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UNCLASSIFIED

PROJECT EVALUATION SUMMARY (PES) - PART I

AFR/DP/PP/EP

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PD-NAP-555

Report Symbol U-447

1. PROJECT TITLE AFRICARE/OPG, Small Perimeter Development		2. PROJECT NUMBER 682-0226	3. MISSION/AID/W OFFICE Mauritania 000126
		4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) <input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION	

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING	7. PERIOD COVERED BY EVALUATION
A. First PRO-AG or Equivalent FY80	B. Final Obligation Expected FY80	C. Final Input Delivery FY83	831,000	From (month/yr.) June 5, 1981
			A. Total \$	To (month/yr.) October 25, 1982
			B. U.S. \$ 456,584	Date of Evaluation Review November 1, 1982

B. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., program, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
8.1 Budget review reveals approximately \$80,000 will remain at PACD. Evaluation recommends corrective action in pump maintenance and training. If AFRICARE/SONADER request PACD extension to use Funds for remedial action during project phase out, this will be processed by USAID. Action Sequence : SONADER, AFRICARE Action : Amend PIO/T Amend OPG	R GOLDMAN AID/W	Prior 12/10/82 Prior 12/31/82
8.2 Other proposals made by SONADER/AFRICARE will be subject to Mission review	R Goldman	NA
9.3 SONADER to transfer Funds (18.3 UM) from Kaedi Sector (IDA credit 888) to Gouraye Sector. New GIRM contribution being requested.	SONADER	ASAP

Handwritten notes: Clr: PRM / MM 03 NOV 82 F&A

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS	10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT
<input type="checkbox"/> Project Paper <input type="checkbox"/> Implementation Plan e.g., CPI Network <input checked="" type="checkbox"/> Other (Specify) Grant Agreement <input type="checkbox"/> Financial Plan <input checked="" type="checkbox"/> PIO/T <input type="checkbox"/> Logical Framework <input type="checkbox"/> PIO/C <input type="checkbox"/> Other (Specify) <input type="checkbox"/> Project Agreement <input type="checkbox"/> PIO/P	A. <input type="checkbox"/> Continue Project Without Change B. <input type="checkbox"/> Change Project Design and/or <input checked="" type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)	12. Mission/AID/W Office Director Approval
Messrs, Koita and Gilbert, SONADER Messrs, Richard H Goldman, Barry McDonald and Rudy Griego, USAID Mr. William Scott, Consultant Messrs. Kennedy and N'Diaye, AFRICARE	Signature <i>Peter Benedict</i> Typed Name Peter Benedict Date 11/02/82

13. Summary -

In many respects, the Africare Small Irrigated Perimeter project has satisfactorily accomplished what it set out to do. SONADER staff and village cooperatives have been trained and the techniques of irrigated agriculture have been extended. Many administrative and logistical problems have been overcome. The Gouraye sector was generally able to supply villages with the necessary agricultural inputs.

The major problem in the sector was the difficulty in keeping the pumps operating smoothly. This was, in part, due to a lack of funds for a better maintenance system. But there was also a problem of communication between the Gouraye sector and SONADER, and between Africare, SONADER, and USAID. Lines of authority and responsibility were not clearly delineated, which seriously constrained the ability of the project to solve problems. An extension of the project as is would do little to change the situation, simply a continuation of trying to provide too much with too little. At the time of project implementation, this was probably felt to be worth a try. But as new problems cropped up, the project did not seem to be flexible enough to respond to the sector's needs.

It is recommended that USAID/Mauritania not continue funding of this project as presently designed. The Mauritanian personnel in the sector have received sufficient training so as to carry out the necessary administrative and extension work. However, a larger project involving the construction of 1,500 hectares of new perimeters is being considered by the World Bank and the USAID-OMVS project. The further development of Mauritanian administrative capability in the Gouraye sector warrants full attention by these projects.

14. Evaluation Methodology -

This evaluation was undertaken to measure the progress of the project and determine the necessity of extending the project for another nine months. The evaluation was conducted by a team composed of USAID, SONADER, and Africare representatives. A field investigation took place from October 9-15. Further interviewing and review of documentation took place in Nouakchott from October 17-24. Several meetings were held with SONADER and Africare officials to review the conclusions of the evaluation.

15. A major assumption the project - that SONADER and Africare would be able to find another donor to contribute 19.5 million ouguiyas to complete the project as originally envisioned by SONADER - proved false. This lack of funds had a detrimental effect on the ability of the Africare project to function effectively.

16. Inputs: Africare agreed to provide (1) Technical assistance, i.e. expatriate technician for 18 months plus associated costs, (2) Direct support for the salaries of local SONADER personnel, (3) other

operational costs, including vehicle operation and office rental, equipment and supplies, for a total of 17,786,000 UM. SONADER agreed to provide Mauritanian personnel, all vehicles for the project, and other indirect personnel costs, for a total of 14,860,000 UM. SONADER and Africare were also to look for additional funds of 19.5 million UM to complete the project as envisioned. These funds were never found, with the consequence that certain items, such as a workshop with repair equipment and sufficient credit for spare parts, were not provided. In general, SONADER and Africare provided the inputs for which they were explicitly responsible.

17. Outputs: The methods of irrigated agriculture were extended by SONADER personnel and the Africare technician. Production in the sector increased as did cropping intensity and yields. Extension agents received sufficient on-the-job training to perform effectively with cooperatives, although they received little formal training. The Sector Chef benefited from the project in terms of training and administrative assistance. The pump technicians and mechanics received insufficient training, and were under-equipped. The sector was not able to sufficiently maintain the pumps, with detrimental effects on the entire project. Villages received training in cooperative practices from extension agents, although four of nine villages fell seriously behind in the repayment of agricultural credit and did not conduct rainy season operations at the perimeters in 1982.

18. Project Purpose: To develop and strengthen the services of SONADER in the Gouraye Sector...intends to make the SONADER personnel an effective force in:

1) Extending the techniques and methods of irrigated agriculture and providing necessary guidance to those farmers that have adopted the technology, and

2) Establishing and supporting farmer participation in development activities through independent cooperatives.

The project has made SONADER personnel a more effective force in extending the techniques of irrigated agriculture. It is less clear that SONADER's financial situation will allow it to support the recurrent costs of an extension service, although a number of donors have urged the government of Mauritania to take on this financial responsibility.

Progress has also been made in establishing independent cooperatives, although there are a number of debt repayment questions which still need to be resolved. The level of participation is at approximately 19% of the active population in the village.

19. The subgoals of the project are stated as follows in the Project Agreement:

Specific Objectives - 1) To ensure the survival of the population by promoting self-sufficiency in food production under existing climatic

conditions; 2) To introduce the techniques of crop production under irrigation to the villagers before extensive irrigation is implemented; and 3) To involve the villagers in the development process and to make them take an active part in the construction of perimeters and their operations.

Objectives two & three were achieved in the sense that irrigated agricultural campaigns were undertaken by villagers, with guidance from extension workers. The participation of villagers in the construction of the perimeters cannot properly be attributed to this project, since the perimeters were really built as a part of a World Bank project.

Objective one was partially achieved, in that villages are now able to supply at least part of their food needs from the irrigated perimeters. However, there is still caution on the part of the villagers in converting fully to irrigated agriculture until they can assure the reliability of their pumps.

20. The beneficiaries of this project included the 15-member staff of SONADER and some 1,400 cooperative members and their families. The SONADER staff benefited from the training and technical advice of a highly knowledgeable agronomist. The cooperative members benefited from the increased knowledge of the extension agents transmitted to them, and also from direct technical advice from the project technician. The families of the cooperative members gained from the increased production in the irrigated perimeters. Note that the project benefited 400 fewer cooperative members than projected in the OPG request, because not all of the planned perimeters were operational.

21. Unplanned Effects -

The major unexpected result of the project was the inability of the Gouraye sector to resolve the mechanical problems with the perimeter pumps. The project was unable to sufficiently change its original design to meet the new needs in the area. This had a detrimental effect on the overall success of the project.

22. Lessons Learned -

a) It is generally not a good idea to try to do too much with too few resources. The project had a highly trained technician as its head, but he was in the field without the necessary means to accomplish much. It might have been better to concentrate resources on the provision of adequate pump servicing and stocking of spare parts, rather than pay for an expatriate technician.

b) Important assumptions should be realistically evaluated before going ahead with a project. In this case, the assumption that 19.5 million ouguiyas would be given by another donor may not have been realistic. The fact that this money was not provided negatively influenced the project as it was designed.

23. This project continued to have problems of communication with SONADER and USAID. The lines of communication were not made clear enough in the project design, and systems of management control were inadequate.

Attached - SONADER/Africare, Small Irrigated Perimeters, Gouraye Sector, Guidimakha Region, Mauritania, Final Evaluation, 24 pages.

SONADER/AFRICARE SMALL IRRIGATED PERIMETER

Evaluation Report: November 1, 1982

Responses to State 81077

1. What constraints does this project attempt to overcome and who does it constrain?

This project primarily attempts to overcome the lack of training of the SONADER staff in the Gouraye sector of Mauritania. The project also provides technical advice to farmers who have built irrigated perimeters in an attempt to improve low agricultural productivity.

2. What technology does the project promote to relieve these constraints?

Training by an expatriate technical advisor is the way in which the education constraint is being overcome.

The low agricultural productivity is being improved by promoting the building of small perimeters, which are then supplied with water by small pumps. The villagers build the perimeters themselves, and are provided pumps by the SONADER organization at subsidized rates.

3. What technology does the project attempt to replace?

The present agricultural system practices a system of recession agriculture, with dry season fields planted in the area along the river as it recedes. The project has introduced the techniques of irrigated agriculture to supplement the rain-fed and recession agriculture in the area, and to increase the security of food production in years of low rainfall.

4. Why do project planners believe that intended beneficiaries will adopt the proposed technologies?

The project has demonstrated that yields can double if the techniques of irrigated agriculture are properly used. The design of the small perimeters is such that farmers retain far greater control of the land, and pay much less for overhead costs than they do with large irrigated perimeter projects.

5. What characteristics do intended beneficiaries exhibit that have relevance to their adopting the proposed technology?

The interest of the farmers is demonstrated by the fact that they contributed their own labor to build the perimeters and that they continue to farm them. The major hesitation of the villagers comes from the poor reliability of the pumps that have been installed. The

SONADER organization in this sector is underfunded and has provided relatively poor maintenance services.

6. Adoption rate of technology

The adoption rate of the pump technology has been slowed down by the unreliability of the pumps. However, the farmers have seen the value of irrigation and the use of fertilizer. They remain interested in building more irrigated perimeters, particularly if the mechanical problems with the pumps can be resolved.

7. Will the project set in motion forces that will induce further exploration of the constraint and improvements to the technological package proposed to overcome it?

The project has introduced new irrigated techniques of agriculture that will be useful in the area as dams are built upstream. The recession agriculture presently practiced in the area will change considerably. Hence, it is important that farmers become experienced in irrigation techniques.

The experience with the pumps will provide information about the necessity of purchasing pumps that are well-adapted to the task at hand and of setting up a better system of stocking spare parts and providing maintenance services.

8. Do private input suppliers have an incentive to examine the constraint addressed by the project and come up with solutions?

A major constraint on the development of private trade in the region is its isolation from the rest of the country. This problem is being addressed by a program of road building by USAID and other donors. The number of perimeters in the Gouraye sector presently would not provide enough business for a private supplier to set up shop. However, as more perimeters are built, there may be sufficient incentive for a private supplier to service pumps and stock spare parts, especially if it can be done on a regional basis. We would estimate it will take ten years to institutionalize private sector involvement.

9. What delivery system does the project employ to transfer the new technology to intended beneficiaries?

There are five extension agents working in nine villages to teach the methods of irrigated agricultural. Pumps and agricultural inputs are generally brought in by a ten-ton truck before the rainy season begins. During the rainy season, transportation is more difficult, often by motorized pirogue. The project provided technical and administrative assistance and training for the extension agents and the sector chief in order to improve their skills in extending the techniques of irrigated agriculture.

10. What training techniques does the project use to develop the delivery system?

The major method of training in the project has been on-the-job training and technical advice. Very little formal training was undertaken. The mechanics and pump operators did not receive sufficient training during the project, which contributed to the poor maintenance record of the project. The system for ordering and stocking of spare parts was also insufficient in the project.

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ISN 35583

SONADER/AFRICARE

Small Irrigated Perimeter Development Project

Gouraye Sector

Guidimakha Region

Mauritania

F I N A L E V A L U A T I O N

William Scott
Consultant
USAID/Nouakchott
November 1, 1982

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INTRODUCTION

This evaluation of the Africare project in the Gouraye sector of Mauritania was conducted with the participation of representatives from SONADER, Africare, and USAID. A team traveled to the project site from October 9-15. Participants included Messrs. Griego and Scott (USAID), Messrs. Koita, Gilbert, and Brindas (SONADER), and Messrs. Kennedy and N'Diaye (Africare). Those interviewed in the field included the Sector Chef, M. Kebe, the five extension agents and mechanics working on the project, and cooperative members in the project villages. Unfortunately, the team members were only able to visit five of the nine villages in the project, due to a rainstorm and the resultant road conditions. Upon returning to Nouakchott, the evaluation continued with interviews with a number of officials at the SONADER office and with the consultation of the available documentation.

We wish to thank the participants in this evaluation. Special thanks goes to M. Bati, General Director of SONADER, who made his staff available for this evaluation and met with the evaluation team a number of times.

AFRICARE EVALUATION
SUMMARY STATEMENT

Project Purpose: To develop and strengthen the services of SONADER in the Gouraye Sector....intends to make the SONADER personnel an effective force in:

1) Extending the techniques and methods of irrigated agriculture and providing necessary guidance to those farmers that have adopted the technology, and

2) Establishing and supporting farmer participation in development activities through independent cooperatives.

Inputs: Africare agreed to provide (1) Technical assistance, i.e. expatriate technician for 18 months plus associated costs, (2) Direct support for the salaries of local SONADER personnel, (3) other operational costs, including vehicle operation and office rental, equipment and supplies, for a total of 17,786,000 UM. SONADER agreed to provide Mauritanian personnel, all vehicles for the project, and other indirect personnel costs, for a total of 14,860,000 UM. SONADER and Africare were also to look for additional funds of 19.5 million UM to complete the project as envisioned. These funds were never found, with the consequence that certain items, such as a workshop with repair equipment and sufficient credit for spare parts, were not provided. In general, SONADER and Africare provided the inputs for which they were explicitly responsible.

Outputs: The methods of irrigated agricultural were extended by SONADER personnel and the Africare technician. Production in the sector increased as did cropping intensity and yields. Extension agents received sufficient on-the-job training to perform effectively with cooperatives, although they received little formal training. The Sector Chef benefited from the project in terms of training and administrative assistance. The pump technicians and mechanics received insufficient training, and were under-equipped. The sector was not able to sufficiently maintain the pumps, with detrimental effects on the entire project. Villages received training in cooperatives practices from extension agents, although four of nine villages fell seriously behind in the repayment of agricultural credit and did not conduct rainy season operations at the perimeters in 1982.

Conclusion

In many respects, the Africare project has satisfactorily accomplished what it set out to do. SONADER staff and village cooperatives have been trained and the techniques of irrigated agriculture have been extended. Many administrative and logistical problems have been overcome. The Gouraye sector was generally able to supply villages with the necessary agricultural inputs.

The major problem in the sector was the difficulty in keeping the pumps operating smoothly. This was, in part, due to a lack of funds for a better maintenance system. But there was also a problem of communication between the Gouraye sector and SONADER, and between Africare, SONADER, and USAID. Lines of authority and responsibility were not clearly delineated, which seriously constrained the ability of the project to solve problems. An extension of the project as is would do little to change the situation, simply a continuation of trying to provide too much with too little. At the time of project implementation, this was probably felt to be worth a try. But as new problems cropped up, the project did not seem to be flexible enough to respond to the sector's needs.

What SONADER still seems to be looking for in Gouraye is a donor that will provide a full range of assistance to the sector. The World Bank and OMVS projects should soon be able to provide such support, which will be fully warranted as new perimeters are built and more farmers need extension services. For the perimeters presently in use, the number of sector personnel would appear to be sufficient, if more emphasis can be placed on resolving the mechanical problems.

Recommendation:

The most pressing need in the Gouraye sector is to provide for the adequate operation of the perimeter pumps. Until such time as the sector becomes part of a larger project, available funds should be concentrated on the purchase of new pumps, the stocking of spare parts, the equipping of a workshop, and the training of mechanics and pump technicians. Personnel and vehicle costs should be kept to a minimum. The Mauritanian personnel in the sector have received sufficient training so as to carry out the necessary administrative and extension work. Technical assistance is needed to train mechanics and answer specific agronomic questions.

Project History

Mauritania has often experienced food deficits in recent years, overcoming them by considerable amounts of international food aid and commercial food imports. The Mauritanian government has sought to gain food self-sufficiency through various means, including a policy of promoting irrigated agriculture. Since 1965, the Ministry of Rural Development has undertaken a number of irrigation projects, many with foreign assistance. In 1975, SONADER (Societe Nationale pour le Developpement Rural) was created by the Ministry to study and implement the irrigated agricultural projects in Mauritania. One of the programs was the construction of small irrigated perimeters (Petits Perimetres Villageois) along the bank of the Senegal River. From 1975-1979, many new perimeters were constructed with financial assistance from the French Government (F.A.C), the World Bank, and the European Development Fund (F.E.D), including four perimeters (Bedinki, Wali, Toulel, and Sagne) that would become part of the Gouraye Sector. In 1979, SONADER created three administrative sectors for construction and administration of small perimeters:

- 1) Rosso - under Dutch financing;
- 2) Boghe - under FED financing; and
- 3) Kaedi (including the Gouraye area) - under World Bank financing.

As more perimeters were constructed in the Kaedi sector, it became difficult to reach all the perimeters administratively from Kaedi, and SONADER decided in July, 1980 to create a new sector based in Gouraye. This sector was equipped with material from the World Bank project based in Kaedi. However, SONADER had to finance the operating costs from its own budget since the Bank project had not planned a separate administrative base in Gouraye. SONADER was looking for a donor to provide financial assistance for the Gouraye Sector and had made a request to an AFRICARE team visiting Nouakchott in April, 1980. AFRICARE submitted a proposal based on the SONADER request to USAID/Nouakchott in August, 1980. Revisions were requested and SONADER submitted another proposal in February, 1981 to AFRICARE, which in turn made a new request to USAID. An agreement for an Operational Program Grant (OPG) was signed between AFRICARE and USAID/Nouakchott in April, 1981, funds approved on June 5, and the project begun in July. However, the project's implementation was delayed somewhat because an official agreement between SONADER and AFRICARE was not signed until October 5, 1981.

Project Description

SONADER's request for assistance in February, 1981 totalled 52,200,000 UM or US\$1,160,000. The OPG approved by USAID was for the sum of US\$456,584, with US\$383,993 (17,786,000 UM) to go to SONADER. In the agreement between SONADER and AFRICARE, the Government of Mauritania agreed to provide an additional 14,860,000 UM (US\$330,222) to the project. An additional 19.5million UM was needed to complete the Gouraye project as originally envisaged by SONADER. Another donor was not found to make up the difference, and consequently, a number of items were cut out of the budget. (See Programme d'Execution Technique et Financier submitted by SONADER as part of the October 5, 1981 agreement with AFRICARE). This lack of funds, in our opinion, has had a detrimental effect on the operation of the Gouraye sector, for reasons we will enumerate later. But this fact should be kept in mind as we proceed with the evaluation of the project.

Project Goals

The stated purpose of the OPG given by USAID to AFRICARE was to develop and strengthen the services of SONADER in the Gouraye Sector of Mauritania. The project intends to make the SONADER personnel an effective force in :

1. extending the techniques and methods of irrigated agriculture and providing necessary guidance to those farmers that have adopted the technology, and
2. establishing and supporting farmer participation in development activities through independent cooperatives.'

(Project Grant Agreement, p.1)

AFRICARE agreed to provide SONADER for 18 months with :

1. an expatriate technician and associated costs (lodging, travel, fringe benefits;
2. local salaries of SONADER personnel;
3. office equipment and supplies;
4. office rent;

5. other operational costs, including fuel and spare parts for the vehicles (see detailed budget in OPG request submitted by AFRICARE, February, 1981). The Project Agreement summarized the AFRICARE budget as follows:

Direct Salary	\$56,250
Local Salaries	\$130,865
Fringe Benefits	\$8,606
Travel Transportation	\$105,956
Allowances	\$24,667
Equipment and Supplies	\$28,147
Other Direct Costs	\$24,622
Overhead	\$78,149
TOTAL	<u>\$456,584</u>

The government of Mauritania, represented by SONADER, agreed to provide all Mauritanian personnel, including a sector chief, an accountant, five extension agents, two mechanics and an assistant, three drivers, a warehouseman, a secretary, and an office assistant; and all necessary vehicles for the project including three Land-Rovers, a ten-ton truck, three boats with motors, and five motorcycles. SONADER also agreed to pay other personnel costs and other costs enumerated in the project budget beyond the AFRICARE contribution. (See Accord-SONADER/AFRICARE, October, 1981)

Specific terms of reference for the expatriate technician were not included in the AFRICARE/SONADER agreement. However, a list of duties was provided in the Project agreement with AID as follows:

- Foresee and provide for the needs of the perimeters, including technical advice and factors of production
- Advise farmers during the cropping season

- Gather up all elements necessary for a complete evaluation of the season
- Study means by which perimeters can be most efficiently operated, anticipating crops and marketing strategies profitable to the farmers
- Assist extension agents and the Sector Chief in gaining the skills necessary to act effectively in their positions
- Oversee the accounts of the cooperatives
- Be responsible for oversight of repayment of credit for factors of production and the pump in each cooperative
- Manage the means of production at the disposal of the sector and anticipate the needs of the sector to assure its continued viability.

Before going on to the technical evaluation, we would like to make it clear that none of the actual construction costs or pump costs were provided for in the agreement between AFRICARE, SONADER, and USAID. These were furnished as a part of the World Bank Project (IDA Mau 888) in the Kaedi/Gouraye area. This project should be viewed largely as a training project, with a portion of the project going to pay the direct salary costs of SONADER. The project was never viewed, at least by USAID, as overall sector support, like that of the Dutch support in the Rosso sector. Hence, the project must be evaluated in a somewhat limited context of training, extension, and administrative work. At the same time, given the limited resources of AFRICARE and SONADER, we must also ask the larger question: are the available funds being spent in the best possible interests of the villagers in the Gouraye Sector?

TECHNICAL AND ECONOMIC ANALYSIS

Production

The small irrigated perimeters have clearly helped to increase production in the Gouraye sector. As shown in Table 1,

TABLE 1 - Gouraye Sector Small Irrigated Perimeters					
	1978	1979	1980	1981	1982
Area available (h)	79.5	79.5	213	290	290
Area cultivated (h)	47.3	115.3	316	535	432(a)
Production - Corn (t)	25	78	1,153	1,810(b)	n/a
Rice (t)	237	192	39	308	n/a
Other (t)	-	-	40	190	n/a
Total (t)	262	270	1,232	2,308	n/a

(a) estimate based on 187 h. cropped during rainy season, and projection assuming same hectarage cropped in dry season, 1981 (i.e., 245 h.);

(b) corn production measured in grain equivalent, not by total ear weight, a measure used in some SONADER statistics;

N.B. Annual figures include one year's rainy season plus the next dry season. Hence, 1980 figures include 1980-81 dry season.

Source: SONADER - Bilan des Actions Menes Sur Les Petits Perimetres-
Analyse de la situation Evolutive de 1977 a 1981
Secteur de Gouraye

SONADER - Evaluation des Campagnes Hivernage 1981 et Contre
Saison 1982, Gouraye PPE/AFRICARE

the amount of hectarage available for cultivation within the small irrigated perimeters increased from 79.5 hectares in 1979 to 290 hectares in 1981. This increase is due to the activities of the World Bank Project and the hard work of the villages themselves.* Note that the hectarage available never reached the projection of 345 hectares used by AFRICARE in their OPG request. This is due to the fact that four of the villages listed therein did not end up with operational perimeters. There were land tenure problems in Sagne and construction difficulties in Sythiane. Bedinky, which had a perimeter constructed in the mid 1970's, was plagued by debt problems and was unable to continue operations. Liradji decided to build a mosque instead of a perimeter.

Cropping intensity increased from 145% in 1979 to 184% in 1981, with a probable drop in 1982 to an estimated 149%. The reasons for the changes in cropping intensity are complicated. But, briefly, the increase from 1979 to 1981 was due to an increase in farmer motivation, reasonably well operating group of pumps, improved agronomic techniques propagated by extension agents, and low levels of farmer debt. The decline in 1982 stems from the fact that fewer villages undertook irrigated campaigns in the rainy season because they were too far in debt to receive credit from SONADER.

Crop production has markedly increased from the 1978 and 1979 average of 266 tons to some 2,300 tons in 1981. These increases are due to a number of factors. First, the increase in available irrigated hectarage has led to an increase in production. Second, cropping intensity increased. Third, yields increased from an average 3.7 tons/hectare of corn in 1979, to 6.5 tons/hectare in 1981. Rice yields increased from 3 tons/hectare in 1979 to over 6 tons/hectare in 1981. The increased yields can be attributed to more skilled use of fertilizer, reliable delivery of water through the pumps, and good weather conditions. There may also be differences in the statistical methods used to measure the various years, making it somewhat difficult to compare between years. Fourth, a wider variety of crops were produced, parti-

* The perimeters are constructed manually with labor provided by the village concerned. The IDA project provided construction equipment, building materials, and 10 tons of food per 20 hectares constructed under the World Food Program's Food for Work Project.

cularly in 1981. Extension agents encouraged the planting of okra and cowpeas wherever possible in the perimeters in the rainy and dry seasons, as well as during a third growing period, the hot, dry season (contre-saison chaude). Table 2 gives a more detailed breakdown of hectareage and crop production in individual village.

It is difficult to attribute the reasons behind the various factors increasing production. Certainly, the construction of a greater number of perimeters under the World Bank Project was one of the important reasons. A greater motivation of the farmers themselves is another factor. This motivation comes from the desire to make their hard work in building the perimeters pay off. It comes from a hope that improved water control will provide added security to their lives. It comes from working with trained extension agents and experts who demonstrate new possibilities for improved crop production. It would seem clear that the work of the extension agents and agronomist working under the AFRICARE project has made a positive contribution towards increasing production in the Gouraye sector, although it is only one of the factors.

Mechanical Problems. It is probable that overall production will decrease in 1982. In the rainy season of this year, four of the nine villages did not undertake an agricultural campaign because they were too far in debt to receive agricultural credit from SONADER. Part of this debt problem stems from the difficulty SONADER has had in keeping the older pumps operating smoothly. As the pumps breakdown, yields are reduced and farmers must pay a greater percentage of their crop for agricultural inputs and annual pump payments.* Furthermore, farmers are reluctant to pay for pumps that are not functioning well. They wonder if SONADER will replace the pump after the three installments are made. Farmers reported that they were discouraged by these problems, and hoped that our visit would help correct the situation. Hence, despite all the gains that have been made in constructing perimeters and teaching farmers the techniques of irrigated agriculture, there is presently a feeling of discouragement among the farmers. Nonetheless, many farmers expressed the opinion that they remained interested in having perimeters and building new ones, on the condition that the problems with the pumps could be resolved.

* Under the present system, cooperatives must pay 50% of the total cost of the pump in three annual installments. Once the three payments are made, the cooperative should receive a new pump.

Cooperatives

The participation of villages in the cooperatives, which are fundamental to the operation of the irrigated perimeters, is an important aspect of the AFRICARE project. As shown in Table 3, the average level of participation of the cooperatives is about 19% of the active population in the villages. This level of participation varies widely between villages.

TABLE 3 -- Cooperatives, Perimeters, and Village Size

Village	Village Population	Active Population	No. in Coop. (80-81)	As % of Act. Popula-	Ave. Plot Size 1)	Est. Village Field (h) (2)	Perim. Size (h)	Perim. as % of Village
Kabou	1,499	782	86	11	.16	495	35	7
Soulou	658	393	87	22	.25	217	30	14
Diougountourou	1,892	895	280	31	.25	624	77	12
Moulessimou	84	42	40	95	.25	28	11.5	41
Diaguily	2,920	1,383	174	13	.085	964	31	3
Woumpou	1,045	570	150	26	.20	345	35	10
Sagne	1,849	1,016	126	12	.07	610	9	1
Toulel	902	576	97	17	.26	298	25.5	9
Wali	1,617	857	142	17	.22	534	53.5	6
Bedinky	320	169	121	72	.16	106	19	18
Synthiane	621	318	n.a.	-	-	205	21	10
Fimbo	686	321	64	20	.26	226	17	8
TOTAL AVERAGE	14,093	7,322	1,367	$\bar{x}=19$	$\bar{x}=.20$	4,652	364.5	$\bar{x}=8$

- 1) Average size of plot cultivated by a cooperative member
- 2) Estimate of Total Village Fields = .33 h/person multiplied by Village population (.33h. derived from estimate of 22,750 hectares cultivated in 1980-81 divided by 68,100 rural sedentary population in Guidimaka.

TABLE 2
GOURAYE SECTOR - SMALL IRRIGATED PERIMETERS
1980 - 1982

Village	Rainy Season-1980		Dry Season-80-81		Rainy Season-1981		Dry Season-81-82		Area Cult. (h.) a.	Mech. Prob.	Debt Prob.
	Area Cult. (h.)	Production (t.)	Area Cult. (h.)	Production (t.)	Area Cult. (h.)	Production (t.)	Area Cult. (h.)	Production (t.)			
Kabou I & II	30	79.5(1) 39.5(3)	16.5	74.3(1)	16.5 3.5	84(1) 5.6(3)	16.5	54(1)	20	N	N
Solou I & II	22	103(1)	28	126(1)	18 12	96(1) 60(2)	22	46.4(1)	25	Y	N
Diougountourou I & II	40	180(1)	40	180(1)	58.5 18.7	254(1) 104(2)	36 36	194.4(1) 28(3)	77	Y	N
Moulessimou	9	62(1)	12	54(1)	10 4	38.3(1) 7.7(2)	14	32(1)	14	Y	N
Diaguily I & II	14.5	103(1)	15	67.5(1)	36 15	185(1) 75(2)	51	119(1)	51	Y	N
Woumpou I & II	-	-	15	67.5(1)	17	83.3(1)	17	76.5(1)	0	Y	Y
Sagne	9	9(1)	NO	Campaigns	Land	Tenure	Pro-	blems	-	-	-
Toulet I & II	10.5	47.3(2)	10.5	47.3(1)	18.5 1.8	61.2(2) 2.8(3)	25.5	97.8(1)	0	Y	Y
Kali I & II	25	53.7(2)	-	-	53.5	240(1)	10.5	60.5(1)	0	N	Y
Bedinky	19	11.6(2)	NO	Campaigns	Debt	Problem	-	-	-	-	Y
Sythiane	-	-	NO	Campaigns	Need	Leveling	Equipment	-	-	-	-
Fimbo	Lack	Equipment	-	-	17	64.6(1)	17	85(1)	0	Y	Y
Totals	179	536.5(1) 112.6(2) 39.5(3)	137	616.6(1)	290	1,045(1) 308(2) 8.4(3) 115(4)b. 17(5)b.	245.5	765.6(1) 28(3) 21(5)c.	187		

- 1) Corn
- 2) Rice
- 3) Sorghum
- 4) Okra (Gombo)
- 5) Cowpeas (Niebe)

- a. Estimated, Rainy Season, 1982.
- b. Not listed by village.
- c. During warm, dry season. Not listed by village.

6-9

95% the highest level and 11% the lowest. In the villages we visited, three of five said that there were more people who would like to join the cooperative if plots became available in new perimeters. In the other two villages, there was some discouragement among cooperative members due to the mechanical problems encountered, and some members had elected not to work their plots this year. However, the villagers we spoke to felt that when the mechanical problems were resolved, these people who had dropped out would return to the cooperative. In general, the cooperatives appeared to be well-accepted by the villages, with a good growth potential if more perimeters were built and the pumps put into better working order.

Financial Situation of the Cooperatives

One of the purposes of the cooperative is to organize the village payment for the factors of production and the annual payment for the pumps. The cooperatives in Gouraye had a relatively good record in making their payments. At the beginning of 1981, the level of debt payment was approximately 62%*, only slightly below the average 66% for all four sectors. In 1982, five out of nine villages have made two pump payments and plan to make a third, at which time they should receive a new pump. However, the other four villages have fallen seriously behind in their payments and were not able to get SONADER to extend further credit this year. The Sector Chief at Gouraye felt that it was necessary to make it clear to the cooperatives that the agreed upon payments must be made. We believe that this was a correct policy decision. It is also our belief that the SONADER organization must resolve the mechanical problems being encountered by improving its servicing capacity and providing new pumps on schedule, in order to motivate the cooperatives to resolve their debt problems.

Benefits of the Project to the Cooperatives

The AFRICARE project has been of benefit to the cooperatives in a number of ways. First, despite the present credit difficulties, the cooperative members have learned from the extension agents and the project staff more about financial management and fiscal responsibility. Second, the presence of the project has generally *been* a factor in positively motivating the cooperative members. Third, and the biggest benefit of the project, the techniques of irrigated agriculture and the use of fertilizer have been learned and accepted by the cooperative members. Village members said that they wanted to continue to use fertilizer, and that they have seen the potential for irrigated agriculture. Not all of this new awareness can be attributed specifically to the AFRICARE project, but it

*SONADER, Rapport d'Activite, Direction de la Mise En Valeur et de la Production, Annees 1980-1981, Janvier, 1982

is our opinion that the work of the extension agents and the field visits of the AFRICARE expert have contributed positively to the awareness and knowledge of the cooperative members in the Gouraye sector. The villagers may be ready to move from the initial phase of extension service (phase d'initiation) into a period with fewer extension agents per village (phase d'assimilation), a normal sequence of events in the SONADER plan for small irrigated perimeters.

Training

One of the ways in which the AFRICARE project planned to strengthen the capability of SONADER to extend irrigated agricultural techniques was through training of the extension agents and other SONADER agents. The Sector Chief is responsible for the overseeing of the extension agents, while the duty of the expatriate technician is to "assist extension agents and the Sector Chief in gaining the skills necessary to act effectively in their positions." (Project Agreement, p. 3)

Extension Agents - The duties of the extension agents include (1) working with villagers on the technical questions of irrigation techniques, and agronomic practices, (2) teaching villagers about correct cooperative practices, and (3) serving as survey informants, filling in questionnaires given to them by various researchers. The extension agents felt that they had received the most help from the project on specific technical questions. They had been visited by the Sector Chief and the Africare technician, at which time the agents received advice and training in the field. They felt that their training was generally sufficient to answer the level of technical questions posed to them by villagers, but occasionally they had to ask questions of the expatriate advisor. They were glad that this help was available and felt that they had benefited from working with the project. They noted, nonetheless, a need for more training, for example, in pump mechanics and basic repair. There was little or no "formal" classroom training during the project, since the Africare technician felt that in-the-field training, responding to specific questions, would be more effective.

Sector Chief - The sector chief also felt that he had benefited by working with the Africare project. He mentioned that he had been able to get technical advice when needed. However, he suggested that in general, the sector had not encountered too many difficult agronomic problems. The biggest help of the project, in his opinion, was the administrative assistance provided by an expatriate technician, particularly in Nouakchott. When the sector chief was running the sector before the arrival of Africare, he

said it was difficult to do everything in Gouraye and try to resolve administrative problems in Nouakchott. However, SONADER has been making an effort to decentralize control, so there should be fewer problems that have to be resolved in Nouakchott.

Mechanics and Pump Technicians - The training of mechanics did not take place during this project. This was one of the items that was under the category of "other financing" in the original project design. The mechanics expressed a need and desire for more training. They also mentioned a lack of equipment with which to repair the pumps and the difficulty of obtaining spare parts.

The pump technicians in the villages received a minimum of training, essentially an explanation of where to put the gas, oil, and water, and what not to do. There was no formal training beyond this. The mechanics felt that more training should be required, but mentioned that many of the technicians could not read, limiting their capacity for intensive training. Another problem, mentioned by the villagers, was the instability of the technicians, who are hired by the cooperatives.

In our opinion, there needs to be the further training of the pump technicians, perhaps combined with higher wages from them to help resolve the instability problems. There also need to be better support from the SONADER operation reliable pumps, with more attention paid to the system for obtaining and stocking of spare parts, both in Nouakchott and Gouraye.

Food Security

One of the goals of irrigated agriculture in Mauritania is to increase the level of food security in the rural sector. We asked cooperative members how the perimeters had contributed to the security of the village. Many reported that the perimeters did add some element of security, but qualified their answer by mentioning the mechanical problems they had encountered with their pumps. Until these problems were resolved, they would not be able to rely too heavily on production from the perimeters. Cooperative members pointed out that they had not been able to completely fulfill village food needs with the available perimeters.

Extension agents informed us that the perimeters formed a relatively small portion of the agricultural acreage in most of the villages. Our estimate of the perimeter size as a percentage of total area cultivated in the village, shown in Table 3, generally confirm this observation, with an average of 8%.

These figures would indicate that there is more labor available for new perimeters. Returns to labor in the perimeters are sufficiently high to warrant a greater percentage of village labor devoted to irrigated crops. However, it appears in the Gouraye sector that villagers are far from willing to devote all of their time to irrigated fields when they still consider the pumps to be unreliable. Hence, there is interest in more perimeters, but approached with an attitude of caution.

Consumption and Marketing

The villages visited by the evaluation team reported that nearly all of the produce grown in the perimeters was consumed by the villagers themselves. Some vegetables and ears of corn had been sold on the market in Solibaby. Villagers felt that they could market more if they were able to produce a surplus. This subject should be investigated when more perimeters are constructed and as the road building projects in the Guidimaka region get underway. Using the few statistics available, we estimate the demand for cereals in the region at about 14,760 tons per year. This was calculated by using a RAMS survey estimate of 122 kilograms of cereals and 42 kilograms of vegetables consumed per capita annually in the Guidimaka area, multiplied by a population of 90,000. Production in the area is estimated as follows:

Table 4 - Cereals Production in the Guidimaka Region ---
1980-81 Season

Crop	Surface Cultivated (ha)	Yield (kg/h)	Production (ton)
Sorghum	19,200	600	11,160
Millet	1,800	400	720
Rice	70	2,000	150
Corn	1,680	320	537
Total - Cereals	22,750		12,567

Source:

- Rapport de La Mission d'Evaluation sur la situation Agro-Sylvo-Pastorale du Ministere du Developpement Rural, Decembre 1980

Imports of food into the region are estimated as follows:

Table 5 - Imports of Food - Guidimaka Region

	Selibaby (tons)	Ould Yenge (tons)	Total (tons)
Rice	1,280	640	1,920
Sorghum	450	150	600
Wheat	100	50	150
Dates	20	20	40
Milk	20	18	38
Butter	10	-	10
Total	1,880	878	2,758

Source:

- Elements d'Une Monographie de la Region du Guidimakha, p.40

It would appear that there are regional marketing opportunities for surplus perimeter production as a substitute for the 2,670 tons of cereals imported into the region and to help cover local food needs in years when total regional production falls below average. Since the country also imports large amounts of food, there should also be opportunities for marketing outside of the region, especially if transport costs are reduced, and food aid does not artificially lower the price of cereals in the market.

Since little of the cereals produced in the Gouraye perimeters has been marketed outside of the village, the economic impact of the project in terms of producing increased cash flows to the village appears to be limited. There is a substitution effect in the sense that cash that is available from other sources - remittances from immigrant workers in France or the sale of cattle - does not have to be spent to purchase foodstuffs from the outside to make up food deficits. In terms of individual cooperative members, increased production from the irrigated

perimeters can bring increased revenues, since any surplus can be sold to other people in the village. Corn and cowpeas appear to provide the best revenue, one of the reasons more of these crops are being grown than rice.

Land Tenure

In the village we visited, there were no land tenure problems evoked in the discussions with cooperative members. Plots in the village perimeters were available to all those who worked on the perimeter, with plots being chosen by lot. We were not able to fully ascertain what percentage of the plots were, in fact, farmed by non-landowning classes of people within the village. There were some reports that the people upon whose land the perimeters had been built had been able to obtain some of the better plots within the perimeter. Further investigation of the availability of plots to all members of the village may be required.

ADMINISTRATIVE ANALYSIS

Linkages between SONADER and Africare

In the agreement signed between SONADER and Africare on October 5, 1981, of the \$383,993 to be spent by Africare on the project, \$259,130 was to be spent by SONADER, \$30,364 by Africare/Dakar and \$94,499 by Africare/Washington. Hence, three systems have been set up to pay for project costs. First, expatriate salary and other international expenses are paid from an Africare account in Washington into the technician's checking account in the United States. Second, for certain line items such as air conditioners and rent, the Africare technician submits a request to the Dakar office, which approves the request after checking with Washington, and transfers money into a CFAF account in Dakar. Third, a system of reimbursement for SONADER expenses has been set up. The financial office of SONADER prepares a quarterly statement of expenses which, after approval by the project technician, is submitted to the Africare office in Dakar. Upon final approval, funds are directly transferred to a SONADER account in Nouakchott.

These arrangements appear to provide satisfactory control over the disbursement of funds in the project. Receipts and requests for reimbursement are verified by the project technician and also approved by the Washington office. The latest SONADER

report shows that 7,105,455 UM have been transferred to the SONADER account, which puts project finances approximately on schedule. (See Situation Detaillée du Financement Africare 1982) Africare only had detailed financial information available through the first quarter of 1982, but these records indicated expenditures well within the amounts budgeted. Africare's Washington office now projects that there will be \$83,521 left in the project account as of December 31, 1982.

Relations between SONADER and Africare have not always been easy. Administrative misunderstandings about vehicle support, local procurement, exonerations, and housing arrangements slowed the project down considerably during the six months of the project. The Africare technician first visited the site in August, 1981, at which time he was able to meet with the Sector Chief and extension agents for some training and the distribution of technical information sheets (fiches techniques) concerning various crops. However, it was not until January, 1982 that he was set up with housing arrangements in Gouraye. There was difficulty in obtaining a satisfactory vehicle from SONADER until February, 1982. A change of directors at SONADER also contributed to the slow start of the project.

Management control of the project technician was exercised by the Africare office in Dakar, and in a general way, by the Director of SONADER. Monthly reports were to be submitted to the Dakar office by the technician. However, there appeared to be little coordination between Africare and SONADER over management control of the project technician. Several officials at SONADER commented that there was a lack of control, and that the arrangements with Africare were somewhat unusual for SONADER, which normally works with donors who have offices in Nouakchott. One way of improving this coordination would have been to submit monthly activity reports directly to someone in SONADER, who would be closely monitoring the progress of the project. This suggestion was made by AFD several times during the project, but the question was never satisfactorily resolved. There appeared to be confusion throughout the project concerning the lines of authority between Africare and SONADER, and who was responsible for verifying and controlling the actual day-to-day work schedule and progress of the project. Clearly, the communication between Africare and SONADER needed to be improved. The present situation with the pumps, and the fact that funds were found for new pumps in the World Bank project account only very recently, would indicate that

SO.NA.DE.R
10.10.82

- ANNEXE - MEMOIRE N° 04/PPS-AFR/82

SITUATION DETAILLEE DU FINANCEMENT AFRICARE
(EN OUGUIYA)

N° DES RUBRIQUES	MONTANTS PREVUS AU PETF	MEMOIRES DE REMBOURSEMENTS					RUBRIQUES AU 01.10.82	
		01	02	02 bis	03	04		
A 1	900.000	138.000	138.000	78.000	147.000	246.000	291.000	
A 2	3.553.000	269.944	269.944	269.944	364.166	704.536	1.944.410	
A 3	520.650	86.775	86.775	-	-	-	433.875	
A 4	126.000	21.000	21.000	21.000	21.000	42.000	21.000	
A 5	378.000	45.000	45.000	45.000	63.000	126.000	99.000	
A 6	5.888.916	905.916	905.916	865.916	820.286	1.824.972	1.471.826	
S-TOTAL A	11.366.566	1.466.635	1.466.635	1.279.860	1.415.452	2.943.508	4.261.111	
B 1	5.400.000	-	-	-	-	-	p.m	
C 1	1.020.000	-	-	-	-	-	p.m	
TOTAL UM	17.786.566	1.466.635	ANNULE	1.279.860	1.415.452	2.943.508	10,681.111	
TOTAL \$ 1\$=45 UM	395.257	TOTAL DES MEMOIRES = 157.899 US \$						237.358

TOTAL VERSE PAR AFRICARE = 7.105.455 UM
PERIODE FINANCEE = JUIN 1981 - SEPTEMBRE 1982 = 15 MOIS.

(soit 473.697 UM mensuel pour l'ensemble du secteur PPS)

A regulariser pour l'elaboration du cout total reel :

- Rubrique A 3 : Fonctionnement autres materiels
- Rubrique B 1 : Personnel expatrie
- Rubrique C 1 : Equipement de la base.

La SONADER sollicite du Fonds AFRICARE une confirmation des montants details dans cette situation.

there was a lack of communication between the Gouraye sector and the central office.

These problems of communication and lines of authority have sometimes made it difficult for the Africare technician to fulfill all of the duties specified in the project agreement with AID. The biggest problem was with managing the "means of production at the disposal of the sector and anticipating the needs of the sector to assure its continued viability". If communication had been better, perhaps the mechanical difficulties in the sector could have been resolved more quickly.

The technician was also responsible for the oversight of repayment of credit by the cooperatives, which proved to be a problem in a number of villages. The technician was the most effective in providing technical advice to farmers, training extension agents and SONADER personnel, and evaluating the agricultural campaigns. The technician lacked the means to do research and technical analysis of soils, largely a problem of project design. This made it difficult to sufficiently "study the means by which parameters can be most efficiently operated".

Linkages with AID

One of the reasons that AID grants money to private voluntary organizations is to undertake relatively small projects with relatively little management input on the AID side. Yet, AID/Nouakchott might have provided somewhat more administrative assistance and continuity for this project. The project evaluation scheduled for the 9th month never took place, and there was a problem of managerial continuity at AID. Africare could have provided monthly reports to AID, which might have helped AID keep closer contact with the progress of the project. Also, Africare's quarterly reports have arrived late, with little financial data. The first quarter report (July-Sept. 1981) was not submitted until March 9, 1982, and the fourth and fifth quarter reports have not yet been received. For future projects, particularly for ones without resident backstopping in Nouakchott, it would appear prudent to provide a greater level of AID administrative management.

SONADER Expenditures

We mentioned in our introduction that the small irrigated perimeter project was envisioned for some fifty million UM. A summary of the project is presented in following

"Recapitulatif General". SONADER has not yet published an accounting of the money that has been spent by the Mauritanian government on the Africare project. An accountant estimated, however, that some 18 million UM will have been spent by Mauritania by the end of the year, in direct and indirect project support.

The expenditures by the government for the project will probably bear little resemblance to the figures presented in the "Recapitulatif", since the expenses listed under "Autre Financement" had to be picked up by G.J.R.M. or cut from the budget. Hence, much of the money destined for vehicles, a well-equipped workshop, and agricultural credit for spare parts were cut back, with the money going instead towards the operational costs of the project. SONADER managed to provide vehicles for the project by supplying vehicles that had been used by other projects. It did not purchase a ten-ton truck, but did make one available from Kaedi. One of the promised pirogues was not purchased. Despite these cutbacks, SONADER was generally able to deliver the fertilizer and fuel-oil necessary for the operation of the perimeters. SONADER also provided the personnel enumerated in the original project agreement.

One of the real problems for SONADER during the project was the supply of spare parts for the pumps. There appear to be a number of reasons for this. First, there was a lack of money in the budget for the purchase of spare parts. This contributed to the low level of parts in stock in the Gouraye sector. Second, the company which won the bid for pumps went bankrupt and therefore did not build 2 garages filled with spare parts that had been promised in the original bid. This created real procurement difficulties for the SONADER organization, with purchases sometimes made in emergency conditions. Third, the ordering of spare parts by the Gouraye sector was not done as early as it might have been, further complicating already difficult procurement problems. In any case, many of the spare parts ordered by the Sector Chief did not arrive, which has contributed strongly to the present difficulties of keeping the pumps in working condition. An under-equipped mechanic workshop also exacerbated the situation. It would seem imperative that measures be taken to correct these problems. The confidence of the farmers, and ultimately the success of the project is at stake.

SONADER
DAF/CAB
20.12.81

PETITS PERIMETRES DE GOURAYE

RECAPITULATIF GENERAL DU FINANCEMENT DU
 PROJET PPE-AFR
 - Sous reserves de modifications mineures -

RUBRIQUES	AFRICARE	AUTRE FINANCEMENT	RIM	TOTAUX
A - FONCTIONNEMENT	11.366.566	9.651.584	-	20.018.150
A1 LOCATIONS	900.000	-	-	900.000
A2 FONCTIONNEMENT MATERIEL ROULANT	3.553.000	5.580.110	-	9.113.110
A3 FONCTIONNEMENT AUTRES MATERIELS	520.650	1.034.550	-	1.555.200
A4 FOURNITURES DE BUREAU	126.000	-	-	126.000
A5 CAISSE D'AVANCE LOCALE	378.000	162.000	-	540.000
A6 PERSONNEL NATIONAL	5.888.916	2.874.924	-	8.763.840
B - ASSISTANCE TECHNIQUE ET CREDIT AGRICOLE	5.400.000	5.900.000	2.580.000	13.880.000
B1 INGENIEUR AGRONOME EXPATRIE	5.400.000	-	-	5.400.000
B2 CREDIT AGRICOLE	-	5.900.000	2.580.000	8.480.000
C - EQUIPEMENT	1.020.000	2.110.000	6.380.000	9.510.000
C1 EQUIPEMENT BASE	1.020.000	180.000	-	1.200.000
C2 EQUIPEMENT ATELIER	-	450.000	1.000.000	1.450.000
C3 EQUIPEMENT GARAGE	-	1.480.000	5.380.000	6.860.000
D - APPUI CONTROLE GESTION SIEGE	-	-	1.440.000	1.440.000
E - IMPREVUS DIVERS/HAUSSES DES PRIX	-	-	4.460.000	4.460.000
TOTAL OUGUIYA	17.786.566	17.661.584	14.860.000	50.308.150
TOTAUX US DOLLAR (1 \$ = 45 UM)	395.257	392.480	330.222	1.117.959

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- 20) _____ -- OMVS, IDP Project Paper