Agriculture and Rural Development: Functional Review FY 1980-1989

Africa Bureau
Office of Technical Resources
Agriculture and Rural Development Division

June 1988

Table of Contents

		Page
	Preface	ii
	Summary	iii
I.	Introduction	1
	A. Purpose and Scope of the Analysis	1
II.	Portfolio Overview	3
	A. Scope and Current Status	3
	B. Agriculture's Share in the Africa Bureau Portfolio	3
	C. Type and Source of Funding - Africa Bureau Portfolio	4
	D. Type and Source of Funding - Agricultural Portfolio	8
III.	Project Purpose Analysis	12
	A. Sector Support	16
	B. Technology Development	18
	C. Technology Transfer	20
	D. Planning and Policy Analysis	22
	E. Agricultural Marketing	24
	F. Construction	26
	G. Agricultural Education	28
	H. Resource Development	30
	I. Land Tenure	32
IV.	Sub-Sector Analysis	33
	A. Crops	33
	B. Livestock	37
	C. Crops and Livestock	38
	D. Fisheries	39
	E. Natural Resources and Forestry	39
	F. Sector-wide	39
	Appendix Tables	40
	Appendix -- Functional Information System Methodology	42

PREFACE

This is the ninth ARD Functional Review prepared by the Agriculture and Rural Development Division of the Office of Technical Resources. It is the fifth Review using ARD's computer-based Functional Information System (FIS).

Wendell McMillan, who developed the information system and database, carried out the updating, computer proccessing and analysis for this Review. Bernard Lane prepared the computer graphics. Don Brown, a former ARD staff member, did the original computer programming for the FIS. Programming for the expansion of the FIS database was done by consultants Mark Marlott and John Markham.

SUMMARY

ARD Functional Reviews provide management, technical and project staff with analyses of the Africa Bureau's portfolio of projects in the Agricultural Sector. This present analysis focuses primarily on the portfolio's relationship to Bureau strategies for Sub-Saharan Africa over the ten-year period from FY 1980 through FY 1989.

The portfolio includes all projects funded under the Development Assistance (DA) functional accounts, the Sahel Development Program (SH) and the Economic Support Fund (ES). The FY 1988 and FY 1989 budgets combined all DA functional accounts plus the Sahel Program into a single Development Fund for Africa (SS); the ES remains separate. Because this functional analysis is separate and independent from budget accounts, the change to a Development Fund for Africa has no impact on these reported functional trends. The portfolio does not include centrally funded sources, such as the PPC and S&T Bureaus, or PL 480 funds and local currency generations from PL 480.

The financial data used in the analysis are those contained in the annual Congressional Presentations.

Overview of the Africa Bureau's Agricultural Portfolio

A. Scope of Major Characteristics

- There were 953 projects in the Africa Bureau's development portfolio over the twelve-year period, FY 1978-1989. Of this total, nearly two-thirds (599) had components related to development of the agriculural sector.

- Of those involved in agriculture, 86 percent (514) were bilateral projects of USAID Missions in 43 Sub-Saharan countries, and 14 percent (85) were regional projects.

- The current status of the agricultural portfolio is as follows: 4 percent (26 projects) in the identification stage; 45 percent (267) being implemented; and 51 percent (306) completed.

B. Agriculture's Share of the Total Bureau Portfolio

- While annual obligations and expenditures have increased for agricultural projects, the rate of growth has not been as fast as for the Bureau as a whole. Consequently, the share of agricultural projects in total Bureau obligations has declined from 64 percent in FY 1980 to about 50 percent in FY 1982-1987. For FY 1988 and FY 1989, planned obligations will be at the 45 and 51 percent level, respectively, and planned expenditures at 49 and 53 percent, respectively. (See Table II-3).

C. Type and Source of Funding - Total Bureau Portfolio

- The Development Fund for Africa (SS) has become the major funding source for the Africa Bureau as of FY 1988 and FY 1989. Under this proposed legislation, there are no longer functional accounts and the Bureau is charged with allocating development assistance to the use which has the greatest probability of achieving the development objectives identified for the continent. This change to a single SS account will increase the importance of evaluations, of indicators of development change, and of tracking systems such as this Functional Review.

- Use of loan funding continued to decline: Loans were 10 percent of all Bureau funding in FY 1980-1981 and then declined to 1 percent or less in FY 1985-1987. No loan funding is planned for FY 1988 and FY 1989. (See Appendix Table A-1)

- Of the three major funding sources, the ES account became increasingly important for the Bureau over the FY 1979-1987 period: ES obligations rose from 34 to 55 percent of the total while DA funding declined from 51 to 34 percent. Sahel funding ranged between 15 and 24 percent to FY 1984, but then declined to 11 percent in 1987. (See Appendix Table A-2)

D. Type and Source of Funding - Agricultural Portfolio

- In FY 1988 and FY 1989 all DA funding was from the Development Fund for Africa.

- Use of loans was concentrated in the agricultural sector as compared to other sectors. Nevertheless, within the agricultural portfolio, loans remained a minor funding mechanism, ranging from 5 to 10 percent of total funding through 1984 and then to 1 percent in FY 1985 and FY 1986 and none in FY 1987 through 1989.

- As with total Bureau funding, the ES account prior to FY 1988 became an increasingly important funding source for the agricultural portfolio, and exceeded the level of DA funding in FY 1985. In FY 1980, 25 percent of the agricultural portfolio obligations was funded through the ES account. By FY 1985 this had increased to 42 percent. In FY 1989 the ES account is planned at 12 percent of the portfolio. Most of this funding (73 percent in FY 1987) was for agricultural sector support activities. (See Table II-2)

- Prior to FY 1988, the DA (103 account) funding remained an important funding source for agricultural projects. Its share in total funding of these projects fluctuated between 30 and 45 percent during the nine years. Funding of agricultural projects from the Sahel account also varied from year to year. It rose to 29 percent of total agricultural obligations by FY 1981, and by FY 1987 had declined to 20 percent. (See Table II-2)

Agricultural Portfolio's Project Purpose Analysis

The Functional Information System was used to analyze the Africa Bureau's agricultural portfolio in terms of the purpose components of each project. As defined in Table 1 of the Appendix they include purpose categories such as Planning and Policy Analysis, Technology Development, Commodity Marketing and Agricultural Education. The trends of Bureau funding for these purposes were examined for both obligations and expenditures over the ten year period FY 1980-1989. (See Tables III-1 to 6) Because of the major size of the Sector Support (SEC) Purpose, the relative importance of other purposes is shown as a percentage of the total agricultural portfolio, and as a percentage of the total agricultural portfolio with SEC funds excluded.

- Over the past ten years, the composition of the agricultural portfolio showed substantial changes: Purpose categories tending to increase their relative importance in the portfolio included Agricultural Sector Support, Technology Development and Technology Transfer; those with an overall decline but increasing in recent years include Agricultural Marketing and Agricultural Education; while those showing declines to varying extents included Planning and Policy Analysis, Construction and Resource Development.

- Viewed in relation to the Bureau's agricultural strategy, most of those purpose categories whose relative importance in the agricultural portfolio increased over the FY 1980-1989 period or which showed increases in recent years, were supportive of the strategy's main components. Conversely, most of those categories with declining shares in the portfolio were not priority elements of the Bureau's strategy.

The changes in each purpose's share of the agricultural portfolio can be summarized as follows:

- Agricultural Sector Support was the dominant purpose category for which funds were obligated and expended during the FY 1980-1989 period. This purpose is comprised of projects that provide balance of payments and program support primarily for development of agricultural production and marketing.

Its relative importance increased dramatically, with obligations for this purpose more than doubling from 17.1 in FY 1980 to 43.6 percent of the total agricultural portfolio in FY 1985. By FY 1989 a decline to 33.3 percent is planned. In addition, despite a major drop in FY 1982, expenditures also increased rapidly, rising from 22.6 to 41.0 percent of the portfolio by FY 1987. Budgeted expenditures are proposed to level off at 26.6 percent by 1989. (See page 16)

- Technology Development showed increases in its share of both obligations and expenditures. By 1986, expenditures rose from 11.9 to 19.1 percent of the total agricultural portfolio, with Sector Support funds excluded. The share in FY 1989 is planned at 16.2 percent. When SEC funding is taken into account, TDE's share continues to show an increase, but at a

lesser rate from 9.2 to 11.9 percent. Obligations with SEC funds excluded, rose from 15.7 to 20.5 percent by FY 1987, and are planned at 16.0 percent in FY 1988 and FY 1989. Similar trends are shown when SEC funds are included, but the percentages are at lower levels. (See page 18)

- Technology Transfer's relative importance has remained about constant in terms of expenditures over the ten-year period. The share fluctuated between 17 and 22 percent with SEC funds excluded, and between 13 and 18 percent with SEC funds included. The trends were similar for obligations over the FY 1980-1989 period. (See page 20)

- Planning and Policy Analysis's share in the agricultural portfolio declined over the FY 1980-1989 period. With SEC funds excluded, expenditures declined from 13.9 percent in FY 1981 to 7.7 percent in FY 1989. Obligations have continued to decline since 1981. In terms of obligations, with SEC funds included, PPA's share decreased more than half from 13.1 percent in FY 1981 to 5.2 in FY 1989. (See page 22)

- Agricultural Marketing, including Commodity Marketing (MKT), Input Supply (INP) and Credit (CRE), showed a decline in expenditures from 19.0 to 15.8 percent of the portfolio, less SEC, by FY 1982. Increased expenditures since then will mean an increase to a 20.3 percent share by FY 1989. While obligations rose to 25.2 percent in FY 1984, the 21.4 percent planned for FY 1989 will exceed the beginning of the period. Changes in relative importance of MKT, INP and CRE were small. (See page 24)

- Construction of rural infrastructure involved a little over half the funding for rural roads, about one-third for village water supplies and about one-sixth for irrigated crops and livestock. CON's share of portfolio expenditures, less SEC funds, fluctuated between 10 and 15 percent through FY 1987 and is projected at 20.1 percent by FY 1989. The share in obligations, with SEC excluded, increased from 11.5 to 21.1 percent by FY 1985 and 1986, dropped to 5.5 percent in FY 1987 but is projected at 12.3 percent in FY 1989. The trends are similar with SEC funds included. (See page 26)

- Agricultural Education, including Human Resources Development (HRD) and Education System Development (ESD), showed an increase from 17.4 percent in FY 1980 to 20.4 percent in FY 1983. However, the share then declines to 14.0 percent in FY 1989. The share in terms of obligations declined both with and without SEC funds. The share of portfolio funding for Education Systems Development declined from a 12 percent share in FY 1980 - 1984 to 7.9 percent in FY 1989. For Human Resources Development, primarily participant training, the share peaked at 8.5 percent in FY 1982 and gradually declined to 6.1 percent in FY 1989. (See page 28)

- Resource Development showed a substantial decline in its share of agricultural portfolio funding. Excluding SEC funding, expenditures dropped from 5.7 to 1.2 percent by FY 1987. However, an increase to 2.5 percent is

planned for FY 1988 and FY 1989. For obligations the share dropped from 3.7 to 0.8 percent in FY 1984. The planned share is 6.6 percent in FY 1989. (See page 30)

- Land Tenure's share in the agricultural portfolio's funding has not exceeded 0.5 percent in any year. There were no obligations planned for FY 1984 through FY 1989. (See page 32)

Agricultural Portfolio's Sub-Sector Analysis

The Functional Information System was also used to examine the relative importance and funding trends of the various Sub-Sectors encompassed by the Africa Bureau's agricultural portfolio. Highlights of the analysis follow. (See Tables IV-1 to 4).

- Sub-Sectors concentrating on Crops accounted for the largest share of agricultural portfolio funding, and increased from about one-fourth to nearly one-half of the total during the FY 1980-1989 period. However, obligations have tended downward since FY 1986. Rainfed Crops was the largest single Sub-Sector over these ten years and its share continued to range from about one-fifth to about one-third of the portfolio by FY 1989. Funding of Irrigated Crops remained at relatively low levels, ranging between 3 and 10 percent of the portfolio through most of the period. However, obligations are projected at 15.3 percent for FY 1988.

- Livestock Sub-Sector funding was relatively low and generally declining during the FY 1980-1989 period. Its share in portfolio expenditures continued to decline from 17 to 6 percent. Obligations peaked at 16 percent in FY 1983, and then steadily drop to 0.1 in FY 1989.

- Sub-Sectors involved with both Crops and Livestock ranged between 10 and 25 percent of the agricultural portfolio. Projects combining Rainfed Crops and Livestock accounted for most of these funds, but their share of expenditures declined steadily from 23 in FY 1981 to 12 percent by FY 1989. Obligations showed a similar decline. Funding for projects combining Rainfed and Irrigated Crops with Livestock was at about the 1 percent level through most of the ten-year period, but obligations are planned to rise by FY 1989 to 9 percent.

- Annual funding for the Fisheries Sub-Sector did not exceed 3 percent of portfolio totals through the ten-year period. In FY 1989, expenditures will have a 1.6 percent share, and there are no planned obligations.

- Forestry Sub-Sector funding did not exceed 3 percent of the agricultural portfolio during the FY 1980-1989 period, except for obligations at the 5-percent level in FY 1986 and FY 1987.

- Natural Resources Sub-Sector funding first increased its share in the agricultural portfolio, but then showed substantial declines. Both obligations

and expenditures peaked at 17 percent, but then drop to 4 and 5 percent, respectively, in FY 1989.

- Sector-wide activities retain a dominant position in the agricultural portfolio with 30 percent of expenditures and 43 percent of obligations in FY 1989. With the growing importance of this area, some sub-classifications are being developed.

AGRICULTURE AND RURAL DEVELOPMENT: FUNCTIONAL REVIEW FY 1980-1989

I. Introduction

ARD Functional Reviews provide analyses of trends and issues relating to the Africa Bureau's portfolio of projects in the Agricultural Sector. This present analysis focuses primarily on the portfolio's relationship to the Bureau's development assistance strategies for Sub-Saharan Africa over the ten-year period from FY 1980 through FY 1989.

The analysis was carried out through use of the Functional Information System (FIS) which was developed to provide both more detailed and more readily accessible information on the portfolio for Bureau management, as well as for technical and project staff. In contrast to methods which classify a project in toto, the FIS provides information at a sub-project, or project component, level. This was done by identifying and quantifying the nature and scope of each project's purposes, as well as the activities used to achieve these purposes. These data were then coded and programmed for processing in micro-computers to provide both ready and continuous access to both technical and financial information on the project portfolio.

While the FIS was developed for analysis of the Agricultural Sector, it now includes all projects in the Bureau's total portfolio. Classified into 10 Sectors, the expanded FIS database now contains 953 bilateral and regional projects active during the FY 1978-1989 period.

This review examines only projects involved with the Agricultural Sector, but a preliminary analysis of projects in the other Sectors has been prepared as of FY 1987.

A. Purpose and Scope of the Analysis

The primary purposes of this functional review are to provide management, technical and project staff with (a) current and trend data on the nature and scope of the Africa Bureau's portfolio of development assistance projects in the Agricultural Sector; and (b) an assessment of this portfolio in relation to the strategies and policies the Bureau has established for development assistance in Sub-Saharan Africa.

The focus of the review is all Africa Bureau projects for which obligations and/or expenditures were made during the period FY 1980 through FY 1989, and that had or have purposes relating to the Agriculture Sector. It includes projects having non-agricultural as well as agricultural components. The analysis covers projects funded under Development Assistance (DA) functional accounts, as well as the Sahel Development Program (SH), the Economic Support

Fund (ES) and the Development Fund for Africa (SS). It does not include centrally funded sources, such as the PPC and S&T Bureaus, or PL 480 funds and local currency generation from PL 480.

The financial data are those contained in the annual Congressional Presentations, and for FY 1980 through FY 1987 these are "actual" obligations and expenditures. For the current year, FY 1988, they are "estimates" and for FY 1989 they are "proposed".

Details on the methodology used in developing the FIS are provided in the Appendix. Also included there are categories, codes and/or definitions of Project Purposes (Table 1), Sectors and Sub-Sectors (Table 2) and Commodity, Special Concerns and other project characteristics (Table 3).

II. Portfolio Overview

Major aspects of the Africa Bureau's portfolio of development projects in the functional area of agriculture are examined in this Chapter. In addition to data on numbers of projects, portfolio investment trends are reviewed over the ten-year period FY 1980 through FY 1989 in terms of obligations and expenditures, as well as by type and source of funding.

Trends and relative importance of project components are analyzed in terms of their Purposes in Chapter III and by Sub-Sectors in Chapter IV.

A. Scope and Current Status

During the twelve-year period FY 1978 through FY 1989, the Africa Bureau's development portfolio was comprised of 953 projects, of which two-thirds, or 599 projects, had components related to development of the Agricultural Sector. (Since projects have non-agricultural as well as agricultural components, the relative importance of the agricultural portfolio is examined in Section II.B below in terms of funding.)

Of the 599 projects involved with agriculture, 86 percent, or 514, were bilateral projects undertaken by USAID Missions in 43 countries of Sub-Saharan Africa, and 14 percent, or 85, were regional projects. The regional projects were distributed as follows: Sahel - 24; Southern Africa - 12; East Africa - 2; and Africa - 47.

In early 1988, when the FY 1989 CP was submitted, the current status of the 599 projects in the agricultural portfolio was as follows: 26 projects, or 4 percent of the total, were in the identification or design stage; 267 projects, or 45 percent, were under implementation; and 306 projects, or 51 percent, had been completed. Of the 293 agricultural projects currently being designed or implemented, 267 projects, or 91 percent, were bilateral, and 26 projects, or 9 percent, were regional.

B. Agriculture's Share in the Africa Bureau Portfolio

In terms of both actual obligations and actual expenditures, funding of agricultural projects rose substantially over the FY 1980-1985 period. Annual obligations increased from $264.6 million in FY 1980 to $397.9 million in FY 1985, an average annual growth rate of 9 percent over this five year period. Annual expenditures rose at a 7 percent rate, increasing from $175.6 million to $247.5 million over the same period. By FY 1989, obligations are expected to decline to $302.3 million while expenditures are to increase to $446.4 million. For the nine year period FY 1980-1989 the average annual growth rates will be 2 percent for obligations and 11 percent for expenditures. See Tables II-1 and 2 and Figures II-1 and 2.

However, taking into account the trends in total Africa Bureau funding for all sectors, the relative position of agriculture showed a substantial decline during the FY 1980-1989 period. Where obligations for agriculture rose at an average annual rate of 2 percent, total Bureau obligations had an 4 percent growth rate, rising from $414.9 million in FY 1980 to $591.5 million in FY 1989. Similarly, while expenditures on agricultural projects grew at an 11 percent rate, total Bureau expenditures showed an annual growth rate of 13 percent, rising from $279.1 million in FY 1980 to $838.7 million in FY 1989.

As a result of the lower growth rate in funding for agriculture, this sector's share of the total Africa Bureau's portfolio declined, in terms of obligations, from 64 percent in the FY 1980 to about 50 percent in FY 1982-1987. Obligations are estimated at the 45 percent level in FY 1988, and proposed at the 51 percent level in FY 1989. See Table II-3 and Figure II-3. For expenditures, the agricultural sector's share was 63 percent in FY 1980-1981, and then, except for one year, has been between 47 and 53 percent.

C. Type and Source of Funding - Africa Bureau Portfolio

The Development Fund for Africa (SS) is a major funding source for the Africa Bureau as of FY 1988 and FY 1989. Under this legislation, there are no longer functional accounts and the Bureau is charged with allocating development assistance to the use which has the greatest probability of achieving the development objectives identified for the continent. This change to a single SS account will increase the importance of evaluations, of indicators of development change, and of tracking systems such as this Functional Review.

Grants vs Loans: In comparison with the use of grants, loans have continued as a minor and declining type of funding mechanism in the Africa Bureau's total portfolio. Although loans accounted for about 10 percent of total Bureau funding in FY 1980-1981, they declined to 1 percent in both FY 1985 and 1986. For FY 1987, loan funding was $3.6 million, or less than half of 1 percent of the Bureau's total funding of $559.0 million. No loan funding is planned in FY 1988 and FY 1989. See Appendix Table A-1.

The predominant sources of these loan funds have been the ARDN and ES accounts, but the relative roles of these accounts have changed dramatically in recent years. ES accounted for 54 to 66 percent of all loan funds from FY 1979 through FY 1982, but then dropped to 36 percent in FY 1983 and to none in FY 1984-1987. At the same time, ARDN increased greatly as a source of loan funding. From FY 1979 through FY 1982, ARDN accounted for 21 to 42 percent of total loan funds, then rose to 96 percent in FY 1984. ARDN declined in FY 1985 to 55 percent and to none in FY 1986 and 1987. The only account with loans in FY 1986 and 1987 was Education.

Table II-1. Agricultural Portfolio: Expenditures by Funding Sources, FY 1980-1989

Funding Source Code/Account	1980 Act.	1981 Act.	1982 Act.	1983 Act.	1984 Act.	1985 Act.	1986 Act.	1987 Act.	1988 Est.	1989 Prop.
	Million Dollars									
FN Development Assistance (Agriculture, Rural Development and Nutrition)	70.4	88.1	93.4	94.9	94.7	85.3	105.4	94.5	192.7	142.0
ES Economic Support Fund	42.5	64.4	22.9	66.4	67.3	81.2	107.2	115.6	90.6	69.5
SH Sahel Development Program	39.5	66.3	52.6	51.6	61.8	59.4	59.4	60.6	75.7	48.3
1/ Other	23.2	23.9	26.9	24.7	26.2	21.5	22.3	24.2	115.9	186.6
Total - Agric. Portfolio	175.6	242.7	195.8	237.6	250.0	247.5	294.3	294.9	474.9	446.4
	Percent of Total									
FN Development Assistance (Agriculture, Rural Development and Nutrition)	40.1	36.3	47.7	39.9	37.9	34.5	35.8	32.0	40.6	31.8
ES Economic Support Fund	24.2	26.5	11.7	28.0	26.9	32.8	36.4	39.2	19.1	15.6
SH Sahel Development Program	22.5	27.3	26.9	21.7	24.7	24.0	20.2	20.6	15.9	10.8
1/ Other	13.2	9.9	13.7	10.4	10.5	8.7	7.6	8.2	24.4	41.8
Total - Agric. Portfolio	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Includes other accounts such as the Selected Development Activities Fund, and the Development Fund for Africa for FY 1988 and FY 1989.

Table II-2. Agricultural Portfolio: Obligations by Funding Sources, FY 1980-1989

Funding Source Code/Account	1980 Act.	1981 Act.	1982 Act.	1983 Act.	1984 Act.	1985 Act.	1986 Act.	1987 Act.	1988 Est.	1989 Prop.
	Million Dollars									
FN Development Assistance (Agriculture, Rural Development and Nutrition)	100.2	105.8	133.9	135.5	136.7	119.3	153.0	121.2	0.0	0.0
ES Economic Support Fund	65.2	56.7	63.0	89.0	119.1	167.8	98.7	82.8	41.7	37.0
SH Sahel Development Program	65.4	81.4	82.6	74.2	73.4	80.4	60.5	56.0	2.6	0.0
1/ Other	33.8	36.8	32.5	14.7	16.4	30.4	25.0	17.7	250.3	265.3
Total - Agric. Portfolio	264.6	280.7	312.0	313.4	345.6	397.9	337.2	277.7	296.6	302.3
	Percent of Total									
FN Development Assistance (Agriculture, Rural Development and Nutrition)	37.9	37.7	42.9	43.2	39.6	30.0	45.4	43.6	0.0	0.0
ES Economic Support Fund	24.6	20.2	20.2	28.4	34.5	42.2	29.3	29.8	14.2	12.2
SH Sahel Development Program	24.7	29.0	26.5	23.7	21.2	20.2	17.9	20.2	0.9	0.0
1/ Other	12.8	13.1	10.4	4.7	4.7	7.6	7.4	6.4	84.9	87.8
Total - Agric. Portfolio	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Includes other accounts such as the Selected Development Activities Fund, and the Development Fund for Africa for FY 1988 and FY 1989.

Figure II-1. Agricultural Portfolio: Expenditures by Funding Source, FY 1979-1988

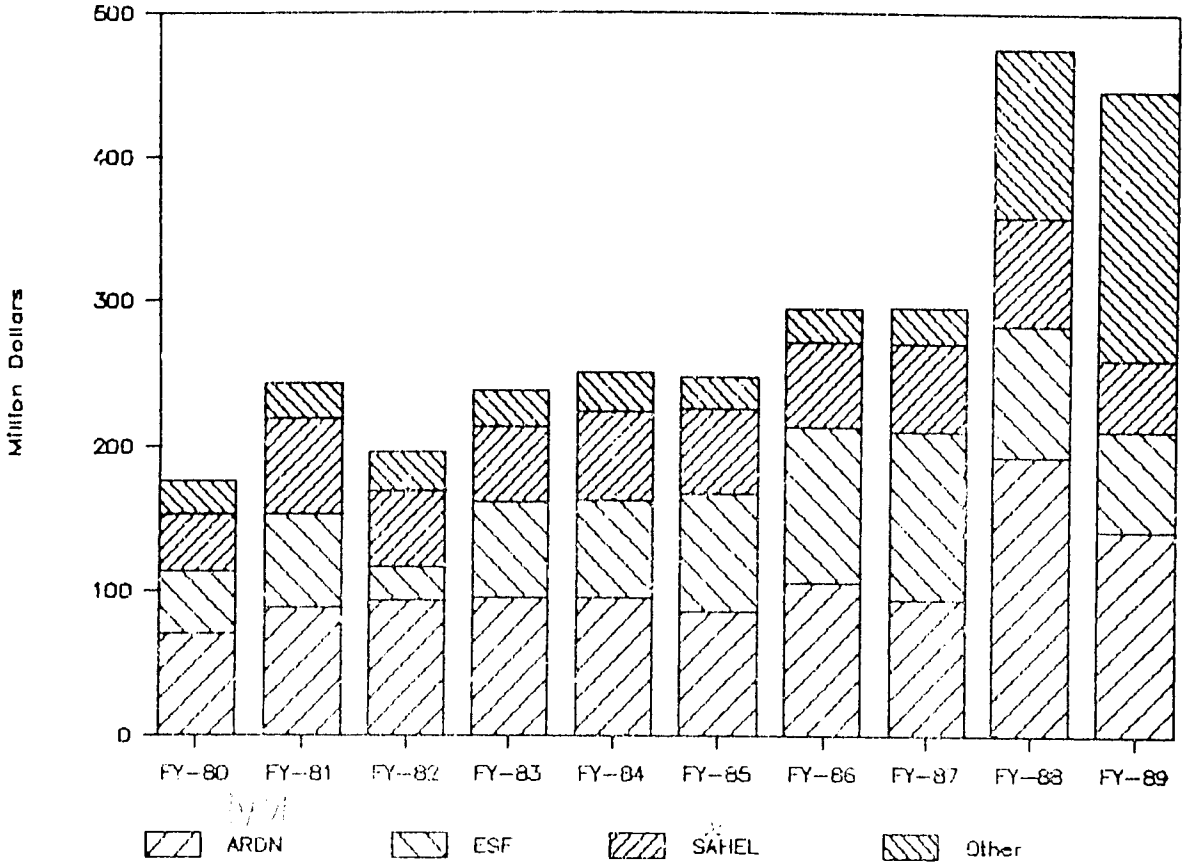
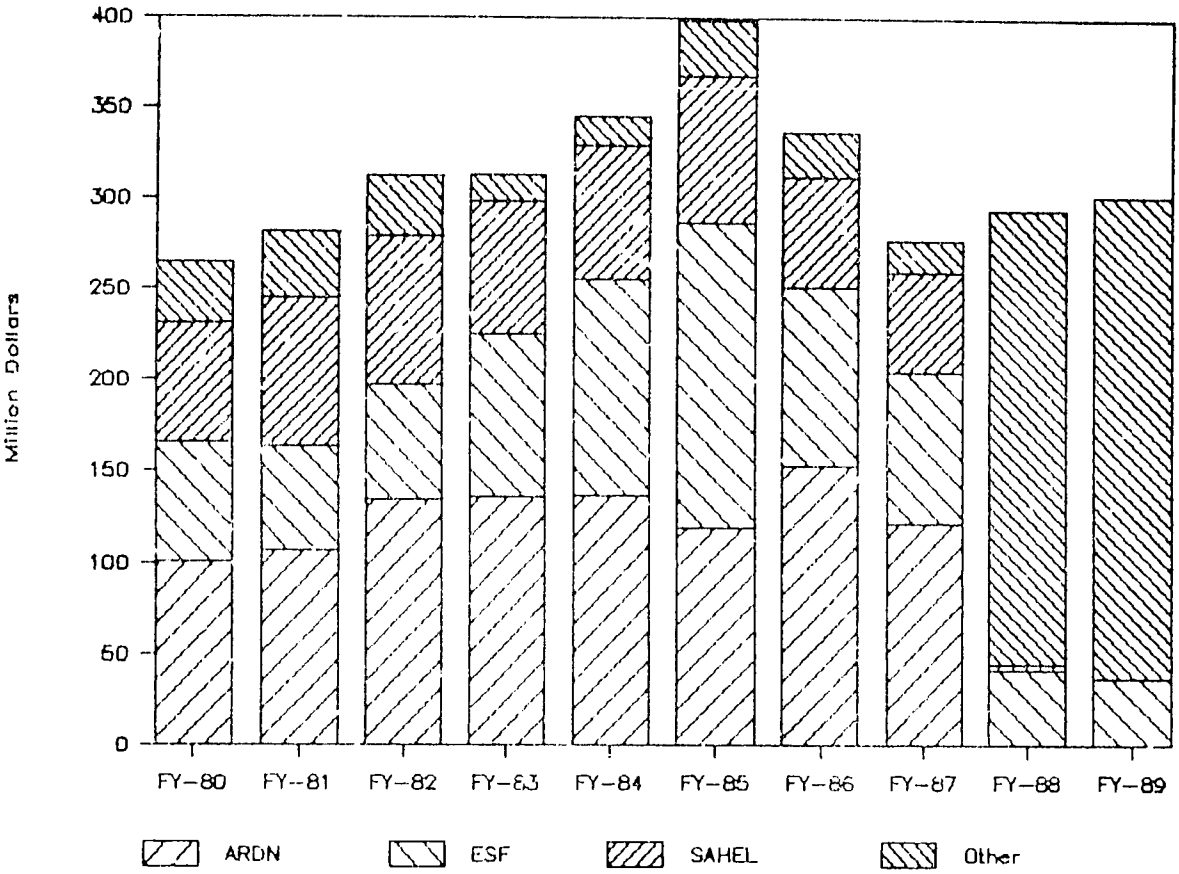


Figure II-2. Agricultural Portfolio: Obligations by Funding Source, FY 1979-1988



D. Type and Source of Funding - Agricultural Portfolio Prior to FY 1988

Within the Bureau's portfolio, the predominant user of loans was the agricultural sector. In addition to use of ARDN funds for loans, a large part of the ESF funds were also used for agricultural development loans. However, within the agricultural portfolio itself, loans have continued as a minor type of funding.

The three major sources of funding for agricultural components of projects, as well as for the total Africa Bureau portfolio, were the functional Development Assistance (DA) accounts, which include Agriculture, Rural Development and Nutrition (FN, ARDN or 103 account); the Economic Support Fund (ES); and the Sahel Development Program (SH). While other funding sources were also used, such as Security Supporting Assistance, Foreign Disaster Assistance and African Refugee Assistance, they have been of relatively minor and declining importance, see Tables II-1 and 2. Development projects funded under PL 480 were not included.

Trends in the use of the various funding sources were roughly parallel for agricultural components and the total Bureau portfolio over the FY 1979-1987 period. For the Bureau, relative use of ES and DA funds reversed over the FY 1979-1987 period: ES obligations rose from 34 to 55 percent of totaling funding, while DA funding declined from 55 to 43 percent. Use of SH funding was between 15 and 24 percent from FY 1979 to FY 1984, but then declines to 13 percent in FY 1987. See Figure II-4 and Appendix Table A-2.

For the Agricultural portfolio, ES funding of obligations rose very rapidly over the nine year period, increasing at an average annual rate of 13 percent, while the FN and SH annual growth rates were only 4 and 5 percent respectively. See Figure II-5 and Table II-2. Although the FN development assistance account remained the most important funding source for agricultural components through FY 1984, ES funding of agricultural components became increasingly important and will exceed FN in FY 1985 and 1987. Over the eight-year period, FN obligations declined from 46 to 37 percent of total agricultural funding, while ES obligations rose from 22 to 39 percent. SH funding of obligations rose to 29 percent of the total in FY 1981, but declined to 18 percent in FY 1987.

Trends in funding of expenditures for the Agricultural Portfolio were similar to those for obligations, with FN has remaining the most important funding source except for FY 1986. See Table II-1.

Table II-3. Agriculture's Share in the Africa Bureau Portfolio, FY 1980-1989
(Million Dollars)

Item	1980 Act.	1981 Act.	1982 Act.	1983 Act.	1984 Act.	1985 Act.	1986 Act.	1987 Act.	1988 Est.	1989 Prop.
	Obligations									
Africa Bureau Portfolio Total	414.9	467.9	624.9	619.8	690.2	836.3	700.0	559.3	648.0	591.5
Agricultural Portfolio Total	264.6	280.9	312.0	313.4	345.6	397.9	337.2	277.7	294.6	302.3
Agricultural Total as Percent of Africa Bureau Total	64	60	50	51	50	48	48	50	45	51
	Expenditures									
Africa Bureau Portfolio Total	279.1	387.3	392.8	508.4	487.0	468.2	559.7	520.2	961.6	838.7
Agricultural Portfolio Total	175.6	242.7	195.8	237.6	250.0	247.5	294.3	294.9	474.9	446.4
Agricultural Total as Percent of Africa Bureau Total	63	63	50	47	51	53	53	57	49	53

Figure II-3. Agriculture's Share in the Africa Bureau Portfolio, FY 1979-1988

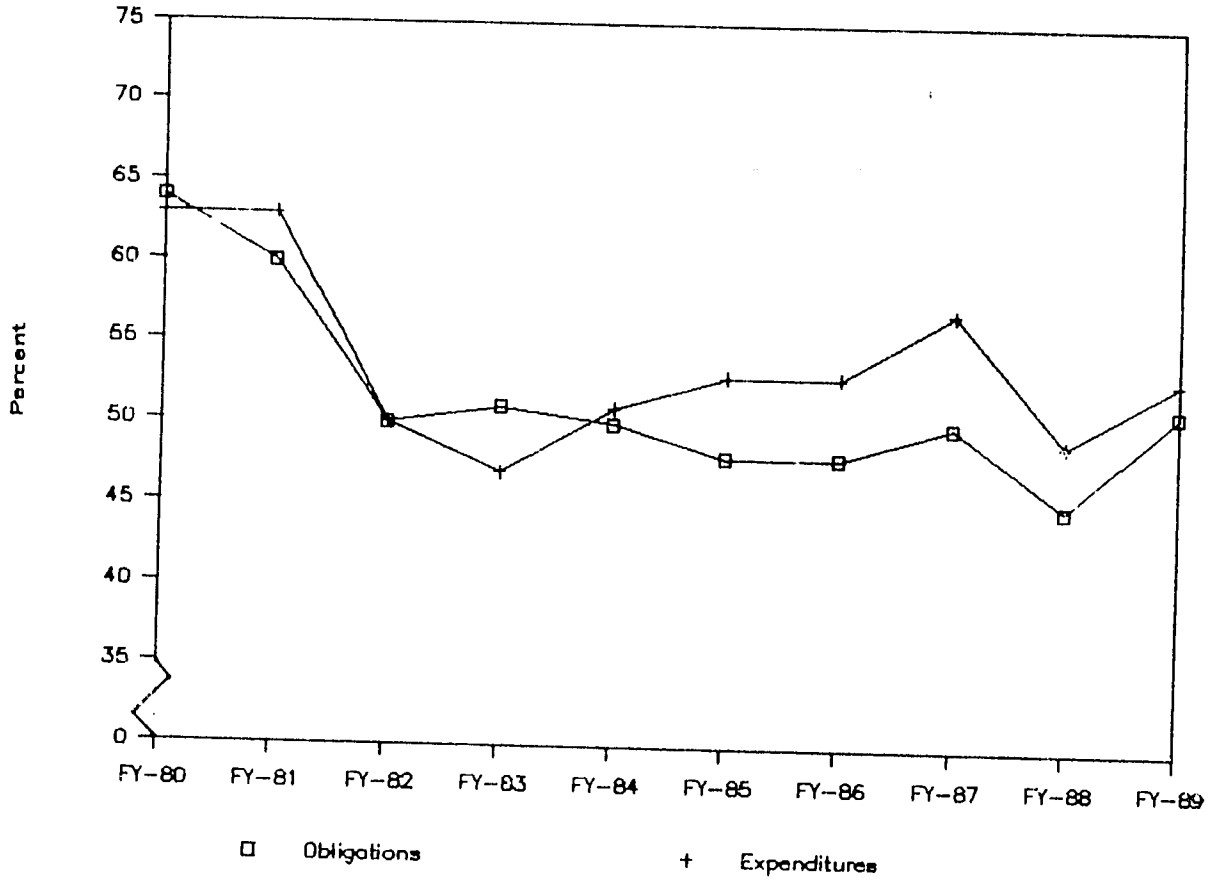


Figure II-4. Africa Bureau Portfolio: Expenditures by Funding Source, FY 1979-1988

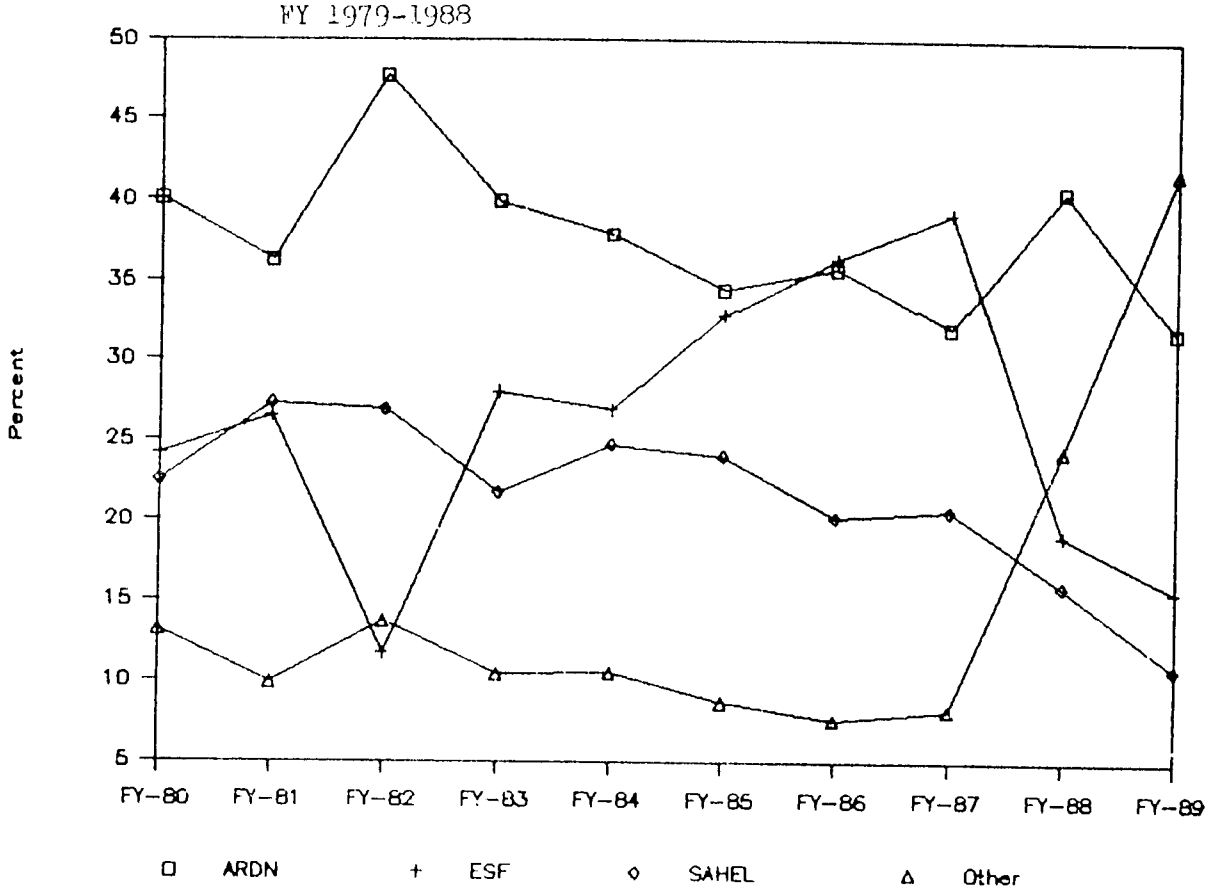
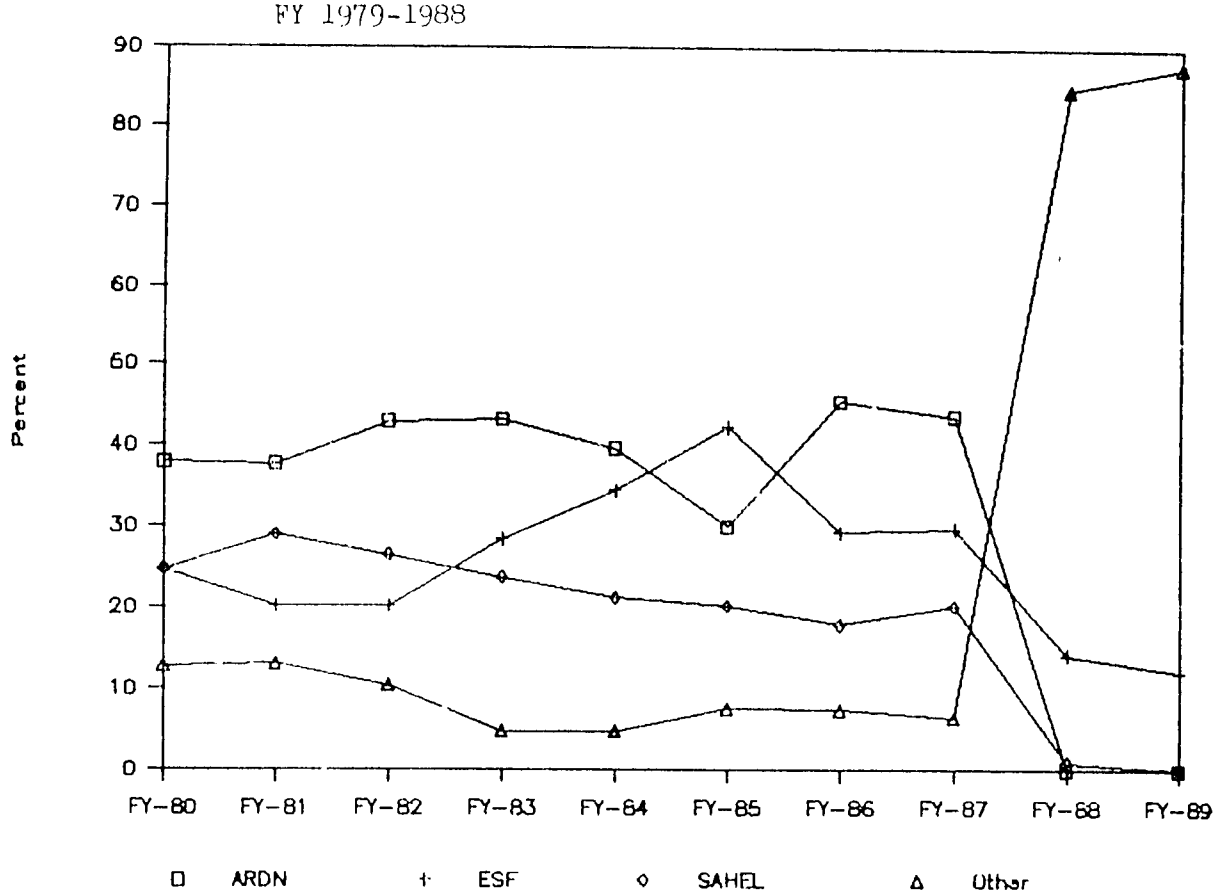


Figure II-5. Agricultural Portfolio: Obligations by Funding Source, FY 1979-1988



III. Project Purpose Analysis

This chapter examines the Purposes of Africa Bureau agricultural projects in terms of their relative importance and funding trends.

As outlined in the Appendix on Methodology, each project in the Africa Bureau's portfolio that was related to agriculture was analyzed in terms of its purpose or purposes. Project purpose was defined as the developmental changes to be achieved so as to solve or mitigate a sector or country problem, and in turn contribute to country development goals.

Twelve Purpose Categories were identified as encompassing all the aspects involved in the development process. (These Purpose Categories with their codes and definitions are given in Table I of the Appendix.) Each purpose of a project was then quantified in terms of LOP Cost and of the funds obligated and expended each fiscal year for that purpose. The funds used for one of these purposes is referred to as a project component. Since the sum of the components comprising a project equals the project's total obligations and expenditures, double counting of funds is avoided.

This analysis is based on the obligation and expenditure data shown by purpose categories in Tables II-1 through 6 for the ten-year period FY 1980-1989. It should be noted that the major size and annual variability of the Sector Support (SEC) Purpose tends to obscure the analysis of other Purposes' relative shares in the agricultural portfolio. Thus the other Purposes are examined both as a percentage of the total agricultural portfolio, and as a percentage of the total agricultural portfolio with SEC funds excluded.

Table III-1. Agricultural Portfolio: Purpose Categories by Annual Expenditures, FY 1980-1989

Purpose Categories	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Propos.
				Million Dollars						
Planning/Policy Analysis	21.6	34.9	22.5	25.3	25.5	25.4	24.6	23.6	37.9	25.1
Technology Development	16.2	25.8	26.6	29.5	29.1	30.2	37.0	29.6	60.6	53.2
Technology Transfer	26.4	32.0	35.8	34.8	32.4	35.6	42.1	38.0	68.1	62.3
Commodity Marketing	3.8	4.2	3.9	4.5	6.8	4.2	4.7	8.4	9.5	12.5
Input Supply	13.0	18.7	14.7	15.6	18.5	19.2	23.2	22.2	43.5	41.6
Credit Development	9.0	8.2	9.5	8.2	7.3	7.5	7.4	7.0	14.2	12.6
Construction	13.9	19.0	23.9	17.5	26.3	19.2	19.3	13.3	54.7	65.9
Resource Development	7.8	5.5	4.2	5.0	3.2	2.3	2.8	2.1	8.6	8.3
Land Tenure	0.7	0.2	1.0	0.5	0.4	0.2	0.5	0.3	0.4	0.4
Human Resource Dev	7.0	14.6	15.1	14.8	14.0	13.0	14.4	13.4	20.6	19.9
Education System Dev	16.0	23.0	20.6	21.3	16.7	11.2	17.4	16.2	32.3	25.9
Sector Support	39.6	57.3	18.0	60.5	69.7	79.5	100.9	120.8	124.5	118.6
Total - Ag Portfolio	175.6	243.4	195.8	237.5	249.9	247.5	294.3	294.9	474.9	446.4
Total - Ag Port. less SEC	136.0	186.1	177.8	177.0	180.2	168.0	193.4	174.1	350.4	327.8

Table III-2. Agricultural Portfolio: Purpose Categories by Annual Expenditures, FY 1980-1989

Purpose Categories	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Propos.
				Percent of Total Agricultural Portfolio						
Planning/Policy Analysis	12.3	14.3	11.5	10.7	10.2	10.3	8.4	8.0	8.0	5.6
Technology Development	9.2	10.6	13.6	12.4	11.6	12.2	12.6	10.0	12.8	11.9
Technology Transfer	15.0	13.1	18.3	14.7	13.0	14.4	14.3	12.9	14.3	14.0
Commodity Marketing	2.2	1.7	2.0	1.9	2.7	1.7	1.6	2.8	2.0	2.8
Input Supply	7.4	7.7	7.5	6.6	7.4	7.8	7.9	7.5	9.2	9.3
Credit Development	5.1	3.4	4.9	3.5	2.9	3.0	2.5	2.4	3.0	2.8
Construction	7.9	7.8	12.2	7.4	10.5	7.8	6.6	4.5	11.5	14.8
Resource Development	4.4	2.3	2.1	2.1	1.3	0.9	1.0	0.7	1.8	1.9
Land Tenure	0.4	0.1	0.5	0.2	0.2	0.1	0.2	0.1	0.1	0.1
Human Resource Dev	4.3	6.0	7.7	6.2	5.6	5.3	4.9	4.5	4.3	4.5
Education System Dev	9.1	9.4	10.5	9.0	6.7	4.5	5.9	5.5	6.8	5.8
Sector Support	22.6	23.5	9.2	25.5	27.9	32.1	34.3	41.0	26.2	26.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III-3. Agricultural Portfolio: Purpose Categories by Annual Expenditures, 1980-1989

Purpose Categories	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Propos.
	Percent of Total Agricultural Portfolio, less SEC									
Planning/Policy Analysis	15.9	18.8	12.7	14.3	14.2	15.1	12.7	13.6	10.8	7.7
Technology Development	11.9	13.9	15.0	16.7	16.1	18.0	19.1	17.0	17.3	16.2
Technology Transfer	19.4	17.2	20.1	19.7	16.0	21.2	21.8	21.8	19.4	19.0
Commodity Marketing	2.8	2.3	2.2	2.5	3.8	2.5	2.4	4.8	2.7	3.8
Input Supply	9.6	10.0	8.3	8.8	10.3	11.4	12.0	12.8	12.4	12.7
Credit Development	6.6	4.4	5.3	4.6	4.1	4.5	3.8	4.0	4.1	3.8
Construction	10.2	10.2	13.4	9.9	14.6	11.4	10.0	7.6	15.6	20.1
Resource Development	5.7	3.0	2.4	2.8	1.8	1.4	1.4	1.2	2.5	2.5
Land Tenure	0.5	0.1	0.6	0.3	0.2	0.1	0.3	0.2	0.1	0.1
Human Resource Dev	5.6	7.8	8.5	8.4	7.8	7.7	7.4	7.7	5.9	6.1
Education System Dev	11.8	12.4	11.6	12.0	9.3	6.7	9.0	9.3	9.2	7.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table III-4. Agricultural Portfolio: Purpose Categories by Annual Obligations, 1980-1989

Purpose Categories	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Propos.
	Million Dollars									
Planning/Policy Analysis	25.3	36.9	28.2	26.6	23.4	17.1	17.1	21.9	18.6	15.8
Technology Development	32.5	46.0	45.9	39.8	40.1	33.4	38.9	39.0	30.5	32.3
Technology Transfer	47.6	44.9	41.8	49.9	39.2	47.7	42.1	47.1	57.8	42.6
Commodity Marketing	2.8	4.5	5.5	4.0	6.8	12.1	6.7	7.2	3.0	7.7
Input Supply	20.9	21.4	28.8	26.3	23.0	31.4	21.3	19.4	22.0	25.8
Credit Development	10.6	9.7	6.2	16.6	25.9	8.6	5.0	8.1	6.6	9.6
Construction	23.7	30.4	25.2	27.8	30.2	42.6	44.2	12.3	25.8	24.9
Resource Development	7.6	3.5	6.6	2.9	1.8	3.8	7.6	7.7	6.5	13.4
Land Tenure	1.5	0.7	0.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Human Resource Dev	14.4	14.6	20.4	17.4	12.7	14.3	12.4	13.5	11.6	20.4
Education System Dev	19.9	20.3	31.9	20.0	18.2	13.5	14.3	13.7	7.8	9.2
Sector Support	57.9	47.9	60.7	81.4	124.3	173.4	127.5	87.8	104.4	100.6
Total - Ag Portfolio	264.7	280.8	311.9	313.6	345.6	397.9	337.1	277.7	294.6	302.3
Total - Ag Port. less SEC	206.8	232.9	251.2	232.2	221.3	224.5	209.6	189.9	190.2	201.7

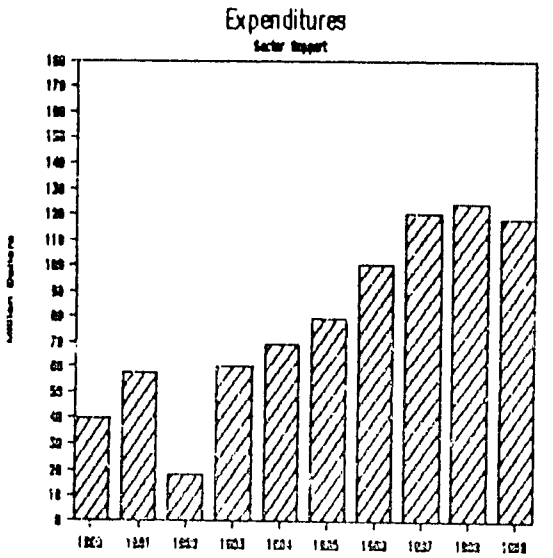
Table III-5. Agricultural Portfolio: Purpose Categories by Annual Obligations, 1980-1989

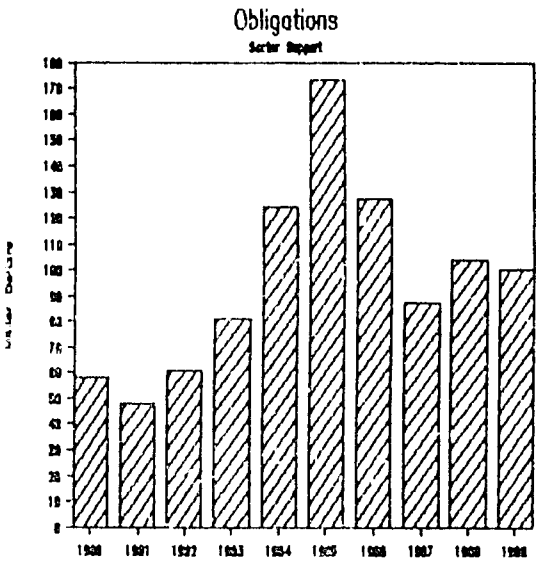
Purpose Categories	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Propos.
	Percent of Total Agricultural Portfolio									
Planning/Policy Analysis	9.6	13.1	12.2	8.5	6.8	4.3	5.1	7.9	6.3	5.2
Technology Development	12.3	16.4	14.7	12.7	11.6	8.4	11.5	14.0	10.4	10.7
Technology Transfer	18.0	16.0	13.4	15.9	11.3	12.0	12.5	17.0	19.6	14.1
Commodity Marketing	1.1	1.6	1.8	1.3	2.0	3.0	2.0	2.6	1.0	2.5
Input Supply	7.9	7.6	9.2	8.4	6.7	7.9	6.3	7.0	7.5	8.5
Credit Development	4.0	3.5	2.0	5.3	7.5	2.2	1.5	2.9	2.2	3.2
Construction	9.0	10.8	8.1	8.9	8.7	10.7	13.1	4.4	8.8	8.2
Resource Development	2.9	1.2	2.1	0.9	0.5	1.0	2.3	2.8	2.2	4.4
Land Tenure	0.6	0.2	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Human Resource Dev	5.4	5.2	6.5	5.5	3.7	3.6	3.7	4.9	3.9	6.7
Education System Dev	7.5	7.2	10.2	6.4	5.3	3.4	4.2	4.9	2.6	3.0
Sector Support	21.9	17.1	19.5	26.0	36.0	43.6	37.8	31.6	35.4	33.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

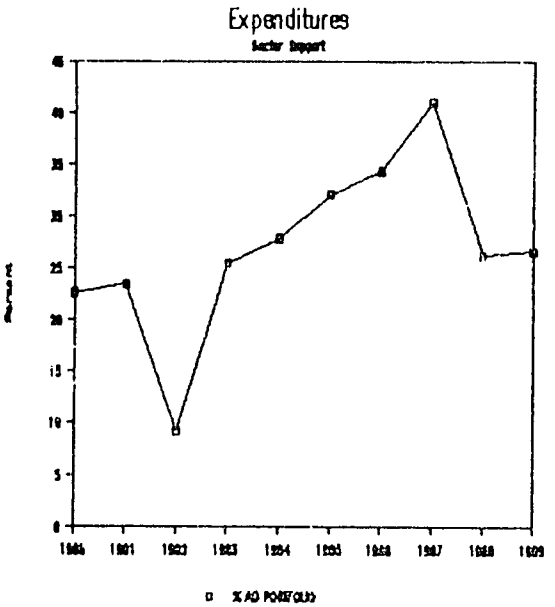
Table III-6. Agricultural Portfolio: Purpose categories by Annual Obligations, 1980-1989

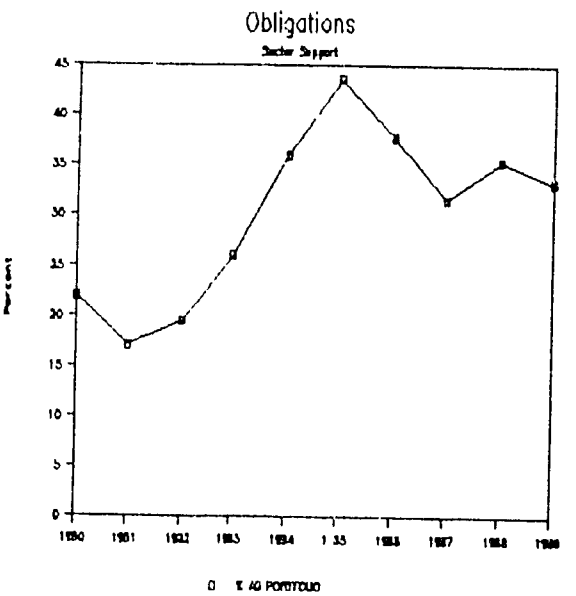
Purpose Categories	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Propos.
	Percent of Total Agricultural Portfolio, less SEC									
Planning/Policy Analysis	12.2	15.8	15.2	11.5	10.6	7.6	8.2	11.5	9.8	7.8
Technology Development	15.7	19.8	18.3	17.1	18.1	14.9	18.6	20.5	16.0	16.0
Technology Transfer	23.0	19.3	16.6	21.5	17.7	21.2	20.1	24.8	30.4	21.1
Commodity Marketing	1.4	1.9	2.2	1.7	3.1	5.4	3.2	3.8	1.6	3.8
Input Supply	10.1	9.2	11.5	11.3	10.4	14.0	10.2	10.2	11.6	12.8
Credit Development	5.1	4.2	2.5	7.1	11.7	3.8	2.4	4.3	3.5	4.8
Construction	11.5	13.1	10.0	12.0	13.6	19.0	21.1	6.5	13.6	12.3
Resource Development	3.7	1.5	2.6	1.2	0.8	1.7	3.6	4.1	3.4	6.6
Land Tenure	0.7	0.3	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Human Resource Dev	7.0	6.3	8.1	7.5	5.7	6.4	5.9	7.1	6.1	10.1
Education System Dev	9.6	8.7	12.7	8.6	8.2	6.6	6.8	7.2	4.1	4.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

A. Sector Support (SEC)









Definition. To provide balance of payments and program support primarily for development of the agricultural sector. Includes Commodity Import Programs, variously titled agricultural and rural sector development grants, and Program and Development Support funds.

Obligations and Expenditures. Agricultural Sector Support was the dominant purpose for which funds were obligated and expended during the FY 1980-1989 period. Its relative importance in the total agricultural portfolio continued to increase substantially, but some decline occurred in FY 1986 and FY 1987, with expectations for some continuing decline in FY 1988 and FY 1989.

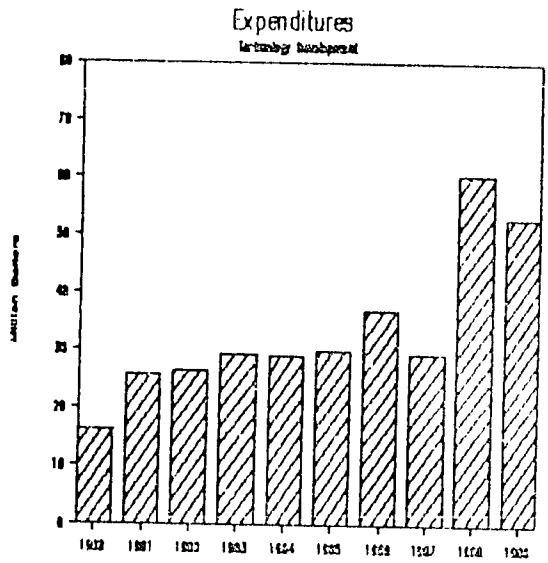
In most of the years under review, obligations and expenditures for SEC ranged between one-fifth and one-third of all agricultural funds in the Africa Bureau's portfolio. By FY 1988, in spite of a major drop in FY 1982, annual expenditures on this purpose are estimated to reach $124.5 million, or a 3-fold increase over the $39.6 million in FY 1980. This will increase SEC's share of total expenditures from 22.6 to 26.2 percent. Little change is proposed for FY 1988 relative to FY 1987 expenditures. Over this same ten-year period, annual obligations peaked at 43.6 percent of the agricultural portfolio in FY 1985; during the three years FY 1987 through FY 1989, about one-third of the obligations are for Agricultural Sector Support.

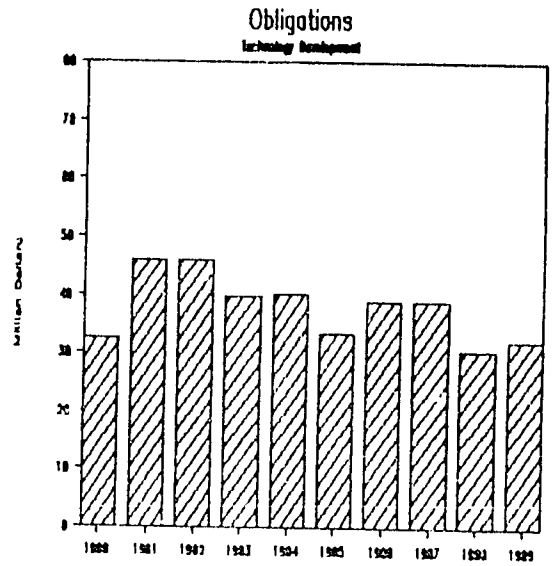
Number and Size. The number of SEC projects used in the FY 1978-1989 period was relatively small, and they ranged widely in size of LOP cost.

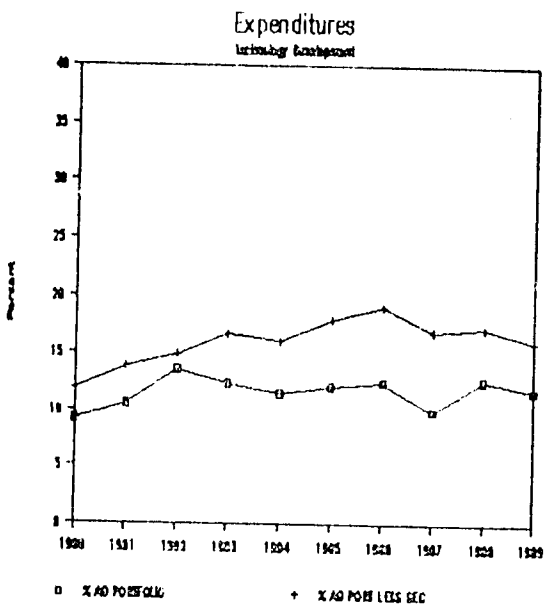
Of the 64 SEC projects in this period, 24 had LOP costs ranging from $0.6 to $9 million; 20 from $10 to $19 million; 9 from $20 to $30 million and 7 from $30 to $45 million. Four others, however, had LOP costs of $54 million, $59 million, $76 million and $270 million. The average LOP cost of the 32 SEC projects under implementation was $23.[illegible] million, while the average size of the 25 projects that had been completed was $11.4 million. The average size 7 SEC projects in the identification stage was $[illegible].1 million.

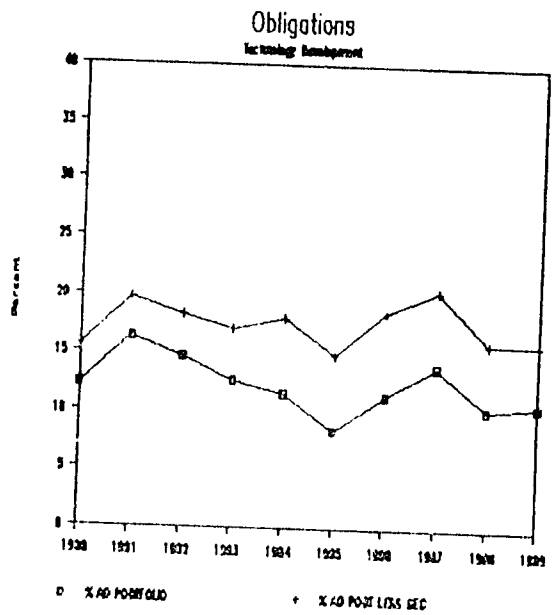
Relation to Strategy. The main thrust of Sector Support projects is for balance of payments support. However, many of the commodities provided though this mechanism (such as fertilizer) relate generally to development of the agricultural sector, a high priority in the Bureau's overall strategy. SEC funding also can provide opportunities to assist in creating national policies that, for example, will give farmers adequate incentives to expand agricultural production, or will encourage private sector development. Where such policy changes are encouraged, a major component of the Bureau's agricultural strategy is being implemented.

B. Technology Development (TDE)









Definition. To conduct, or to improve the capacity for conducting research on improved technologies for agricultural production and consumption.

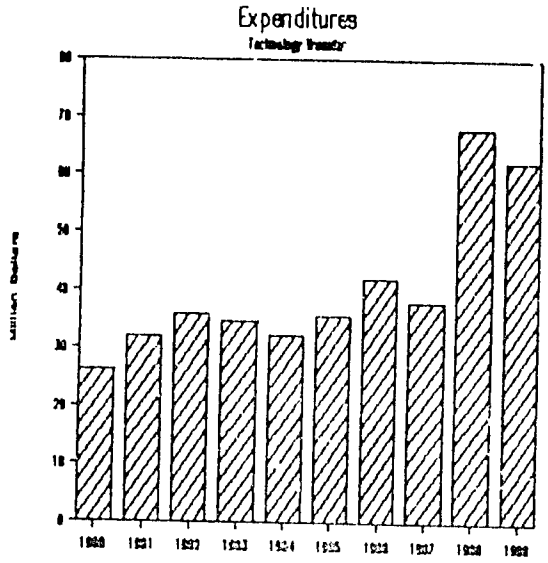
Expenditures. Expenditures on Technology Development show the highest annual growth rate of any category in the agricultural portfolio except for Construction. Actual expenditures rose over the FY 1980-1987 period from $16.2 to $29.6 million or at an average annual rate of 9 percent. With planned expenditures to rise to $53.2 million in FY 1989, the growth rate over the FY 1980-1989 period will be 14 percent.

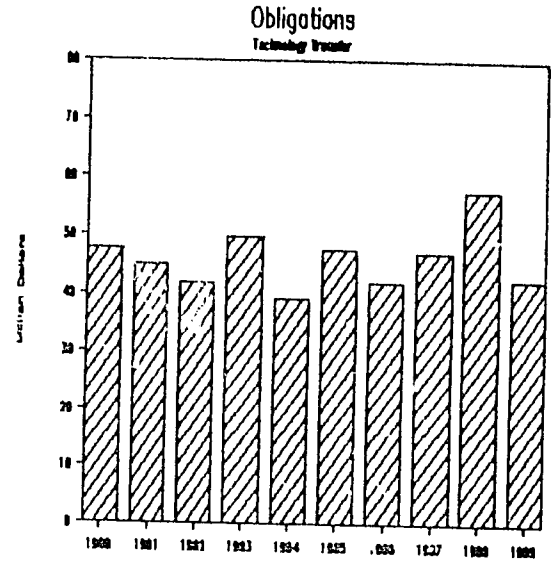
TDE's share in the total agricultural portfolio, with SEC funds excluded, increased 4.3 percent over the nine year period. From 11.9 percent in 1980, its share has risen to over 16.2 percent in FY 1989. When Sector Support funds are taken into account, TDE's share in the total agricultural portfolio continues to show an increase, but at a lesser rate. From 9.2 percent in 1980, its share rises to 11.9 percent in 1989.

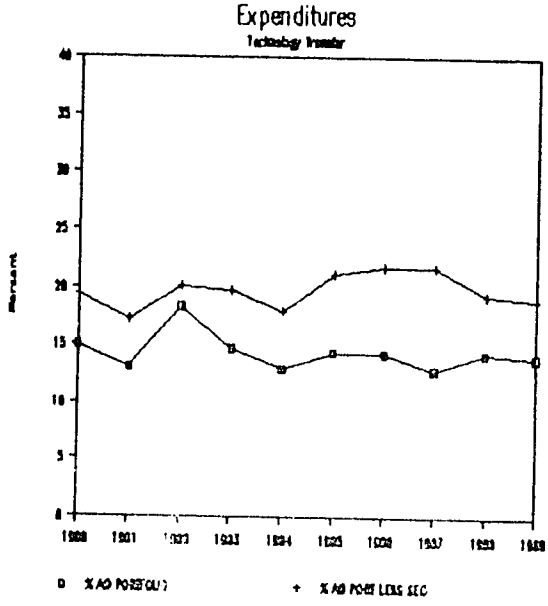
Obligations. Technology Development remains important in terms of obligations. The planned obligation level of $32.3 million in FY 1989 will be the fourth largest of any category in the agricultural portfolio, exceeded only by Sector Support, Agricultural Marketing and Technology Transfer. The obligations for Technology Development have experienced some significant fluctuations over the past ten years. The dollar amounts rose from $33 million in FY 1980 to $46 million in FY 1981, slowly dropping back to $33 million in FY 1985, rising to $39 million in FY 1987 and projected to be $33 million in FY 1989. TDE's share of total obligations in the agricultural portfolio, less SEC funds, varied from between 16 percent and 21 percent of the total.

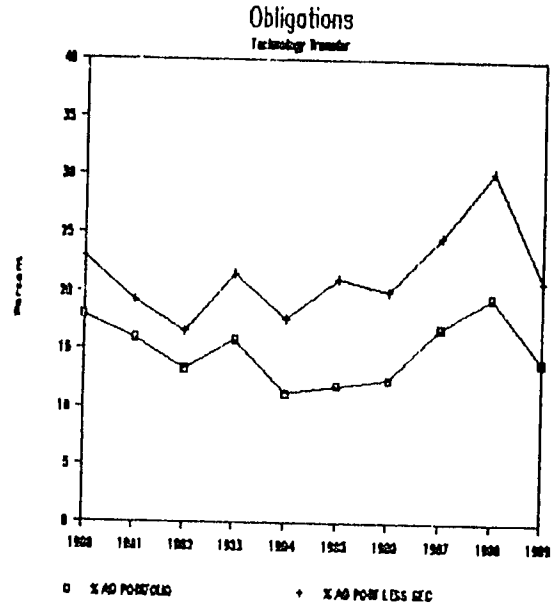
Relation to Strategy. Technology Development is a major component of the Bureau's agricultural strategy, i.e., to assist in building self-sustaining institutions that provide the appropriate technology necessary for effective production and distribution of food products. The "Plan for Supporting Agricultural Research and Faculties of Agriculture in Africa" outlines the thrust being pursued to continue and further focus efforts in this area. The very positive upward trend in expenditures would appear to indicate strong support for the "Plan". However, annual obligations do not show any consistent trend. It would appear that further efforts are necessary if the "Plan" is to be adequately implemented in coming years.

C. Technology Transfer (TTR)









Definition. To extend, or to improve the capacity for extension/diffusion/transfer of improved technologies for agricultural production and consumption.

Expenditures. Actual expenditures on Technology Transfer increased at a 5 percent growth rate, or from $26.4 to $38.0 million over the FY 1980-1987 period. Using the projected figures for FY 1989, the growth rate will be 10 percent over the nine year period. The FY 1988 expenditure level of $62.3 million will be the fourth largest of any category, exceeded only by Sector Support, Agricultural Marketing and Construction.

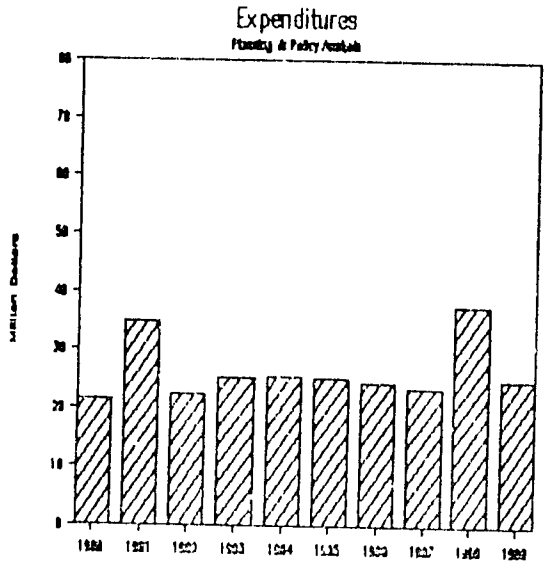
In relation to the total agricultural portfolio, with SEC funds excluded, TTR's share fluctuated between 17 and 22 percent over the nine year period, and is planned at 19.9 percent in FY 1989. When Sector Support funds are included, TTR's share in the total agricultural portfolio shows a -1 percent decline from FY 1980 to FY 1989.

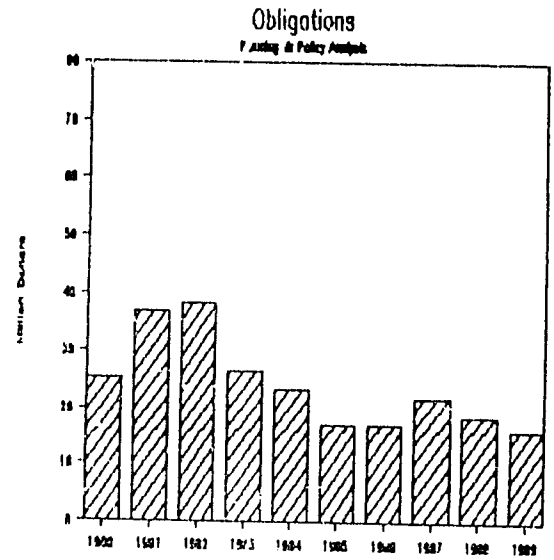
Obligations. In terms of obligations, funding for technology Transfer continued to fluctuate over the nine-year period, and showed a -1 percent decline from $47.6 to $42.6 million. However, the FY 1989 obligation level will be the third largest of any category, exceeded only by Sector Support and Agricultural Marketing.

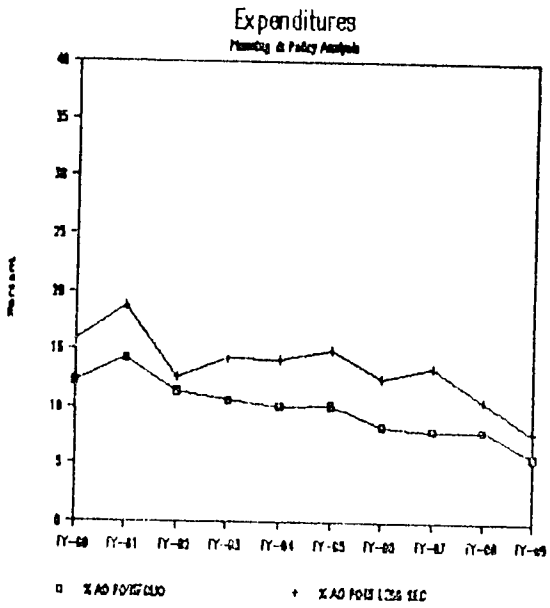
TTR's share of total portfolio obligation funds also fluctuated from year to year and showed a -4 percent decline from 18.0 to 14.1 percent of the agricultural portfolio over the nine-year period.

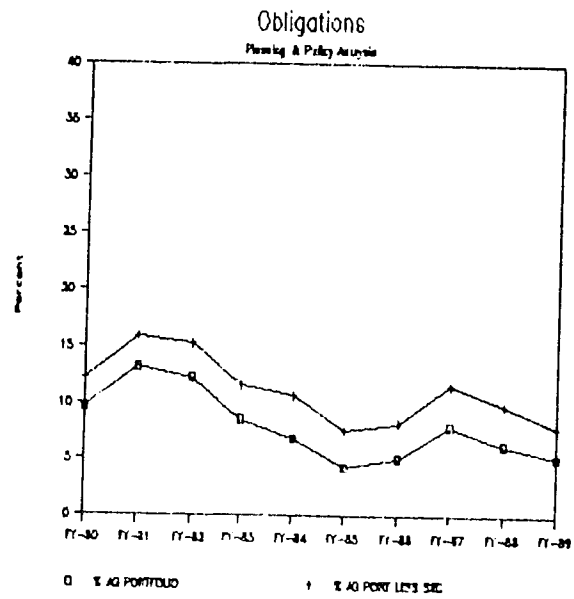
Relation to Strategy. Technology Transfer has priority ranking in the Bureau's agricultural strategy and, although the trend in funding has been relatively flat, the level of funding has exceeded that of most other categories. This funding provides substantial support in strengthening institutional capabilities for extending improved technologies, as well as in providing means for greater farmer participation in the development process.

D. Planning and Policy Analysis (PPA)









Definition. To conduct, or to improve the capacity for conducting economic planning and analyses of policy issues relating to agricultural development. Includes data collection and processing.

Expenditures. Except for peaks in FY 1981 and FY 1988, expenditures on Planning and Policy Analysis were nearly level over the nine-year period. They grew from $21.6 in FY 1980 to $25.1 million in FY 1989, or at an average annual growth rate of 2 percent.

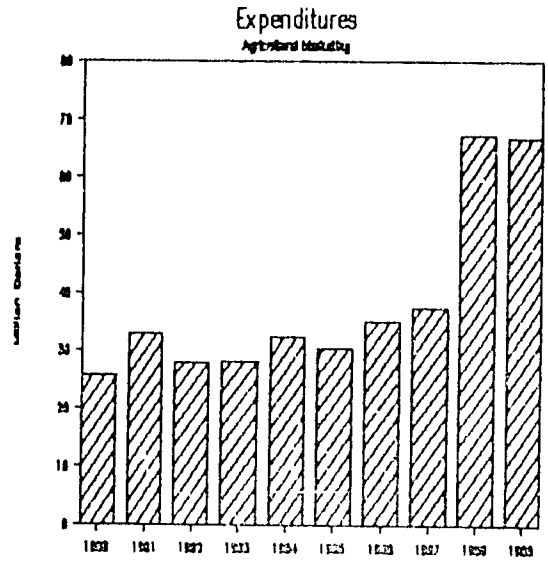
In relation to the growth of the total agricultural portfolio, with SEC funds excluded, PPA's share declined from a peak of 18.8 percent in FY 1981 to less than half that level, or 7.7 percent, in FY 1989. When Sector Support funds are included, PPA's share shows a general decline from 12.3 to 5.6 percent over the FY 1980-1989 period.

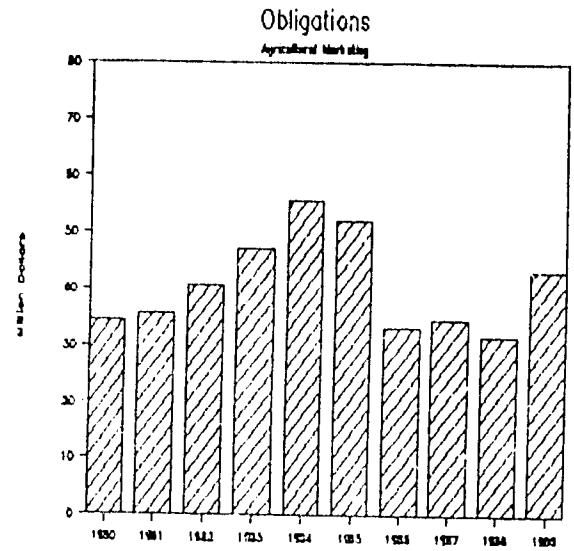
Obligations. In terms of obligations, PPA funding rose from $25.3 million in FY 1980 to $38.2 million in FY 1982, but then declined to $15.8 million in FY 1989. This was an average annual decline of -5 percent over this nine-year period.

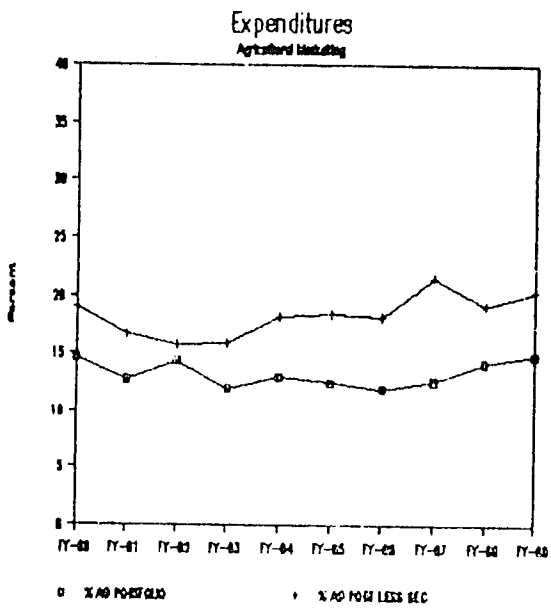
PPA's share of total obligations in the portfolio generally showed a decline since FY 1981, dropping from 13.1 percent to 5.2 percent.

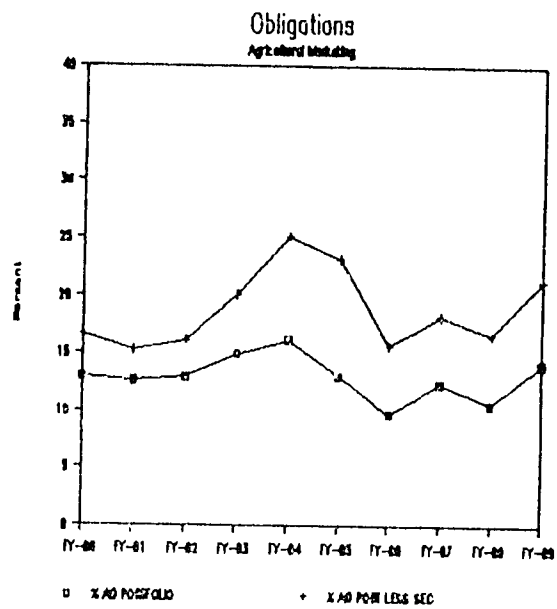
Relation to Strategy. Bureau strategy for agricultural development emphasizes assistance to create policy environments that will provide incentives for farmers to increase production. Some leverage to support this strategy thrust is provided through Agricultural Sector Support projects, as noted in A. above. However, strengthening of institutional capacity to provide the analyses needed for planning and policy decisions is also essential. The declines in PPA funding -- both in absolute and relative terms -- made this institutional support increasingly more difficult.

E. Agricultural Marketing (MKT, INP, CRE)









Definition. [Agricultural Marketing here includes three related purpose categories: Commodity Marketing (MKT), Input Supplies (INP) and Credit (CRE)]. To improve, or to strengthen the capacity to improve the assembly, handling, processing, storage, transport and/or distribution of agricultural commodities and products (MKT), and/or the delivery of physical inputs (INP) and credit (CRE) for agricultural production and consumption.

Expenditures. Expenditures on Agricultural Marketing show an average annual growth rate of 11 percent over the FY 1980-1989 period. However, most of this increase is planned after FY 1987. Actual expenditures were at about the $30 million level through FY 1987, and then are to be about $67 million in FY 1988 and 1989. The FY 1989 expenditure level will be the second largest of any category, exceeded only by Sector Support.

Agricultural Marketing's share in total portfolio expenditures with SEC funds excluded, showed a decline from a 19.0 percent share in FY 1980 to 15.8 percent in FY 1982. This was followed by a substantial increase to 20.3 percent in FY 1989, for a net decline of 1.3 percent over the nine year period. When Sector Support funds are included, Agricultural Marketing's share fluctuated between 12.0 and 14.9 percent through FY 1989.

Changes in the share of portfolio expenditures for Commodity Marketing Input Supply and Credit were relatively small over the FY 1980-1989 period.

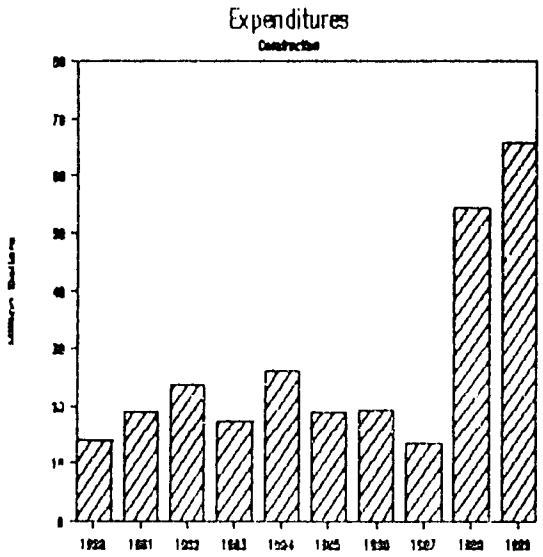
Obligations. In terms of actual obligations, Agricultural Marketing funding rose from $31.3 million in FY 1980 to a peak of $55.7 in FY 1984. With a proposed level of $43.1 million for FY 1989, obligations show a growth rate of 3 percent over the nine-year period. The FY 1988 expenditures will be the second largest of all the categories, exceeded only by Sector Support.

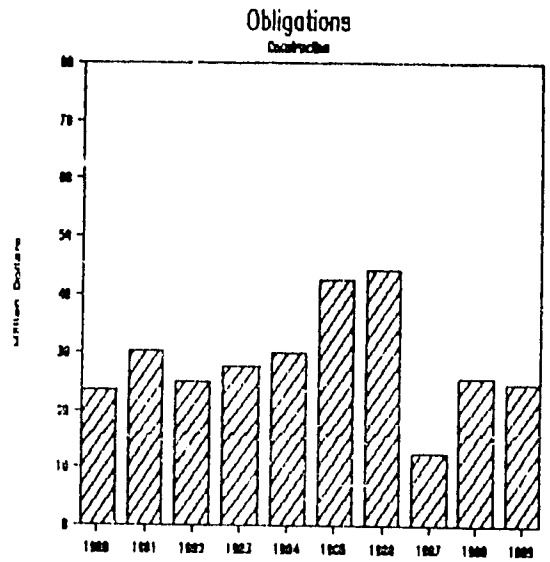
Agricultural Marketing's share in total portfolio obligations, less SEC funding, was in the 15 to 20 percent range for most of the period.

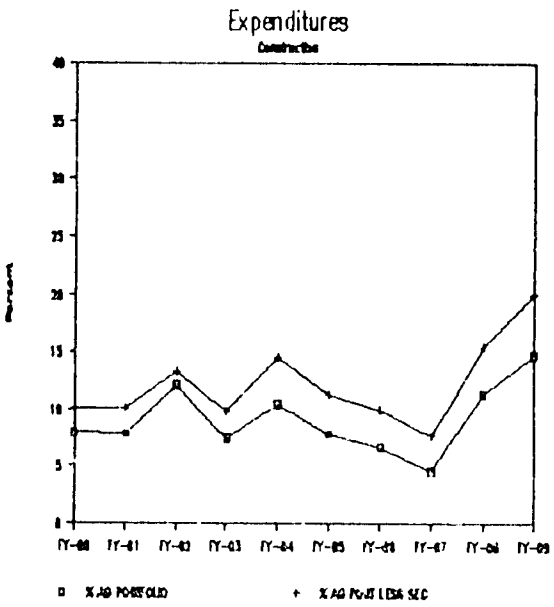
The share of obligations for Commodity Marketing and Input Supply each showed considerable fluctuation over the FY 1978-1986 period, with no clear cut trends. Credit rose sharply to a peak in FY 1984, but then experienced a rapid drop.

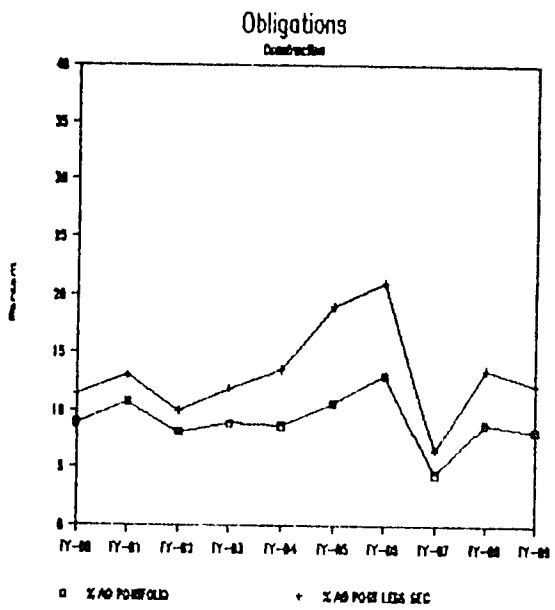
Relation to Strategy. Bureau strategy gives priority to strengthening capabilities of agricultural institutions. These include cooperatives and other private sector firms engaged in marketing food and other commodities, as well as those providing seeds, tools and other production inputs to farmers. The relative importance of funding for these purpose categories was essentially stable up to FY 1983. While actual and proposed expenditures show a positive upward trend, the declining trend in obligations since FY 1984 suggests less support in the future for this aspect of the Bureau's agricultural strategy.

F. Construction (CON)









Definition. To construct, or to strengthen the capacity to construct basic facilities/infrastructure for agricultural and rural development -- transport, communications, power, water supply/waste disposal systems. (Does not include construction undertaken as an ancillary activity of project classified under any other purpose category.)

Expenditures. Actual expenditures on construction of rural infrastructure nearly doubled from $13.9 to $26.7 million from FY 1980 to FY 1984, but declined to $13.3 million in FY 1987. This was a -1 percent decline over the seven-year period. However, using projected expenditures of $55 and $66 million for FY 1988 and FY 1989, respectively, the growth rate will be 17 percent for the nine-year period. This is the largest growth rate of any category. A little more than half of these funds were for rural roads, about one-third for village water supplies and about one-sixth water systems for irrigated crops and livestock.

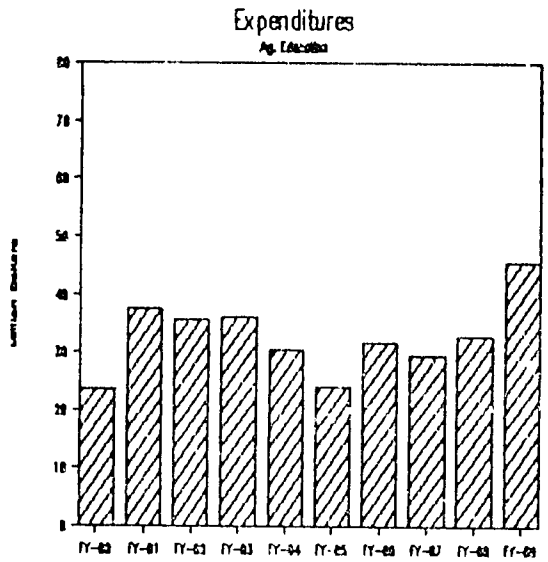
Construction's share in total expenditures of the agricultural portfolio, with SEC funds excluded, fluctuated between 10 and 15 percent through FY 1987 and is projected at 20.1 percent by FY 1989. Similar expenditure trends are shown when SEC funds are included.

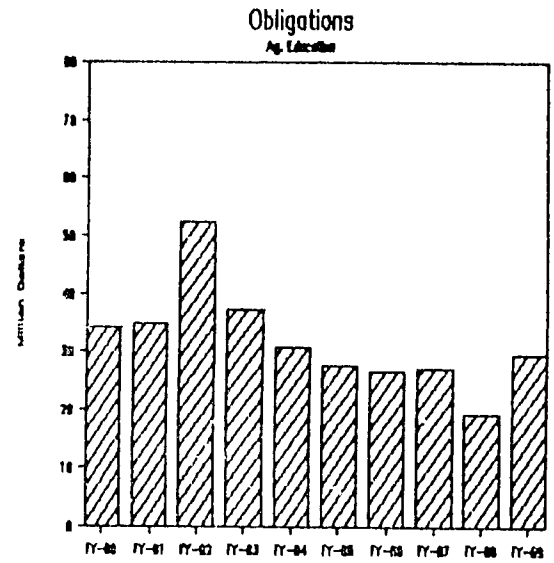
Obligations. Obligations for rural infrastructure grew from $23.7 million in FY 1980 to $44.2 million in FY 1986, or at a growth rate of 11 percent. However, actual obligations then dropped to $12.3 million in FY 1987. With proposed obligations dropping to $25 million, the growth rate for the nine year period will be 1 percent. Nearly two thirds of these funds were for rural roads, about one-fourth for village water supplies and about one-sixth water supply systems for irrigated crops and livestock.

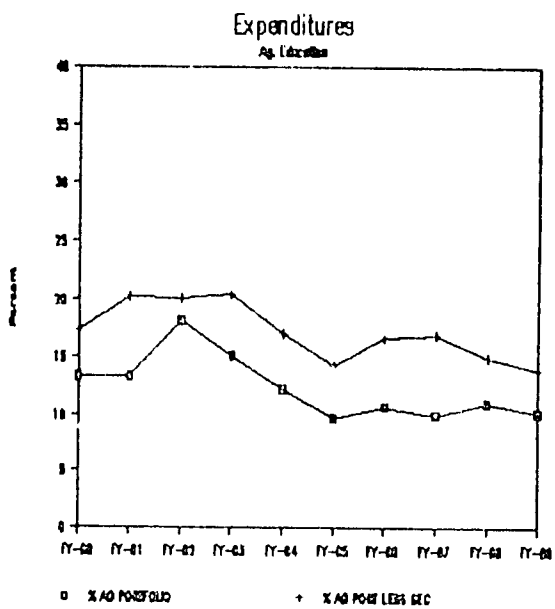
Construction's share in total portfolio obligations, less SEC funds, increased from 11.5 percent in FY 1980 to over 21.1 percent in FY 1986. It then drops to 6.5 percent in FY 1987, and is projected at 12.3 percent in FY 1989. A similar trend is shown when SEC funds are included.

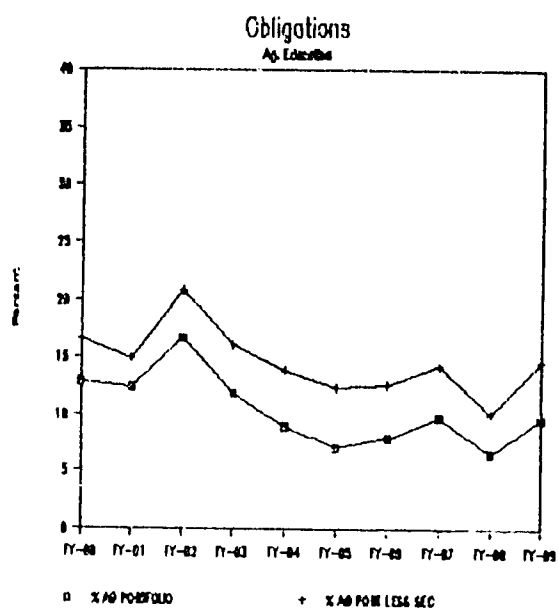
Relation to Strategy. Except for the high expenditures projected for FY 1988 and FY 1989, funding for construction of rural infrastructure showed a fluctuating but slightly declining share in the agricultural portfolio over the FY 1980-1988 period. This reflects the increased relative importance being given to other purpose categories, such as Sector Support, Technology Development and Technology Transfer. Since Bureau strategy gives higher priority to activities oriented towards improved policy environment and institution building, the slight downward trend for infrastructure provides support to the overall strategy.

G. Agricultural Education (HRD, ESD)









Definition. [Agricultural Education includes both Human Resources Development (HRD) and Education System Development (ESD)]. To improve, or to strengthen the capacity to improve rural training and human resources development (HRD), and/or the structure/curricula/operations/facilities of rural educational institutions (ESD).

Expenditures. Actual expenditures in Agricultural Education increased at a 3 percent growth rate, or from $23.9 to 29.6 million over the FY 1980-1989 period. Using the projected figure of $45.3 for FY 1989, the growth rate will be 8 percent over the nine-year period.

Agricultural Education's share in the total portfolio, with SEC funds excluded, increased from 17.4 percent in FY 1980 to 20.4 percent in FY 1983. However the share then declines to 14 percent by FY 1989. When Sector Support funds are included, the share peaks at 18.2 percent in FY 1982 and then declines to 10.3 percent in FY 1989.

Changes in the share of portfolio expenditures for Education Systems Development, less SEC funds, essentially paralleled those shown for Agricultural Education. From a 12-percent share in FY 1980-1984, the share declines to 7.9 percent in FY 1989. For Human Resources Development, primarily participant training, the share peaked at 8.5 percent in FY 1982 and gradually declined to 6.1 percent in FY 89.

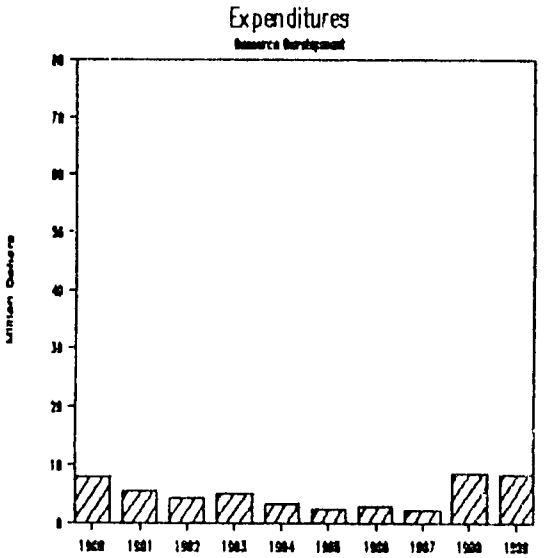
Obligations. In terms of obligations, the funding for Agricultural Education showed a general downward trend of -2 percent, moving from $34.3 to $29.6 million over the FY 1980-1989 period.

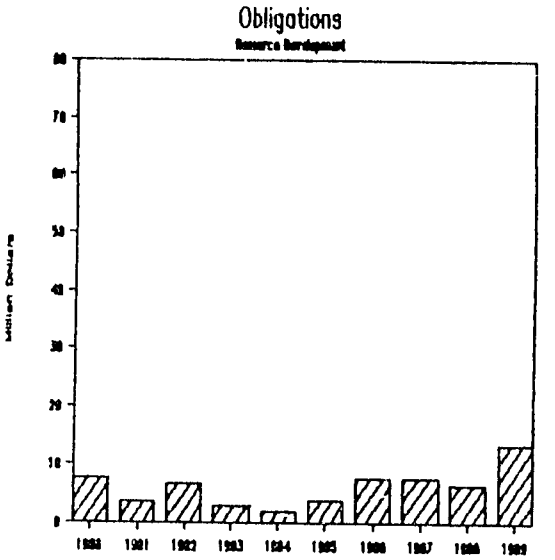
Agricultural Education's share in total portfolio obligations, with SEC funds excluded, peaked at 20.8 percent in FY 1982, but showed a general decline over the nine-year period. From a 16.6 percent share in FY 1980, it dropped to a 14.7 percent share in FY 1989. When Sector Support funds are included, the overall decline is from 12.9 to 9.7 percent.

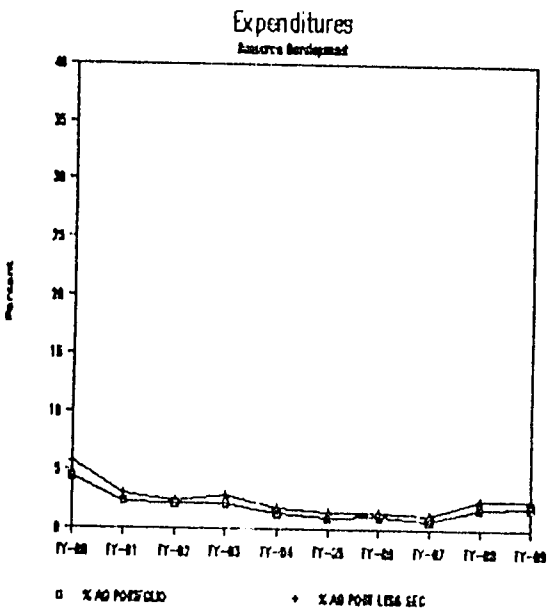
Changes in the share of portfolio obligations for Educational Systems Development, less SEC funds, parallel those for Agricultural Education, declining from 9.6 to 4.6 percent. For Human Resources Development, the share fluctuated between 8.1 and 5.9 percent through FY 1988. A 10.1 percent share is proposed for FY 1989.

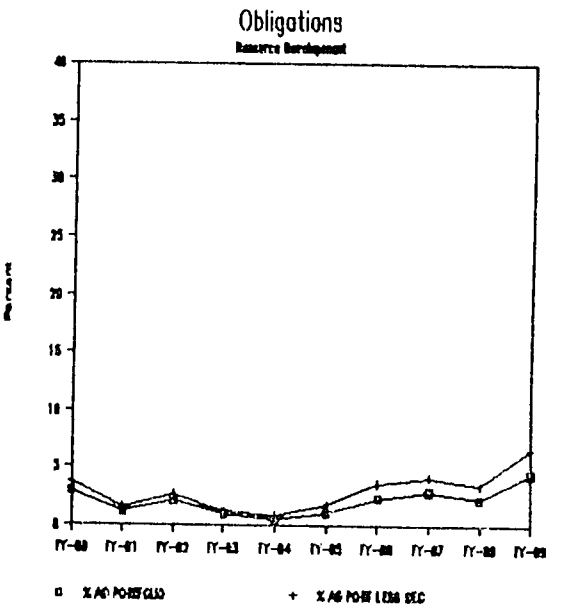
Relation to Strategy. Human resource development ranks high in Bureau agricultural strategy and funding for Agricultural Education, including both institution building and participant training activities, has been at relatively high levels through most of FY 1980-1989 period. Nevertheless, the strong downward trend in obligations through FY 1988 has been reflected in substantial drops in expenditure levels in recent years. The proposed increase in FY 1989 obligations may indicate that the decline in expenditures is halted.

H. Resource Development (RED)









Definition. To develop, or strengthen the capacity to develop, manage and conserve soil, water and environmental resources.

Expenditures. Actual expenditures on Resource Development continued to decline from $5.7 million in FY 1980 to $1.2 million in FY 1987. However, this downward trend will reverse with planned expenditures of over $8 million in FY 1988 and FY 1989.

In relation to the growth of the total agricultural portfolio, with SEC funds excluded, RED's share showed a substantial decline from 5.7 percent in FY 1980 to 1.2 percent in FY 1989. This will increase to 2.5 percent in FY 1989. A similar trend is shown when SEC funds are included.

Obligations. In terms of obligations, the funding for Resource Development, less SEC funds, showed a growth rate of 7 percent over the nine-year period. This is the largest obligation growth rate of any category. The decline from $7.6 million in FY 1980, to $1.8 million in FY 1984 has been more than offset by the increases in later years. In FY 1989, obligations are proposed at a $13.4 million level.

NRE's share in portfolio obligations declined from 3.9 percent in FY 1980 to 0.8 percent in FY 1984, but is planned to reach 6.6 percent in FY 1989.

Relation to Strategy. Resource Development's share in the agricultural portfolio has shown declines over the FY 1980-1989 period in terms of both obligations and expenditures. The declines reflected the increased relative importance that was given to other purpose categories, such as Sector Support Technology Development and Technology Development. However, current Bureau strategy gives increasing priority to activities oriented towards maintaining and enhancing the natural resource base and the environment. Thus the upward trend in obligations since for FY 1985 indicates this continued support for the conservation and development of natural resources. It also should be noted that a number of the other project purposes have elements of natural resource development. The most obvious examples are in the area of Technology Development and Technology Transfer. Because no overlap is allowed in the functional classification proceedure, only those activities which are principally Resource Development are included here. An additional system is being developed within the Agricultural and Rural Development Division to report activities which in any way contribute to the Bureau's Natural Resource Strategy.

I. Land Tenure (LTE)

Definition. To improve, or to strengthen the capacity to improve access to and/or ownership of agricultural land, water and other resources.

Expenditures and Obligations. Land Tenure's share in the agricultural portfolio's expenditures and obligations have not exceeded 0.5 percent in any year. Actual expenditures did not exceed $1.0 million in any year, and planned expenditures are set at $0.4 million in FY 1989. There were no obligations planned for FY 1984 through FY 1989.

Relation to Strategy. Land Tenure's relative importance in the agricultural portfolio has been at a very low level throughout the FY 1979-1988 period, and little change is likely in coming years.

IV. Sub-Sector Analysis

This chapter examines the relative importance and funding trends of agricultural Commodity Sub-Sectors encompassed by the Africa Bureau's portfolio of development projects over the ten-year period FY 1980-1989.

As discussed in the appendix on Methodology, components of each project in the portfolio were classified as to their development Purposes. In addition, each project component was also related to its relevant Sub-Sector. In the Agricultural Sub-Sectors, project activities involved with commodities are combined into major groupings, such as Rainfed Crops, Irrigated Crops or Livestock. However, where the activities are not directly related to commodities such as rural roads or support for credit and other rural institutions, they are not included in this analysis. (Sub-Sector categories and codes are shown in Table 2 of the appendix.)

A. Crops

Sub-Sectors involved only with Crops, including both Rainfed and Irrigated Crops, maintained the largest share of portfolio funding throughout the FY 1980-1989 period. Expenditures and obligations ranged between one-fourth and one-half of the total agricultural portfolio. Since FY 1981, the share of expenditures has moved upward from 23.0 to 43.1 percent, and obligations, from FY 1980 through FY 1985, increased from 30.7 to 47.6 percent. However, since FY 1986 the share of obligations declines to 31.2 percent in FY 1989.

Rainfed Crops continued as the largest single Sub-Sector until FY 1988 when it was surpassed by Sector-wide activities. Actual obligations ranged between $30 and $42 million through FY 1987 but are then projected to decline to $18.5 million in FY 1989. While relative importance of Rainfed Crops in the portfolio increased from 19 to 31 percent in terms of expenditures, obligations rose to 41 percent in FY 1984 and then decline to 17.6 percent by FY 1989. See Figure IV-1.

The most important Purpose carried out by projects in the Rainfed Sub-Sector was Technology Development, which accounted for about 50 percent of the Sub-Sector's expenditures. This was followed by Technology Transfer and Input Supply.

Irrigated Crops funding remained at relatively low levels through most of the ten-year period but shows planned increases for FY 1988 and FY 1989. Actual expenditures did not exceed $5.7 million, nor actual obligations $10.8 million, through FY 1987. The relative importance of Irrigated Crops in the portfolio ranged between 2.9 and 5.3 percent in terms of actual expenditures, with a proposed level of 8.7 percent in FY 1989. Actual obligations, which ranged between 3.1 and 10.1 percent, are now projected at 15.3 and 6.3 percent in FY 1988 and FY 1989. See Figure IV-2.

Construction and Resource Development purposes each accounted for about one-third of the expenditures for projects in the Irrigated Sub-Sector. About one-fourth was for Technology Transfer.

Table IV-1. Agricultural Sub-Sectors by Annual Expenditures, 1980-1989

Sub-Sectors	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Proposed
					Million Dollars					
Crops										
Rainfed	14.7	20.5	26.7	26.0	28.1	26.5	33.7	32.4	52.8	45.5
Irrigated	3.2	3.0	3.8	4.7	4.6	4.2	5.7	4.2	14.7	12.8
Rainfed/Irrigated	0.8	0.6	0.5	[illegible]	0.9	1.5	1.8	0.3	3.4	5.0
Sub-Total	18.7	24.1	31.0	[illegible]	33.6	32.2	41.2	36.9	70.9	63.3
Crops and Livestock										
Rainfed/Livestock	10.5	23.7	20.4	22.2	16.7	15.8	17.7	8.6	19.9	18.2
RF/Irrig/Livestock	2.3	1.3	1.8	2.2	0.8	0.9	2.2	3.8	3.2	1.9
Sub-Total	12.8	25.0	22.2	24.4	17.5	16.7	19.9	12.4	23.1	20.1
Livestock	13.4	10.9	8.4	8.7	10.7	10.3	9.4	5.7	12.0	8.3
Fisheries	0.5	0.7	0.6	0.9	1.0	1.1	1.7	1.4	2.3	2.3
Forestry	0.5	0.7	0.8	1.3	1.2	1.4	0.8	1.4	2.6	3.5
Natural Resources	10.6	12.3	12.3	15.2	13.6	16.6	12.3	11.0	19.1	6.1
Sector-wide	20.6	30.9	17.7	17.4	16.9	16.2	21.4	21.9	48.1	43.1
Total-Ag Sub-Sectors	77.1	104.6	93.0	99.3	94.5	94.5	106.7	90.7	178.1	146.7

Table IV-2. Agricultural Sub-Sectors by Annual Expenditures, FY 1980-1989

Sub-Sectors	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Proposed
					Percent of Total					
Crops										
Rainfed	19.1	19.6	28.7	26.2	29.7	28.0	31.6	35.7	29.6	31.0
Irrigated	4.2	2.9	4.1	4.7	4.9	4.4	5.3	4.6	8.3	8.7
Rainfed/Irrigated	1.0	0.6	0.5	0.7	1.0	1.6	1.7	0.3	1.9	3.4
Sub-Total	24.3	23.0	33.3	31.6	35.6	34.1	38.6	40.7	39.8	43.1
Crops and Livestock										
Rainfed/Livestock	13.6	22.7	21.9	22.4	17.7	16.7	16.6	9.5	11.2	12.4
RF/Irrig/Livestock	3.0	1.2	1.9	2.2	0.8	1.0	2.1	4.2	1.8	1.3
Sub-Total	16.6	23.9	23.9	24.6	18.5	17.7	18.7	13.7	13.0	13.7
Livestock	17.4	10.4	9.0	8.8	11.3	10.9	8.8	6.3	6.7	5.7
Fisheries	0.6	0.7	0.6	0.9	1.1	1.2	1.6	1.5	1.3	1.6
Forestry	0.6	0.7	0.9	1.3	1.3	1.5	0.7	1.5	1.5	2.4
Natural Resources	13.7	11.8	13.2	15.3	14.4	17.6	11.5	12.1	10.7	4.2
Sector-wide	26.7	29.5	19.0	17.5	17.9	17.1	20.1	24.1	27.0	29.4
Total-Ag Sub-Sectors	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table IV-3. Agricultural Sub-Sectors by Annual Obligations, FY 1980-1989

Sub-Sectors	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Proposed
					Million Dollars					
Crops										
Rainfed	29.8	41.9	35.1	41.1	41.3	34.5	36.6	32.3	23.8	18.5
Irrigated	3.9	10.1	5.2	7.8	3.1	10.5	10.8	7.4	17.4	6.6
Rainfed/Irrigated	0.4	2.0	2.2	1.2	1.2	2.1	0.0	0.3	2.2	7.7
Sub-Total	34.1	54.0	42.5	50.1	45.6	47.1	47.4	40.0	43.4	32.8
Crops and Livestock										
Rainfed/Livestock	26.0	29.5	26.6	21.8	9.9	9.2	9.4	17.6	9.8	10.9
RF/Irrig/Livestock	0.2	1.7	2.6	0.0	0.4	4.6	6.1	1.6	7.3	9.1
Sub-Total	26.2	31.2	29.2	21.8	10.3	13.8	15.5	19.2	17.1	20.0
Livestock	15.0	10.9	19.4	19.9	8.1	4.6	4.3	0.8	4.6	0.1
Fisheries	0.4	1.2	2.4	0.7	0.6	2.1	2.5	3.0	1.8	0.0
Forestry	2.2	1.8	1.1	0.9	1.3	0.9	5.7	4.5	1.8	2.1
Natural Resources	13.7	17.5	24.6	19.9	14.6	8.7	3.7	4.2	4.7	5.0
Sector-wide	19.6	24.6	23.6	13.5	19.9	21.7	27.9	36.1	40.5	45.1
Total-Ag Sub-Sectors	111.2	141.2	142.8	126.8	100.4	98.9	107.0	107.8	113.9	105.1

Table IV-4. Agricultural Sub-Sectors by Annual Obligations, FY 1980-1989

Sub-Sectors	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Actual	1987 Actual	1988 Estimated	1989 Proposed
					Percent of Total					
Crops										
Rainfed	26.8	29.7	24.6	32.4	41.1	34.9	34.2	30.0	20.9	17.6
Irrigated	3.5	7.2	3.6	6.2	3.1	10.6	10.1	6.9	15.3	6.3
Rainfed/Irrigated	0.4	1.4	1.5	0.9	1.2	2.1	0.0	0.3	1.9	7.3
Sub-Total	30.7	38.2	29.8	39.5	45.4	47.6	44.3	37.1	38.1	31.2
Crops and Livestock	0.0									
Rainfed/Livestock	23.4	20.9	18.6	17.2	9.9	9.3	8.8	16.3	8.6	10.4
RF/Irrig/Livestock	0.2	1.2	1.8	0.0	0.4	4.7	5.7	1.5	6.4	8.7
Sub-Total	23.6	22.1	20.4	17.2	10.3	14.0	14.5	17.8	15.0	19.0
Livestock	13.5	7.7	13.6	15.7	8.1	4.7	4.0	0.7	4.0	0.1
Fisheries	0.4	0.8	1.7	0.6	0.6	2.1	2.3	2.8	1.6	0.0
Forestry	2.0	1.3	0.8	0.7	1.3	0.9	5.3	4.2	1.6	2.0
Natural Resources	12.3	12.4	17.2	15.7	14.5	8.8	3.5	3.9	4.1	4.8
Sector-wide	17.6	17.4	16.5	10.6	19.8	21.9	26.1	33.5	35.6	42.9
Total-Ag Sub-Sectors	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Figure IV-1. Rainfed Crops

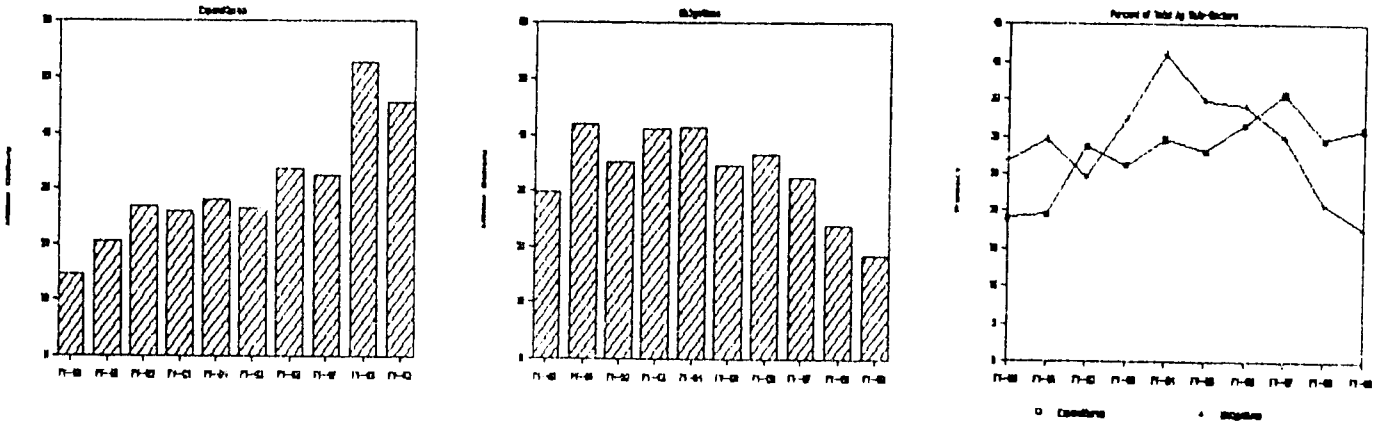


Figure IV-2. Irrigated Crops

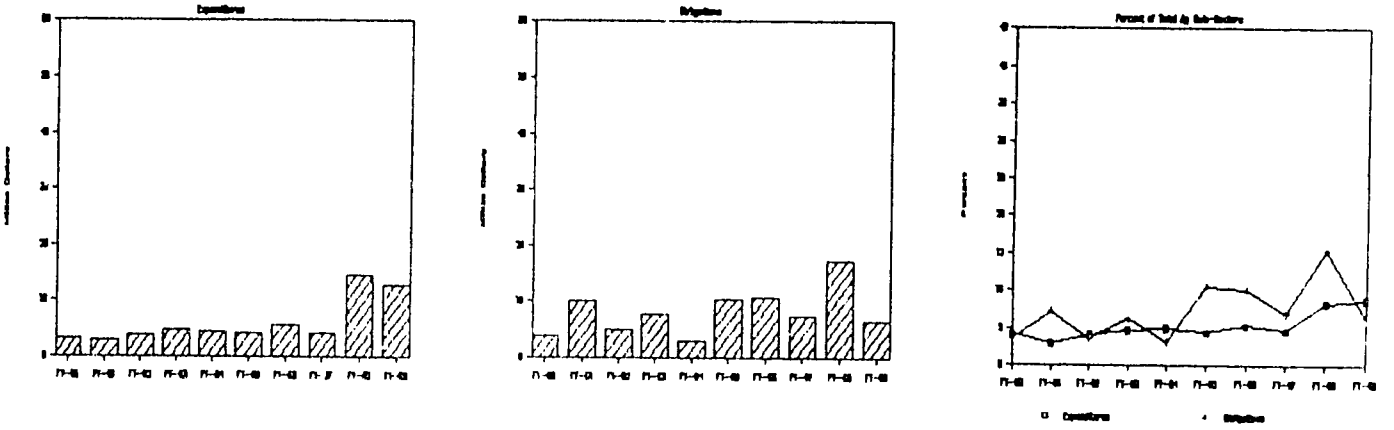
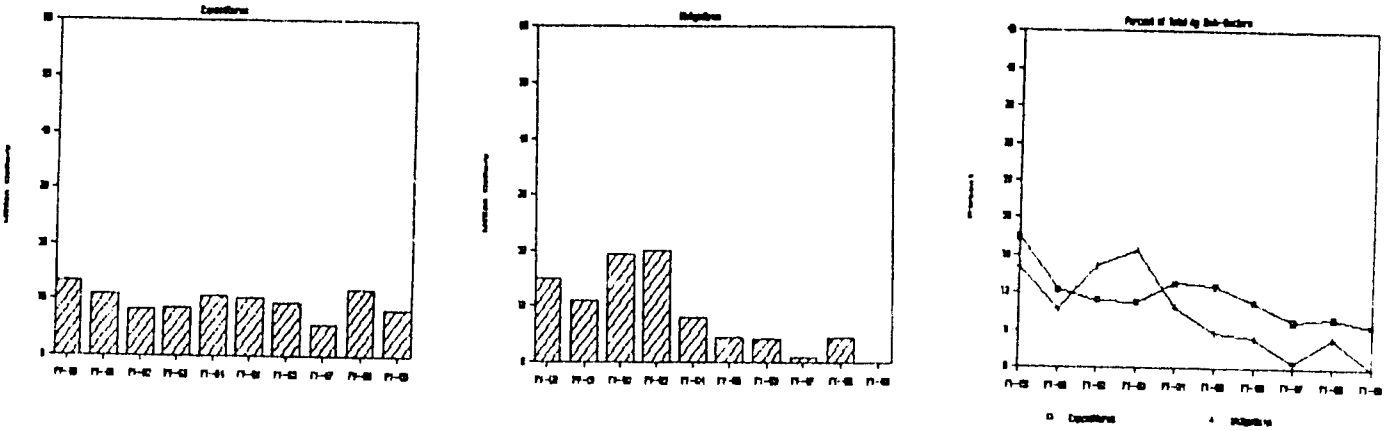


Figure IV-3. Livestock



Projects involving both Rainfed and Irrigated Crops had relatively low actual obligation and expenditure levels though FY 1987, ranging up to $2.1 million. Project Purposes in this Sub-Sector were chiefly Construction and Technology Development.

B. Livestock

Funding levels for projects concentrating on livestock development were relatively low during the FY 1980-1989 period, with annual obligations and expenditures ranging below $15.0 million during the ten-year period.

In addition, the Livestock Sub-Sector's share in actual expenditures declined steadily from 17.4 to 6.3 percent by FY 1987, and are projected at 5.7 percent in FY 1989. Annual obligations peaked at 15.7 percent of the portfolio in FY 1984 and then steadily drop to 0.1 percent in FY 1989. See Figure IV-3.

The most important purposes of projects in the Livestock Sub-Sector were Technology Transfer and Technology Development which accounted for about one-third and one-fifth, respectively, of all expenditures throughout the ten-year period. Planning and Policy Analysis and Resource Development were also relatively important in most of the years.

C. Crops and Livestock

Funding for projects in Sub-Sectors involved with both Crops and Livestock ranged between 10 and 25 percent of portfolio totals over the FY 1980-1989 period. There was little net change in relative importance between the beginning and ending years of this ten-year period. Projects combining Rainfed Crops with Livestock accounted for nearly all funding through FY 1987 with projects involving Rainfed and Irrigated Crops with Livestock showing a slight increase for FY 1988-1989.

The relative importance of the Rainfed Crops/Livestock Sub-Sector first increased, but then declined throughout most of the ten-year period. From FY 1981-1989, expenditures declined steadily from 22.7 to 12.4 percent of the portfolio totals. Obligations declined from 23.4 percent in FY 1980 to 9.3 percent in FY 1985; the relative share increased to 16.7 percent in FY 1987, but is followed by a decline to 10.4 percent in FY 1989. See Figure IV-4.

Actual obligation and expenditures for projects combining Rainfed and Irrigated Crops with Livestock were at very low levels (mostly around 1 percent of the portfolio) through FY 1984. However, planned funding to FY 1989 indicates a rise to 8.7 percent for obligations and 3.4 percent for expenditures. See Figure IV-5.

Project Purposes in the Crops/Livestock Sub-Sectors included Technology Development, Technology Transfer and Planning and Policy Analysis.

Figure IV-4. Crops and Livestock

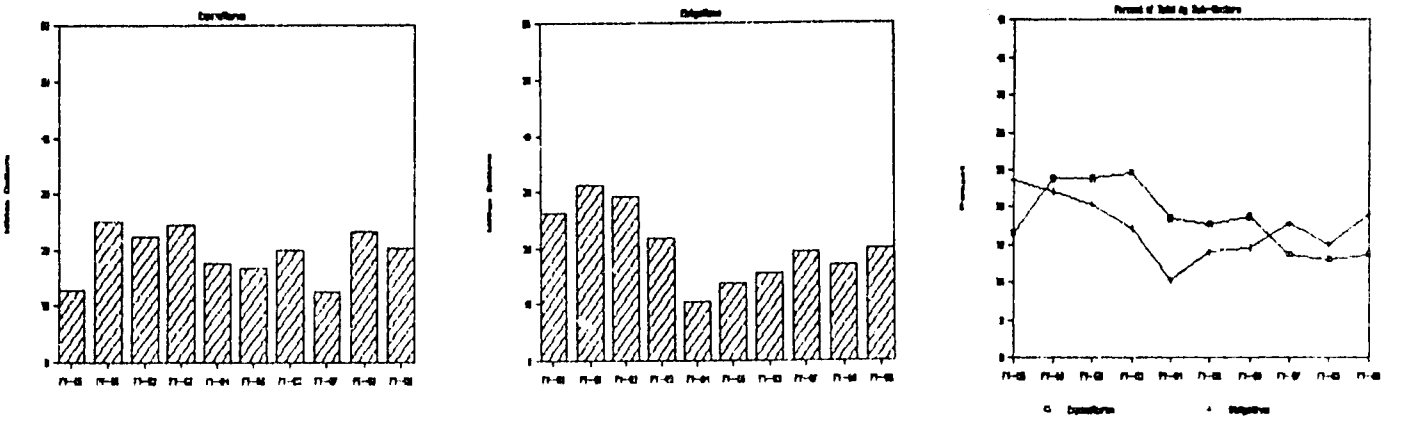


Figure IV-5. Natural Resources and Forestry

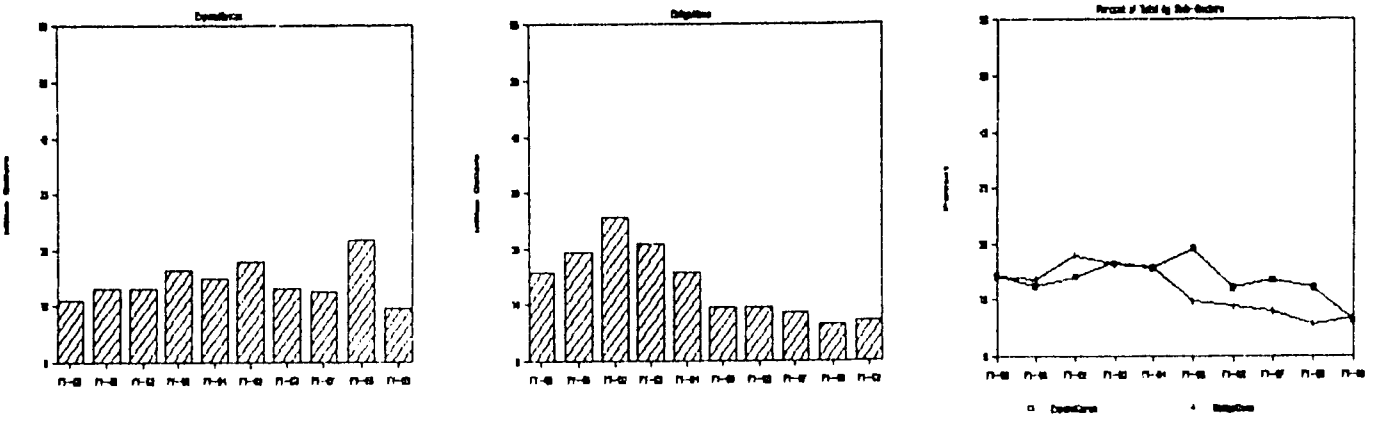
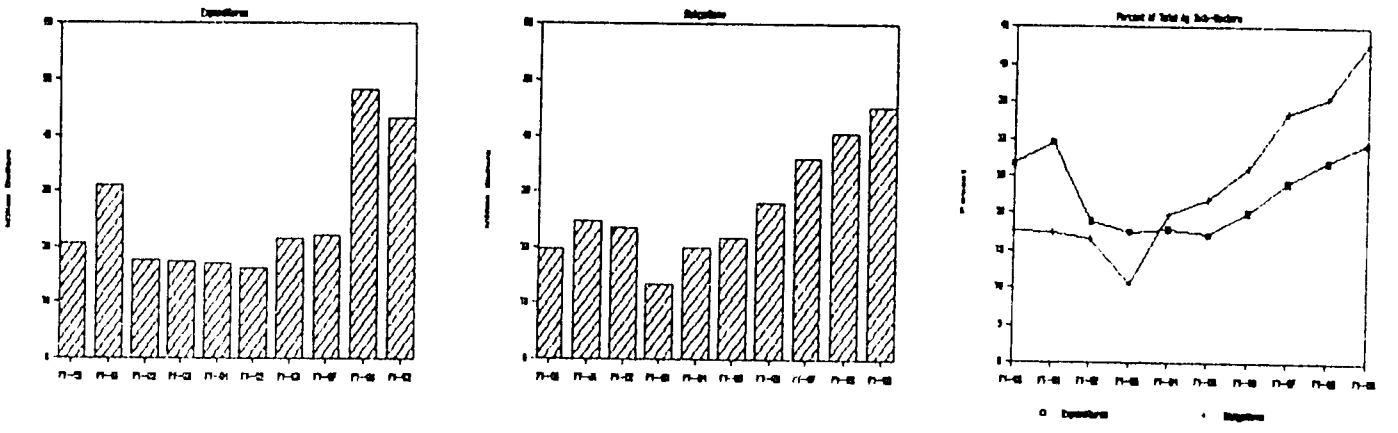


Figure IV-6. Sector-wide



D. Fisheries

Annual funding for the Fisheries Sub-Sector did not exceed 2.8 percent of the agricultural portfolio during the FY 1980-1989 period. Actual obligations ranged between $0.5 and $2.4 million, and actual expenditures between $0.4 and $3.0 million. In FY 1989, expenditures will have a 1.6 percent share, and there are no planned obligations.

The most important purposes of projects in the Fisheries Sub-Sector were Technology Transfer and Input Supplies, accounting for about four-fifths of all expenditures throughout the ten-year period.

E. Natural Resources and Forestry

Obligations for projects in the Natural Resources Sub-Sector first increased to $34.6 million by FY 1982, but then show a continuing and major decline to $3.7 million in FY 1986. This was a drop from a 12.3 percent share of the portfolio to 3.5 percent. Expenditures continued to rise to 17.6 percent in FY 1985, but declined to 4.2 percent in FY 1989.

Funding for the Forestry Sub-Sector did not exceed 2.0 percent of the agricultural portfolio during the FY 1980-1989 period. Actual obligations ranged between $0.5 and $1.4 million, and actual expenditures between $0.4 and $1.4 million. Planned obligations will be 2.1 and 3.5 percent, respectively, in FY 1988 and FY 1989.

The most important purposes of projects in the Natural Resources and Forestry Sub-Sector were Resource Development and Planning and Policy Analysis, accounting for about three-fourths of all expenditures throughout the ten-year period.

F. Sector-wide

Annual expenditures for projects in the Sector-wide Sub-Sector increased from $19.6 million in FY 1980 to $45.1 million in FY 1989; the relative share of expenditures increased from 27 to 29 percent. Obligations ranged between $17 and $22 million through FY 1987 and are planned at $43.1 million in FY 1989; the relative share over the ten-year period increased from 17 to 43 percent. The most important purpose was Sector Support activities, which is the most rapidly growing function. The increasing importance of this broad, general purpose suggests the need for more analysis to better understand the composition of this broad program.

Appendix Table A-1. Africa Bureau Portfolio: Grant and Loan Funding FY 1980-1989

Type of funding	1980 Act.	1981 Act.	1982 Act.	1983 Act.	1984 Act.	1985 Act.	1986 Act.	1987 Act.	1988 Est.	1989 Prop.
	Million Dollars									
Loans	34.6	47.1	37.5	41.3	36.7	7.0	8.5	3.6	-	-
Grants	380.3	420.8	587.4	578.5	653.5	829.3	681.6	555.7	648.0	591.5
Total	414.9	467.9	624.9	619.8	690.2	836.3	700.1	559.3	648.0	591.5
Loan as % of total	8	10	6	7	5	1	1	--	0	0

Appendix Table A-2. Africa Bureau Portfolio: Obligations by Funding Sources, FY 1980-1989

Funding Sources	1980 Act.	1981 Act.	1982 Act.	1983 Act.	1984 Act.	1985 Act.	1986 Act.	1987 Act.	1988 Est.	1989 Prop.
	Million Dollars									
DA:										
ARDN	102.7	108.1	135.0	141.7	138.6	128.2	166.0	141.5	-	-
POP	3.0	4.5	7.3	11.7	15.5	15.0	26.1	33.8	-	-
HLT	29.4	49.4	43.9	31.0	27.1	46.6	36.8	26.9	-	-
EHR	30.3	25.1	35.9	29.3	35.8	35.4	49.1	33.5	-	-
SDP	26.1	17.6	13.0	16.5	16.7	20.1	12.2	60.4	-	-
Sub-Tot	191.5	204.7	235.1	230.2	233.7	245.3	290.2	296.1	-	-
ESF	132.7	163.0	294.8	286.1	333.1	417.8	245.2	164.8	90.2	81.5
Sahel	76.5	95.6	93.8	85.0	106.6	103.3	84.6	78.6	4.8	-
Other	14.2	4.6	1.2	18.5	16.8	69.9	80.0	19.8	553.0*	510.0*
Total	414.9	467.9	624.9	619.8	690.2	836.3	700.0	559.3	648.0	591.5
	Percent of Total									
DA	46.2	43.8	37.6	37.1	33.9	29.3	41.5	52.9	85.3*	86.2*
ESF	32.0	34.8	47.2	46.2	48.3	50.0	35.0	29.5	13.9	13.8
Sahel	18.4	20.4	15.0	13.7	15.4	12.3	12.1	14.1	0.8	-
Other	3.4	1.0	0.2	3.0	2.4	8.4	11.4	3.5	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ARDN as % of Total	24.8	23.1	21.6	22.9	20.1	15.3	23.7	25.3	-	-
ARDN as % of DA	53.6	52.8	57.4	61.6	59.3	52.3	57.2	47.8	-	-

* Development Fund for Africa (Includes $3.0 million for AIDS in FY 1988)

Source: AID Congressional Presentations, Annex 1 - Africa, FY 1982-1989

APPENDIX

Functional Information System Methodology

In developing a methodology to provide more detailed and more readily accessible information on the Africa Bureau's project portfolio, it was necessary to consider the kinds of information needed by management, technical and project staff, as well as the availability and accessibility of technical and financial data from existing Bureau data sources.

Daily experience in the ARD Division has shown that information needs vary widely. Bureau, Agency, Congressional and other personnel require information ranging from portfolio-wide analysis of major trends over a period of years; to country, sector and sub-sector data on project purposes, outputs and inputs; to information on projects dealing with special concerns and policy initiatives of the Agency; to specific technical and financial facts on a specific project. Often as not, the information must be obtained within a very short time frame. Also, because the need for these types of information is a continuing one, the information must be updated regularly to retain its relevance. This requires institutionalization of the information system.

While much relevant data in varying forms presently exists in numerous Agency documents, the current availability and accessibility of data is generally very limited. Users of "purpose", "technical" and "functional sub-category" codes, for example, encounter many problems of incompleteness and/or ambiguity. Considerable information is regularly provided on many financial aspects of projects, but these data almost always are related to the project in toto and not to its various inputs and components. In addition, only limited and usually highly aggregated information is readily available on the technical purposes of the projects. By "purposes" is meant the developmental changes that are to be brought about by the project to solve or mitigate specific sector or country problems. Similarly, little information is readily available on the specific activities being taken within a project to achieve the project's developmental purposes; as well as on the scope of the project, such as the agricultural commodities involved, or on the participants in the project, such as host country institutions, target groups, contractors and other donors.

Taking into account the varying types of information needed and the characteristics of existing data sources, ARD developed a methodology to meet the analytical purposes of this portfolio-wide Functional Review, and, at the same time, provide the basis for a Functional Information System that can supply continuing, more detailed and more rapidly accessible information on the Bureau's portfolio of development projects. In establishing and maintaining this Functional Information System, primary emphasis was given to the use of technical staff in the ARD Division. The technical background and operational activities of these staff members is suitable for maintaining consistency in the classification and coding of data, for

adapting the system as needed from time to time to meet changing information needs, and for minimizing the burden of data requests on field staff. The use of a microcomputer within the Division greatly increases the accessibility of information to management, technical and project staff, as well as allows for expanded analyses of the portfolio.

To establish and later update, the Functional Information System, each project was analyzed in terms of purpose, sector and sub-sector classifications. These classifications were integrated with financial data continuing onward from FY 1978, and included related data on project status, scope, participants and special concerns. Data on individual projects were recorded onto a one-page Work Sheet for each project, see Figure 1, and then after editing, directly entered into a micro-computer. Data on the annual obligations and expenditures were down-loaded to the micro-computer from the A.I.D. mainframe computer. The collection, classification and coding of data was done by ARD technical staff. For the Agricultural Sector, field personnel were asked only to verify and clarify data. Non-financial data on projects in other sectors are still preliminary since they have not yet been reviewed by relevant technical personnel.

Details on the procedures used to classify and describe the projects follow.

A. Project Classification

The classification of development assistance projects is difficult because most projects are multi-faceted. With several purposes being implemented as components of a project, a single classification is not appropriate. In addition, while efforts have been made in the past to classify projects, this was usually done to meet an immediate need. While the categories used may have been useful for that exercise, the categories could not be disaggregated and thus the data could not be reanalyzed to provide other types of information. Thus, there is a need to provide information in as disaggregated a basis as possible. However, at the same time, the information system has to be feasible to operate and maintain. The needs of information users and the availability of data must be fully considered before and during the development of a classification system.

In this Functional Information System each project was analyzed in terms of its primary purpose or purposes. Project Purpose was defined as the developmental changes to be achieved to solve or mitigate a sector or country problem, and in turn contribute to country development goals. Based on the experience of senior technical staff, twelve Purpose Categories were identified as encompassing the major factors affecting the developmental process of the various sectors, see Table 1. It should be noted, however, that three of these categories - Commodity Marketing, Input Supply, and Credit Development - can be subsummed under a more general category of Agricultural Marketing. Similarly, Human Resources Development and Education System Development can be subsummed under Agricultural Education.

Functional Information System

WORK SHEET

Country/Region _____

Project Number _____

(Incl. Sub-projects _____)

Project Title _____

Obligation Dates		LOP Cost ($000)		Approval Symbol
Initial	Final	Auth.	Plan.	
Totals				

AID Inputs	$000	% Total
Personnel		
Training		
Commodities		
Construction		
Other		
Cont. & Infl.		
Totals		100

Sector	Sub-sector	Sub-sector	Purpose	Estimated Plan. LOP	Est. ($000)	Actions to be taken in order to achieve the project purpose	
Totals							

Target Groups Involved	Commodities Involved:
Institutions Involved:	Special Concerns:
	____Institution Building ____Integrated Rural Develop. ____Women in Development ____Cooperatives ____Title XII Institutions ____Farming Systems Research ____Private Sector
Project Status	AID/W Proj. Mgr.
As of 8 ____Identification ____Implementation ____Completed		
	AID Proj. Mgr.	Contractor(s) Involved:

Figure 1

Table 1. ARD Functional Information System: Project Purpose Categories, Codes and Definitions

Code	Purpose Categories/Definitions
PPA	Planning and Policy Analysis To conduct*, or to improve* the capacity for conducting economic planning and analyses of policy issues. Includes data collection and processing.
TDE	Technology Development To conduct*, or to improve* the capacity for conducting research on improved technologies for production and consumption.
TTR	Technology Transfer To extend* or to improve* the capacity for extension/diffusion/transfer of improved technologies for production and consumption.
MKT	Marketing To improve*, or to strengthen* the capacity to improve the assembly, handling, processing, storage, transport and/or distribution of commodities and products.
INP	Input Supply To improve*, or strengthen* the capacity to improve the delivery of services and physical inputs for production and consumption.
CRE	Credit Development To improve*, or to strengthen* the capacity to improve the delivery of credit for production and consumption.
CON	Construction To construct*, or to strengthen* the capacity to construct basic facilitites/infrastructure -- transport, communications, power, water supply/waste disposal systems. (Does not include construction undertaken as an ancillary activity of a project classified under any other purpose category.)
RED	Resource Development To develop*, or to strengthen* the capacity to develop, manage and conserve soil, water and environmental resources.
LTE	Land Tenure To improve*, or to strengthen* the capacity to improve access to and/or ownership of land, water, and other resources.

*Or expand, establish, strengthen, study, organize, etc., as appropriate.

(Continued)

Table 1. Continued

Code	Purpose Categories/Definitions
HRD	Human Resources Development To improve*, or to strengthen* the capacity to improve training and human resource development.
ESD	Education System Development To develop*, or to strengthen* the capacity to develop educational institutions' structure/curricula/operations/facilities.
SEC	Sector Support To provide balance of payments and program support primarily for national or sector economic development. Includes Commodity Import Programs, Sector Grants, and Program and Development Support funds.

After each Project Purpose was identified, it was then related to the actions to be taken, or the results to be produced, in order to achieve the project purpose. These actions were summarized in a short sentence of 80 characters or less.

Each Project Purpose was also quantified in terms of its percentage share of the project's planned Life of Project (LOP) Cost. With the percentage shares of all the purposes totalling 100 percent, double-counting was avoided. Each purpose percentage share of the LOP cost was applied to the obligations and expenditures data to indicate the amount of funds obligated and/or expended each year on that purpose.

Each Project Purpose was also related to its relevant Sector and Sub-Sector, as shown in Table 2. The ten Sectors, along with their Sub-Sectors, are designed to include development activities throughout the national economy. (These categories have been adopted from "Indexes to the International Standard Industrial classification of all Economic Activities", Statistical Papers Series M, No. 4, United Nations, N.Y.) Since certain project activities are associated with more than one Sector, provision is made for a primary sector (Sector 1) and, as necessary, a secondary sector (Sector 2). Thus a project involved with food processing, for example, is included in IND (Sector 1) and AGR (Sector 2). Since the Sub-Sector relates to the primary sector, the Industry Sub-Sector FOD would apply in this example.

The major sources of data used for classifying the projects were project documents (PPs, PIDs, etc.), CDIE/DI print-outs of Project Sheets and Planned Program Summary Sheets in Congressional Presentations (CP) Data from FY 1976 through FY 1989.

B. Financial Characteristics

Measures of trends in funding for each project included annual Obligations from FY 1978 through FY 1989, as well as annual Expenditures from FY 1979 through FY 1989. Data through FY 1987 are actual, while for FY 1988 they are estimated and for FY 1989 they are proposed. Both measures were further identified as to Grant or Loan, and as to funding source. These sources are primarily Development Assistance (DA) functional accounts, Sahel Development Program (SH), and Economic Support Fund (ES). A change in funding source has occurred effective with FY 1988. Legialation established the Fund for African Development (SS) which contains all development assistance. The Economic Support Fund remains a separate account. Not included are centrally funded sources, such as the PPC and S&T Bureaus, or PL 480 funds and local currency generation under PL 480.

Table 2. ARD Functional Information System: Sector and Sub-Sector Categories and Codes 1/

Sector1	Sector2	Sub-Sector
AGR	AGRICULTURE	
AGR		CRR Crops - Rainfed
AGR		CRI Crops - Irrigated
AGR		CRO Crops - Rainfed and Irrigated
AGR		CRL Crops - Rainfed and Livestock
AGR		CIL Crops - Irrigated and Livestock
AGR		CAL Crops - Rainfed, Irrigated and Livestock
AGR		LIV Livestock
AGR		FIS Fisheries
AGR		FOR Forestry
AGR		NRE Natural Resources
AGR		NSS No specific sub-sector
IND	INDUSTRY	
IND		FOD Food manufactoring
IND		FME Fabricated machinery/equipment
IND		OMI Other manufacturing industries
IND		OTI Other industries
IND		NSS No specific sub-sector
ENY	ENERGY	
ENY		FOF Fossil Fuels
ENY		REN Renewable
ENY		FUW Fuelwood
ENY		PWR Power/generation/distribution
ENY		NSS No specific sub-sector
COM	COMMERCE	
COM		WRT Wholesale/retail trade
COM		FIN Financial services
COM		OBS Other business services
COM		NSS No specific sub-sector

(Continued)

Table 2. Continued

Sector1	Sector2	Sub-Sector
TRA	TRANSPORT	
TRA		ROA Roads/bridges
TRA		WAT Waterways/ports
TRA		MOD Other modes (Rail, air, etc.)
TRA		COM Communications
TRA		NSS No specific sub-sector
EDU	EDUCATION	
EDU		GRA Graded (Primar , secondary)
EDU		HGR Higher (University, college)
EDU		VOT Vocational (Technical institutions, etc.
EDU		NFO Non-formal (Adult, community)
EDU		NSS No specific sub-sector
HLT	HEALTH	
HLT		PHC Primary Health Care
HLT		WSS Water supplies/sanitation
HLT		DIS Disease control
HLT		NUT Nutrition
HLT		NSS No specific sub-sector
POP	POPULATION	
POP		FSP Family Planning Services
POP		FER Fertility factors/conditions
POP		NSS No specific sub-sector
CMS	COMMUNITY SERVICES	
CMS		HOU Housing
CMS		DEV Community development
CMS		ORG Labor, business, professional organizations
CMS		OCS Other community organizations
CMS		GSE Government services (administration)
CMS		NSS No specific sub-sector
BUD	BUDGETARY SUPPORT	
BUD		NSS No specicifc sub-sector

1/ Each project component is classified by a primary sector (Sector 1) and, as necessary, by a secondary sector (Sector 2). For example, agricultural education is classified EDU AGR, rural roads TRA AGR, etc.

The total cost of each project is the most recent planned Life of Project (LOP) cost shown in the various CPs. Projects currently being designed and implemented show the LOP cost in the FY 1989 CP, while completed projects show LOP costs from earlier CPs, or from CDIE/DI print-outs of Project Data Sheets. The authorized LOP costs are also recorded in the FIS.

AID financed inputs into each project are shown under the following categories: Personnel, Training, Commodities, Construction, Other, and Contingencies and Inflation. The total Operating Program Grant (OPG) was used for private and voluntary organizations (PVOs). The major sources for these inputs were project documents, which were obtained largely through the AFR/PD/IPS project micro-fiche system. They were supplemented with inputs shown in pre-FY 1982 CPs.

C. Other Portfolio Characteristics

In addition to purpose categories and financial aspects, other characteristics of each project were identified and categorized to provide information on the scope and status of projects in the portfolio.

Project Participants. Persons and organizations involved in each project were identified under the categories of Institutions Involved (i.e., the type and name of host country institutions participating in project implementation); Target Groups; and Contractors. At a later date Other Donors Involved directly in the project will be added. (However, Peace Corps volunteers are already included in this category.) The categories and their codes are shown in Table 3.

Agricultural Commodities. The agricultural commodities (plants, animals and their products), as well as the agricultural production and and marketing inputs involved in each project were identified. The Primary Categories and their codes are shown in Table 3. Secondary Categories are also shown for Cereals.

Special Concerns. To provide quick identification of projects having activities related to Agency Special Concerns, these Concerns were noted for each project. The categories and codes presently in use are shown in Table 3.

Region. Each project is also identified by region as follows: CAF Central Africa; CWA Coastal West Africa; EAF East Africa; SAF Southern Africa; SWA Sahel West Africa; and REG Africa-wide.

Project Status. The current status of each project is noted under one of these categories: Identification (including Design), Implementation, and Completion (including Termination), see Table 3. Also recorded in the FIS are the AID/W and Field Project Managers.

Table 3. ARD Functional Information System: Commodity, Participant, Special Concern and Project Status Categories and Codes

Target Groups

SMF	Small farmers
SHR	Small herders
RES	Residents
RRE	Rural residents
GTP	Government technical personnel
NTP	Non-govt. technical personnel
SUL	Skilled/unskilled workers
REN	Rural entrepreneurs
STU	Faculty and students
REF	Refugees
AGR	Agricultural sector
GNP	National Economy

Institutions Involved

GOV	Government
MOA	Ministry of Agriculture
OGM	Other govt. ministries/agencies
PAR	Parastatals
LRO	Local/regional organizations
UNV	Universities/schools

Commodities Involved

CRO	Crops
CER	Cereals
	MIL Millet
	SOR Sorghum
	COR Corn
	WHE Wheat
	RIC Rice
FRU	Fruits/nuts
VEG	Vegetables
ROO	Roots/tubers
LEG	Legumes
OIL	Oil Crops

Contractors

UNV	Universities
PVO	Private/voluntary org.
PRI	Private firms
USG	USDA/other U.S. Govt.
PSC	Personal services contractors
INO	International organizations

Special Concerns

IBL	Institution building
IRD	Integrated rural development
NUT	Nutrition improvement
WID	Women in development
COO	Cooperatives
TI2	Title XII institutions
FSR	Farming systems research
PRE	Private sector

Project Status

IDE	Identification
IMP	Implementation
COM	Completed

Other Donors

PEC Peace Corps

Commodities Involved (Cont'd)

WOD	Wood
MED	Spices/herbs
STI	Stimulants (coffee, etc.)
LIV	Livestock
POU	Poultry
FIS	Fish
INP	Inputs (production/marketing)
SEE	Seeds
FOR	Forage
FIB	Fibers
SWE	Sweetners

D. Computer Processing

The size and complexity of the functional information database necessitated computer processing. This work was initially done on an IBM PC with dBase software. Later, files were transferred to a Tandy 2000 microcomputer to enable full development of a series of menu-driven programs that can maintain, retrieve and print out information from the data base. Current hardware being used is a Wang PC with data storage on a 30 megabyte Winchester drive. The size of the data base and supportive programs require about 3 million bytes of storage space so a hard disk is required for full use of the system.

The data base itself is on five files in dBASE III+. The dBASE program files allow entry and retrieval of information among these five files. Maintenance of the system's data is done with a password protected menu-driven system of programs. One of these programs allows updating of the financial data base from files downloaded into the Wang PC from the Agency's mainframe. FY 1984-1989 data used in this report were downloaded through the assistance of PPC/PB.

The original programming for the FIS was written by a staff person of ARD. Additional programming work is provided, as needed, under a RSSA with the USDA/OICD. Staff in ARD have received training in dBase and have continuing access to services from IRM's Technical Resource Center.