

UNCLASSIFIED

PD-AAS-480

**AGENCY FOR  
INTERNATIONAL  
DEVELOPMENT**



**ANNUAL BUDGET SUBMISSION  
FY 1981**

**SENEGAL**

BEST AVAILABLE

**DEPARTMENT  
OF  
STATE**

JUNE, 1979



UNCLASSIFIED

FY 1981

ANNUAL BUDGET SUBMISSION

OMVS PROGRAM

SENEGAL RIVER BASIN

DEVELOPMENT ORGANIZATION

OMVS

ANNUAL BUDGET SUBMISSION

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a/ This OE Summary includes only OMVS. It is presented so that the OE level for OMVS can be compared to the program level. The formal OE request with budget detail and supporting schedule is consolidated in the Senegal ABS.

TABLE I - LONG RANGE PLAN BY APPROPRIATION ACCOUNT (\$ Thousand)

Decision Unit: OMVS - Sahel Regional

	FY 1979 Est.	FY 1980 Est.	FY 1981 REQUEST Minimum & Current	PLANNING PERIOD					
				AAPL	1982	1983	1984	1985	
Development Assistance									
Sahel Development Program	498	3,035	1,000	27,625	6,000	-	3,500	4,000	

TABLE III - PROJECT OBLIGATIONS BY APPROPRIATION ACCOUNT  
 FY 1979 - FY 1981  
 (Thousands \$)

APPROPRIATION ACCOUNT/PROJECT NO./TITLE	L/G	FY 1979	FY 1980	Minimum	DECISION UNIT	
					OMVS - Sahel Regional	
					FY 1981 Current	AAPL
<u>SH</u>						
628-0605 OMVS Agronomic Research II	G	373	900	1,000	1,000	1,500
628-0620 OMVS Data & Institutional Development:						
A. Basin Survey and Mapping	G	125	1,750	-	-	-
B. Hydraulic Systems Planning and Management	G	-	385	-	-	2,000
628-0621 OMVS Infrastructure Development Support:						
A. Equipment Provision	G	-	-	-	-	15,000
B. Downstream Irrigation Development Plan	G	-	-	-	-	2,000
628-0622 OMVS Socio-Economic Unit	G	-	-	-	-	3,000
628-0623 OMVS Fisheries Development	G	-	-	-	-	4,125
(625-0929 Planning, Management and Research) (Non-add)	G					(180)

FORMAT  
EXPLANATORY ANNEX TO TABLE III

Decision Unit: OMVS - Sahel Regional

<u>Project No.</u>	<u>Change (+ or -)</u> <u>(\$000)</u>	<u>Explanation of Change in FY 1980 Funding Level</u>
628-0620	+635	Revised Funding Estimates. Project will be completed early FY 81. Cannot await FY 81 funds for final funding. Some upward adjustment due to delays in equipment arrivals.



## Project Descriptions

### 1. 628-0620 OMVS Data and Institutional Development; Hydraulic Systems Planning and Management

Purpose: To assist the Senegal River Basin Development Organization (OMVS) with technical assistance, staff development and data collection in order that the Organization can better plan and manage the development activities occurring in the Basin.

Background: In July 1977 an AID design team visited Dakar to prepare a PP for the proposed OMVS Water Data Collection Project. The project embraced two discrete activities: (a) establishing a system of flood forecasting and stream gauging; and (b) conducting hydrogeological investigations to determine the quality and quantity of groundwater in the Basin. The design team decided not to recommend the first activity since the regional Sahel Water Data Network Project in Niamey could eventually provide most of the inputs required for the OMVS in this area. The team recommended that a further study be undertaken to determine the development potential of groundwater. On the basis of this recommendation, and based on requests from OMVS member states for this assistance, AID will engage the services of a hydrogeologist to assess requirements for a groundwater investigations program to make this determination. It is anticipated that this expert's two/three month examination will produce a PP amendment to the OMVS Data and Institutional Development Project by October 1979.

Host Country and Other Donors: The French Government has assembled an impressive, though incomplete, bibliography of information on groundwater deposits. Its staff at the Geological and Mining Research Office (BRGM) will be made available to assist the U.S. expert in carrying out his analysis. The OMVS will provide its staff geologist to monitor the study.

Beneficiaries: OMVS and the Member States of Mali, Mauritania and Senegal will receive initial benefits of the project but the ultimate beneficiaries of an improved and strengthened OMVS will include small farmers of the Senegal River Basin who are among the poorest in West Africa. Nomadic herdsmen would benefit through development of livestock watering sites. Villagers will benefit from having dependable wells for their water supply even though the villages may be some distance from the river.

FY 80 program: Technical services contract to undertake observations. Preparation of drilling plan.

FY 81 program: Well-drilling equipment will be purchased and field brigades organized. Contracts to carry out drilling operations using AID-financed drilling equipment.

Major Outputs:

Quantitative evaluation of groundwater potential (safe well yields, development and operating costs, recharge, quality, aquifer characteristics).

System of observation and test wells.

Establishment of hydrogeological unit in OMVS.

Strengthening of national services (Mali, Mauritania and Senegal).

<u>AID Financed Inputs:</u>	(000 \$)	
	<u>FY 80</u>	<u>FY 81</u>
Long-term technical assistance contract	300 (36p/ m)	540 (54p/m)
Vehicles	65	
Other Costs	20	100
Local Contracts		750
Commodities		160
Drilling Equipment		<u>450</u>
Totals	<u>385</u>	<u>2,000</u>

Estimated Project Duration: 30 months

Life of Project Cost: \$2,385,000

2. 628-0621 OMVS Infrastructure Development Support

Purpose: To assist the OMVS reach its goal of controlling the flow of the Senegal River so that comprehensive agriculture development of the Basin can take place.

Background: The OMVS and its predecessor organizations, dating back to 1963, have conceived an impressive development plan to harness the water resources of the Senegal River. This plan, approved five years ago by the OMVS Member States, embraces two dams, ports and navigation authorities. The Diama dam in the delta is fully financed and construction will commence before the end of 1979. Bids on the Manantali dam, located in Mali, which will regulate the flow of the River, will be tendered in the summer of 1979. Construction is expected to commence in early 1980. Feasibility studies are underway on navigation and ports. The Diama dam will cost about \$170 million; Manantali is expected to cost \$490 million.

Host Country and Other Donors: OMVS Member States: undetermined percentage of local costs. Saudi Arabia: \$100 million; Kuwait: \$68 million; Abu Dhabi: \$50 million; Germany: \$90 million; France: \$54 million; African Development Bank: \$52 million; European Development Fund: \$32 million; Canada: \$10 million.

Beneficiaries: The entire farming population of the Basin, about 1.6 million in number, will ultimately benefit from the double cropping which the OMVS mainstream infrastructure program will permit. In addition they will benefit from improved domestic water supplies and improvements in livestock, fishery, and forestry -- all made possible by sustained year-round flow in the River.

FY 1981 program: Preparation of a major downstream irrigation development plan. Provision of heavy equipment in support of infrastructure construction.

Major Outputs:

Long-range irrigation plan for entire basin, including identification of priority development projects to pre-feasibility/feasibility stage.

Water control structures on river.

<u>AID Financed Inputs:</u>	(\$000) FY 81
Technical Assistance Contract Team (150 p/m)	1,500
Commodities and Vehicles	150
Other Costs	350
Heavy Equipment	15,000
Total	17,000

Estimated Project Duration:

Downstream Irrigation Development Plan: 2 years.

Equipment Provision: 5 years.

Life of Project Cost: \$17 million.

3. 628-0622 OMVS Socio-Economic Unit

Purpose: To assist OMVS develop the continuing capacity to monitor farmer attitudes towards rural development change in the Senegal River Basin.

Background: In recognition of the fact that the farming population of the Basin is adapting with difficulty to the rapid changes imposed by the introduction of large-scale irrigation, OMVS and its Member States are assembling base-line data concerning economic and work practices of the farming population. These data will be processed and analyzed by the end of 1979. (It is expected that this information will affect the planning and design of the perimeters). OMVS intends to establish a permanent monitoring unit within its secretariat so that the needs of the rural population can be assessed on a regular basis.

Host Country and Other Donors: The United Nations and OMVS Member States will provide over \$800 million to establish the unit.

Beneficiaries: The farmers of the Basin will benefit from the use to which their views will be reflected in the design of agricultural projects in the Basin.

FY 81 program: Contract team will collaborate with OMVS and UN personnel to strengthen the unit, which will already have been started. Funds for administrative support and other local costs will also be provided. Training plan will be prepared.

Major Outputs:

OMVS Socio-Economic Unit within the secretariat, staffed with professionals capable of updating basic information relating to the basin population on a regular basis.

	(\$ 000)
<u>AID Financed Inputs:</u>	<u>FY 81</u>
Technical Assistance Contract (long term: 120 p/m) (short term: 60 p/m)	1,200 600
Office Equipment and Supplies	250
Local Costs	500
Training	450
Total	3,000

Estimated Project Duration: 5 years.

Life of Project Cost: \$3 million.

#### 4. 628-0623 OMVS Fisheries Development

Purpose: To promote and expand the practice of fish culture in the Senegal River Basin.

Background: The people living in the Basin close to the River typically devote part of their daily schedule to fishing. Normally this is done from canoes and with the use of nets. Their catch is an important contribution to the daily protein intake of the population and represents significant cash income to them as well. Construction of the Diama Dam will prevent two species of sea-water fish from reaching fresh water sites to spawn. While this is not seen as an overriding negative impact, since the new reservoirs will provide a rich and plentiful source of new fish and since the benefits to be derived from increased agricultural production far outweigh the loss of the two species, AID proposes to undertake a study to determine the fisheries development potential in the River Basin, including analysis of mitigating measures as recommended in the Fisheries Report of the OMVS Environmental Assessment Project (625-0617).

Host Country and Other Donors: The UN (FAO) and the US (Peace Corps) are undertaking small pond fish culture projects in the River Basin.

Beneficiaries: About 50,000 people presently living in the Delta area will benefit from the initial phase of the project. Ultimately, when in later fiscal years additional funds are sought through PP amendments, the new reservoirs will be the sites of fish culture programs. This will increase the beneficiary spread to several hundred thousand.

FY 81 Program: A study will be carried out on several proposed recommendations which are expected to result in one or more measures for project intervention. If approved, a fish canal may be constructed. Simultaneously, future reservoir and marigot fishery enhancement will be planned.

Major Outputs:

Recommendations for other fishery developments will be made.

	(\$000)
<u>AID Financed Inputs:</u>	<u>FY 81</u>
Short-Term Consultants (13 p/m)	125
Engineering Consultants (and surveying subcontracts)	500
Construction	<u>3,500</u>
Total	4,125

Estimated Project Duration: 36 months.

Life of Project Cost: \$4,125,000.

TABLE V - FY 1981 PROPOSED PROGRAM RANKING

RANK	DESCRIPTION	TERM/ NEW/ CONT.	LOAN/ GRANT	APPROP. ACCT.	PROGRAM FUNDING (\$000)		WORKFORCE (Number of Positions)	
					INCR	CUM	INCR	FNDH
					INCR	CUM	INCR	CUM
	<u>DECISION PACKAGE MINIMUM AND CURRENT</u>							
	*Terminated Projects with Pipeline							
	**628-0620 OMVS Data & Institutional Development; A. Basin Survey & Mapping New and Continuing Projects	T	G	SH	(1,135)	(1,135)	-	-
1	**628-0605 OMVS Agronomic Research II Basic Workforce	O	G	SH	1,000	1,000	-	1
	<u>DECISION PACKAGE AAPL</u>							
2	**628-0605 OMVS Agronomic Research II	O	G	SH	500	1,500	-	1
3	628-0621 OMVS Infrastructure Development Support	N	G	SH	15,000	16,500	-	1
	A. Equipment Provision	N	G	SH	2,000	18,500	1	1
	B. Downstream Irrigation Development Plan							
4	628-0620 OMVS Data and Institutional Development; B. Hydraulic Systems Planning and Management	O	G	SH	2,000	20,500	-	1
5	628-0622 OMVS Socio-economic Unit	N	G	SH	3,000	23,500	-	1
6	628-0623 OMVS Fisheries Development	N	G	SH	4,125	27,625	-	1
	Total AAPL Package and Related Workforce				27,625		4	1
	* Unliquidated balance as of 9/30/80							
	**Approved PP as of 4/30/79							

DECISION PACKAGE NARRATIVE

Decision Unit: OMVS - Sahel Regional

Decision Package Minimum and Current

The governing strategy statement on the Senegal River Basin Development Organization (OMVS) is a paper prepared in February 1978 entitled U.S. Assistance to the OMVS and the Senegal River Basin. Because the nature of river basin development demands an integrated approach, a significant amount of AID resources is reaching the Basin through the bilateral programs of USAID/Senegal, USAID/Mali and OAR/Mauritania. This ABS, however, concerns the OMVS itself, omitting the important agricultural development initiatives being undertaken by the bilateral AID missions. The primacy of the agricultural sector is highlighted in the strategy statement; implementation of AID programs in the agricultural sector is detailed in the bilateral ABSs. This budget, then, aims at the Organization itself, which has been mandated by the governments of its member states, Mali, Mauritania and Senegal, to develop and implement a mainstream development program for the Basin. This plan was ratified five years ago by the Council of Ministers. It involves:

- (1) The Diama delta dam, with a maximum normal pool elevation of 1.5 meters. The main functions of this dam, impounding 310 million cubic meters, are to: (a) prevent seawater intrusion; (b) provide a reservoir of fresh water for irrigation and other uses; (c) facilitate diversion into the Lac de Guiers for municipal use in Dakar and to Lac R'Kiz in Mauritania for irrigation use; and (d) facilitate discussion into the Aftout-es-Sahel depressions in Mauritania for local irrigation use and for municipal use in Nouakchott. The dam is expected to cost about \$160 million with construction underway by the end of 1979.
- (2) The 60-meter high Manantali dam on the Bafing River in Mali will impound 13,500 million cubic meters of water, sufficient to provide a firm water supply for: (a) the irrigation of at least 255,000 hectares of land; (b) maintenance of a river flow of 300 cubic meters per second for navigation; and (c) the generation of an annual average of 800,000,000 kilowatt/hours of electrical energy. Tenders for the dam construction (with installation of the electrical turbines deferred until 1990) will be issued in June 1979. Construction is expected to begin in the first half of 1980. While costs are not firm, the present estimate, with allowance for inflation, is \$490 million (excluding the turbines).

(3) Ports and navigation facilities. The plan envisages creation of a navigable channel from St. Louis to Kayes, Mali and the construction of two maritime ports, as well as eight ports of call between those two points. These two projects are currently at the feasibility stage.

The magnitude of the OMVS plan, the total cost of which is unknown, has precluded AID's taking a major participatory role in its implementation. The minimum decision package would focus on the outstanding activity for which funding would be required in FY 1981. (The significant basin survey and mapping activity would continue into FY 1981 but funding requirements would be completed in FY 1980.) This activity is agronomic research, for which OMVS has been mandated regional authority by its Council of Ministers. AID's involvement in basin agricultural research began in 1975, when it assisted the final phases of a UN-related effort to coordinate a regional approach to the Senegal River Basin's research. Since irrigation projects are the chief justification for development of dams on the river, applied research into crop choices, patterns and practices is essential to valorize the high investments into the basin development program.

While most aspects of the OMVS development plan are heavily infrastructure-oriented, OMVS' role in agricultural research is directly linked to the improvement of the farming population in the valley. Thus, a long-range program to enhance the agronomic research centers' capacity to conduct applied research will provide a permanent support mechanism to the fifty-year irrigated perimeter development program. This is supportive of the OMVS goal to find ways to reduce high per-hectare investment costs and accelerate conversion of rain-fed and recession agriculture to irrigated production.

At present, about 15,000 hectares are under irrigation in the basin, most of them in Senegal. The plan calls for eventual irrigation of approximately 330,000 hectares: 180,000 in Senegal; 120,000 in Mauritania and 30,000 in Mali. Prior to FY 1980, AID committed \$873,000 towards continuing local cost support to the three centers and towards designing a four-year program of project development. This design is being carried out through a contract with the Consortium for International Development.

AID strategy for the Senegal River Basin places emphasis on agricultural development and allied sectors, including comprehensive planning, research, training and the environment. In the minimum package, AID's role vis-a-vis the OMVS would be to contribute to the improvement of the agriculture sector through direct support to the OMVS Agronomic Research Centers.

Decision Package AAPL

Our Approved Assistance Planning Level request is based on the realization that the OMVS development plan represents the optimal opportunity for utilization of the resources of the Senegal River Basin. This request, therefore, calls for AID's direct endorsement of the plan by contributing in a modest way to the infrastructure development of the River.

This package consists of five discrete activities, described in the attachment to Table IV. Our participation in the financing of the OMVS mainstream development plan would accomplish several objectives. First, it would provide direct endorsement of the development plan of a well-functioning and competent regional planning organization in Africa, whose principal goal is to raise the living standards of the population. Second, it would contribute directly to the well-being of the Basin population since our participation would demonstrate our commitment to harnessing the water resources, so scarce in the Sahel, for agricultural production. Third, it would enable us to play a stronger role in encouraging an increase in food production in the Sahel. At the same time, preparation of a comprehensive irrigation development plan would present the OMVS Member States with a realistic timetable for irrigating the valley over the next several decades. Up to now, irrigation planning and methods have not been consistent with the realities of the Senegal River Basin. Preparation of such a plan would enable the three member states to program their human and financial resources more rationally.

The groundwater inventory would for the first time demonstrate the relationship between surface water flows and the aquifer recharges. Such data are important to determine what uses, if any, groundwater in the basin can be put to, especially after the dams are put into operation. Once the relationship is defined, it might be possible to achieve economies and expand irrigation projects away from the river, where the cost of building canals and pumping long distances is prohibitive. The soils characteristics of the light loamy soils located some kilometers from the river are suitable for production of certain vegetables which cannot be grown on the heavier soils near the river. Expansion of the cropping possibilities in this way will provide a greater variety of food to the population and promote the goal of eventual establishment of food processing facilities.

Establishment of a socio-economic unit within the OMVS will provide a continuing capacity to monitor the changes taking place in the attitudes and practices of the basin population. Initial experience with irrigation projects in the Basin showed that the needs and capabilities of the farmers were not being taken into account in planning and designing the

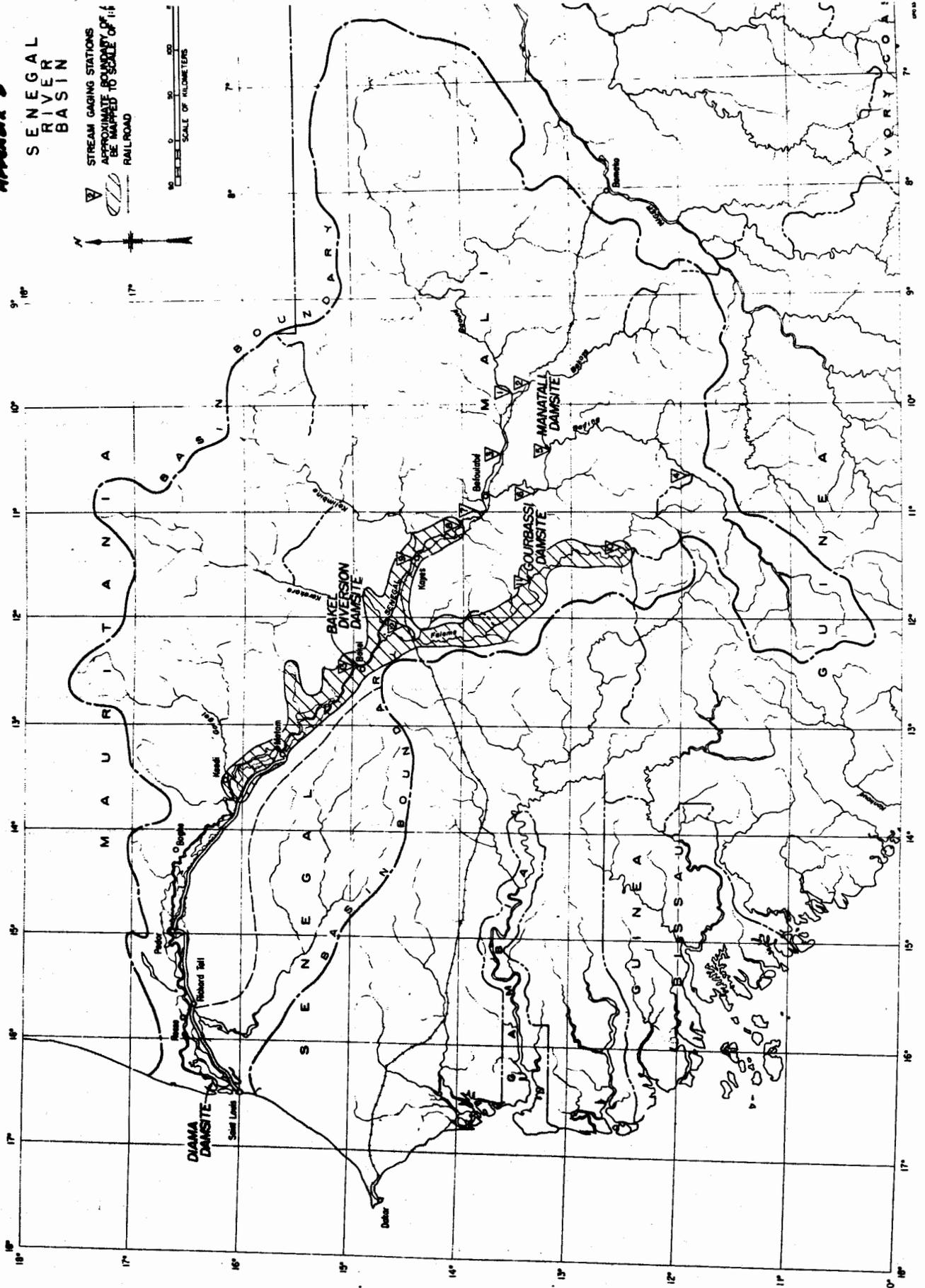
perimeters. Since the change from traditional agriculture to irrigated farming was so drastic, the farmers did not easily learn new methods. In recognition of this fact, OMVS has been conducting a series of base-line surveys to determine what problems are posed by the introduction of modern agriculture into the basin and how they can be overcome. AID supports this endeavor and is proposing to assist the Organization establish the capability to monitor permanently the socio-economic effects of the planned developments.

Fishing is an important source of protein and cash income to the basin population. Construction of the Diama Dam will result in some ecological changes affecting two salt-water species of fish which spawn in fresh water. If feasible, AID would support the concept of a canal linking the mainstream with a depression lake about 15 kilometers away in Mauritania. In addition, other measures to exploit increased fish production in anticipation of dam construction will be undertaken. Later, the reservoirs of the two dams can be utilized to promote intensive fish culture.

APPENDIX D

SENEGAL  
RIVER  
BASIN

▲ STREAM GAGING STATIONS  
APPROXIMATE BOUNDARY OF 1:1  
RAILROAD



PROJECT SUMMARY

OMVS - Sahel Regional

NUMBER OF PROJECTS

	FY 77	FY 78	FY 79	FY 80	FY 81	
					MINIMUM	CURRENT
Implementation at Beginning of Year	2	2	2	2	2	2
Moving from Design to Implementation During Year	0	1	0	0	0	3
Design for Future Year Implementation	2	1	0	3	0	0
<b>▲</b> SUBTOTAL	4	4	2	5	2	5
Number of Non-Project Activities	1	1	3	1	1	1
<b>▲</b> TOTAL	5	5	5	6	3	6

NUMBER OF PROJECTS MOVING FROM DESIGN TO IMPLEMENTATION BY PROJECT SIZE

AID'S CONTRIBUTION TO LIFE OF PROJECT COST	FY 77	FY 78	FY 79	FY 80	FY 81	
					MINIMUM	CURRENT
Less than \$1 Million						
\$1 To \$5 Million	1	1		2		
\$5 To \$15 Million	1	1				
\$15 To \$25 Million				1		
More Than \$25 Million						

AID 1510-6 (3-79)

FUNCTION/ORGANIZATIONAL UNIT/ POSITION TITLE/PROFESSIONAL SPECIALITY	TABLE IX - SUPPORTING DATA ON PROPOSED PROGRAM RANKING POSITION REQUIREMENTS - FY 1979 - 1981 (By Function, Organizational Unit, Position Title and Professional Speciality)						DECISION UNIT OMVS					
	NUMBER OF POSITIONS						Minimum/Current/ AAPL as shown					
	FY 1979		FY 1980		FY 1981		Minimum		Current		AAPL	
	USDH	FNDH	USDH	FNDH	USDH	FNDH	USDH	FNDH	USDH	FNDH	USDH	FNDH
<b>PROGRAM PLANNING:</b>												
Program Officer	1		1		1							
Assistant Program Officer	1		1		1							
TOTAL Program Planning	2		2		2							
<b>PROJECT IMPLEMENTATION AND DESIGN:</b>												
Engineer	1		1		1						1	
Agronomist												
SUB TOTAL Project Implementation & Design	1		1		1						1	
Total Increment	3		3		3						1	
Cumulative Total	3		3		3						4	

This OE Summary includes only OMVS. It is presented so that the OE level for OMVS can be compared to the program level. The formal OMVS OE request with budget detail and supporting schedule is consolidated with Senegal, Gambia & Guinea and included in Senegal/ABE

OPERATING EXPENSE SUMMARY - OMVS

COST SUMMARIES	FY 77			FY 78			FY 79			FY 80		
	(\$000')	RELATED WORKYRS.	UNIT COST									
US Direct Hire	142.6	3.1	46.0	192.4	3.8	50.6	145.0	3.0	48.3	150.0	3	50.0
FN Direct Hire	1.0	.3	3.3	3.2	1.2	2.7						
US Contract Personnel	10.0	1.0	10.0	11.5	1.0	11.5	12.0	1.0	12.0			
FN Contract Personnel												
Housing	37.0	3.5	10.6	44.9	4.0	11.2	36.5	3	12.2	45.0	3	15.0
Office Operations	83.8	XXXX	XXX	119.5	XXXX	XXX	107.5	XXXX	XXX	128.0	XXXX	XXX
<b>TOTAL REQUEST</b>	<b>274.4</b>	<b>4.4</b>	<b>62.4</b>	<b>371.5</b>	<b>6.0</b>	<b>61.2</b>	<b>301.0</b>	<b>4.0</b>	<b>75.2</b>	<b>323.0</b>	<b>3.0</b>	<b>107.7</b>
Amount of Trust Fund Included in Total Requested												

COST SUMMARIES	FY 81 AAPL			FY 81 MINIMUM			FY 81 CURRENT		
	(\$000')	RELATED WORKYRS.	UNIT COST	(\$000')	RELATED WORKYRS.	UNIT COST	(\$000')	RELATED WORKYRS.	UNIT COST
US Direct Hire	153.0	3.1	49.4	140.0	3.0	46.7	140.0	3.0	46.7
FN Direct Hire									
US Contract Personnel									
FN Contract Personnel									
Housing	54.0	3.1	17.4	50.0	3.2	15.6	50.0	3.0	15.6
Office Operations	140.0	XXXX	XXX	140.0	XXXX	XXX	140.0	XXXX	XXX
<b>TOTAL REQUEST</b>	<b>347.0</b>	<b>3.1</b>	<b>111.9</b>	<b>330.0</b>	<b>3.0</b>	<b>110.0</b>	<b>330.0</b>	<b>3.0</b>	<b>110.0</b>
Amount of Trust Fund Included in Total Requested	-0-			-0-			-0-		

