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FINAL EVALUATION
OF
JUBBA DEVELOPMENT
ANALYTICAL STUDIES PROJECT

(USAID Project 649-0134)

REPORT

August 1, 1989

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SUMMARY

Introduction

The Jubba Development Analytical Studies (JUDAS) Project was conceived in 1983 as AID's contribution to a master plan for optimum development in the Jubba River Valley. The key to that development will be the proposed Baardheere Dam, expected to be completed in 1995. Authorized as a grant, the JUDAS initial obligation of $ 5,250,000 was increased to $8,550,000 in 1985. Originally to be completed on December 31, 1986, the current PACD is September 30, 1991.

Expected outputs from JUDAS are:

1. A classification of the Valley's lands that are suited to irrigated agriculture;

2. Identification of environmental impacts of development, especially from the dam, and recommendation of mitigating measures;

3. Identification of sociological contraints and recommendations for a smooth transition to irrigated agriculture; and

4. Development of the Ministry as an effective planning institution.

Accordingly, USAID made technical assistance and institutional strengthening inputs. Technical assistance consisted of 3 components:

- A PASA with USBR for arable land classification;
- A small business "set-aside" direct contract with ARD for the environmental and socio-economic studies (JESS); and
- A Cooperative Agreement with NAS for advisory guidance to and review of ARD's work.

Institutional strengthening was to include personnel development by means of short courses and degree courses abroad, in-country development seminars and on-the-job training of counterparts. While USAID retained responsibility for the organization of courses abroad, counterpart training was to be provided by USBR and ARD. ARD's scope also included classroom instruction.

A mid-term evaluation of JUDAS was performed in April 1987. The following report is a "final" evaluation initiated in July-August 1988, and completed in May 1989 when ARD's final draft reports became available.

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Water and Land Resources Studies

The Bureau classified some 360,000 ha of arable lands in the Valley, including: 27,000 ha presently irrigated, 144,000 ha of lands capable of growing a wide range of irrigated crops and 189,000 ha of lands best suited for paddy rice grown in periodic rotation with non flooded crops.

Under irrigation these latter lands will require good water management and surface drainage because of the peculiar characteristics of their vertisolic soils. In accordance with the terms of the PASA, the Bureau's classification system took into consideration physical and economic factors, and the lands classified as arable are potentially capable of supporting an economic agricultural activity when irrigated with water from the Jubba River. In the implementation of its work, the Bureau encountered a number of problems. Some of these, such as logistical and administrative impediments, are common in developing country situations. Others, more serious, included:

- the sheer magnitude of the area to be surveyed, which dictated reductions in the density of the field sampling and soil testing in order to observe time and budget constraints;
- an imprecise definition of the scope of work, which led the Bureau team to carry out unnecessary project analyses with inadequate data;
- an unbalanced mix of disciplines in the composition of the resident team and a lack of direction and cohesion among its members; the team leader left Somalia before completion of the work and the final report was written by a short-term team member;
- the AID Mission's inability to provide technical oversight of the land classification effort.

The Bureau provided 142 pm of professional services in Somalia and expended the funds provided in its PASA ($ 2,172,140). Its report, issued in July 1987, has been criticized by various quarters, and USAID did not consider it an acceptable product. Basically, however, the Bureau's work constitutes a fair reconnaissance level classification survey of arable lands in the Valley, suitable for the purpose of master planning and potential project identification. The Bureau later removed from its report other data, such as project layouts and ranking analysis, and improved the presentation of the soils and land classification without additional field or laboratory work. The revised reconnaissance report is dated December 1988.

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Environmental and Socio-economic Analyses (JESS)

The purpose of this component was to provide the necessary information on social and environmental aspects to be incorporated into the Master Plan for the Jubba Valley. The Project Agreement was signed in September 1983 but the contract was not signed until September 1985. This meant that JESS began behind schedule in providing the information and recommendations that were to be taken into account in developing the Master Plan. Furthermore, the position of long-term advisor in the Planning Division was eliminated in the amended Project Paper when another donor (GTZ) took over the formulation of the Master Plan. As a result, the project had no direct involvement in planning and hence was in a weaker position to obtain adequate consideration of its conclusions and recommendations. A first draft of the Master Plan was produced in January 1988, with limited use of JESS data and conclusions.

ARD provided 240 person-months of professional services in Somalia at a cost of $3,584,713. JESS produced detailed analyses on riverine forests, vegetation, water quality, fisheries limnology, ornithology and long-term environmental monitoring. Reports have been produced and discussed with MPJVD on pre-construction concerns about the Baardheere dam and on environmental issues. Environmental base maps have been prepared. Surveys on malaria and bilharzia have been conducted. Information has been collected on demographic characteristics, land tenure, pastoralism and other economic activities, local institutions, health and nutrition, and special women's issues. A special paper was written on resettlement issues. The results of the cultural heritage surveys reveal valuable sites and materials which need to be salvaged from the reservoir area.

A major weakness in the design was lack of attention to data management. ARD did take steps to rectify this situation, providing 7.5 months of short-term expertise and hired a manager for the Resource Center. Nevertheless, computer analysis of the socio-economic baseline study was not completed until June 1988 which left little time for further analysis and report preparation in Somalia.

These difficulties, however, have not had a significant adverse effect on JESS performance. Some thirty reports were produced and distributed between July 1986 and August 1988. Overall the work has been of high quality. Good relationships were established between the team and MPJVD. A draft of the synthesis report was discussed with MPJVD and USAID prior to team departure. Final drafts of the various volumes became available from ARD between February 24 and May 22, 1989. Final reports were still to be issued as this evaluation was completed.

JESS data and recommendations have been considered useful by other consultants and donors. The environmental findings have been used

At the Project Officer's request BOSTID did circulate copies of the USBR Land and Water Resources Reconnaissance Report for review by a number of specialists (not members of the Advisory Panel). The reviewers' comments were collected by BOSTID in a timely manner and forwarded to USAID.

After each of the workshops, BOSTID circulated summary proceedings of the sessions, and a final report with a synthesis is still to be prepared.

The overall conclusion is that this mechanism has been less than useful to the advancement of JUDAS.

Institutional Development

Short courses abroad and in-country development seminars received very little attention from the Mission during project implementation. Most of the emphasis has been on degree courses abroad, and most of this activity took place in the latter part of project execution, mainly under the initiative of the last Project Officer. Several professionals from the Ministry are still in training abroad and five of them were expected to leave for the United States at the time of this evaluation.

The PACD was recently extended to September 30, 1991 to permit completion of this program. About $390,000 had been expended as of the middle of 1989 for training abroad and it is anticipated that a total of $700,000 will have been expended when the project ends. Although the cost of this kind of training is high, it seems to be a good investment toward building up the professional capability of the Ministry's staff.

Another useful training activity has been on-the-job training of counterpart personnal by the resident teams of USBR and ARD. The additional compensation given to the counterpart participants has been a good incentive to ensuring continuity in the employment of personnel trained on-the-job by the USBR. Several of them now occupy key positions in the Ministry and others have become good candidates for further training abroad. Although its results have been positive, the on-the-job training of counterparts could have been more successful if it had been coordinated and overseen by a senior individual within the Ministry.

Aside from the training of a few individuals as described above, the development of the MPJVD as a planning institution - - one of JUDAS Project objectives - -has left much to be desired. One of the reasons is that the Project Paper contained no institutional analysis and, as a result, the program for institutional development was defined in vague terms only. That program did include positioning within the Ministry an expatriate experienced

in river basin planning, assisted by short-term consultants. This input was deleted from the program and the funds committed to it were transferred to cover increases in the costs for technical assistance. This change was very detrimental to the success of the institutional development function of the JUDAS Project.

General

The relationship between USAID and the MPJVD in connection with JUDAS has been smooth and effective throughout. However, project planning on the part of USAID was deficient. The initial Project Paper, prepared hurriedly, could have been revised and improved later, when an amended PP was issued. Instead, USAID's main concerns seemed to be to obligate additional funds and transfer funds from institutional development to technical assistance to offset the gross errors made earlier in estimating project costs.

Insufficient attention was given by the Mission to the technical issues related to the TA program. This stemmed from the fact that the Mission did not have on its staff professionals with training in land resources, environmental sciences and socio-economics. This problem might have been overcome if a senior professional with related experience had been brought to Mogadishu under a PSC to exercise technical oversight of the program from beginning to end. Furthermore, REDSO/ESA services could have been utilized more to provide technical monitoring. The lack of continuity that results from frequent changes in Project Officer assignments (Mogadishu is a 2-year post) would also have been mitigated. Additionally, the grant to NAS would have been unnecessary, and the USBR work would have been better focused.

Fortunately, the contractor engaged for JESS (ARD) performed well. The good quality and comprehensiveness of the baseline data it collected reflect the level of professionalism of that small-business firm.

In spite of the various weaknesses mentioned above, land class maps are now available for the Valley, and valuable environmental and socio-economic data have been collected. These permit a planned development of the Valley.

The institutional development component of JUDAS was underrated by the Mission, both in the conceptualization and the implementation of the Project. This is an area which, to be carried out successfully, requires the active participation of skilled experts in human resources development and in organizational structuring of planning bodies. That expertise was lacking in the Mission, and the only expatriate advisor who could have made such a contribution was deleted from the program.

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Nevertheless, through the efforts of the last Project Officer and those of the contractors staff, substantive personnel development took place through degree courses abroad and on-the-job training, respectively.

Completion of the TA part of the Project, originally anticipated to be 3 years, was stretched to more than 4 years. This is not surprising for a project carried out in a remote and not easily accessible area. The overall cost of the Project, $8,550,000, seems high for a program that provided less than 400 person-months of technical assistance and some 23 person-years of off-shore training.

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Chapter I

GENERAL

Preface

The report which follows contains a "Final Evaluation" of the Jubba Valley Development Analytical Studies Project, a technical assistance project funded by the United States Agency for International Development in cooperation with the Government of Somalia Democratic Republic. The report was prepared by an evaluation team composed of the three following individuals:

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  Louis Berger International, Inc.
  Washington, DC 20006

- Carolyn Barnes, Social Scientist
  REDSO/ESA
  Nairobi, Kenya

- Edward McGowan, Natural Resource Specialist
  REDSO/ESA
  Nairobi, Kenya

The findings and conclusions contained in this Final Evaluation Report are based on field investigations conducted in Somalia during the period July 17 through August 16, 1988, and office work carried out subsequently. A Provisional Report on the evaluation was issued on August 17, 1989, based on the material available from the contractors as of that date. This Final Evaluation Report contains revisions that were made on the basis of more definitive material received subsequently.

The team members acknowledge the assistance of the Government of Somalia, USAID/Somalia, and Associates for Rural Development in carrying out this evaluation.

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Introduction

Background

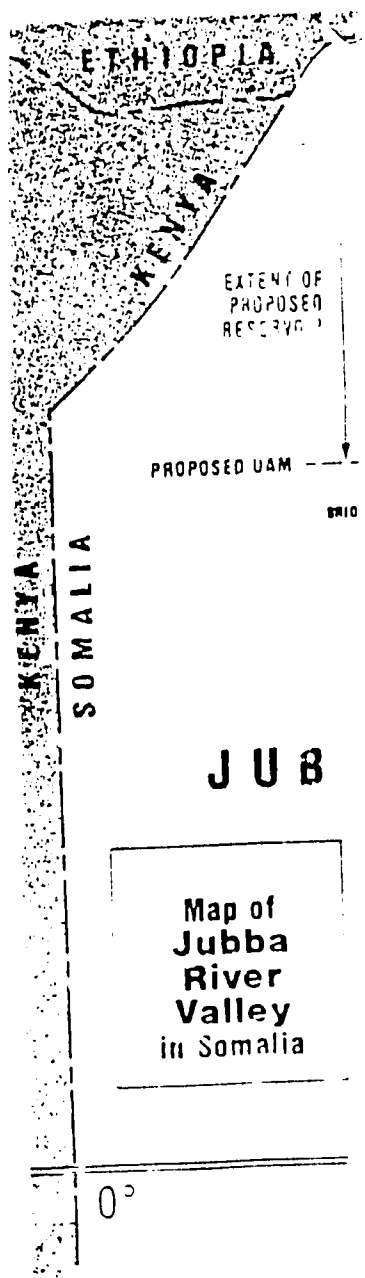
The Jubba River Valley is situated in the south-western part of Somalia. It is borded on the east by the Shebelli River Valley, on the west by the Kenya border, on the north by Ethiopia, and on the south by the Indian Ocean. The Valley has an area of 170,720 km^2 (27% of Somalia's total land area), with about 300 km of coastline (see Fig.1). In Somalia, the Jubba River flows southward for some 700 km, and discharges into the Indian Ocean just north of Kismayo. The Jubba is the only river in Somalia with a perennial flow, with an average annual discharge of about 6200 MCM (million cubic meters) at its entrance into Somalia. About 35% of the total drainage area of 220,000 km^2, or 76,000 km^2, are located within Somalia. Most of the remainder is located in Ethiopia (134,000 km^2, or 60%), where almost all the water supply originates. A small portion is in Kenya.

The key to the development of the natural resources of the Jubba Valley is construction of the Baardheere dam, on the Jubba River, at a site located some 35 km upstream from Baardheere town. The dam, with a height of 75 m, would create a reservoir with a total volume of 3400 MCM and an area of 425 km^2 at elevation 144. The regulated flow would be about 4000 MCM per year and would support a power installation of 140 MW (megawatts) with an annual generation of 425 million kwh. The current (1988) estimate of the cost of the dam, reservoir and power facilities is $398 million.

It is anticipated that some 150,000 ha could be irrigated on a continuous basis with water released from the reservoir. The Jubba Valley is one of the most important areas in Somalia for future agricultural activity. On its development depend the country's future food self-sufficiency and foreign currency earnings from agricultural exports.

The Valley's climate is arid with two rainy seasons. Mean annual rainfall ranges from 500 mm in the north hills to 300-400 mm in the alluvial plain. The Valley is covered by deciduous forest vegetation which becomes very sparse in the north. Along the river banks is the remnant of a gallery forest which reflects the presence of good alluvial soils.

The Government of the Somali Democratic Republic (SSDR) has committed itself to the construction of Baardheere Dam as the essential first step toward development of the Jubba Valley. This commitment is reflected by the fact that a Ministry has been entrusted with responsibility for planning, design and implementation of the dam, powerplant and irrigation facilities.



Map of Jubba River Valley in Somalia

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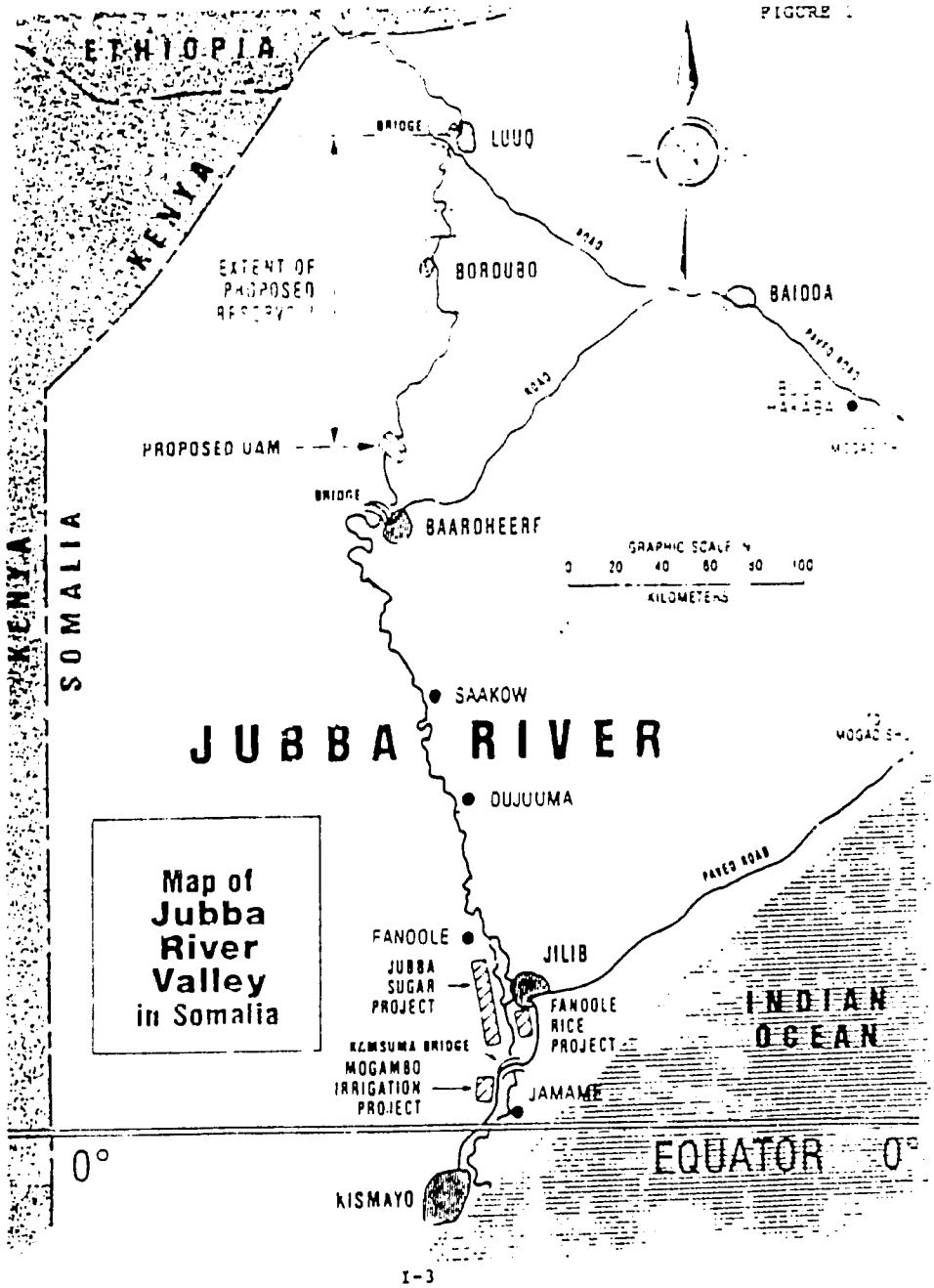

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Evaluation Methodology

The Evaluation Team's Scope of Work is reproduced as Annex B at the end of this report.

Sources of Information

To gather information for its evaluation work, the team:

- Reviewed USAID's project record files (see Annex D for a breakdown of the file contents); although many documents were missing, the files were found to be fairly well organized, and were helpful in recontructing the development of the Project's history and implementation.

- Interviewed persons involved in the Project who were in Somalia at one time or another during its execution, including officials from USAID, MPJVD, IBRD, ARD and AHT (See Annex C for a list of the individuals involved); with the exception of a few MPJVD officials, most of the persons interviewed had not been involved in the Project since its inception.

- Studied the reports and other documents produced by the Project. This included the USBR report, various reports, drafts and working papers prepared by ARD's staff and consultants, ARD files and the minutes of four workshops organized by NAS (see Annex E for a listing of most of these documents.

- Perused a number of other documents related to the Jubba development, that had been prepared by others. This included reports by AHT, HLC, Lahmeyer, Sir Murdoch McDonald and Partners, and others (See Annex F for a list of the most significant reports).

The Evaluation Process

Using the information collected from the various sources described above, the evaluation team endeavored to gauge the adequacy of the Project's outputs as compared with original expectations. Some consideration was given to the cost effectiveness of accomplishing the objectives, although the evaluation did not include an audit of implementation. The project's outputs were examined against their intended use in order to ascertain their adequacy. The relationship of inputs to outputs production was examined, in order to attempt to determine whether the inputs, as provided, had been sufficient to produce the expected outputs.

The original project design and its later revision were examined, in order to draw conclusions on their adequacy and the appropriateness of the implementation methodologies that were

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adopted (as intended, and as applied). Finally, an attempt was made by the team at determining the extent to which the Project's purpose and its goal have been achieved.

Whenever deficiencies were identified an attempt was made at tracing their main causes, so that lessons could be derived that might be useful in the conceptualization, design and implementation of similar future projects.

The three members of the Evaluation Team were selected by USAID/Mogadishu so that they would provide a coverage as complete as possible of the technical and scientific disciplines that were within the scope of the Jubba Development Analytical Studies Project. Accordingly, the team included a senior water resources development specialist (who also acted as Team Leader), a natural resources specialist and a social scientist.

They concentrated each on his (her) own area of expertise. Most of the Project's organizational, contractual and financial aspects were covered by the Team Leader, in addition to the resources development aspects.

In gathering data for the evaluation, abundant information was received from individuals involved in the project's design, implementation and supervision, and from some of its beneficiaries. Obviously, much of this information was subjective, and the team endeavored to mitigate this factor either through corroboration, or through critical examination of conflicting views. The written record was also helpful through implicit as well as explicit statements contained in numerous memoranda, letters, cables and telexes.

Not all participants could be interviewed by the Final Evaluation Team. In particular, the USBR resident staff left Somalia upon completion of its field work in April, 1987, and none of them were there to provide background information that could have been very useful. Also, the NAS participants were not present, but the Team Leader met with Dr. Michael McDow, Associate Director of NAS' Board on Science and Technology for International Development (BOSTID), upon his return to Washington, and discussed with him relevant aspects of the Evaluation.

Finally, although this report was intended to be a Final Evaluation report, all Project outputs are not yet available in final form. In particular, Associates in Rural Development's (ARD) final report (synthesis of the Jubba Environmental and Socio-economic Studies) had not been issued at the time of the finalization of this report (May 31, 1989). However, final drafts of all documents were available. The schedule chosen by the Project Officer for that part of the evaluation which was performed in Somalia did permit the evaluation team members to interface with the ARD resident staff members before their departure from Mogadishu in late

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August, 1988, at the completion of the field activities. This was a distinct advantage to the evaluation process.

Presentation of the Results

The remainder of this report presents the results of the final project evaluation carried out as described above.

Chapter II contains a restatement of the Project's concept, including its original goal and purpose, the intended inputs, and the projects's expected outputs. It is against these expectations as a backdrop that the actual accomplishments have been evaluated.

Chapters III, IV and V deal, in sequence, with the evaluation of each of the main technical study components of the Project.

Chapter VI contains an overall evaluation of the Project as it has been carried out, with reference to its principal purposes. It also contains an evaluation of the relationship between USAID and the MPJVD to the extent that it influenced the success of the Project. The project costs are also summarized in that chapter, as this important input has also influenced the success of the Project. Some conclusions are drawn, that could be useful to the implementation of similar projects to be carried out in the future.

Previous Evaluation

A "mid-term" evaluation of the Project was performed in March-April, 1987 by a 3-person team led by Mr. John Buursink, of TAMS. The results of that evaluation are contained in a report dated April, 1987.

Acknowledgements

All persons interviewed cooperated willingly with the evaluation team. All seemed to be sincere in their interest in the development of the Jubba Valley, and all seemed to be candid in their answers to the team's questions.

A special mention must be made of the invaluable help given to the team, and especially to its Team Leader, by Mr. Weston Fisher, Project Officer at USAID/Mogadishu, Somalia.

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Chapter II

PROJECT CONCEPT

1. Chronology

The Project Identification Document was approved by AID/Washington on September 12, 1983. The Project Paper (PP) was authorized on September 28, 1983. The Project Agreement between AID and the GDSR (#83-8) became effective on September 29, 1983. The Project Authorization provided a budget of $5,250,000 as an AID grant, and equivalent $2,630,000 as the GSDR contribution, for a total of $7,880,000. The project was to be carried out over a three-year period from January 1984 to December 1986.

The PP was revised in 1985 and the Project Agreement amended on June 30, 1985, to reflect an increase in the AID grant to $ 8,550,000. Ostensibly, this amendment did not change much of the original goal, purpose or outputs. Rather, it reflected mostly adjustments in the estimated cost of major inputs on the basis of actual price proposals received from technical assistance contractors.

2. Project Goal

The long term goal of the Jubba Valley Development Analytical Studies Project (the Project) is to contribute to the formulation of a master plan for optimum development of land and water resources in the Jubba River Valley. The Master Plan itself is to be developed by the Ministry of National Planning and Jubba Valley Development (MNPJVD or MPJVD) with technical assistance from a German advisory team of planners funded by the German Agency for Technical Cooperation (GTZ).

The goal is consistent with the government's intention to construct a large dam at Baardheere as the keystone of multiple purpose development in the Jubba Valley. Baardheere Dam, now under design, will permit the generation of hydroelectric power to serve principally the major centers Mogadishu and Kismayo, and the development of irrigated agriculture in the Jubba Valley.

Planning for the accomplishment of this objective received renewed momentum in January 1987 when a team of planners from Agrar und Hydrotechnik GmbH (AHT) was fielded in Mogadishu to assist MPJVD in the formulation of its Master Plan. AHT's schedule called for completion of the plan formulation process by the beginning of 1989.

Achievement of the Project's goal is tied to MPJVD's successful development of the Master Plan.

3. Project Purpose

The Project's purpose is two-fold:

1. Provide MPJVD information on present land use, on suitability of Jubba Valley lands for irrigated agriculture, and on social, economic and environmental conditions, as necessary for preparation of the Master Plan;

2. Strengthen MPJVD's long-term institutional capability to plan and monitor development of the Jubba Valley.

The definition of the Project's purpose, as expressed above, limited USAID's involvement in the plan formulation process to the provision of specific technical and scientific data, and to an institutional development function.

The original Project Agreement (ProAG) stipulated a completion date (PACD) of December 31, 1986. That date was subsequently (June 30, 1985) extended to September 30, 1988, and later (July 26, 1987) further extended to May 30, 1990. The most recent amendment extended the PACD to September 30, 1991. The successive extensions reflect delays experienced in the achievement of purposes 1. and 2. above.

4. Project Outputs

Identification of project outputs is useful for the final evaluation since they provide tangible indicators of purpose achievement. The team's attention was focused on these.

While the ProAg does not mention specific outputs, the Mission Director's approval memorandum of September 21, 1983, does list four outputs expected from the Jubba Development Analytical Studies Project as follows:

"1. Classification of soils and land classification for areas of highest agricultural potential in the Jubba and lower Shebelli valleys;

2. Identification of likely environmental impacts of each of the various options for development and recommendations for approaches to minimize adverse impacts;

3. Identification of potential sociological constraints and recommendations for effecting a smooth transition to irrigated agriculture with appropriate integration with rainfed farming and livestock grazing;

4. Developing the MPJVD as an effective coordinative body for master planning in the Valley."

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The study area was defined as "the entire area affected by plans for water control in the Jubba Valley." This encompasses the Jubba River Valley from Luuq Ganana (150 km from the Ethiopian border) downstream to the sea. The Lower Shebelli River Valley from Jowhar downstream to the swamps was included in the project area because interbasin transfer of water from the Jubba to the Shebelli was considered a feasible possibility. Also, the areas along any proposed link canal(s) would be part of the study area.

From the wording used in defining the expected project outputs it is evident that construction of Baardheere Dam had been adopted implicitly as a given. Feasibility studies might investigate the dam's economic justification, but it was expected that the conclusion of these studies would be positive. The main thrusts of the AID-supported project were to assist MPJVD in its development through institutional strengthening, and to identify potential sociological and environmental problems so that they could be prevented or minimized.

5. Project Budgets

The initial budget, contained in an amendment dated November 9, 1983, that followed shortly the execution of the ProAg, was established on the basis of the project cost as estimated in the September 85 Project Paper. Table 1 is taken from that document.

On June 30, 1985, Amendment No. 2 to the ProAg increased the budget by some 56% (63% for the U.S. dollar AID grant, and 42% for the So.Sh. contribution from the GSDR). Table 2 summarizes this revised budget, which has remained valid to date.

6. Project Inputs

1. Technical Assistance

USAID provided technical assistance to MPJVD through three different contractual arrangements as follows:

- a Participating Agency Service Agreement (PASA) with the Department of Interior, Bureau of Reclamation (USBR), for the performance of water and land resources studies.
- a direct AID contract with Associates in Rural Development (ARD) for performance of environmental and sociological studies.
- a Cooperative Agreement with the National Academy of Sciences (NAS) to provide advisory support to the environmental and sociological studies.

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TABLE 1

Project Financial Plan
(Sept. 25, 1983)

		AID Grant ($000)	GSDR Contrib. ($ Equiv.)	Total
I.	Land Use & Soils Classification			
	A. Reconnaissance Grade (25 PM)	500	200	700
	B. Feasibility Grade (100 PM)	1,500	300	1,800
	Sub-total I	2,000	500	2,500
II.	Environmental Effects			
	A. Issues Identification (15 PM)	300	100	400
	B. Analysis of Effects (40 PM)	700	400	1,100
	Sub-total II	1,000	500	1,500
III.	Socio-economic Considerations			
	A. Design Research (3 PM)	50	30	80
	B. Field Research (40 PM)	500	500	1,000
	C. Conclusions (6 PM)	100	-	100
	Sub-total III	650	530	1,180
IV.	MJVD Support			
	A. Long-term Advisor(s) (5 PY)	500	150	650
	B. Consultants (60 PM)	600	250	850
	C. Logistics	250	700	950
	D. Long and Short-term Training	250	-	250
	Sub-total IV	1,600	1,100	2,700
	Project Total	5,250	2,630	7,880

Table 2

Project Budget, revised as of 6-24-85

Items	Person-months (X pat.)	AID Grant ($000)	GSDR Contrib. (eqv. $1000)	Total
I. Technical Assistance		6,210	1,530	7,740
Soil classification and land-use survey	127			
Environmental & socio-economic analysis	210			
Scientific monitoring & expert resource base	46			
Procurement of project vehicles	—			
II. Institutional Development		370		370
Training/study tours in U.S./3rd country	3.8 p.y.*			
In-country participant training/seminars	9 p.m.*			
III. Project Support (equipment, vehicle and household support for resident staff + procurement of aerial photos/landsat & helicopter services for land classification survey)		1,515	1,100	2,615
IV. Project evaluations (interim + final)	8.5	100		100
V. Contingencies			272	
VI. Escalation during project life		355	826	1,453
		8,550	3,728	12,278

*National participants

Table 3 presents in tabular form an overview of the implementation of the major inputs, together with related activities. This chart is an updated/completed version of that contained in the "mid-term" evaluation report.

Table 3

Overview of Project Inputs Implementation

USAID-Funded Activities

	USAID/MJVD	BUREAU OF RECLAMATION	ASSOCIATES IN RURAL DEVELOPMENT	NATIONAL ACADEMY OF SCIENCES
1983	9/29: ProAg #83-8 effective 11/9: Amendment No. 1 AID's contrib. estab at $5,250,000			
1984		2/15: Contract effective Sept.: Submittal of Inception Rpt. Nov.: Arrival team leader in Mogadishu		
1985	6/30: ProAg Amendment No. 2 Increased to $8,550,000 and from So. Sh. 40.5M to So. Sh. 146M. Extends PACD to 9-30-88. Adds Counterpart sociologist	Apr.: Arrival team in Mogadishu 7/17: Amendment No. 1	9/13: Contract effective 9/19: Amendment No. 1 Nov.: Arrival team in Mogadishu	8/7: Contract effective
1986	5/13: Amendment No. 3 12/31: Original PACD	Feb.: Interim Rep. Mar.: Ahn Evaln. 10/23: Amendment No. 2	Apr: Phase I completed Start Phase II	Feb.: Wkshp. I, Somalia Apr.: Wkshp. II, USA Spet.: Wkshp. III, Kenya
1987	Apr.: Mid-term evaluation 7/26: Amendment No. 4 (Extends PACD from 9/20/88 to 5/30/90) to permit completion of LT training 7/31: PACD	4/7: Draft final report 4/15: Departure team July: Submittal of Draft Final Report		May: Wkshp IV, USA
1988	July-Aug.: "Final Evaln." 9/30: First revised PACD 9/30: PACD (original)	Dec.: Revised Reconnaissance Report	March: Completion of Phase II Apr.: Start Phase III End-Aug: Departure of Resident Team	6/30: Submittal of draft "Final Report"
1989	4/30: Revised PACD		June: Presentation of final results in Mogadishu	
1991	9/30: Latest Revised PACD			

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As of the date of this report, the USBR report has been submitted in its final form; of ARD's Phase III work, the TEBS and SEBS reports were available in near-final form and the Executive Report was available in "final" draft form; and NAS's report of the Jubba Advisory Panel still needs to be prepared and submitted to AID.

A summary of the U.S. dollar funds expended for project activities through July 24, 1989, is provided on Table 4.

Table 4

Project Expenditure Status as of 7.24.89

No.	Description	Obligated	Earmarked	Committed	Expended	See Note
1.	Technical Assistance/Operon. Support					
	BUREC			2,172,140	2,080,337	(1)
	ARD			3,584,713	3,548,741	(2)
	NAS			375,000	375,000	(3)
	Miscellaneous			32,564	611	
	Video/Film Docus					
	Total for TA/Operational Support	6,251,458	6,182,544	6,164,417	6,106,908	(4)
2.	Institutional Development	700,000	600,609	600,609	389,171	310,829
3.	Project Support*	563,000	562,173	562,173	562,173	827
4.	Field Support Unit**	900,000	900,000	814,413	606,214	293,786
5.	Evaluation	87,000	135,542	106,903	100,308	35,234
	Total Project	8,550,000	8,380,868	8,248,515	7,764,774	785,226

* It is not clear whether this includes aerial photos acquisition.

** Field Support Unit cost had originally been intended to be paid from GSDR funds.

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(1) As per R. Ives, USBR, Washington, DC
(2) as per P. Dulin, ARD, Burlington, VT
(3) as per Dr. M. Dow, BOSTID, Washington, DC
(4) as per W. A. Fisher, USAID/Somalia, by telex of 6-1-89. The breakdown does not quite match this total. Complete reconciliation could not be effected.

CHAPTER III

EVALUATION OF THE IMPLEMENTATION OF THE SOILS CLASSIFICATION AND LAND USE SURVEY

1. Introduction

This component of the Jubba Development Analytical Studies Project, carried out by the USBR under a PASA agreement with USAID, has been criticized by numerous individuals and agencies, various reasons being cited as a basis for criticism. Its output, a July 1987 report titled "Reconnaissance Report, Jubba Valley, Analytical Studies, Land and Water Resources" was considered by USAID to be a draft. Accordingly, the Final Evaluation Team paid special attention to this part of the work, in order to determine whether the USBR met its commitment under the PASA, and whether the Project Agreement between USAID and GSDR has been fulfilled.

This component is referred to in various documents under different titles that reflect various emphases, and perhaps diverse interpretations about what the studies should consist of. For example, one finds:

Project Paper (9.25.83):

Land Use and Soils Classification,
Soils Study/Land Classification,
Water and Land Resources Study (reconnaissance grade), and
Irrigation Suitability Land Classification (feasibility level);

Project Agreement (9.29.83):

Soil and Land Use Classification, and
Land Use and Soils Classification;

Terms of Reference for USBR work (10.20.83):

Reconnaissance Land Classification and Drainage Investigations for Irrigation Suitability;

PASA with USBR (2.1.84):

Reconnaissance Water and Land Resources Studies; and
Irrigation Suitability Land Classification;

Amended Project Paper (6.2.85):

Classification of Soils/Survey of Land use,
Soils and Land Classification Survey,
Irrigation Suitability Land Classification

2. Scope of Work and Methodology

A review of the content of the 1983 Project Paper shows that it had initially been envisioned that Technical Assistance in the land resources area would consist of: first a reconnaissance-grade study, and then a feasibility-grade study of the water and land resources available in the Jubba Valley. The studies would include irrigation suitability land classifications at the reconnaissance and at the feasibility levels, respectively. The two studies were to be the same in scope, and differ "only in intensity and detail of observations and explorations, and in scale of mapping". Specifically:

	Reconn.	Feas.
boring density:	1 site/km^2	1 site/0.5km^2
mapping scale:	1:50,000	1:10,000
estimated manpower:	25 pm	100 pm
estimated AID grant:	$500,000	$1,500,000

This scope of work was adapted from a document prepared by the World Bank, intended by the Bank to be used for planning and design of the Farahane and Shalambood areas, covering 10,000 hectares in the Lower Shebelli Valley.

Final terms of reference for the land classification work were to be formulated in October 1983 by a joint SCS/USBR team.

The original text of the PP provided that topographic maps at scales of 1:50,000 and 1:10,000 were to be provided by GSDR, but in the final text this section was stricken, and the project budget has no allowance for topographic surveys, neither in the US $ nor in the SoSh currencies.

The ultimate outcome of the studies, an "irrigation suitability land classification", was to be completed by February 1987, for use by MPJVD in its planning process. The cost of this work was included in the budget total estimate of U.S.$ 5,250.000

The Project Agreement between USAID and the GSDR, executed only four days after the PP, contains only a brief description of this project component, uses the designations "soil and land use classification" and "irrigation suitability", and states specifically that aerial surveys were to be included. The financial plan appended to the ProAg is the same budget estimate as that contained in the PP (see Table 2), and lists separately the reconnaissance grade and feasibility grade classifications.

The SCS/USBR "Pre-reconnaissance soil survey/land classification team" came to Somalia as planned, in October 1983. It included one senior soil scientist from the SCS (Dr. Otto W. Baumer), and a soil scientist and a hydraulic engineer from the USBR.

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The team determined that there were some 267,000 hectares of potentially arable lands in the Jubba Valley. It is implicit in the report that the team realized the impossibility of implementing the work outlined in the PP and ProAg within the budget provided. It proceeded to recommend a 2-year reconnaissance land classification study, aimed at delineating arable areas, using existing 1:100,000 topographic maps. The US currency component of the cost of this work, to be carried out under a PASA with either the SCS or the USBR, was estimated to be US $ 925,000, not including the purchase of equipment for transportation, laboratories and camping.

The pre-reconnaissance team report clearly distinguished between "arable land" and "irrigable land" as defined by the USBR in its land classification manuals. This distinction is important, because it seems to have been a source of confusion that resulted in the USBR team performing work beyond its scope, and in much of the criticism levelled at it.

The USBR methodology for land classification was developed over the years of the Bureau's activity in the reclamation of the Western United States. This methodology has since been applied in developing countries with or without adaptation, and some of these applications have been criticized for not taking into account conditions particular to developing countries. One finds such critisms among the comments made by several reviewers of the Bureau's 1987 Reconnaissance Report on the Jubba Valley.

According to the Bureau's definitions, "irrigable land" is that portion of the "arable land" which is planned to be served under a <u>specific</u> water supply plan. Arable land is that which could be economically farmed under more <u>general</u> assumptions regarding irrigation service. Determination of the former (irrigable land) requires detailed layouts and cost estimates of the planned irrigation facilities. Delineation of the latter (arable land) is made on the basis of generalized parameters used to estimate a minimum cost of irrigation water supply (O, M & R).

Cognizant of these distinctions and of the time and money limitations of JuDAS, the pre-reconnaissance team deliberately chose to limit the scope of work of this component to delineating, classifying and mapping the <u>arable lands</u> located in the Jubba Valley. This is evidenced from two pages taken from their proposed outline of the Reconnaissance Report, attached herewith as Annex H.

It is not apparent from the record when and how USAID decided that the US Bureau of Reclamation would be charged with the land classification work, except that the pre-reconnaissance team report recommends that the work would best be done by either the SCS or the USBR. In any event, on February 1, 1984, a PASA between USAID

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and USBR was executed, providing $ 2,172,140 for "Reconnaissance Water and Land Resources Studies". The amount obligated included $1,607,405 for the USBR and $564,735 to be retained by AID for direct disbursement. The size of the resident team had been increased from 3 to 5 persons and the purchase of a substantial amount of equipment was included, thus accounting for the increase from the team's estimate $ 925,000 to $ 1,607,405. It is not clear from the record on what basis AID estimated that $564,735 should be obligated in addition to the Bureau's estimate, and this seems to be an unusually large contingency reserve.

As it turned out, part of that reserve ($400,000) was added by PIO/T amendment of 10.23.86 to the Bureau's amount, to account for increased manpower utilization (142mm against 124.5mm). The Bureau's budget was thus increased to $ 2,007,405. It was subsequently agreed that $60,000 of the amount remaining with AID would be paid to the Bureau at the conclusion of its work.

The PASA, titled "Reconnaissance Water and Land Resource Studies" reused in its scope of work some of the narrative for a "reconnaissance "irrigation suitability land classification " that had been part of the 1983 Project Paper. Thus, even though the land classification survey had been realigned by the pre-reconnaissance team to consist merely in delineation, classification and mapping of arable lands, and even though the Summary on the first page of the PASA stated specifically that "...BUREC will undertake an investigation of arable lands...", the PASA scope unfortunately used the term "irrigable lands" and spoke of "land irrigability."

3. Implementation

Implementation of the Bureau's contract seems to have started on the right track. Available maps at 1:100,000 were enlarged to 1:30,000, field sampling and testing was carried out, and arable lands were mapped using a variety of criteria including economic. This work is documented in Chapters I through III of the July 1987 report, and in Appendix I. That work, generally speaking, was carried out in accordance with usual Bureau practice and meets the general requirements of a land arability study. A number of improvements needed to be made to the report were pointed out by several reviewers of the studies.

At some point in the studies (the record does not document when), the USBR team began an "evaluation of potentially irrigable areas", as reported in Chapter V of the 1987 report and in Appendix III. It is not clear when or how this happened: it could be that someone reinterpreted the words "irrigation sustainability land classification" used in the PASA Scope of Work, as requiring the study of "specific plans for water supply", following the Bureau's definition of "irrigable lands." Paragraph 5.1 on p. 85 of the Report states that "one objective of the study, as requested by

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USAID-Mogadishu, was to list priorities for future investigations of potentially irrigable areas. Therefore, engineering and economic evaluations were made of possible irrigation projects to serve potentially irrigable areas."

Bureau officials subsequently stated (telex of 2.3.88) that "the Burec planning engineer's presentation of potential project plans was largely an outgrowth of his efforts to generate OM&R estimates..."

In any event, the Bureau team proceeded to carry out this work, not required within the scope of an arable lands classification study. Available basic data used in this work (maps, agronomic and economic data, etc.) were inadequate, and therefore resulted in highly questionable conclusions which did not escape the justified criticism of many interested persons. Additionally, substantial manpower was used in this futile effort, instead of the classification work proper.

4. Composition of the USBR Team

The pre-reconnaissance report had recommended that a 3-person team be assigned to Somalia for 2 years to perform the land arability study. Presumably, this team would have included:

2 soil scientists, and
1 drainage engineer.

The Bureau then negotiated-- and obtained, as evidenced by the PASA -- an increase to 5 persons for 2 years each, as follows:

1 Planning Engineer (Team Leader)
1 Land Classifier
1 Drainage Engineer
1 Economist
1 Soil Scientist

In addition, some 4.5 person months were to be contributed by senior staff, probably for criteria development and review.

The planning engineer being also the team leader, it appears that the time allocated to the engineering function was to be de-emphasized as compared with the disciplines provided for the land classification (soils, drainage, economics). It could be expected that such a team would be well suited to meet the requirements of land arability studies.

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The team actually fielded by the Bureau was quite different in composition, as shown below:

1 Team Leader (geologist)	28 months
1 Planning Engineer	26 months
1 Economist	24 months
1 Soil Scientist	24 months

While the individuals assigned to these positions were long-term USBR employees with some overseas experience, it is evident that the discipline mix was quite different from that anticipated earlier for a land classification effort. The team leader's own area of expertise (geology) was of marginal application to the work (agronomic in nature) and, partly as a result of that fact, he involved himself more in administrative and other non-technical matters than in providing guidance and direction to the land classification work.

To bridge the gap, a number of temporary duty staff were assigned to the project as follows:

2 Land classifiers, for a total of	22 p.m.
2 Drainage engineers, for a total of	6 p.m.
1 Soil scientist	10 p.m.
Data processor	2 p.m.

5. Problem Areas

In the previous sections, two main problem areas have been identified and traced back into the project's history. They are reviewed in the following paragraphs together with additional issues that impacted implementation of the USBR work.

1. Scope of work

While the objective should have been a reconnaissance level classification of the Jubba Valley arable lands, the Land and Water Resources Studies tried to achieve a delineation and classification of irrigable lands. As a result, what was probably a substantial number of man-months were expended unnecessarily in the preparation of project layouts, cost estimates and economic comparisons. The methodology followed in that exercise was not consistent with the level of available data, and the results of the "evaluation of potential irrigable area" (Chapter V of the July 1987 report) are very questionable and of little value.

In the process, precious technical and logistic resources were diverted from the land arability study, with the result that the density of auger borings was less than originally specified

(1 every 4 km^2 vs. 1 every km^2) and the number of laboratory tests were reduced (see especially Dr. Otto W. Baumer's comments on the soils section of the Report, Annex I).

2. Composition of the Resident Team

It has already been pointed out that the discipline mix of the 4-person resident team assigned to Somalia by the USBR was deficient. The reduction from 5 to 4 and the change of disciplines may have resulted from the lack of availability for overseas assignment of Bureau personnel qualified in the required areas of specialty. That the Bureau must have had difficulty staffing the Project may explain the long time (9 months) that elapsed between the date of execution of the PASA (February 15, 1984) and the arrival of the Team Leader in Somalia (November 4, 1984). The whole team was not mobilized completely until April 22, 1985).

The soils and land classification work required that several specialists be sent to Somalia on TDY for rather long periods, up to 10 or 11 months in one or two cases. In addition to the individual hardship of such long TDY assignments, they probably affected the quality of the overall work, and certainly its quantity, as compared to work performed by resident personnel in family status. At the same time, the overall project cost was increased, as evidenced by the successive budget revisions.

3. Personality Conflicts

The written record reveals the existence of a tension between resident USBR staff and USAID personnel. Clearly, an adversary relationship developed between the team leader and the Project Officer. This is exemplified by the fact that the Bureau team (and later also the ARD team) was required to communicate by cable with its Denver or Washington headquarters only through the USAID mission. This procedure, obviously undesirable from a management viewpoint, undoubtedly contributed to the aggravation of an atmosphere of mistrust.

Other facts probably contributed to the lack of cooperation between individuals. For example, the Team Leader did not move to his permanent quarters until 5 1/2 months after his arrival in Somalia. Although this is not rare in developing country situations, it was bound to affect his morale and humor. The fact is that the Bureau team lacked direction and cohesion.

4. Local Constraints

The performance of the Bureau team, engaged in a large field operation in a remote area, depended on the effectiveness of a large number of Somalian support and counterpart personnel.

It is common for such support systems to break down occasionally or fall short of expectations in countries where local resources are stretched thin as in Somalia. Plans, schedules and budgets generally do not make sufficient allowances for this, and this Project was no exception. Because of budget limitations, some of the work had to be scaled down if the perceived scope of work was to be covered. The density of auger borings, the number of tests, etc. were decreased.

Field operations depended on the acquisition of fuel which could not be purchased without going through a complex administrative and accounting procedure. The record shows that this demanded much of the Team Leader's time and energy through the first year of project activity until the procedure was streamlined by opening local currency project accounts.

It is common in developing countries that, as they acquire experience, assigned counterpart personnel move from one position to another, from one ministry to another, or even from the government's service to the private sector. This happened with this project, and it affected its performance. For example, one laboratory assistant had been laboriously trained to assist in the operation of the soils laboratory. After one year, as he had become proficient and was depended upon, he requested--and obtained--a transfer. As a result, the testing work fell behind and, as shown by the record, much of it was never done.

5. Home Office Support

It seems that implementation of the USBR work would have benefited substantially from a greater amount of technical guidance and advice from the Bureau's headquarters both in Denver and in Washington.

Staffing of open positions was done by the Denver office in an adequate manner. For example, the need for temporary land classifiers, drainage specialists and others, when recognized, was filled as quickly as possible. However, technical direction, oversight and review seem to have been lacking, particularly in the second half of project implementation. At the beginning of the work, a senior team did come to Somalia to establish classification criteria -- which was very effective. However, later the resident team seems to have been left on its own. It is likely that the excursus into project layouts and irrigability studies would have been avoided, had senior Bureau staff provided their usual review function. This problem was compounded near the end of the team's work in Somalia when the Team Leader left the country before the other team members: the rest of the team were given the task of writing the draft Land and Water Resources Reconnaissance

Report. The quality of the report, including coherence and completeness of the test data, would have probably been improved considerably if more senior staff support had been provided.

The Mogadishu AID mission did not have on its staff technical personnel with background in land classification for irrigated agriculture. It had turned to a sister government agency with recognized expertise in that field to perform the work in accordance with its own methodology and standards. USAID's expectancies were frustrated by the Bureau's less-than-usual professional care for its product.

6. Project Cost

It seems that, after the original PP and the ProAg established a budget of $ 2 million for the land classification studies, the USAID Mission was reluctant to increase it. Rather, the scope of the program was degraded from feasibility to reconnaissance level during the visit of the pre-reconnaissance team. The budget was increased by a modest amount to $2,172,140 after the USBR provided its proposal for the PASA. This adjustment took place in 1985. Since then, the Mission steadfastly resisted requests from the Bureau for additional budget, even to bring the report's quality up to standard.

6. Evaluation of the Program

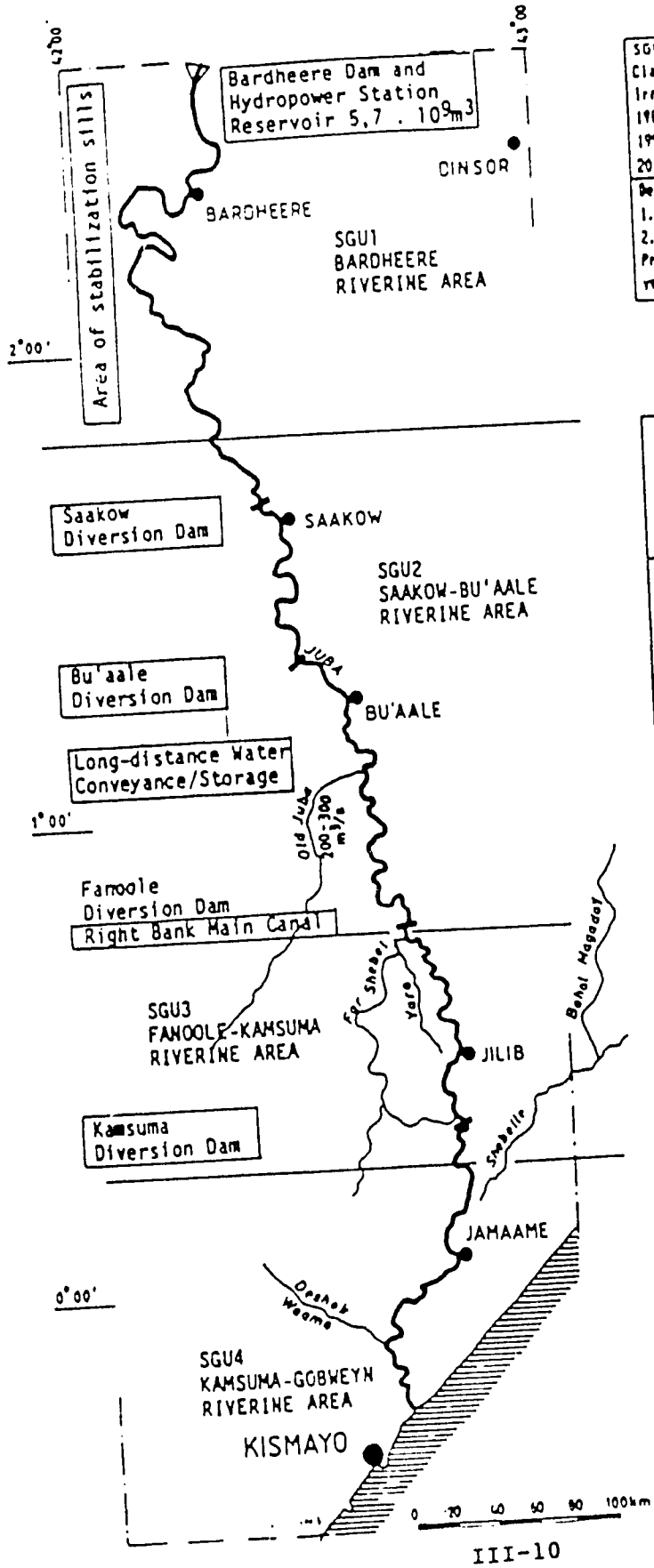
1. The Output

It is the evaluation team's judgment that the Bureau of Reclamation did perform the expected arable land classification in accordance with acceptable professional standards. Presentation of the results in the Reconnaissance Report left somewhat more to be desired and needed to be corrected. Despite contrary views expressed by officials of MPJVD, the evaluation team's judgment is that the material contained in Chapter V of the Report and in most of Appendix III is extraneous to the scope of the work, its validity is very doubtful and it probably will have no usefulness. As explained above, this is because feasibility-level procedures were carried out with basic data suitable only for reconnaissance purposes.

The AHT team, working with MPJVD on the formulation of a master plan for the Jubba Valley has used the arable land classification (see Figure 2, reproduced from Volume II of their June 1988 Master Plan Report), and will be generating specific project studies for prioritization that will have the advantage of being based on more detailed data and analyses.

FIGURE 2

Overview of Water Development Alternatives



SGU 1
Class 1,2 7,375 ha; R2 87,937 ha
Irrigation Development:
1988 - 2,500 ha
1995 - 6,000 ha 2005 - 7,500 ha
2015 - 7,500 ha 2015+- 10,000 ha

Development Alternatives:
1. Small-scale pumping (actual)
2. Medium-scale pumping (20 pump.s)
Protection against the 5 to 10 years floods: local small bunds

SGU 2
Class 1,2 92,694 ha;R1,2 36,928 ha
Irrigation Development:
1988 - 1,600 ha
1995 - 5,000 ha 2005 - 10,000 ha
2015 - 25,000 ha 2015+ -25,000 ha

Development Alternatives:
Deshek conversion
(controlled flooding) and:
1. Small-scale pumping
2. Medium-scale pumping
3. Gravity Diversion (Saakow, Bu'aale Diversion Dams)
Protection against 10 year floods: Long- distance Water Conveyance to Afmadow / storage.

SGU 3
Class 1,2 40,988 ha;R1,2 1,722 ha
Irrigation Development:
1988 - 8,000 ha
1995 - 10,000 ha 2005 - 13,000 ha
2015 - 20,000 ha 2015+- 40,000 ha

Development Alternatives:
1. Right Bank Canal and pumping
2. Right Bank Canal without pumping
Protection against 20 year floods: Bunds. Headworks for Far Shabeele and Yara. Hoobay Flood Protection.

SGU 4
Class 1,2 28,858 ha;R1,2 18,659 ha
Irrigation Development:
1988 - 5,000 ha
1995 - 6,000 ha 2005 - 12,000 ha
2015 - 12,000 ha 2015+- 37,500 ha

Development Alternatives:
1. Small and medium scale pumping
2. Gravity Diversion (Kamsuma Diversion Dam)
Protection against the 10 to 20 years floods: bunds, river training

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Therefore, it was proposed in the provisional version of this Evaluation Report that Chapter V and other material related to "potential irrigable areas" be eliminated from the Reconnaissance Report and its appendices. It was recommended that the USBR be requested to revise its report in accordance with the following guidelines:

1. Limit the report's scope to that of a "Reconnaissance classification of arable lands in the Jubba Valley". The chapter on Lower Shebelli lands would be retained since it disposes adequately of the question of transbasin diversion -- an issue that was included in the original scope.

2. Improve the report's presentation of the soil properties analysis data, following related comments made by a number of reviewers, in particular some of those contained in Dr. Otto Baumer's letter of October 30, 1987 (Annex I). These improvements to the report should best and most efficiently be made by a senior soil scientist from the Bureau's staff.

3. Print and bind the report in a format appropriate to last as a basic reference in future planning studies.

The above recommendations required no new field data, laboratory analyses or additional studies. If carried out by experienced staff members of the Bureau of Reclamation, their implementation should not be costly.

The recommendations were followed, and in December 1988 the USBR revised its earlier report. The revised report was issued at the end of February 1989.

As it now stands, the report adequately

- documents the reconnaissance-level land classification studies that were performed;
- identifies and locates some 333,000 hectares of lands potentially irrigable in the Jubba Valley (arable lands, in USBR parlance);
- distinguishes between four main classes, depending on the agricultural potential and the economic attractiveness of irrigation; and
- discusses main water management issues.

As such, the report serves the intended purpose and will be useful to locate lands that could potentially be irrigated economically from the Jubba River. Such areas should be subjected to feasibility-level studies before development is decided upon. Although the report is generally consistent with the original intent of the PASA, and is now in a form which can be accepted by AID, it falls short of what could have been expected for the funds that were expended.

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2. Fulfillment of USAID's Commitment

As stated in Chapter II, one of the original purposes of the Project was to provide to the MPJVD a feasibility-grade classification of irrigable lands in the Jubba Valley. Instead, a reconnaissance-level classification of arable lands has been performed, and topographic mapping at a 1:10,000 scale was cancelled. Thus, the original purpose was not accomplished.

It is not apparent from the record whether the GSDR was informed by USAID of this change in output level when it was adopted about October 1985, and whether AID obtained GSDR's agreement. This is crucial to determining whether USAID's commitment has been fulfilled. It was reported to the evaluation team by MPJVD officials that GSDR was aware of the change when it was made, but was still expecting a feasibility-level study as a second step. This matter could not be confirmed by the evaluation team, as the USAID persons involved in the decision-making process in 1985 are no longer present at the Mission.

3. Achievement of the Project Goal

The Project was planned so that land classification maps would become available to MPJVD by February 1987. This would have permitted Master Plan studies to have the full benefit of the land classification studies. The Bureau (draft) report became available in July 1987. A"slippage" of five months is probably within acceptable limits, especially since AHT's activities related to the preparation of the Master Plan did not start until January 1987.

Therefore, this part of AID's goal was accomplished. However, the extent to which the land classification data was used by AHT fell short of the expectations. While AHT did cite the arable land class areas as determined by USBR, their Master Plan for development to year 2005 includes no substantive irrigation projects other than rehabilitation/extension of existing irrigation facilities and some small scale and deshek irrigation. At the end of the period only, river diversion facilities for new irrigation are to be studied and constructed. Thus, the land classification data collected under AID's sponsorship was not used for the Master Plan development -- not because it was inadequate or late, but because of AHT's view that the development of large areas of new irrigated lands should be deferred until after 2005.

In a recent review of its draft report, the Bureau of Reclamation was criticized (by the A.H.T. Planning Team Leader) for having "ignored the areas under 1000 ha (the small-scale irrigation development), the area where presently all the

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action is and should be". This emphasis reflects AHT's preference for small scale development, in contrast with larger sized irrigation projects. The Bureau's scope of work did not require that particular attention be given to 'small scale irrigation". Their land arability survey, made at reconnaissance level, delineated broadly those areas which, under favorable assumptions, would be suitable to irrigated agriculture. Determination of the type of irrigated agricultural development best adapted to prevailing physical, social and economic conditions is a later step in the planning process. Such determination will require more detailed land classification surveys.

Another criticism, also from AHT, is that the Bureau report "can do more harm than good by... raising expectations far beyond realistic levels on the size of the area that can be irrigated in the Jubba Valley (around 175,000 ha versus (as AHT estimates) perhaps 75,000 ha by 2015)..." It seems to this Evaluation Team that the Bureau of Reclamation fulfilled its mission by identifying those areas that are, generally speaking, "suitable for irrigation". The best of these lands (Classes 1 and 2) add up to about 170,000 hectares and another 190,000 hectares were classified as best suited for paddy rice production in periodic rotation with non-flooded crops, and requiring good water management and surface drainage for optimum production " (Classes R1 and R2).

Whether Somalia should or could develop 75,000 ha (or more, or less) by the year 2015 is a matter for planners to investigate. It is also theirs to determine where such 75,000 ha should be located, based on the areas and classes identified by USBR.

4. <u>Appropriateness of the Design of this Project Element</u>

It is now obvious that the original goal was too ambitious, and premature.

The preparers of the Project Paper must have known that a very large area could potentially be irrigated with a regulated flow of 4000 MCM from the Jubba River Baardheere Dam. They should have known that semi-detailed land classification surveys for feasibility studies of such an area would take much more than two years and two million dollars.

Further, it was unnecessary to call for preparation of feasibility-grade irrigability and class maps, made at 1:10,000 scale, before master plan studies had selected potential irrigation areas which should be studied at the feasibility level.

The pre-reconnaissance team had corrected the situation, but unfortunately the initial momentum was difficult to overcome.

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Chapter IV

ENVIRONMENTAL AND SOCIOECONOMIC ANALYSES

A. Environmental Aspects

1. Introduction

As stated in ARD's contract (p. 13), Jubba Environmental and Socioeconomic Studies program (JESS), was to:

(1) Provide the GSDR with timely information to be used in formulating a socially and environmentally sound master plan for the Jubba Valley, and to provide the GSDR with guidelines to be used in formulating future projects which are socially and environmentally sound.

(2) Identify and evaluate the interrelated sociological and environmental effects which will be caused by development of the river valley; an to further describe procedures and development activities that will mitigate adverse impacts and enhance beneficial impacts.

(3) Provide the GSDR with a realistic plan for the monitoring of environmental, social, land use, and agricultural parameters of the Jubba River Valley so that national development decisions can be made based on sound, current data.

(4) Develop institutional strengths in the MJVD through classroom and on-the-job training.

The JESS contractor was to accomplish its task in three phases: a) collection of secondary data, b) field collection of primary data and studies, with preliminary assessment of inputs, and c) final analyses and assessments.

This subchapter relates to the overall environmental aspects of the project (JUDAS) and specifically to the work under the JESS subproject.

Effective "environmental analyses" or "assessments" should include proper integration of not only the human and natural systems, but institutional and economic systems.

It is appropriate to inquire whether performance of the land classification survey should have been entrusted to the Bureau of Reclamation under a PASA, as it was, or whether it should have been awarded to a private consulting firm on the basis of an open competition. This issue had been dealt with in the pre-reconnaissance report, which stated: "The personnel required to conduct the reconnaissance land classification and drainage investigations is unique to the USBR and the USDA. There are a few private consultants in the U.S. that have the capability to conduct the survey. However, they would probably recruit USBR Soil Scientists and Drainage Engineers to do the job. Therefore, it is recommended that the investigations be accomplished through a PASA agreement with one of the above agencies."

The above argumentation, expounded by a USDA/USBR team, reflects a bias which subsequent events proved to be faulty. Work done by a government agency is neither of better quality, nor cheaper than that performed by the private sector. The survival of a consulting firm depends on the satisfaction of its clients with the quality of the services it provides to them. Cost competitiveness is assured by the process used to select the winning firm, and by the strict rules and guidelines applied by government procurement officers. The conclusion must be reached that this project would have had better chances of success had USAID called for competitive proposals from the private sector, and monitored the work of the selected firm as it usually does. If desired by USAID, the USBR could have participated in the competition.

Finally, USAID would have been in a better position to adopt the best plan and to oversee its implementation if it had had, in house, technical capability in the area of land classification. The Mission had no such specialist on its staff, and it placed itself entirely in the dependence of others with respect to this important program. The Mission's chances of achieving its goals would have been immeasurably enhanced if it had recruited early a land classification specialist as a Personal Services Contractor (PSC) to oversee the program -- even direct it -- from the Mission. Better continuity from phase to phase would have resulted from the involvement of that person from within the Mogadishu AID Mission. Free from the administrative duties that occupy much of the time -- and mind -- of the usual project officers, that person would have been able to concentrate on technical matters and ensure that quality standards were observed. Alternatively, a senior land classification expert could have been seconded to USAID from USDA or USBR since much of the capability in this field is located within these agencies. The magnitude of the Project warranted this formula, which might even have resulted in a reduction in the time expended and the cost of the Bureau of Reclamation work.

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Chapter IV

ENVIRONMENTAL AND SOCIOECONOMIC ANALYSES

A. Environmental Aspects

1. Introduction

As stated in ARD's contract (p. 13), Jubba Environmental and Socioeconomic Studies program (JESS), was to:

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Effective "environmental analyses" or "assessments" should include proper integration of not only the human and natural systems, but institutional and economic systems.

2. Project Papers

a) Overview

From an environmental perspective, the project's goal is entirely praiseworthy. The project itself, however, may not attain the degree of success envisioned by its architects. In addition to time pressures in the design stage, the protracted AID procurement process added delays to an already difficult situation. Hasty PP preparation and critical timing on funding did not allow for adequate consideration of cost estimates or the workloads they would influence.

Several agencies and organizations (USAID, MPJVD, GTZ, AHT, IBRD, NAS, ARD, USBR) were to coordinate to attain the result. The designers gave insufficient attention to problems stemming from a lack of continuity and potential turnover in a two-year USAID post (e.g. there were at least 3 project officers during the course of the project).

After the original PP had been accepted and funds obligated, compelling design questions began to arise indicating a lack of careful thought and technical knowledge of the environmental assessment and planning process. Some of these questions were addressed in the amended PP. In developing the amended PP, expertise outside the Mission was brought to bear on some issues. However, several questions were not answered. For example, in the Background Statement and the Action Memorandum to the Mission Director for the amended PP it was recognized that "the Mission lacks sufficient expertise in river basin ... related topics" Yet, at the same time, the Project as presented in the PP Amendment still required close coordination of work products and schedules among several actors, and failed to take into account that Somalia is a high turnover post. Further, the design also did not give sufficient consideration to the fact that the Ministry being called upon to play a key role was still embryonic. The result was a complex and high risk project. An added unknown was the experimental use of a small-business set aside in the project. With such knowledge, there should have been mechanisms built into the PP to assure internal continuity and coordination. Instead, the long-term advisor to the Ministry in the area of river basin planning who could have assisted in this function was deleted from the Project.

No long-term river basin specialist for project oversight within the Mission was envisioned, yet this need also proved critical. What has happened is not uncommon: planning is often subordinated to funding obligation schedules. Future programs of this complexity need early design input from the class of technical expertise who will ultimately conduct the project. In addition, where multiple agencies are to be coordinated, greater attention to project management continuity is of paramount importance. In

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spite of these flaws in the JUDAS Project as a whole, its Environmental and Socio-economic Studies component (JESS) can be considered remarkably successful.

Problems of Timing: The timing of AID's inputs, as discussed within the original PP, was to "fit well with the calendar of programming already established for the MPJVD" (PP page 20). The original PP was finalized in the last days of the fiscal year in which the project was to begin. The JESS contract was signed two years later in September 1985. The team members arrived in Mogadishu shortly thereafter.

The PP time line assumed a high degree of coordination not only amongst several disparate ministries but also amongst donors and contractors to donors (More is said about contractors below). A point worth mentioning, however, is that each contractor would have its own specific time lines for contract completion. Apparently, none of the contract arrangements established by USAID or AHT attempted to coordinate activities to fit the overall goal.

The Project's architects assumed an orderly sequencing of events between the several actors. The program assumed that late 1983 and early 1984 discussions amongst MPJVD and short term consultants would create the terms of reference for the long term technical advisor. The time lines (original PP p. 22), also assumed several critical inputs which were later either removed (long term advisor to the ministry) or whose schedule slipped to such a degree that their value was compromised. In early concepts the long term advisor was seen as critical to assisting in development of the MPJVD "as an effective coordinating body for master planning ..." and development of an overall master plan for the valley. In concert with the pre-established calendar of MPJVD, the long-term advisor was to initiate work in April 1984, after start of the soils classification, but before the start of the environmental analyses (JESS). The initial data were to be used by this long-term advisor in developing the early inputs; using these data the advisor was later to guide MPJVD in the development of the overall plan, by providing oversight for the environmental analyses, and finally the development of monitoring procedures.

That proper coordination of early inputs was critical is seen from the AID/W Project Committee comments on the JESS PIO/T. In its March 1984 meeting the Project Committee states "It is very likely, for example, that critical decisions going into the master plan will be made before the proposed Env/Soc study is completed." This statement reflects a similar concern stated by AFR/TR/ARD staff (March 26, 1984 memo from Atwood to Shah). Atwood suggests rearranging the PIO/T thrust to address priority "objectives" emphasizing the need to "provide the GSDR with timely information..."

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The Project Committee also felt "it essential to clarify and elaborate on certain aspects of the SOW so that proposers would have an adequate understanding of the objectives ...". The Project Committee suggests a need for greater description and understanding of MPJVD functions and for planned institutional development within the ministry. Later the Project Committee discusses the need to strengthen the wording relating to the contract phases. "Full consideration should be given to coordination and compatibility with other studies ongoing in the basin." Notwithstanding these initial plans, calendars and concerns indicating a critical need for good coordination, the JESS contract, as mentioned above, was not initiated until September 1985, fully two years after PP approval.

With respect to coordination and compatibility with other ongoing studies, the record also documents the following. In a February 15, 1986 memo from ARD central to JESS staff on AHT/GTZ plans, the memo's author asks staff to work more closely with AHT. A conclusion after reading the memo is that the two teams were not working in a "coordinated" or "compatible" fashion. The early record indicates various attempts at coordination as contained in informal exchanges and occasional meetings between the two teams. The ARD team was conscientious in its effort to transfer data and information in early drafts to AHT. The AHT corporate deadlines and policy regarding circulation of preliminary draft documents seems to have precluded AHT use of some data. Additionally AHT work products were not available for JESS review until the first drafts of Vol. I and Vol. II of the Master Plan were circulated for review. As an example, in an earlier draft of the AHT Master Plan (p. 42) one finds the following statement: "Furthermore, data on the urban sector were not yet available from the JESS Baseline Survey at the time of the study." Yet in other areas, JESS data are readily quoted or internalized. This may indicate that where available and appropriate, AHT used JESS data. Some progress in coordination was also achieved in the field. As mentioned above one action which may have caused much of the problem was elimination of the earlier envisioned long-term planning advisor to the MPJVD. The withdrawal of this position weakened the environmental analyses and their usefulness as well as the totality of the project and its potential for attainment of the goal.

3. <u>Generalized Questions</u>

This section examines a series of generalized questions to elaborate on the success or failure to attain the Project's Goal, Purposes, outputs, and inputs - and as such, how these may or may not impact the environment.

a. Project's Goal

With respect to this evaluation, attainment of the Project Goal is dependent upon the adequacy of current and future coordination

amongst the numerous agencies and ministries. As such, attainment of the goal relies on factors contributed to but beyond the control of JESS. Notwithstanding the technical aspects, the chief ingredient for success will be the overall policy into which all else is interwoven. Policy direction ultimately rests outside of the Project's purview. The JUDAS Project and JESS activity have supplied a necessary set of ingredients to an overall mix for which the question of sufficiency remains unanswered. The inability at this time to answer this question does not reflect poorly on the project under evaluation.

b. Project's Purpose(s)

The Project Purpose(s) are found in both the Log Frame and either as stated or implied within the texts of the two Project Papers. Although these functions are to objectively guide an evaluation, the various readings lead to different interpretations. It is recognized that difficulties arise when there is an attempt to apply objective criteria to a conceptual research type of program. Nevertheless, a sounder environmental objective might have been: The generation of sufficient baseline data on environmental (and socio economic) aspects of overall basin development to aid the MPJVD and its planners in the formulation of a master plan and in the review of potential environmental impacts and thereby initiate the master planning in an environmentally sound fashion. This definition would have more squarely set responsibility for master planning with the governmental units and their master planners. From such a definition it would follow that until the final option from a given proposal is selected, ultimate impacts cannot be judged. Only the impacts from Baardheere Dam were to be assessed because that project was to be treated as a given in the Valley's development plan.

The task of objectively evaluating the Project is further hindered by other log frame factors. The verifiable indicators, means of verification, and important assumptions in both original and amended documents are imprecise and ambiguous, thus precluding precision in interpretation.

With respect to interpreting the second portion of the Purpose, that of providing support to the MPJVD there is again considerable ambiguity. As an attempt to overcome the ambiguity in the evaluation, the JESS contract language was included. The lack of clarity was not, however, diminished by reading the contract or its amendments.

i <u>Identification of likely environmental effects of various development alternatives, and recommendations for approaches to minimize adverse impacts. (Amended PP, p. 16).</u>

The JESS contract reiterates, in principle, this output. The "verifiable indicator" merely states long and short term assistance

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supplied to MPJVD. No quality is mentioned, and only final reports per contract are required as "verification".

Again, one must take the long view - that of the multitude of future projects described in and necessary to the Master Plan. From that perspective, as well as that provided by such reports as the JESS Environmental Issues Paper, we have a fair idea of likely directions and "likely environmental effects."

The careful reader will note that in the first portion of b. above the "effects" are not limited to the negative. Thus discussion of the positive effects could be considered an essential part of the verifiable indicators. Req 16 requires enumeration only of the negative. Nonetheless, the JESS reports do discuss both the positive and negative as well as neutral aspects. Of importance to a discussion on environmental impacts is the inclusion of those policy areas which also affect the socio-economic structure. JESS documents have been designed to provide such inclusion.

As a whole, the JESS reports go a long way toward satisfying the need as specified.

ii Development of MPJVD as an Effective Planning Body (Amended PP, Log Frame)

This aspect has been previously discussed in the Project Paper section supra.

iii Incorporation of Environmental Assessment in Planning Stages (APP, Log Frame)

Within the terms of the JESS contract, this item is not susceptible to evaluation. It was not a JESS function, rather it was a function of MPJVD and AHT. Nonetheless a comment is warranted. Had there been the ability to maintain timing and sequencing, as originally envisioned, this output might have been more successfully realized. The removal of the long-term advisor to MPJVD also affected success here.

4. Specific Questions

a. Overall

1) Were studies enumerated in the PP sufficient to assure an environmentally sound master plan? Do outputs accurately reflect environmental needs?

With respect to the first question the PP did not enumerate studies, but did list "illustrative development problems." These illustrative areas are: a) dependability of water resources and agricultural production. b) availability of labor for development and social change, c) preservation versus

production, d) downstream aquatic impact and productivity, e) irrigation schemes and concomitant health beyond. The JESS contract, not the PP outlined the studies to be performed.

Although called for in the contract, certain studies, e.g. surface water and sediments, have been considered by some as redundant to the Master Planning needs. Upon reading Volume II of the Master Plan, it seems, based on the numerous proposed projects with environmental implications, that there will be ample demand for the JESS studies. JESS studies were used by other donors in their review of the dam and Valley development. AHT/GTZ utilized the following JESS data: demographics, health, fisheries, forestry, livestock, and water quality. AHT/GTZ was to have conducted studies in this area but evidently did not cover it completely. A review of the 31 JESS reports for environmental importance and quality of material shows them to be above average.

In addition, the IBRD Aide Memoire on the Baardheere Dam Project found the JESS data to be "a sound basis for planning mitigatory measures." Finally, the IBRD paper on resettlement issues is based on JESS data.

The question was raised about the overall usefulness of studies, and if one were to cut back on the effort, where? In the main, all the studies were useful. In some areas one could argue for a reduction. Such an argument is presented here. Certain portions of studies although generating useful data may under some logics, have been unnecessary. The dam is assumed as a given. Thus one expects total destruction of vegetation within the impounded area and substantial alteration on the periphery. Unique specimens were sampled and turned over to the Royal Botanical Garden at Kew. Also with the dam, it is highly probable that water related diseases would increase. Did then, the health studies need to be extensive? In the case of health, wisdom prevailed and the overall extent of the study was reduced.

Other areas not studied might have borne fruit. The vegetation monitoring plots are correlated to black and white aerial photographs. Although these photographs do represent an excellent reference and have been used elsewhere, there were other options. There are compelling arguments (also available at the time of study design) for the use of false color infra red electronic recordings (video). This was rejected as a source of data - an error on reflection. The infra red data could also have been correlated with the RMR contract, which itself could have been better interpreted. Interpretation was, however, not part of the contract. Greater use of video for field work documentation would also have been desirable. Furthermore, the use of Geographic Information Systems should be given greater consideration in future projects of this kind.

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2) Discuss relative merits of the Log Frame in attaining environmentally sound design.

The Log Frame has been previously discussed. It is apparent that greater attention to its design was warranted.

3) How would current A.I.D. policy affect this project's design?

Current AID policy may affect future projects of this magnitude and complexity in a positive way. Recent AID policy on the environment requires a holistic view of resource utilization. Although this project was conceived with that view in mind, the project under today's policy requirements may have resulted in a more coherent design. Designers would be, under today's policy, forced to consider many complexities. It would become apparent from such an exercise whether or not sufficient technical expertise existed within AID to fully consider the overall program. If such expertise was lacking, the design would reflect the need to bring in that class of technical expertise needed to operate the project.

4) Are outputs of the PP accurately reflected in the ARD contract? If not are departures logical?

The ARD contract can be said to be reflective of the general PP thrust. However, given the lack of specificity in the PP - perhaps a better question is - Should there have been other studies that were not included?

The contractor was to provide certain data, the generation of which was under the control of other contractors. To the extent that substantial timing delays in startup developed, compliance was affected. The contract was amended three times to reduce inconsistencies and redundancy. The JESS team has produced a focused product that appears to adequately address project needs.

On March 27, 1988, the Contractor (ARD) requested, among other things, a time extension of its contract at no additional cost, from September 30, 1988, to April 30, 1989, to complete the data analyses and compile the reports. That extension was granted by the Mission Director on May 3, 1988.

On January 25, 1989, ARD requested a further no-cost extension to July 31, 1989. ARD provided the following rationale for that request:

> "As discussed on numerous occasions and reported in ARD's JESS monthly and annual reports, JESS fieldwork (especially SEBS) suffered delays due to

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out-of-season Deir flooding, local currency shortages to the Project, and computer problems. These delays have been passed on to the current situation whereby the SEBS draft was distributed late and in a form less refined than desired. Further delays in USAID/Somalia receipt of draft reports of SEBS and TEBS from USAID/REDSO increased the comment period considerably and ARD did not receive comments until much later than originally planned (some comments have still not been received). A no-cost extension is needed in order to meet new delivery and presentation schedules for JESS final reports. A 90-day, no-cost extension will be in the best interests of the Project in that it will ensure that adequate time is available for production and dissemination of all final reports and presentations."

The mission considered this to be a reasonable request and granted an additional 90-day extension on February 13, 1989.

5) Would it have been better to award two contracts, thus splitting environment from the socioeconomic study?

The project was complicated by the existence of three separate contractors. Creation of yet another contract would have further complicated project management and coordination. Additionally, by having both environment and socioeconomic studies under one contract a more holistic approach was achieved, thereby providing a more interdisciplinary perspective, and better integration of environment and socio-economic issues and recommendations.

6) Were subcontracts administered appropriately by ARD?

The subcontractors performed according to specifications and the data are above average. Baseline data by RMR are extensive, their usefulness extends beyond their immediate application to the proposed Master Plan projects. The studies undertaken by Blue Nile Associates provided much useful information on vector borne disease in the valley.

7) Did ARD perform a training function, was such called for in its contract, and how effective was it?

A single sentence in the Contract under Objectives (p. 13) directs the contractor to "Develop institutional strengths in the MPJVD through classroom and on-the-job training.

The contract's primary emphasis of involvement in training related to on-the-job training and perhaps short courses in Somalia. Training funds for short- and long-term coursework

outside Somalia, and study tours, are under the control of USAID/Somalia. Hence ARD's role in such training was to offer suggestions to USAID/Somalia's JUDAS project manager. These suggestions included technically appropriate courses and as specifically requested by USAID/Somalia, to assist with logistic arrangements involved in having Somali nationals attend such courses.

The contractor produced a Manpower and Training Assessment report in July 1986. The document contains a well-rounded discussion of the Ministry's needs with recommendations for management and training. However, USAID's Project Officer did not permit the release of that report, presumably because it was not intended that ARD become involved in planning and organizing the training. Nevertheless, the contractor participated in selecting key Ministry personnel for training, and helped provide the logistic support for a short course on remote sensing.

8) <u>Were ARD outputs properly incremented to be useful to those producing the master plan?</u>

As discussed elsewhere, there were severe restrictions in timing due to an uneven start up. These problems led to an inability to gain total coordination between the various contractors, including ARD. Amendments to the PP and ARD contract were made in an attempt to bring the system back into coordination. Full coordination was not achieved. Nonetheless, in many instances JESS information or studies were used in the Master Plan. Where they were not, they supply baseline data for future analyses warranted by proposed studies or projects within the Master Plan. The Phase III reports will also be useful to the many project areas as proposed within the Master Plan.

9) <u>How well did ARD perform in relationship to the contract?</u>

ARD's original proposal was reviewed and accepted by AID. Within the contract, the personnel as listed were also accepted. The record shows, however, that the original team leader for JESS was replaced after the Phase II data collection had begun. With this change ARD's resident field team appears to have become more effective. A discussion with staff indicates that perhaps it was a fortuitous event. The event does demonstrate backup capacity within ARD. The change was accomplished smoothly and affected favorably the quality of the environmental analysis. It also demonstrated the capacity of the contractor to respond quickly to needed changes in field operations. This ability to respond was also demonstrated in other ways. For example, unseasonal and unforeseeable floods and heavy rains precluded fielding scheduled teams for studies related to cultural resources, limnology, and fisheries. These

teams and their studies had to be rescheduled. Nevertheless, the results of the studies are above average. The first team leader was considered quite good at logistics and therefore played a useful role in initial project start-up. The second Chief of Party, an experienced environmental scientist, proved to be also a capable manager, a skilled coordinator and reviewer of work products, and a good writer and synthesizer. He also worked in a highly cooperative mode with other actors involved in the overall program.

10) Was performance even though in accordance with the contract, sufficient to meet the needs of MPJVD and USAID?

Data generated and their usefulness meet and exceed the needs of both USAID and MPJVD.

11) To what degree were ARD outputs affected by other participants?

This has been covered in discussions above.

b. With Respect To USAID

1) Was the project well-conceived from an environmental perspective?

As discussed elsewhere, the project concept and its goals were praiseworthy. Unfortunately the undertaking required integration of complex issues as well as an understanding of their import. This exceeded the capacities of the project's architects and those contributing to later amplification.

As a suggestion for future efforts of this magnitude and complexity, greater attention to detail is warranted. Projects should be designed with the aid of those whose technical disciplines will be employed. In addition, critical sequencing needs should be carefully evaluated and allowances for contingencies included. For high turnover posts which experience problems of institutional memory, a long-term PSC should be brought in as technical advisor. This individual must be accorded authority for technical oversight. Further, the Log Frame warranted improvement of measures to evaluate both quantity and quality of outputs.

2) Discuss project management from attainment of an environmentally sound product.

The concept although praiseworthy was ambitious. Many disparate parts needed coordination, yet there were few points from which a perspective of the whole might be gained. The Project was compromised by realities at hand, the embryonic state of the Ministry, the differing agendas of GTZ and USAID

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and the separate contractual requirements of AHT, USBR, ARD and NAS. Despite these problems the project seems to have worked. Its accomplishment is due to the effort of the AID project managers and the consulting team who were able to overcome serious internal flaws.

3) Discuss integration of USAID inputs and outputs with respect to project soundness and the needs of other participants.

As discussed elsewhere, design inputs requiring amendment and project timing have been a constant and continuing factor in attainment of success. To a great degree initial design was driven by the need to obligate. An additional factor worth commenting on was staff turnover within the Mission. Notwithstanding the strength of its two longer term project managers (there were at least three managers during the course of the project), institutional memory suffered from the periodic change in key staff. The project managers had to interact with MPJVD, GTZ, AHT, USBR, ARD and their various subcontractors, NAS and senior mission management. The complexity of management for AID was thus increased when one considers that the project required integrating several teams with teams of other donors. The ability of each new manager to rapidly traverse the learning curve of this complex project was a serious problem affecting project implementation. A project this complex should, in the future, consider adding a full time PSC technical advisor position within AID. It is not wise nor efficacious to have technical oversight split among many other pressing needs.

4) Were various evaluation and interim reports well conceived, executed, and adequately monitored?

A contract requirement for periodic reporting kept interested parties abreast of activities. This provided a fine tuning mechanism with appropriate feedback. A discussion of the mid term evaluation may be found in the socio-economic section. Quality control of documents was maintained through a hierarchical review process. The Chief of Party for JESS is a highly respected environmental scientist whose function was to integrate the various products. He would read and comment on each draft report, and discuss these comments. The team as a whole would hear and comment on a presentation of the work. The work was then amended as necessary in rough and sent to the home office. The permanent staff in the home office reviewed the work and sent it out for peer review. World class scientists and institutions have reviewed and profited from the various studies. Somalia is a little studied area and these reports often provided new information to the scientific community. For example, the Royal Botanic Garden at Kew was reviewer for vegetation studies, and it received specimens not previously held.

The JESS monthly reports were circulated to a wide audience, including the World Bank office in Somalia, who copied and redistributed them to Central Bank staff. The JESS paper on preconstruction concerns was also utilized by IBRD senior management staff. The JESS papers on resettlement were relied on extensively by the Bank in project preparation for the resettlement program.

c. With Respect To MPJVD

1) Is there sufficient institutional development to assure adequate and continuing environmental soundness?

The answer is no. Institutional development as a part of the current project is inadequate to assure continuing environmental soundness, and is affected by the current government structure and institutional problems among and within ministries. Insufficient numbers of technically competent staff exist, and staff tenure with the organization may be ephemeral. This need not be the case, however.

The Master Plan lists a series of subprojects for continuing institutional development. In addition, numerous other subprojects contain strengthening programs related to the technical aspects of project operation.

2) Discuss the relationship of MPJVD participation in project and overall impact on the post project environment.

Ministry involvement is considered crucial to the sustained use of the Valley's resource base. The record of participation indicates considerable difficulty in finding and maintaining adequate counterpart staff. Not all counterparts were directly connected to the Ministry, and some left for training or overseas schooling. Many of the counterparts positioned with the JESS team were inadequately prepared. Most had no training in fields necessary to undertake their counterpart assignments.

Frequent staff turnover or transfer affected implementation. Other factors affecting Ministry participation included national policies and other Ministry actions beyond its control. Reliance on other ministries for authorization or funding often crippled efforts or caused protracted delays.

3) Discuss environmental aspects of MPJVD collaboration in data collection and analysis.

This question has been answered in part, above. The Ministry's infrastructural and institutional linkages as well as management systems are embryonic. With only limited human resources, the Ministry ability to collaborate has been extremely limited. As

a collaborator, the Ministry was unable to respond because the absorptive capacity of the organization was exceeded. There appears to have been some involvement by other agencies. For example, the Ministry of Health participated in implementing certain water-related environmental health studies. Members of the faculty from the University also participated in water quality analysis and land tenure studies. The MRJVD has been able to facilitate seminars and meetings in which other ministries became involved.

Many of the shortcomings could have been resolved through a greater emphasis on institution building.

Key personnel are soon to return from overseas training. Their return will certainly expand the Ministry's capacity. The process of institution building, though promising, appears to be insufficient. The Master Plan recommends several new institution building initiatives which merit support.

B. Social Science Assessment

1. JESS Design and Strategy

a. Project Paper

The logical framework and project description sections of the original Project Paper are deficient in specifying the project outputs, purpose and goal in relation to the social science input. The sociological output is stated as: "Identification of potential sociological constraints and recommendations for effecting a smooth transition to irrigated agriculture with appropriate integration with rainfed farming and livestock grazing." The project purpose statement includes "to provide the necessary information on ... social effects for incorporation into the Master Plan for the Jubba Valley." An indicator of achievement of project purpose is "(with) baseline data collected from Jubba Valley project planning can commence with full knowledge of the soils and environment." Presumably the latter means socioeconomic as well as physical environment.

The original Project Paper contains an annex with the terms of reference for the environmental and socioeconomic assessment study. The annex specifies: a) 15 topics to be covered in the socioeconomic study, b) 5 items to be covered on public health, c) nutrition, d) archaeology and historical sites/treasures and e) a plan for surveillance and monitoring both socioeconomic and environmental indicators.

The work was to be carried out in three phases:
a) preliminary data collection and review of existing literature,

b) field data collection and preliminary assessment of the environmental and sociological effects of irrigation and dam development and c) final analysis and assessment of the environmental and sociological effects of irrigation and dam development, including an environmental and social impact statement with procedures on mitigating adverse impacts.

The original PP suggested approximately 151 person months of long and short term technical assistance. This included 25 person months of a sociologist and 20 person months of a public health specialist.

The terms of reference in the PP for the socioeconomic and related studies were extremely weak. USAID solicited comments from the REDSO/ESA Behavioral Scientist which she sent in February 1984 (cable Nairobi 04102), pointing out that her suggestions were based in part on a paper written on behalf of USAID entitled "Social Issues Related to the Proposed Baardheere Dam and Development Schemes" (October 1982). (The latter indicates that USAID

considered this an important topic deserving more attention at an earlier date.) The terms of reference recommended by the REDSO/ESA Behavioral Scientist were incorporated into the PP amendment and subsequently the contract with ARD. The amended PP retained the phased strategy and increased the number of person months to 210, including a sociologist/agriculturalist, sociologist and public health specialist, each for 36 person months.

Thus, rather than the main text of the PP it is the terms of reference which center on the expected directions and achievements of the socioeconomic and related inputs.

b. Terms of Reference

The terms of reference set out in the amended PP and ARD contract are detailed below. It is significant to note that the phased process, together with the involvement of the National Academy of Sciences which was added in the amended PP, established mechanisms for additional guidance and modifications as the project evolved.

At the conclusion of each phase, the contractor had to submit a report to USAID and MPJVD which contained the findings of the preceding phase and a detailed work plan for the succeeding phase. Where findings so indicated, the report was to contain feedback and recommendations for redirection or modification of the studies. The critical juncture was the work plan for Phase II specifying the field studies to be undertaken.

The overall objectives of JESS as stated in the PP amendment are:

"Provide GSDR with timely information to be used in formulating a socially and environmentally sound master plan for the Jubba Valley and to provide GSDR with guidelines to be used in formulating future projects which are socially and environmentally sound.

Identify and evaluate the interrelated sociological and environmental effects which will be caused by development of the river valley; and to further describe procedures and development activities that will mitigate adverse impacts and enhance beneficial impacts.

Provide GSDR with a realistic plan for the monitoring of environmental, social, land use and agricultural parameters of the Jubba Valley so that national development decisions can be made based on sound, current data.

Develop institutional strengths in the MPJVD through classroom and on the job training."

In regards to the sociological studies, the objectives, study populations and analyses were specified in the amended PP and ARD contract. The social studies were to generate a data base that would assist the GSDR in the formulation of strategies and plans for basin development which relate to the circumstances, and would be responsive to the needs of the populations who live in, or periodically make use of, the Valley's land and water resources. They were to provide new information concerning social institutions and patterns of agricultural production and resource management that currently exist in the Valley. The following topics were to be addressed:

-"Description of existing water and land-use practices, productive systems, and the socio-political organization of the different occupational groups who make use of Valley resources.

-Assessment of direct, indirect, and short- and/or long-term impacts of specific development activities proposed for the basin, and of differential effects on different categories of people. Special attention shall be paid to the effects of relocation and resettlement on the affected population.

-Critical analysis of steps which might be taken to increase socio-economic benefits to affected groups, and increase participation of local institutions in management of water resources and irrigation. Complementary measures to minimize or mitigate clearly detrimental sociological effects shall also be proposed.

-The studies will provide benchmark information essential as the basis for accurate and meaningful measurement of the socio-economic benefits of Valley development.

-The studies will recommend procedures for maximum participation of local populations in the planning, monitoring and evaluation of development activities that will affect them."

The populations to be studied were to include but not necessarily be limited to:

-persons to be displaced;

-valley residents along river;

-people based elsewhere who enter the Valley periodically to graze livestock or use water resources, especially during drought;

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-people who enter the Valley for wage labor on agricultural schemes; and

-labor pool for dam construction or new irrigation schemes.

The surveys were to be determined by the outcome of the Phase I review of the literature and of plans for ongoing data collection by GSDR and other donors. Samples of each of the populations noted above were to be included. Household level surveys were to include basic demographic, nutrition, economic and social indicators necessary to establish a baseline and to assess potential and eventual actual impacts of valley development interventions.

In addition it was envisioned that data would be collected on specific topics:

-production and land use systems in the area;

-social organization of production and relationships, labor needs, utilization and availability;

-availability and access to productive inputs and government services;

-rules and regulations regarding access to land and water resources;

-local institutions;

-social services; and

-estimates of skilled and unskilled labor available for construction.

Nutrition, public health, archaeology and historical sites/treasures, follow-up and monitoring were also included as areas to be addressed.

All work was to be performed in cooperation with assigned Somali counterpart staff from the MPJVD and other Somali agencies and organizations.

In Phase III the Contractor was to analyze and assess environmental and sociological impacts of proposed development projects and submit a final report with recommendations on mitigating and enhancement measures and a plan for continuing with environmental and socioeconomic monitoring by MPJVD after completion of JESS. The final report was to include completed annexes of all data collected under the project, including maps and results of laboratory, computer and other analyses.

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c. Changes in the Terms of Reference

The terms of reference were precise, but the system allowed for adjustments. The actual changes to the socioeconomic and related studies were substantial in three cases. First, at the request of USAID, the socioeconomic work did not include refugees in research on the population to be displaced.

Second, the method of collecting data to indicate nutritional status changed. Originally the nutrition work was to focus on an estimation of the contribution of calories and protein of each food to the diet and its consumers and description of anticipated effects on nutrition. Instead, it centered on describing village eating patterns, the dependency of households on nomad produced milk, and weights and measure of 3-4 year olds in selected villages. Subsequently, the weight measures were canceled because collaboration was not forthcoming from the Ministry of Health or National Refugee Commission as anticipated.

Third, the terms of reference had called for consultations with the study population after the analysis had been completed. This was deemed inappropriate apparently because of determining how to obtain proper representation and organizational difficulties. Also such an exercise to discuss findings and mitigating actions could easily arouse expectations. Thus, this element was eliminated from the ARD contract.

2. Implementation: Participants and Process

a. Long Term Technical Assistants

The ARD bid proposed a socioeconomist and anthropologist for the long term technical assistance team. The public health work was designated for short term assistance. The socioeconomist was contracted for 36 months and the anthropologist for 34 months. The socioeconomist had previous experience carrying out research on the Senegal river basin, while the anthropologist had previously conducted project related studies for two years in Somalia and Ph.D research on Somalis in northern Kenya.

There was a high degree of collaboration and cooperation between the two specialists in designing and carrying out the field work. The socioeconomic baseline survey (SEBS) contained sections which were the direct responsibility of each but administered to all relevant interviewees. In addition the socioeconomist was solely responsible for conceptualizing, designing and carrying out a market study, centered on price information. She also began the design of a separate interview schedule on women's issues, but responsibility for this task was subsequently turned over to the

spouse of the anthropologist who had been hired locally as an administrator but whose scope of work included some responsibility for research. Thus a second anthropologist was brought onto the study team and she assumed responsibility for the women's study. She spent about 12 months directly on research and analysis.

The socioeconomist also helped with data management. Even before being taken off field work to handle the resource data center, she had been spending a great deal of time overseeing data coding and entry, and trying to resolve technical data management and computer difficulties.

b. Elaboration of the Socio-economic Studies

It was intended that the MPJVD and AHT would help to identify the key topics or issues which they wanted addressed and the emphasis of the studies would be adjusted accordingly. However, no such guidance was forthcoming. Furthermore, the AHT had its plan for short term consultants which presented a dilemma since they were addressing some of the same topics but with much less depth and much smaller coverage.

Furthermore, on the team there appears to have been a degree of variation in interpretation of the terms of reference. Was the main objective data for planning and baseline benchmarks? If so what was required? Or,was the main focus to be baseline data on a wide variety of topics which then could be extracted to address planning issues but also provide a broad description of the situation during the study period, ie. 1986/87, which at a later point could be used to evaluated conditions and situations in the valley? This became an issue during the midterm evaluation (see below) in terms of the amount of data being collected and the time required for data coding and entry.

Phase I entailed a rapid reconnaissance in the Valley from mid-March through August 1986, longer than originally planned due to the inavailability of funds from the local shilling budget during June and July 1986. The purpose of the rapid reconnaissance was to construct a general overview of the social and economic characteristics of the Jubba Valley. Information was gathered from extensive interviews with the valley's public administrators, local leaders and villagers, as well as observations. Open ended forums were conducted in 26 villages throughout the valley, which lasted from one to four hours and covered a range of topics. Historical chronologies were established for several parts of the valley, to establish benchmark reference points for recording dates, such as births, deaths. Also the team compiled lists of villages and sub-district units from which they could draw the random sample of villages to be included in the baseline study.

In the course of the rapid reconnaissance, JESS recruited and trained its first 12 enumerators. At the Ministry's request, the majority of JESS field staff were recruited from the Valley.

The first NAS workshop, held in January 1986, permitted discussions between the NAS panel and ARD's long term field staff. It was agreed that six issues should be given adequate consideration, in addition to others already being considered for the field studies. These included resettlement of people dislocated by the reservoir, consideration of livestock and pastoralism in agricultural schemes, local and national institutional factors involved in development, and large versus medium or small-scale irrigation projects as development approaches.

According to the workplan it also included collection of data on topics which the AHT and MPJVD planners expected from JESS. Those were: current land use patterns, socioeconomic characteristics of population groups in the valley, production and resource uses of livestock, and infrastructure and social services of valley communities.

In developing the workplan the social scientists spent considerable time identifying a unifying framework for the data analysis. The most important one for the social science data was that of resource user-producer group

The Phase II Workplan also underwent various alterations based on comments received from NAS and AID/Washington.

The workplan specified that the socioeconomic baseline study was designed to generate data from the length of the valley, from Luuq to Kismaayo to cover:

- demographic profile
- family resource management and allocation
- health and nutrition
- social services
- women's issues

In addition the plan identified the following special socioeconomic studies: pastoralism, resettlement, land tenure, development of local institutions, irrigation costs, economic history of irrigation projects, markets and transportation, labor, rural and urban dynamics, nutrition, and cultural heritage. Each was discussed in terms of the major issues.

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Significant input was given to defining the studies for Phase II, including from NAS. But, except for some in country, informal consultations, the questionnaires for the main SEBS study and the women's component were not subject to review or comments from other professional social scientists with experience in development planning. Nor was the team required to do so.

c. Involvement of MPJVD and Other Somali Groups

The involvement of MPJVD and other Somali groups or individuals was considered significant by AID for two reasons: first, to increase the awareness of a core group of Somalis to socioeconomic issues related to river basin development and second, to enhance the in country capacity to investigate and address such issues.

The MPJVD was supposed to provide a counterpart economist and sociologist, the latter being included in Amendment Number 1 to the Project Agreement. A veterinarian was assigned as the counterpart economist. He had previously been a counterpart with a team which studied existing projects in the Jubba Valley. This veterinarian served as counterpart for approximately 12 months before he was assigned as a special assistant to the Minister. Thereafter, a woman with a degree in French and English was assigned as counterpart. She basically performed the role of interpreter for the team for about 5 months.

The socioeconomic team was able to recruit two men who had worked previously with the JESS anthropologist on another project and each had one year of undergraduate education at the University of Wyoming focusing on sociology of the Third World. These people performed critical mid to low level professional tasks in carrying out the SEBS study and gained valuable experience in organizing and implementing field studies. While neither were ministry staff initially, one was taken into the Ministry in 1987 and the other in early 1988. The former was sent for one year of university training in August 1987. The latter continued his work with JESS and in August 1988 departed for one year of study at the University of Wyoming to take courses in sociology, agricultural economics and statistics. He has a general understanding that he will serve as an agricultural economist working on plans for the Jubba Valley when he returns. The current plan in MPJVD appears to be that one will serve as Head of Water Management in the planning department.

Professional Somalis from other institutions were drawn into the socioeconomic and related studies in the following ways. First, an affiliate of the Somali Academy of Sciences was contracted to do a rapid survey on the labor situation in the Jubba Valley on which to base a paper presented at the first NAS workshop, held in Mogadishu.

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Second, the Faculty of Chemistry was hired on a local contract to carry out all of the tests relateu to the water quality and public health surveys. A member of the Faculty of Medicine served as coordinator of the malarial survey. Third, the Ministry of Health was involved in planning and implementing an epidemiology survey in the Lower Jubba Valley. MOH supervisors and technicians were used to conduct the study under the guidance of a short term consultant. Fourth, an economics professor at the University of Somalia was engaged as a counterpart to the land tenure specialist and worked with the JESS project for six weeks.

Apart from the assignment of counterparts and administrative functions, the participation of MPJVD in the social science studies has been limited to receipt of information and responding to it. Nevertheless, MPJVD considers that there was very good dialogue and communication with JESS. This was both at an informal and formal level. MPJVD officials classified the project to the evaluators as "an exceptional case" and as "one of the best" in terms of communication and working relationship.

Seminars by short term and long term technical assistants, initiated by JESS, have been held by MPJVD but almost exclusively for its staff. The MPJVD did not invite other ministries, although when a topic specifically concerned a particular individual, that person would be invited. Approximately 15 seminars were held. Each centered on a particular issue and presented preliminary findings. The participation of staff varied considerably.

Beginning in early 1988 JESS set out a plan for writing and presenting key issues papers to the MPJVD and interested parties, following a suggestion by the REDSO/ESA Behavioral Scientist. Two issues papers were written and presented to the Ministry for preliminary comment. Response to the first paper was delayed for some months. A seminar was held on the environmental issues paper on July 20th. Written comments were received on the second paper which centered on resettlement. However, the Ministry felt that a seminar on resettlement would not serve a useful purpose as it had been discussed in detail in meetings with a World Bank team. Moreover, as time passed it became apparent that public discussion of key sensitive issues is not appropriate within the Somali context and so the idea of issues papers was not pursued further.

For the seminar on the environmental issues paper MPJVD invited other ministries. The seminar was attended by people from the Ministry of Health who are concerned about control of bilharzia and malaria in the valley. Although the Ministry of Agriculture did not send representatives, they had prepared comments on the draft and had added a section on resettlement.

MPJVD officers expressed their view to the evaluation team on the importance they gave to the institution building aspect of the project. In terms of increasing the level of awareness and

knowledge, in retrospect it was felt that a few well organized seminars of a longer duration might have been useful. Apparently more basic training on topics and issues and a synthesis of findings and conclusions was needed.

d. Linkages with Others Working on the Jubba Valley

The environmental assessment section details the relationship of the JESS team with AHT.

The social scientists advised 5 University of Somalia students in preparation for studies they undertook in the Jubba Valley and provided logistical assistance. JESS provided technical, administrative and logistical support to a PhD student on a Fulbright grant who studied the economic history of the Lower Jubba. Also JESS established a working relationship with a researcher with the Land Tenure Center, University of Wisconsin, who is a PhD student researching land tenure in the Middle Jubba Valley. Her report has been a major input on this topic for JESS.

Linkages were established with the Settlement and Resource Systems Analysis (SARSA) Project, an AID centrally funded project,which carried out a one year study of Kismayo region. That research centers on commodity flows in the lower Jubba Valley. Both teams attempted to avoid overlapping efforts and permitted access to data sets and materials.

Close liaison was maintained with Halcrow Fox Associates, Ltd., the firm contracted by GSDR with financing from the World Bank, to focus on resettlement and a compensation plan for people from the Baardheere Dam inundated reservoir area. (This team worked in Somalia from April 1987 to July 1988.) Discussions were held and an agreement made to avoid duplication of work. The teams shared and discussed initial findings. JESS assisted Halcrow Fox technically and logistically. In addition, two JESS enumerators assisted in the socio/ethnographic studies undertaken by Halcrow Fox. At the request of the World Bank and MPJVD, JESS reviewed and provided comments on the Halcrow Fox report.

The World Bank carried out a pre-preappraisal mission November 1 - 22, 1987 focused on Baardheere Dam. Emphasis was given to involuntary resettlement provisions and environmental concerns. The mission met with the JESS team and used their data, which is explained further in section below. A second Bank mission focused on resettlement met with the JESS team and used relevant data.

In addition to these substantive linkages, JESS had contact with a number of other donor agencies and with various GSDR ministries as it carried out its field studies.

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e. Short Term Technical Assistants

A total of 9 person months were devoted to social science short term investigations, 4 to the cultural heritage study and 19.5 for water quality and public health. In many cases the short term consultants returned at least once, while the others conducted their field studies during one consultancy period and submitted final reports which were written in the U.S. In a few instances ARD staff provided advisory services on data analysis near the end of the project, i.e. June 1988.

Short Term Inputs to Studies

Purpose	Person Months	Type
Socioeconomic studies		
Land Tenure	5	Consultants
Livestock	3	Consultant
Local Institutional Analysis & SEBS	.5	ARD H.Q. Staff
SEBS and Marketing Survey Analysis	.5	ARD H.Q. Staff
Cultural Heritage	1	Consultant
Water Quality/Public Health	19.5	Consultant
Socioeconomic and Environmental Monitoring	.75	ARD H.Q. Staff
Data Management	8.5	Consultants

A bilharzia survey and malaria survey were carried out simultaneously in the Lower Jubba Valley from December 20 1987 to January 16, 1988. The bilharzia survey covered over 2000 children between the ages of 5 and 14 from Jamamae town and 14 smaller villages. Some 2000 children were treated with the effective drug: those found positive in the survey and 500 -600 who came for examination and treatment at a clinic set up at the field camp. The investigators found an overall prevalence rate of 75%, while the prevalence rate in the 14 villages was 80%. A follow-up snail/transmission survey was conducted in the Lower, Middle and Upper Jubba areas in July 1988.

The malaria survey was coordinated by a member of the Faculty of Medicine at the Somali National University. The study took place in two village centers and eight villages in the Lower Jubba region. The study concluded malaria is endemic and the degree of endemicity varies from hypoendemic to mesoendemic with hyperendemic pockets.

The cultural heritage work covered 699 sites, mostly archeological scatters of middle and late stone age artifacts. Other sites included cairns, burial areas and caves, some of which contained unusual rock art. The work was executed in September - November 1987 by a large team and had been planned during a one month visit in 1986 by the team directors, who had previously conducted archeological work in Somalia. The team was composed of two senior researchers and four graduate students from the U.S. Attempts to enlist people associated with the Somali Academy of Sciences were unsuccessful. Two volunteers from the U. S. joined the team for the second foray into the study area. A total of 435 person days were spent in the field. (The table above reflects the professional person months on which the subcontract was based, not the actual input.)

A three-month consultancy was carried out focused on pastoralism. Approximately five weeks of this time was spent collecting data from nomadic pastoralists. For this assignment ARD engaged a person who had studied Somali pastoralists previously.

For the land tenure study four months of the services of an anthropologist and one month of services of an economist were provided by specialists with previous experience addressing land tenure issues in Somalia. As noted earlier, the main consultant was assisted by a professor from the University of Somalia. Because of the JESS agreement with the Land Tenure Center concerning the work being conducted by one of their people plus information and insights obtained by the long term social scientists, this topic has received backup coverage.

Quality control was exercised by the second Chief of Party and ARD headquarters. Short term consultants were required to present the Chief of Party a draft report for his comments prior to their departure. ARD headquarters exercised control in the acceptance of final reports.

Data management and computer short-term assistance was provided at three stages. First, during the design of the questionnaires a short term consultant provided critical advise on the design format to ease data coding and entry. Second, the same consultant returned from 24 May to 21 June 1987. He provided additional crucial input on data entry to help reduce errors. Third, another consultant worked from mid-January 1988 for five months. A hardware

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specialist worked with him initially for two weeks. During the five months all data were entered, corrected and analyzed by STAT Pac.

f. Main Implementation Problems

The main problems encountered relate to a specific phase of implementation. Initially difficulties were related to disbursement of local currency funds, logistics especially for field work, and securing counterparts and field staff. As these were resolved and field work was underway, data processing became the main problem area for the social scientists.

During the first phase, arrangements had to be made for field stations and access to fuel. Field stations were set up at three points. Even though credit arrangements were made locally to procure fuel, the need for a dependable supply led to four drums of fuel being stored at each station. The project jeeps had to be modified to carry more people.

Arrangements had to be made for the release of local currency funds from the GSDR. Obtaining local currency disbursements proved to be a major and continuing problem. Not until the second Chief of Party arrived in early 1987 were arrangements satisfactory to both JESS and MPJVD agreed upon.

Because the MPJVD and JESS offices were located in the presidential compound, after-hour access was virtually impossible. Therefore, in December 1986 a house was rented and established as the JESS resource center, which contained all computer equipment and documents.

In order to get the data processed, staff had to hire and train people for data coding and entry. Coding of each questionnaire had to be verified, which involved an immense amount of time from the professional staff. A series of coding checks was established which required review of a coding problem by the socioeconomist or anthropologist and a coding verification check by the data center manager prior to being sent for data entry. Moreover, there were crisis situations due to malfunction of computers, software problems and so forth.

ARD took various measures in an attempt to deal with data management and computer problems. As mentioned earlier the socioeconomist was relieved of field work responsibilities to focus on data management. Subsequently in September 1987 an expatriate was hired locally to be in charge of the Resource Center. Both she and the socioeconomist had responsibilities related to data management and computers. The main problem was that no professional computer expert was there and thus much time went into having to solve problems which a specialist could have tackled more efficiently. The work performed by the head of the resource center

was absolutely critical in preventing major deadlocks in handling of the data.

As mentioned above, the services of short term consultants in data management were provided for a total of 8.5 months. They performed a crucial contribution. Nevertheless, the computer printouts for SEBS did not begin flowing until June 1988. This left the researchers with an adequate amount of time to analyze the data, do special runs to test hypotheses, draft their report, receive comments from peers and finalize their report. The quality of the report is a strong indication of the dedication as well as the capability of the social scientists who were put in the unenviable position of producing high quality analyses under a tight deadline schedule. That the entire effort was not long behind the planned delivery schedule, in comparison with many other studies projects, is attributable to wise ARD management decisions.

g. Monitoring and Midterm Evaluation

Formal monitoring was designed into the project through monthly reports, and annual reports from the JESS team leader to USAID and MPJVD. In addition, formal and informal meetings were held as necessary between JESS and its USAID Project Officer. JESS has benefitted from having USAID Project Officers who actively supported and facilitated their work and had an appreciation for the substance of the project. Since JESS began there have been two Project Officers. The first Project Officer extended her tour of duty for one year in order to continue monitoring the project. She served until July 1987 and the second officer has continued the momentum and oversaw the final stages of project close out.

Starting in August 1986 with the 10th monthly report, at the request of the Project Officer the reports began to contain a summary of the information and knowledge being gained on the valley from conducting the field studies. Although previous monthly reports contained a section on liaison, beginning with Report No 20, June 1987, a special section was added on Links to the Master Plan. Thus, the Project Officer was able to monitor these two major aspects of JESS.

Monitoring was done by ARD headquarters through both review of monthly reports and special visits to Somalia. During the latter at times specific actions, e.g. reports on Phase I and II, were also addressed. Approximately six visits can be classified as performing a monitoring function.

The PP specified that midterm and final evaluations would be conducted. A midterm evaluation was carried out March 22 to April 15, 1987. Data collection on the socioeconomic baseline study (SEBS) had just begun in January 1987 and only some 300 SEBS interviews had been completed. The evaluation team questioned the size of the sample, set at 1000 households, the statistical

validity of some of the sample and whether a large baseline survey, in general could not have been replaced through aerial surveys and smaller samples. It acknowledged that GTZ/AHT had not yet provided clear guidance on their data needs. It concluded that the questionnaire's length was excessive. And, it noted that the team seemed to underestimate the amount of time it would take to analyze the data and prepare reports in the form called for in the scope of work.

Neither JESS nor USAID considered the midterm evaluation useful, although the Project Manager did note that USAID should not ignore the warning raised about data input and analysis. Instead it seemed to present a challenge to proving that 1000 households could be covered and all accomplished within the general timeframe set for JESS.

Whether as a result of the midterm evaluation or other factors, ARD did request that the SEBS field work end in January 1988, and the last SEBS interviews were finished in February 1988. (One of the data management consultants had recommended December 1st, 1987 as the cut-off date.)

3. Review and Assessment of Output

A. Studies Completed

Annex E contains a list of the studies and some interim reports on these. While initially only 20 copies were sent to Somalia for distribution, as of late 1987 30 copies were distributed within Somalia. One hundred copies of the final synthesis and accompanying volumes are to be printed. It is recommended that at least 75 of these be distributed within Somalia. Besides MPJVD and relevant ministries, the Somalia Academy of Sciences and the National University of Somalia ought each to receive two copies. Individuals who have been associated with the project ought to be on the distribution list.

B. The SEBS Report

1. Introduction

A draft of the SEBS report dated November 18th, 1988, was sent to external reviewers for comment. The draft did not contain an executive summary nor a section on economics. The following evaluative comments are based on a JESS final report still noted as a draft, and hence it is referred to herein as "the revised version."

2. Overview of SEBS Report

Overall, the professional quality of the analysis is outstanding, taking into account the enormity of the task undertaken, the working conditions, and the limited time and financial resources left to the team to analyze their data. The analysis reflects the multi-disciplinary approach of JESS and linkages with others carrying out studies in the Jubba Valley. The SEBS report not only presents and analyzes data from the survey work carried out by the long term technical assistants, but it also: incorporates information from the special topical studies carried out by the short term technical assistants; cites and references the JESS environmental studies; and uses data from other studies carried out in the Valley. It employs a historical framework for the valley, particularly the Lower Jubba Valley, which captures long term trends and the forces that drive them, and gives an overview of the macrolevel economic situation to provide the context for the analysis of the microlevel economic data.

As noted by one reviewer: "The studies are grounded in an understanding of Somali history, colonial experience, social and economic organization, ecological adaptation, and farming systems. This is evident in the design of the sampling frame, the construction of the instruments, and the modes of data collection. It is also evident in the attempt to analyze current and future trends in land tenure and household economic strategies in terms of past political and development experience in the Jubba Valley."

One of the main themes in the SEBS is that the large scale, plantation model of agriculture has dominated development activities in Somalia and in the Jubba Valley. The evidence in Somalia as well as elsewhere shows that this approach has been unsuccessful. Moreover, SEBS provides information about the negative impact of plantation agriculture in the valley, especially upon those whose land was appropriated. The theme of land use, rights and tenure is carried throughout the report. It shows historical adaptation to changing conditions and events, and the positive and negative effects of these. This theme culminates in recommendations related to the settlement of people to be displaced by the Baardheere Dam reservoir.

The SEBS classifies the population as urban, agricultural riverine, agricultural nonriverine and pastoral, and the data presentation and analysis use these socioeconomic categories, in addition to regional categories. However, the only population data presented use the categories urban, rural, and nomadic. The SEBS report discusses the difficulties with existing population statistics and estimates, presents two sets of figures and explains why JESS adopted one set as the basis for its own sampling and population estimates. However, the version of the SEBS report for this evaluation did not provide a table with an estimate of either the absolute or the relative proportion of the population in each

of the four socioeconomic categories used in analyzing the SEBS data. This becomes an obstacle for the reader who wants to know the size of the population which is likely to be affected by some of the beneficial and negative impacts associated with the construction of Baardheere Dam and the proposed development activities.

One can understand the reluctance of the SEBS team to provide an estimate of the population which will be affected by each beneficial and adverse impact. However, a table with the estimated population in each socioeconomic category would have allowed the reader to obtain a notion of the potential magnitude of each impact since the socioeconomic category is mentioned in the discussion.

3. Reviewers Comments

Many of the external reviewers would have liked more information on the dynamic elements operating among residents and institutions in the Jubba Valley. Comments from these reviewers are provided below. They reveal that there was not a consensus on the aspects which reviewers thought should have been elaborated upon in SEBS. One wrote:

> "..major focus should be placed on the dynamics of traditional economies, primarily pastoral and agropastoral, within the Valley. This is perhaps the most fundamental shortcoming of the draft report...A systematic presentation and interpretation of data is required to provide a thorough overview of indigenous socio-economies of the Valley. Instead, the report's predominantly static and fragmented treatment fails to identify the emerging trends, needs and liabilities of these economies, although this is necessary for estimating the likely impacts of the dam on them..."

> "Some of the key questions that should be addressed in any investigation of the Valley's socioeconomic character and their changes are: what patterns of survival strategies (or risk minimization strategies) are significant in the Valley? What combinations of production activities such as stock raising, rainfed cultivation, deshek or other riverine associated cultivation, wage labor, and so forth, are involved in these strategies? ...What changes have these survival strategies undergone in recent years and what is the significance of these changes for pastoral and agropastoral dependence on riverine resources?"

Another reviewer made the following comments:

> "...in addition to surveying a ...cross-section of Valley residents, JESS researchers also talked to local

residents about their experiences and concerns. Case studies may not be as convincing to donors as statistics, but they represent one of the JESS team's unique contributions, and you really ought to find a way to include the jist of their content...

"You might, for example, extract from ...field reports some anonymous direct quotes from valley residents expressing their views on labor, livestock, transportation, marketing, social services, and land tenure problems...it would demonstrate the special value of JESS' long-term, on-the-ground field studies, and might help to call attention to the need to balance Valley concerns with national priorities."

A third reviewer commented on the static presentation of information on institutions: "...the reader cannot really see how they work or what they do." He continues:

"The political description is not only thin, but (contains) no discussion of the most important political institution, the party. ...The section gives no sense of the dynamics of power...We know from other evidence that there are power brokers, that patronage is rampant, that kinship and clanship are crucial in gaining and maintaining access to land and other resources."

All of the above comments show a desire for more information and analysis to elucidate the dynamics of life in the Jubba Valley, in terms of timeframe, interhousehold and community relations, power relationships and conditions of access to critical resources and institutions. The revised draft incorporates more information on some of the dynamic elements, but the treatment is limited.

4. <u>Format, Presentation and Clarity</u>

The report is organized into the following sections:

- Executive Summary,
- Introduction,
- Inventory and Description of Existing Conditions,
- Impacts of Proposed Developments and Recommended Measures to Enhance the Beneficial Impacts and Mitigate the Adverse Impacts, and
- Monitoring of the Proposed Development in the Jubba Valley.

This organization has the effect of clearly emphasizing the recommendations. The format, use of headings and bold face type make the report easy to read and easy for a busy planner to find and focus upon those topics which are of particular concern to him

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or her. However, as discussed below, the relative importance of the recommendations tends to get lost in the section on Impacts.

The clarity and quality of the writing is outstanding. And, the tone is straightforward and objective.

The report is enhanced by a set of very good maps and an extensive bibliography which appears as a separate volume in the JESS reports.

5. SEBS Executive Summary

The executive summary of the revised draft of SEBS is slated for further editorial work before the report is finally published. Therefore, it would not be useful to highlight all of the shortcomings of the revised draft.

The challenge will be to present an executive summary which highlights the key points and issues, and draws the reader to measures to enhance beneficial impacts and mitigate adverse impacts. If the executive summary attempts a balanced summarization of all of the field data, the reader's attention will get distracted before reaching the significant part of the report - that is, what should be addressed in the formulation of plans for the Jubba Valley.

6. Impacts of Proposed Developments and Recommended measures to Enhance the Beneficial Impacts and Mitigate the Adverse Impacts

This section of the report discusses the developments proposed for the Valley, projects the impact of those developments on the inhabitants of the Valley and makes recommendations for enhancirg the beneficial impacts and mitigating adverse impacts of the proposed developments. This section represents a significant revision and reorganization of the presentation of the recommendations in comparison to the first draft. It greatly enhances the overall impact of the report.

This section is organized into six sub-sections. The first describes the proposed developments in the Jubba Valley, while the others discuss the likely impacts and recommends measures for enhancing the beneficial impacts and mitigating adverse impacts. These crucial discussions are grouped under the following categories:

- o The Baardheere Dam and Impoundment of Jubba Waters
  - -change in river hydrology
  - -reduction in forage and change in transhumance cycles
  - -gains and losses of agricultural activities
  - -creation of boom towns
  - -health
  - -loss of direct communication with Garbahaarey

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- -loss of cultural legacy
- -increase in crocodile and hippopotamus populations
- -nutrition
- -increase in fish populations in reservoir
- -navigation

o Relocation and Resettlement
- -resettlement impacts on residence patterns
- -resettlement impacts on sanitation
- -resettlement impacts on political organizations
- -resettlement impacts on education occupational structure
- -implications of social diversity and impacts on host communities
- -psychological stress of resettlement
- -settler housing
- -initial state of resettlement

o Various Irrigation Options
- -irrigated state farms
- -impacts of private, commercial irrigated farms
- -small-group irrigated farms
- -household irrigation

o Urbanization and Economic Growth
- -increased horticultural production
- -increased demand for milk and meat
- -water use and sanitation
- -construction of residential subdivisions
- -pattern of food demand
- -housing construction fuelwood demand
- -employment
- -income/revenue generation
- -trade with Kenya

o Infrastructural Developments
- -roads
- -electricity
- -expansion of present state farms

As indicated by the above listing, the report is very comprehensive when it comes to identifying the beneficial and adverse impacts. However, this causes difficulty in quickly identifying the most critical potential negative effects and the most important potential beneficial effects. For example, the SEBS report comes out clearly and unequivocally in favor of smallholder agriculture over state farms in the future choices of agriculture for the Valley. It also stresses the importance of the need for controlled flooding to permit continuation of flood-recession irrigation by households, under existing resource rights. However, these very significant and important discussions seem to get lost due to the organization of the topics.

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One is sympathetic with the writers' attempt to develop analytical categories for the discussions in this important section of the report to achieve some coherence. Yet in doing this, the relative importance and significance between all of the factors become blurred. As mentioned elsewhere, this is aggravated by the lack of estimates on the potential population which will be affected. Possibly the weakness in highlighting the most important impacts will be rectified through the presentation in the Executive Summary of SEBS.

The thorough treatment of the implications of the Baardheere Dam and proposed developments unquestionably reveal the vastness of the programs and projects which are needed to enhance the positive and mitigate the negative impacts. This evaluation team would have liked to see ARD taking a bold step towards using their collective wisdom to indicate priorities within the short, medium and long term. Financial resources and trained personnel are scarce, even when augmented by loans and donor grants. The capacity of Somali institutions to undertake the development activities needed in the Valley also needs to be taken into account. Furthermore, although the dam will provide direct and indirect benefits to people outside the Valley and to the national economy at large, there is the risk of creating a significant regional imbalance if almost all development efforts of the Somali government and donor assistance are directed to the Jubba Valley over the next decade.

7. Monitoring of the Proposed Development in the Jubba Valley

This section sets forward the rationale and a plan for monitoring the effects of the Baardheere Dam and subsequent developments. It identifies six topical areas for which changes in key variables should be monitored. It explains the reason for the selection of each area and the methodology which should be employed for each. SEBS proposes that monitoring be the responsibility of a special unit created under the Baardheere Dam Project which will probably be attached to the Ministry of National Planning and Jubba Valley Development. The structure of the monitoring unit and resource needs are elaborated.

The proposal is realistic in its requirements for data, personnel and supportive logistical facilities and commodities, given existing conditions and basic constraints within the government. Because of this the proposed monitoring function has the potential of being achieved. However, organizational and political factors will influence (a) the extent to which the unit feels free to present its conclusions and recommendations based on the data; and (b) the use of the data, conclusions and recommendations to alter donor and Somali government plans and allocation of resources.

Readers unfamiliar with the context and conditions might fault JESS for not proposing a more elaborate monitoring function and

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broader coverage of the valley population. However, the evaluation team considers that an approach which has the greatest possibility for success is more important than one that ensures that all important data points are adequately covered in the plan, but whose chances of being implemented are small.

C. Incorporation of SEBS into the Executive Summary

As stated in the introduction, the evaluation team has not received the final version of the draft Executive Summary which was completed in August 1988. This leaves the team to comment on the early version or to anticipate the organization and contents of the Executive Summary, but neither of these options would be very productive and useful to the reader of this evaluation who has access to the Executive Summary.

Instead, attention will be given, albeit briefly, to an assessment of the comments of the external reviewers. In general the comments which centered on the Executive Summary and on the Socioeconomic Studies Report reflected a careful study of the drafts and contained thoughtful remarks about the substance and presentation. Often the reviewer guided the team to consider citing relevant literature and experiences. Furthermore, some of the reviewers submitted detailed comments on each chapter. The revised version of the Socioeconomic Studies report reflects incorporation of many of the suggestions and the Executive Summary will also incorporate many of the comments received.

Some of the reviewers comments, however, ask for a type of analysis which was not possible, given the data base of the studies. Furthermore, many of the external reviewers wanted the team to address politically sensitive issues such as the lack of success of various government policies, and to use a "hard-hitting" language.

It is clear from the correspondence of the team leader to each of the external reviewers of the draft Executive Summary that care has been given to capturing the attention of planners within the Somali government and development agencies for whom the report is intended to the results and recommendations, rather than creating a negative reaction to specific comments which might lead them to dismiss the important study results and recommendations.

D. Use of JESS Data, Analyses and Recommendations

As of August 1988 use has been made of JESS social science and related information: on the population from the reservoir area, livestock, demographics within the Jubba Valley, and bilharzia and malaria in the Jubba Valley. In addition both the consultant carrying out the epidemiological work and the director of the cultural heritage study have been slated by other donors as consultants to continue work on these topics.

Volume I of the Master Plan for Jubba Valley cites demographic data, land tenure information and health data from JESS. A World Bank preappraisal mission and a mission focused on resettlement used JESS data. The preappraisal mission found that the JESS data on Somalis in the area to be inundated by the reservoir to be more adequate than that presented by Halcrow Fox. It also concluded that data already gathered by JESS and AHT provided adequate information for the Bank's environmental assessment, as well as a sound basis for planning mitigatory measures. The mission accepted the recommendations of the JESS cultural heritage team.

A working paper on resettlement of the people to be displaced as a result of the Baardheere reservoir has been done by the World Bank. Information on the local inhabitants, their economic activities, and land use were drawn from JESS data. Furthermore, recommendations presented in the JESS resettlement issues paper and other ideas of the JESS anthropologist formed a significant part of the proposed project design. For example, attention was given to land registration as a major initial activity.

A livestock study carried out by an AHT consultant drew a significant amount of data from JESS. Use was made of a) livestock estimates obtained by remote sensing techniques, b) production parameters for camels, cattle, sheep and goats per district 1986/87, and c) range fodder dry matter annual production rates by the JESS environmentalist.

The cultural heritage survey revealed that the proposed Baardheere reservoir encompasses a vast array of prehistoric and historical sites. Some sites are of particular significance such as rock art sites and some caves and rockshelters have the potential of yielding substantially more information than was gathered in the JESS study. It is apparent that some excavation work should be done to preserve the most important data. It appears that the World Bank may hire the director of the cultural heritage study for further work, including salvage.

The cultural heritage team leader organized a display at the Somalia National Museum of some of the initial site findings and photographs taken at the sites. Somalis as well as other interested parties may look forward to the final results and analysis of the archeological work stimulated by JESS.

4. Conclusions and Lessons Learned

a. Conclusions

1) JESS has assembled a great deal of useful socioeconomic data on the Jubba Valley. This information has led to sound conclusions and provided well substantiated recommendations. The final reports and computerized data base provide the MPJVD and development

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assistance agencies information for planning and monitoring developments in the Valley. SEBS data have been incorporated into the planning process. JESS demographic, health and livestock data were used by AHT in the Master Plan. The data, analysis and recommendations regarding resettlement and cultural heritage have influenced the work of World Bank missions.

2) Although the socioeconomic work to be accomplished by the Project was poorly articulated in the original PP, this was rectified by USAID prior to contracting for the work.

3) Although a formal mechanism was established for professional technical review of JESS work through the National Academy of Sciences component, it was used for the socioeconomic studies only twice: for initial identification of issues which should receive attention and for review of final draft reports. Besides the midterm evaluation, it appears that no other professional review occurred (except by ARD headquarters) until the last year of the project, when all field studies had been completed. REDSO/ESA services were only used once, although they had been available throughout the project.

4) Prior to launching the major socioeconomic surveys, no outside professional review was required for the questionnaires and sampling framework. This was a high risk for USAID in a project focused exclusively on studies with a planning objective. While in this case the work did not suffer greatly from lack of a review, controversy arose during the midterm evaluation which otherwise could have been avoided or at least lessened and the attention of the evaluators could have been focused more productively on other aspects. While the argument can be made that it costs little to collect additional information in field surveys, an indirect cost is incurred in data coding, entry and analysis. Moreover, some planning issues should have received greater attention, e.g. the labor situation and marketing, vis a vis peripheral baseline data points.

5) A major weakness in the PP design was the omission of attention to data management. While ARD did recognize the importance of some input from a data management and computer specialist the amount of time needed was underestimated and there was no efficient mechanism for resolving crisis problems with software and hardware.

6) More attention ought to have been given to institution building related to the socioeconomic studies. Project design weaknesses led to problems and deficiencies. First, the PP never included an institutional analysis and omitted attention to incentives and rewards, yet it called for two counterparts presumably with some background in economics and sociology. An institutional analysis at the design stage would probably have revealed the unlikelihood of obtaining suitable counterparts from

within the MPJVD and could have resulted in discussions with MPJVD on a method whereby a suitable and willing counterpart could have been secured from outside the ministry. The field work was carried out under extremely harsh conditions and required real commitment. It should have been acknowledged from the beginning that those physically working in the Jubba Valley should be rewarded based on performance. Secondly, at least some of the off shore training opportunities should have been designated for counterparts and other professional level staff involved in JESS based on performance and scheduled for the last year or an additional year after the long term technical assistants had completed their work.

Acknowledgement is given to MPJVD for hiring onto its staff two of the JESS field technicians and approving them for further training. Not only has their excellent performance been rewarded but the valuable experience gained will remain with the ministry.

7) The amount of time spent by the Chief of Party on budgeting matters and logistics indicated the need for additional administrative backup, with was eventually provided. The result of the Chief of Party attending to details was a major field effort that worked.

b. Lessons Learned

1) In future projects with a significant studies component, AID should require a review of the main questionnaire(s) and sampling framework prior to initiation of the interview phase. The reviewers ought to hold discussions with the questionnaire designers in order to clarify the reasons for certain types of questions; in order to ensure reliable responses, questions must be framed in a manner that takes into account cultural aspects. USAID and/or the project team should identify suitable reviewers locally or regionally. The peer review of the draft SEBS report proved useful. However, a better model should be developed for peer involvement.

The three-phase system in JESS proved useful and should be incorporated in similar projects.

2) Although researchers should have certain basic computer skills, in similar projects the selection of the researcher should still be based more on other experience and qualifications. Future projects of this kind which rely heavily on computers for timely delivery of a large amount of data should either have a fulltime data/computer specialist during the critical stage when data is being entered and processed, or a contract with a firm/individual locally or regionally to provide assistance in a timely manner. In addition, funds and time ought to be made available to provide some training for the researchers in use of the appropriate software.

3) Projects which have a major studies component ought to focus on achievements, in particular the use and usefulness of the data and recommendations, at the purpose level. This would lead to giving more attention to records on the distribution of the reports, special seminars on the subjects, feedback on recommendations and tracking the way and extent to which the data, analysis and recommendations are used. Unless it is incorporated into the project purpose and subsequent monitoring system, it is difficult for evaluators to report on the views of others on the use and usefulness of the studies.

4) Adequate attention must be given to incentives and rewards when a project is designed, especially in countries like Somalia where salary scales are extremely low. The design should incorporate rewards for excellent performance, such as short term and long term training.

Chapter V

EVALUATION OF THE SCIENTIFIC MONITORING AND EXPERT RESOURCE BASE

1. Contractual Arrangements

This element, entrusted to the National Academy of Sciences, had not been contemplated by the original Project Paper (9.25.83) as one of the project inputs. In 1981, the Board on Science and Technology for International Development (BOSTID), a division of the National Research Council (NRC), itself an affiliate of the National Academy of Sciences, had organized in Washington, DC a discussion seminar on Somalia related to the potential of technology, combined with an understanding of the ecological and socio-economic factors, to increase the productivity and stability of Somalia's agro-sylva-pastoral systems. As a result of the interest generated by this seminar, a BOSTID staff member made a program development trip to Somalia and visited AID. Mission officials perceived the possibility of obtaining from BOSTID assistance to supplement the mission's limited technical capability to oversee activities related to river basin ecology and related topics, particularly the anticipated $3.3 million Jubba Environment and Socio-economic Studies (JESS) component which was subsequently awarded to Associates in Rural Development (ARD). The BOSTID representative was invited to submit to the Mission a proposal for advisory services and oversight of the JESS activity.

BOSTID's proposal was submitted through the National Academy of Sciences on April 3, 1984, for services in the estimated amount of $ 450,000. A series of negotiations followed, with the result that NAS's scope of responsibilities was made to include review of the work to be produced by JESS, and the initial cost of authorized services was reduced to $ 375,000. A PIO/T for a cooperative agreement in that amount to the NAS, a non-profit private organization, was executed on September 11, 1984. Award of the grant to NAS was justified by the Mission on the basis that the services required in connection with the highly visible JESS project could not be obtained from any other person or firm (sole source).

The Amended Project Paper, issued on 6.25.85, included the NAS participation as one of the proposed inputs.

On September 10, 1985, a grant amendment (No. 1) reinstated the $ 450,000 as an estimated total amount, the obligated amount being held at $ 375,000.

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2. Scope of Work and Methodology

Under the terms of the Cooperative Agreement, NAS was to:

1. Ensure that appropriate scientific criteria are met in the environmental and socio-economic studies (JESS).

2. Provide the project with access to a broad pool of information and experts, and with a forum for the free flow of information and effective guidance of the project.

3. Provide peer review and analysis of the study's findings.

4. Establish linkages between the Somali and US scientific commmunities.

As the mechanism to accomplish the above purposes, the Academy proposed to convene a panel of experts in river basin development, with emphasis on the analysis of social and environmental consequence of dam construction, and to organize a series of five workshops to be held at critical points in the performance of the studies.

The workshops were to be the forum for exchanges between the panel members, the ARD team, USAID and MPJVD officials, and interested Somali scientists.

BOSTID, with its permanent staff, was to be the executing group on behalf of NAS.

3. Budget

Salaries (BOSTID Staff)		$ 125,730
Mark-up:		
Fringe benefits	28,910	
Overhead	90,624	
G & A	43,863	
Sub-total, Markup		163,397
Consultants		10,925
Travel		127,990
Other direct costs		21,950
Total estimated cost		$ 450,000

The panel members participation was on a voluntary basis, with no compensation except for reimbursement of direct costs.

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4. Accomplishments

BOSTID assembled a panel composed initially of the following persons:

- Dr. Thayer Scudder, Social Scientist (Chairman), California Institute of Technology, Pasadena, CA
- Dr. Claudia Carr, Ecologist, University of California, Berkeley, CA
- Dr. Lee V. Cassanelli, Historian, University of Pennsylvania, Philadelphia, PA
- Dr. Bereket Habte Selassie, International Lawyer, Howard and Georgetown Universities, Washington, DC.
- Mr. Walter Lusigi, Director, UNESCO/IUCN Integrated Program on Arid Lands Marsabit, Kenya.

The following persons were subsequently added to the Panel:

- Dr. John Hunter, Geographer, Michigan State University, Lansing, MI.
- Dr. Peter Rogers, Social Scientist, Harvard University, Cambridge, MASS.
- Dr. Charles Howe, Economist, University of Colorado, Boulder, CO.

Four workshops were held as follows:

Date	Venue	Theme
Jan.86	Mogadishu, Somalia	Development of the Jubba River Valley
Apr.86	Burlington, VT, USA	Review of environmental and socio-economic issues related to Development in the Jubba River Valley
Oct.86	Nairobi, Kenya	Development of the Tana and Athi River Basins in Kenya: Applications to the Jubba
May 87	Berkeley Spring, WVA, USA	River basin development in Africa; implications for the Jubba Valley

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5. Evaluation of the NAS Component

1. The formula used in this project by the AID Mission to supplement its lack of technical expertise in monitoring and oversight of the ARD contract implementation is quite unusual, if not unique. Apparently, for a period of about 8 months from the opening of the Mogadishu AID mission until about 1979, there was a full-time mission environmentalist on duty in Mogadishu. As the JESS activity was being conceptualized in 1981-1982, if the mission had brought back an environmentalist/social scientist on its staff, general direction could have been provided to that important activity. ARD was selected as well qualified to perform the work on the basis of competitive proposals received from several firms with expertise in the required fields. As many consulting firms do, ARD had an in-house quality control system that utilizes senior specialists to establish study criteria and review the work as it is produced.

2. However, the Mission lacked in-house technical expertise to monitor and review the production and quality of project outputs. To bridge that gap, the Mission added, at considerable cost, a third party which was neither located near the scene of activity, nor had in-house technical expertise to perform the needed monitoring and review function. BOSTID depends on the benevolent participation of academics spread out all over the United States. Thus, the independent external check on JESS's work desired by the Mission was not provided by NAS.

3. It is difficult to see how this cumbersome mechanism could have provided effective monitoring and a constructive and timely review of the studies carried out by ARD. In fact, the only contacts the members of the advisory panel seem to have had with JESS took place during the workshops. By all reports, these workshops were not well organized, as the participants were not prepared to deal with the themes of the workshops by receiving JESS reports and documents in advance. Nor did they provide substantive inputs subsequent to the workshops. Only a few letters were exchanged over the three years between ARD staff and panel members.

4. While workshops are always useful by virtue of the informal contacts that take place between the participants outside of the formal sessions, the value of such benefits to the project seem to have been out of proportion with the expenses incurred.

5. The workshops were not followed by the substantive documents that could have been prepared by BOSTID to guide JESS. Few memoranda such as: Appendix V, Preliminary Suggestions on

the Jubba Valley Dam Project Studies" by Dr. Walter J. Lusigi, are to be found in the Project records, and even that 3-page + memorandum is little more that a check-list of data that probably did not add much to ARD's intended program.

6. It appears that some suggestions were made by the panel which would have increased beyond practical limits the scope of JESS work, as can be gathered from responses from ARD: "We cannot... spend more money than the contract allows."[1]

7. The reports prepared by individual specialists sent to Somalia by ARD on specific environmental issues were sent by ARD to BOSTID, but these reports seem never to have reached the panel members. In any event, no review commments were received by ARD on these documents.

8. At the end of 1987, the Project Officer requested BOSTID to arrange a review of the USBR draft report by a number of reviewers he had identified. Although NAS's participation in the land classification work done by the Bureau was not part of the NAS scope of work, BOSTID circulated the draft among the reviewers, received the reviewers comments and forwarded them to USAID's Project Officer. BOSTID made no attempt at digesting the varied responses from some 8 reviewers nor synthesizing them. This task fell back on the Project Officer.

9. Similarly, after ARD issued its draft of the JESS Executive Report and the Socio-Economic Baseline Survey (SEBS) draft volume, BOSTID sent copies of the drafts to members of the panel for review. BOSTID's rapid response enabled the reviewers to see the drafts and provide quickly prepared comments which were sent directly by the panel members to ARD.

6. Unfinished Work

After the 4th workshop, NAS's own expenditures under the grant were within $10,000 from the authorized amount of $375,000. It was decided by AID's Project Officer that the 5th workshop would not be held and that, instead, BOSTID would use the remaining funds for a "peer review" by the panel members of the final synthesis report to be prepared by ARD as the outcome of its 3-year baseline data collection activity. This "peer review" was performed as stated in par. 5.9 above.

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[1] ARD letter to BOSTID, dated 5.9.86

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7. Conclusion

As in the case of the Land Classification Studies, monitoring of JESS's technical accomplishments would have been better accomplished by an AID environmentalist/social scientist attached to the Mogadishu mission. And it was the professional responsibility of ARD-- a consulting firm-- to ensure that the work of its personnel received appropriate guidance and review by senior, expert technical staff.

As it happened, BOSTID provided little or no guidance to ARD in its performance of JESS. Panel members' reviews of the JESS Executive Report Draft were prepared hurriedly and had little impact on the report. The workshops did provide an opportunity for ARD, NAS and Somali officials to meet. However, no continuing linkages between the Somali and US scientific communities were established.

A large part of the cost of the NAS participation was used to defray the cost of BOSTID staff personnel, including their salaries and associated fringe, overhead and general expenses. The returns to the Jubba Valley studies of this expense were close to nil.

Chapter VI

INSTITUTIONAL DEVELOPMENT OF MNPJVD

1. Introduction

The MPJVD is responsible for the overall planning and implementation of development projects in the Jubba Valley, and for coordinating the activities of various external donors in their contributions toward the development of the Valley. Established in 1982, the Ministry needed to build up the necessary expertise to direct effectively the development of the Valley's resources. The Ministry's organization as of 1983 is shown graphically in Figure 3.

The need for institutional development and strengthening of MPJVD was addressed by the Jubba Valley Development Analytical Studies in one of its two purposes. That purpose was to strengthen the Ministry's long-term institutional capability to plan or at least coordinate planning of development in the Jubba Valley, and monitor that development.

Accordingly, the first Project Paper (9.25.83) included the obligation of $250,000 for long-term and short-term training of Ministry personnel. That PP also included, as a short-term purpose, technical assistance to the MPJVD in defining the Master Plan and in coordinating its formulation. This assistance was to be provided in the form of one or more technical advisor(s) specialized in River Basin Planning who would begin "scoping out" the development of a Master Plan in April 1984, assisted by a number of shorter term consultants. This assistance was to be completed at the end of 1988. The level of effort was envisioned to be as follows:

Item	Level of Effort	AID Grant (US $)	GSDR Contributio (equiv. $
Long and Short-term training	-	250,000	-
Long-term advisor (s)	5 py	500,000	150,000
Consultants	60 pm	600,000	250,000

The Project Agreement signed on 9.29.83 provided for "long and short-term institutional support to the MPJVD, including logistical support and long term consultants support."

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SOMALIA

REVIEW OF JUBBA VALLEY DEVELOPMENT PROGRAM

ORGANIZATIONAL CHART

Ministry of Jubba Valley Development as of September 1983

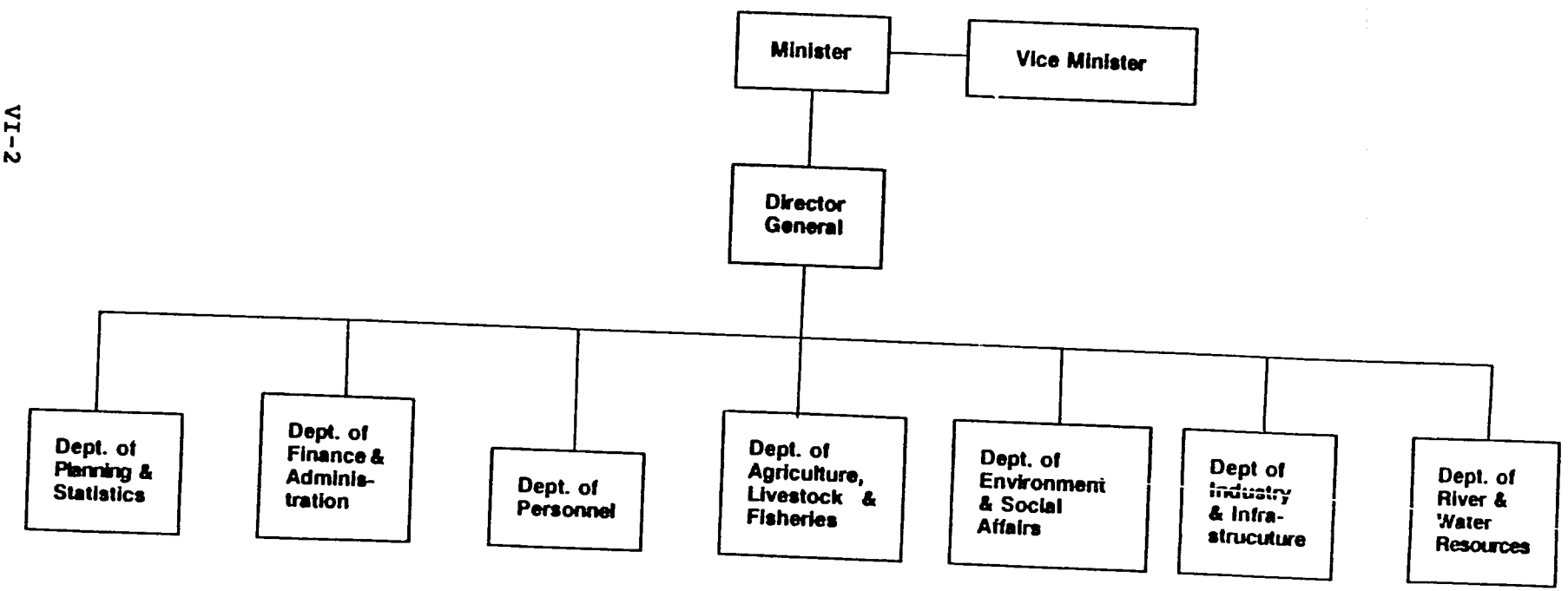

Figure 3

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2. The Amended Project Paper

The amended project paper, dated 6.2.85, introduced changes to the original plan. It reorganized the type and extent of institutional support to be provided by AID with the view of developing the Ministry's planning capability by:

1. Increasing the level of long/short-term training of MPJVD personnel; and

2. Deleting the long-term advisor position(s) and related consultants.

The reason for deleting the contribution of a River Basin Planner who was to be positioned within the MPJVD is that the German foreign aid agency, GTZ, had volunteered to fund formulation of the Master Plan. Accordingly, a regional planner from the German consulting firm Agrar and Hidrotechnik (AHT) was assigned to Mogadishu as of January 1987, supported by a number of specialists coming to Somalia on short-term and longer term assignments. (AHT already had a resident team working in Somalia on other project studies). The deletion of the Advisor in effect removed AID's direct link to MPJVD's formulation of the high priority Master Plan.

On the other hand, AID increased its emphasis on staff training through four mechanisms:

- Short courses abroad
- Degree courses abroad
- In-country development seminars
- on-the-job training of counterparts

For the life of the Project, AID earmarked $370,000 for this form of institutional development of MPJVD, to be apportioned as follows:

- Short courses abroad:	
-10 trainees abroad each for about 3 months	$110,000
- Degree courses abroad:	
-2 trainees each for 2 academic years	114,000
- In-country training:	
9 pm of expatriate instructors on TDY	146,000
Total for institutional development	$370,000

This budget was subsequently increased to $ 429,000.

The estimate for in-country training envisioned 9 development seminars for MPJVD professional staff participants, to be held in Somalia over a three-year period. Four of these were tentatively scheduled in February and August 86, June 87 and March 88. The participant training development seminars were to be organized with guidance and assistance from the National Academy of Sciences.

The on-the-job training of ministry professional staff was to be accomplished through the assignment to the contractorts' staff of a number of counterparts from the MPJVD. The following were specified in the PP and the Project Agreement:

-Sociologist
-Economist
-Agronomist
-Civil Engineer
-Water Resource Engineer
-Soil Scientist
-Livestock Specialist

3. Accomplishments

a. Training Abroad

Organization, management and monitoring of this activity have been carried out by the Mission itself, specifically by the current Project Officer and one of his assistants. Table 6 summarizes, in tabular form, the extent of training abroad already accomplished and still underway as of August, 1988. It can be seen that two persons from the Ministry went to Kenya and to the United States, respectively, for short-term training courses. Three more were in the united states for one-year Masters programs in soil science, management and irrigation, and have returned. Four occupy positions of importance within the Ministry. The fifth, who is Director of Planning, is currently in Germany on another training program.

Four other professionals are currently in the United States: three for Masters-level programs (one to two academic years) and one for a 3-year PhD in Range Management and Entomology.

The Mission's financial report indicates that, as of 3.31.88, about $243,000 had been disbursed for the training activity, from a committed amount of $429,000. This corresponds to about 88 person-months of training abroad. The training of the individuals still abroad will correspond to an additional 75 person-months, requiring about $207,000 on the basis of the same average cost. The total expenditure would thus be about $ 450,000 -- an amount slightly above the committed amount.

Table 6

Ministry of Planning and Jubba Valley Development
Long and Short-term Training Candidates

Staff who have undergone training

Participant Names	Sex	Degree	Institution & Field of Study	Dep. Date	Date of Return
Abdullahi Mohamed Nur	M	Non Degree Training	USIU, Nairobi Remote Sensing		Returned Dec. 23, 1984
Aweys Haji Yusuf	M	Non Degree Training	HIID Project Investment Appraisal and Management	06/30/86	Returned Sept. 22, 1986
Abdurahman Islaw Mahdalla	M	MS	Wyoming University Soil Science	06/10/86	Returned 06/2/87
Ali Warsame Aden	M	MS	USIU Nairobi Org/Mgt. Development	09/01/86	Returned Sept.1, 1987
Duale Hussein Abdi	M	MS	Utah University Irrigation	01/01/87	Returned January 1, 1988

On-going Training

Participant Names	Sex	Degree	Institution & Field of Study	Dep. Date	Date of Return
Yassin Nur Osman	M	MS	Cornell University Nat. Res. Planning	01/6/88	In training May 30, 1989
Mohamed Ali Mohamed	M	Ph.D.	Texas University Nat. Res. & Entomology	01/01/86	Still studying August 17, 1989
Ali Ahmed Gulaid	M	MS	Utah University Irrign. & Drainage Eng.	09/17/87	In training Sept. 1, 1989
Ahmed Mohamed Ali	M	MS	Wyoming University Rural Sociology & Statistics	08/23/87	In training Feb. 28, 1990

Staff who have not returned

Nasir Abdurahman Abdi	M		Utah State University Drainage and Salinity	03/23/86	Left course Whereabouts unknown

The financial report shows an obligated amount of $700,000 for institutional development (i.e. training), and the Mission was planning to use the non-committed amount of some of $250,000 - $260,000 for the long-term training in the U.S. of three additional professionals in

-irrigation and water management

-sociology and economics/statistics

-finance and accounts

and one in Nairobi, Kenya, in

-organization and management.

Funds permitting, the Mission plans to send additional individuals to third countries for training in various disciplines related to river basin planning and irrigation management. The recent extension of the PACD to May 30, 1990 was intended to permit the accomplishment of most of these plans.

One individual, Said Hussein Hersi, entered the U.S. International University in Nairobi on September 28, 1988, where he is pursuing a 2-year Master's program on Organization Management Development. On August 12, 1988, Omar Moallim Ahmed was enrolled in a one-year non-degree program in Sociology and Agricultural Economics at the University of Wyoming. Gulaid Abdulkandir Artan began a 2-year program in irrigation management at Utah State University.

A third candidate for training in the U.S., Ali Warsame Aden, is still to be processed. Five other candidates are expected to enroll in Master's degree programs at the University of Jordan, beginning in September 1989.

b. <u>In-country Development Seminars</u>

As far as can be ascertained, none of the activity that had been outlined in the Project Paper was carried out. NAS did not concern itself with the organization of in-country development seminars (that was not mentioned in their contract's Scope of Work), and neither did USAID until recently.

The current Project Officer organized a professional development seminar led in Mogadishu by two Kenyan specialists from the Nairobi Remote Sensing Center (RSC) in May 1988. That 2-week seminar dealt with

- cartography
- Interpretation of low level aerial photography
- Interpretation of satellite imagery

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organized at the cost of only $15,600 under a purchase order with the RSC, the seminar was attended by some 15 persons from the MPJVD. That seminar seems to have been useful to the Ministry personnel who attended it. They become exposed to techniques which are important in development planning, including an overflight in an airplane for a photographic demonstration.

The Project Officer intends to organize in the near future a Computer Training seminar to be given by Somali specialists. That seminar will be directed to training MPJVD personnel in the use of the computer equipment that will be left by the ARD (JESS) team when they leave Somalia in August, 1988.

A series of 1 to 1 1/2 hour "seminars" were held by ARD, but these were little more than briefing sessions given by individuals consultants on their findings before they left the country, at the end of their TDY assignments. These briefing sessions, given principally for the benefit of Ministry personnel, were unevenly attended; reportedly, many of them were limited to interactions between the expatriate consultants.

It was reported to the Evaluation Team that H.E. Habib, Minister of the Jubba Valey Development, repeatedly expressed his belief in the usefulness of in-country development seminars. However, USAID did not respond effectively and the budget of $146,000 originally allocated to this training function went largely unused.

The absence of English-speaking MPJVD staff appears to have been a constraint. While the Ministry established an English language training program for staff, using a Somali private school, it was poorly attended and MPJVD staff capability remained low. Given this deficiency, USAID chose to expand the scope of degree training courses abroad.

c. <u>On-the-Job Training of Counterparts</u>

The Mid-term Evaluation Report (April 1987) contains a list of the counterpart personnel assigned to the USBR team and to the ARD team as of that date. The list of counterpart staff assignment to the USBR team is probably fairly complete, since it was established as they were completing their work in Somalia.

This list, reproduced below, also shows the location of each individual as of August 1988.

BUREC Somali Counterpart Staff

Name	Profession	Present Location
Abdirahman Islaw Mahadalle	Agronomist	MJVD, Director of planning. Currently in Germany for a 2-month training course.
Hassan Aden Mohamed	Agronomist	MJVD, assigned as counterpart to AHT Planning team
Rukiyo Ali Kulmiye	Agronomist	MJVD, Training Unit Section
Duale Hassan	P.S.Agronomist	Returned from 8-month training at U.S.U. Currently assigned as counterpart to AHT Planning team
Gulaid Abdulkadir Artan	Civil Engineer	MJVD, currently Acting Director of Planning
Ali Ahmed Gulaid	Civil Engineer	Currently in training at U.S.U.
Abdi Jama Samatar	Accountant and Management	Assigned to AHT team as accountant
Abdirahman Mohamed Mudey	Economist	Assigned as counterpart to AHT Planning team
Abdinasir Abderrahman	P.S.Geologist	Whereabouts unknown (was in training in U.S.)
Lul Omer Mohamed	Lab Assistant	MJVD Data Center
Kaha Mohamed	Soil Scientist	Left MJVD. Currently working for Af. D.B. in Ivory Coast.

The mid-term evaluation report also contains a list, probably partial, of the counterpart staff assigned to the ARD team. An updated and completed list, obtained from MPJVD for the purpose of this report, follows. The list also shows the present location of each individual.

ARD Somali Counterpart Staff

Name	Profession	Present Location[1]
Abdulkadir Haji Ibrahim	Agronomist	MJVD, awaiting training
Mohamed Hasan Adan	Veterinarian	MJVD, awaiting training
Abdirahi Mohamed Ahmed	Linguist	MJVD, awaiting training
Abdirahman Mohamed Ali	Economist	MJVD, awaiting training
Faduma Rosle Mohamed	Linguist	MJVD, awaiting training
Ahmed Mohamed Ali	Field Technician	In training at Wyoming U.
Omar Moalim Ahmed	Deputy Technician	In training at Wyoming U.
Said Husein Hersi	Administration	Enrolled at US International University in Nairobi.

In addition, ARD recruited directly some 40 Somali staff, who were on their payroll while there was a need for them. These included:

20 Enumerators
8 Market Surveyors
1 Accountant
1 Office Manager
1 Logistics Manager
1 Office Assistant
1 Secretary
4 Cooks
2 Cleaners etc.

While there may have been a training benefit that accrued to these individuals from their employment by ARD, it was lost to the Ministry, except for two enumerators subsequently hired by MPJVD.

4. Evaluation

The institutional development thrust of this project was intended to be an important function of USAID's contribution toward the development of the Jubba Valley. Originally, $ 1,350,000 or 25% of the project budget, had been allocated to strengthening the MPJVD. As the project developed, and as it became evident that the cost of other activities had been underestimated, the institutional development activities as provided in the original Project Paper were de-emphasized and in the subsequent amendment some of the funds were transferred to technical assistance activities.

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[1] as of August, 1988.

GTZ's interest in placing within the MPJVD a team of planners assigned to the formulation of the Master Plan was taken by USAID as a reason for deleting the position of River Basin Planning Advisor(s) and related technical assistance. As could be expected, AHT -- GTZ's contractors for master planning -- saw their primary responsibility as the production of a Master Plan, and naturally did not attend to institutional development of the Ministry's staff (except for special attention paid in the last few months by the new AHT Team Leader to the organization of the Ministry, and to a long-term staff development plan.)

By placing within the Ministry an institutional advisor experienced in the administration of river basin development, USAID could have made a lasting contribution to the strengthening of the MNPJVD and, ultimately, to the development of the resources of the Jubba Valley. That individual would have worked with Ministry officials in identifying training needs for professional, technical and administrative staff, in developing appropriate training programs in the four categories considered by the Project Papers, and in expanding the staff as required to make of the Ministry an effective planning agency.

USAID's most notable contribution to institutional development has been in the degree courses abroad. Officials of MJVD expressed satisfaction with that phase of the program, particularly the graduate courses. While this activity has been fairly successful despite the absence of a coordinator trained in this field, it has been a punctual approach that will result in the improvement of professional skills of several individuals. Long-term benefits will accrue to the Ministry, but they will materalize in the future. This effort does not help strenghten the Ministry as an institution over the short term, an important objective of the Project that was not achieved. Neither has the Project achieved the objective of training a large portion of the Ministry's staff through in-country development seminars.

Another area which did receive attention is that of the Somali counterparts, intended to be professionals from the MJVD assigned to work on project activities with contractor personnel. The Project Agreement listed seven position to be filled. Although some of the counterpart positions were never filled (for example that of a sociologist), a much larger number of personnel were assigned by the Ministry as counterpart staff. The underlying assumption is that, by working with resident expatriate personnel, the national counterparts can learn skills and techniques that are directly relevant to their function within the Ministry. Additionally, it gives an incentive to personnel to remain in the Ministry through the mechanism of allowances, thus ensuring staff continuity.

contractor personnel have expressed disappointment with this professional development activity, principally because the counterpart personnel areas of specialization generally did not correspond to those of the expatriates to whom they were assigned, and also because of the excessive absenteeism of some of the counterparts. However, some Ministry officials expressed more positive feelings about the results of this activity.

Examination of the lists of counterpart staff assigned to the USBR team during its activity in Somalia from April 85 to April 87 shows that most of the counterparts have remained with the Ministry. These individuals are regarded by MJVD Directors as important members of their staff. One of them is continuing his professional development at Utah State University; four are currently working with the AHT team on the development of the master plan, and the AHT team leader is helping them become self-sufficient by assigning to them independent technical tasks.

Despite their general reservations, members of the ARD team confirmed that at least five of the counterparts assigned to them were eager and intent on learning. Three are currently abroad for long-term training and two more are expected to enter a Master's program at the University of Jordan in September 1989.

It should be understood that contractors' most pressing concern is generally to complete the technical studies outlined in their scope of work. Therefore, they are often reluctant to take the time to patiently teach their assigned counterparts. Officials of MJVD familiar with ARD's field activities stated the Somali counterparts involvement was not truly "on-the-job training", in-as-much as most of the counterparts participated as interpreters or translators. However, this is an activity which, in the long term, can make a very substantial contribution to the strengthening of the Ministry. It seems that this is already happening as a result of the Jubba Project. However, the effectiveness of this training function would have been enhanced if the counterparts professional development had been coordinated and monitored by one senior person. The long term expatriate advisor who was to have been assigned to the Ministry could have performed that function.

5. Recommendations

The Project Officer's current plans to expend an additional $260,000 to send three professionals to the U.S. and one to Nairobi for degree courses should be pursued. The project's PACD has been extended to 9.30.91 for this purpose; the individuals involved have been identified and they are aware of these plans. A cancellation of these arrangements would be counterproductive. It is recommended that it be implemented.

The Project Officer also proposes to use part of that amount to send five other professionals for training in Jordan.

It was also recommended in the Provisional Evaluation Report that the institutional strengthening activity which did not take place be reinstated, to be carried out over a 2-3 year period until the new PACD. This would consist of placing within MNPJVD a senior institutional advisor specialized in the administration of river basin development plans, and of carrying out an extensive program of in-country staff training with the assistance of human development specialists and instructors in relevant subjects and disciplines. There is still a great need for this function and if required funds could be added to the current JuDAS project appropriation, this would enable USAID to make a substantial contribution to the development and strenghtening of the MNPJVD as that Ministry enters a critical period of its activity, namely the implementation of the Baardheere multiple purpose project.

Chapter VII

Overall Evaluation

1. USAID - MNPJVD Relationship

The relationship between USAID and the Ministry seems to have been smooth and effective. Regular coordination of subjects of mutual concern was ensured by means of weekly meetings attended by the USAID Project Officer, the Ministry's Director General and the Ministry's Project Manager. Additional participants, from time to time, were other office directors from the Ministry (depending on the topics to be discussed), the Contractors' Team Leaders, the USAID training officer, or other parties.

The weekly meetings took place at the office of the Director General of the MPJVD on Tuesdays at 10:00 am. They are reported to have been held consistently, and to have been rescheduled if postponement was necessary. Additional meetings between the Project Officer and the Director General took place whenever the situation required. Practically all matters between USAID and MPJVD were handled at that level, and few, if any, meetings between the USAID Mission Director and the Minister were held to discuss the substance of the Project.

2. Project's Impact on Master Planning for Jubba Valley Development

One thrust of the Project's contribution to the development of the Jubba Valley was the generation of data needed in the process of formulating a Master Plan for optimum development of the Valley's natural resources. These data included:

- A delineation of potentially irrigable lands and their classification;
- Socio-economic and public health information on inhabitants and users in the Valley;
- An assessment of potential impacts of Baardheere Dam on the environment and identification of measures to mitigate adverse effects.

All three of these data collection tasks were accomplished, and the products thereof were made available to the AHT planners. As it turned out, the Master Plan they formulated for the 1990-2005 period does not include irrigation of new lands, outside of improvements of deshek cultivation and rehabilitation/expansion of irrigation schemes existing in the Southern part of the Jubba

Valley. Consequently, the land classification maps prepared by the U.S. Bureau of Reclamation did not serve for formulation of the Master Plan. However, the plan for the 1993-95 period calls for the study of alternatives for the diversion of irrigation water from the Jubba River. It can be expected that, in the course of that study, the land classification maps will be used to identify alternative service areas and appropriate river diversion points.

The socio-economic baseline data collected by ARD over the last 24 months are now (August 1988) being compiled and analyzed. However, as they were being developed, many of these data were already transferred to the planners and other interested parties, and put to use as follows:

- The computerized database was transferred to AHT in January 1988, and presumably exploited in the process of their studies.

- Data on the populations located in the potential reservoir area, including analysis of these data and recommendations related to their resettlement were transferred to World Bank staff and their consultants for resettlement, and used by them in their evaluation of resettlement requirements.

- Data on the present health situation were used by AHT in Volume I of the Master Plan report, and also passed on to WHO for their own planning purposes.

- Data on livestock were also used by AHT.

- Remote sensing maps were turned over to AHT.

- Aerial photos at 1:10,000 scale were turned over to AHT.

- Basic descriptive demographic information collected and compiled by ARD were cited by AHT in their volume I of the Master Plan Report.

Thus, it appears that the purpose for which socio-economic baseline data were collected is already being served. These data have been used in the formulation of the Master Plan and, therefore, their impact has been positive. All users or potential users of these data expressed respect for the thoroughness of the surveys and the good quality of the data.

ARD team members have expressed concern at not being given an opportunity to review the AHT product, so as to ensure that their data were used appropriately. In fact, some instances of misinterpretation and misuse have occurred. AHT attributes this to the fact that they were receiving from ARD advance data before it was processed, and that this will be corrected as a matter of course when final material is received from ARD. In any event,

this risk is always present when data collected by one group are used by another, which is the general case. Here, however, some of the baseline surveyors were still present in Somalia as their data were already being used by planners, and this did provide an opportunity for some feedback from the ARD team on AHT's use of their data.

In addition, AHT's work on the Master Plan is undergoing a process of several iterations. Their initial report draft was already revised once, and some of the misinterpretations of ARD data were corrected in the second version. Reportedly, that draft is itself in the process of being revised, and the final draft version will await issuance of ARD's final report. AHT is intent on ensuring consistency between the JESS data and their own work.

Finally, it is the view of the evaluation team that ARD's environmental assessment of potential consequences of Baardheere Dam has had a positive impact on development planning: their thorough investigations have shown that construction of the dam would have no major adverse effects, with the exception of health effects (possible development of shistosomiasis in the reservoir area, and possible development of medicine resistant strains of malaria). As a result of this environmental assessment, the World Bank staff are now looking favorably at the Baardheere project and are moving expeditiously to complete their pre-construction review process.

3. Project Impact on the MNPJVD

Unfortunately, the Evaluation Team must be less positive about the impact the JuDAS Project has had on the Ministry of National Planning and Jubba Valley Development. As documented in an earlier chapter, the institutional strengthening component was de-emphasized as the Project evolved, and the Ministry is neither better organized nor better staffed as a result of the Project. The value of the on-the-job counterpart training still remains to be demonstrated. The most notable achievement is that a few professionals have received academic training abroad, some of whom have returned to the Ministry better able to deal with technical problems in their respective fields of specialization. Although this is valuable, it falls far short of the Project's objective to improve the Ministry's capability as an executing or even coordinating agency to plan economic development in the Jubba Valley.

The development of Baardheere dam and powerhouse is the responsibility of BDP--a project department of the Ministry. Engineering designs are carried out by outside consulting engineering firms and are subject to review by an international board of consultants. Implementation, under guidance from the World Bank, will be by construction contractors supervised by a consulting engineering firm. It can be expected that the

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Ministry's role in that undertaking will be minimized because of its inherent weaknesses. Nevertheless, the dam will be a success because it is a well defined engineering structure.

On the other hand, rational and optimum development of the remainder of the Valley's resources requires planning and direction from an organized, competent and effective body. With very few exceptions, the planning group located within MPJVD is not much further along in 1989 than it was in 1985.

4. Evaluation of the Project's Design and Methodology

Later difficulties in project implementation can be traced back to deficiencies in its design. Among these:

1. The design of the Project seems to have been deficient. Apparently, the original Project Paper (September 1983) was prepared hurriedly in order to obligate funds before the end of the fiscal year, and it did not receive sufficient thought. For example, the Logical Framework (Annex G) is vague, and is not specific as regards objectively verifiable indicators. The Amended Project Paper, dated 6.2.85, could have been improved by the Mission. Instead, the same design and logical framework were reused, thus foregoing the opportunity to correct major deficiencies.

2. The original scope of work of the land classification survey was too ambitious. The Mission used for the Project Papers a scope of work of land classification survey established by the World Bank for the Farrahane and Shalambood areas along the Shebelli River. The Bank was considering rehabilitation of these two irrigated areas which add up to a total of 10,000 hectares. The Bank's scope of work called for a reconnaissance level survey of irrigable lands, to be followed by a feasibility-grade classification. The latter level of detail was justified by the fact that it was to support a decision to construct specific irrigation facilities for 10,000 hectares. The potentially irrigable area in the Jubba Valley was considerably larger, and the land classification was to be used only for the purpose of preparing a Master Plan of development. It was unnecessary to consider a feasibility-grade land classification survey or, to use USBR terminology, an "irrigable land" classification survey. The reconnaissance level or "arable land"-- in USBR parlance -- classification was sufficient.

3. The cost of performing the land classification surveys was underestimated by the Project designers. The amount provided for both reconnaissance and feasibility surveys ($2 million) was insufficient to perform even the reconnaissance classification alone ($2,172,000 to date).

The cost of performing the environmental and socio-economic studies was grossly underestimated by the original Project designers: $1,650,000 were provided in the Project Paper, as compared with $3,585,000 committed to date.

The contract for environmental/socio-economic studies was a "small-business set aside". The record shows that considerable discussion within the Mission preceded the decision to utilize the small business set aside mechanism. In the main, the discussion and arguments on both sides centered on the capacity of a small business firm to undertake a project of this magnitude. (A small business firm, by definition, has an annual volume of business of less than $ 3 million, and this contract, to be completed in three years, was to exceed $ 3.5 million). Normally, a number of firms with large in-house capacity would have been asked to submit competitive proposals for a project with this complexity. However, the Mission overcame its apprehensions and decided, on an experimental basis, to find a small firm that mignt have a sufficient capacity to perform. It invited competitive proposals from small businesses and, on the basis of a proposal that was judged to be excellent, awarded a contract to Associates in Rural Development (ARD).

ARD had to recruit most of the long term resident personnel from outside the firm, (114 pm out of 145) and almost all the short-term assignments were filled by outside consultants (76.5 pm). However, ARD's management was obviously discerning in staff selection, and it was able to exercise enough control over the quality of the work performed. As a result, except for the work of very few TDY consultants, JESS performed a good socio-economic and environmental survey. While the schedule for completion of final reports was delayed, the final product is of high quality and has been made available in time to be used by the World Bank team who resumed pre-appraisal activities in June 1989.

6. Consideration was given during the project design to the desirability of grouping under a single contract the environmental studies and the socio-economic studies. Even though the larger amount of work was to be handled by a small business firm, a single contract provided greater management ease both for USAID and for the Contractor. In addition, a single team, under unified management permitted a better technical integration of environmental considerations with socio-economic factors. When the initial Team Leader was replaced after the first year of activities, ARD assigned to Mogadishu a strong Team Leader with good management ability and solid expertise as an environmentalist. The result is that ARD was able to successfully integrate the work of its varied professionals.

7. The contract for land classification was awarded to the US Bureau of Reclamation under a PASA without competitive proposals from the private sector. USAID did not even receive names and c.v.'s of candidates for the resident staff positions in the Bureau's proposal for the work. Additionally, the scope of work was not reviewed carefully, otherwise the confusion related to the level of detail of the classification would probably have been avoided. The Mission could have relied on the 10.20.83 pre-reconnaissance report to a larger extent in establishing a scope of work for the PASA.

   As shown by this Project, professional work performed by federal agencies is not necessarily of better quality than similar services provided by the private sector, and the costs are not very different. Proposals for land classification should have been invited from the private sector, and a contract award made after careful scrutiny of the qualifications of proposed staffs, methodologies and schedules. Several reputable consulting firms have on their permanent staffs experienced soil scientists and land classifiers. Some of these personnel are former US Bureau of Reclamation employees who have moved to the private sector with the decline of Burec's volume of activity over the last 10 years or so.

   Since the Mission appears to have been desirous to involve the USBR as a specialized sister agency, that organization could have been invited to participate in the competition.

8. An important component of the Project - - its institutional development function - - did not receive sufficient emphasis. Neither of the Project Papers contained an institutional analysis. The Project's initial design of placing an expatriate advisor within the Ministry should have been retained in the Amendment. An institutional advisor experienced in the administration of water resources development programs stationed within the Ministry would have made an invaluable contribution to the organization of the Jubba Development Directorate, to the professional development of its staff, and to its overall planning capability. He would have assisted the Director in monitoring and integrating the studies carried out by three separate contractors (USBR, ARD, AHT) funded by two distinct donors (USAID, GTZ). He could also have been helpful in developing BDP into a stronger implementing agency, if so desired by the Ministry. With respect to staff development, he would have directed the training effort. This task fell by default to the successive Project Officers who in final analysis had neither sufficient time nor technical preparation for this task.

9. Not all the individuals selected for degree training courses abroad were chosen on the basis of merit. This is an expensive method of training that would have been more cost-effective if implemented more selectively.

10. Administration of the Project was assigned to a USAID direct hire Project Officer. At least three persons filled this function during the five years of the project life. Having no professional expertise in land resources, environmental assessments or socio-economics, they could not adequately involve themselves in the technical problems that needed to be resolved in order to keep the project in line with its original purposes, on schedule, and within budget. A professional with appropriate experience could have been recruited by USAID under a PSC and assigned full time to oversee the JUDAS project over a 4-year period -- beginning to end -- including, perhaps, even the Project design phase.

11. Finally NAS did not seem to be adapted to the guidance and review function that was assigned to that institution. The remote location of its support staff and the dispersed locations of the volunteer academics who served on the advisory panel made its contributions sporadic and weak. More interim in-country evaluations including periodic visits from REDSO/ESA technical specialists might have been a better method for providing external review and quality control.

12. Officials of the MPJVD expressed their concurrence on the need for further institutional strengthening of the Ministry, with emphasis on training in management, irrigation, environmental studies and public administration. In their view, such technical assistance could be provided by short-term advisors, considering that there is currently a long-term advisor for institutional development funded by the Federal Republic of Germany's GTZ/AHT.

5. Lessons Learned

A number of conclusions can be drawn from the evaluation of this project, which could be applied to the design and implementation of future projects of this kind.

1. Once a Project's goal, purpose and outputs have been established, identify realistic quantifiable indicators that can be used later to measure its actual accomplishments and compare them quantitively with anticipated performance.

2. Provide realistic budgets for projects implementation. Overall budgets should include an identified amount for contingencies, to be used later by the Mission for unforeseen situations.

3. Budget transfers between individual components of a project should be made only after a considered determination of the impact of such adjustments on the achievement of the overall goals and purposes.

4. For large technical assistance projects, pay particular attention to the development of carefully established terms of reference and apply the same selection criteria to PASA agencies as applied to private sector contractors.

5. Require from the proposers that they describe clearly their management plan, including their quality control system and a cost-control mechanism that gauges progress against time both in terms of quantity of output and expenditures. Assign weight to the management plan in the evaluation of the proposals.

6. Assign to the management and oversight of the project a Mission staff member who has professional qualifications related to the disciplines to be employed in the project. If the Mission does not have on its staff a professional with the required expertise, a Personal Services Contractor should be engaged by the Mission for this purpose. His/her responsibilities should include oversight of the assignment and effectiveness of counterparts for on-the-job training components.

7. Avoid involvement of different donors in iterdependent components of the same project.

8. Similar projects with a large studies component should contain a phased strategy to permit professional review prior to commencing field studies. Furthermore such projects ought to require a review of the main questionnaires and sampling framework prior to initiation of the interview phase. Provisions should be incorporated in the project design for inputs from a data/computer specialist.

9. Project designs ought not to omit incentives and rewards. For example, at least some of the off-shore trainees should be selected on the basis of performance.

ANNEXES

LIST OF ACRONYMS

AfDB	African Development Bank
AHT	Agrar und Hydrotechnik, GmbH
AID/W	AID/Washington
BDP	Baardheere Dam Project
BOSTID	Board on Science and Technology for International Development
c.v.	Curriculum Vitae, resume of experience
E/SEA	Environmental and Social Effects Assessment
GSDR	Government of the Somali Democratic Republic
GTZ	German Agency for Technical Cooperation
IBRD	World Bank
JESS	Jubba Environmental and Socio-economic Studies
JUDAS	Jubba(Valley) Development Analytical Studies
MJVD	
MNPJVD	Ministry of National Planning and Jubba Valley
MPJVD	Development
NAS	National Academy of Sciences
NRC	National Research Council
OM&R	Operation, maintenance and replacements
PACD	Project Assistance Completion Date
PASA	Participating Agency Service Agreement
PID	Project Identification Document
PIO/T	Project Implementation Order (Technical)
pm	Person-month(s)
PP	Project Paper
ProAg	Project Agreement
PSC	Personal Services Cont ıct
py	Person-year(s)
RSC	Remote Sensing Center (Nairobi)
SEBS	Socio-economic Baseline Survey
SOW	Scope of work
TEBS	Terrestrial Ecology Baseline Studies (a part of JESS)
USAID	AID/Mogadishu
USBR	
Burec	U.S. Bureau of Reclamation (Dept of the Interior)
WHO	World Health Organization (of the U.N.)

SCOPE OF WORK

JUBBA DEVELOPMENT ANALYTICAL STUDIES PROJECT (649-0134) FINAL EVALUATION

I. Background: The Jubba Development Analytical Studies (JUDAS) project was approved in September 1983 and is scheduled to end in September 1988. The purpose of this project is to "provide the necessary baseline information on soils, land use, environment and social effects of proposed development schemes in the Jubba River Valley and provide institutional support to the Ministry of Planning and Jubba Valley Development." In order to achieve this purpose, the project has undertaken four activities: (1) classification of soils and land use classification; (2) identification of environmental and socio-economic constraints; (3) development of Ministry of Planning and Jubba Valley Development (MPJVD) as an effective planning body; and (4) incorporation of the environmental assessment in the planning stages.

Since this project is scheduled to end within the next several months, USAID/Somalia requires a final evaluation of the project to document overall project performance and impact. This evaluation will assess the adequacy of both the project's design and its implementation.

II. STATEMENT OF WORK:

A. Assess the extent to which the project's goal has been achieved and the reasons for relative success/failure.

B. Assess the extent to which the project's purpose has been achieved, the extent to which there have been shortfalls in achieving the purpose, and the reasons for relative success/failure.

C. Assess the extent to which the project's outputs have been achieved, or not achieved, and the reasons for relative successes/failures. Analyze the extent to which outputs as designed and as implemented were necessary and sufficient to achieve the purpose. Discuss the contribution of the inputs in achieving outputs (i.e., were inputs necessary and sufficient?)

D. evaluate the project's original and amended designs: was the design logically articulated to address the stated problem(s) and achieve the stated objectives?

E. Evaluate the project's implementation, specifically the relative roles by each of the various participants in relative successes and/or failures in achieving the project's objectives, including USAID, the Ministry of Planning and Jubba Valley Development (MPJVD), U.S. Bureau of Reclamation (BUREC), Associates in Rural Development (ARD), and the National Academy of Science (NAS).

F. Assess the impact of the project in light of the above, especially it's likely contribution to development of the Jubba Valley and the proposed Baardheere Dam Project.

G. If/where appropriate, document specific "lessons learned" that AID should bear in mind for similar future efforts and recommend changes and improvements for such efforts.

III. Roles and Responsibilities: USAID requires a three person team for three weeks to perform this evaluation. Two of the team members (a social scientist and an environmental scientist) will be staff members of AID's Regional Economic Development Support Offices in Nairobi. The third individual (either an AID employee or an individual hired under contract), shall serve as team leader and will have evaluation experience, demonstrated writing skills and a regional planning background, preferably related to river basin development in Africa. A fourth team member from the Somali National Monitoring and Evaluation Facility also may be assigned. These team members will work cooperatively to cover the statement of work outlined in Section II above and present its findings. The team leader, in consultation with USAID/MPJVD, will be responsible for assignment of specific tasks to individual team members and for the coordination of report drafting and preparation of the final report.

The team will be responsible for establishing its own evaluation schedule and methodology, but will be expected at a minimum to interview key project participants available in Somalia, review pertinent project reports and other documents, and visit primary project sites as mutually agreed with the USAID project officer who will assist the team in identifying appropriate resources. USAID and/or MPJVD may assign a project staff member to assist the team, but these individuals will serve as "resource" people and not as team members.

At the time of its arrival, the team will have a briefing with relevant USAID, MPJVD and technical assistance representatives to gain background on the project and a better understanding of

USAID's and MPJVD's expectations for the evaluation. No less than five days prior to the end of the evaluation period, the team will present a draft report to the USAID and the MPJVD for review. Within two days after receipt of this draft report, USAID and the MPJVD will provide comments to the team in a debriefing, during which the team's findings and conclusions will be discussed. At this time questions and/or points of concern or disagreement with the draft should be raised and an understanding reached on how they will be handled in the final report. As a result of this debriefing, the team leader will provide a draft final report and submit it to USAID prior to departure from Somalia. Within 30 days after receipt of the revised draft, USAID and MPJVD will provide comments to the team leader. Within another 30 days after submission of these comments, the team leader will provide USAID with four copies of a final edited and cleanly typed report. USAID will in turn make copies available to MPJVD. Within 14 days after final approval by USAID and MPJVD the team leader will provide an additional 30 copies for distribution to MPJVD and other interested parties.

The final report must include an Executive Summary that concisely states the team's major findings, conclusions and recommendations. The report as a whole should focus on overall project achievements, particularly at the purpose and goal levels. More detailed technical information, if deemed important to the evaluation, should be included as annexes to the main body of the report. The annexes also will include a copy of this evaluation scope of work and a copy of the project's logical framework.

Specific Questions to be Addressed by the Evaluation Team

Project Paper Design:

1. Were the studies called for in the Project Paper the most important baseline studies needed for masterplanning purposes? Was the level of effort proposed adequate?

2. How useful was the Logical Framework? What, if anything, could have been done to improve it?

3. Should the design of environmental and socio-economic baseline surveys and analysis for projects of this kind be done differently in the future?

U.S. Bureau of Reclamation:

1. Was the U.S. Bureau of Reclamation Scope of Work well conceived and realistic? Was it followed?

2. To what degree were the SOW objectives and outputs achieved and not achieved?

3. Was BUREC the appropriate entity to carry out this study?

4. What recommendations can be made for future studies of this kind?

Associates in Rural Development:

1. Does the ARD Contract accurately reflect the desired outputs contained in the PP?

2. How well did ARD perform in relation to the contract and the overall needs of MPJVD and USAID, for both baseline data collection and analysis and involvement of MPJVD personnel in the development and presentation of data, subsequent analysis, and formulation of recommendations?

3. To what degree were ARD outputs affected by the Government of Somalia Democratic Republic budget allocation and disbursement procedures? By GSDR rules and regulations affecting travel, logistics and procurement? By restrictions on Somali salaries and per diems?

National Academy of Sciences:

1. Were the National Academy of Sciences' Terms of Reference under the Cooperative Agreement appropriate? Were they followed?

2. Were NAS workshops well organized and useful?

3. Did the peer review process work? What were the constraints and limitations in using of NAS to provide input to the JUDAS studies?

4. Should NAS be used in a similar role on future projects?

USAID/Somalia:

1. How effective was USAID project management?

2. How well established were the lines of communication between USAID and MPJVD? Between USAID/MPJVD, GTZ and the World Bank?

3. Were interim and mid-term evaluations, and Quarterly Project Implementation Reports, well conceived and executed? Were recommendations and proposed actions followed?

4. How well has the institutional development component of the JUDAS project worked? What are the shortcomings? How could it be improved?

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Ministry of Planning and Jubba Valley Development:

1. How did MPJVD perceive its role in the JUDAS Project?

2. What were the constraints affecting MPJVD participation in the JUDAS studies?

3. What could have been done to improve MPJVD collaboration in field work, data collection and analysis? How could this be improved in the future?

4. What more could have been done to improve MPJVD coordination of JUDAS with GTZ and other donor activity?

Overall Assessment:

1. Were the outputs of the various studies incorporated into the GTZ/Agrar-Und Hydrotechnik (AHT) masterplanning exercise as originally envisaged under the PP? If not, why not and what have been or may be the consequences?

2. Could MPJVD/GTZ/USAID have worked more collaboratively to integrate baseline data, analysis and recommendations into the overall planning process for Jubba Valley development?

3. How useful have the study results been to MPJVD, Baardheere Dam Project and the World Bank?

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List of Persons Interviewed

MNPJVD:

H.E. Ahmed Habib Ahmed, Minister
Abdi Ali Moallin, Director General
Aweys Haji Yusuf, Director General BDP
Mohamed Ali Mohamed, MPJVD, PhD Candidate
Ali Warsame Aden, Director of Finance and Personnel
Omar Moallim Ahmed Mohamed, Counterpart (JESS)
Mohamed Hassan Aden, Veterinarian, Counterpart (JESS)

USAID

Lois Richards, Director
Mike Bradley, Controller
Daniel Vincent, P.E. Chief Engineering Office
Weston Fisher, Project Officer, ARD
H. Habbad, Procurement Officer, FSU
Ahmed A. Abdulle, Chief Project Account, Controller's Office
Abdulkadir A. Afrah, Assistant Project Manager
M. Hersi, Program Assistant, CMO

IBRD

Roy Hewson, Baardheere Dam Project Officer
Laurie N. Robertson, Agricultural Officer (FAO)
Scott Gugenheim, Authopologist

AHT

Jan-Hillern Taaks, Senior Economist

ARD

Robert (Gus) Tillman, PhD, Environments/Educ. & Wildlife Science, and JESS Team Leader
Ian Deshmukh, PhD, Ecology
James L. Merryman, PhD. Anthropology
Nancy Merryman, PhD. Anthropology
Kathryn Craven, PhD, DEvelopment and Agric. Economics
Ralph Klumpp, PhD, Bilherzia Consultant

NAS

Dr. Michael McD.Dow, Associate Director, BOSTID

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ANNEX D

JUBBA DEVELOPMENT ANALYTICAL STUDIES (JUDAS)
(649-0134)

USAID/AGR OFFICIAL FILE

A.	100	RFTP	
	101	Proposals	
B.	102	Project Identification Document (PID)	
	103	Project Agreement (PROAG)	
	104	Project Paper (PP)	
	105	Project Authorization	
	106	Waivers	
C.	107	Jubba Valley Policy	FY 82-87
	108	Incoming Cables	FY 85
	109	Incoming Cables	FY 82-84
	110	Incoming Letters/Memos	FY 85
	111	Internal Communication	FY 85
	112	Incoming Letters/Memos	FY 84
	113	Internal Communication	FY 84
	114	Outgoing Cables	FY 85
	115	Outgoing Cables	FY 84
	116	Outgoing Cables	FY 84-87
	117	Outgoing Cables	FY 85
	118	Outgoing Letters/Memos	FY 85
	119	Outgoing Letters/Memos	FY 84
	120	Outgoing Communication	FY 84
	121	Advisory Comm. Meetings	FY 84-87
	122	Advisory Comm. Reports	FY 84-86
	123	Vehicles	FY 85-87
	124	Quarterly Fin. Reports	FY 84-87
	125	Finance/Budget (DDD)	FY 84-87
	125.0	Finance/Budget (DDD)	FY 83-85
	125.1	Finance/Budget (DDD)	FY 84-86
	125.1	Finance/Budget (DDD)	FY 84-86
	125.2	Finance/Budget (DDD)	FY 86
	125.3	Finance/Budget (DDD)	FY 87
	125.4	Finance/Budget (DDD)	FY 88
	125.5	Finance/Budget (DDD) JESS Quarterly Requests	
	126	FSU Finance/Budget	FY 87
	127	FSU Finance/Budget	FY 86
	128	FSU Finance/Budget	FY 84-85
D.	129	Conditions Precedent	
	130	Project Implementation Letters	

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E.

131 - 136	PIO/Ps	
137	PIO/C 40003	FY 84
138	PIO/C 40004	FY 84
139	PIO/C 40034, Listing	FY 84
140	Purchase Orders	
140.1	Purchase Order/Remote Sensing	
141	Procurement Correspond.	FY 84-87
141.1	Commodity Disposition/ Project Closeout	

F. Contracting

142	BUREC:	PIO/T 40002	
143	BUREC:	Consultants	FY 84-87
144	BUREC:	Correspondence	FY 84-87
145	BUREC:	Work Plan	FY 85
146	BUREC:	Finance/Budget	FY 85-87
147	BUREC:	Purchase Orders	FY 84-87
148	BUREC:	PIO/Cs	
149	BUREC:	Reports/Invoices	FY 84-86
150	BUREC:	Reports/Status	
151.1	BUREC:	Reports/Evaluat.	FY 86
151.2	BUREC:	Reports/Eval.	FY 88
152	BUREC:	Reports/Quarterly	
153	BUREC:	Afgoi Lab	
154	BUREC:	Aerial Photography	FY 83-85
155	BUREC:	Soils	FY 80-86
156	BUREC:	Irrigation	
156	BUREC:	Geo. Survey/Nat Res.	FY 84
158	BUREC:	Remote Sensing	FY 83-84
159	BUREC:	Water	FY 69-87
160	ARD/JESS:	PIO/T 40005	
161	ARD/JESS:	Subcontract RMR	
162	ARD/JESS:	Correspondence	FY 85-86
163	ARD/JESS:	Consultants	
164	ARD/JESS:	Finance/Budget	FY 86-87
165	ARD/JESS:	Procurement	
166	ARD/JESS:	Commodities	
167	ARD/JESS:	Vouchers	FY 86-87
168	ARD/JESS:	Work Plans	FY 86-87
169.1	ARD/JESS:	Reports/Monthly	FY 86
169.2	ARD/JESS:	Reports/Annual	
169.3	ARD/JESS:	Phase III Reports	
170	ARD/JESS:	Sites/Visits	FY 86
171	ARD/JESS:	Ecological	FY 85-86
172	ARD/JESS:	Land Tenure	FY 86-87
173	ARD/JESS:	Environmental Reports	
174	ARD/JESS:	Env. Correspond.	FY 80-87
175	ARD/JESS:	Archaelogy	
176	ARD/JESS:	Anthropology	

176.1	ARD/JESS:	Monitoring	FY 87
176.2	ARD/JESS:	Mapping	FY 87
176.3	ARD/JESS:	Report Review	FY 87
176.4	ARD/JESS:	Public Health	FY 87
176.5	ARD/JESS:	Fisheries	FY 87
176.6	ARD/JESS:	Forestry	FY 87
176.7	ARD/JESS:	Limnology	FY 87
176.8	ARD/JESS:	Pre-Constrn. concerns of Baardheere Dam	
176.9	ARD/JESS:	Socio-Economic	
176.10	ARD/JESS:	Data management	
176.11	ARD/JESS:	Vegetation	
176.12	ARD/JESS:	Ornithology	
177	NAS:	Proposal	
178	NAS:	PIO/T & Agreement	
179	NAS:	Correspondence	FY 84-87
180	NAS:	Finance	FY 86-87
181	NAS:	Curriculum Vitae	
182	NAS:	Reports/General	
183	NAS:	Workshop/Nairobi	
184	Contract:	Curriculum Vitae	
185	Contract:	Consultants	FY 82-87
186	Contract:	Selection	FY 79-85
187	Contract:	AMC Motors	FY 84-87
188	Contract:	AMC Reports & Invoices	
189	Contract:	Supply	649-0134-0-00-5026
190	Contract:	Supply	649-0134-0-00-5002

G.	191.1	Reports/Mid-term Evaluation	FY 86-87
	191.2	Reports/Mid-term Evaln. (Final)	
	191.3	Reports/Final Evaluation	
	192	Reports/Implementation	FY 84-87
	193	Reports/Quarterly	FY 84-86
	194	Reports/Reviews & Studies	FY 83-87
	195	Reports/Status	FY 83-86
	196	World Bank/Correspondence	FY 83-86
	197	World Bank/Reports	FY 86
	198	Baardheere Dam Reports	
	199	AHT/Reports	
	200	AHT/Schedule & SOWS	
H.	201	Proposal/Fullbright Hays - K. Menkhaus	
I.	202	Reports	
J.	203	Film: Videotape PIO/T and SOW	

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LIST OF REPORTS PRODUCED BY THE PROJECT

1. PHASE I REVIEW AND PHASE II WORK PLAN FOR THE JESS PROJECT; 31 July 1986.

2. BIBLIOGRAPHY OF THE JUBBA VALLEY IN SOMALIA FOR THE JESS PROJECT; 31 July 1986.

3. JESS MANPOWER AND TRAINING ASSESSMENT; Richard Z Donovan; 31 July 1986.

4. JUBBA ENVIRONMENTAL AND SOCIOECONOMIC STUDIES FIRST ANNUAL REPORT; 3 November 1986.

5. JESS INTERIM REPORT ON HEALTH IMPACTS OF DESIGN ALTERNATIVES FOR PROPOSED BAARDHEERE DAM; William R. Jobin; 11 November 1986.

6. JESS INTERIM REPORT ON HEALTH CONSEQUENCES OF DESIGN CRITERIA FOR WATER SUPPLY AND SANITATION IN NEW AND RESETTLED COMMUNITIES; William R. Jobin; 12 November 1986.

7. JESS CONSULTANCY REPORT ON WATER QUALITY AND PUBLIC HEALTH ENGINEERING; William R. Jobin; 20 November 1986.

8. JESS INTERIM REPORT ON CULTURAL HERITAGE SITES IN PROPOSED BAARDHEERE RESERVOIR AREA; Steven A. Brandt; 20 November 1986.

9. INTERIM REPORT ON VEGETATION SURVEY OF THE JUBBA VALLEY; Christopher F. Hemming; October 1986.

10. JESS PHASE I DESIGN STUDIES; William R. Jobin, Peter A. Bloch, James C. Riddell, Curt R. Schneider and James F. Ruff; July 1986.

11. JESS SECOND CONSULTANCY REPORT ON WATER QUALITY AND PUBLIC HEALTH ENGINEERING; William R. Jobin; January 1987.

12. JESS FISHERIES CONSULTANCY I REPORT; Earl K. Meredith; June 1987.

13. JESS INTERIM REPORT ON AERIAL PHOTOGRAPHY INTERPRETATION; Eric Trump; June 1987.

14. JESS PRELIMINARY REPORT ON AERIAL SURVEY OF THE JUBBA RIVER; R. Murray Watson; June 1987.

ANNEX E

LIST OF REPORTS PRODUCED BY THE PROJECT

HASE I REVIEW AND PHASE II WORK PLAN FOR THE JESS PROJECT; 1 July 1986.

IBLIOGRAPHY OF THE JUBBA VALLEY IN SOMALIA FOR THE JESS ROJECT; 31 July 1986.

ESS MANPOWER AND TRAINING ASSESSMENT; Richard Z Donovan; 1 July 1986.

JBBA ENVIRONMENTAL AND SOCIOECONOMIC STUDIES FIRST ANNUAL EPORT; 3 November 1986.

ESS INTERIM REPORT ON HEALTH IMPACTS OF DESIGN ALTERNATIVES OR PROPOSED BAARDHEERE DAM; William R. Jobin; 11 November 986.

ESS INTERIM REPORT ON HEALTH CONSEQUENCES OF DESIGN RITERIA FOR WATER SUPPLY AND SANITATION IN NEW AND ESETTLED COMMUNITIES; William R. Jobin; 12 November 1986.

ESS CONSULTANCY REPORT ON WATER QUALITY AND PUBLIC HEALTH NGINEERING; William R. Jobin; 20 November 1986.

ESS INTERIM REPORT ON CULTURAL HERITAGE SITES IN PROPOSED AARDHEERE RESERVOIR AREA; Steven A. Brandt; 20 November 986.

NTERIM REPORT ON VEGETATION SURVEY OF THE JUBBA VALLEY; hristopher F. Hemming; October 1986.

ESS PHASE I DESIGN STUDIES; William R. Jobin, Peter A. loch, James C. Riddell, Curt R. Schneider and James F. uff; July 1986.

ESS SECOND CONSULTANCY REPORT ON WATER QUALITY AND PUBLIC EALTH ENGINEERING; William R. Jobin; January 1987.

ESS FISHERIES CONSULTANCY I REPORT; Earl K. Meredith; June 987.

ESS INTERIM REPORT ON AERIAL PHOTOGRAPHY INTERPRETATION; ric Trump; June 1987.

15. JESS THIRD CONSULTANCY REPORT ON WATER QUALITY AND PUBLIC HEALTH ENGINEERING; William R. Jobin; July 1987.

16. JESS WORKING PAPER: PRE-CONSTRUCTION CONCERNS WITH THE BAARDHEERE DAM; R.E. Tillman; November 1987.

17. JESS INTERIM REPORT: RIVERINE FORESTS OF THE JUBBA VALLEY, ISSUES AND RECOMMENDATIONS FOR CONSERVATION; Ian Deshmukh; 17 November 1987.

18. JESS INTERIM REPORT: MAPPING JESS RESEARCH RESULTS; Paul Dulin; 14 October 1987.

19. JESS INTERIM REPORT: SURVEY OF PALEARCTIC MIGRANT BIRDS IN SOMALIA'S MIDDLE AND LOWER JUBBA VALLEY; David Pearson; 23 October 1987.

20. JESS INTERIM REPORT: LONG-TERM ENVIRONMENTAL AND SOCIOECONOMIC MONITORING; Paul Dulin; 26 October 1987.

21. JESS REPORT ON WATER BALANCE AND SEDIMENT TRANSPORT IN THE JUBBA RIVER WATERSHED; Donald Alford; 31 August 1987.

22. JESS INTERIM REPORT: DATA MANAGEMENT AND ANALYSIS; Leonard A. Malczynski; 30 November 1987.

23. JESS INTERIM REPORT: SECOND VEGETATION SURVEY OF THE JUBBA VALLEY; Christopher F. Hemming; August 1987.

24. JUBBA ENVIRONMENTAL AND SOCIOECONOMIC STUDIES -- SECOND ANNUAL REPORT; 15 December 1987.

25. JESS INTERIM REPORT: SECOND SURVEY OR PALEARCTIC MIGRANT BIRDS IN SOMALIA'S MIDDLE AND LOWER JUBBA VALLEY; David Pearson; December 1987.

26. JESS REPORT ON CULTURAL HERITAGE SURVEY OF THE PROPOSED BAARDHEERE RESERVOIR; S.A. Brandt and T.H. Gresham, with contributions from N. Carder, J. Ellison and R. Benson; 24 February 1988 (draft).

27. JESS REPORT ON FORESTRY IN THE JUBBA VALLEY; T. Synott.

28. JESS REPORT ON LAND TENURE DYNAMICS IN THE JUBBA VALLEY; J. Riddele

29. JESS REPORT ON 2ND FISHERY CONSULTANCY IN THE JUBBA VALLEY; E. Meredith.

30. JESS REPORT ON PASTORALISM IN THE JUBBA VALLEY; J. Janzen.

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31. JESS FINAL REPORT ON PUBLIC HEALTH AND WATER QUALITY IN THE JUBBA VALLEY; W. Jobin.

32. JUBBA ENVIRONMENTAL AND SOCIOECONOMIC STUDIES - ASSOCIATES IN RURAL DEVELOPMENT INC.
- VOL. I EXECUTIVE REPORT (DRAFT)
- VOL. II ENVIRONMENTAL STUDIES
- VOL. IV BIBLIOGRAPHY
- SOCIOECONOMIC BASELINE STUDIES (DRAFT), BY K. Craven, J. Merryman and N. Merryman
- SEBS - TABLES AND FIGURES (DRAFT)

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ANNEX F

LIST OF OTHER RELEVANT REPORTS

1. AHT: (Deshek and Small- and Medium-scale Irrigated Agriculture in the Jubba Valley,-
   a. Main Report, September 1984
   b. Physiographic and Land-use Maps 1:50,000 (Atlas of 26 maps), July 1984

2. USBR: Project Inception Report, Land and Water Resources Studies, Jubba River Valley, Somalia, September 1984 (Prepared by Thomas H. Seldon, Soil Scientist, Earll Dudley, Planning Engineer, Tina J. Rogers, Drainage Engineer)

3. Clark University/Institute for Development Anthropology, Problems and Issues in African River Basin Planning, June 1985

4. Lahmeyer International, Prefeasibility Study on Interim Storage Reservoir, Final Report (4 Volumes), October 1985
   Vol. I : Executive Summary
   Vol. II : Appendices A-D
   Vol. III: Appendices E-G
   Vol. IV : Appendices H-N

5. Electrowatt Engineering Services, Ltd., Baardheere Dam Project, Design Review Report, Zurich, Switzerland, October 1985

6. Sir M. MacDonald & Partners Ltd., Homboy Areas and Smallholder Banana Cultivation in the Lower Jubba Valley and Assessment of Agricultural Benefits, Cambridge, England; Draft: April 1987; Final: July 1987
   - Main Report
   - Annex 1, Homboy Feasibility Study
   - Annex 2, Smallholder Banana Development
   - Annex 3, Agricultural and Flood Control Benefits

7. AHT Master Plan for Jubba Valley Development
   December 87: Vol. I, Present Stage of Development
   June 88: Vol. I, Present Stage of Development, Revised Draft
   June 88: Vol. II, Regional Development Programme, Draft
   June 88: Vol. III, Profiles of Development Proposals, Draft

8. USBR: Reconnaissance Report, Jubba Valley Analytical Studies, Land and Water Resources, Main Report + 3 Appendices, July 1987, Draft
   (Appendix I : Lands and Drainage

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Appendix II : Agricultural Economic Analyses
Appendix III: Supplemental Engineering Data)

9. Dr. I. Jan Gerards, Executive Summary, Irrigation Water Systems Planning, Debriefing Presentation, Draft, AHT GmbH, Mogadishu, Somalia, March 1988

10. BOSTID: Summary of Issues and Workshop Reports of the Jubba Valley Advisory Panel, June 1988.

11. USBR: Jubba Valley Analytical Studies - Land and Water Resources - Reconnaissance Report - Revised December 1988 - 4 Volumes:
    - Main Report
    - Appendix I: Lands and Drainage
    - Appendix II: Agricultural Economic Analysis
    - Appendix III: Supplemental Engineering Data

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LOGICAL FRAMEWORK
FOR
SUMMARIZING PROJECT DESIGN

Est. Project Completion Date 9/88

Date of this Summary _____

Project Title: Jubba Valley Development Analytical Studies

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program Goal: The broader objective to which this project contributes: Create a Master Plan which will optimize resource uses in the Jubba River Valley.	Measures of Goal Achievement: Increased planning capability of MJVD leading to increased food production.	Ministry of Planning Statistical Abstracts, acceptable development project design output.	Concerning long term value of program/project: GSDR maintains Jubba Valley development priority
Project Purpose: Provide necessary information on soils/land use, social and environmental effects for incorporation into Master Plan. Provide support to the MJVD.	Conditions that will indicate purpose has been achieved: End of project status. Baseline data collected from Jubba Valley project planning in valley can commence with full knowledge of soil/environment. Increase in capacity of MJVD to effectively plan rational development projects.	Review of MJVD use of current data base. Environmental assessment used in planning design. Review of MJVD project design schemes.	Affecting purpose-to-goal link: No major disaster in Jubba Valley area. MJVD provides technical assistance agreed upon.
Outputs: Classification of soils and land use. Identification of environmental/ sociological constraints. Development of MJVD as effective planning body. Incorporation of environmental assessment in planning stages.	Magnitude of Outputs necessary and sufficient to achieve purpose. Contracts signed for all surveys needed. Long- and short-term assistance as contracted for.	Project and field records. Project accounts. Review of final reports.	Affecting output-to-purpose link: MJVD provides counterparts in a timely fashion. Petrol and staff provided in a timely fashion.
Inputs: Activities and Types of Resources See Financial Plan. Training. Technical assistance. Planning strategies.	Level of Effort/Expenditure for each activity. See Financial/implementation plan. See annexes for scopes of work and RFTP.	Project records. Contractor's field reports (phases I, II and III). Project manager's quarterly assessment.	Affecting input-to-output link: Project technicians and commodities arrive in a timely fashion.

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Extract
From 10-20-83 report by
pre-reconnaissance team.

5. Role of economics

6 Availability and utilization of laboratory

7. Detail of coverage

   a. Traverses of the area

   b. Type and frequency of borings

   c. Type of physical and chemical analysis of screenable and master site samples

8. Special investigations

   a. Land development

   b. Soil studies, such as total and available water-holding capacity, leaching, infiltration, hydraulic conductivity and others

   c. Quality of return flows

9. Irrigation

   a. Method

C. Specifications

   1. Development, review, and refinement

   2. Application

   3. Chart

D. Detailed Descriptions of the Arable Categories

   1. Lands suitable for irrigation

   2. Lands that are marginal for irrigation

   3. Nonsuitable lands

   (These data should include the characteristics and qualities of soil, topography and drainage features that will affect

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land use of management factors under irrigation. Such da
may be advantageously set forth in a tabular form.
should be noted that this is one of the most importa
portions of the report, so care should be used in developi
these descriptions.)

E. Results

1. Include sample of typical Land Classification Sheet

2. Include an arable map

3. Tabulate areas in hectares for lands

Chapter VII - Determination of Arable Area

A. Basis for arable area

B. Factors affecting and disciplines involved in selection of general land areas of subareas of the project.

1. Feasibility of water service

2. Adequacy of water supply to serve

3. Feasibility of drainage service

4. Effects of return flow quality

C. Factors affecting onfarm arability

1. Location and elevation

2. Topographic or natural and manmade barriers

D. Tabulation of arable land area

1. Unit or subdivision of project

2. Land classes

3. Irrigated and nonirrigated

E. Map of Arable Land

Chapter VIII - Special Problems

In this portion, briefly discuss any problems relating to land classification which may affect the ultimate suitability of the area for irrigation development. Suggested solutions to the problem should be given together with the effect these problems have had on land classes and total arable area in Feddans. Typical

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items for inclusion in this portion are slick spots; low cation-exchange capacity; high or low-infiltration rates; low water holding capacity; need for amendments; high leveling; clearing or stone-picking costs; bedrock outcrops; and numerous isolations; lack of drainage outlets or poor surface-drainage conditions. If all factors are favorable this chapter may be omitted.

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ANNEX I

Midwest National Technical Center
Federal Building, Room 345
100 Centennial Mall North
Lincoln, Nebraska 68508-3866

FTS 541-5363; Commercial 402-437-5363

October 30, 1987

Dr. Jeffrey Gritzner
National Research Council
Office of International Affairs
2101 Constitution Avenue
Washington, DC 20418

Re: Review of "Jubba Valley Analytical Studies, Lands and Water Resources Report" (July 1987).

Dear Dr. Gritzner:

Only a brief look at the Boring Location maps at the end of Appendix 1 should convince most reviewers that a great deal of field work had been done. This is especially true if one considers the remoteness of the test site locations.

In general, my review of the "Jubba Valley Analytical Studies, Lands and Water Resources Report" (from here on referred to as the report), is limited to the comments, tables, and figures in Appendix 1 - Lands and Drainage.

More specifically, my comments and remarks will deal with the contents of chapter III, LANDS, of Appendix 1 of the report.

The basis of my review is to be an agreement between USAID and USBR (United States Bureau of Reclamation) dated September 29, 1983, and a report "Jubba Valley Soils Study and Land Classification" (October 20, 1983) prepared by Val H. Carter, Marvin J. Voight (both from the Bureau of Reclamation) and myself. I have not seen the agreement between USAID and USBR, but I make the assumption that the scope of the work to be carried out by USBR is outlined similarly as it is in the "Jubba Valley Soil Study and Land Classification" report. Enclosed is a copy of this report, and I refer to pages 17 through 29. Particular attention is drawn to section e on page 17, where reference is made to USDA soil survey procedures, subsection (2) on page 19, and section c, "Profile Descriptions" where the USBR soil classification system is mentioned.

Specific Comments:

1. Representative Soil Profiles--example on page 38, Appendix 1.

The descriptions in Figure III- do not meet with the prescribed standards of the USDA cooperative soil survey by either being incomplete or missing

a. Color-hue chroma and value are omitted and it is also not stated whether the colors were read for dry-or-moist soils.

b. Consistence--missing.

c. Roots--missing.

d. Pores--missing.

e. Reaction to HCL (effervescence)--missing.

f. Horizon designations--missing.

g. Boundary descriptions--missing.

2. General descriptions--example on pages 36-37, Appendix 1.

It is not made clear if what is described is a map unit or a range of characteristics of a component of a map unit.

3. Point Sites--examples after page 140.

None of the point site profiles have been classified according to USDA Soil Taxonomy. For the classification to be complete, each pedon of the point sides needs to be classified at least to the categorical level of the soil family.

Many of the descriptions on a stand alone basis would not suffice to classify the soils conclusively. For example, the presence of a mollic epipedon can only be determined if both the moist and dry color of the soil in known.

4. Laboratory Analyses--tables of examples following point sites.

Of the 40 point sites, for only 16 some lab work has been done, and only 4 have a complete particle size analyses. Soil water retention data is only given at saturation and at suctions of 1/3 and 15 bar, although complete soil water retention curves were anticipated according to page 19 of the enclosed proposal. There is no indication if the percent moisture is based on the weight or

volume of the soil. Bulk density and organic carbon were also not measured. These remarks also refer to descriptions and lab results of the Prereconnaissance Investigation. Table VII-1 on page 138 gives some information of petrographic results; a total of three samples from the lower Jubba Valley were analyzed, considering the size of the area this data is quite insufficient to be indicative of the clay mineralogy for all the soils investigated.

General Remarks:

It would appear that substantial portions of previous reports had been adapted without letting the reader know, how these previous findings stacked up against the results of this more recent investigation of soils, and what different conclusions, if any, can be drawn. There are also a couple of items that caught my attention. On page 96 the question of poor drainability is raised because of heavy clay texture. This is followed by a statement that the vertical and horizontal cracks may permit a flushing of the soils. I am not an expert on managing of saline and source soil, however I have some experience with vertisols and I would think that at best the contribution of horizontal cracks to the movement of water in vertisols would be minimal. On page 103 it is stated that certain information is needed in order to estimate the potential of "surface flushing" of salts. One of the items required is time for crack closure upon applying water." This led me to consider whether horizontal cracks would close prior to vertical cracks, or vice versa.

Recommendations:

This report should not be made public before thorough technical editing of the soil section by someone who knows soil survey and the aspects of soil science pertaining to irrigation and drainage. If possible, some of the bench mark soil sites should be revisited, and the soils descriptions be brought up to standards. Also, some of the bench mark soils should be analyzed for organic carbon and clay mineralogy. The sections where portions of other reports were adapted should be clearly referenced. The persons who participated should be named and their contribution to this study should be identified.

Sincerely,

Signed

OTTO W. BAUMER
Research Soil Scientist
National Soil Survey Laboratory

Enclosure