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USAID/KENYA

Assessment of Program Impact

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FORWARD

USAID/Kenya submitted its Country Program Strategic Plan to Washington for approval in February 1990; a Program Week was held in early March to review it; and an approval cable was received in July. Based on AID/W approval, the Mission has proceeded to implement a program-level monitoring and evaluation system using 1989/90 as the base year and 1995 as the benchmark year. An Africa Bureau/CDIE/MSI team visited Nairobi for two weeks in October 1990 to design a program-level monitoring and evaluation system and outline a detailed Management Information System (MIS) for the Mission.

This year's API report briefly reviews performance over the past five years. As recommended at the API Workshop, the reporting format used is based on USAID/Kenya strategic objectives and targets recently approved by AID/W. As suggested, USAID/Kenya has used Section III to rearticulate several targets and indicators for the population and agriculture objectives. In the case of the private enterprise strategy, the objective and targets have been revised since the submission of the CPSP. The new objective tree is presented here for the first time, and the program is discussed based on this revised objective. For each section, a summary chart is provided with specific indicators and appropriate data, followed by a written description and assessment of program impact.

In this year's API, USAID/Kenya focusses on the impact of the population objective. The review is based on the recently completed 1989 Demographic Health Survey (DHS) and the just completed draft CDIE Impact Study. For the agriculture objective, the report concentrates on the impact of agricultural research interventions based on recent evaluation results. For the private enterprise program, this API presents the objective tree contained in the new private enterprise strategy which will be reviewed by AID/W in November. An impact analysis of the private enterprise program will be provided in next year's API report.

SECTION I: USAID/KENYA PROGRAM GOALS

GOAL	Actual FY 1985	Actual FY 1988	Latest Est. FY 1989	Data Sources
INCREASE SUSTAINABLE BROAD-BASED ECONOMIC GROWTH:				
1) Increase Real Income Per Capita				
a) Using GOK Inflation Estimate	1.0 %	1.1 %	1.2 %	1990 Economic Survey
b) Using USAID/Kenya Inflation Estimate	1.0 %	-0.9 %	-0.8 %	USAID/Kenya Analysis
2) Percent of Rural Population Without Access to Minimum Food Requirements	18-22 % (1984)	n/a	n/a	1990 World Bank Report
3) Infant and Child Mortality Per Thousand (Ages 0 to 5)	136 (1980)	n/a	110 (1987)	1990 UNICEF Report
4) GOK Expenditure Per Primary Pupil on School Equipment and Supplies (Kenya Pounds)	1.92	.19	.08	1990 World Bank Report
5) Percent Of Forest/Woods Depleted Per Year	n/a	n/a	1.7 % avg. (1980-89)	1989 World Bank Report

SUB-GOAL 1				
REDUCE FERTILITY AND POPULATION GROWTH:				
1) Reduce Fertility Rate	7.7 (1984)	n/a	6.7	DHS
2) Reduce Population Growth Rate	4.1 (1984)	n/a	3.8	Census

SUB-GOAL 2				
INCREASE PRODUCTION, EMPLOYMENT, INCOME AND FOREIGN EXCHANGE EARNINGS:				
1) Real GDP Growth Rate				
a) Using GOK Inflation Estimate	5.1%	5.2 %	5.0 %	1990 Economic Survey
b) Using USAID/Kenya Inflation Estimate	5.1%	3.2 %	3.0 %	USAID/Kenya Analysis
2) Annual Growth Rate in Employment:				
a) Formal Sector	4.9 %	5.7 %	4.5 %	1990 Economic Survey
b) Smallholder Agriculture	3.0 % (1974-85)	n/a	n/a	1988 World Bank Report
3) Foreign Exchange Earnings (Total Exports Plus Tourism, \$ in Millions)	\$1,228	\$1,461	\$1,405	1990 Economic Survey

SECTION I

SPECIAL FACTORS AFFECTING THE USAID PROGRAM

Several key factors over the past year have affected and will continue to affect USAID/Kenya's program over the 1990-95 strategy period. The most important is the increasingly uncertain political climate in the country growing out of the multiparty debate. Another key factor is the impact of Kenya's declining terms of trade on the economy. Oil prices have doubled over the past six months and coffee prices have dropped by fifty percent over the past year. Each of these factors is discussed briefly below.

o Increasing Political Uncertainty: Increasing opposition to the Government's political agenda and the growing tide worldwide for democratization have led to growing demands for a multiparty system and new national elections. These issues came to a head in July, 1990 with country-wide demonstrations and riots accompanied by detentions without trial and more recently the banning of a monthly news journal which has been critical of the Government. These recent demonstrations and disturbances have also been fueled by the growing number of disenchanted Kenyans who have seen their employment opportunities diminish over the past five years. The result of this increased political uncertainty and pressure for a multiparty system is a less certain investment climate. In addition, many donors have expressed concern over the Government's handling of the multiparty debate and have suggested that future foreign aid levels depend to some degree on socio-political events as well as economic actions. This is important because Kenya depends heavily on foreign aid to offset its large current account deficit. Decreases in official development assistance would greatly affect the economy and the Government's ability to undertake necessary structural adjustments. The current situation is probably a factor in the diminished political will/ability on the part of the government to implement policy reform.

o Increasing Trade Deficit, Declining Terms of Trade: Kenya's oil import bill will almost double within the next 12 months based on current oil prices. In addition, coffee export earnings continue to be depressed because of a fall in coffee prices by 50 percent in the past year. Recently revised 1990 Balance of Payments (BOP) estimates show a \$250 million deficit while only a year ago Kenya experienced an \$80 million BOP surplus. The external shocks to Kenya's balance of payments may force the Government to slow and/or back off from its commitment to its import liberalization program. This sharp decline in the terms of trade highlights the need for Kenya to move quickly to implement its broad based export development strategy. Kenya has so far chosen to draw down its foreign exchange reserves but will soon have to make difficult choices, including more pronounced exchange rate depreciation and curtailing of certain imports. The effect

- of the terms of trade decline on the economy will be substantial, leading to an economic slowdown.

SECTION II

PROGRESS TOWARD OVERALL COUNTRY PROGRAM GOALS

Kenya has made substantial progress at the macroeconomic level toward increasing the incomes, standards of living and future for the average Kenyan during the past five years. According to GOK statistics, real income per capita increased by over one percent annually over the past five years. Infant and child mortality rates continued to decline over the 1980 to 1987 period, and the ratio of school-age children in school is still very high. Yet, when analyzing these trends in more detail, focusing on the majority of the population, the results are not so clear and in fact point to potentially troublesome indicators for the future, particularly with regard to nutrition, education, poverty, and the environment. The Mission's analysis of Kenya's progress on country-level indicators is discussed below.

GOAL: Sustained and Broad-Based Economic Growth

1. Income: Using the Government's inflation estimates, per capita income grew by 1.1 percent annually over the past five years. Many analysts in Kenya, however, believe that the Government's consumer price index (CPI) is outdated and may underestimate inflation. The World Bank's draft 1990 Country Economic Memorandum devotes seven pages to the possible "sources of biases and inaccuracies" in the current GOK CPI. USAID/Kenya has previously reported that the CPI may currently underestimate inflation by at least 2 percent annually. Therefore, real per capita income and real modern sector wages in 1989 may have decreased by 0.8 percent instead of increasing by 1.2 percent. The World Bank and the IMF have asked the GOK to review and update the CPI.

2. Nutrition: The World Bank recently completed (1989) an analysis of food and nutrition in Kenya and found an increasing level of malnutrition and child-stunting. The Bank report states that approximately 20 percent of the rural population does not have access to minimum food requirements (1984 data). The report also states that the proportion of children ages 1-4 who are stunted increased from 24 percent in 1977 to 28 percent in 1982.

3. Infant and Child Mortality: Infant and child mortality is currently estimated to be 70 per thousand and 40 per thousand respectively. While under-five mortality is low for Kenya as a whole and has continued to decline, these figures mask the very high levels of mortality found in some districts. According to the Kenya Demographic and Health Survey, infant mortality appears to have remained relatively stable over the past decade.

4. Education: Gross primary school enrollments are quite high in Kenya, estimated at 94 percent in 1987. While high, however, there is reason to suspect that primary enrollments may be falling, and

that education in Kenya is suffering from a general decrease in quality of services provided. A key indicator of this decrease in quality is per pupil primary school expenditures on school equipment and supplies. Expenditures in this category dropped from 1.92 Kenya pounds per pupil in 1985 to .4 Kenya pounds per pupil in 1990.

5. Natural Resources: Maintenance of the environment is one measure of the sustainability of broad based economic growth. Kenya's environmental problems stem largely from population pressures on its limited land resources. These pressures are contributing to soil erosion as well as deforestation, which in turn has led to the destruction of wildlife and natural habitats. In the period from 1980-89, Kenya's forests and woodland have been depleted at a rate of 1.7 percent per year.

SUBGOAL 1: Decrease Fertility Rate and Population Growth Rate

The 1989 Demographic and Health Survey (DHS) documented the first significant decline in fertility in Kenya's history. As shown in Table 1 (Annex B), the total fertility rate (TFR) declined from 7.9 children per woman in 1977/78 to 6.7 in 1989. Moreover, if one compares fertility rates for the 12-month period prior to each of the surveys (versus the three-year period used for the DHS), the decline during the period 1984-1989 is actually from 7.7 to 6.5 children per woman.

The recorded changes in fertility are consistent with other data showing increased knowledge and use of contraception, as reported in the KDHS. Statistics from the Ministry of Health, as well as from other large Non-Governmental Organization providers such as the Family Planning Association of Kenya (FPAK) and the Family Planning Private Sector (FPPS) Project, also show dramatic increases in the availability and use of contraception. Though USAID/Kenya is greatly encouraged by these changes, a TFR of 6.7 is still one of the highest in the world and must decline to much lower levels if Kenya is to achieve its demographic goals.

It is difficult, pending the release of the 1989 Census data, to assess the impact of this recent decline in fertility on the rate of natural increase. However, it would appear that the annual population growth rate has clearly dropped below 4.0 percent. Current estimates used by the Ministry of Planning put the rate at 3.4 percent, while estimates prepared for USAID by the U.S. Census Bureau, show a rate of 3.6 percent per year. It is important to note that, due to the age structure of the population, even the most optimistic scenario projects a doubling of Kenya's current population of 24.3 million in less than 25 years.

A recent analysis of the proximate determinants of fertility indicates that fertility regulation now accounts for 25 percent of the difference between the total fecundability rate, and the

current estimate of fertility. As shown in Table 2 (Annex B), this percentage has increased from only 7.0 percent in 1977/78. Fully two-thirds of the decline in fertility since 1977/78 is due to increased fertility regulation. On the basis of this analysis, the CDIE Impact Assessment Team concluded that family planning has been the most important factor in this decline.

SUBGOAL 2: Increase Production, Employment, Income and Foreign Exchange Earnings

Kenya's economy has performed well at the macroeconomic level over the 1985-89 period. According to the GOK, production and income have grown at approximately 5.2 percent annually in real terms over the 1985/89 period. If the CPI is underestimated, then perhaps 3 percent annual growth was achieved, still quite high for sub-Saharan Africa. Foreign exchange earnings increased by 22 percent from 1985 to 1989 in dollar terms as a result of coffee and tea price increases, rapidly growing tourism receipts and a successful opening into horticultural exports. Unfortunately, imports also experienced a boom period, increasing by 53 percent between 1985 and 1989, resulting in a growing current account deficit.

Employment information in Kenya is very good for the formal sector, but irregular special surveys are relied upon to track the large share of the labor force in smallholder agriculture and the informal sector. Employment growth over the 1974-85 period was quite impressive, as the table below indicates. Unfortunately, the public sector was the major source of job creation in the formal sector and the informal sector absorbed the growing labor force in urban areas at a cost of declining real wages.

Employment Growth Trends

	<u>Actual Employment</u> <u>(1985)</u>	<u>Growth Rate</u> <u>(1974-85)</u>
1. Modern Wage Sector	1,175	3.3
Private	588	1.7
Public	346	5.3
Large Agriculture	241	1.8
2. Smallholder Agriculture	5,542	3.0
3. Urban Informal	504	10.1
4. Rural Non-farm	213	6.7
5. Unemployed	236	--
6. TOTAL	7,620	--

Source: 1988 World Bank Report on Kenya's Employment

SECTION III

PROGRESS TOWARD STRATEGIC OBJECTIVES AND RELATED PROGRESS INDICATORS

STRATEGIC OBJECTIVE 1: Increase Contraceptive Use

USAID/Kenya's first strategic objective is to increase the use of safe and effective methods of contraception. Specifically, the objective is to increase the prevalence of contraceptive use among married women of reproductive age from the current estimated level of 27 percent to 35 percent by the end of FY 1995. As shown in Table 3 (Annex B), contraceptive use has increased dramatically, from only 7 percent in 1977/78 to 27 percent in 1989, with an increase from 9 to 18 percent in modern method use since 1984. This rate of change is virtually unprecedented in the African context.

Though certain parts of the country lag behind, the 1989 DHS found that contraceptive use increased in all regions of the country, and among all age groups. The period 1984-1989 also found dramatic increases in more effective method use, with voluntary surgical contraception (VSC) and injectable contraceptive use increasing from 2.6 and 0.5 percent to 3.6 and 2.7 percent respectively. Religious differentials in overall contraceptive use were negligible - again reflecting the broad-based acceptance of the concept of family planning.

In addition to periodic national prevalence surveys, USAID will also monitor annual changes in contraceptive use, using aggregate data on couple-years-of-protection (CYP) derived from the newly established Logistics Management Information System (LMIS). The LMIS, which is situated in the Ministry of Health, will generate quarterly estimates of CYP for all registered service delivery points in both the public and private sector. It is projected that there will be a 25 percent increase in CYP over the FY 1991 level by 1995.

TARGET 1.1: Improve the Availability of Family Planning Services

The primary focus of USAID's population assistance is to increase the availability and quality of family planning information and services. This is being accomplished by extending and strengthening clinic-based services, community-based family planning, and contraceptive retail sales. This program emphasis is based upon the belief that considerable unmet demand for family planning exists, and that extending and improving services will help to activate this latent demand.

The recent DHS strongly supports this assumption. There has been a dramatic decline in mean ideal family size in Kenya - from 7.2 in 1977-78 to 4.4 in 1989. What is particularly surprising is that

STRATEGIC OBJECTIVE No. 1

	Actual 1984	Baseline 1989	Benchmark 1995	Data Sources
STRATEGIC OBJECTIVE 1				
INCREASE CONTRACEPTIVE USE:				
1) Increase Contraceptive Prevalence Rate	17 %	27 %	35 %	DHS
2) Increase Couple Years of Protection	n/a	Establish in 1991	25 % Increase	Project Database

TARGET 1.1				
IMPROVE THE AVAILABILITY OF FAMILY PLANNING SERVICES (Indicators are provided in Sub-targets 1.1a-1.1e)				
SUB-TARGET 1.1a				
INCREASE THE NUMBER OF GOVERNMENT HEALTH FACILITIES ROUTINELY OFFERING FAMILY PLANNING SERVICES	577	837	1,088	Project Database
SUB-TARGET 1.1b				
INCREASE THE NUMBER OF PRIVATE SECTOR AND NGO SERVICE DELIVERY POINTS ROUTINELY OFFERING FAMILY PLANNING SERVICES	181	864	1,124	Project Database
SUB-TARGET 1.1c				
INCREASE THE NUMBER OF SITES OFFERING VOLUNTARY SURGICAL CONTRACEPTION	4	47	78	Project Database
SUB-TARGET 1.1d				
INCREASE PERCENT OF SUB-LOCATIONS WITH ACCESS TO COMMUNITY-BASED SERVICES	10	30	45	Project Database
SUB-TARGET 1.1e				
INCREASE NUMBER OF RETAIL OUTLETS SELLING:				
a) Reasonably-Priced Oral Contraceptives	0	0	120	Project Database
b) Reasonably-Priced Condoms	0	120	580	Project Database

TARGET 1.2				
INCREASE DEMAND FOR CONTRACEPTIVE SERVICES				
SUB-TARGET 1.2a				
DECREASE PERCENT OF NON-PREGNANT WOMEN CITING LACK OF KNOWLEDGE OF CONTRACEPTIVE METHODS AS CONSTRAINT TO USE	n/a	23 %	10 %	DHS
SUB-TARGET 1.2b				
INCREASE PERCENT OF WOMEN KNOWING WHERE SERVICES CAN BE OBTAINED FOR:				
1) IUD	n/a	60 %	75%	DHS
2) Female Sterilization	n/a	85 %	95 %	DHS

this change occurred across all age groups. The percent of women wanting no more children increased from 32 to 49 percent between 1984 and 1989, with another 26 percent indicating a desire not to become pregnant within the next 24 months.

The draft CDIE Population Impact Assessment further supports this conclusion. The draft reports states:

"This rapid decline in ideal family size gives ample evidence of a strong demand for family planning, and suggests the need to increase the availability of family planning services to allow women to bring actual fertility in line with their stated family size preference.

Further evidence is provided in a recent study by Cross and Obungu (1990) based on the 1989 KDHS which concluded that 36 percent of currently married Kenyan women had an unmet need for contraception, that is, they were not currently using contraception, were not currently pregnant or protected by postpartum amenorrhea, and wanted to either limit or space additional children. Among these, 22 percent had an unmet need for a spacing method, and 14 percent for a more permanent method. These data suggest that we can expect contraceptive prevalence to increase further as the availability and quality of family planning services continues to improve.

TARGET 1.2: Increasing Demand for Contraceptive Services

As discussed above, it is USAID's belief that there is considerable latent demand for contraceptive services in Kenya. Though this latent demand has, in many cases, been activated through improvements in the availability and quality of services, it is clear that lack of correct knowledge about contraceptive methods, and where they can be obtained, remains an important factor limiting contraceptive use. For this reason, USAID will support a focused effort to address this need, and will monitor changes in this knowledge through the DHS planned for 1993, and specialized surveys financed through the centrally-administered Population Communication Services Project.

Program Interventions to Achieve the Strategic Objective and Targets

Clinic based family planning services

USAID has made a major commitment to helping to ensure that, wherever possible, family planning services are offered through existing health facilities, both in the public and private sector. In the public sector, attention has focused on training key service providers in maternal/child health and family planning (MCH/FP), logistics management, and the provision of contraceptive supplies.

Though national data will not be available until the end of FY 1991, data from a 1989 Situation Analysis carried out within MOH facilities, as well as training and LMIS data, clearly show a dramatic rise in the number of MOH facilities staffed by personnel trained in MCH/FP and a much improved contraceptive supply system. The number of MOH registered service delivery points has increased from 577 in 1984 to 837 currently. The number is projected to rise to 1,088 by 1995.

Complementing this public sector effort have been several programs to introduce and/or strengthen family planning services in private health facilities. These include, through the Family Planning Private Sector Project, efforts to introduce family planning into health facilities in private commercial firms, parastatals, training institutions, private maternity homes, and NGO hospitals and health centers. In addition, both bilateral and central funds are being used to introduce family planning into the clinics of private medical practitioners. The number of private sector facilities offering family planning has risen from 181 in 1984 to 912 in 1990.

One special subset of the clinic-based services component is the Voluntary Surgical Contraception (VSC) program. Through the Association for Voluntary Surgical Contraception (AVSC), USAID has supported the establishment of 47 VSC sites in both the public and private sector. This expansion of service sites has contributed to the substantial rise in VSC procedures - from a few hundred per year in 1982 to nearly 10,000 in 1989. The number of sites is planned to increase from 4 in 1984 to 78 by the end of 1995.

Community based family planning services

The portion of the country served by community-based family planning (CBFP) workers has increased dramatically since 1988. Until that time, it is estimated that less than 15 percent of the population was served by such programs. Since 1988, there has been a major expansion in the community-based programs implemented by the Family Planning Association of Kenya and Maendeleo ya Wanawake Organization. Through a recent grant to the Christian Health Association of Kenya, USAID is supporting a major effort to expand community-based family planning services through their extensive network of health facilities. In short, through these and other NGO initiatives currently underway, it is estimated that nearly 35 percent of the sublocations are currently served by CBFP workers.

Contraceptive Retail Sales

The newest element of USAID's strategy supports efforts to enhance the availability of reasonably priced condoms and oral contraceptives sold through commercial retail outlets. USAID will help finance the marketing and distribution of four products to be obtained through a commercial arrangement between a local marketing

· firm and commercial suppliers. FY 1991 will be the base year for this program and a rapid increase in retail outlets is projected over the three-year project period.

Improved Family Planning Knowledge

USAID/Kenya will support a focused effort to improve knowledge about family planning methods among providers, clients, and potential clients. This effort will be implemented by the Family Planning Association of Kenya, with the assistance of S&T/POP's Population Communication Services Project. The project will support the preparation and distribution of materials to both public and private sector organizations involved in family planning service delivery. This initiative is expected to substantially reduce the portion of clients who cite lack of knowledge as a constraint to family planning use.

STRATEGIC OBJECTIVE No. 2

	Actual 1985	Baseline 1989	Benchmark 1995	Data Sources
STRATEGIC OBJECTIVE 2				
INCREASE AGRICULTURAL PRODUCTIVITY AND FARM INCOME:				
1) Increase Maize Yields (MT/Hectare)	1.7 mt/hect (1980-84)	2.2 mt/hect (1985-89)	4% annual increase	CBS, PAM, NCPB
2) Increase On-farm Real Income	4.6% annual inc.(1974-82)	Establish in 1990/91	4% annual increase	CBS, PAM, Survey

TARGET 2.1				
IMPROVE AGRICULTURAL MARKET EFFICIENCY				
SUB-TARGET 2.1a				
REDUCE MARKETING COSTS FOR MAIZE AND BEANS	n/a	Establish in 1990/91	Reduce by 15 %	PAM, Project Survey
SUB-TARGET 2.1b				
REDUCE VARIATIONS IN REGIONAL AND SEASONAL MAIZE PRICES	n/a	Establish in 1990/91	Reduce by X %	CBS, NCPB

TARGET 2.2				
ACCELERATE DEVELOPMENT AND TRANSFER OF IMPROVED TECHNOLOGIES				
SUB-TARGET 2.2a				
INCREASE THE RATE OF DEVELOPMENT OF TECHNOLOGICAL PACKAGES	n/a	Establish in 1990/91	15 by end 1995	KARI Database
SUB-TARGET 2.2b				
INCREASE THE NUMBER OF TECHNOLOGICAL PACKAGES TRANSFERRED TO DISSEMINATION AGENCIES	n/a	Establish in 1990/91	10 by end-1995	KARI Database
SUB-TARGET 2.2c				
INCREASE ADOPTION OF NEW TECHNOLOGIES				
1) Percent Smallholder Maize Acreage in High Yield Varieties	n/a	40 %	60 %	KARI, MOA
2) Increase Fertilizer use	175,000 mt	285,000 mt	15% increase	MOA
3) Increase Adoption Rates	n/a	n/a	surveys	KARI, Surveys

STRATEGIC OBJECTIVE 2: Increase Agricultural Productivity and Farm Income

The USAID/Kenya agriculture program has focused primarily over the past five years on increasing agricultural productivity through accelerating the development and adoption of new technologies. There is strong evidence that recent gains in agricultural productivity in Kenya can be associated with the increased use of improved seed varieties and the increased use of fertilizer. USAID has played a significant role in both.

1) Increase Maize Yields (metric tons per hectare)

During the 1981-90 period, maize yields in Kenya are estimated to have increased at a rate of approximately 2.1 percent per year. While this positive growth trend reversed the negative rate of growth (-0.7 percent per year) experienced during the 1973-80 period, this rate of increase has been insufficient to meet the country's objectives for food security and income growth as the population growth rate has until recently been 4.1 percent per year.

Over the past four crop years, average yields have increased significantly over the early 1980s. The average annual yield for the 1980-84 crop years was 1.725 mt/hectare while it increased to 2.175 mt/hectare in the 1985-89 period. (The 1984/85 drought year is excluded.) Between the first and second half of the 1980s, average yields increased by 26 percent. In recent years the average annual increase in maize yields has been approximately 3 percent, significantly higher than the decade average.

The necessary and sufficient factors which are responsible for this large increase in yields are 1) relatively good price incentives, 2) favorable weather, 3) introduction of new inputs and 4) increased use of fertilizer. As discussed below, USAID/Kenya has been a key donor working with agricultural research and the importation, pricing and distribution of fertilizer. With the area under maize production stabilized since 1983, production gains can be associated with the success of increased agricultural productivity and USAID/Kenya's agricultural sector program.

2) Increase On-Farm Real Incomes

For the period in which most recent data is available, the per capita income for rural smallholders was estimated to have increased at a rate of 4.6 percent per year (1974-1982). Since no country-wide income data has been collected since 1982, conclusions about income in the 1980s are tentative, but many indicators suggest that on-farm incomes may have fallen or at a minimum stagnated during the 1980s. Agricultural sector GDP grew at an average rate of 3 percent per year in the 1980s, while the

population growth rate was 4.1 percent, suggesting that per capita agricultural sector income growth was negative. Increased rural malnutrition and child stunting also suggest that rural incomes are not improving. More analysis must be undertaken to address the question of on-farm real income growth.

During the upcoming year, the Government will be analyzing in detail the 1986/87 Agricultural Production Survey which should add additional information on real on-farm incomes. In addition, USAID/Kenya is presently completing a baseline survey in six districts which will provide 1990 on-farm income and expenditure data for selected crops.

TARGET 2.1: Improve Agricultural Market Efficiency

Since agricultural marketing efficiency has only this year become a focus of the agricultural sector strategy, no analysis is presented here. During 1990/91, a baseline for indicators of market efficiency will be established. Data generated under the Kenya Market Development Program will provide the baseline for establishing current marketing costs for maize and beans. In addition, the analysis of current variations in regional and seasonal maize prices will be established as a second indicator to track changes in overall marketing efficiency.

TARGET 2.2: Accelerate Development and Transfer of Improved Technologies

Over the past five years, a number of activities in agricultural research and fertilizer importation and distribution have contributed to the increase in maize yields.

Agricultural Research - New Seed Varieties

USAID/Kenya has focused its support of agricultural research on the Kenya Agricultural Research Institute (KARI) and has become one of the largest donors supporting KARI. For the past three years USAID/Kenya has concentrated its support for KARI on designing and installing new administrative, financial and personnel systems and cereal crop research. A major impact of this assistance can be seen in the number of new or improved maize seed varieties released over the last three years and the release of new technological packages.

While maize seed sales in Kenya have averaged about 17-18,000 metric tons per year over the past six years, the productivity of the new seed varieties has steadily increased. Seven new or improved maize varieties have been released over the last three years. A new coastal variety was released in 1989 which increased yield potential by almost 35 percent from the previously recommended variety. 614-D, recommended for the high potential areas was released in 1987, replacing 614-C. The 614-D has a yield

increase potential over the C variety of 10 percent. Overall 614 sales have increased from 3,390 mt in 1983/84 to 9,877 mt in 1989/90. In 1989 a new hybrid 626 was released which could overtime replace the 614 series. H626 has an increased yield potential of 13 percent over 614D. Sample on-farm yield data from five districts indicate average yields of 5.5 MT/HA for the 614 variety, an approximate 60 percent increase above average yields for these districts.

Maize Streak Research

During the past 18 months, the decisive action and rapid deployment of research scientists and equipment by KARI to study and control the rapid spread of the maize streak virus has prevented a major breakdown of the maize production system in Kenya. Rapidly deployed KARI surveys in 1989 indicated major infestations of the virus in Central and Eastern Provinces. With continued USAID assistance, KARI scientists, working with technical advisors, quickly developed a plan of research action to control the disease and its spread. Resistant cultivars have been identified, and plant breeding techniques developed at KARI are being utilized to incorporate resistance for appropriate Kenya varieties. A large multi-year loss of maize production has been averted in large part because of the rapid detection of the disease and decisive action by KARI to assume responsibility for the applied research and transfer of the research to users in a timely fashion.

Contract Research

KARI has also recently developed an approach to contract research for specific commodities where direct beneficiaries of research outputs are assessed costs under the program. For example, KARI, in collaboration with the Pyrethrum Board of Kenya, has developed a tissue culture laboratory for propagation of pyrethrum planting material. Since 1988, foundation planting material for commercial uses has increased eightfold and has greatly improved in quality. In the two major pyrethrum production areas of Kenya -- Kisii and Nakuru Districts -- average net profit per acre has increased by 30 percent in one year. Virtually all pyrethrum is produced as an important cash crop by farmers with two to five acres, therefore KARI's efforts in pyrethrum research are directly benefiting smallholders in Kenya.

Increased Fertilizer Use

In the mid-1980s, the Government identified the lack of fertilizer use as a major constraint to increased yields. In response to this problem, USAID/Kenya implemented a multi-year fertilizer importation program with a policy agenda which has opened the importation and distribution of fertilizer to private traders and has resulted in decontrolled fertilizer prices. Fertilizer use has increased from 129,000 metric tons in 1980/81 to 175,000 mt in

1984/85 and to 285,000 metric tons in 1988/89. This substantial increase in fertilizer use has been a key component in increasing agricultural productivity. A recent impact evaluation of the USAID/Kenya fertilizer program found that the availability and use of fertilizer by smallholders has also increased substantially.

Strengthening the private sector's role in fertilizer has been a key component of the USAID program. The Government's decontrol of fertilizer prices has led to increased competition in the market. In addition, the Kenya National Fertilizer Association (KNFA), which represents private firms and cooperatives, has played an increasingly important role in importing and distributing fertilizer. The KNFA's role in importing fertilizer is expected to expand even more in the coming years as the Government's role decreases.

STRATEGIC OBJECTIVE No. 3

	Actual 1985	Baseline 1989	Benchmark 1995	Data Sources
STRATEGIC OBJECTIVE 3				
INCREASE PRIVATE ENTERPRISE EMPLOYMENT WHILE REVERSING THE DECLINE IN REAL WAGES:				
1) Real Wage Bill Growth Rate	7.1 %	5.6 %	7.0 %	Economic Survey
2) Formal Private Sector Employment Growth Rate	3.7 %	1.6%	4.0 %	Economic Survey
3) Private Sector Real Wage Growth Rate	-1.5 %	-0.8 %	1.0 %	Economic Survey and USAID/Kenya
TARGET 3.1				
INCREASE NON-TRADITIONAL EXPORT EARNINGS:				
Increase Non-traditional Export Earnings	\$320 Mil.	\$420 Mil.	\$675 Mil.	Economic Survey
SUB-TARGET 3.1a				
IMPROVE POLICY ENVIRONMENT FOR EXPORTS:				
Increase Investment in Non-traditional Export Enterprises	n/a	Establish in 1990/91	Establish in 1990/91	Project Survey
SUB-TARGET 3.1.b				
EXPAND SUPPORT SERVICES FOR EXPORTERS:				
Increase The Number of Non-Traditional Exporters	n/a	400	550	KNCC, Special Surveys
TARGET 3.2				
INCREASE PROFITABILITY OF SMEs:				
Increase The Number of SME New Starts	n/a	Establish in 1990/91	Establish in 1990/91	Project Survey
SUB-TARGET 3.2a				
IMPROVE REGULATORY ENVIRONMENT AND SUPPORT SERVICES FOR SMEs:				
Increase New Investment in SMEs	n/a	Establish in 1990/91	Establish in 1990/91	Project Survey

STRATEGIC OBJECTIVE 3: Increase Private Enterprise Employment While Reversing the Decline in Real Wages

USAID/Kenya's third objective, to increase private enterprise employment while reversing the decline in real wages, has been revised from the CPSP. What follows is a brief description of the proposed indicators for the private enterprise strategic objective, targets and subtargets. The reader is directed to the October 1990 USAID/Kenya Private Enterprise Strategy Statement for additional detail on the choice of indicators and the monitoring and evaluation system to be used to track program achievements. A full discussion of the impact of USAID/Kenya's Private Enterprise program will be presented in next year's API report.

The primary indicator proposed for Strategic Objective 3 is the real wage bill. The real wage bill incorporates both employment and real wage concerns. The real wage bill grew by an average of 6.5 percent over the 1985-89 period and by 4.3 percent over the 1988-89 period. The target growth rate is 7.0 percent for 1995, which if achieved, will begin to address the problem of declining real wages.

Real wage growth as well as employment growth will also be tracked for private enterprises. The proposed indicator for real wage growth is a 1 percent average annual increase in formal private sector real wages, from a baseline average real rate increase of -0.8 percent in 1989.

Increasing employment will also be used as an indicator with a 1989 baseline of 1.6 percent and the proposed 1995 target growth rate of 4.0 percent.

Due to the absence of recent data on the informal sector, a survey is planned for FY 91 to establish a baseline on the number of employees and real wages of this sector. The survey will define the informal sector proportion of wage employment. This approach is necessary given the informal entrepreneurs' reticence to report wages or income, and the lack of national statistics. While change in the level of employment and real wage bill of the formal private sector can be tracked on an annual basis, that of the informal sector will be monitored against the FY 91 baseline by special surveys to be conducted in FY 93 and FY 95.

TARGET 3.1: Increase Non-Traditional Export Earnings

Non-traditional export (NTE) earnings, defined as exports excluding coffee, tea and petroleum products, have risen from \$320 million in 1985 to \$420 million in 1989, with an average annual growth rate of 4.6 percent over the 1985-89 period. Through proposed program interventions, the annual growth rate of NTE earnings is expected to increase to 9 percent over the 1990-99 period, with a target of \$675 million in NTE earnings in 1995. The GOK Annual Economic

Survey will be utilized to track the increases in non-traditional export earnings. The trend analysis monitored by the Mission will separate non-traditional exports into subsectors of value added from EPZs, horticulture, processed agricultural goods, manufactured goods and handicrafts. Changes in volumes of exports and destinations of products also will be analyzed periodically.

Additional program performance indicators which are proposed for tracking the sub-targets are: 1) increasing investment in non-traditional export enterprises, and 2) increasing the number of non-traditional exporters. Project data will be utilized to analyze the trends in investments and numbers of exporters.

TARGET 3.2: Increase Profitability of Small and Medium Enterprises (SME)

Profitability of small and medium enterprises relates to the income and employment uptake potential of each existing firm in the subsector, and is critically linked to the potential for new entrants to create and expand businesses into the small and medium size range. In order to measure the number of SME new starts, the Mission plans to combine information available from the Statistical Abstract with other data from the Central Bureau of Statistics and several planned impact studies to demonstrate changes over time in the subsector.

In order to determine an increase in investment in SME's over time, a baseline study will be undertaken in FY 91 to determine the level of investment in small and medium enterprises. A Kenyan consulting firm will design, conduct and analyze the research.

ANNEX 2

ADDITIONAL POPULATION DATA

Table 1

Total Fertility Rates by Province, Various Surveys: Kenya

Province	1977/78 KFS	1984 KCPS	1989 KDHS	Percent Deadline 1977-1989
Western	8.2	6.3	8.1	1.2
Nyanza	8.0	8.2	7.1	11.3
Rift Valley	8.8	8.6	7.0	20.5
Central	8.6	7.8	6.0	30.2
Nairobi	6.1	5.6	4.6	24.6
Eastern	8.2	8.0	7.0	14.6
Coast	7.2	6.7	5.5	23.6
Kenya	8.1	7.7	6.7	17.3

Source: Cross et. al., 1990, Table 1

ANNEX 2

Table 2

Analysis of Proximate Determinants of Fertility: Kenya

Year	TF	TFR	TF-TFR	Decomposition of Difference Due to		
				Marriage Patterns (No./pct.)	Fertility Regulation (No./pct.)	Lactation Amenorrhoea (No./pct.)
1977-78	17.3	8.3	-9.0	-1.7 (19%)	-0.6 (17%)	-6.7 (74%)
1984	17.2	7.7	-9.5	-2.4 (25%)	-1.1 (12%)	-6.0 (63%)
1989	17.2	6.7	-10.5	-2.6 (25%)	-2.6 (25%)	-5.3 (50%)
Change 1977-1989			-1.5	-0.9	-2.0	+1.4

Note: TF = Total fecundity rate; i.e., the theoretical maximum number of children in the absence of any inhibiting effects of the proximate determinants.

Source: Robinson, W.W. and S.F. Harbison, 1990