacounda. This is a field-oriented operation, who in the future will be closely coordinating its field activities with those of the OMVG environmental laboratory.

This differs from the recommendation in Dr. Falter's report. However, his recommendation was based on the assumption that we would build a new facility and not renovate an existing site.

III. Laboratory Costs

A thorough analysis of Dr. Falter's costing of the Main and Satellite Laboratories has been made by OMVG staff. There are some basic flaws in his analysis consisting of the following major errors and/or misunderstandings:

It is unlikely that a new main laboratory will be constructed. If a new laboratory was to be constructed it would need to be based on $170/m^2$ instead of $80/m^2$ (reference: Barney Mosley, USAID Engineer). Renovation of a new building is estimated at about 20,000$US.

Costs of fuel, generators, well construction and gas/water storage were not accounted for. This greatly adds to the initial start-up costs and more importantly to annual operation and maintenance costs for both the main and satellite laboratories.

The price of renovating the Labé Laboratory is expensive due to the costing being in Sylis. OMVG has costed most of the materials locally, including transport to Labé from Dakar. Renovation costs by our estimates decrease from about 63,000$US to about 22,000$US. USAID will seek a contribution in this amount in Sylis from PL-480 counterpart funds as has been obtained for Michigan study costs. This option could reduce the satellite lab start-up costs to zero.

Inadequate laboratory supplies have been previewed for the Labé Laboratory. Because of transportation problems between labs, Labé must be relatively self-sufficient. Therefore additional equipment and supply costs at the start-up phase have been added.

Calculations for the Main Laboratory, including both recurrent and start-up costs, are contained in Attachment A, (Tables A1 - A4). A summary of these estimates is contained in Table 1. Attachment B (Table B1) contains cost estimates for the Satellite Laboratory in Labé. These are summarized in Table 2. None of the above figures have been adjusted for inflation. They are expressed at present value (1984 prices). We feel that with adequate start-up support from the USAID, OMVG can reasonably afford these laboratories. Table 3 provides a gradual programming of yearly increases in OMVG's budget over five years. These are relatively small increases (Table 4). We feel these increases are affordable and will permit the OMVG to develop a system that is operational and effective. OMVG contends that these costs represent the reasonable and acceptable minimum necessary in order to have a viable, functional basinal laboratory.

The start-up date for the Labé Laboratory should be delayed until 1988. This will reduce the initial budgetary burden to the member states, and give the main laboratory a chance to become established and to prove its worth to the member states.

A recommendation that should improve the political acceptability of staggering the environmental labs' installation, would be for the OMVG to employ from the outset, at the main lab, the Guinean chemist who would eventually operate the Labé Satellite Lab. In this way, he would continue to receive training and be ready to take over the Labé Satellite Laboratory once in place. This would add an additional 2,903,564 CFA (7,000$US) to the above annual salary figures for the main lab.

USAID will covenant any support to the laboratory with an agreement that OMVG obtain as lab personnel those technicians trained during the Michigan study. This would assure that the laboratory is manned by highly qualified staff. Job descriptions of recommended professional staffing are contained in Attachment C.

An area where recurrent costs have been reduced is in the payment of salaries by the OMVG. The OMVG has developed salary grades for the various educational and experience levels of technicians (Attachment D). These new grades have been used to calculate annual salaries for the laboratories.

The figures presented in this memo will go through additional review and refinement. However, we fell they cover all prerequisites of an operational environmental unit.

IV Long Term Training And Technical Support

The OMVG staff is in basic agreement with Dr. Falter on the need for continual training and long-term technical support. Recommended training and support can be achieved in two ways: (1) through a Title 12 program in which a University or Universities provide long-term guidance and advice to the Laboratory staff, and (2) through the use of Peace Corps Volunteers. As suggested by Dr. Falter in the initial phase of the Title 12 program, technicians should be placed with the laboratory on a full time basis (6 months - 1 year for the interim period) until Peace Corps Volunteers are installed. Thereafter, U.S. scientists can pay regular visits on an advisory basis.

This program should be long-term in nature, perhaps a minimum of 10 years. An advantage of the Title 12 program is that it will offer OMVG's staff a long-term opportunity for the transfer of technology between the U.S. and the Gambia River Basin. It will also open up educational opportunities for OMVG staff in the U.S. through short course and/or University study for advanced degrees. Likewise, it will afford a unique opportunity for graduate students from the U.S. to spend their summers and/or a year abroad conducting applied research for the OMVG, while at the same time applying this experience towards an advanced degree. The potential also exists for university students from the member states to work out of the laboratory during the field phase of their research.

Peace Corps will provide the Environmental Laboratory highly trained people working side-by-side on a counterpart relationship with the OMVG's laboratory staff. OMVG should emphasize to Peace Corps/Washington that Peace Corps Volunteers (Ms. and/or Ph.D's) will have all the equipment and financing necessary to carry out applied research which can be useful for the purpose of resource management in the Gambia River Basin. As successful precedent along the same lines was an USAID/Peace Corps/Auburn University jointly-sponsored environmental program which aimed at developing the fisheries and institutional capability of the Dept. of Fisheries in the Ministry of Agriculture in El Salvador. Auburn University provided an advisor, while students or graduates conducted necessary research using the field and laboratory gear provided by the project. The end result was a viable fisheries department able to carry on its own research and environmental management programs. When the project began, the highest degreed person had a 6 months training course. When completed, there was one Ph.D, one M.Sc. and at least three Ba's who had studied in the U.S. and returned to supervise operations. Additionally, many technicians had received skills training. These experiences resulted in improved extension programs for farmers, the creation of fish ponds, the promotion of fishing cooperatives on lakes to exploit cage culture as a secondary income, as well as applied research programs in fish culture and the beginnings of a marine and estuarine research program. If one is to assess USAID's program to date, it would be necessary to say that it is heading in the right direction but has a long way to go before it can be considered a successful development project. Development involves more than producing reports. It is people working with people for the development of long-term, self-sustaining institutional capabilities. The results of these efforts must then be directly applied, in this case to the management of basin resources. If implemented, as suggested, USAID's investment will result in a successful development project and a positive return for tax payers' dollars. An unique opportunity exists to create a West African center for applied research and analysis in environmental management, staffed by a multi-national group of West African scientists. It is unique because here is the potential to keep the relations between West African scientists in an upward direction. A year ago, few Gambian researchers had any contact with their Senegalese or Guinean counterparts. As a result of the Gambian Basin studies, contacts have been established and political and cultural barriers have been significantly eroded.

Finally, a laboratory situated in the heart of a river basin, staffed and operated by member state technicians, would be unique in West Africa. Its findings will be useful to the eventual development and management of other river systems in West Africa. Its staff and the center could serve as a training ground and research facility that would benefit the many African river basin development projects currently underway or planned.

TABLE 1

Summary of Start-up and Recurrent costs for the OMVG Water Resources Laboratory Technical Center

	CFA	U.S.
1)- Site Establishment Costs Including Building Renovation	26,200,000	63,000
2)- Additional Laboratory Equipment At Start-up	24,500,000	59,000
3)- Annual Salaries	17,256,000	41,582
4)- Operation And Maintenance	21,220,000	51,133

415 CFA = $ 1 (U.S.)

TABLE 2

Summary Of Start-up And Recurrent Costs For The OMVG Satellite Laboratory In Labé

Summary Of Start-up And Recurrent Costs For the OMVG Satellite Laboratory in Labé	COST	
	CFA	U. S.
1/- Materials For Renovation Of The Labé Laboratory (Dakar purchase)	7,900,000	19,000
2/- Materials For Renovation Of The Labé Laboratory (Labé purchase)	1,400,000	3,300
3/- Site And Total Establishment Costs	7,150,000	17,200
4/- Additional Laboratory Equipment Costs-Start-Up	13,000,000	31,300
5/- Annual Salaries	5,807,128	13,993
6/- Operation And Maintenance Annually	15,115,000	36,421

415 F CFA = $ 1 (U.S.)

TABLE 3

Programming For Establishment Of Water Resources and Support Facilities In The Gambia River Basin For OMVG

Activity	Cost C.F.A.	Cost U.S.	Source Of Funds	1984 June-Jan	1985 Jan -June	1985/86 June-June	1986/87 June-June	1987/88 June-June	1988/89 June-June
Renovation Of Main Laboratory Site Plus Site Costs	26,200,000	63,000	USAID or other Donors	----------					
Additional Laboratory Equipment Costs Main Lab	24,500,000	59,000	USAID or other Donors	----------	----------	----------			
First Half Year Salary Main Laboratory	8,628,000	20,791	OMVG and Member States		----------				
First Half Year Operation Main Laboratory	10,310,000	25,566	OMVG and Member States		----------				
Full Year Salaries, Main Lab.	17,256,000	41,582	OMVG and Member States		----------	----------	----------	----------	----------
Full Year Operation And Maintenance Main Lab.	21,220,000	51,133	OMVG and Member States		----------	----------	----------	----------	----------
Renovation Of Satellite Lab.	16,400,000	39,500	USAID or other Donors					-----	
Additional Laboratory Equipment Costs, Satellite Laboratory	13,000,000	31,300	USAID or other Donors					-----	

TABLE 3 (Cont')

Programming For Establishment Of Water Resources and Support Facilities In The Gambia River Basin For OMVG

Activity	Cost C.F.A.	Cost U.S.	Source of Funds	1984 June-Janv	1985 Janv-June	1985/86 June-June	1986/87 June-June	1987/88 June-June	1988/89 June-June
Salaries 1st Half Year Satellite Lab.	2,903,564	6,997	OMVG and Member States					----	
First Half Year Operation Maintenance	7,557,500	18,211						----	
Full Year Salaries Satellite Laboratory	5,807,128	13,993							--------->
Full Year Operation Maintenance Costs	15,115,000	36,421							--------->

A-11

TABLE 4

Annual Percent Increase In OMVG Yearly Budget
Due to Implementation of Laboratory Facilities

Fiscal Year	Cost C.F.A.	Cost U.S.	Annual Percent Increase In Existing OMVG Budget
84/85	19,238,000	46,357	13.6
85/86	38,476,000	92,715	11.9
86/87	38,476,000	92,715	0
87/88	48,937,064	117,923	5.8
88/1990	59,398,128	143,129	5.5
ereafter			

) Calculated

aboratory Budget Year ;i+ 1 (Laboratory Budget Year i) x 100 ÷ (Existing (OMVG (Budget (1983/84 + (Laboratory Budget Year i)

) 1983/84 OMVG Budget
142,000,000 CFA/342,169 $ U.S.

ANNEX A

ATTACHMENT NO. 1

ADDITIONAL EQUIPMENT FOR MAIN LABORATORY

Item	Cost $ U.S.
1/- Chemical	
a) - Fume Hood	1,800
b) - Toc Analyser	16,000
2/- Physical	
a) - Drying Oven	450
b) - Muffle Furnace	
c) - Flow Meter	1,500
d) - Turbidimeter	
e) - U.W. Photometer	600
3/- Biological	
a) - Dissecting Microscope	1,000
b) - Membrane Filterkit (Milipore)	475
c) - Bacterial Incubator	700
d) - Herbarium Cupboards	600
e) - Study Skin & Bird Collection Cupboards	600
f) - Laboratory Carts (2)	700

TABLE A-1 (Con't)

ADDITIONAL COSTS FOR MAIN LABORATORY

Item	Cost $ U.S.	
4/- Photo & Map Interpretation		
a)- Stereo 200 m Transfer Scope	14,000	
b) - Digital Planimeter	3000	
c) - Light Table (2)	___	Already constructed by Rodriguez
d) - Photo Laminiting Machine	1100	
e) - Photo Cabinets	475	
f) - Mirror Stereoscope	425	
g) - Field Stereoscope	120	

ADDITIONAL COSTS FOR MAIN LABORATORY

Item	Cost $ U.S.
/- Maintenance	
a) - Arc Welder 200 -amp	400
b) - Accetylene Torch	350
c) - Tools	3000
d) - Outboard Motor Repair Tools	2000
Total	53,195
10 % Contingency	5,320
Grand Total	58,515

TABLE A-2

SITE AND TOTAL ESTABLISHMENT COSTS MAIN LABORATORY

	Cost $ U.S.
1) 30 kwh Generator	10,868 (H.T.)
a) 2000 Gallon Reservoir for Diesel	2,000
b) 500 Gallon Reservoir for Gas	1,400
c) Septic Tank Drain Field	1,800
d) Submersible Electric H_2O Pump 10 m^3/H	3,521 (H.T.)
e) Well construction	4,000
f) 2000 gallon water cistern	4,000
g) Plumbing & Fixtures	4,200
h) Electricity & Lighting	4,500
i) Communications Set-up	700
j) Building Renovation	20,000
Total	56,989
10% Contingency	5,700
Grand Total	62,689 (63,000)

TABLE A-3

ANNUAL SALARIES MAIN LABORATORY

	C.F.A./U.S.
1/- 4 Professionals (See Appendix "C" For Job Descriptions)	10,080,000/24,289
2/- Secretary-Librarian	1,320,000/ 3,181
3/- Accounting Officer	1,320,000/ 3,181
4/- Auto/Boat Mechanic (Chef de Garage)	1,740,000/ 4,193
5/- Family Allowance	336,000/ 810
6/- Medical Fees	500,000/ 1,205
7/- Field Per Diem 560 Man-Days	1,960,000/ 4,723
3,500 CFA/Day	17,256,000/41,582

TABLE A-4

OPERATION AND MAINTENANCE BUDGET - MAIN LABORATORY

Category	Fuel (liters)	Cost (CFA/US)	Maintenance (CFA/US)	Total (CFA/US)
1) Outboard Meters				
a) 10 hp 150 hr/yr	570	119,700/288		140,270/338
b) 25 hp 250 hr/yr	2845	597,450/1,440	83,000/200	680,600/1,640
c) 40 hp 200 hr/yr	6000	1,260,000/3,036	207,500/500	1,467,500/3,536
d) 40 hp 200 hr/yr			Subtotal	2,888,370/5,514
2) Outboard Motor Oil (2 % of fuel)	250	201,250/485		201,250/485
3) Boat Maintenance			207,500/500	207,500/500
4) Vehicles 4 Total	Operation & Maintenance		1,245,000/3,000	,000/3,000
2500 km/Mo/Vehicle	Fuel		2,784,000/6,708	,000/6,708
5) Replacement of Nets & Trawls				705,500/1,700
6) Fisheries Field Gear Repair (Net Repair)				83,000/200
7) Limnological & Field Gear Repair				332,000/800
8) Lab. Equipement + Repair & Maintenance				2,075,000/ 5,000
9) Expendable Field Supplies				581,000/ 1,400
10) Expendable Lab, Supplies				1,245,000/ 3,000
11) Office Supplies				332,000/800
12) Communication Systems Including Phones				498,000/ 1,200

TABLE A-4 (Cont.)

Operation And Maintenance Budget Main Laboratory

Category	Fuel Liters	Cost CFA/$ U.S.	Maintenance CFA/$ U.S.	Total CFA/$ U.S.
13/- Purchased Electricity	/Electrical Generator			7,812,943/18,826
14/- Building Maintenance				830,000/ 2,000
			Total	

1/- Gas 210 CFA/Liter in Senegal hors tax
2/- 415 CFA/$ U.S.
3/- Outboard oil hors tax 805 CFA/Liter
4/- Land cruiser Diesel Consumes 16 liters/100 km
5/- a) (20 kw/hr) (10 hr/day) (5 days/week) (4 week /Mo) (12 Mo./Yr) (89,14 CFA/kwh) 4,278.720 CFA
b) (7 kw/hr) (14 hr/day) (5 days/week) (4 week /Mo) (12 Mo /Yr) (89,14 CFA/kwh) 2,096,573
c) (7 kw/hr) (24 hr/day) (2 days/Week) (4 week /Mo) (12 Mo /Yr) (89,14 CFA/kwh) = 1,437,650

Total = 7,812,943/18,836
CFA / $ U.S.

ANNEX A

ATTACHMENT NO. 2

Materials For Renovation Of The Labé Laboratory (Obtainable in Dakar)

Materiel	Supplier	Quantity	Unit Price Hors tax, Tout tax CFA	Total Price (CFA)	Total Price ($ US)
1) WaterBased Paint (Gylatex)	SAEC	250 kg	501 kg	125,250	302
2) Oil Based Paint (Afrilac)	SAEC	30 kg	1273/kg	38,190	92
3) Ciment	SOCOSEN	4000 kg	34,455/T	137,820	332
4) Fer à béton Ø 8	Morel & Prom	250 kg	23,500/100kg	58,750	142
5) Lavabo 60 complet	Buhan & Teisseire Sanitaires	2	32,215	64,430	155
6) Receveurs de Douche Complet	Buhan & Teisseire Sanitaires	2	38,625	77,250	186
7) 2 W.C. Chasse Basse	Buhan & Teisseire Sanitaires	2	40,125	80,255	194
8) Reglettes 60 cm, Support Neon	SENEMATEC	9	6615	59,535	143
9) Ampoules Neon 60 cm	SENEMATEC	9	1360	12,240	30
10) Douilles Bayonet	SENEMATEC	18	260	4,680	11
11) Interrupteur Encastrés	SENEMATEC	20	1950	39,000	94
12) Prix de courant Encastré	SENEMATEC	18	1810	32,580	79

Materials For Renovation Of The Labé Laboratory Obtainable In Dakar

Materiel	Supplier	Quantity	(CFA) Unit Price Hors Tax, Tout Tax	(CFA) Total Price	($ U.S.)
14) Boîte Dérivation Encastré	SENEMATEC	22	1670	36,740	89
15) Fil Electrique à 2 conducteurs x 2.5	SENEMATEC	200 m	395/m	79,000	190
16) Feuilles d'Isorels	Dakar Matériaux	106	2600/feuilles	275,600	664
17) Vitre 5 mm	Senegal Mirror	26 m2	7500/m2	195,000	470
18) Tôles Ondulees (galvanized rooting)	SOFICA	269 sheets (753.2 kg)	553/kg	416,520	1,005
19) Metal Window Frames 1.2 x 1.2 m	MBaye NDoye	10	101,000	1,010,000	2,434
20) Metal Doors 1.2 X 2.1	MBaye NDoye	2	190,000	380,000	916
21) Metal Doors 08. X 2.1 m	MBaye NDoye	2	98,000	196,000	472
22) Metal Window Frames 0.6 x 1.2 m	MBaye NDoye	4	61,000	244,000	588
23) Wooden Doors 0.8 X 2.1. m	MBaye NDoye	6	42,000	252,000	607
24) Wooden Doors 0.6 x 2.1	"	4	41,000	164,000	395
25) Wood Window 1.2 X 1.2.	"	18	28,500	513,000	1236
26) Carpentry Wood		9 m^3	120,000/m^3	1,080,000	2,603
27) Transport	a) No's 1-17	4700 kg Approx.	100/kg	470,000	1,133
	b) No's 18-26	10,000 kg "	100/kg	1,000,000	2 410
Total				7,043,380	16,972
10 % Contingency				705,000	1 700
Grant Total				7,748,380	18,672 (19,000)

1) 415 CFA = $ 1 (U.S.)

Materials For Renovation Of The Labé Laboratory Which Must Be Bought In Guinea

Materiel	Quantity	Unit Price Sylis	Total Price Sylis	Total Price $ U.S.
Bloc	40 m3	1000/m3	40,000	1 905
Gravier	18 m3	1000/m3	18,000	857
Sable	8 m3	1500/m3	12,000	1 572
Total			701,000	3 334

1) 1 $ US = 21 syli

B-3

SITE AND TOTAL ESTABLISHMENT COSTS SATELLITE LABORATORY

	Cost $ U.S.
1) 15 kw generator (1)	6,808
2) 4000 liter reservoir (2) Diesel with calibrated pump (H.T.)	1,310
3) Submersible Pump (1) electrix, 10 m3/Hr	3 521
4) Well (No cost, to be constructed) (By Existing Well Project)	
5) 2000 gallon (3) water cistern	4 000
Total	15,639
10 % Contingency	1 564
Grant Total	17,203

(1) Matforce. Also to obtain estimate from Manutention Africaine

(2) Manutention Africaine, More precise estimated and Facture Proforma to be provided

(3) Barney Mosely, USAID. Manutention Africaine also to provide estimate

ADDITIONAL LABORATORY EQUIPMENT SATELLITE LABORATORY

Item	Cost $ U.S.
Chemical	
a) Specific I On Electrades NO_3, NH_3 CI	800
b) Field PH Meter + Extraprobes	
c) YSI O_2/ Temp. Meter + Extraprobes	2,500
d) YSI Conductivity Meter + Platinizing Instrument	700
e) Vacuum Pump Electric+Manual	550
f) Milipore Fitter Apparatus	400
g) Plastic Bottles For Water Storage	685
h) Freezer	500
i) Glassware/Pipets, etc.	1,500
j) Chemicals etc	1,000
k) Spectrophotometer	2,000
l) Meter Balance	2,000
m) Hach Engineers K.T.	5,000
	1,000
Physical	
a) Drying Oven	450
b) Balance 2000 g	115
c) Turbidimeter	1,100
d) Flow Meter	already exists at Labé
e) Instruments For Bed . Load & Suspended Solid	already exists at Labé
Biological	
a) Dissecting Scope	1,000
b) Milipore Membrane Filter	475
c) Baterial Incubator	700
d) Lab Cart	350
e) Compound Microscope	3,000
h) Reglascope	700

ADDITIONAL LABORATORY EQUIPMENT SATELLITE LABORATORY

Item	Cost $ U.S.
Photo & Map Interpretation	
a) Planimeter	200
b) Light Table	already Exists
c) Photo Cabinet	450
d) Field Stereoscope	240
Maintenance	
a) Tools for vehicle repair	
TOTAL	28,415
10 % Contingency	2,842
Grand Total	31,257

TABLE B-5

ANNUAL SALARIES

- SATELLITE LABORATORY -

	C.F.A.	U.S.
1) Professionals (2)	5,040,000	12,145
2) Family Allowances (2)	96,000	231
3) Medical Fees	111,128	268
4) Field Per Diem 160 Man-Days 3500 CFA/Day	560,000	1,349
TOTAL	5,807,128	13,993

TABLE B-6

OPERATION AND MAINTENANCE BUDGET - SATELLITE LABORATORY

Category	Fuel (liters)	Cost CFA/$U.S.	Maintenance CFA/$U.S.	Total CFA/$U.S.
1) Vehicles (2) 2500 Km/Mile/Vehicle		Operation & Maintenance: Fuel	622,500/ 2,880,000/	622,500/1,500 2,880,000/6,940
2) Replacement/Nets & Repair				124,500/300
3) Limnological Field Repair & Maintenance				124,500/300
4) Lab. Equipement W/ Repair and Maintenance				622,500/1,500
5) Expendible Field Supplies				166,000/400
6) Expendible Lab Supplies				415,000/1,000
7) Office Supplies				124,500/300
8) Electrical generator	27,216			8,167,615/19,681
10) Purchased Electricity				498,000/1,200
11) Building Maintenance				1,369,500/3,300
		Total	15,114,715/36,421	

1) Gas and Diesel 300 CFA/Liter
2) Toyota BJ 60 Consumes 16 liters/100 km
3) 15 kw Generator Operating 9 Months Per Year, 7 days A Week, consuming 4.5 liters/hour

ATTACHMENT NO. 3

MAIN LABORATORY

Position: Aquatic Chemist

Education: 4 year University Degree plus a minimum of 2-4 years Operating a Wet Lab.

Salary: 210,000 CFA/month

Duties & Qualifications: As lab director, to oversee the daily operation of the OMVG environmental laboratory. This individual must have experience with running a wet laboratory including the operation and calibration of such sophisticated instrumentation as the autoanalyzer, fluorometer and spectrophotometer. He/She shall be familiar with standard methods techniques for the examination of water and wastewater. He/She shall be responsible for developing a quality control program within and between the Labé laboratory. He/She shall be responsible for ordering new supplies, overseeing the maintenance and upkeep of equipment. He/She shall work closely with other aquatic biologists, ecologists, agronomists, engineers and public health personnel who may need water samples collected and analyzed. He/She shall be physically capable of conducting strenuous field survey. He/She shall aid in the interpretation of analyzed data. He/She shall work with other team members in developing annual monitoring/surveillance and applied research programs.

MAIN LABORATORY

Position: Aquatic Biologist

Education: 4 years University Degree with a minimum of 2-4 years practical field experience.

Salary: 210,000 CFA/month

Duties & Qualifications: He/She shall be familiar with the calibration and utilization of the various limnological field instrumentation, such as oxygen/temperature probes, pH meters, conductivity meters and underwater light meters. He/She shall be versed in the collection and field preservation of water samples to be eventually analyzed in the OMVG environmental laboratory. He/She shall be familiar with the field collection of phyto - zoo - and icthyoplankton samples. He/She working with the fishery biologist shall have a sufficient taxonomic background to key out such samples in the laboratory. He/She shall be sufficiently familiar with the handling of fishery gear to help the fishery biologist in the field. He/She shall be an expert in handling small boats and motors and prepared to spend extended periods in the field. He/She shall work closely with the chemist in the analysis and interpretation of water quality data as it relates to the natural and man-made environments. He/She shall work closely with other team members in developing monitoring/surveillance and applied research programs.

MAIN LABORATORY

Position: Fishery Biologist/Fishery Manager

Education: 4 Years University and/or Technical School Degree, with a minimum of 2-4 years of practical field experience.

Salary: 210,000 CFA/month

Duties & Qualifications: He/She shall have extensive experience in the use of experimental fishing gear such as gill nets, trap nets, block nets, trawls and icthyoplankton nets. He/She shall be an expert in handling small boats and motors. He/She shall be capable of enduring long and sometimes strenuous field conditions. He/She shall have a strong taxonomic background. He/She shall be capable of working up fish specimens such as analysing for length/weight, fecundity and stomach contents. He/She shall be sufficiently familiar with limnological sampling gear to aid the aquatic biologist in field sampling. He/She shall be responsible for the repair and maintenance of field gear and foreseeing the ordering of new supplies well in advance of their need. He/She shall work closely with other team members in developing monitoring/surveillance and applied research programs. He/She shall play a major role in monitoring the changes in fish population dynamics up and downstream of the proposed dams. He will use these findings, working closely with member state authorities and artisanal fishermen, to determine the most appropriate means of exploiting the new fisheries that will develop in order to provide the greatest economical and nutritional returns for the fishermen's efforts while maintaining viable fishery stocks.

MAIN LABORATORY

Position: Forester/Wildlife Manager

Education: 4 Years University Degree and/or Technical School degree with a minimum of 2-4 years of practical experience.

Salary: 210,000

Duties & Qualifications: He shall have a strong background in plant taxonomy and be already familiar in the identification of local trees and shrubs. He shall have a strong background in remote sensing as a tool in vegetational analysis. He/She shall become familiar with using such wildlife monitoring tools as night lighting, mist netting, tracking and hunter interviews to identify and locate wildlife. He/She should have an expertise in the identification of West African wildlife.

He/She shall use the Mark Hurd Aerial photographs to refine the University of Michigan vegetational maps. He/She will continue to refine the relationship between wildlife and vegetation. He/She shall be prepared to spend extended periods of time in the field under adverse conditions conducting groundtruthing of photographic interpretation and studying wildlife. He/She will work closely with the member states to adopt and apply appropriate wildlife management techniques, and watershed management practices (i.e. erosion control, natural reforestation, irrigated tree plantations, village woodlots). He/She shall coordinate field activities with personnel of Niokolo-koba Park in developing and carrying out applied research programs.

SATELLITE LABORATORY

Position: Aquatic Biologist/Chemist

Education: 4 years University Degree plus a minimum of 2-4 years operating a wet lab.

Salary: 210,000 CFA/month

Duties & Obligations: To oversee the daily operation of the Labé satellite laboratory. The individual must have experience with operating a wet lab including standard methods techniques for the examination of water and wastewater. He must be familiar with the use of limnological, water quality and fisheries field gear and be prepared to spend extended periods in the bush on sampling missions. He/She shall be responsible for operation, maintenance and calibration of all instrumentation as well as, for ordering new laboratory and field supplies. He/She will work closely with personnel from the main laboratory in developing yearly monitoring, surveillance and supplied research programs.

SATELLITE LABORATORY

Position: Forester/Wildlife Manager

Education: 4 years University Degree plus a minimum of 2-4 Years operating a wet lab.

Salary: 210,000

Duties & Obligations: This person shall have a strong taxonomic background in identifying tropical vegetation and be willing to learn, if not already capable, to identify West African Wildlife. He/She shall have a strong background in the use of remote sensing as a tool in vegetational analysis and begin using Mark Hurd Aerial photographs to refine the University of Michigan vegetational maps. He/She will be prepared to spend extended periods in the field. He/She will work closely with the main laboratory's wildlife manager/forester in developing applied research and monitoring programs. He/She shall work closely with the Guinean authorities and the program Sauvegarde du Fouta Djallon in developing a watershed management program (i.e erosion control, natural reforestation, irrigated tree plantations and village woodlots), for this region of the basin.

ATTACHMENT NO. 4

PERSONNEL DU LABORATOIRE

Dans les discussions sur ce problème, il est suggéré l'introduction de deux nouvelles motions dans le classement du personnel de l'OMVG.

Actuellement il existe à l'OMVG :

- Personnel Hors Catégorie
- Personnel de Direction et Conseillers
- Cadres de Conception

A ajouter :

- Cadre d'Exécution
- Technicien de terrain

avec une nouvelle grille de salaire et avantages comme suit :

- Cadre d'Exécution:

Salaire de base	=	125,000 FCFA
Indemnité de Responsabilité	=	30,000 FCFA
Indemnité de logement	=	40,000 FCFA
Indemnité de transport	=	15,000 FCFA
Total Emoluments	=	210,000 FCFA

- Technicien de Terrain et Assimilé

Salaire de base	=	65,000 FCFA
Indemnité de logement	=	30,000 FCFA
Indemnité de transport	=	15,000 FCFA
Total Emoluments	=	110,000 FCFA

- Chef de Garage

Salaire de base	=	75,000 FCFA
Indemnité de logement	=	30,000 FCFA
Indemnité de responsabilité	=	25,000 FCFA
Indemnité de transport	=	30,000 FCFA
Total Emoluments	=	145,000 FCFA

Ces propositions de salaires et émoluments ont été fixés en tenant compte du coût de la vie et la pratique qui est actuellement en application à l'OMVG.

- En ce qui concerne les qualifications :

1) Cadre d'Exécution

Baccalauréat ou Advanced level plus deux ou trois années de formation dans une institution universitaire ou de technologie ou pratique sur le domaine en question.

2) Technicien de terrain ou Assimilé

B.E.P.C. ou Ordinary level ("O" Level) jusqu'au Baccalauréat ou Advanced level ("A" Level)

ont pris part dans la discussion :

Mr. Mamour Gaye	- Directeur Technique
Mr. Omar Njie	- Directeur Administratif et Financier
Mr. Paul A. DeGeorges	- Expert Environnementaliste
Mr. Idrissa Samba	- Expert Homologue Environnementaliste

OMVG, le 27 Juin 1984

ANNEX B

REQUEST FOR FUNDING FROM OMVG

ANNEX B

GAMBIA RIVER BASIN
DEVELOPMENT ORGANISATION
B. P. 2353
DAKAR R. P.
SENEGAL

O. M. V. G.

HIGH COMMISSION
HAUT COMMISSARIAT

ORGANISATION POUR LA MISE
EN VALEUR DU FLEUVE GAMBIE
B. P. 2353
DAKAR R. P.
SENEG

REF : OMVG/USAID/VOL.II/(119).

Dakar, le 15 Novembre 1984

OBJET / : Amendement au Projet
OMVG/USAID N° 625 0012.

Monsieur le Chef du Projet,

Faisant suite à notre entretien du 15 Novembre 1984, j'ai l'honneur de vous marquer mon accord sur le document de l'amendement au projet OMVG/USAID N° 6250012 et je sollicite par la même occasion le financement de toutes les actions qui y sont réflétées.

Veuillez croire, Monsieur le Chef du Projet, à l'assurance de ma considération distinguée.

Malick A. K. JOB

Mr Lewis Lucke
Chef de Projet USAID/OMVG
N° 6250012
U S A I D

- DAKAR -

ANNEX C

REVISED PROJECT DESIGN
LOGICAL FRAMEWORK MATRIX

PP SUPPLEMENT

PROJECT DESIGN SUMMARY LOGICAL FRAME

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
GOAL			
The socio-economic development of the rural population of the Gambia River Basin.	Aggregate increases in production, income in the areas of rainfed and and water-managed agriculture, livestock and forestry as projected in Action Plan of June/1982.	Member-states statistics; production statistics; Council of Ministers review.	
SUB-GOAL			
To establish an effective coordinating agency for GRB development in conjunction with Member-states and other donors by 12/85.	1. Regional planning function for GRB being handled in efficient manner by OMVG by 1/86. 2. OMVG has secured funds and/or commitments for funds for feasibility studies proposed in Action Plan by 12/82. 3. OMVG serves as effective implementing agency for coordination of feasibility studies within the GRB. 4. 50% of projects/studies for which funds have been secured by 12/82 are in implementation by 6/83. 5. OMVG staff plays key role in implementation, monitoring, and evaluation of OMVG Intergrated River Basin Management Plan by 12/85. 6. Donors and Member-states recognize OMVG as the overall coordinating agency for GRB development by 1985.	1. Minutes of Council of Ministers meetings. 2. Records of OMVG. 3. Records and evaluations of USAID and donor community 4. Interviews 5. Contractor Reports: - Kekreti Study - Balingho Study - Pilot Perimeters Study - Soils Studies - Integrated Impact Assessment Report	1. Adequate donor community financial support. 2. Member-states support and recognize OMVG's role as regional planning body.

'P SUPPLEMENT'

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
			Pg. 2 (cont'd)
PURPOSE			
To establish in collaboration with donor community an effective Planning Division within the OMVG by 12/87.	1. 75% of key staff positions filled by nationals of Member-states by 1/85. 2. Planning Division recommendations are recognized as an important evaluation and implementation resource by donors and Member-states and become integral part of decision-making process. 3. Effective collaboration between Planning Div. and Member-state agencies is demonstrated by regualr meetings, joint decision-making processes, and regular evalutation and monitoring of data, policy, etc. by 12/86.	1. OMVG Integrated Management Plan for GRB 2. OMVG and USAID documentation 3. Project evaluation and monitoring	1. OMVG adequately staffed and equipped to assume planning function. 2. Staff positions not subject to high turnover. 3. OMVG develops an adaptive planning process utilizing data and findings of Impact Assessment Studies. 4. Planning Div. supported by Member-states national planning agencies.
OUTPUT			
1. BASIN-WIDE STUDIES	a.) Socio-economic and environmental assessment studies are carefully integrated to provide consistent conclusions and recommendations. b.) Study teams flexible enough to respond to feedback and to incorporate modifications over study period. c.) Study designs and work plans are approved by OMVG. d.) Studies are concise documents containing baseline conditions, predicted impacts and mitigative measures. e.) Study results are accepted by the OMVG and Member-states. f.) Study teams work closely with Member-state institutions and do not duplicate already existing data.	1. Final Integrated Assessment Report 2. Contractor Reports 3. OMVG and donor community documentation	1. USAID/RSDO Project Management provides adequate supervision and guidance to keep implementation on track and research activities integrated. 2. Member-states provide adequate institutional and budgetary support to enable OMVG to develop its role as an effective Basin planning agency. 3. OMVG distributes copies of final integrate impact assessment reports to donor community and Member-state agencies within a reasonable period after study is presented. 4. Member-states and Council of Ministers accept Study conclusions and recommendations.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
OUTPUT (cont'd)			pg. 3 (cont'd)
A. Impact Assessment Studies			5. OMVG Integrated Management Plan is accepted by Council of Ministers, Member-states, and donor community as a basis for GRB long-term development.
(i) River Resources study (ii) Wildlife/Vegetation study (iii) Public Health stuoy (iv) Socio-economic study	a. Contract award 10/82; surveys begin 6/82; 100 copies of draft report due 3/31/85; 100 copies of final report due 9/30/85.		
B. Aerial Photography/Mapping			6. Excessive delays in project implementation are avoiced.
(i) Aerial Photography (ii) Ground Surveys (iii) Map production	a. Contract award 1/82; 50 sets orthophotographic maps are delivered 12/84.		7. OMVG develops linkages with Member-state agencies about goals and nature of planning process.
2. TRAINING		4. Academic Degrees 5. OMVG Work Plans	8. OMVG Member-state staff installed by arrival of field study teams.
A. Academic/On the Job			9. Technical assistance team has adequate institutional support.
(i) Environmentalist; Rural Sociologist; Resource Economist.	(i) Complete Masters program and 1.5 yrs on the job training with TA by 1/87.		
(ii) Data Management	(ii) Complete .5 yrs on the job training and 1 yr formal training by 4th Qtr 1986.		
(iii) Hydrologist	(iii) Complete 1 yr on the job training and Masters program by 4th Qtr 1987.		
(iv) Geodetic/Cartography staff	(iv) Provision of .4 yrs stateside training and .6 yrs on the job training.		
(v) Member-states technical staff	(v) Approx. 200 months of on-the-job skills training in data collection, sampling, survey design, chemical analysis, and data base management.		

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
OUTPUT (cont'd)			Pg. 4 (cont'd)
3. TECHNICAL ASSISTANCE/ LONG-TERM		6. Individual Work Plans	
A. Environmentalist	A. Installed 4/82, complete 10/86.		
B. Rural Sociologist	B. Installed 4/82, complete 10/86.		
C. Economist	C. Installed 10/84, complete 9/86.		
D. River Basin Planner	D. Installed 6/85, complete 6/87.		
E. Hydrologist	E. Installed 6/85, complete 6/86.		
F. Data Management Specialist	F. Installed 4/85, complete 10/86.		
4. TECHNICAL ASSISTANCE/ SHORT-TERM	Total Project Effort: 24 months		
INPUTS			
1. Training	see Financial Plan and Budgets Contained in Section 4.1.	1. Sub-obligating documentation	1. DMVS staff is technically qualified and adequatedly supported per project document requirements.
2. Technical Assistance		2. Project contracting actions	
a. Impact Assessment Studies		3. USAID Regional Controller reports and audits	2. Job performance by USAID-funded technical advisors is adequate.
b. Technical Advisors			
3. Commodities			3. Timely completion of project implementation and financial management by Management.
4. Evaluations			

A.I.D./WASHINGTON DELEGATION OF AUTHORITY CABLE

UNCLASSIFIED STATE 313775/01 ANNEX D

ACTION: AID-2 INFO: AMB DCM RIG CHRON 6

C & R

VZCZCTAA894ESC604
RR RUTADS
DE RUEHC #3775/01 2970233
ZNR UUUUU ZZH
R 232231Z OCT 84
FM SECSTATE WASHDC
TO RUTADS/AMEMBASSY DAKAR 7705
INFO RUFHJL/AMEMBASSY BANJUL ABIDJAN 3280
BT
UNCLAS SECTION 01 OF 02 STATE 313775

1984 OCT 23 PM 3:11

LOC: 05
23 OCT 84
CN: 42063
CHRG: AID/RDO
DIST: UTI
O.M.V.G. PROJECT
ARRIVEE : 23 OCT 1984
RECEIVED :
DATE :

ACTION
RPDO
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Embassy

AIDAC DAKAR FOR RDDO ABIDJAN FOR REDSO/WCA

E.O. 12356: N/A
TAGS:
SUBJECT: GAMBIA RIVER BASIN (OMVG) (625-0012) - PP AMENDMENT

REF. A) DAKAR 6612 B) STATE 235781 C) DAKAR 5500

1. SUMMARY: UNDER SECTION 4A (2)B OF DOA 140, REVISED, THE AA/AFR CONCURS THAT, SUBJECT TO THE CONDITION THAT THE ISSUES/CONCERNS RAISED BELOW ARE ANSWERED TO THE SATISFACTION OF THE SENEGAL MISSION DIRECTOR, THE USAID/SENEGAL DIRECTOR MAY AUTHORIZE AN AMENDMENT TO THE GAMBIA RIVER BASIN PROJECT (655-0012) TO (A) INCREASE THE LIFE-OF-PROJECT AUTHORIZATION BY DOLS. 2'000'000 AND (B) EXTEND THE PROJECT ASSISTANCE COMPLETION DATE BY 15 MONTHS TO DECEMBER 31, 1987. END SUMMARY.

2. AN ISSUES MEETING WAS HELD TO DISCUSS THE PROPOSED AMENDMENT OF THE OMVG PROJECT. ALTHOUGH ALL MEMBERS PRESENT FELT THAT THE PROPOSED AMENDMENT IS NEEDED, SOME FELT STRONGLY THAT A FURTHER EXPLANATION AND/OR JUSTIFICATION WAS NEEDED ON SPECIFIC TECHNICAL ISSUES. AID/W IS CONCERNED THAT SOME OF THESE ACTIVITIES WOULD BE DIFFICULT FOR HOST COUNTRIES TO STAFF AND MAINTAIN

AFTER THE PROJECT TERMINATES AND QUESTIONS WHETHER SOME OF THESE ACTIVITIES ARE CRUCIAL TO THE OVERALL PURPOSE AND SUCCESS OF THE PROJECT'

Action To :
Action When : Date
Tel. :
Other :
Due Date :

THE AMOUNT OF INCREASE SHOULD ALLOW FOR ONLY THOSE ACTIVITIES WHICH ARE CONSIDERED ESSENTIAL FOR THE ACHIEVEMENT OF PROJECT PURPOSE AND WHICH CAN BE MAINTAINED BY LOCAL STAFF AFTER THE PROJECT IS COMPLETED. AID/W FEELS THAT AN INCREASE OF DOLS 2 MILLION WOULD BE SUFFICIENT TO CARRY OUT THE REQUIRED ACTIVITIES. SOME OF THE ACTIVITIES WHICH REQUIRE FURTHER JUSTIFICATION AND/OR EXPLANATION FOLLOW: WOULD IT VERY DIFFICULT TO JUSTIFY THE USE OF SAHEL FUNDS FOR CONSTRUCTION OF A MAP STORAGE FACILITY IN GUINEA. ALSO' WOULD THE GAMBIA BE IN A POSITION TO STAFF AND MAINTAIN SUCH A FACILITY AFTER THE PROJECT

TERMINATES? AID/W RECOMMENDS CONSIDERAT FOR
CONSTRUCTION OF ONE CENTRAL STORAGE FACI

F. IS AN ENVIRONMENTAL MONITORING LABOR ED
ESSENTIAL FOR ACHIEVING PROJECT OBJECTIV
RECOGNIZES IMPORTANCE AND DESIRABILITY O
FACILITY BUT QUESTIONS WHETHER SCARCE RES
FUTURE STAFF CAPABILITIES WITHIN THE OMV
DEVOTED TO THIS ACTIVITY.

C. WHAT TYPE OF MODELING EXERCISE ARE YO G?
HOW IS IT TO BE UTILIZED IN THE PLANNING D HOW
ARE LOCAL STAFF TO BE UTILIZED IN THIS E

3. THE FOLLOWING ISSUES/CONCERNS WERE R HOULD
BE ADDRESSED IN THE PP SUPPLEMENT.

A. CAN THE HYDROLOGIST ACCOMPLISH ALL T
INCLUDING THE DEVELOPMENT AND TESTING OF
HYDROLOGICAL MODEL WITHIN ONE YEAR? WHAT RPOSE
OF THIS MODEL AND HOW IS IT TO BE UTILIZ NT
AND FUTURE)

B. WHAT IS THE ROLE OF THE OMVG, INCL
RELATIONSHIP WITH THE MEMBER STATES IN
STUDIES AND PLANNING, ITS RESPONSIBILITI IONAL
PROCEDURES AND DECISION MAKING PROCESS?

C. WHAT IS THE ROLE OF OTHER DONORS IN T T AND
HOW ARE THEIR ACTIVITIES BEING COORDINATE AID

FUNDED ACTIVITIES?

D. HAVE ALL THE 611 (A) REQUIREMENTS BE

E. HOW ARE THE SOILS STUDIES BEING PROV P
ASSISTANCE BEING UTILIZED BY THIS PROJEC SE
STUDIES COMPLETE AND WILL THEY BE INTEGR HE
PLANNING EFFORT FUNDED THROUGH THE AMEND

F. DISCUSS THE FINDINGS AND RECOMMENDATI
RECENT PROJECT EVALUATION AND HOW THE RE NS
ARE BEING IMPLEMENTED

G. A REVISED LOG FRAME SHOULD BE INCLUD

H. A DEFINITIVE IMPLEMENTATION PLAN AND ASE
OUT OF ACTIVITIES SHOULD BE INCLUDED.

4. AID/W REGRETS THE DELAY IN RESPONSE, THAT
CONSIDERATION OF THE ISSUES/CONCERNS RAI ILL
BE HELPFUL IN FINAL PREPARATION OF PP SU

UNCLAS SECTION 02 OF 02 STATE 313775

SENEGAL MISSION DIRECTOR MAY AUTHORIZE AMENDMENT AND EXTENSION OF PACD ONCE THE ABOVE ISSUES/CONCERNS HAVE BEEN ADDRESSED AND ANSWERED TO HER SATISFACTION. PLEASE INFORM AID/W ON STATUS OF ABOVE. FINAL BUDGET AMOUNT AND OTHER INFORMATION FOR CN ON SUBJECT AMENDMENT SHOULD BE SENT WHEN PP SUPPLEMENT IS BEING FINALIZED.
SHULTZ
BT
#3775

NNNN

UNCLAS SECTION 02 OF 02 STATE 313775

ANNEX E

MID TERM EVALUATION SUMMARY

ANNEX E

GAMBIA RIVER BASIN DEVELOPMENT PROJECT

625-0012

May 11, 1984

excerpts from MID TERM EVALUATION:

- Executive Summary
- Fundamental Conclusions & Recommendations
- Action Recommendations

EXECUTIVE SUMMARY

The Gambia River Basin Development Project as authorized in 1981 and since amended grants $14,694 000 to the basin development commission (OMVG) through September 1986. OMVG receives this assistance on behalf of its four member states (Senegal, The Gambia, Guinea, and its newest member, Guinea Bissau) in the form of technical assistance for river basin planning, elaborate environmental and socio-economic studies being produced under contract by the University of Michigan, and detailed aerial photography and maps contracted for Mark Hurd Aerial Surveys Inc. -- all to create a planning capacity.

The project is now at a mid-point where the maps have been completed and the final drafting of the Michigan report is about to begin. The process of planning in OMVG should soon enter a synthesis/integrative phase which over the next two and a half years will systematically refine and present options for river basin development investments and management to member states and potential donors.

It is widely believed that the Gambia River system presents a great, perhaps the best opportunity for stabilizing and increasing agricultural, especially food production in this drought-stricken area of West Africa.

Realizing its potential through large-scale water control investments and subsequent irrigated rice development, with up-stream hydropower generation, would be costly and perhaps risky. Thus thorough and extensive analysis of environmental, socio-economic and public health factors and a reliable data base are prerequisites to planning and agreements on investments. The question is: has this project produced them and will the professional capacity exist in OMVG to use them through the completion in 1986 of its preinvestment phase?

The Evaluation finds that the quality, timeliness of delivery and utility of the maps and studies will be satisfactory. The maps are more detailed and of a higher quality than originally planned, but this is appropriate and within the allotted budget. For the studies to be completed in their most useful form will require considerable work on the integration of findings from the four more or less independent components on socioeconomics, river resources, wildlife/vegetation and public health. Their presentation and use would be given considerably added value if combined with an integrative exercise and modeling effort involving OMVG and member state officials about a year from now. That should be supervised by an experienced river basin Planner and make use also of the results of other studies commissioned by OMVG and an hydrological basin model and certain economic studies to be added through the AID project.

However, the planning operation of OMVG, to wh ... et technical ... assistance, training and equipment (computers, lab ... documentation) ... are devoted, while developing, has not reached the l ... ompetence and ... vigor it will require from now on. As establishment ... ionships with ... member state technical agencies and supervision of t ... studies comes to ... an end, missing and additional technical assistance ... tia, river basin ... planner, hydrologist, data and documentation managem ... alists) should be ... provided and selected special studies undertaken alo ... he permanent ... establishment of data, maps and documentation managem ... some additional ... training. This should assure that the process of pl ... the systematic ... consideration of investment alternatives and their c ... efits and impacts ... in basinal development -- will proceed as intended s ... nt decisions on ... development actions of major importance are taken in ... few years.

In sum the Evaluation finds that the project i ... ful so far and ... well managed. Achievement of its purpose -- establi ... f an effective ... planning unit in OMVG -- is both desirable and possi ... nts are moving ... rather quickly in the Basin: negative ones in terms ... lining ... agricultural economy, and positive ones with respect ... nment's and donor ... interest in new development initiatives. Therefore, ... uation recommends ... an intensification of the planning process. This sh ... nabled by ... additional project inputs valued at about ten but no ... t 15 percent of ... the current project's cost and a three month extensi ... Project ... Assistance Completion Date.

FUNDAMENTAL CONCLUSIONS AND ACTION RECOMMENDATI

A. Fundamental Conclusions

On the whole, the project has been successful i ... rst phase. It is ... well managed, given the magnitude and diversity of i ... e logistical ... difficulties of studying the basin, and the natural ... ins of a new ... institution like OMVG charged with such important ta ... management by ... USAID/Senegal/RBDO, in particular, has been highly p ... al and devoted. ... The project in its original terms is within the budge ... time limits set ... for it. As planned by project management, this mid- ... uatin has come at ... precisely the point where decisions should be taken ... uing and ... enhancing support that builds on achievements to ass ... llment of the ... project's purpose.

In the first two years of actual project operat ... ginning with ... contractor selection and commencement of mapping, it ... unavoidable that ... implementation has concentrated on mounting the mass ... onmental and ... socio-economic studies and mapping exercise. The ve ... uality maps are ... now being delivered and have already been of value ... ng certain ... enginering planning decisions. The studies will be ... by early 1985. ... There have been certain problems in their execution, ... agerial and ... substantive, but these to a great extent are being o

Specifically, completion of the final integrated report in its most useful form may necessitate both a rescheduling of the time of certain team leaders and extension of the due dates for the reports. In this manner, use of the massive socio-economic data base being compiled will be optimized, and more complete data on the Guinea portion, as provided for in a late contract amendment, are used, can be fully included.

This has been a period, also, in which the technical assistance provided to the OMVG has been employed, for the most part unavoidably, in assisting and advising execution of the studies and maps as well as establishing technical relations with member state agencies. The problem here is that the technical assistance team has been extremely incomplete. The river basin planner, who should have served the function of chief of party was not appointed; instead the UNDP provided a Chief Technical Advisor to OMVG, but he has not served the purpose of leading the integrative technical work of the Planning Division. The post of economist has been vacant for nine months. The result is that the Planning Division has been in a reactive mode and has not taken the leadership role intended for it. Long-term training for counterparts has also not followed the intended sequence, so that it will be more difficult than expected to combine overseas studies with substantive work of the Division in the coming two years.

To a certain extent, the above inadequacies are attributable to an original design fault which can and should now be corrected. This is that the project design failed to provide a plan or concept for the evolution of a planning operation in OMVG.

The project's purpose, to establish an effective planning division by the end of 1985, was set up to be achieved by simply providing self-directing experts and training. Their goals and fit within a dynamic and growing organism with specific functions and targets were not specified.
Thus, too, certain technical expertise necessary to a planning operation was not included in the technical assistance package (and has not been provided by other donors), notably in the fields of hydrology, irrigation scheme planning, public health, and development project finance and management.

It is not surprising, therefore, that what actually constitutes the strategic planning process of OMVG draws very little on the Planning Division, as it currently exists. The OMVG is following the Action Plan of 1982, provided with the support of the UNDP, and is in the process of revising its basin-wide production model and set of regional and national project prospectuses, while at the same time seeing to the completion of a series of feasibility and water resource studies supported by other donors. Within about ten months those exercises and the Michigan studies will all be completed.

That is the point, the beginning of 1985, at which the planning operation of OMVG should take a new and more ambitious course. Continued, and indeed the increased commitment of the four member states to the importance of the development of the Gambia River Basin and the central function of OMVG will be a prerequisite to such an enhancement of functions and responsibilities, as will be increased donor coordination.

But the opportunity and necessity are there. As the major donor to the OMVG, AID should encourage the member states and officials of OMVG to set forth in detail their plans for carrying out the process of basin-wide development decision-making in the next two to three years. On that basis, AID should be prepared to provide additional resources for the project which should then run until the end of 1986.

The conclusion here is that a strategic decision process will require a fully operational well-equipped planning unit in OMVG, positioned to answer directly to the High Commissioner and Secretary General. The purpose of this planning unit should be to gather and synthesize all the essential information bearing on environmental, socio-economic, and financial implications and impacts of possible basinal development efforts and to present options to the decision-makers with increasing refinement beginning in mid-1985.

To achieve this, the current AID project would need to be amended to add inputs necesarry to the achievement of its original purpose. OMVG and its Council of Ministers would have to support this evolution of the Organization's planning operation and unit both in principle, with specific instructions and mandates, and in terms of member states' financial and personnel contributions. Both appear to the evaluation team to be desirable and feasible.

In that light, Section IV.B., below, sets out a series of action recommendations directed at both AID and OMVG concerning the staffing, functions and facilities of the Planning Unit and future steps in AID project management. As a whole, they call for the completion of staff and facilities of a central planning unit and operation of the synthesis and options-presentation process described above through 1986. They follow from the detailed analysis of the OMVG Planning Division's institutional development presented in Section I, above, and reflect certain conclusions about the execution of studies and maps contained in Sections II and III.

Principally, the recommendations indicate an increase in OMVG and project technical assistance staffing for overall planning and synthesis, hydrological modelling, data base management and additional special studies. Training needs to be reformulated and increased slightly. Facilities for documentation, maps, data processing and environmental monitoring, using inputs already largely provided by the project, need to be set up and made operational. Finally, it is recommended that an integrative exercise be undertaken, assisted by modeling and presentation experts to be contracted for by AID, which would both clarify development options for decision makers on the basis of the enormous amount of information OMVG will have gathered by early 1985 and provide analytical and presentational tools useful for later phase of river basin planning and development.

An increase in project funding of ten to 15 percent is recommended, along with a three month extension of the Project Assistance Completion Date (PACD) to December 31, 1986. The latter would synchronize the AID project's timing with that of institutional assistance from UNDP, setting the stage for consideration of later multi-donor assistance. The former is a modest immediate increase in AID assistance that should be cost-effective. It would be instrumental in achieving the project's, OMVG's and the member states' important and realizable objectives as the pre-investment phase of basin development is completed.

B. ACTION RECOMMENDATIONS

1. Staffing of Planning Unit

a) River Basin Planning - The position of chief of the Planning Division should be filled by a qualified member state national. The project should provide an experienced river basin planner technical assistant for two years beginning no later than December, 1984. He or she, with the Planning Division chief, should direct the integration and synthesis of all river basin information for presentation to member states and donors. The existing river basin planner counterpart, Mr. Bah, should go for training in hydrology following a year's English language training.

b) Hydrology - The project should provide an hydrologist technical assistant for at leat one year (long or recurrent short-term) to develop an hydrological model of the Basin and integrate it into larger modeling exercises.

c) Economics - The newly recruited economist technical assistant and his counterpart (to be provided by OMVG) should integrate all economic information collected by OMVG into the overall integrative tasks of the Planning Unit and execute and/or direct short-term technical assistance to execute special studies: inter alia, on financial implications of river basin development, the economics of irrigation schemes, and opportunities for economic cooperation among member states.

d) Environment - The environmental technical assistant should be extended to the PACD to remain in place until the counterpart returns and to assist in general data integration for planning, vital environmental impact mitigation analysis and establishment of an environmental monitoring policy. His counterpartt should begin 18 months of training in the U.S. as soon as possible in order to return by 1986.

e) Sociology - The technical assistant should remain in place until his counterpart returns from 18 months training and there is an overlap of at least three months.

f) Data Management - A data base management expert familiar with the design and content of the Michigan data base should be provided for one year to ensure its integration into larger modeling exercises, train staff in its use, and oversee the installation of the OMVG's computer facilities.

g) Development Project Analysis - The OMVG should be requested to extend Mr. Kane's assignment and give him responsibility within the Planning Unit for coordinating analysis of all currently active and planned development programs in the Basin and their relationships to interventions being planned by OMVG.

h) A qualified member state documentalist should be recruited at once to begin establishment of the documentation center including the safekeeping and filing of maps and photos. Short-term technical assistance should be provided, as necessary.

2. Functions of the Planning Unit

a) OMVG should undertake an objectives-setting exercise concerning its planning operation involving the concluding supervision of studies, the integrative exercise and the preparation of the Revised Action (Integrative) Plan. The result should be an integrated work plan for the Planning Unit from which each person would develop his or her specific tasks.

b) On the basis of this work plan, when additional technical assistance and counterparts are in place, the current Planning Division should be converted into a Planning Unit under the direct supervision of the High Commissioner and Secretary General so that its higher and more central function is differentiated from the tasks of the more narrowly technical and operational agriculture and infrastructure divisions.

c) An integrative exercise, on the model of Adaptive Environmental Assessment and Management, should be planned and funded by the project.
It should involve major member-state decision makers, as well as OMVG staff and consultants, and occur in the Spring of 1985. Its products, in the form of reports, audio-visual displays and the like, should be widely disseminated in the Basin.

d) In-country short-term training for OMVG staff members at African institutions (ENEA, ESGE, IDEP) should be explored as additional staff-building opportunities. Its timing and content should be coordinated with completion, review and presentation of both the Michigan draft final and final reports and the subsequent OMVG 1985 Indicative (or Action) Plan.

3. Facilities of the Planning Unit

a) Documentation Center - With the assistance of the data management technical assistant, this should be established to store the Michigan data base for retrieval on specific analysis tasks. It should be provided with a local currency account under the supervision of the OMVG accountant with additional financial management training under SRFMP as necessary and this fund used to procure essential documents locally. A foreign currency account should be established in the project for overseas procurement of documents and references. Special attention should be given to water resources texts, advice on the collection of which can be obtained from AID engineers. The Documentation Center should develop an information network with member state research institutions and consider publishing a newsletter to disseminate baseline study results.

b) Environmental Monitoring Laboratory - The consultant's report on development of this facility, using the equipment left behind by the Michigan group, should be given serious consideration, along with the advice of the Planning Unit's environmentalists. In planning for a continuing field program, however, careful attention should be given to the recurrent costs of operations. These do not fall under the purview of the project and a special case would have to be made for AID to finance any long-term environmental monitoring effort in the Basin. If it is decided to store the equipment for later use, this should be funded by the project, but then the environmentalist technical assistant should reconcentrate his work on analysis and synthesis.

c) Computers - Those being provided directly to OMVG and those to arrive at the completion of the Michigan studies should be housed and maintained under the supervision of the data base management expert. He or she should train OMVG staff in their use and develop the capacity in OMVG for running programs and data from additional sources, such as the ROSS and Clark Ross models being used by others working on basin problems.

d) Fiscal Allocation Responsibility Model - As with OMVS and at the appropriate time, this should probably be provided to OMVG as a tool for planning Member States' participation in major scheme development, financing and management. The need for it should be assessed in late 1985.

Map Storage and Access

The maps and aerial photographs produced by the project are such a major contribution that they deserve special attention -- for their preservation and optimization of their use, as follows:

a) The aerial photos and photomaps already delivered to OMVG should be moved immediately into a temporary holding room. This should be a separate, vacant room which has been well-scrubbed and cleaned, shuttered against sunlight, and totally enclosed and air conditioned. It should not be used for other purposes. Two staff members should be named as responsible for the photos and maps and the room. No future delivery of maps should be made until this controlled temporary storage has been assured by the OMVG.

c) The qualified Librarian/Documentalist to be immediately recruited should have, among other duties, permanent responsibility for the safekeeping and filing of the photos and maps. Each member state should also name the staff person who will be directly responsible for storing and filing their sets of photos and maps.

d) The project should immediately purchase a set of map files and associated map room equipment for OMVG and each member state.

e) AID should require and finance the construction or renovation of appropriate map rooms for the OMVG and each Member State. Preliminary plans should be drawn up with the responsible staff person and chief of service and include shelves, tables, shutters, weather seals, air conditioning and leakage/flooding protection. An AID Engineer should approve the plans and completed work.

e) AID should provide short-term technical assistance of a PASA map librarian from one of the several mapping agencies (USGS, DMA, Army Map Service, etc.) who would: set up the OMVG map room and files; train the OMVG documentalist; set up each Member State's map file; and train appropriate Member State personnel. Length of this service would be 2-3 months.

f) One complete set of the photomaps which have been delivered to the OMVG (and for the most part have not been unpacked) should be sent immediately to the UM/Harza Team for use in the final phase of the River Basin Study.

g) The project should finance a country photo and map interpretation seminars. be held in each Member State and at OMVG for riod of afternoon sessions. The seminars shou d by an interdisciplinary, mixed pan ists with interpretation skills (live sources, demography/geography, forest should consist of methods and techniques of p eration used to obtain various types of subs mation. About 15-20 technical personnel d d in particular subsectoral analysis should participate in each seminar. The OMVG envi should have a role in planning and organizing t

h) Private study, consulting or firms who are given sets of photos or maps quired to pay a reasonable user's fee. These be collected in a special fund set aside for p ge, reorder, etc. The photomaps enable f e significant savings in project study and ber State operating budgets are limite in.

5. AID Project Management

a) As the time consuming studie ed, AID project management should concentrat grative and planning activities through gs with the Planning Unit, senior OMVG f and interested donors. In particular, UNDP, donor supporting OMVG operations on a long-ter ld be consulted with on a continuing basis, concerns the further evolution of the pro coordination of UNDP and AID assistance to the next 30 months.

b) AID should support OMVG in r ly financial support of OMVG from member financial and in terms of seconded personnel.

c) Independently of OMVG staff, anagers should establish working relationsh rs of the technical committees from me monitoring issues and evolution of the ercise.

d) Member States should be requ n personnel trained on the job by Michi rd to future monitoring and other tasks in

e) AID should refer the docume uinea Bissau "Terms of Reference for the elopment of the Koliba-Corubal and Kayanga- s" to the office of the AID Representative/Bi deration of support under the bilateral Bissau aid program.

AID should speedily pursue negociations with OMVG on the evolution of the project as recommended above. As some indications of member-state support would be necessary, this make take some time; simultaneously other steps can and should be taken:

(1) The contract for long and short-term economic technical assistance should be negociated as soon as possible.

(2) Plans should be set afoot for map and lab equipment storage.

(3) A plan and proposal from Michigan should be solicited regarding any revised timing and use of resources for completion of the draft final report. (See II; above).

(4) A Project Paper Supplement following the guidance of AID Hand-book 3, Chapter 13 should be composed (with REDSO/WCA assistance as necessary) to be used as the basis for a ProAg Amendment.

ANNEX F

PROCUREMENT PLAN

ANNEX F

PROCUREMENT PLAN

1. Responsible Agency

All procurement activities proposed in this Supplement will be the responsibility of USAID/Dakar/RBDO.

2. Equipment and Commodity List

According to current projections the general equipment and commodity list attached as Attachment 1 to this Annex will be purchased by project funds through direct USAID procurement. Minor substitutions or revisions may be made but the overall dollar costs of commodities will not be raised. Specifications for commodities are included in Annex A as well.

3. Source and Origin

Except as noted in paragraphe 5 and 6 below, the authorized source and origin for commodities will be Code 000 and cooperating countries (Senegal, The Gambia, and Guinea).

4. Method of Procurement

No individual procurement action will exceed $100,000; consequently Small Value Procurement Procedures will be followed. Procurement actions will be coordinated by the USAID/Supplies Management Office and RBDO. Normal commercial practices will be observed for all procurement (offshore and local) of goods and services. Solicitation for a reasonable number of quotations (pro forma invoices) will be made and awards will be made to the most advantageous offeror (price and other factors considered).

5. Shelf Item Procurement

Those items imported to the designated cooperating countries from eligible geographic sources and containing no non-Free World Components, for sale to the general public and kept in stock in the form in which they are imported, are eligible for financing under this Grant. These items are not specifically imported for project use.

a) U.S. (Code 000) imports can be purchased in unlimited quantities up to the amount of authorized local procurement in each category.

b) Commodities eligible under the shelf item provision have a maximum permitted unit cost of $5,000 from Code 935 countries and may not exceed 10% of total local costs financed by AID for the project.

The following items of Code 935 origin will be purchased under the shelf item rule:

Construction Materials (cement, aggregate, rerod, lumber, etc.)	$ 46,000
Office Furniture	4,000
Office Equipment	15,000
Office Supplies	6,000
Map Storage Equipment	10,000
Vehicle Operations	32,000
Generator Set (20 kw)	17,125
Subtotal	$130,125
Contingencies (10%)	13,010
TOTAL	$143,135

The relatively small quantity and recurring nature of these local cost requirements over the span of the project make U.S. procurement of these items impractical and prohibitive in terms of cost.

6. Other Local Costs

Other local currency costs will include disbursements for the following lines of services:

Technical Assistance: short term	$ 25,000
Training	25,000
Subtotal	50,000
Contingencies (10%)	5,000
TOTAL	$ 55,000

Total local currency authorization including the $143,000 for shelf item procurement described in Paragraph 5 above is requested in the amount of $198,000 for the activities included in this Project Paper Supplement.

7. Waivers

A waiver of AID's source and origin requirements is requested as follows:

i) waiver of the ten percent (10%) limitation on shelf item procurement allowing up to $150,000 in shelf item costs and authorization to increase shelf item procurement unit value from $5,000 to $20,000

8. Delivery

Port of entry for all project imported commodities will be Dakar, Senegal, unless otherwise indicated in procurement documentation. All project commodities will be shipped on the basis of CIF/Dakar. Suppliers will provide insurance in the amount of 120% CIF cost of the commodities. AID's marking requirements will be followed for all shipments.

9. Receipt and Utilization

USAID/Supplies Management office will be responsible for the proper reception and clearance of incoming project commodities. Inspection of incoming shipments must be made and receiving documents shall be annotated with comments on evident or possible damages/losses. SMO will initiate all insurance claims.

PP SUPPLEMENT/ANNEX F: attachment 1

EQUIPMENT/COMMODITY LIST

Off-shore Procurement

COMMODITIES	QUANTITY	UNIT	COST	SUB-TOTAL ($)
Laboratory Equipment				
Fume Hood	1		1,800	
Lab Carts	2	150	300	
Drying Oven	1		450	
Muffle Furnance	1		400	
Turdidimeter	1		920	
Underwater Photometer	1		600	
Centrifuge	2	525	1,050	
Constant Voltage Transfor	3	200	600	
Kemmerer Bottles	1		300	
Atomic Absorber Unit	1		4,750	
Gas Chromatograph	1		5,250	
Laboratory Chemicals			6,000	
Slide Projector	2	300	600	
Projection Screen	2	150	300	
Drafting Supplies			950	
Biological Testing Gear			1,000	
Blueprinting Machine			1,000	
Soil Testing Outfits (2)		3,500	7,000	
Soil pH meters			100	
Soil Testing Sieves	4	250	1,000	
Rain Gauges	2	120	240	
Field Microscope	2	225	450	
Soil Auger	3	100	300	
Surber Sampler			300	35,540
Photo and Map Interpretation				
Pantograph	1		2,000	
Digital Planimeter	2	525	1,050	
Light Tables	3	175	525	
Photo Laminator	2	1,100	2,200	
Photo Cabinets	2	475	950	
Mirror Stereoscope	6	420	2,520	
Field Stereoscope	4	120	480	
Clinometer	2	50	100	
Forest Densitometer	1		700	
Drafting Tables	2	700	1,400	
Lettering Set	2	275	550	
Storage Cabinets	5	475	2,375	

PP SUPPLEMENT/ANNEX F: attachment 1

COMMODITIES	QUANTITY	UNIT	COST	SUB-TOTAL
(Photo and Map Interp. cont'd)				
Drawing Pens	4	55	220	
Overhead Projector	2	322	644	
Drafting Materials			1,000	
Map Roll Files	16	72	1,152	
Altimeter			1,078	
Tree Height Altimeter			122	15,240
Maintenance Equipment				
Arc Welder	1	422	422	
Acetylene Torch	1	350	350	
Maintenance Tool Set	2	1,140	2,280	
Automotive Tool Set	1	1,350	1,350	
Electric Repair Equipment			1,650	6,152
Data Management Equipment				
Peripherals (mass storage)			18,222	
CPU			13,350	
Software			6,222	
Supplies			4,507	
Networking Equipment			7,300	53,851
Vehicle Maintenance				
Spare Parts			6,500	6,500
SUB-TOTALS				$116,060
Transport (10%)				11,606
TOTAL				$129,356
contingencies (10%)				12,967
GRAND TOTAL				$142,853

ANNEX G

WAIVER ACTION MEMORANDUM

ANNEX G

ACTION MEMORANDUM TO THE DIRECTOR USAID/SENEGAL

FROM: Lewis W. Lucke, RBDO

SUBJECT: Request for Source/Origin Waiver to Increase Shelf-Item Procurement Authority

I. PROBLEM

Your authorization is required to waive the ten per-cent (10%) limitation on total shelf-item costs to allow up to $ 150,000 total shelf-item procurement for activities authorized under the terms of Project Paper Amendment No. 3 and to increase shelf-item procurement unit value from $5,000 to $20,000.

II. FACTS:

A.	Cooperating Country	:	Senegal
B.	Nature of Funding	:	Grant
C.	Source of Funding	:	Sahel Development Program
D.	Project	:	Gambia River Basin Development
E.	Number of Project	:	625-0012
F.	Description of Goods	:	Construction Materials Office Equipment Map Storage Equipment Vehicle Operations Generator Set
G.	Probable Source:	:	Senegal
H.	Probable Origin:	:	Code 899 (free world)

3. DISCUSSION

1. The Gambia River Basin Development Project (625-0012) is highly technical in nature. The greatest proportion of project funding to date has been earmarked for implementation contracts with private firms and educational institutions for the provision of technical services. Accordingly, the project has a very low ratio of local costs to total project costs.

As part of the package of supplementary activities authorized under the provisions of the Project Paper Supplement, a Water Resources Laboratory will be established in the Gambia River Basin to monitor the impacts of development on the natural resource base. USAID has agreed to provide financing for the refurbishment of a site to be donated by the OMVG Member-States for the Laboratory facility. The requested increased authorization for local cost sheld-item expenditures will be utilized to procure materials to repair, upgrade, and furnish the OMVG-provided lab facility. This activity will represent the major outlay of local cost financing (Direct USAID procurement) for the entire project, hence its large share (72%) of total local cost authorization (Ref: PROJECT COSTS BY FINANCIAL CATEGORY, TABLE 4.1.; PROCUREMENT PLAN, Annex F, Project Paper Amendment No. 3).

Construction materials necessary for the refurbishment of the Laboratory facility must be pruchased locally and delivered to the work site. In addition, it would be advisable that office equipment and some of the lab equipment to be installed be obtained from local vendors to ensure after sales maintenance. An increase in total authorized project shelf-item costs is required for approval of these recommended procurement actions.

2. An additional request is made to increase the unit price limit to $20,000 to allow for local procurement of a large generator set (and spares) to provide a back-up power supply for the laboratory. The maintenance requirement for such an item mandates that procurement be made through an established local firm.

3. As specified in this waiver, increased shelf-item costs will constitute 1.3% of total project costs and 12% of total obligated project commodity expenditures.

IV. RECOMMENDATIONS

Whereas total shelf-item costs as specified in this waiver will not exceed the limit of $250,000 for total shelf-item purchases prescribed in Handbook 1, Supplement B, Section 18A:4b, and pursuant to AFR Redelegation No. 140 (as amended), section 7, it is recommended:

a) that the ten per cent limitation on shelf-item procurement be waived to allow up to $150,000 in shelf-item costs under the terms of the Project Paper Amendment No. 3;

b) that the unit price for shelf-item procurement be increased to $20,000 per unit.

ANNEX H

TRAINING PLAN

ANNEX H

TRAINING PLAN

1. Long Term:

a) OMVG Staff Hydrologist

Strengthening OMVG's capability in the planning and evaluation of future water resource developments is one of the key objectives of the Gambia River Basin Development Project. To reinforce this capability, the OMVG staff hydrologist will enter a two-year Master's Degree program at a U.S. educational institution. The area of study will concentrate on applied hydrology, modelling, systems analysis, and resource economics. The hydrologist's training will be closely coordinated by both the River Basin Planner and the Hydrologist provided under the terms of the Project Supplement.

Start of training:	3rd quarter 1985
Completion:	3rd quarter 1987
Cost:	$60,000

b) Information Resource Specialist

Management and analysis of the baseline data compiled by the Impact Assessment Studies will be an essential aspect of the planning and decision-making process taking shape at the OMVG. An OMVG member-state technician will receive one year of skills-specific training in Information Resource Management in order to assume responsibility for the OMVG Information Resource Center.

Start of training:	3rd quarter 1985
Completion:	3rd quarter 1986
Cost:	$25,000

2. Seminars and Training Exercises:

a) Integrative Planning Exercise

The development of a multi-objective planning methodology applicable to the OMVG decision-making process will be undertaken in a series of structured planning seminars and training exercises. OMVG and member states technicians will participate in analysis and evaluation of the baseline data and developing applications for the long-term process of planning for, monitoring, and managing the watershed's resource base. Details of the Planning Exercise are contained in Section 3.6. (Recommendations). It is anticipated that the entire cadre of OMVG and Member-States personnel with basin-related planning responsibilities will be involved with this comprehensive training/planning exercise. The final outputs of this activity (interactive model, Mitigation Plan, basin-wide Resource Management Plan, audio-visual materials), once elaborated, will then serve as "templates" for the OMVG Integrated River Basin Management Plan. The planning exercise will be conducted by specialists in impact assessment analysis, resource management, and river basin planning.

Start of training:	3rd quarter 1985
Completion:	2nd quarter 1986
Cost:	$160,000

b) Photographic Interpretation Training Seminars

In order to ensure maximal utilization of aerial photographs and orthophoto maps produced by the project, OMVG and Member-States personnel will take part in user-oriented training sessions designed to demonstrate applications for various subsectors, such as land-use and range management. The workshops will be organized and conducted by a panel of sub-sector specialists in photo interpretation.

Start of training:	2nd quarter 1986
Completion:	3rd quarter 1986
Cost:	$40,000