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AUDIT OF AID PARTICIPATION IN  
SAHEL RIVER BASIN DEVELOPMENT

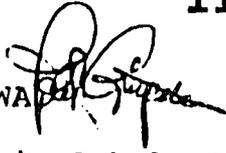
Audit Report No. 7-625-87-4

December 31, 1986

## memorandum

DATE: December 31, 1986

REPLY TO  
ATTN OF:

John P. Competello, RIG/A/WA 

SUBJECT: Audit of AID Participation in Sahel River Basin Development  
(Audit Report No. 7-625-87-4, dated December 31, 1986)

TO: Peter Benedict, Director, USAID/Niger

This report presents the results of audit of AID's participation in Sahel river basin development. The program results audit was made to determine whether AID assistance had been successful and whether its management was effective.

Audit results showed that AID assistance had mixed results. While AID succeeded in providing Sahel river basin organizations substantial planning data, the organization's own weaknesses and slow growth in building their planning capability limited the effective use of the data. Also, AID project management needed improvement.

USAID/Niger was responsible for projects assisting the Niger river basin organization. The audit found that a lack of qualified river basin planners limited the organization's capability to plan development activities. Also, insufficient funding because member countries did not pay their dues caused management problems, and the organization was not able to pay its normal operating expenses. At the time of audit, salaries had not been paid for several months and member states owed about \$1.5 million. In addition, the audit identified several weaknesses in USAID/Niger project management and identified an opportunity to reduce project costs.

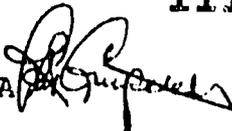
During the audit, the Africa Bureau decided to terminate AID assistance to the Niger river basin organization. The Bureau's decision was based on poor progress and lack of member country support. Thus, the audit recommendation directed to USAID/Niger is closed upon issuance of this report.

Your comments to the draft report were considered as appropriate, and the entire text is included in Appendix 1. Please let this office know of any further comments on the report within 30 days.

## memorandum

DATE: December 31, 1986

REPLY TO  
ATTN OF:

John P. Competello, RIG/A/WA 

SUBJECT:

Audit of AID Participation in Sahel River Basin Development  
(Audit Report No. 7-625-87-4, dated December 31, 1986)

TO:

Sarah Jane Littlefield, Director, USAID/Senegal

This report presents the results of audit of AID's participation in Sahel river basin development. The program results audit was made to determine whether AID assistance had been successful and whether its management was effective.

Audit results showed that AID assistance had mixed results. While AID succeeded in providing Sahel river basin organizations substantial planning data, the organization's own weaknesses and slow growth in building their planning capability limited the effective use of the data. Also, AID project management needed improvement.

USAID/Senegal was responsible for projects assisting The Gambia and Senegal river basin organizations. The audit found that the regional organizations, established to plan and oversee development of The Gambia and Senegal river basins, had significant management and funding problems. These problems limited the impact of AID assistance and, unless corrected, will lessen AID's ability to achieve its objective in assisting in Sahel river basin development. Also, USAID/Senegal project management needed improvement.

The audit recommends a reassessment of AID assistance to The Gambia and Senegal river basin organizations and improved USAID/Senegal management of the river basin project portfolio. Your comments to the draft report have been considered and are included as Appendix 2. Your actions on the report recommendations have resulted in both recommendations being resolved. The recommendations can be closed upon completion of promised actions.

Please notify this office within 30 days of any additional information related to action planned or taken to implement the recommendations.

## EXECUTIVE SUMMARY

Since 1975, AID has authorized 14 projects amounting to about \$60 million to help strengthen the planning capabilities of three regional organizations in West Africa. The organizations were empowered by their member countries to plan and oversee the development of The Gambia, Niger, and Senegal river basins. In order to carry out these responsibilities, the organizations required (1) data, such as that obtained from basin-wide hydrologic, economic and environmental studies, and (2) the capability to effectively use the data. AID assisted in performing the necessary studies and in developing planning capability within each organization.

The Office of the Regional Inspector General for Audit/West Africa made a program results audit of AID participation in Sahel river basin development. The objectives of the audit were to determine whether AID assistance had been successful and whether its management was effective.

Audit results showed that AID assistance had mixed results. While AID succeeded in providing Sahel river basin organizations substantial planning data, the organizations' own weaknesses and slow growth in building their planning capability limited the effective use of the data. Also, AID project management needed improvement.

AID-funded studies provided critical data necessary for development of the three river basins. These included social, economic and environmental studies, and river basin development models, such as for hydrology and allocation of fiscal resources. Notable was a comprehensive study of The Gambia river basin which demonstrated that the location of and justification for two of three dams proposed by the member countries should be reassessed.

AID assistance was less successful in strengthening planning capability needed for the long-term development of Sahel river basin regional organizations. The audit identified critical weaknesses in the organizations, and found AID management not effective in overseeing its assistance activities.

AID recognizes that river basin development requires strong regional organizations with effective planning capabilities. However, the Sahelian organizations responsible for river basin development made slow progress in developing an adequate planning capability. Progress was limited by problems with technical assistance and participant training, as well as a lack of qualified host country personnel. Also, the river basin organizations had management problems and lacked funds since some member countries did not pay their dues. As a result, maximum use could not be made of AID-provided river basin planning data. AID began to address these problems in

1986 when it terminated assistance to the Niger river basin because of poor results. As well, USAID/Senegal also withheld assistance on a new project pending organizational improvements in the Senegal river basin organization.

Institutional reforms, and management and financial support from member countries are essential if future AID assistance is to be effectively utilized. This report recommends that further AID assistance be reassessed and be contingent on improvements in the Sahel regional organizations. USAID/Senegal concurred in the recommendation and has begun corrective action. As a result, the report recommendation is resolved and can be closed upon completion of corrective action.

AID handbooks provide guidance for effective project management. AID missions in Niger and Senegal did not always follow handbook guidance. Projects needed to be better managed because the missions did not systematically (1) reassess project assumptions, (2) enforce grant conditions and covenants, (3) measure project results, (4) conduct required evaluations, or (5) review the costs and benefits of projects. As a result, AID projects' effectiveness was impaired. Also, project costs could be reduced. This report recommends that improvements be made in project management. USAID/Senegal agreed with the recommendation and has begun corrective action. As a result, the report recommendation is resolved and can be closed upon completion of corrective action.

USAID/Niger and USAID/Senegal comments to the draft report are included in Appendices 1 and 2. Both Missions expressed criticism of the audit scope, for which we have provided additional clarification in the body of the report.

Africa Bureau action terminating all assistance to the Niger river basin organization results in the closing, upon issuance of this report, of the one recommendation directed to USAID/Niger.

USAID/Senegal disagreed with some of the report's findings, but accepted the recommendations. Mission comments were directed at providing (1) greater perspective to river basin development, (2) additional information on actions taken to address the audit report recommendations, and (3) facts which the Mission believed had not been accurately reported.

USAID/Senegal believed the audit report did not give sufficient credit to The Gambia and Senegal river basin organizations for their accomplishments. Major among these was the expected successful completion of dam construction on the Senegal River funded by other donors amounting to about \$700-800 million. Also, AID assistance to both organizations through the individual projects was considered more successful than stated in the audit report.

Mission comments have been considered and the report modified as deemed appropriate. However, the scope of audit did not include other donor assistance; hence, the audit expressed no opinion on the role of river basin organizations in the dam construction funded by other donors.

The audit report credited AID for providing the river basin organizations with excellent tools for regional planning, but concluded that the organizations did not have the planning capabilities to effectively use them. Audit reports note accomplishments, but are intended to focus on correcting problems in order to enhance AID effectiveness.

This report addresses significant problems which AID faces in achieving its objectives in Sahel river basin organizations. USAID/Senegal's agreement with (1) management and funding problems cited in the report, and (2) the report's recommendations, demonstrate that improvements in Sahel river basin organizations and AID management were needed. This office will cooperate with USAID/Senegal to assure timely closure of the report recommendations.

*Office of the Deputy Director*

AUDIT OF AID PARTICIPATION IN  
SAHEL RIVER BASIN DEVELOPMENT

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AUDIT OF AID PARTICIPATION IN  
SAHEL RIVER BASIN DEVELOPMENT

PART J - INTRODUCTION

A. Background

The development of river basin resources is critical to mitigating the damage caused by periodic droughts in the Sahel region of Africa.<sup>1/</sup> River basin development reaps major benefits, from agricultural production to construction of dams and irrigation projects. Other benefits include electrical power production and improved waterways.

AID and other international donors are assisting in the development of the Sahel river basins. Arab and European countries are providing about \$800 million to construct dams on the Senegal river. Since 1975, AID has authorized 14 projects amounting to about \$60 million (see Exhibit 1), to help strengthen the planning capabilities of three regional organizations in West Africa.

The organizations were empowered by their member countries to plan and oversee the development of The Gambia, Niger, and Senegal river basins. In order to carry out these responsibilities, the organizations required (1) data, such as that obtained from basin-wide hydrologic, economic and environmental studies, and (2) the capability to effectively use the data. AID assisted in performing the necessary studies and in developing planning capability within each organization.

The three regional organizations are:

- Organisation pour la Mise en Valeur du Fleuve Gambie (OMVG) which included the countries of The Gambia, Guinea, Guinea-Bissau and Senegal (hereafter referred to as The Gambia River Basin);
- Autorite du Bassin du Niger (ABN) which included the countries of Benin, Burkina Faso, Cameroon, Chad, Guinea, Ivory Coast, Mali, Niger, and Nigeria (hereafter referred to as the Niger River Basin); and
- Organisation pour la Mise en Valeur du Fleuve Senegal (OMVS) which included the countries of Mali, Mauritania, and Senegal (hereafter referred to as the Senegal River Basin).

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<sup>1/</sup> The Sahel includes the countries of Burkina Faso, Cape Verde, Chad, The Gambia, Mali, Mauritania, Niger, and Senegal.

These organizations were created by countries having common interests in river basin development. Chartered through treaties, the organizations have international legal authority. They are headed by a commissioner who reports to a council of ministers advising the heads of state of the member countries. Member countries are required to pay for operating costs through annual contributions.

USAID/Senegal managed AID projects in Senegal and The Gambia. USAID/Niger managed projects in Niger. As of June 1986, AID had obligated about \$52 million of the \$60 million authorized, of which about \$34 million had been spent.

#### B. Audit Objectives and Scope

The Office of the Regional Inspector General for Audit/West Africa made a program results audit of AID participation in Sahel river basin development. The objectives of the audit were to determine whether AID assistance had been successful and whether its management was effective.

The audit did not include other donor assistance to Sahel river basin organizations. Also, the audit did not include an examination of the pros and cons of river basin development nor analyses of the political/economic rationale for AID's assistance.

The audit covered AID assistance between 1975-86 and included work at the Africa Bureau, USAID/Senegal, USAID/Niger and at the regional organizations. Auditors held discussions with Bureau officials on the policy framework for AID participation in Sahel river basin development. Audit work at the USAID's included discussion with AID officials and reviews of project evaluations, project papers and other reports providing information on results of AID assistance. At the regional organizations, the auditors interviewed officials and reviewed pertinent records. Field trips were made to several project sites in Senegal. The audit, completed in September 1986, was made in accordance with generally accepted government auditing standards.

USAID/Niger and USAID/Senegal comments on the draft report have been considered and are included in the report as deemed appropriate. The full text of their comments are in Appendices 1 and 2.

AUDIT OF AID PARTICIPATION IN  
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PART II - RESULTS OF AUDIT

The audit found that AID assistance had mixed results. While AID succeeded in providing Sahel river basin organizations substantial planning data, the organizations' own weaknesses and slow growth in building their planning capability limited the most effective use of the data. Also, AID management needed improvement.

AID-funded studies provided critical data necessary for the development of the three river basins. These included social, economic and environmental studies, and river basin development models, such as for hydrology and allocation of fiscal resources. Notable was a comprehensive study of The Gambia river basin which demonstrated that the location of and justification for two of three dams proposed by the member countries should be reassessed.

AID assistance was less successful in strengthening planning capability needed for the long-term development of Sahel river basin regional organizations. The audit identified critical weaknesses in the organizations, and found AID management not effective in overseeing its assistance activities.

The report recommends AID reassess its assistance to the Senegal and The Gambia river basins, and that AID mission management be improved.

## A. Findings and Recommendations

### 1. AID Assistance To Sahel River Basin Organizations Must Be Reassessed

AID recognizes that river basin development requires strong regional organizations with effective planning capabilities. However, the Sahelian organizations responsible for river basin development made slow progress in developing an adequate planning capability. Progress was limited by problems with technical assistance and participant training, as well as a lack of qualified host country personnel. Also, the river basin organizations had management problems and lacked funds since some member countries did not pay their dues. As a result, maximum use could not be made of AID-provided river basin planning data. AID began to address these problems in 1986 when it terminated assistance to the Niger river basin because of poor results. As well, USAID/Senegal withheld new project assistance pending organizational improvements in the Senegal river basin organization. Institutional reforms, management and financial support from member countries are essential if future AID assistance is to be effectively utilized.

#### Recommendation No. 1

We recommend that the Director, USAID/Senegal reassess assistance to the Senegal and The Gambia river basins organizations. Specific issues to be included in the reassessment are whether or not and to what extent the organizations can (1) gain the financial support of the member countries, and (2) have the management and staff capability to more effectively plan and coordinate river basin development.

#### Discussion

AID experience in other parts of the world has shown that river basin development requires strong regional organizations with sound, effective planning capabilities. The importance of planning capabilities cannot be overemphasized. River basin studies provide data which are used to prepare development plans. The plans, if adopted, provide guidance to the regional organizations, the member states and donors to help make decisions on major activities, such as dams and irrigation projects. This can ultimately result in the expenditure of hundreds of millions of dollars by member countries and donors.

AID recognized the need to improve the planning capabilities of Sahelian river basin organizations. Its strategy was to develop capability through projects which strengthened the organizations in the long term. AID wanted to develop planning capabilities to better ensure that Sahelian government decisions on river basin development were informed and sound.

The audit found AID assistance had mixed results. As of September 1986, AID had provided The Gambia, Niger and Senegal river basin organizations with studies necessary for development planning. AID also provided technical assistance and participant training to develop the organizations' capabilities to use the data. However, as discussed below, the three regional organizations made slow progress in improving their planning capabilities. Technical assistance problems, delays in participant training, and the lack of qualified host country people have slowed the progress. In addition, the organizations have suffered due to internal management problems and lack of financial support from member countries. These continuing problems limit AID's ability to meet its goals for the Sahel river basin organizations.

The Gambia River Basin (OMVG) - From 1981 to 1986, AID spent about \$14 million of \$17 million authorized to improve OMVG planning capabilities and develop studies concerning river resources, public health and socioeconomics.

AID completed several studies on river basin development, but OMVG was slow in developing the capability to utilize them because it lacked qualified staff. In 1981, another donor was to provide OMVG a river basin planning advisor. The donor provided a water resources transport advisor but not the river basin planner envisaged in the AID project paper. OMVG went without a river basin planning advisor until 1985 when AID provided one. By 1986, according to a consultant's report, OMVG had appointed its Technical Director who was not a qualified river basin planner to work with the AID advisor. Further, due to an approximate two-year delay in sending participants to training in the U.S., only one of four counterparts to the AID technical assistance team was on the job in mid-1986. According to OMVG personnel, this person was a hydrologist and lacked specialized training in river basin planning. OMVG personnel also stated that the counterparts would be limited in their ability to resolve problems after the departure of the AID technical assistance team.

OMVG activities have also been impeded by the lack of qualified personnel, including those necessary to adequately staff an AID-financed laboratory. While attempts were being made to have member states transfer civil servants to fill vacant positions, funding for training and operating expenses was not available.

OMVG has also been short of funds. The OMVG activity report for 1985 showed the equivalent of \$522,000 in outstanding contributions owed against 1984 and 1985 member country dues. This amount represents 54 percent of \$968,000 committed by member states during this period. According to the OMVG Secretary-General, member states were looking to the donors to provide operating funds instead of the organization having to rely on member country contributions.

The Niger River Basin (ABN) - Since 1977, AID spent about \$2.5 million of \$14.8 million approved to help create a planning department within ABN and provide river basin studies. The audit found that a lack of qualified planners and financial resources limited ABN planning capabilities. ABN had not established a planning department until 1984, when a department was formed from the heads of several departments including agriculture, commerce and navigation. According to a December 1985 evaluation, these individuals had other duties, limiting their effectiveness in planning. Also, according to ABN personnel, only the water resource planner was adequately qualified. ABN staff, qualified in five other disciplines, was not available because ABN did not hire AID-financed trainees. ABN had insufficient funding for years, preventing the organization from hiring the trainees. Salaries had also not been paid for two to three months, and member states owed the equivalent of \$1.5 million.

The Senegal River Basin (OMVS) - Since 1975, AID spent about \$18 million of \$28 million authorized for nine projects involving agricultural research, environmental studies, socioeconomic studies, basin mapping, computer facilities, and monitoring of Senegal river basin groundwaters. A planning department, needed to make the most effective use of AID-financed studies, was not established until 1982. The department was reorganized in 1984 because of management problems and lack of qualified staff. At the time of audit in mid-1986, an AID project to develop planning skills had not begun because OMVS had not met conditions requiring organizational changes. Also, according to a 1986 AID-funded organizational study, planning was hampered by poor communications, insufficiently trained staff and inadequate member-country financing.

The organizational study recommended that the planning unit be improved by: (1) making it a permanent OMVS unit, (2) giving it an autonomous role in planning and evaluation, and (3) letting it serve in an advisory role to the secretary general.

Planning was further hampered because much of the AID and other donor financed studies were stored at a documentation center in St. Louis, Senegal -- about 260 kilometers from OMVS in Dakar. The organizational study found the center was used primarily by non-OMVS researchers, technicians, and scholars. Also, the center was poorly maintained. In responding to the draft report, the Mission added that the center functioned more as an archive for historical data than as an information source for planning. Recent information existed in Dakar, but most planners were located in St. Louis. To resolve the problem, the Mission said a transfer of OMVS to St. Louis was under consideration.

The OMVS's own problems contributed to its inability to establish an effective planning capability. The AID-financed organizational study noted serious deficiencies in the management of internal resources. These included a seriously underqualified and poorly supervised accounting staff, excessive operating costs amounting to 95 percent of allocated resources, and lack of member state funding.

The study considered lack of member state funding to be the major problem. It pointed out that the contribution of member states represents 99 percent of the resources included in the OMVS operating budget. Yet, over the years, member states' contributions have increasingly been in arrears. For example, member states' arrears in 1979 were the equivalent of about \$1 million; by January 1985, arrears were the equivalent of about \$1.4 million. By November 1985, contributions for the year totalled only the equivalent of about \$1.7 million or 45 percent of OMVS budgetary needs. The organizational study concluded that unless urgent measures were taken to bring the financial situation under control, OMVS administrative operations would soon be insolvent.

With regard to OMVS management, the study noted the importance of administrative operations:

"Administrative operations of the High Commission are subject to numerous external influences which, if not formally managed, undermine institutional efficiency and promote a breakdown of operating systems. These include: multiple and heterogeneous programming objectives; diffuse political, professional, and personal allegiances; political patronage in recruitment; failures of member-states to adhere to budgetary commitments; and the heavy administrative load that is related to participation by numerous donors in OMVS programming."

The study found the following management problems:

- inadequate formal systems for management control;
- overcentralization of authority and responsibility;
- absence of fully qualified personnel in key administrative positions;
- poor internal coordination and communications;
- inadequate operating resources;
- political patronage and tacit agreements on personnel quotas and assignments preventing competitive recruitment;

- poor maintenance of the physical plant and equipment, and inadequate supplies;
- low priority assigned to field operations; and
- ad hoc resource allocation and prejudicial scheduling of timely salary payments.

The study recommended reorganization of OMVS based upon (1) need for a well-articulated structure, (2) need to improve efficiency, cost-effectiveness and coordination, and (3) the need to adhere to existing institutional mandates and emphasize member-state participation.

AID Policy and Actions to Resolve Organization Problems -- Africa Bureau officials stated that Bureau policy on Sahel river basin development was to give support only where donor assistance activities were led by a capable organization supported by its member governments. In 1986 the Bureau acted on this policy by terminating assistance to the Niger river basin organization. In doing so, the Bureau noted poor progress and lack of support from member states. The member states, in turn, had lost confidence in ABN because it had not demonstrated sound management and planning capabilities.

USAID/Senegal had also begun action to deal with OMVS problems. Prior to approving a \$6 million project for planning and policy development, the Mission in 1985 established conditions precedent requiring reorganization and staffing for more effective planning. To meet these conditions, the organizational study was financed by AID and completed in July 1986 at a cost of about \$100,000. The report included recommendations involving OMVS organization, budget and financial management, operations and personnel management. Regarding OMVS, USAID/Senegal officials indicated AID had no plans for new projects.

In conclusion, AID assistance to the Sahel river basin organizations has had mixed results. While studies have been provided for good development planning, the institutional capability to effectively use the data has been weak. AID assistance will only have limited success unless the organizations are strengthened and supported by member states. AID action to terminate assistance to the Niger river basin and USAID/Senegal's action to withhold approval of a project supporting the Senegal river basin are steps in the right direction. USAID/Senegal should consider corrective actions taken by OMVS and require improved OMVS performance in deciding the future course of AID assistance.

### Management Comments

USAID/Niger did not believe the audit addressed major policy issues in river basin development. It said that the audit treated an important and complex project involving multi-billion dollar investments too superficially. In the Missions' view, the Africa Bureau needed to develop a strategy for river basin development based on a more appropriate analysis of the political/economic rationale for AID assistance. Alternatively, the Mission believed AID could decide that it was unable to address, or that it was not worthwhile to address the range of issues in this complex, multi-national, multi-donor political and economic environment of river basin development.

USAID/Senegal concurred with the recommendation and has begun to take corrective action. The Mission recognized that planning was a critical element of the program and an area where both OMVS and OMVG needed to strengthen capabilities. In reassessing AID assistance, the Mission was looking to OMVS to reorganize along the lines suggested by the 1986 organizational study. The Mission believed the reorganization would address management problems and reduce the organization's operating budget. The Mission also believed that member countries would have to reassess their level of financial support. A condition precedent to the AID \$6 million Planning and Policy Development Project requires reorganization and staffing for more effective planning. The Mission proposed to closely monitor OMVS action.

With respect to OMVG, the Mission indicated that a fully staffed technical assistance planning team was now in place and developing a range of tools including cost-benefit and hydrologic models. Furthermore, participant trainees had returned and had assumed their duties.

USAID/Senegal disagreed with some aspects of the finding. The Mission felt that the finding (1) did not fully recognize the progress of OMVS and OMVG over the last decade, particularly the successful planning and near completion of a \$700 to \$800 million dam system on the Senegal river funded by other donors, and (2) did not fully recognize AID projects' contributions to the regional organizations.

### Office of Inspector General Comments

USAID/Niger and USAID/Senegal comments on the scope of audit have been recognized and clarification has been added in that section of the report. The audit was never intended to analyze the political/economic context of AID assistance, nor to evaluate the impact of other donor assistance to the Sahel river basin organizations. Thus, no opinion is expressed on these issues brought up in Mission comments.

Also, in response to USAID/Senegal comments that the audit report did not give sufficient credit to The Gambia and Senegal river basin organizations' accomplishments, or AID's successful role in helping the organizations through specific project-related studies, the Office of Inspector General notes that audit reports primarily focus on problem areas requiring management attention. In this regard, the report gave AID credit for providing excellent studies for use in river basin planning. However, the audit report and the Mission comments are in agreement that the organizations' funding and planning capabilities needed improvement.

USAID/Senegal action is responsive to the report recommendation, which is considered resolved. The audit concurs with the Mission position that if recommendations outlined in the OMVS organizational study are implemented, OMVS management and financial support will be strengthened. As concerns OMVG, the full staffing of the planning unit should enable the unit to better fulfill its role. The current project ends December 1987 and the Mission has indicated it contemplated no further assistance to OMVG. Since OMVG's problems are less acute than those of OMVS, Mission action will be sufficient, provided OMVG's management and financial viability are closely monitored so they do not impair project success.

The audit recommendation can be closed upon the Mission's providing evidence that OMVS has accepted and begun to implement the organizational studies' recommendations, and that the financial condition of OMVS and OMVG have improved.

## 2. Projects Could Be Better Managed and Costs Reduced

AID handbooks provide guidance for effective project management. AID missions in Niger and Senegal did not always follow handbook guidance. Projects needed to be better managed because the missions did not systematically (1) reassess project assumptions, (2) enforce grant conditions and covenants, (3) measure project results, (4) conduct required evaluations, and (5) review the costs and benefits of projects. As a result, AID projects' effectiveness was impaired. Also, project costs could be reduced.

### Recommendation No. 2

USAID/Senegal improve management of projects for The Gambia and Senegal river basins through the following actions:

- (a) revise project assumptions and logical frameworks to reflect the regional organizations' capabilities to perform their roles;
- (b) require the regional organizations to meet grant conditions and covenants;
- (c) measure project results;
- (d) conduct required evaluations; and
- (e) justify the cost benefit of the components of the groundwater monitoring project.

### Recommendation No. 3

USAID/Niger reduce the cost of the socioeconomic studies component of the river basin planning project by about \$4 million.

### Discussion

To promote effective project implementation and AID oversight, AID Handbook 3 stresses (1) reevaluation of design assumptions, (2) enforcement of grant agreements, (3) measurement of results, (4) periodic evaluations, and (5) review of costs and benefits. AID's approach to project management helps to ensure that (1) projects adapt to changing conditions, (2) AID and the host country agree on their responsibilities, (3) progress against project objectives are monitored, (4) independent evaluations are conducted, and (5) results are commensurate with monies invested. AID's approach also ensures that AID management is aware of problems and can respond.

Reevaluation of Project Assumptions - Assumptions are used in establishing project goals and objectives. If an assumption is

invalid, project decisions can be faulty and accomplishments jeopardized. The AID Handbook notes that as conditions may change, assumptions should be reassessed periodically and projects redesigned accordingly.

The audit found that 10 of 14 projects contained invalid assumptions regarding member countries' funding of regional organizations and the organizations' management capabilities (Exhibit 2). Although aware of problems in these areas, the missions did not reassess these assumptions and change or redesign the projects.

The OMVS Groundwater Monitoring Project was approved in 1983 under the assumption that "OMVS will continue to command the political and financial support from the member states." The assumption recognized that without support, OMVS could not effectively support and manage the project. OMVS records showed that the organization had inadequate financial support. Between 1983 and 1986, OMVS suffered major financial setbacks because member countries did not pay their dues. This contributed to management, staffing, and other problems included in the July 1986 AID-funded study of OMVS operations. It also contributed to delayed project implementation while the parties attempted to resolve their differences on whether AID or OMVS was to finance certain operating expenses. According to Mission records, minor matters such as the appropriate level of per diem rates for OMVS personnel took nearly two years to resolve.

Although USAID/Senegal had been aware of OMVS' problems, there was no evidence prior to 1986 that the Mission had reassessed this assumption. By 1986, the Mission was attempting to find ways to resolve the budgetary shortfall.

The advantage of reassessing assumptions is that it helps Mission and project management better evaluate if project objectives can be met under changing conditions. For example, had the assumption about OMVS' ability to manage the groundwater project been reassessed, it should have caused the Mission to question the organization's capability. Upon finding weaknesses the Mission could have considered the need to divert resources to help resolve them. Partly because OMVS lacked the capability to provide adequate resources to manage the groundwater project, progress was delayed for about two years. Furthermore, OMVS project personnel at St. Louis, Senegal, complained about an almost total lack of project management by OMVS officials in Dakar and long delays in obtaining needed decisions.

Enforcement of Grant Agreement Covenants and Conditions - Grant agreement covenants and conditions requiring the regional organizations to use AID studies financed by the project,

establish a planning department, or provide trained staff and other resources, were not enforced on eight projects (Exhibit 2).

ABN agreed to support and effectively use AID-financed trainees to strengthen its planning capacity, but returned participants were not employed because of lack of funding by member states. As a result, the 1985 evaluation found the project objective of establishing an adequately staffed planning unit was not achieved. Also, according to a 1986 consultant's report, for political reasons the organization did not incorporate a several-million-dollar AID-funded environmental study into the OMVG master development plan as required by the AID grant. This was particularly important because the project's objective was to have OMVG use the study in its planning process. Despite this setback, AID continued to fund the project.

Measuring Project Results - The missions did not effectively measure or evaluate progress on most projects. Projects with little results were carried forward into new project phases. For example, USAID/Senegal approved about \$3.2 million for three agricultural research projects (OMVS Agronomic Research I and II, and Agricultural Research II) between 1975 and 1984. At completion of Phase I, and the expenditure of \$1.3 million, a sufficient number of people had not been trained, research centers could not be financed by member countries, project equipment was in disrepair, and project trainees could not be employed because of lack of funds. Despite these shortfalls, the Mission approved two subsequent projects for about \$1.9 million.

Conducting Required Evaluations - No evidence was available that evaluations were made on four of six completed projects in Senegal. For example, according to Mission records, the \$3.7 million OMVS Environmental Assessment Project was not evaluated during its seven-year life. An evaluation would have been a useful tool to AID in measuring the impact of AID assistance and in assisting with further program identification and design. In this regard, an evaluation of the Niger Project found little long-term impact. Although the evaluation recommended redesign, the problems noted were of such severity that AID determined it could make better use of its resources by discontinuing assistance.

Review of Project Costs Versus Benefits - The missions did not critically review project costs in relation to expected benefits. As discussed below, the audit identified the potential to reduce project costs in Niger and in Senegal. Subsequent to audit, however, the Niger project was terminated because of lack of results.

Niger River Basin Planning Project (625-0944) - USAID/Niger planned to spend \$5.7 million of \$11.7 million for socioeconomic and environmental studies to be incorporated in an overall Niger Basin Development Plan.

A 1985 evaluation found that the studies were overdesigned. It was reported that the scope far exceeded the capabilities of ABN, and the amount of analysis and detail was not needed. The evaluation recommended limiting activities to the identification and assemblage of studies already carried out by other institutions.

By 1985, USAID/Niger had cut planned costs for this component by \$1.7 million, but not as much as the evaluation had suggested. The assemblage of studies by other institutions, as recommended by the evaluation, was not fully considered.

The recommendation of the 1985 evaluation was sound and additional reductions of \$4 million should have been made. The investment in socioeconomic and environmental studies could not be effective given the lack of results by ABN and what could reasonably be expected of the organization. ABN did not have the technical and managerial capabilities to use the studies.

Senegal River Basin Groundwater Monitoring Project (625-0958) - This \$5.2 million project (including a \$.6 million OMVS contribution) included a component costing about \$2 million to install and operate 450 piezometers<sup>1/</sup> in and around 45,000 hectares of irrigated perimeters. Yearly operation and maintenance costs were projected at about \$149,000. The component was justified on the basis of net annual savings of \$4 per hectare or \$180,000 per year in averted crop losses.

In July 1986, the Mission found the project costs were underestimated and requested the Africa Bureau to approve an additional \$2.9 million, raising the total project cost to \$8.1 million. One of the major reasons for the request was increased cost of contracting for the construction of piezometers. OMVS did not have the capability and expertise to do so, as the project had planned. Also, project costs did not provide for certain operating expenses such as fuel and office functions. The Mission lumped all components under one figure. As a result, the specific cost increases for piezometers and their installation, operation and maintenance

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<sup>1/</sup> According to the project paper, this component would use the apparatus to monitor and control the application of water and pesticides in and near major diked irrigated perimeters. In this way the project would avert irrigated crop losses from water-logging and toxicity build-ups.

could not be identified. Further, the request did not contain an analysis of the cost/benefit ratio of each project component under the increased funding.

To determine whether this project component was still cost effective, the auditors estimated the cost under the new proposed \$8.1 million funding, using the project paper formula for estimating costs (see Exhibit 3). The cost was estimated at about \$3 million, or an increase of 50 percent over the original estimate. Yearly recurrent operation and maintenance costs were estimated at about \$252,000 or an increase of 69 percent. Using the cost benefit formula of the project paper, this would lead to a negative rate of return. Namely, instead of a benefit of \$4 per hectare, the project would now cost \$12.63 per hectare against benefits of \$12, or a loss of about \$28,000 yearly.

USAID/Senegal officials disagreed with the auditors' analysis. The Mission believed the component was necessary to protect estimated agricultural investments of nearly \$1 billion over the next 10 years. The Mission stated the component would be cost effective as coverage would be extended to nearly 200,000 hectares of potential irrigated perimeters instead of the 45,000 hectares designed in the project paper. Rather than piezometer distribution of 1 to 100 hectares, the new distribution would be 1 to 400 hectares. According to USAID/Senegal, using the project paper formula, this would cause a net savings and thus justify the expenditure.

The auditors found no evidence that the revised location of the piezometers had undergone a new technical analysis or that the revised distribution had been incorporated in implementation plans or in the justification made to the Africa Bureau for additional funding. The placement of piezometers in and around 200,000 hectares is a significant departure from the project paper's technical analysis of placement around 45,000 hectares. Unless the new distribution is submitted to technical analysis, AID can have no assurance that more piezometers will not be needed at a future date. If significant numbers of piezometers are subsequently needed, the investment will not be cost effective.

In conclusion, AID Missions needed to improve the management of the implementation of projects designed to develop Sahel river basin organizations. AID handbook guidance should be more systematically implemented and actions should be taken to correct problems on current projects.

### Management Comments

USAID/Niger comments contained certain clarifying information which has been used to the extent deemed appropriate. However, as previously stated, since AID terminated all assistance to the Niger river basin organization, recommendation number 3 directed at USAID/Niger is closed upon report issuance.

USAID/Senegal agreed that it needed to improve management of the river basin projects, and cited a number of management actions taken to address the specific parts of recommendation number 2. The Mission said it had reassessed and revised project assumptions such that all major ongoing projects had been either substantially redesigned or were held in abeyance to the proposed OMVS reorganization. Likewise, the Mission had taken steps to ensure the enforcement of all grant conditions and precedents as required by AID regulations, and said it would henceforth perform all scheduled evaluations and measure project results.

The Mission also recognized that in the past the management of river basin activities was semi-autonomous. With staff reductions, the office had become better integrated into the overall Mission management system during the past year. The Mission believed this had resulted in better compliance with AID regulations and improved internal controls.

Regarding the groundwater monitoring project, the Mission was not given the additional \$2.9 million requested of the Bureau -- thus the Mission was still exploring other cost savings measures. The technical analysis of the number and placement of piezometers developed by the project team had been reviewed by USAID and found to be sound. Also, the number of piezometers was technically sufficient and would not be increased.

### Office of Inspector General Comments

USAID/Senegal response and actions taken are sufficient to resolve recommendation number 2. We agree that a basic cause of deficiencies found in river basin project management was due to its semi-autonomous standing within the Mission. Parts (a), (b), (c), and (d) of recommendation number 2 can be closed upon additional evidence, such as a Mission order or a revised organization chart, that river basin activities are now within the overall USAID/Senegal management system.

Regarding the cost/benefits of the groundwater project (part e of recommendation number 2), we request further details when final funding is known, as well as the technical analysis showing the cost effectiveness of piezometer construction component.

## B. Compliance and Internal Control

Compliance - The audit disclosed instances of non-compliance by the Missions and the regional organizations. Missions did not fully enforce project agreements or follow AID Handbook requirements. Regional organizations had not complied with conditions precedent and covenants to establish a planning department, furnish adequate staff, implement projects in a timely manner and furnish sufficient resources.

Other than these cited conditions, nothing came to the auditors' attention that would indicate that untested items were not in compliance with applicable laws and regulations.

Internal Control - Missions needed better administrative controls. Missions did not reevaluate project assumptions, measure project results or evaluate project costs versus results. These deficiencies increased the risks that projects would not adapt to changing conditions, AID management would be unaware of and unable to react to significant problems, and cost effective results would not be achieved.

AUDIT OF AID PARTICIPATION IN  
SAHEL RIVER BASIN DEVELOPMENT

PART III - EXHIBITS AND APPENDICES

## AID PARTICIPATION IN SAHEL RIVER BASIN DEVELOPMENT

STATUS OF PROJECTS DESIGNED TO STRENGTHEN  
SAHEL RIVER BASIN ORGANIZATIONS  
AS OF JUNE 30, 1986

<u>Organization/Project</u>	<u>(In Thousands of U.S. Dollars)</u>			
	<u>Budgeted</u>	<u>Obligated</u>	<u>Expended</u>	<u>Unexpended</u>
<u>Gambia River Basin Commission - Established 1976</u>				
Gambia Riv. Bas. Dev. 625-0012, 6/81-12/87	\$15,865	\$15,865	\$12,845	\$3,020
Support to Reg. Org. 698.0413.11, 6/83-12/87	1,029	1,029	1,029	-0-
<u>Niger Basin Authority - Established 1964</u>				
Niger Riv. Dev. Planning 625-0915, 8/77-12/85	1,850	1,850	1,678	172
Niger Riv. Bas. Planning 625-0944, 8/82-8/87	11,700	6,714	843	10,857
Support to Reg. Org. 698-0413.12, 8/82-8/87	1,200	250	-0-	1,200
<u>Senegal River Basin Authority - Established 1963</u>				
OMVS Agron. Research II 625-0605, 9/78-12/83	862	862	862	-0-
OMVS Agronomic Research I 625-0616, 6/75-Completed	1,260	1,260	1,260	-0-
Environmental Assess. 625-0617, 2/76-2/83	3,738	3,738	3,738	-0-
OMVS Mapping 625-0620, 8/76-1/83	9,768	9,768	9,768	-0-
OMVS Fiscal Allocation 625-0620A, 8/76-9/85	827	827	827	-0-
Planning & Pol. Dev. 625-0621, 7/85-6/89	6,000	3,500	52	5,948
OMVS Socioeconomic Study 625-0929, 9/78-Completed	200	200	200	-0-
OMVS Agric. Research II 625-0957 7/84-6/90	1,057	1,057	134	923
OMVS Ground Water Mon. 625-0958, 8/83-12/89	4,651	4,651	905	3,746
Total	<u>\$60,007</u>	<u>\$51,571</u>	<u>\$34,141</u>	<u>\$25,866</u>

## AID PARTICIPATION IN SAHEL RIVER BASIN DEVELOPMENT

LISTING OF COMPLIANCE EXCEPTIONS

<u>Organization/Project</u>	<u>Grant Agreement Provisions Not Enforced</u>	<u>Projects with Invalid Assumptions<sup>1/</sup></u>	<u>Terminated Projects not Evaluated</u>	<u>Ineffective Cost vs. Benefits</u>
<u>Gambia River Basin Commission</u>				
Gambia Riv. Bas. Dev. 625-0012, 6/81-12/87	X	X		
Support to Reg. Org. 698-0413.11, 6/83-12/87				
<u>Niger Basin Authority</u>				
Niger Riv. Dev. Planning 625-0915, 8/77-12/85 completed	X	X		
Niger Riv. Bas. Planning 625-0944, 8/82-8/87	X	X		X
Support to Reg. Org. 698-0413.12, 8/82-8/87				
<u>Senegal River Basin Authority</u>				
OMVS Agron. Research II 625-0605, 9/78-12/83 completed	X	X	X	
OMVS Agron. Research I 625-0616, 6/75- completed		X	X	
Environmental Assess. 625-0617, 2/76-2/83 completed			X	
OMVS Mapping 625-0620, 8/76-1/83 completed	X	X	X	
Fiscal Allocation 625-0620A, 8/76-9/85 completed		X		
Planning & Pol. Dev. 625-0621, 7/85-6/89		X		
OMVS Socioeconomic Study 625-0929, 9/78- Completed	X			
OMVS Agric. Research II 625-0957, 7/84-6/90	X	X		
OMVS Groundwater Mon. 625-0958, 8/83-12/89	X	X		X

<sup>1/</sup> Common to these 10 projects were the invalid assumptions that the regional organizations would have adequate member state financial support and adequate management capability.

AID PARTICIPATION IN SAHEL RIVER BASIN DEVELOPMENT

REVISED ESTIMATES - GROUNDWATER MONITORING

	<u>1983 Project Paper</u>	<u>Estimated Revised Costs</u>
Total Project Costs <sup>1/</sup>	\$5,202,000	\$8,132,000 <sup>2/</sup>
Less: Malian Component	<u>618,000</u>	<u>966,000</u> <sup>3/</sup>
	4,584,000	7,166,000
Less: Component to Construct 200 Piezometers & 10 Boreholes	<u>770,000</u>	<u>1,204,000</u> <sup>4/</sup>
	3,814,000	5,962,000
Less: Materials to construct 450 Piezometers Component	<u>156,000</u>	N/A
	3,658,000	5,962,000
Less: Cost of Monitoring System for 200 Piezometers Component = 50 percent	<u>1,829,000</u>	<u>2,981,000</u>
	1,829,000	2,981,000
Add: Materials to construct 450 Piezometers Component	<u>156,000</u>	N/A
Total Estimated Costs of 450 Piezometers Component	<u>\$1,985,000</u>	<u>\$2,981,000</u>
Estimated Yearly Recurrent Costs for 450 Piezometers Component (Operation and maintenance)	<u>\$149,000</u>	<u>\$252,000</u> <sup>5/</sup>

<sup>1/</sup> Includes host country contribution.

<sup>2/</sup> Per project paper supplement, April 1986, which also includes an increased host country contribution.

<sup>3/</sup> Based on project paper estimate of 11.9 percent of total project costs.

<sup>4/</sup> Based on project paper estimate of 14.8 percent of total project costs.

<sup>5/</sup> Based on project paper supplement estimate of 69 percent increase in operating expenses.

ACTION: ~~FILE~~ <sup>RIG</sup> INFO: DCM ~~RIG~~

Appendix 1  
Page 1 of 12

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SUBJECT: SAHEL RIVER BASIN DEVELOPMENT  
- DRAFT AUDIT REPORT

REF: MEMO COMPETELLO (RIG/A/WA) TO BENEDICT  
- (DIR-USAID/NIGER) DTD 11/14/86

1. SUMMARY: USAID/NIAMEY FINDS THAT SUBJECT REPORT DOES NOT PROVIDE SUFFICIENT CONTEXT OR INFORMATION TO THE LEVEL OF DETAIL MERITED BY THE SUBJECT. IT TREATS A HIGHLY IMPORTANT AND COMPLEX ACTIVITY INVOLVING INVESTMENTS OF MULTI-BILLIONS OF DOLLARS IN FAR TOO SUPERFICIAL A MANNER TO BE USEFUL TO AID PLANNERS AND STRATEGISTS WITH REGARD TO CURRENT AND FUTURE ACTIONS IN RIVER BASIN DEVELOPMENT ACTIVITIES. MISSION COMMENTS IN THIS CABLE THUS PROVIDE WHAT WE CONSIDER TO BE ESSENTIAL SUPPLEMENTARY INFORMATION TO BE INCLUDED AS AN ANNEX TO THE REPORT PER REF MEMO. GIVEN THE QUOTE PROGRAM RESULTS AUDIT UNQUOTE OBJECTIVE OF THE REPORT, THE SUPPLEMENTARY INFORMATION LEADS TO CONCLUSIONS AND RECOMMENDATIONS ON WHAT WE FEEL TO BE A MORE APPROPRIATE PLANE THAN THOSE OF THE REPORT. THE PRINCIPAL CONCLUSION IS THAT THE AUDIT WAS DIRECTED TOWARD AN INVESTIGATION OF SYMPTOMS (I.E., THE EFFECTIVENESS OF REGIONAL RIVER BASIN ORGANIZATIONS) RATHER THAN THE CAUSE (I.E., LACK OF ABILITY OF AFRICAN GOVERNMENTS TO MASTER THE ECONOMICS AND THE TECHNOLOGY OF RIVER BASIN DEVELOPMENT, AND OF AID TO COMPLETE AND APPROVE A RIVER BASIN DEVELOPMENT STRATEGY). THUS IT DIDN'T COME TO GRIPS WITH THE NEED TO MEASURE AID'S PERFORMANCE IN TERMS OF: A) THE POTENTIAL ECONOMIC VALUE AND BENEFITS OF RIVER BASIN DEVELOPMENT ACTIVITIES WHICH COULD RESULT FROM AID ASSISTANCE; B) THE PROGRESS ACHIEVED VERSUS WHAT COULD BE REALISTICALLY EXPECTED IN THE ELAPSED TIME, AND C) THE POLICY/STRATEGY FRAMEWORK REQUIRED TO DEAL ADEQUATELY WITH SUCH A SUBJECT. THE PRINCIPAL RECOMMENDATION THUS IS THE NEED FOR THE AFRICA BUREAU TO DEVELOP A STRATEGY FOR RIVER BASIN DEVELOPMENT BASED ON A MUCH MORE APPROPRIATE ANALYSIS OF THE POLITICAL/ECONOMIC RATIONALE FOR AID INTERVENTIONS. ALTERNATIVELY, AID COULD DECIDE THAT IT IS UNABLE OR IT IS NOT SUFFICIENTLY WORTHWHILE TO ADDRESS THE RANGE OF ISSUES WHICH CONFRONT IT IN THE COMPLEX MULTI-NATIONAL,

MULTI-DONOR POLITICAL AND ECONOMIC ENVIRONMENT OF RIVER  
BASIN DEVELOPMENT. END SUMMARY.

2. PAGE (1) OF THE REPORT'S EXECUTIVE SUMMARY STATES THAT THE DEFECTIVES OF THE QUOTE PROGRAM RESULTS AUDIT UNQUOTE WERE QUOTE TO DETERMINE WHETHER AID ASSISTANCE HAS BEEN SUCCESSFUL AND WHETHER ITS MANAGEMENT WAS EFFECTIVE UNQUOTE. FINDINGS ON THE SUCCESS OF AID ASSISTANCE MUST FIRST DETERMINE THE CONTEXT OF AID'S INTERVENTIONS WHICH TAKE INTO ACCOUNT AID STRATEGY, AND THE NATURE AND SCOPE OF THE TASK ADDRESSED. CONCLUSIONS CAN THEN BE DRAWN CONSISTENT WITH THIS CONTEXT. THE CONTEXT PROVIDED IN THE REPORT WAS LIMITED TO THE FIRST PARAGRAPH OF THE INTRODUCTION, AN ACKNOWLEDGEMENT OF THE CRITICAL IMPORTANCE OF RIVER BASIN DEVELOPMENT. NO LINKS ARE ESTABLISHED IN THE REPORT BETWEEN THIS CONTEXT AND THE FINDINGS. THE COMMENTS PRESENTED BELOW WILL DESCRIBE THE CONTEXT OF AID INVOLVEMENT, MAKE STATEMENTS ON THE SUCCESS OF AID'S INVOLVEMENT IN SPECIFIC TERMS WITHIN THAT CONTEXT, AND PROPOSE A MORE GENERAL RECOMMENDATION FOR FURTHER CONSIDERATION. WE RECOMMEND THAT THE REPORT'S CONCLUSIONS AND RECOMMENDATIONS, PARTICULARLY THOSE REGARDING AID'S MANAGEMENT OF RIVER BASIN ACTIVITIES. BE EXAMINED WITHIN THE MORE GENERAL CONTEXT.

3. THE CONTEXT OF RIVER BASIN DEVELOPMENT IN THE SAHEL CAN BE EXAMINED UNDER THE FOLLOWING CATEGORIES:  
A) HISTORICAL: THE 1969-1974 DROUGHT IN THE SAHEL LED TO SIGNIFICANT USG EFFORTS TO EXAMINE WAYS OF PROVIDING SAHEL NATIONS A MORE SECURE MEANS OF SUSTENANCE. THE FOUR MAJOR RIVER SYSTEMS (SENEGAL, GAMBIA, NIGER, AND LAKE CHAD) BROUGHT SIGNIFICANT FRESH WATER RESOURCES FROM THE MORE RAINFALL ABUNDANT AREAS INTO THE SAHEL. RESULTS OF EXPLORATORY MISSIONS WERE PRESENTED TO THE BOGOSIAN  
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U.S. CONGRESS AND LED TO A DETERMINATION THAT THE U.S. SHOULD PROVIDE ASSISTANCE IN THE DEVELOPMENT OF THESE RIVER SYSTEMS. STUDIES INCLUDED SATELLITE PHOTOGRAPHS AND ASTRONAUT OBSERVATIONS IN 1974, AND LED TO STARTLING CONCLUSIONS SUCH AS THE SPECULATION BY ONE SPECIALIST THAT ACCELERATED SEDIMENTATION OF THE NIGER RIVER SYSTEM DUE TO INCREASED MODERN DAY HUMAN ACTIVITY COULD LEAD IT TO ALTER ITS COURSE TO FLOW NORTH THROUGH MALI AND INTO THE SENEGAL BASIN RATHER THAN EAST AND BACK SOUTH AS IT NOW DOES. (HE CITED ORAL TRADITION AND SECOND CENTURY MAPS BY PTOLEMY TO SHOW THAT THE NIGER RIVER MAY HAVE ORIGINALLY FLOWED THAT WAY.) PREVIOUS AID EXPERIENCE IN RIVER BASIN DEVELOPMENT WITH THE MEKONG RIVER IN SE ASIA WAS EVALUATED AS A SUCCESS AND PROVIDED A PRECEDENT FOR AID INTERVENTION (SEE PAR 77-2, ASIA REGIONAL, DTD. 5/12/77, COVERING TWENTY YEARS OF ASSISTANCE TO MEKONG RIVER BASIN PROGRAM). AID SPONSORED A MULTI-DONOR COLLOQUIUM ON RIVER BASIN DEVELOPMENT IN WASHINGTON IN APRIL, 1979, WHICH PROVIDED THE ECONOMIC, TECHNICAL, LEGAL, POLITICAL AND SOCIAL FRAMEWORK FOR STUDIES AND INTERVENTIONS. THE AFRICA BUREAU BEGAN DRAFTING A RIVER BASIN DEVELOPMENT STRATEGY STATEMENT IN 1980, BUT VARIOUS FACTORS CONTRIBUTED TO THE INABILITY OF THE BUREAU TO DEVELOP AN APPROVED RIVER BASIN STRATEGY DOCUMENT. ON THE OTHER HAND, THE SAHEL DEVELOPMENT STRATEGY STATEMENTS APPROVED FOR THE 1980-84 PERIOD INCLUDED THE NECESSITY TO SUPPORT IRRIGATION AND RIVER BASIN DEVELOPMENT ACTIVITIES TO MEET THE LONG-TERM QUOTE FOOD SELF-SUFFICIENCY BY THE YEAR 2000 UNQUOTE OBJECTIVES OF THE SAHEL COUNTRIES.

1) POLITICAL: THE EARLY YEARS OF INDEPENDENCE IN WEST AFRICA BROUGHT STRONG NATIONALISTIC EFFORTS (AND HIGH COMPETITION AMONG NATIONAL LEADERS) TOWARD ECONOMIC DEVELOPMENT. THESE GAVE WAY IN THE LATE 70'S AND 80'S TO THE RECOGNITION THAT IMPROVED ECONOMIC MANAGEMENT AND REGIONAL ECONOMIC RELATIONSHIPS ARE REQUIRED TO FOSTER STEADY GROWTH. THE 1980 LAGOS PLAN OF ACTION, THE ECONOMIC COMMUNITIES OF ECOWAS AND CEMAC, AND THE STRUCTURAL REFORM PROGRAMS HAVE DEMONSTRATED A GRADUAL MATURING OF AFRICAN LEADERS TO THE REALITIES OF DEVELOPMENT. REGIONAL RIVER BASIN ORGANIZATIONS HAVE SIMILARLY BEEN INFLUENCED BY THIS EVOLUTION. PRESIDENT SEROU TOURE OF GUINEA, WHO DEVOTED MOST OF HIS EFFORTS PRIOR TO 1980 TO HIS POLITICAL QUOTE UNITED STATES OF WEST AFRICA UNQUOTE OBJECTIVES, ABRUPTLY ALTERED HIS POLITICS IN 1978-79 TOWARD JOINING AND PROVIDING LEADERSHIP IN THE ORGANIZATIONS WITH ECONOMIC DEVELOPMENT AS THEIR PRINCIPAL OBJECTIVES (ECOWAS, THE NIGER, GAMBIA AND MANO RIVER ORGANIZATIONS). HIS DIRECTION INCLUDED, FOR EXAMPLE, INSTRUCTIONS TO THE GAMBIA BASIN (OMVG) MEMBER COUNTRIES IN 1981 TO PREPARE PLANS FOR ECONOMIC INTEGRATION. ON THE NIGER RIVER, NIGERIA WAS THE ONLY COUNTRY WITH SUFFICIENT RESOURCES TO CONSTRUCT RIVER INFRASTRUCTURE WORKS, BUILDING TWO LARGE DAMS AND PLANNING A THIRD. NIGERIA THUS REMAINS HIGHLY INTERESTED IN UPSTREAM DEVELOPMENTS, AND INDICATED IN DNE NEA CONFERENCE THAT IT WOULD QUOTE COME VISIT UNQUOTE MALI, IF MALI MOVED FORWARD SERIOUSLY WITH

ITS DREAMS TO IRRIGATE 1 MILLION HECTARES (WHICH COULD HYPOTHETICALLY USE ALL THE WATER IN THE NIGER RIVER). INABILITY OF MEMBER COUNTRIES TO COME TO TERMS EARLY WITH WATER APPORTIONMENT AGREEMENTS COULD LEAD TO SEVERE POLITICAL PROBLEMS IN THE FUTURE.

C) DEVELOPMENTAL: THE SENEGAL RIVER (OMVS) ORGANIZATION WAS THE FIRST TO GAIN POLITICAL CONSENSUS FROM ITS MEMBER COUNTRIES (SENEGAL, MALI, MAURITANIA) ON DEVELOPMENT PROJECTS AND PROFIT FROM DONOR INTEREST IN FINANCING INFRASTRUCTURE. THE DOWNSTREAM DIAMA AND THE UPSTREAM MANANTALI DAMS ARE BEING BUILT AT A COST OF OVER DOLS 400 MILLION. UNFORTUNATELY, THE DECISION TO BUILD THE DAMS WAS STRONGLY INFLUENCED BY POLITICAL FACTORS. THE TECHNICAL STUDIES (I.E., SENEGAL CONSULT, PEYRARD, ALEXANDER GIBBS, OMVS GLOBAL ASSESSMENT) WERE USED TO JUSTIFY THE POLITICAL DECISION BUT OMVS WOULD NOT PERMIT FORMULATION OF A CRITICALLY EVALUATED MASTER POGOSIAN  
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PLAN NECESSARY FOR ECONOMICALLY VIABLE RIVER BASIN DEVELOPMENT. AN AID-FINANCED STUDY BY THE THE BUREAU OF RECLAMATION WHICH PROPOSED AN ALTERNATIVE DEVELOPMENT SCHEME, FOR EXAMPLE, WAS NOT APPRECIATED BY THE OMVS. AS IT BECAME CLEAR IN 1982-83 THAT THE OMVS SCHEME WAS NOT ECONOMICALLY JUSTIFIABLE, AND THAT THE FINANCIAL BURDEN ON THE MEMBER STATES WOULD BE CONSIDERABLE, DONORS SUDDENLY BECAME MUCH MORE CAUTIOUS WITH REGARD TO PROJECTS PROPOSED IN OTHER RIVER BASINS. THE TWO DAMS PLANNED FOR THE GAMBIA RIVER AND THE KANDADJI DAM ON THE NIGER RIVER WILL NOT ACHIEVE FINANCIAL SUPPORT UNLESS ADEQUATE STUDIES DEMONSTRATE THEIR VIABILITY. THE WORLD BANK IS STUDYING ALTERNATIVES TO THE KANDADJI IN NIGER, FOR EXAMPLE. (THE WORLD BANK, HOWEVER, IS ONLY CONSIDERING NIGER NATIONAL PARAMETERS AND IS NOT EXAMINING THE REQUIREMENTS FROM A REGIONAL RIVER BASIN DEVELOPMENT BASIS. THE LACK OF AN EFFECTIVE NBA IS A REAL CONSTRAINT HERE.) THE UNITED STATES IS A NEWCOMER IN SAHEL RIVER BASIN DEVELOPMENT, AND WAS NOT ABLE TO EXERT MUCH INFLUENCE INTO THE RIVER BASIN PLANNING PROCESS UNTIL IT BEGAN TO PARTICIPATE WITH THE UNDP IN DESIGNING SYSTEMATIC PLANNING STUDIES IN 1977-82. THE U.S. WAS NOT A PRINCIPAL PARTICIPANT IN THE OMVS DECISIONS, BUT ATTEMPTED TO PROVIDE SUBSEQUENT STUDIES TO BETTER RATIONALIZE DECISIONS ALREADY REACHED. IT WAS WITH THE OMVG, NEA, AND LCIC (LAKE CHAD) THAT AID AND THE UNDP WERE ABLE TO BEGIN INFLUENCING THE PLANNING PROCESS IN THE LATE 1970'S AND EARLY 1980'S. THE U.S. HAS A UNIQUE CAPABILITY IN RIVER BASIN PLANNING AS A RESULT OF THE RAPID DEVELOPMENT OF THE RIVER SYSTEMS IN OUR COUNTRY. OTHER DONORS HAVE NOT DEVELOPED A MASTER PLAN TECHNOLOGY, HAVING DEVELOPED THEIR RIVERS PIECE-MEAL OVER THE COURSE OF HISTORY. YET IT IS CLEAR THAT THE U.S. RIVER BASIN DEVELOPMENT TECHNOLOGY IS A LONG-TERM AND DYNAMIC PROCESS ALSO, GIVEN THE MAGNITUDE OF THE COSTS AND THE REQUIREMENT THAT RIVER SYSTEMS BE DEVELOPED BY STAGES.

4. GIVEN THE ABOVE, THREE IMPORTANT WEAKNESSES OF AID PLANNING HAVE EMERGED REGARDING INVOLVEMENT IN RIVER BASIN DEVELOPMENT ACTIVITIES:

A) WEST AFRICANS DO NOT HAVE THE EXPERIENCE OR THE TECHNICAL KNOWLEDGE NECESSARY TO PLAN RIVER BASIN DEVELOPMENT, NOR HAVE THEY RECOGNIZED AT THE POLITICAL LEVEL THEIR NEARLY TOTAL DEPENDENCE ON OUTSIDE EXPERTISE TO PROVIDE DIRECTION IN RIVER BASIN PLANNING. AID DID NOT COMPLETELY ACCOUNT FOR THAT IN ITS PROJECT DESIGNS.

B) ALTHOUGH AID REALIZED AT THE BEGINNING THAT A COMMITMENT TO RIVER BASIN DEVELOPMENT WAS LONG-TERM, THAT 20-50-100 YEAR TIME HORIZONS ARE THE PERIODS FOR WHICH PLANS ARE DEVELOPED, IT DID NOT ANTICIPATE THAT CHANGES IN AID PERSONNEL/POLICIES/RESOURCES WOULD THREATEN THAT COMMITMENT. INITIAL DATA GATHERING AND MASTER PLAN DEVELOPMENT ACTIVITIES FOR WEST AFRICA, WITH THEIR NUMEROUS CONSTRAINTS, IS A 5-10 YEAR PROCESS ALONE. IT IS DIFFICULT FOR AID TO MAINTAIN ACTIVITIES WHICH HAVE GESTATION PERIODS THAT LONG.

C) THE EXPERIENCE GAINED IN THE MEKONG PROJECT WAS NOT APPLIED FOR THE AFRICAN RIVER BASINS. DONORS PROVIDED TOTAL FINANCIAL AND TECHNICAL SUPPORT OVER THE LONG TERM (30 YEARS) FOR THE MEKONG COMMITTEE. THE AID AFRICA BUREAU AND OTHER DONORS DID NOT APPLY THIS LESSON IN PROJECT DESIGN. CONSEQUENTLY, THE LACK OF MEMBER COUNTRY FINANCIAL SUPPORT HAS CAUSED AID TO REDUCE OR HALT ITS RIVER BASIN DEVELOPMENT PROJECT ACTIVITIES RATHER THAN SHORE IT UP AS WAS DONE FOR THE MEKONG COMMITTEE.

5. THE RESULTS OF AID RIVER BASIN ACTIVITIES CAN NOW BE EXAMINED IN THE LIGHT OF THE ABOVE CONTEXT.

USAID/NIAMEY DOES NOT HAVE UP-TO-DATE INFORMATION ON THE SENEGAL AND GAMBIA RIVER BASIN EXPERIENCES, AND EXPECTS USAID/DAKAR CAN FILL THAT IN. THE COMMENTS BELOW ARE BASED ON INFORMATION AVAILABLE IN NIAMEY:

A) NIGER BASIN AUTHORITY (NBA): THE USAID PROJECT BOGOSIAN  
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PERMITTED THE NBA TO OBTAIN COMPLETE DATA FOR THE TOTAL BASIN AND PLACE IT INTO A SINGLE DATA STORAGE AND RETRIEVAL SYSTEM - THE FIRST SUCH SYSTEM IN THE EXISTENCE OF THE ORGANIZATION. PREVIOUSLY, GUINEA PERMITTED NO ACCESS TO OUTSIDERS, AND COOPERATION BETWEEN THE ANGLOPHONE NIGERIA AND THE FRANCOPHONE STATES PERMITTED ALMOST NO EXCHANGE OF DATA. THE U.S. CORPS OF ENGINEERS, IMPLEMENTATION AGENT OF THE USAID PROJECT, EARNED RESPECT FROM TECHNICAL PERSONNEL OF ALL COUNTRIES. WITH THE COORDINATION PROVIDED BY THE NBA EXECUTIVE SECRETARIAT, TOTAL COOPERATION FROM MEMBER COUNTRIES WAS BEING PROVIDED TO BEGIN EXECUTION OF THE VARIOUS SUB-ACTIVITIES UNDER THE SECOND PROJECT. (THE FIRST PROJECT WAS COMPLETED AND HAD ACHIEVED MOST OF ITS OBJECTIVES, INCLUDING THOSE NOTED AS DEFICIENT IN THE EVALUATION.) USAID WAS ALSO PROVIDING LEADERSHIP AMONG DONORS TO NEGOTIATE AN EFFECTIVE DONOR-NBA RELATIONSHIP FOR CONTINUED COOPERATION. AS A RESULT, THE OCTOBER NBA COUNCIL OF MINISTERS MEETING TOOK ACTION ON SEVERAL REORGANIZATION MEASURES WHICH BEGIN THE PROCESS OF RESOLVING THE PROBLEMS FACING THE NBA IN TERMS OF FINANCIAL SUPPORT AND BEING ABLE TO IMPLEMENT THE PRINCIPAL OBJECTIVES OF THE ORGANIZATION. MEMBER STATES ARE MAKING NO PROGRESS ON ACHIEVING FINANCIAL SUPPORT FOR DAM CONSTRUCTION, SUCH AS THE LANDADJI IN NIGER AND THE TOSSEYE IN MALI, WITHOUT NIGER RIVER MASTER PLANS BEING DEVELOPED.

F) GAMBIA (OMVG): AS THE GAMBIA RIVER PLANNING PROJECT WAS BEING DESIGNED IN 1981-2, THE OMVG HIGH COMMISSIONER INDICATED THAT TOTAL FINANCING FOR THE DOWNSTREAM DAM-BRIDGE WAS ASSURED, AND THAT CONSTRUCTION WAS ONLY PENDING FINAL SITE AND DESIGN STUDY COMPLETION. AT THAT TIME, HOWEVER, THE GERMAN REPRESENTATIVE CALLED AID/W TO INQUIRE ON THE STATUS OF THE ENVIRONMENTAL STUDIES. UPON LEARNING THAT THE STUDIES WERE ONLY BEING DESIGNED, HE INDICATED THAT THAT INFORMATION WOULD AFFECT THE RELEASE OF THE GERMAN FINANCIAL SUPPORT. TO DATE, WE UNDERSTAND THAT FINANCIAL SUPPORT FOR THE DOWNSTREAM DAM HAS STILL NOT BEEN SECURED, 5 YEARS LATER. THE AUDIT REPORT INDICATES THAT THE USAID PROJECT STUDIES HAVE NOT BEEN USED BY THE OMVG. GIVEN THAT THESE STUDIES MAY BRING INTO QUESTION THE POLITICAL DECISIONS ALREADY MADE, IT SHOULD NOT BE A SURPRISE, BUT TO CONCLUDE THAT THESE STUDIES HAVE NOT HAD AN EFFECT AND WON'T BE USED IS ERRONEOUS. SUCH A CONCLUSION CAN ONLY COME LATER IN THE LONG-TERM RIVER BASIN PLANNING PROCESS. THE LACK OF THESE STUDIES HAS ALREADY APPARENTLY HAD AN EFFECT IN DELAYED FINANCING. THE OMVG CASE IS THE FIRST WHERE THE LATE-ARRIVAL OF THE U.S. PLANNING INTERVENTION MAY HAVE A POSITIVE EFFECT BY ENCOURAGING A LONG-TERM MASTER PLANNING PROCESS. IN ADDITION, WITH GUINEA JOINED OMVG IN 1981, THE FACT THAT A TOTAL BASIN PLANNING PROCESS HAD BEEN INITIATED MAY HAVE PREVENTED GUINEA FROM INSISTING ON INCLUDING ITS DAM IN THE OMVG DEVELOPMENT PACKAGE.

C) LAKE CHAD (LCBC): THE AUDITORS WEREN'T INSTRUCTED TO EXAMINE AID'S EXPERIENCE WITH THE LCEC, WHICH IS UNFORTUNATE BECAUSE IT, TOO, IS BEING INFLUENCED

POSITIVELY BY AID'S INTERVENTIONS IN THE 1978-1982 PERIOD. AID AND UNDP CONDUCTED BASIN-WIDE DEVELOPMENT STUDIES FOR LCFC WHICH WERE BEING CONCLUDED IN 1981 IN SPITE OF THE 1979-82 WAR IN CHAD. AID WITHDREW FURTHER SUPPORT IN 1982 WHEN THE EXECUTIVE SECRETARY REFUSED TO PLACE HIGH PRIORITY ON PLANNING BUT INSTEAD INDICATED THAT PROJECT MANAGEMENT WAS A PRINCIPAL PRIORITY. WE UNDERSTAND NOW THAT THE CURRENT EXECUTIVE SECRETARY HAS FOLLOWED AID'S ADVICE COMPLETELY, INCLUDING MOVING FORWARD TO EXTEND LCFC BOUNDARIES TO COVER THE TOTAL BASIN AREA INTO CENTRAL AFRICAN REPUBLIC. LCFC IS NOW PREPARING STUDIES SIMILAR TO THOSE DESIGNED IN (AND MODELED AFTER) THE RECENTLY TERMINATED AID NBA PROJECT.

6. THE AUDIT REPORT DID NOT EXAMINE ANY OF THE INTRICATE DYNAMICS DESCRIBED ABOVE. IT DID NOT DETERMINE OVER WHAT PERIOD IT SHOULD BE REALISTICALLY EXPECTED ECOSIAN

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THAT THE AID INTERVENTIONS WOULD BEGIN TO HAVE AN IMPACT. IT DID NOT DISCUSS THE NECESSITY FOR AID TO WEIGH AND DETERMINE THE DEVELOPMENT PRIORITIES BETWEEN THE POTENTIAL LONG-TERM RIVER BASIN ACTIVITIES AND THE MORE VISIBLE SHORT-TERM BENEFITS OF THE STANDARD BILATERAL AID PROJECTS. IT DID NOT INDICATE THAT RIVER BASIN DEVELOPMENT PLANNING EFFECTS INVESTMENTS AND POTENTIAL ECONOMIC BENEFITS AT TWO TO THREE ORDERS OF MAGNITUDE ABOVE THOSE AID NORMALLY HANDLES IN WEST AFRICAN COUNTRIES, AND THE CONSEQUENT NEED FOR AID TO RAISE ITS LEVEL OF SERIOUS ANALYSIS ACCORDINGLY PRIOR TO REACHING CONCLUSIVE DECISIONS ON RIVER BASIN ACTIVITIES. IT DID NOT QUOTE THE APPROVED SDSS OR SSSS AS THE BASIS FOR AID/W GUIDANCE, BUT QUOTED MORE RECENT INFORMAL POLICIES WHICH HAVEN'T BEEN SUBJECTED TO A RIGOROUS REVIEW PROCESS. IT DID NOT IDENTIFY THE POLICY AND TECHNICAL GUIDANCE VACUUM AID FIELD PROJECT OFFICERS HAVE FACED OVER THE LAST TWO YEARS BECAUSE OF LITTLE BACKSTOP SUPPORT FROM AID/W ONCE ISSUES CITED IN PARA 4 WERE DISCOVERED, SERIOUSLY AFFECTING FIELD PROJECT MANAGEMENT. IT INDICATED THAT THE CORRECT ACTION WAS WITHDRAWAL RATHER THAN RESOLVING PROBLEMS TO ACHIEVE OBJECTIVES, WHICH DOESN'T SEEM CONSISTENT WITH THE STRENGTHS, THE IDEALS, AND THE APPROACH GENERALLY APPLIED BY THE U.S. IN INTERNATIONAL ACTIVITIES. THE DEPTH OF THE REPORT'S ANALYSIS WHICH CONCLUDED SIMPLY THAT RIVER BASIN ORGANIZATIONS ARE WEAK AND HAVEN'T DEVELOPED THEIR PLANNING CAPABILITY SUFFICIENTLY IS ANALOGOUS TO THE LEVEL OF ANALYSIS REQUIRED TO CONCLUDE THAT ONE NEEDS MONEY TO PURCHASE AN AUTOMOBILE. THUS WE CONCLUDE THAT THE OBJECTIVES OF THE AUDIT WERE NOT ACHIEVED.

7. WITHOUT ADEQUATE ANALYSIS OF THE ISSUES FACING AID'S INVOLVEMENT IN RIVER BASIN DEVELOPMENT ACTIVITIES, AID HAS DE FACTO MADE THE DECISION THAT IT IS UNABLE OR IT IS NOT WORTHWHILE TO ADDRESS THE RANGE OF ISSUES WHICH CONFRONT IT IN THE COMPLEX, MULTI-NATIONAL, MULTI-DONOR POLITICAL AND ECONOMIC ENVIRONMENT OF RIVER BASIN DEVELOPMENT BY CANCELLING THE NBA PROJECT AND SERIOUSLY QUESTIONING THE OTHER ON-GOING RIVER BASIN PROJECTS. WE RECOMMEND THAT AT LEAST ONE, CAREFULLY CONSIDERED, OBJECTIVE, HIGHLY TECHNICALLY QUALIFIED, OUTSIDE OPINION BE SOLICITED WHICH CAN PROVIDE AN ANALYSIS OF THE VALUE OF AID'S INTERVENTION IN RIVER BASIN DEVELOPMENT ACTIVITIES IN WEST AFRICA. IF POSITIVE, WE RECOMMEND THAT AID/AFR MAKE A DETERMINED EFFORT TO COMPLETE AND APPROVE A STRATEGY FOR RIVER BASIN DEVELOPMENT IN WEST AFRICA.

8. GENERAL COMMENT: WE SERIOUSLY QUESTION THE APPROPRIATENESS OF CHARGING AN AUDIT TERM WITH THE TASK OF CONDUCTING A PROGRAM RESULTS INVESTIGATION CONCERNING AN ISSUE SUCH AS RIVER BASIN DEVELOPMENT WITHOUT BRINGING IN QUALIFIED EXPERTISE TO PARTICIPATE ON THE TEAM. AT LEAST AID SHOULD USE THE EXPERIENCE IT HAS, SUCH AS LOU COHEN (MEKONG) AND FRED ZOBRIST (WATER RESOURCES PLANNER).

9. CORRECTIONS REQUIRED IN THE TEXT OF THE REPORT ARE AS FOLLOWS:

- P. 2: THE NIGER BASIN AUTHORITY (NEA) IS A
- BILINGUAL (ENGLISH/FRENCH) ORGANIZATION AND
- CAN BE REFERRED TO IN AN ENGLISH REPORT UNDER
- ITS ENGLISH NAME AND ABBREVIATION.
- P. 5: REPORT DOES NOT ADDRESS WHAT WAS EXPECTED IN
- TERMS OF PLANNING CAPABILITY. RIVER
- ORGANIZATIONS IN THE U.S. ARE NOT CAPABLE IN
- GENERAL OF IMPLEMENTING PLANNING STUDIES
- ON THEIR OWN AND GENERALLY EMPLOY CONSULTANTS
- -----'NING CAPABILITIES ARE FOUND IN
- --...,'TUENCY NETWORK. APPLIED TO WEST
- AFRICA, THIS MEANS DONOR CONSULTANTS ARE
- HIRED AND DIRECTED BY THE RESIDENT RIVER
- BASIN ORGANIZATION MANAGERS, AND PLANNING
- EXPERTISE IS FOUND IN THE NATIONAL ORGANIZA-

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- TIONS TO PROVIDE GUIDANCE WHEN NEEDED (I.F.,  
- MAKES NO REFERENCE TO EXISTENCE OF THESE  
- COMMITTEES AND THE ROLE THEY PLAY IN PLANNING  
- PROCESS).
- P. 9: SAYING AID WAS INVOLVED FOR 11 YEARS IS  
- MISLEADING. WHILE AID ASSISTANCE TO THE  
- OMVS DID BEGIN 11 YEARS AGO, IT WAS ONLY  
- IN ABOUT 1977 THAT AID ASSIS-  
- TANCE BEGAN TO APPROACH RIVER BASIN PLAN-  
- NING SYSTEMATICALLY, AND THE MAJOR GAMPIA  
- AND NIGER PLANNING PROJECTS WERE DESIGNED  
- IN 1981-82.
- P. 10: NPA ASSISTANCE INCLUDED TWO PROJECTS  
- - 625-0915 AND 625-0944 - NOT THREE.
- P. 11: NPA TECHNICIANS EFFECTIVELY HAD LITTLE OTHER  
- WORK TO IMPLEMENT THAT TOOK THEIR TIME  
- OTHER THAN THE AID PROJECT. THEY WERE  
- QUALIFIED, EXPERIENCED, TECHNICALLY EDUCATED  
- INDIVIDUALS, BUT NOT EXPERIENCED AS  
- PLANNERS. PROVIDING THIS EXPERIENCE WAS THE  
- PURPOSE OF THE AID PROJECT. USAID WAS NOT  
- ACTIVITIES WITH EXISTING STAFF. SUPPLEMENTARY  
- STAFF WAS BEING PROVIDED UNDER THE AID PROJECT  
- IN THE MANNER ADDRESSED UNDER THE P.5 COMMENTS  
- ABOVE. THE AUDIT REPORT DID NOT QUESTION  
- THE PROJECT DESIGN WHICH, IN 1977, DID NOT  
- TAKE SUFFICIENTLY INTO ACCOUNT RECURRENT  
- COST CONSIDERATIONS. HAD IT DONE SO, THE  
- REPORT COULD HAVE SHOWN THAT THE FIVE  
- INDIVIDUALS TRAINED UNDER 625-0915 WOULD HAVE  
- INCREASED NPA RECURRENT COSTS A SIGNIFICANT  
- AMOUNT, POSSIBLY JUSTIFYING THE DECISION TO  
- NOT EMPLOY THEM. PROJECT PAPERS SHOULD  
- NOT BE CONSIDERED AS PERFECT DOCUMENTS, BUT  
- SHOULD BE CRITICALLY EXAMINED AS MUCH AS IS  
- PROJECT IMPLEMENTATION. REPORT DID NOT  
- QUESTION ADEQUATELY THE PP DESIGN OR CP'S IN  
- LIGHT OF SUBSEQUENT EXPERIENCE. SINCE THE  
- REPORT DIDN'T REACH THE LEVEL OF DETAIL OF  
- INVESTIGATING THE DEFINITION OF ADEQUATE  
- PLANNING, THE REPORT COULD NOT HAVE BEEN ABLE  
- TO CONCLUDE THAT THE CP ON PLANNING UNIT  
- ESTABLISHMENT WAS NOT MET.
- P. 15: SUGGEST THAT REPORT CITE THE SOURCE OF THE  
- APPROVED DOCUMENT WHICH PROVIDES BUREAU  
- POLICY ON RIVER BASIN DEVELOPMENT AS  
- AGENCY AUTHORITY, RATHER THAN JUST QUOTING  
- BUREAU OFFICERS. ALSO THE STATEMENT  
- WHICH READS THAT MEMBER STATES HAD  
- LOST CONFIDENCE IN THE NPA SHOULD BE QUALI-  
- FIED TO EXPLAIN THAT CONFIDENCE WAS LOST  
- TEMPORARILY IN THE MANAGEMENT OF ITS  
- EXECUTIVE SECRETARIAT BUT NOT IN THE  
- RATIONALE AND OBJECTIVES OF THE ORGANIZA-  
- TION. THIS IS EVIDENCED IN ITS CONTINUED  
- EFFORTS TO RESOLVE ITS PROBLEMS.

- P. 16: USAID/NIGER DOES NOT BELIEVE THAT THE NBA'S ORGANIZATIONAL PROBLEMS GO BEYOND ITS ABILITY TO RESOLVE. WE BELIEVE THAT IT WILL RESOLVE ITS PROBLEMS, DEMONSTRATED BY THE PROGRESS MADE IN THE OCTOBER COUNCIL OF MINISTER'S MEETING (SEE NIAMEY 7536).
- P. 20: THE STATEMENT THAT THE AUDIT FOUND 10 OF 14 PROJECTS CONTAINED INVALID ASSUMPTIONS IS NOT SUPPORTED BY ANY FINDINGS CLEARLY INDICATED IN THE REPORT. THE CRITERIA AND THE SPECIFIC FINDINGS SHOULD BE STATED TO SUBSTANTIATE THIS STATEMENT.
- P. 21: STATEMENTS AT THE BOTTOM OF THE PAGE NEED TO BE RE-EVALUATED BASED ON COMMENTS ABOVE

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- REFERRING P. 5 AND P. 11 TEXTS. WE BELIEVE IT SHOULD REFLECT THE NEED FOR REVISING PP ASSUMPTIONS BASED ON IMPLEMENTATION EXPERIENCE RATHER THAN TAKING THE ORIGINAL ASSUMPTIONS AS PERPETUALLY VALID.
- P. 23: NIGER RIVER PLANNING PROJECT EVALUATION TEAM DID NOT RECOMMEND THAT THE PROJECT BE TERMINATED.

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# memorandum

DATE: December 18, 1986  
REPLY TO: *G. Carner*  
ATTN OF: George Carner, Acting Director  
SUBJECT: Audit of AID Participation in Sahel River Basin Development  
TO: John Competello, RIG/A/W

Please find attached Mission comments on your draft report on subject audit.

We have focussed our comments on putting river basin development in perspective, mainly for the record, and in describing the actions we have taken to address the recommendations since the audit was opened.

I hope that these comments will enable you to finalize and close this audit which has engaged so much effort of our respective staffs.

Thank you for facilitating the audit process.

MISSION COMMENTS

AUDIT OF A.I.D. PARTICIPATION IN  
RIVER BASIN DEVELOPMENT

Audit Report No. 7-625-87-

MISSION COMMENTS  
AUDIT OF A.I.D. PARTICIPATION IN  
SAHEL RIVER BASIN DEVELOPMENT

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I. SUMMARY

USAID/Senegal has carefully reviewed the Audit Report and, while as a matter of record we disagree with some of its findings, we accept its recommendations. USAID/Senegal's comments are of three kinds:

- Contextual - It is important to place river basin development in broader perspective for an adequate understanding and assessment of USAID's assistance program;
- Informational - We have updated and detailed some actions taken to address recommendations since the Audit was initiated;
- Factual - We continue to disagree with the Audit Report on several key program and project issues.

USAID's comments are presented in order to round out the Report and provide a basis for the closing of Audit recommendations.

II. RIVER BASIN DEVELOPMENT IN PERSPECTIVE

The Mission believes that an understanding of the nature of river basin development and the programs of the regional organizations and USAID is essential to a balanced assessment of the program. The purpose of this section is to provide a perspective on river-basin development, organizational frameworks, objectives, planning and on the accomplishments of the river basin development organizations and the A.I.D. program.

- River Basin Development

In the most simple physical sense river basins are defined by the hydrological cycle and system. The purpose of river basin development is to rationally and optimally exploit this natural resource system for the sustained benefit of the area. These systems can provide many benefits including power, transport, potable water, irrigated agriculture, recreation, fisheries, etc. While water supply for agriculture is surely one of the major benefits to be derived, it is neither the sole benefit nor, in some cases, even the most important. River Basin Development is by its nature complex and multi-sectorial, with sectors often in competition for the water resource.

River basin development in the arid and semi-arid areas, like the Sahel, can be one of the keys to economic development in general. Rivers represent one of the few permanent and easily accessible sources of water. Rivers in the Sahel tend to be large, highly seasonal in terms of total volume flows and without major permanent tributaries throughout much of their length in the Sahelian countries. This situation leads to the perception that often fairly major infrastructure is needed to harness the rivers.

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- Organizational Frameworks

The basins of the major Sahelian rivers are shared by several countries. Because river basins are functioning systems, interventions in one part of the basin inevitably affect other areas. Hence, regional organizations are a necessity for optimum water resources management. River basin development organizations exist and have authority only in-so-far as the sovereign member-states delegate these powers. River basin organizations are in a somewhat ambiguous position; recognized as needed by member countries yet unable to exert political power over the individual nations. There are natural tendencies toward the fragmentation of these organizations.

OMVS and OMVG have been created to plan, promote and coordinate river basin development. Their actual field-level implementation roles are limited by the member-states and usually revolve around those activities, like dams, which are truly works common to the member-states.

- USAID's Participation

USAID's role has been to assist river basin organizations develop their institutional capabilities by developing analytical tools and, recently, their planning capacities. To date USAID has avoided participation in large scale infrastructure. USAID has helped provide planning tools such as aerial photographic coverage, mapping and environmental and socio-economic assessments essential to water management for both the OMVS and OMVG. USAID is currently supporting the development of planning capabilities through technical assistance, training and commodity procurement.

- River Basin Development Planning

The planning promoted by USAID is multi-objective and process oriented. Planning is more than the linear execution of studies or documents which are approved at every step of the way. It is participatory, interactive and iterative. It must be flexible and take into account new information on environmental, economic, financial, social, technical and political matters.

The U.S. has unique capabilities in this area not only because of our experience with large infrastructure but also because of our long standing and unique experience in participatory multi-objective planning. Much of this grew out of the "environmental movement" and is widely accepted.

- A.I.D.'s River Basin Development Strategy

USAID's role in the OMVS and OMVG conforms closely to A.I.D.'s and the Africa Bureau's river basin development strategy as reflected in foreign assistance legislation and the "Problems and Issues in African River Basin Planning" Report. The latter document, carried out under the Settlement and Resource Systems Analysis Cooperative Agreement, is a state-of-the-art report developed by well-known river basin specialists. A.I.D.'s program is thus on sound conceptual footing. In addition, it is reasonable in scale and provides crucial assistance based upon U.S. and regional organizations strengths and weaknesses.

- Accomplishments

The accomplishments of OMVS since its first formulation in 1963 have been significant. The keystone of the program, a dam system including a downstream salt-water intrusion bridge-dam and an upstream storage dam, is well on the way to completion. This 700-800 million dollar investment will be completed on schedule and under budget. The downstream dam was scheduled to start functioning in the spring of 1986. It was functionally complete in November of 1985 and, by and large, has been supplying expected benefits. OMVS and its financial partners have already begun discussing the use of the "balance" of funds (loan commitments versus actual costs) remaining from this activity. Construction of the upstream dam, planned for completion in 1988, is slightly ahead of schedule (two weeks to a month) and the pace of work is accelerating since logistical problems have lessened and local workers have become more experienced. The filling of the reservoir is to start in 1987. Although far from complete, the use of anticipated "savings" from this activity are also being discussed.

The length of time between the inception of the organization and the construction of the first phase dam infrastructure compares favorably to similar organizations and projects throughout the world including the U.S. The fact that the "dam package" will be finished on-time and under budget is an outstanding accomplishment not only in the African context but in the global context as well. This is an exception to the general rule that dam projects have been plagued by delays and cost over-runs.

These results could not have been obtained without a strong regional organization which had the support of its member-states. The results show that OMVS has competency in a range of disciplines including project conception, design and implementation; problem identification, terms of reference development, pre-feasibility and feasibility studies, final design, bid document preparation, bid analysis, contract and financial management, and donor and member-state coordination.

Mission Comments: Audit of River Basin Activities

P. 4

OMVS's activity over the past ten years has been understandably focussed on dam construction. However they have also been active in other areas such as agricultural research, data collection and analysis, coordination of water policy and the planning of "post-dam" activities such as agricultural development, navigation and energy. These activities will take on more importance in the future.

- A.I.D.'s Contribution to Date

USAID's contribution to the accomplishments of the OMVS program have been significant and to some extent decisive. USAID has been involved with OMVS since 1971 and through 1983 had granted some 17.5 million dollars to OMVS. While this pales in comparison to the amounts of loans allocated by some donors, notably Arab, USAID is considered a major contributor and a major shaper of policy by dint of the length and nature of its assistance.

- Fiscal Allocation and Responsibility Project

Three major OMVS activities supported by U.S. assistance are worth mentioning. From 1976-1985 A.I.D. invested some 830,000 dollars in a Fiscal Allocation and Responsibility Project. This project developed a state-of-the-art fiscal allocation model based on extensive data on the costs and benefits of the OMVS program. For a relatively small investment, this activity provided the "key" for the agreement on the sharing of costs for the infrastructure between donors and the OMVS member-states. Without such an agreement the OMVS program could not have gone forward in a timely and sound fashion. In addition to the key, the model also serves as a computer-assisted planning tool and has an accounting aspect which allows a complex portfolio of loans, grants and different currencies to be managed and financial reports produced each month. It has been estimated that this latter component alone has saved OMVS and the member-states several hundred thousand dollars in late fees. These are impressive concrete results from A.I.D.'s program and show good return on investment.

- Environmental Assessment

The second activity was the Environmental Assessment of the OMVS program, a study which began in 1976 and was completed in 1980 at a cost of 3.7 million dollars. This 19 volume study, which generated and synthesized a vast amount of data on the basin, analyzed the OMVS programs impact on the natural and socio-economic environment and developed an action plan. This plan has been very useful and, for example, USAID's Groundwater Monitoring Project, Artificial Estuary Study and planned Health and Upper Valley Master Plans are direct responses to the assessment's recommendations. The information contained in the Environmental Assessment Report, some new, some pulled together for the first time, has been useful to a variety of actors in the development of the basin.

- Aerial Survey and Mapping

The third activity, Aerial Survey and Mapping, also started in 1976 and was completed in 1983 at a cost of 9.8 million dollars. This activity produced good quality maps and aerial photographs which are essential tools for development planning. These products have also been used extensively for the planning of agricultural development, the siting of data collection points (for the Groundwater Monitoring Project for example) and the placement of infrastructure. The products have been supplied to the OMVS member states and Annex 1 gives a partial indication of the users, both other donors and local institutions. Although benefits from this activity are difficult to estimate with any precision, its impact on optimizing existing investments of some 800 million dollars and the projected one billion dollar investment over the coming decade means that the returns, already substantial, are likely to increase.

- OMVG

Under the OMVG Project, USAID assistance has also provided aerial photographic coverage, mapping and impact assessment studies. These activities have had similar benefits to those undertaken for OMVS. Of particular note is the impact assessment which benefited from and incorporated lessons learned from the original OMVS activity. The "peer review" of this assessment identified various weaknesses of the study; however, there was a general consensus that the report represented the most comprehensive study of its kind yet undertaken in Africa and was of good quality. The assessment, which has had significant impact on OMVG's proposed program, sets a new precedent for river basin planning in Africa against which all subsequent studies will be evaluated.

That both OMVG and OMVS are managed out of a single regional office has allowed for an uncommon amount of "cross-fertilization" and institutional memory.

To be sure, the OMVS, OMVG and USAID program have weaknesses and we have been taking a series of measures to address problems and improve the impact of our projects and strengthen OMVS capabilities. However we believe that successes of USAID programs and OMVS accomplishments far outweigh these difficulties and should not be discounted. In short, results have been commensurate with funds expended.

### III. RESULTS OF AUDIT

#### A. Findings and Recommendations

##### Recommendation No. 1 - Need to Reassess A.I.D. Assistance to Sahel River Basin Organizations

The Mission concurs with the Audit Report's Recommendation to reassess USAID assistance to the Senegal and Gambia River Basin organizations. At this time the Mission has no plans for future assistance or new initiatives for the organizations. The present USAID portfolio, already the result of a lengthy reassessment process, has been undergoing further reassessment since the initiation of the Audit. USAID feels that the present program, endorsed by the Africa Bureau, is basically a sound and reasonable approach, in both scale and effectiveness.

##### \* Previous Reassessment

Previous reassessment work for OMVS centered around the conception, design and review of a proposed 60 million dollars Integrated Development Project. This activity mobilized significant human and financial resources from both within and outside USAID. The extensive and critical review of this project by AID/W, the concerned USAIDs, OMVS and the member-states led to a reassessment of the USAID program strategy and the role of OMVS. Overly ambitious elements of the program were eliminated (i.e. telecommunications) and some elements of the project, which were considered more appropriate to member-state implementation, were "bilateralized" (i.e. some agricultural research, some irrigation endeavors).

The regional planning and policy coordination activities, most appropriate to the mandate and capacity of OMVS, were scaled back to form the core Planning and Policy Development Project (PPD). This project, plus the Groundwater Monitoring and Agricultural Research activities, constitute the present portfolio with an LOP of some 12 million dollars. These projects build upon and respond to USAID's previous activities such as the environmental assessment.

The OMVG project was evaluated and amended in 1984. The amendment added two million dollars and extended PACD through December 1987.

##### \* Ongoing Reassessment

Within the framework of the reassessment of USAID assistance the Audit Report recommends that two issues be specifically included: (1) the financial support to the organization from the member states and (2) the capacity to effectively plan and coordinate river basin development. The discussion section of the Audit Report addresses the second item first.

\* Discussion

The Audit Report states that after 11 years A.I.D. assistance had mixed results in developing planning capability. However, A.I.D.'s attempts to improve planning capabilities only date from 1984. Prior to that time A.I.D.'s involvement was mainly in providing tools for planning through activities in aerial photography and mapping and environmental and socio-economic studies. These activities although useful and vital did not include the technical assistance, training or other resources necessary for the creation or strengthening of planning units or capabilities. A.I.D. recognized the need for the development of planning capabilities to fully utilize the planning tools that had been provided and amended the OMVG Project (1984) and developed the Planning and Policy Development Project (1985) for OMVS. This represents the first time A.I.D. assistance was applied to planning. In the case of the OMVG some progress has already been made. In the case of OMVS the Audit Report correctly points out that A.I.D. assistance is contingent on a reorganization of OMVS and particularly the planning function.

Relative to both the planning and financial status of OMVS, the Audit Report quotes extensively from the Reorganization Study funded by the Mission. It is important to note that the study was initiated by OMVS and the OMVS Council of Ministers (COM). Its main objectives as defined by the COM directly address the Audit Reports First Recommendation; namely the need to improve the financial standing of the organization and improve cost-effectiveness in light of the financial situation of the member-states and the need for the organizational structure to reflect the needs of the "post-dam" era particularly in terms of planning. There is general recognition of the organizational problems within OMVS and with this recognition a genuine commitment to make improvements.

The study, completed in July 1986, provides USAID and OMVS guidance on improving OMVS's performance in several areas. USAID, while recognizing that the study is not perfect, that reorganization will take time and that there are other studies in progress which will supplement the study's findings, has already moved ahead with a variety of actions to assure timely implementation of the most appropriate recommendations. We have raised the issue at the December 1986 Consultative Committee meetings and with individual member-state Ministers. The report has been distributed to all OMVS donors and they have taken an active interest in the study. We fully expect the reorganization process to start at the OMVS Council of Ministers meeting in December 1986.

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The financial situation of OMVS continues to be disturbing as noted in the reorganization study and as quoted from that study by the Audit Report. For 1986, as of November 15, only approximately 32% of member state planned contributions had reached OMVS. Mauritania is by far the most delinquent in payments having paid only about 4% of what was due. Financial commitment is certainly a key indicator of member-state support. It would be unrealistic to assume, however, that a regional organization would do better than the Member-State governments. In Mali for instance civil servant salaries are often several months late and salaries can take up 95% of a departments' budget. Given the economic and financial situation in the member-states even limited contributions may reflect some sacrifice and commitment. Where funds are scarce perhaps other indicators such as the delegation of authority from sovereign states to a regional organization could be used to gauge support. OMVS in this regard has significant power to speak and make commitments for the member-states.

A number of donors have expressed concern over this issue at the Consultative Committee meetings with OMVS. From USAID's perspective the issue of arrears cannot be separated from issues of financial management such as more realistic and competent budgeting, improved management of available resources and implementation of stronger cost reduction measures. The organizations have greater control over these issues than over member-state government contributions. The reorganization study directly addresses these issues. The Mission will monitor closely this situation especially through the reorganization process which will help OMVS reduce costs and budget more wisely.

The OMVS has already taken steps to improve the financial situation. During 1986, the High Commissioner visited the Presidents of the Member-States to increase their awareness of the problem. The Ministers of Finance have been associated with the Budgetary Sessions of the Council of Ministers to assure realistic commitments are made. The December 1986 Council of Ministers meeting is a budgetary session and the Mission expects to see some improvement of the situation. OMVS has agreed to the financial management recommendations of the reorganization study and the implementation of these and other cost reduction recommendations should improve the financial situation and encourage more timely and less onerous member-state contributions.

On the planning issue it is clear that this is a critical element of the program and an area where both OMVS and OMVG need to strengthen their capabilities. This is the major focus for USAID's assistance. During 1986, OMVG has made strides in this area. All three long-term participants will have returned and resumed their positions in the planning unit. A standardized water resources planning methodology (based on the OECD model) has been adopted. A fully-staffed technical assistance planning team is in place and developing a range of tools including cost-benefit and hydrologic models. Alternative management scenarios are being analysed to ensure that economically efficient and sustainable solutions are proposed to the member states for resource allocation problems in the basin.

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Recommendation No. 2 - Need to Better Manage Project Implementation and Reduce Project Costs

The Mission agrees with the Audit Report that USAID/Senegal needed to improve the management of river basin projects - we believe that over the past year significant improvements have been made. The following comments are keyed to the subsection headings of the Audit Report.

(A) Revise project assumptions and logical frameworks to reflect the regional organizations' capabilities to perform their roles.

The Mission presents here three examples of on-going projects where assumptions were reassessed and the projects substantially redesigned to reflect project realities and experience.

The mid-term evaluation of the OMVG Project in 1984 made it clear to the Mission that investments in planning tools (aerial photography, mapping and impact studies) were not being sufficiently institutionalized into a planning process and a planning capability was not being developed. The Mission moved immediately to develop and fund a PP amendment to rectify this deficiency. As a result of the PP amendment resources have been applied to the planning capability of OMVG since 1984. These resources include technical assistance, training and commodities. Progress has been made in institutionalizing the previous components of the project; the aerial photos and maps are being used more extensively and the impact study is being refined and improved.

The Mission reassessed several project assumptions from the initial Project Paper during the implementation of the Groundwater Monitoring Project over the past year. It was discovered that the project design was weak and substantial redesign was needed. A reassessment of OMVS's management and technical capabilities lead to the conclusion that OMVS did not have the capability to execute piezometer construction by force account as initially designed. The Mission revised this component to be implemented by the private sector. Free and open competitive bidding procedures were used (for both U.S. and local firms) to assure that the best price was obtained. While the final contract price exceeded what was budgeted for this item in the PP, USAID is convinced that good management procedures were applied to assure that this was the most cost-effective option. The Mission moved forward with the development of a PP Supplement which reflected this change and reassessed other project assumptions as well.

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A last example of reassessment is the Planning and Policy Development Project. Under this project the Mission funded the OMVS Reorganization Study which appears to be a base document for the Audit. This assessment of the structure and functions of OMVS was called for and initiated prior to the audit. One of the objectives of the study was to reassess assumptions about OMVS's capabilities particularly as they affected the PPD Project. The study underlines the aspects of the organization that must be strengthened if the project is to be successful. The Mission is pushing for OMVS acceptance and implementation of the majority of the study's recommendations.

Thus USAID has been reassessing and revising project assumptions throughout implementation. As a result all major ongoing projects (LOP greater than two million dollars) have been either substantially redesigned or are being partially held in abeyance to the reorganization process.

(B) Require the regional organizations to meet grant conditions and covenants

The Mission has taken steps to ensure the enforcement of all Grant Agreement Conditions and Covenants as required by A.I.D. regulations. We cannot expect that studies will always be integrated into the planning process in their full form. Studies can be incorrect, incomplete, inaccurate or deserving of further study and verification. The best studies are only an input into the decision making process. A close analysis of the present OMVG indicative plan for example shows that much information from the USAID-funded study was in fact used as a basis for decisions about the operation and management of the proposed infrastructure. Technically, the Condition Precedent has been met. From USAID's perspective we would have liked to see more of the study's recommendations reflected in the plan. The Mission continues to press multi-objective planning activities and policy dialogue to assure planning documents and the activities of OMVG reflect the soundest decisions.

(C) Measure project results and

(D) Conduct required evaluations.

The Mission will take steps to assure that all required evaluations are carried out as planned and project results are measured. It is useful to make a distinction between projects that aim at producing a product, such as a study or maps, and projects whose aim is to strengthen institutions. It is difficult to evaluate the former until the products are produced. This is the case for two of the four projects, the Environmental Assessment and the Aerial Survey and Mapping activity, mentioned as having not been evaluated. The Environmental Assessment activity, which was completed in five years, not eight years as stated in the Audit Report, was guided by at least one "peer review". At this review, which took place in Geneva, draft sections of the report were reviewed and critiqued by well-known experts in environmental assessment including scientists from the International Union for the Conservation of Nature. Quality control for the Aerial Survey and Mapping was assured by the Defense Mapping Agency which acted as a Consulting Engineer to OMVS and the Mission.

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All ongoing projects have evaluation plans and the needed resources to carry them out. The Mission foresees no problem in adhering to these evaluation schedules. The Mission has learned lessons from past projects which will assist in this endeavor.

(E) Justify the cost/benefit of the components of the Groundwater Monitoring Project.

The Groundwater Monitoring Project is an institution building and data collection, analysis and dissemination project. As with most projects of this nature it is less susceptible to traditional economic analysis than some production projects. The PP for this project was notably weak in economic analysis and attempted to give only the most general approaches to cost/benefit analysis. USAID has attempted to deepen this analysis and the Audit Report accepts the Missions economic justification.

Under the Project the installation of 680 piezometers is planned to monitor the quantity and quality of groundwater. In and of themselves these instruments do not "control the application of water and pesticides" although they provide data to decision makers which can be used to modify the application of water and pesticides. Although there are a number of piezometers planned for high potential agricultural areas, the measurement of groundwater quality and quantity has benefits for other sectors as well. See Annex 2 for a discussion of the range of benefits. These additional benefits increase the likelihood of a good cost/benefit ratio.

The PP for the Groundwater Monitoring Project did estimate that, for the irrigated agriculture aspects of the project, coverage would be some 45,000 ha. The new figure of 200,000 ha was the result of the on-the-ground technical work and reconnaissance by the project team, including technical assistance, after the project started. This work, which was impossible to detail at the time of PP preparation, amounts to a new technical analysis of this component.

Given budgetary constraints this activity will not be allocated the full request of 2.9 million in Supplemental funds. Thus the Mission is continuing to explore cost-saving methods as reflected in Annex 2. The technical analysis of the number and placement of piezometers developed by the project team has been reviewed by USAID and found to be sound. The number of piezometers is technically sufficient and will not be increased. In fact, as Annex 2 points out, a slight reduction to the absolute minimum is anticipated.

B. Compliance and Internal Control

In the past the Mission Office charged with the management of the river basin portfolio was semi-autonomous. With staff reductions the office has become better integrated into the Mission management system over the past year. The extensive design phase of portfolio development was completed with the authorization of the PPD in 1985. Since then we have been able to concentrate on implementation of the program. This has led to better compliance and internal control. In addition the River Basin Development Office has already developed software for computerized project management tracking systems and we are expanding its use from the OMVG project to other activities in the portfolio. This will improve portfolio management, monitoring and internal control.

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PARTIAL LIST OF USERS OF AERIAL  
PHOTOGRAPHIC COVERAGE AND MAPS  
OF THE SENEGAL RIVER BASIN

In Senegal : Products stored at the SGN  
Service Géographique National  
13, Rue Victor Hugo

<u>User Organization</u>	<u>Use (if known)</u>
- Ministère de l'Hydraulique :	Canal du Cayor Project
- ORSTOM	: Research on groundwater, on water quality in the delta/Lake Guiers regions
- SAED/USAID/FAO	: Development of small irrigated perimeters in the Bakel area
- Secrétariat d'Etat aux Ressources Animales	: Livestock directorate Bakel livestock project
- SAED/GERSAR	: Feasibility studies of the Podor and Saldé-Wala irrigation schemes
- SAED/SATEC	: Design of irrigated perimeters in the Matam area
- SAED/Dutch cooperation	: Design of projects in the Ile Amorphil area
- National Park Service	: Studies on Djoudj bird park
- University of Dakar	
- UNDP/Dakar	
- SAED/Germany (FRG)	: Studies in the Senegal Valley
- IGN Paris	
- COGEMA Senegal	
- Amsterdam University	
- FAO/UNDP	

In Mauritania : Products stored at the Ministry of Transport  
Service Topographique

- Ministry of Equipment and Transport : Rural roads project in the Guidimaka region (Roads MBout-Selibaby-Gouraye and Selibaby-Kaédi)
- Ministry of Hydraulics : Rural water supply project for the Guidimaka region (Eng. firm BURGEAP)
- Ministry of Rural Development : Study of the Aftout-es-Sahel region and Chott Boul (by DPN, Genie Rural)
- SONADER : Studies of irrigated perimeters in the valley
- IUCN (Switzerland) for PDR/DPN Nouakchott : Study of the national park of the lower Mauritania Delta

In Mali

- USAID : Manantali Resettlement Project
- Germany/UNDP : Deforestation of the Manantali reservoir
- Ministry of Hydraulics : Studies in the Manantali area
- BRGM/Bamako : Studies on groundwater and mining in the Malian Upper Valley.

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CLASS: UNCLAS  
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DEFTT: PEDO:AS  
CLEAR: 1.5BFD:  
2.DIR:G  
3.PRM:H  
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AIDAC

E.O. 12356: N/A

SUBJECT: GROUNDWATER MONITORING PROJECT (625-0958)

REFS: (A) DAKAR 7030; (B) STATE 211990; ✓  
(C) STATE 255770 ✓

1. PER AID/W CONCURRENCE PARA 1 REF (C) MISSION PLANS TO MOVE AHEAD WITH REOBLIGATION OF DOLS 1 MILLION FOR SUBJECT PROJECT. THE BUDGET FOR THIS AMOUNT WILL BE CAREFULLY DEVELOPED TO ASSURE THAT IT KEEPS THE PROJECT MOVING AND HAS MAXIMUM IMPACT ON THE ACHIEVEMENT OF EOPS.

2. AT THE SAME TIME WE ARE CONTINUING TO EXPLORE OPTIONS FOR FUNDING THE DOLS 1.9 MILLION DIFFERENCE BETWEEN ORIGINAL REQUEST REF (A) AND AVAILABLE FUNDS. THE FOLLOWING PARAS GIVE SOME INDICATION OF OJP THINKING AT THIS STAGE, INCLUDING COST-SAVINGS MEASURES TO DECREASE THE ORIGINAL DOLS 2.9 MILLION REQUEST AND THE IMPORTANCE OF THE PROJECT TO REGIONAL AND BILATERAL CONCERNS. WE WILL CONTINUE TO REVIEW THE SITUATION IN LIGHT OF BUDGET CONSTRAINTS AND THE RELATIONSHIP BETWEEN THE REGIONAL AND BILATERAL PROGRAMS. IN THIS REGARD WE LOOK FORWARD TO FURTHER DISCUSSIONS WITH AID/W DURING UPCOMING TRYS.

3. RETHINKING OF MISSION PRIORITIES.

(A) DURING THE PREPARATION IN THE SPRING OF 85 OF THE CDSS, ALL PROJECTS INCLUDING THIS ONE WERE CAREFULLY ANALYZED, BOTH TO DETERMINE THEIR VALUE AND IF THEY WERE ESSENTIAL TO OUR STRATEGY. WE DETERMINED THAT GROUNDWATER MONITORING, WHILE HIGHLY TECHNICAL AND NOT VERY VISIBLE WAS AN ESSENTIAL ELEMENT OF OUR RIVER BASIN STRATEGY WHICH IS AN ESSENTIAL COMPONENT OF OUR OVERALL STRATEGY. THE SENEGAL RIVER IS A MAJOR INTERNATIONAL NATURAL RESOURCE FOR THE OMVS MEMBER STATES AND ITS DEVELOPMENT AND SOUND MANAGEMENT RAISE IMPORTANT AND REAL ISSUES THAT MUST BE DEALT WITH ON A REGIONAL LEVEL. ALTHOUGH OMVS HAS ITS PROBLEMS, ITS EXISTENCE FOR ALMOST 25 YEARS IN ONE FORM OR ANOTHER CULMINATING IN A 700 MILLION DOLLAR INVESTMENT PACKAGE INCLUDING TWO DAMS (WELL ON THE WAY TO COMPLETION ON TIME AND WITHIN BUDGET) ATTEST TO THE REALITY OF THESE ISSUES, THE NEED FOR REGIONAL ORGANIZATIONS AND WHAT CAN BE ACCOMPLISHED. IT ALSO IS AN APPROPRIATE ARENA FOR DONOR INTERVENTION ESPECIALLY FOR DONORS WITH COMPARATIVE ADVANTAGE SUCH AS THE U.S. IN RIVER BASIN PLANNING, DEVELOPMENT AND MANAGEMENT.

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THE PRESENT MISSION OMVS PORTFOLIO INCLUDES PROJECTS THAT ARE ESSENTIAL TO THE RATIONAL DEVELOPMENT OF THE BASIN, AS WELL AS FITTING INTO MISSIONS' CDSS STRATEGIES. THESE PROJECTS COMPLEMENT AND REINFORCE THE BILATERAL PROGRAMS OF MAURITANIA AND SENEGAL AND TO A LESSER EXTENT MALI.

(B) IMPORTANCE OF THE GROUNDWATER MONITORING PROJECT. MISSION FEELS THAT AID/W MAY BE UNDERESTIMATING THE RELATIVE IMPORTANCE OF THIS PROJECT AND OFFERS THE FOLLOWING INFORMATION. PROJECT ACTIVITIES ARE BEING CLOSELY FOLLOWED AND DATA ARE EAGERLY ANTICIPATED, NOT ONLY BY THE NATIONAL HYDRAULICS SERVICES, BUT ALSO BY NATIONAL AGRICULTURAL RESEARCH AGENCIES (ISRA, IFP, AND CNRADA), RURAL DEVELOPMENT AGENCIES (SAED, SONADER AND OVSTM, AGHYMET AND OTHER PROJECTS BASED ON THE RIVER. MISSION'S FIRM CONVICTION IS THAT POTENTIAL BENEFITS OF PROJECT WILL ACCRUE IN IMPORTANCE AND INFLUENCE AS DATA COLLECTION AND ANALYSES BECOME AVAILABLE. CRUCIAL TO THE RATIONAL DEVELOPMENT OF THIS MAJOR NATURAL RESOURCE IS THE DEVELOPMENT OF A WATER MANAGEMENT SYSTEM IN ITS BROADEST SENSE. IN THE MICROCOSM OF THE IRRIGATED PERIMETER AN EFFICIENT WATER MANAGEMENT SYSTEM IS OBVIOUSLY ONE OF THE KEYS TO SUCCESS. IN THE MICROCOSM OF THE RIVER BASIN THIS IS EQUALLY TRUE. GROUNDWATER CAN NOT BE SEPARATED FROM THE FUNCTIONINGS OF THE WATER SYSTEM; THE INTERACTIONS BETWEEN GROUNDWATER, SURFACE WATER AND RAINFALL ARE DIRECT AND RECIPROCAL. MUCH DATA EXISTS ON THE RAINFALL AND SURFACE WATER COMPONENTS OF THE SYSTEM. YET, IN SPITE OF ITS CRUCIAL ROLE IN THE SYSTEM, LITTLE IS KNOWN ABOUT THE GROUNDWATER COMPONENT. THE PROJECT WILL OVERCOME THIS LACK AND WILL PROVIDE INFORMATION FOR THE OPTIMAL WATER MANAGEMENT SYSTEM FOR THE ENTIRE BASIN. HENCE BENEFITS TO BE DERIVED FROM GROUNDWATER MONITORING DATA AFFECT MANY SECTORS. A SECTOR BY SECTOR ANALYSIS FOLLOWS.

(1) AGRICULTURE. IT IS ESTIMATED THAT CLOSE TO ONE BILLION DOLLARS WILL BE INVESTED IN THE VALLEY OVER THE NEXT DECADE FOR AGRICULTURE ALONE. IN SENEGAL ALONE 14 MAJOR DONORS ARE INVOLVED IN AGRICULTURAL DEVELOPMENT OF

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TENS OF THOUSANDS OF HECTARES. WITHOUT AN UNDERSTANDING AND MONITORING OF THE GROUNDWATER COMPONENT OF THE HYDROLOGICAL SYSTEM THE EFFECTIVENESS AND EFFICIENCY OF THIS INVESTMENT IS JEOPARDIZED. FOR SOUND WATER MANAGEMENT OF IRRIGATED PERIMETERS ACCURATE MEASUREMENT OF PUMPAGE CAPACITY, WATER REQUIREMENTS OF CROPS, EVAPOTRANSPIRATION, LOSSES BY LEAKAGE FROM CANALS, DEEP PERCOLATION FROM FIELDS, WATER-LOGGING POTENTIAL, SALINITY AND OTHER FACTORS ARE NECESSARY. USAID EXPERIENCE WORLDWIDE HAS SHOWN THAT WITHOUT THIS INFORMATION TOTAL INVESTMENT COSTS CAN BE COMPROMISED. ALREADY IN THE SRB PROJECTS ARE BEING JEOPARDIZED BY RISING SALINITY AND WATER LOGGING ESPECIALLY IN THE DELTA. GROUNDWATER DATA ARE ESSENTIAL, FOR EXAMPLE, FOR PLANNING FOR DRAINAGE OF IRRIGATED FIELDS, A COST ELEMENT THAT CAN BE AS MUCH AS ONE HALF THE TOTAL INVESTMENT PER HECTARE. WHEN DRAINAGE IS OVERLOOKED PERIMETERS CAN BECOME WASTE-LANDS. GROUNDWATER DATA CAN EVEN HELP OPTIMIZE TRADITIONAL FLOOD RECESSION AGRICULTURE WHICH IS, IN A SENSE, A PROGRESSIVE FOLLOWING OF RECEDED GROUNDWATER. THE PRESENT WATER MANAGEMENT SYSTEM FORESEEN ONCE THE TWO DAMS ARE OPERATING INCLUDES AN ARTIFICIAL FLOOD TO AID IN THE TRANSITION FROM TRADITIONAL RECESSION AGRICULTURE TO IRRIGATED AGRICULTURE. THE OPTIMIZATION OF THIS FLOOD IN TIME AND SPACE IS HINDERED BY THE LACK OF GROUNDWATER DATA. THE FLOOD COULD EASILY REQUIRE HUGE QUANTITIES OF WATER THAT COULD COMPETE DIRECTLY WITH OTHER SECTORS SUCH AS ENERGY PRODUCTION. IN MANY INSTANCES INVESTMENTS IN PLANNING CAN PREVENT COSTLY REHABILITATION EFFORTS LATER.

(2) THE MANAGEMENT OF DAM INFRASTRUCTURE.

APPROXIMATELY 700 MILLION DOLLARS HAS BEEN INVESTED IN DAM INFRASTRUCTURE. THIS MAY TURN OUT TO HAVE BEEN THE EASY PART AS THE DELICATE PROBLEMS OF MANAGING THE INFRASTRUCTURE BEGIN TO SURFACE. WITHOUT KNOWLEDGE OF THE RIVER/GROUNDWATER DYNAMICS THE OPTIMIZATION OF RELEASES FROM THE MANANTALI RESERVOIR WILL BE IMPOSSIBLE. IT IS POSSIBLE THAT IN THE LONG-TERM THE ELIMINATION OF SEASONAL FLOODS WILL AFFECT AQUIFER RECHARGE WITH POTENTIALLY DISASTROUS RESULTS. FOR THE SALT WATER INTRUSION DAM, IN THE HEART OF PRESENTLY DEVELOPED IRRIGATION LANDS, THE EXTENT OF LATERAL MIGRATION OF SALINE GROUNDWATER AND WATER LOGGING THAT MAY DEVELOP UPSTREAM MUST BE MEASURED AND PREDICTED. THIS WILL AFFECT THE OPTIMAL WATER LEVEL AT WHICH DIAMA WILL BE MANAGED. IN THE FLAT DELTA, SUB OPTIMAL MANAGEMENT COULD AFFECT THOUSANDS OF HECTARES.

(3) LIVESTOCK AND DOMESTIC WATER SUPPLY.

IN MANY CASES LIVESTOCK PRODUCTION IN THIS AREA IS CONSTRAINED NOT BY FORAGE BUT BY WATER. ACCESS TO SURFACE WATER MAY DIMINISH AS IRRIGATION EXPANDS. ACCESS TO INTERIOR FORAGE RESOURCES IS CONTINGENT ON GROUNDWATER DEVELOPMENT. GROUNDWATER DATA CAN HELP RATIONALIZE LIVESTOCK DEVELOPMENT. DOMESTIC WATER SUPPLIES ARE

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TRADITIONALLY OBTAINED THROUGH GROUNDWATER SUPPLIES. RECENTLY WELLS HAVE BEEN ABANDONED BECAUSE OF SALINITY OF HAVE GONE DRY. MUCH INVESTMENT HAS BEEN MADE IN DEEPENING WELLS AND DIGGING NEW WELLS. THIS PROCESS COULD BE OPTIMIZED BY GROUNDWATER DATA WHICH WOULD IDENTIFY SUITABLE AREAS FOR DEVELOPMENT.

(4) HEALTH. INCREASED AGRICULTURAL DEVELOPMENT MEANS INCREASED FERTILIZER AND PESTICIDE USE WITH THE ACCOMPANYING DANGERS OF CONTAMINATION OF SURFACE AND GROUNDWATER SUPPLIES. THIS HAS DIRECT IMPLICATIONS FOR HUMAN AND LIVESTOCK HEALTH BUT ALSO, AS IS WELL DOCUMENTED, REPERCUSSIVES THROUGHOUT THE FOOD CHAIN. MONITORING OF THESE CHEMICAL HAZARDS WILL PERMIT PLANNING OF CONTROL AND MITIGATIVE MEASURES.

(5) ECOLOGY/FORESTRY/FISHERIES. GIVEN THE SPARSE AND ERRATIC NATURE OF RAINFALL THROUGHOUT MUCH OF THE BASIN, ECOSYSTEMS HAVE EVOLVED THAT TAKE MAXIMUM ADVANTAGE OF SEASONAL FLOODS AND GROUNDWATER SUPPLIES. THE SEASONAL FLOODS PROVIDE, FOR EXAMPLE, A CRUCIAL ENVIRONMENT FOR CRITICAL LIFE CYCLE STAGES OF MAJOR ECONOMICALLY IMPORTANT FISH SPECIES. VAST AREAS OF ACACIA NILOTICA FOREST, THE MAJOR FUELWOOD AND CHARCOAL SPECIES OF THE ZONE, ARE ADAPTED TO SEASONAL FLOODS AND HIGH WATER TABLES. CHANGES IN THESE PATTERNS MAY WELL MEAN THE ELIMINATION OF THIS DOMINANT SPECIES AND MASSIVE ENVIRONMENTAL CHANGES. PLANNING FOR

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REFORESTATION AND ENVIRONMENTAL MANAGEMENT REQUIRES DATA ON THE GROUNDWATER SITUATION TO ENABLE, FOR EXAMPLE, THE SELECTION OF APPROPRIATE TREE SPECIES.

(6) ENERGY AND NAVIGATION.

ENERGY PRODUCTION AND NAVIGATION REQUIRE REGULAR RELEASES OF WATER TO GUARANTEE MINIMAL HYDRO-ELECTRIC POWER AND DEPTHS THROUGHOUT THE YEAR. THIS COMPETES WITH OTHER USES OF THE WATER. KNOWLEDGE OF THE GROUNDWATER SUPPLIES IS REQUIRED TO ASSESS HOW GROUNDWATER CAN CONTRIBUTE TO OTHER USES AND UNDER WHAT CONDITIONS AND THUS OPTIMIZE ENERGY PRODUCTION AND NAVIGATION DEMANDS. DURING HIGH WATER FLOWS IN THE RIVER THE AQUIFERS ARE RECHARGED. IT ALSO APPEARS THAT DURING LOW FLOWS, GROUNDWATER CONTRIBUTES TO THE RIVER. THE EXTENT OF THESE RECIPROCAL RELATIONSHIPS WILL AID IN OPTIMIZING RIVER FLOWS AND RESERVOIR STORAGE NEEDS.

(7) MINING AND INDUSTRIAL DEVELOPMENT.

EVENTUALLY THESE SECTORS WILL ALSO COMPETE FOR WATER SUPPLIES. FOR THE MINING SECTOR THE PROJECT MAY HAVE INTERESTING SPIN OFF BENEFITS NOT DIRECTLY RELATED TO WATER MANAGEMENT SYSTEMS. RECENTLY USGS AND AID/NOUAKCHOTT HAVE EXPRESSED INTEREST IN SOIL LOGGING TO BE CONDUCTED AS PART OF PIEZOMETER CONSTRUCTION. LOGGING MAY BE USED TO ESTIMATE EXTENT OF DEPOSITS OF POTENTIALLY COMMERCIAL QUANTITIES OF COAL, PHOSPHATE AND PEAT IN THE RIVER VALLEY.

(8) POPULATION GROWTH.

AS IRRIGATED AGRICULTURE EXPANDS, IT IS HIGHLY LIKELY, BASED ON EXPERIENCE ELSEWHERE, THAT THERE WILL BE SUBSTANTIAL POPULATION GROWTH. WE ESTIMATE THAT FOR EACH FARM FAMILY EVENTUALLY THERE WILL BE ONE NON FARM FAMILY IN THE SERVICES SECTOR. THE QUANTITY, QUALITY OF GROUND WATER WILL BE AN ESSENTIAL FACTOR IN THE LOCATION OF MARKET TOWNS.

4. RETHINKING OF TECHNICAL OPTIONS.

(A) CONTRACT FOR CONSTRUCTION OF 660 PIEZOMETERS IN SENEGAL AND MAURITANIA WAS SIGNED ON JUNE 14. CONTRACT CONTAINS MODIFICATION CLAUSE THAT ALLOWS REDUCTION OF PIEZOMETERS BY 20 PERCENT. THIS IMPLIES POSSIBLE OVERALL REDUCTION OF 132 PIEZOMETERS. HOWEVER, AS STATED IN REF (A) PAR 5.4 THE MINIMUM NUMBER OF PIEZOMETERS NECESSARY FOR RELIABLE, COMPLETE, VALID DATA IS 598, I.E. 20 IN MALI AND 578 IN SENEGAL/MAURITANIA. THEREFORE ACTUAL REDUCTION POSSIBLE IN CONTRACT IS 82 PIEZOMETERS WITH CONSEQUENT SAVINGS IN ORDER OF DOLS 200,000.

(B) REDUCTIONS IN TECHNICAL ASSISTANCE COULD CAUSE SERIOUS IMPEDIMENTS TO PROJECT IMPLEMENTATION, GOALS AND OUTPUTS. AS STATED REF (A), PARA 5.1., TECHNICAL ASSISTANCE MUST BE PRESENT, AT A MINIMUM, FOR TWO YEARS BEGINNING FROM PIEZOMETER CONSTRUCTION START UP DATES.

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IT IS INDISPENSABLE IN ORDER TO SUPERVISE PIEZOMETRIC CONSTRUCTION, COMPLETE TWO FULL YEARS OF PRELIMINARY DATA COLLECTION IN ALL THREE MEMBER STATES, ENSURE PROPER FINANCIAL MANAGEMENT AND MEANINGFULLY INTEGRATE PARTICIPANTS AND TRAINEES INTO PROJECT.

5. RETHINKING OF MANAGEMENT OPTIONS.

(A) MISSION IS INVESTIGATING POSSIBILITY OF ASSISTANCE FROM MALI AND MAURITANIA USAID'S IN FINANCING, WITH REGIONAL FUNDS, OF RESPECTIVE COUNTRY PARTICIPANT IN SHORT TERM TRAINING IN HYDROGEOLOGY WITH POSSIBLE SAVINGS OF ABOUT DOLS 55,000.

(B) MISSION WILL ALSO INVESTIGATE ACCELERATION OF TAKE OVER PROCESS OF PROJECT OFFICES WHEREBY OMVS AND NATIONAL HYDRAULICS SERVICES CAN COVER, AT LEAST IN PART, OPERATING EXPENSES COSTS BEFORE THE PACD AND AT THE SAME TIME FACILITATE THE TRANSITION PERIOD FROM PROJECT TO GOVERNMENT OPERATION OF THE OFFICES.

(C) ANOTHER AVENUE FOR POSSIBLE SAVINGS IS USE OF FUTURE MISSION PMR FUNDS FOR PROJECT EVALUATION COMPONENT. THIS WOULD SAVE DOLS 45,000.

(D) SPLITTING UP DRILLING RESPONSIBILITIES BETWEEN PRIVATE AND FORCE ACCOUNTS HAD BEEN CONSIDERED LONG AGO

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AND REJECTED. MISSION EXPERIENCE INDICATES, AND PRESENT PLANNED FORCE ACCOUNT WITH MALIAN HYDRAULICS SERVICE FOR PIEZOMETER CONSTRUCTION SUPPORTS THIS VIEW, THAT FORCE ACCOUNTS ARE GENERALLY MORE EXPENSIVE THAN PRIVATE CONTRACTING. FORCE ACCOUNT PIEZOMETER CONSTRUCTION COSTS IN SENEGAL AND MAURITANIA WOULD BE PROHIBITIVE AS GOVERNMENT SERVICES DO NOT HAVE ON HAND THE EQUIPMENT OR PERSONNEL NECESSARY FOR THE CONSTRUCTION REQUIRED. IN ADDITION, PROJECT WOULD BE OBLIGED TO COMPETE WITH OTHER PROJECTS AND OTHER GOVERNMENT SERVICES FOR USE OF WHAT FEW RESOURCES DO EXIST. IT WOULD BE UNCERTAIN AT BEST THAT FORCE ACCOUNT CONSTRUCTION COULD BE EXECUTED AS PLANNED AND SCHEDULED OVER SUCH AN EXTENDED PERIOD OF TIME AS THE 18 MONTHS PROJECTED. FURTHER, MISSION POLICY IS TO USE THE PRIVATE SECTOR WHEREVER POSSIBLE, AS PART OF THE EFFORT TO DEVELOP A STRONG PRIVATE SECTOR IN THE REGION.

CONCERNING FORCE ACCOUNT WITH PROJECT SECTOR OFFICES, WE REITERATE REF (A) PARA 3.1.A. THAT PROJECT DOES NOT HAVE THE EXPERIENCE, CAPABILITY OR MANPOWER TO CARRY OUT THIS WORK OR EVEN A PART OF IT SUCCESSFULLY. ENERGY SPENT ON CONSTRUCTION WOULD ONLY DEGRADE AND DETRACT FROM PROJECT'S PRIMARY WORK TASKS OF MONITORING, COLLECTION, ANALYSIS AND DISSEMINATION OF DATA.

6. USAID WILL KEEP YOU INFORMED.

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FACTUAL DISAGREEMENTS

What follows represents a partial list of some general observations and what we believe are factual errors or unsubstantiated claims in the Audit Report.

- The USAID funded OMVS Reorganization Study, including all direct quotes, should be properly and fully referenced.

- The definition of piezometer is incorrect. Webster's Dictionary defines piezometer as "any of various instruments used in measuring pressure, compressibility, etc". It is not an "apparatus used to monitor and control the application of water and pesticides".

- The OMVS Environmental Assessment Study lasted five years and not eight.

- The OMVS Documentation Center - Since this center never benefited from USAID assistance it may be misplaced in an Audit of A.I.D. assistance. In addition the physical isolation of the OMVS Documentation Center from OMVS headquarters does not appear to have significantly hampered planning since many of the most critical and recent documentation exists in Dakar. The Documentation Center functions more as an archive of historical research in the valley and storage of old OMVS papers than as a information center for planning. Also should be noted that most personnel of the OMVS Planning Unit are based in St.-Louis where the center is located. Moreover, a serious reorganization option under consideration is the transfer of OMVS to St.-Louis.

- River Basin Development Models - The Audit states that this is a product of USAID assistance. We are unsure of what this means. We are unaware of any river basin development models for the OMVG or OMVS or any other basin. We have assisted in the development of hydrologic, cost/benefit and fiscal allocation models. Other sectorial models exist also. However, the complexity of river basins have not permitted the development of a integrated global model to date.

- Member-state contributions - In some places the Audit Report states that member-states have not paid their dues. Closer to the truth is that member-states have not totally met their commitments. They still however contribute.

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- Reduction of Project Costs - The Audit Report states that "project costs could be reduced by up to \$7 million." While unable to speak for USAID/Niamey, we believe that this figure refers partially to the groundwater Monitoring Project and is overstated given the Audit Report's statement that "USAID/Senegal action to reassess the cost effectiveness of piezometer construction addresses the auditors' concern" and the comments provided by the Mission.

- Provision of studies - The Audit Report states or implies in several cases that USAID "provided studies to the organizations". We believe that these activities were joint and had significant institution building and training aspects. The Audit Report language implies a much more one sided relationship and "top-down" approach than was in fact the case. Thus the impact of these activities are significantly underestimated by the Audit.

- Definition of River Basin Development - We believe that the Audit Report's definition of river basin development as aiming "to increase agricultural production through construction of dams and irrigation projects" misses the mark by some degree and is too restrictive. The Mission's views on this are presented in Section II.

- OMVG Environmental Monitoring Laboratories - The Audit Report states that "OMVG activities have also been impeded by the lack of qualified personnel, including the staffing of an AID-financed laboratory." While USAID has plans to support this activity, the OMVG project itself has not yet committed any funds.

- OMVS Dam Program - At one point the Audit Report implies that only one dam is being built on the Senegal River. As Section II points out, there are in fact two dams being built simultaneously. This increases the significance of OMVS's accomplishments.

- Groundwater Monitoring Costs - The discussion of this project's cost is unclear. The Audit Report implies that increased project costs were 8.1 million dollars. The increase requested was 2.9 million dollars. In addition the Project Paper Supplement which details and justifies this additional funding does break down the request by the traditional AID Handbook line-items. The contract for piezometer construction is 2.2 million dollars for 660 piezometers. Thus it is difficult to see how 450 piezometers can cost "about 3 million dollars".

- Groundwater Monitoring Project Personnel's Observations on Management

The Audit Report mentions that Groundwater Monitoring Project personnel in St.-Louis complained about OMVS management. It remains unclear as to whether the Auditors verified the validity of these complaints with OMVS officials. In addition, to put things in perspective, the Groundwater Monitoring staff have been generally outspoken in their praise for the quality of A.I.D. management. It remains unclear whether the Auditors asked the project staff about A.I.D. management and if they did why it was left out of the report.

- Impact of OMVS Financial Situation on the Groundwater Monitoring Project

The Audit Report claims that the financial situation of the OMVS had negative impacts on the Groundwater Monitoring Project. While the OMVS has financial problems, USAID believes that these have not affected project implementation to a significant degree to date. For instance while a schedule for per diem payments was being developed, significant progress was being made on the inventory and mapping of water observation points, the setting up of the main and sector offices, the drafting of the IFB for piezometer construction and training programs were developed and three participants were sent to the U.S.

- OMVG Planning Advisor -- The audit report implies that a planning advisor was not installed at the OMVG until 1985. The report states that " In 1981 another donor was to provide OMVG a planning advisor, but never did. OMVG went without until 1985 when A.I.D. provided one." In fact, the UNDP provided a water resources planner to the OMVG High Commission from the period of late 1982 until fall 1986. The UNDP advisor played a key role, along with A.I.D.-funded technicians, in elaborating the OMVG Master Plan and the Revised Indicative Plan, two of the principal planning documents generated by the OMVG High Commission.

Acting on a proposal of the Mid-Term Evaluation of the OMVG Project, an additional planner, funded by A.I.D., was installed in 1985 as the Director of the OMVG Planning Unit. This position was created to enhance the capabilities of the OMVG Division of Technical Services, which exercised responsibility over the Planning Unit. The A.I.D.-funded planner was a direct counterpart to the Director of Technical Services, a Senegalese-trained engineer who has served continuously throughout the duration of the A.I.D. project and who also had planning responsibilities within the OMVG. Lastly, a member-state technician was also assigned as a planner, and had been installed and active at the High Commission Planning Unit since early 1983 (per the terms of the sole Condition Precedent in the Project Paper). The report's statement that "by 1986 the OMVG had not appointed a qualified planner to work with the A.I.D. advisor" therefore misrepresents somewhat of the actual situation. Sufficient planning personnel (a total on four at various times) were present at the OMVG since the startup of the A.I.D. project to shoulder the responsibilities for planning, including both expatriate advisors and member-state counterpart personnel.

To infer that the planning process was impeded due to a lack of personnel is to misconstrue one of the central concerns and objectives of the A.I.D. project, i.e. the planning methodology itself. The OMVG has not lacked for planners; it has been hampered instead by a single-purpose approach to planning that considers neither the true costs of water development (proposing massive subsidization of new water users), nor the need to provide for local level involvement in the decision-making process (advocating instead highly centralized planning). The Audit Report does not touch on these programmatic concerns which are critical to the outcome of the project.

- OMVG Counterpart Trainees - The report states that "due to an approximate two-year delay in sending participants to training in the U.S., only one of four counterparts to the A.I.D. technical assistance team was on the job in mid-1986". The statement does not acknowledge that A.I.D. project management, with the full accord of the OMVG High Commission, revised the implementation schedule, without jeopardizing training objectives, in order to better utilize member-states personnel in the mobilization of the impact studies field work. The revised training plan is reflected in the updated implementation plan for the project in Project Paper Amendment No. 2. Overall, A.I.D. project management feels that the OMVG Project has been relatively successful in providing valuable training opportunities to member-states technicians, both long-term and short-term.

Some implementation delays affecting the training plan occurred early in the project due primarily to the fact that project management duties for the project were relocated from OAR/Banjul to AID/Dakar/RBDO in mid-1982. At the same time the OMVG High Commission was relocating from Kaolack to Dakar. After transferring the project to AID/Dakar in mid-1982, a major contract for the project for the impact studies was awarded and negotiated in the fall of 1982. Due to the delays incurred to that date and, at the suggestion of the A.I.D. technical advisors, it was deemed of more benefit to the project to keep the member-states technicians/trainees at site as long as possible to participate in the mobilization of the field studies component of the impact studies. The participants were rescheduled to depart when the studies began the data collection phase.

The candidate trainees were, in fact, better qualified for the most part than had been expected and provided valuable assistance with reconnaissance trips and the design of research strategies and work plans. As envisioned, the trainees participated in the mobilization for the impact studies field work and contributed to the member-states review of the work plan, which was approved by the OMVG in April/May 1983. The eventually departed for stateside training per the revised training plan.

Of the three member-state technicians sponsored by USAID for masters level degree work, all three have successfully completed their degree requirements. Two are already re-installed as active members of the Planning Unit. The third long-term trainee is scheduled to return Jan. 2, 1987. This provides for a overlap with the A.I.D. technical advisors of 12 months ranging up to 18 months, sufficient time to prepare for the departure of the A.I.D. advisors. In addition, because of their on-hands experience with the project prior to their departure, their graduate degree research was directed towards issues of immediate relevance to the OMVG, using data generated by project activities.

A fourth trainee (water planner) has received short term training in water resources project evaluation (1 month) and microcomputer applications for water resource management (1 month) through the A.I.D. project. He is also scheduled to participate in a three-month training internship with the Corps of Engineers in the U.S. concentrating on the hydrologic model developed by the A.I.D. project. He has also benefited by receiving valuable on-the-job training working along-side the A.I.D.-funded hydrologist.

- Institutional Support - A recurrent theme of the RIC audit is that member-state support to the river basin agencies will have to be reinforced if the A.I.D. projects are to be successful, as, for example "A.I.D. assistance will only have limited success unless the organizations are strengthened and supported by member states." While this might be true in the most narrow of terms, it does not reflect the unique institutional character of resource management agencies, especially those in developing countries.

The nature of water resource planning is such that very complex and demanding skills are required for very brief and short-lived tasks that, nonetheless, can have very enduring consequences. Much water resources planning is undertaken as feasibility studies which once completed, will never be called for again. The OMVG has undertaken and very competently managed to fruition numerous such lengthily and complicated studies, among them the AHT Kekreti Feasibility Study, the Howard Humphries Salt Retention Barrage Study, the Rhine-Ruhr Balingho Feasibility Study, the Poly-Techna Upper Valley Reservoirs Study, in addition to others. OMVG prepared terms of reference for the above-mentioned studies and reviewed their final reports for presentation to the Council of Ministers and the Heads of State. It would be unrealistic for the OMVG to carry a full-time staff of experts qualified to perform the required studies for a major water resource planning effort, especially considering that, typically, planning for water projects takes decades to accomplish (cf. the Aswan Dam, Hoover Dam, California State Water Project, Central Arizona Project, the OMVS dams, etc.).

OMVG's current staff has proven itself adequate to the task in contracting for and administering the extensive body of reports required for the design of the Gambia River Basin development portfolio. All the basic disciplines necessary for planning are well-represented within the OMVG. Consulting firms have performed the major studies thus far, as is appropriate for such an planning effort, and OMVG has subjected them to a review process, as in the case of the Member-States Review of the A.I.D.-funded Impact Studies. As stated previously, it is A.I.D. project management's position that OMVG's major institutional weaknesses lay within its planning policy. At the same time this creates a major opportunity for the project to demonstrate the effectiveness of more appropriate and effective planning policies and forestall the adoption of water development plans which will likely result in major financial burdens for the member-states.

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AUDIT OF AID PARTICIPATION IN  
SAHEL RIVER BASIN DEVELOPMENT

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