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Regional Inspector General for Audit
Nairobi, Kenya

Audit of the Quality of MACS Data At USAID/Mozambique

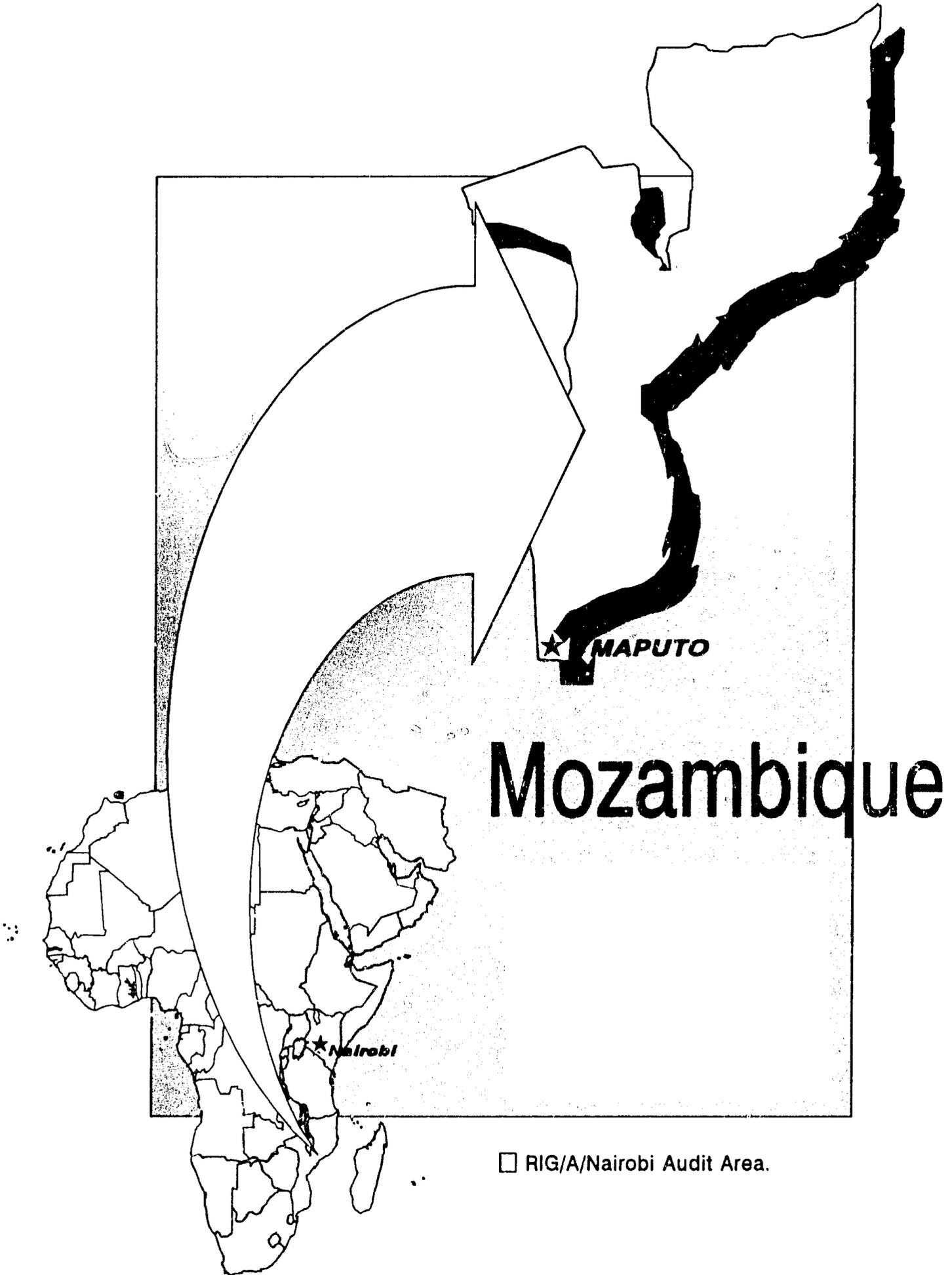
Report No. 3-656-95-015
August 18, 1995



GENERAL
UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF THE REGIONAL INSPECTOR GENERAL FOR AFRICA
NAIROBI, KENYA

Audit of the
Quality of MACS Data At USAID/Mozambique

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Mozambique

□ RIG/A/Nairobi Audit Area.



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

August 18, 1995

MEMORANDUM

FOR: Roger D. Carlson, Director, USAID/Mozambique

FROM: RIG/A/N, *John Buyer*
Everette B. Orr *for*

SUBJECT: Audit of the Quality of USAID/Mozambique's MACS
Data (Audit Report No. 3-656-95-015)

This memorandum is our report on the Audit of the Quality of Mission Accounting and Control System (MACS) Data at USAID/Mozambique. We considered your comments on the draft report and have included them in their entirety as Appendix II to the final report. Based on your comments and actions, Recommendation Nos. 1.2, 1.3, and 3 are considered closed and Recommendation Nos. 1.1 and 2 are considered resolved upon issuance of this report.

I appreciate the cooperation and courtesy extended to my staff during the audit.

Introduction

Realizing that USAID must operate with increasingly scarce funds, the Agency is undertaking a new and aggressive effort to change the way data and information are managed. Such an effort is critical to our future: in the modern workplace, be it business or government, a high-quality, reliable information system is no longer a luxury—it is a necessity.

To ensure the data in the entire USAID system is of high quality and therefore useful to managers concerned about project status and pipelines reports, the Office of Information Resource Management (IRM) is undertaking a major initiative. They are centralizing data collection and improving the management of information by creating

a data warehouse (see Appendix V), a repository for data from all Agency systems. One of the first steps in bringing data to this warehouse is the Project Information and Pipeline Evaluation (PIPE) initiative. A joint IRM and Financial Management project, the PIPE will combine MACS data from the missions and financial data from USAID/Washington, allowing all Agency managers timely and comprehensive information on USAID projects worldwide.

Accordingly, for this system to succeed, the MACS data from all of the missions must be of the highest quality. Therefore, in support of IRM's work, the Office of Audit is conducting a series of audits designed to evaluate the quality of data in the MACS files, which is central to the Agency's work. An important part of the effort is this audit of USAID/Mozambique's data.

Audit Objective

The audit was designed to answer the following question:

Is the data in USAID/Mozambique's Mission Accounting and Control System (MACS) accurate?

Audit Findings

USAID/Mozambique's MACS data was considered to be accurate in 25 of the 36 data elements reviewed. However, the other 11 data elements contained significant errors. The table on the following page illustrates the various data elements which were found to be inaccurate at USAID/Mozambique.

**RESULTS OF OUR REVIEW OF
USAID/MOZAMBIQUE'S MACS DATA**

MACS Files	Data Elements Reviewed	Elements With Significant Errors	Elements With No Significant Errors *
Budget Allowance Transaction	3	0	3
Reservation/Obligation Transaction	4	0	4
Commitment Transaction	7	1	6
Disbursement Transaction	9	2	7
Advance Transaction	6	2	4
Project Information Master	7	6	1
Total	36	11	25

* Error rates of less than 5% were considered accurate for reporting purposes. (See Appendix III.)

The significant errors were caused by three different problems:

1. Project files not maintained accurately;
2. Documentation not maintained to support transactions; and
3. Posting errors made during data entry.

Since USAID managers worldwide will rely on information in the Agency's data warehouse for making decisions on where and how to allocate scarce resources, it is critical that the data coming from each mission's MACS be accurate and complete. Therefore, the efforts of USAID/Mozambique to ensure the integrity of data in MACS will contribute to the Agency's overall goal of providing accurate and timely information on all USAID project activity worldwide.

An analysis of each problem area and recommendations to correct the problems are discussed in detail on the following pages.

Project Files Not Maintained Accurately

Project information in USAID/Mozambique's MACS was inaccurate because the information was not entered and maintained according to procedures

established by MACS User's Guide (Release 19). These procedures detail the need to:

- Verify 17 data elements, including the Project Number, Agreement Date, Authorization Date, and Project Assistance Completion Date (PACD), when entering information into the system; and
- Periodically review the data elements and adjust them as required.

We reviewed all of the Mission's 40 Project Information Master (PIM) records and tested 7 data elements in each record. Six of the seven elements we reviewed contained significant errors, with error rates from 7.50 to 72.50 percent, as illustrated in the table below.

The Mission's procedures did not ensure that all data elements for projects were correctly entered and updated when changes were made to a project. Documents used to enter project information into MACS were missing (especially for old projects) or did not always contain all the necessary data and the Mission did not have a written policy to obtain the correct information. When revisions or corrections were received, accounting personnel did not always verify that the data in the MACS record was accurate.

PROJECT INFORMATION MASTER FILE				
MACS DATA ELEMENT	TOTAL RECORDS	SAMPLE RECORDS	SAMPLE ERRORS	ERROR RATE
Project Assistance Completion Date	40	40	10	25.00%
Authorized Amount	40	40	3	7.50%
Agreement Date	40	40	9	22.50%
Terminal Disbursement Date	40	40	18	45.00%
Project Number	40	40	0	0.00%
Life of Project (in years)	40	40	29	72.50%
Host Country Contribution	40	40	15	37.50%

The Life of Project (In years) data element was not entered or updated correctly when project data was first entered into MACS or when data changes occurred. For example, the Life of Project (LOP) is a calculated field which should show the number of years between the Project Agreement Date and the Project Assistance Completion Date (PACD). When a project is started or extended, the LOP needs to be entered or recalculated in MACS. However, 29 (72.50 percent) of the LCP data elements reviewed had a zero (0) shown for the LOP or the LOP was not updated once the PACD date changed. These problems occurred because of missing and incomplete source documentation and accounting personnel lacking experience and training with entering project data into MACS.

In addition, other information contained in the PIM file was not entered correctly or periodically reviewed and updated for accuracy. For example, the Agreement Date should be the date the agreement was signed—a date which does not change. However, 9 (22.50 percent) of the Project Agreement Dates in MACS were incorrect. As well, 15 (37.50 percent) of the Host Country Contribution amounts were listed as "\$0.00" in MACS, although Mission source documents indicated a contribution was required. If the project information files had been periodically reviewed, it is likely that the errors described above would have been detected and corrected.

Recommendation No. 1: We recommend the Director, USAID/Mozambique:

- 1.1 Correct the Project Information Master file to ensure the information is accurate;**
- 1.2 Ensure the Project Information Master file data is updated according to FM Policy Directive FS/95/01, Issued November 15, 1994; and**
- 1.3 Periodically review the data entered into the Project Information Master file to ensure the data is correct.**

Documentation Supporting Entries in MACS Was Not Maintained

General Accounting Office Internal Control Standards require all transactions to be documented by written evidence. In addition, the standard requires that documentation be available and easily accessible for examination.

Additionally, USAID Handbook 21 provides that:

"The head of each bureau, staff office, and overseas post is responsible for implementing effective records management procedures within his or her organization."

Source documentation used for entering information in MACS did not always contain necessary element data to document MACS entries at USAID/Mozambique. Documentation to support eight records in the Advance Transaction (ADT), six records in the Commitment Transaction (COT), and six records in the Disbursement Transaction (DIT) files, that were maintained by the Mission, did not include the required element data. Since documentation with the required element data was not available to support the entries, we could not verify the accuracy of these records in the MACS system.

The element data was not maintained because the Mission did not ensure that required element information be included on source documentation and that the documentation be easily accessible for review. For example, our review of records in the Commitment Transaction file indicated that document files did not contain documentation supporting entries into a MACS field—the Commitment End Date. Several of the transactions in our sample from the Commitment Transaction file could not be supported because the Commitment End Dates were not always documented by Mission staff doing the input into MACS. The lack of written procedures allowed an inadequate system whereby source documentation was not always maintained to document entries into MACS.

Recommendation No. 2: We recommend the Director, USAID/Mozambique, establish written procedures necessary to ensure that documentation with the required element data be maintained to support all transactions entered in the Mission Accounting and Control System.

**Data Not Entered Correctly
In Certain Data Elements**

MACS data was inaccurate in the Disbursement Transaction (DIT) and Advance Transaction (ADT) files because the information was not entered and maintained according to procedures established by MACS User's Guide (Release 19). These procedures detail the need to:

- Verify 17 data elements, including the Project Number, Agreement Date, Authorization Date, and Project Assistance Completion Date (PACD), when entering information into the system; and
- Periodically review the data elements and adjust them as required.

In addition, data should be entered consistent with certain parameters. From the MACS User's Guide, we derived data-parameters for two of the data elements in the MACS system. For example:

- Disbursing Office Code, from a Disbursing Office Code Table obtainable from Financial Management, identifies the disbursing office for a disbursement.
- Advance Type, identifies purpose of the advance, such as
 - 1 = Travel,
 - 2 = Quarters,
 - 3 = Contractors, and
 - 4 = Others.

The Controller's Office did not always accurately enter information into the aforementioned data fields in MACS. For example, 15 of the Disbursing Office Codes in the DIT file were entered incorrectly into MACS when USAID/Mozambique's accounting transactions were being performed by another Accounting Station. Also, we found that five of the Advance Type records in the ADT file were entered incorrectly by Mission accounting personnel because of their inexperience and need for training with MACS transactions.

If training had been provided and information in the MACS periodically reviewed for accuracy, the errors in the files described above could have been detected and corrected in a timely manner.

We could not find any relationships between these errors or systemic problems that would cause them. Therefore, we conclude that these errors were made because accounting personnel did not understand the correct use of the parameters or they entered incorrect data (human error).

Recommendation No. 3: We recommend the Director, USAID/Mozambique, provide additional training to Controller personnel, with an emphasis on due care and timeliness, to ensure they use the correct procedures for determining the values to be placed in the various data elements.

Management Comments and Our Evaluation

USAID/Mozambique agreed with the report's findings and recommendations and promptly took actions to improve the problem areas. In commenting on our draft report, USAID/Mozambique said that accounting staff have already been instructed to ensure that Project Master Information files contain documentation to support data entries in MACS and that they, along with Mission project officers, would conduct quarterly reviews of these files. Based on Mission comments and actions taken or planned, Recommendation Nos. 1.2, 1.3, and 3 are considered closed and Recommendation Nos. 1.1 and 2 are considered resolved upon issuance of this report. The complete text of the Mission's response to the draft report is included in its entirety in Appendix II of this report.

APPENDICES

SCOPE AND METHODOLOGY

Scope

The Office of the Regional Inspector General for Audit, Nairobi audited the quality of data maintained in MACS files of USAID/Mozambique in accordance with generally accepted government auditing standards. The audit was performed from March 27 through April 19, 1995, at USAID/Mozambique. We reviewed 6 files and 36 data elements from a universe of 28 MACS Transaction/Master files and 757 data elements (21.4 and 4.8 percent respectively). If the error rate was significant (5 percent or more) on any of the data elements, we determined the cause and made appropriate recommendations.

Methodology

The Office of Audit consulted with Financial Management (FM) officials in Washington, D.C., and identified the MACS files and key data elements that would be reviewed for each file. At FM's request, we agreed to report any unsupported MACS transactions as errors in computing the error rates.

We analyzed USAID/Mozambique MACS transactions for the period October 1, 1991, to September 30, 1994, from 6 of the 28 MACS Transaction/Master files¹:

- Budget Allowance Transaction;
- Reservation/Obligation Transaction;
- Commitment Transaction;

¹ A complete listing of MACS Transaction/Master files can be found in Appendix IV.

- Disbursement Transaction;
- Project Information Master; and
- Advance Transaction.

We selected a statistical sample for five of the data files that would provide a confidence level of 90 percent and a precision level of plus or minus 4 percent. We reviewed the entire universe of records in the Project Information Master file.

For each data element reviewed (dollar amounts, dates, document numbers, etc.), we determined whether the data in MACS was supported by information from source documents. Our determinations included identifying transactions with unsupported documentation as errors. Based on the results of these determinations, we calculated error rates for each data element and assessed whether the error rate was significant. Error rates of less than five percent were not considered significant. Data elements with an error rate equal to or above five percent were considered significant for reporting purposes. Except for the Project Information Master file, which was reviewed in its entirety, we statistically projected the number of errors in the MACS files. These projections indicate the total number of errors estimated for each data element based on the errors found in the statistical sample.

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1995 8. 10.

To: Mr. Everette B. Orr,
RIG/A/N

From: Roger D. Carlson, Director
USAID/Mozambique

Subject: Audit of the Quality of USAID/Mozambique's MACS Data

We have completed our review of the subject draft report and provide the following Mission comments for your consideration when issuing the final report.

Recommendation No. 1.1: With the exception of expired unilateral disaster relief activities, the Controller staff has conducted a review of all project documents and updated the MACS Project Information Master File as appropriate. As discussed with the auditors during the conduct of their audit, documentation to support six unilateral disaster relief activities implemented between 1984 and 1988 is not available in the file. Accounting records were not maintained by USAID/Mozambique during the time these activities were implemented and I can only assume the files were misplaced at the time the accounting responsibilities were transferred from the Regional Accounting Station to USAID/Mozambique. A memorandum will be placed in each of these activity folders to acknowledge the loss of this documentation and to identify to the best of our ability, the information which should be entered in each of the data fields within the Project Information Master File. For example, as unilateral activities, there was no host country contribution requirement. Our memorandum to the file will appropriately note that fact.

In order to close this recommendation, the Mission will provide RIG/A/N with a listing, as of September 30, 1995, of the seven data elements in the Project Information Master File which were reviewed during the audit. This listing will reflect the corrections made to the data file following the completion of the audit.

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Recommendation 1.2 and 1.3: Immediately following completion of the audit, the Controller held a meeting with accounting and voucher examination staff to review the Report of Audit Findings (RAF) prepared by RIG/A/N. During this meeting FN Policy Directive F9/95/01 was reviewed and a copy provided to each accountant and voucher examiner. Accountants were instructed during this meeting to ensure that each project file contains documentation to support data entries in MACS. It was agreed that the accountants, with the assistance of the project officers, would review the data entered into the Project Information Master File on a quarterly basis. This review will take place during the quarterly accrual meetings held between accountants and project officers.

Based on this meeting and the instructions provided to the accounting staff, the Mission requests that recommendation numbers 1.2 and 1.3 be closed upon issuance of the final audit report.

Recommendation No. 2: I have instructed the Controller to issue appropriate written guidance to ensure that both accounting and voucher examination staff understand and follow the Agency's requirement to ensure that documentation, to include referencing the required MACS element data, is maintained to support all transactions entered in MACS. This requirement has already been reviewed by the Controller in meetings with the appropriate staff and action has been taken to ensure compliance.

Once this guidance has been issued in writing, a copy will be provided to RIG/A/N along with a request to close this recommendation.

Recommendation No. 3: Using the RAF, the Controller has conducted additional training for appropriate Controller staff to ensure that data elements are properly coded. Examples were used from the sample data tested during the audit and codes such as the "Disbursing Office" code and "Advance Type" code were clarified. Controller staff were reminded that these codes were important to maintain data integrity and that when in doubt as to the proper coding convention, they should refer to the MACS/MACSTRAX manual or seek guidance from their supervisor. Obviously mistakes in coding will occur but I believe the additional training provided by the Controller following the conduct of the audit will result in significant improvement in the data integrity of the USAID/Mozambique MACS data.

Based on the training provided by the Controller, I hereby request this recommendation be closed upon issuance of the final report.

APPENDIX II

USAID/Mozambique Management Response

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I would like to take this opportunity to thank you and your staff for their constructive approach to this audit. As you know, USAID/Mozambique only assumed responsibility as a MACS accounting station in May 1994. This audit provided the Mission with a useful and timely review of our procedures and controls and the draft report includes recommendations which will certainly improve the quality of our accounting data.

Drafted by: GJenkins, CONT



**USAID/MOZAMBIQUE
MACS FILES AND ELEMENTS REVIEWED**

MACS FILES/ELEMENT	UNIVERSE	NUMBER IN SAMPLE	ERRORS IN SAMPLE	ERROR RATE	PROJECTED ERRORS IN UNIVERSE
BUDGET ALLOWANCE TRANSACTION					
Budget Plan Code	257	62	1	1.61%	*
Transaction Amount	257	62	0	0.00%	None
Project Number	257	62	1	1.61%	*
RESERVATION/OBLIGATION TRANSACTION FILE					
Obligation Document Number	5,696	80	0	0.00%	None
Reservation Control Number	5,696	80	0	0.00%	None
Budget Plan Code	5,696	80	1	1.25%	*
Transaction Amount	5,696	80	0	0.00%	None
COMMITMENT TRANSACTION FILE					
Commitment Number	2,199	78	3	3.85%	*
Earmark Control Number	2,199	78	0	0.00%	None
Call Forward Date	2,199	78	0	0.00%	None
Budget Plan Code	2,199	78	0	0.00%	None
Transaction Amount (AID/W)	2,199	78	0	0.00%	None
Transaction Amount (Mission)	2,199	78	0	0.00%	None
Commitment End Date	2,199	78	6	7.69%	169
DISBURSEMENT TRANSACTION FILE					
Obligation Number	19,801	81	3	3.70%	*
Reservation Control Number	19,801	81	6	7.41%	1,467
Commitment Number	19,801	81	1	1.24%	*
Earmark Control Number	19,801	81	1	1.24%	*
Transaction Type Code	19,801	81	0	0.00%	None
Budget Plan Code	19,801	81	3	3.70%	*
Disbursing Code	19,801	81	15	18.52%	3,667
Budget Allowance Disbursement	19,801	81	1	1.24%	*
Federal Outlay Code	19,801	81	1	1.24%	*

**USAID/MOZAMBIQUE
MACS FILES AND ELEMENTS REVIEWED
(continued)**

MACS FILES/ELEMENT	UNIVERSE	NUMBER IN SAMPLE	ERRORS IN SAMPLE	ERROR RATE	PROJECTED ERRORS IN UNIVERSE
PROJECT INFORMATION MASTER FILE					
Project Number	40	40	0	0.00%	None
Agreement Date	40	40	9	22.50%	9
Terminal Disb. Date	40	40	18	45.00%	18
PACD	40	40	10	25.00%	10
Life Of Project (In Years)	40	40	29	72.50%	29
Authorized Amount	40	40	3	7.50%	3
Host Country Contribution	40	40	15	37.50%	15
ADVANCE TRANSACTION					
Advance Number	855	74	3	4.05%	•
Obligation Document No.	855	74	2	2.70%	•
Commitment Document No.	855	74	2	2.70%	•
Project Number	855	74	8	10.81%	92
Advance Type	855	74	6	8.11%	69
Advance Amount	855	74	0	0.00%	None

*Error rates of less than 5 percent were not considered significant for reporting purposes

MACS TRANSACTION AND MASTER FILES NUMBER OF DATA ELEMENTS	
MACS FILE NAME	# OF ELEMENTS PER RECORD
Operating Expense Budget Master	10
Operating Expense Budget Transaction	12
Budget Allowance Master File	13
Budget Allowance Transaction File	12
Reservation Master File	17
Obligation Master File	37
Reservation/Obligation Transaction File	20
Project Information Master File	115
Project Information Transaction File	25
Condition Precedent Transaction File	96
Project Element Master File	13
Project Element Transaction File	12
Direct Reimbursement Authorization (DRA) Master File	16
Direct Reimbursement Authorization (DRA) Transaction File	17
Earmark Master File	20
Earmark Transaction File	19
Commitment Master File	41
Commitment Transaction File	25
Advance Master File	22
Advance Transaction File	30
Planned Expenditures Master File	13
Planned Expenditures Transaction File	15
Accrual Transaction File	18
Prepayment Amortization Transaction File	23
Disbursement Transaction File	28
Interface Disbursement/Advance File	36
Interface Disbursement/Advance Reject File	35
Prepayment Amortization File	17
Total 28 MACS FILES	757

USAID'S INFORMATION MANAGEMENT

This new USAID effort to establish a quality information system is described in the Agency's Information Systems Plan (ISP Volume I: Report to Management, February 1993). A primary goal of this plan is to have corporate data managed at the Agency level rather than "owned" by each individual office.

Using an information engineering methodology, models of the Agency's business processes and data requirements were created. These models were then broken into eight logical Business Areas. Each Business Area represents related functions within the Agency that share similar business processes and data needs. Each of these eight areas will be studied in depth, in a process called Business Area Analysis (BAA).

The BAA provides a greater level of detail on the functions in each area and provides a basis for designing system requirements. Each BAA 1) continues to model the data requirements and business functions, 2) includes this information in the Agency's electronic repository, and 3) reconciles the new models back to the Agency-wide models. This results in a high degree of standardization, stability, and reusability.

Currently three BAA's are being conducted—Core Accounting, Procurement, and Budgeting. The inter-dependencies of these three business areas are high and will require significant sharing of data. Therefore, to facilitate the systems development work, IRM is planning a data warehouse that will allow movement to a data sharing environment.

Populating this data warehouse will begin with transferring MACS transaction level data into the warehouse. The Core Accounting BAA, which includes the AWACS project, needs a functioning warehouse to provide the most benefit to the Agency.

Smaller initiatives are under way to begin the transition to a corporate database. Project Information and Pipeline Evaluation (PIPE) currently brings in summary MACS and FACS data, to provide project status and pipeline information to Agency managers. In order to make sound decisions, it is important that managers using such information know the quality of the data being used.

**Regional Inspector General
for Audit, Nairobi, Kenya**

David Conner, Audit Manager
James Rorie, Auditor-in-Charge
Nelson Kaburu, Referencer