



African Food Needs Assessment

Situation and
Outlook Report



1991/92 Food Aid
Needs = 6 million tons

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Outlook Report

November 1991

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Report Coordinators

Michael Kurtzig, Margaret Missiaen, Linda Scott
(202) 219-0680

Principal Contributors

Mark Wenner . . . North Africa
Stacey Rosen . . . Central Africa
Margaret Missiaen . . . West Africa
Stacey Rosen . . . East Africa
Linda Scott . . . Southern Africa and Methodology
Michael Kurtzig . . . Aggregate Food Aid Needs and Availabilities
Daniel Pick . . . Vector Autoregression Commercial Import Forecasts
Carolyn Whitton . . . Short-Term Outlook for Global Cereal Supplies
Nydia Suarez . . . Outlook for Cereal Food Aid Availabilities

Appreciation is extended to the U.S. Agricultural Counselors and staffs in the African countries covered in this report and to the Foreign Agricultural Service for their timely and cogent review of this report. The coordinators would also like to thank Rebecca Lent, Gene Mathia, and John Dammore for their insightful comments.

Approved by the World Agricultural Outlook Board. Summary released November 1, 1991. The summary and text of Situation and Outlook Reports are available electronically. For details, call (202) 720-5505.

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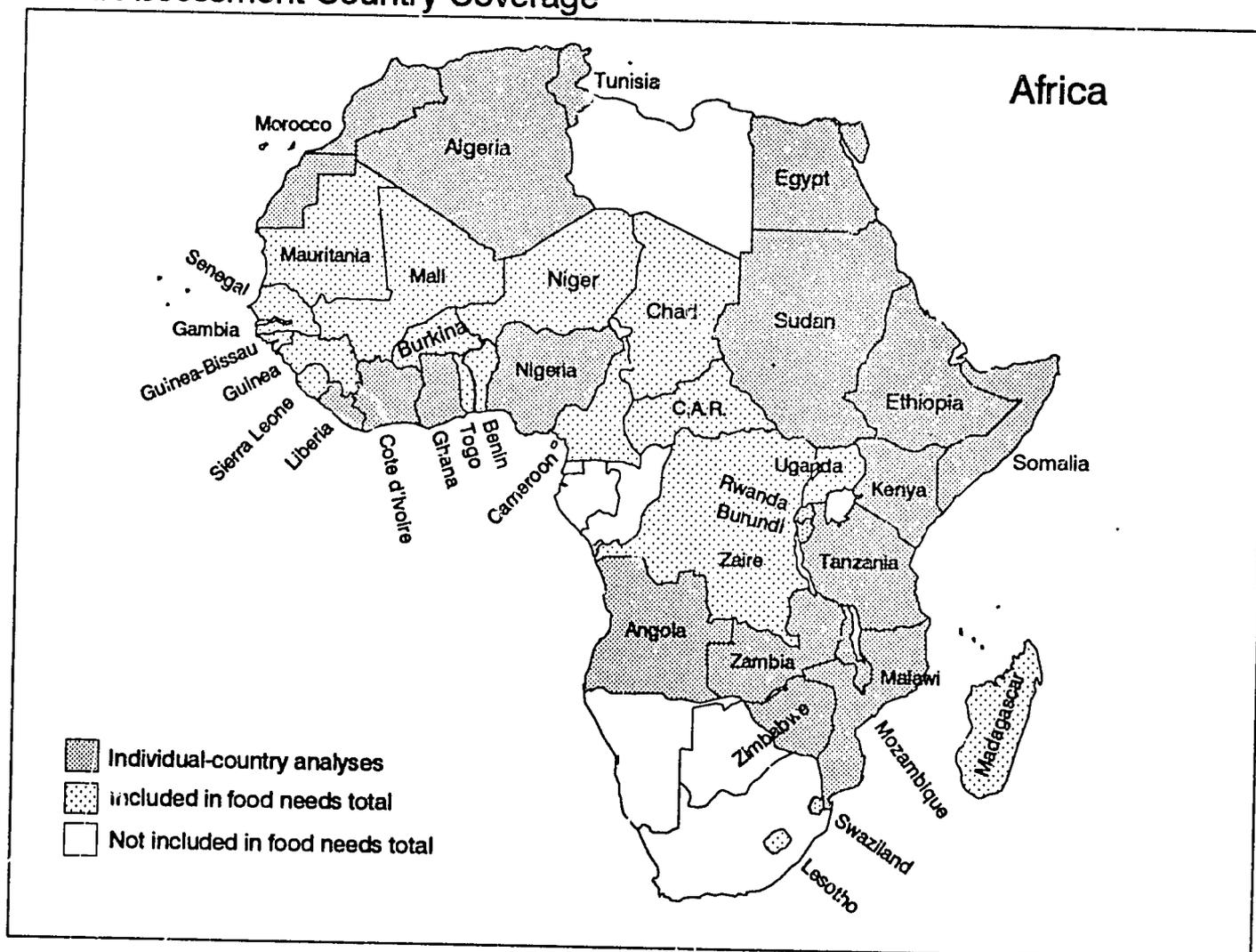
Foreword

The *African Food Needs Assessment* report follows on the heels of the *Global Food Assessment (GFA)* report published in November 1990. It assesses the short-term food aid needs of African countries. The study contains food aid estimates for 1991/92 and 1992/93 for 40 African countries based on USDA data as of September 1991 and data from other sources. While this report regards only Africa, future issues may include other regions, e.g. Latin America, South Asia. This report differs from last year's GFA report in the following ways:

- It focuses only on Africa.
- Needs estimates cover 40 African countries.

- It includes analyses for the 19 individual countries highlighted on the map in figure 1.
- The coverage includes all African countries that have historically been significant recipients of food aid.
- The report also assesses food needs of several African nations which are significant commercial food importers.
- A 5-year average is used to "stabilize" per capita consumption and production at recent levels.

Figure 1
Food Assessment Country Coverage



Summary

Cereal food aid needs in 1991/92 for 40 African countries are somewhat higher than historical receipts despite an anticipated recovery in total cereal production. Needs are greatest in heavily populated West Africa, followed closely by East and Southern Africa where poor weather and ongoing civil conflict have resulted in large-scale population movements and severely curtailed food supplies. In North Africa commercial imports are forecast to increase.

For those countries requiring food aid in 1991/92, an estimated 6 million tons of cereals would be needed to maintain per capita consumption at the 1986-90 average. However, to meet the United Nation's (U.N.) minimum caloric standard would require 11.4 million tons. Both estimates significantly exceed the 3.5 million tons of food aid received by these countries in 1990/91.

In Africa, cereals typically account for more than 40 percent of all calories consumed and comprise the bulk of all international food aid. According to the Food and Agriculture Organization (FAO) of the U.N., global cereal food aid in 1990/91 was 11.2 million tons and is projected to increase to 12 million tons in 1991/92. Because Sub-Saharan countries typically receive about 30 percent of world food aid shipments, aid available to meet their needs in 1991/92 is estimated at 3.6 million tons, significantly below projected needs.

Despite some discrepancy between estimated needs and availabilities for 1991/92, the results do not necessarily constitute a recommendation for expanded cereal food aid. The estimates are one measure intended for use with information provided by agencies involved in food aid delivery. Other essential information includes logistical (e.g. port facilities, fuel, trucks) and economic constraints to the delivery and absorption of aid, acute needs arising from uneven food distribution within countries, and emergency needs.

The report also examines short-term global grain outlook and food aid availability. World grain production in 1991/92 is forecast down 5 percent from 1990/91 to 1.694 billion tons, still the second highest on record. Much of the drop will occur in the Soviet Union, where dry weather contributed to a sharp reduction in 1991/92 output. Production in developed countries is forecast down 5 percent, while it is projected up slightly in developing countries. The large crops and high carry-in stocks in several major exporting countries should ensure adequate exportable supplies to meet expanding global import needs.

In Africa cereals typically account for more than 40 percent of all calories consumed and comprise the bulk of all interna-

tional food aid. The FAO estimates that cereal food aid shipments for the July 1990-June 1991 trade year were 11.2 million tons. This is the seventh consecutive year in which the 1974 World Food Conference goal of 10 million tons of cereal aid was exceeded. The major donors continue to be the United States, the European Community (EC), Canada, Japan, and Australia.

This past year the African food situation was affected by a number of dramatic and historic events. In Ethiopia, the 17-year reign of Colonel Mengistu Haile Mariam ended in May. In Somalia, the government of President Siad Barre was overthrown in January, disrupting food aid deliveries, not only there but to surrounding countries. In Sudan, below-average agricultural output, a continuing civil war, and an economy in a state of ruin have made for the worst food crisis since 1984's disastrous drought. The civil war in Liberia, which began in late 1989, completely disrupted all aspects of life there. Thousands of Liberians were displaced from their homes; more than 750,000 fled to neighboring countries. The recent unrest in Zaire is likely to increase food aid needs there.

In East Africa the 1991/92 cereal output is estimated at 18.4 million tons, a 11-percent increase from last year. This increase is attributed to Sudan, where output is expected to recover from a drought-affected 1990/91 crop. Given commercial imports of 679,000 tons, 2 million tons of food aid are needed to meet 1991/92 consumption requirements. Ethiopia and Sudan account for well over half of these needs. In order to meet nutritional requirements, 4 million tons of food aid are required.

Despite the anticipated recovery of grain production in 1991, West Africa's food aid needs are forecast near 3 million tons, significantly above historical receipts. Cote d'Ivoire and Nigeria, countries which have not previously been food aid recipients, are included and both have substantial aid needs. Nigeria's deficit of more than 1 million tons is caused by maintaining per capita consumption at the average of the last 5 years. During that period, grain consumption declined significantly while consumption of root crops increased.

In Southern Africa, grain stocks are at their lowest in 4 years. Widespread food shortages and malnutrition are reported in Angola and Mozambique, where 2 successive years of unfavorable weather and ongoing civil war have threatened the food security of many households. Zimbabwe's role as a grain supplier in southern Africa will be severely curtailed by drought.

The North African region's 1991/92 commercial imports of cereals are forecast at 16.7 million tons, up 6 percent from the previous year. The increase is paced by Tunisia, which had strong growth in imports compared to a marginal increase in Egypt, and by smaller-than-expected increases for Morocco and Algeria.

Projections for 1992/93 show further growth in imports, primarily in Egypt. Status quo and nutrition-based food aid needs for the region are forecast at zero for the next 2 crop years. These data are considerably below historical receipts but are plausible, given the record domestic production and the higher commercial import capacity.

Africa's economic activity slowed in 1990, reflecting the effects of the rise in petroleum prices and the drop in the price of some of its major export commodities—coffee, cocoa, and tea—to the lowest levels in a decade. For the continent as a whole, Gross Domestic Product (GDP) growth was 2 percent; inflation was 15-20 percent. In the near term, little progress is expected in alleviating Africa's poverty. Real

GDP remains at the level of 20 years ago, with per capita GDP continuing to decline. The short-term outlook is particularly bleak in Ethiopia, Mozambique, and Sudan where the effects of drought and civil war have been devastating.

Most African countries are oil importers and experienced a decline in real income as a result of the Gulf War. Sudan's downturn was compounded by the disruption of trade with Iraq and Kuwait and from the loss of worker remittances from those countries. Africa's major oil exporters—Nigeria, Angola, Algeria, and Cameroon—benefitted from the higher oil prices. However, all but Nigeria experienced sluggish growth because of unfavorable weather or costs related to policy adjustments. In Ghana, Kenya, Nigeria, Togo, and Tunisia, structural adjustment and policy reforms are being carried out and real growth has increased. In other countries, Cameroon, Liberia, Somalia, Sudan and Zaire, the economic situation has continued to deteriorate, partly due to the inability to carry out needed stabilization policies and structural reforms.

Short-Term Outlook for Global Cereal Supplies

Global Grain Production Forecast Down, Stocks Tighten and Prices Rise

World grain production in 1991/92 is forecast down 5 percent from 1990/91 to 1.694 billion tons but it is the second highest on record (table 1). Much of the drop will occur in the Soviet Union, which in the past 5 years, on average, has accounted for 13 percent of total world output and is the world's largest grain importer. In addition to unsettled economic and political conditions, dry weather has contributed to a sharp reduction in Soviet grain output. Production in developed countries is forecast down 5 percent, while output in developing countries is projected up slightly. But the large crops and high carry-in stocks in several major exporting countries should ensure adequate exportable supplies to meet the expanding global import needs.

World grain trade is forecast up 5 percent, mostly because of sharply increased imports by the Soviet Union and China. Assuming availability of adequate financial assistance, Soviet grain imports in 1991/92 are projected at 37 million tons, compared with only 26 million the previous season. China's imports are forecast up 46 percent. Imports by other countries are projected down nearly 2 percent.

As 1991/92 production falls and trade rises, ending stocks are expected to tighten (figure 2). Global grain stocks are projected to drop almost as low as at the end of 1988/89, pulling the stocks-to-use ratio down again (figure 3). Exporter stocks in particular are forecast down as exporters meet rising import demand.

Figure 2
World Ending Stocks, 1970-91

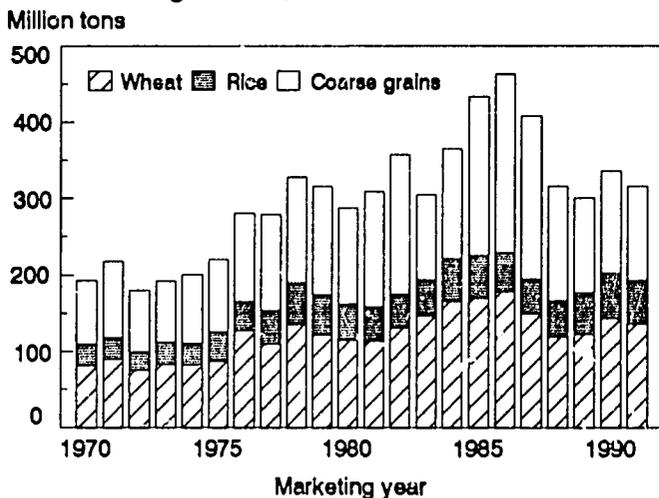
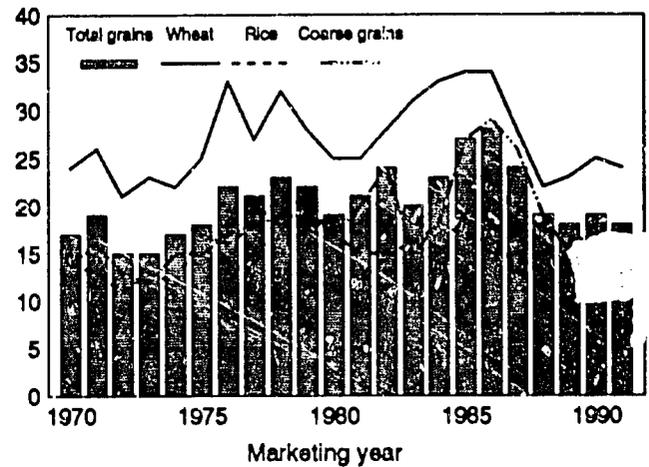


Figure 3
World Stocks-to-Use Ratios
Percent



Coarse grain prices for 1991/92 are higher because of lower foreign and U.S. production and tightening stocks (table 2). Although exportable wheat supplies are abundant in some major exporting countries, expectations of increased import needs are pressing prices up. Global rice stocks are expected to drop and imports to rise; however, increased exporter supplies, particularly in Asia, likely will leave export prices relatively unchanged.

World grain area is currently 6 percent below that of a decade ago and has fluctuated little in the last 5 years. Assuming no significant area change and that yields follow a 10-year trend, world grain output for 1992/93 would rise about 2 percent. A trend gain in consumption would be about the same, and further stock accumulation would be minimal. Among the 40 African countries included in this report, grain output is expected to climb 3 percent in 1992/93.

World Wheat Crop Forecast Down, Still Second Largest on Record

World wheat production in 1991/92 is forecast down 7 percent but will be the second highest on record (table 3). As in 1990/91, production will fall below projected use. Much of the production drop is in the USSR. Although record output is forecast for the EC and Canada, output in other major exporting countries—Argentina, Australia, and the United States—is expected to fall. Large carry-in stocks in the EC and Canada are keeping supplies high. Minor exporters, such as Turkey, some East European countries, and Saudi Arabia, also had large crops and several have substantial carry-in stocks.

Trade for 1991/92 is forecast at 105 million tons, up 12 percent from the previous year and the highest since 1987/88. The amount of growth in trade will depend on how much the

Table 1. Total cereals: World production, consumption, net imports, and ending stocks 1/

Region/country	Production					Consumption				
	1987/88	1988/89	1989/90	1990/91	1991/92	1987/88	1988/89	1989/90	1990/91	1991/92
-----Million tons-----										
Developed countries	554.1	478.2	564.7	603.2	571.0	469.3	437.8	453.0	465.3	464.5
United States	278.5	204.2	281.9	310.2	277.2	216.5	186.8	203.1	219.1	217.7
Canada	51.5	35.7	48.0	58.8	56.5	28.1	24.7	25.1	27.2	26.6
EC-12	166.4	174.0	173.2	170.4	180.1	151.4	153.5	152.5	145.0	147.6
Other Western Europe	14.8	15.2	16.8	18.7	16.0	15.1	15.2	15.2	15.3	14.6
South Africa	11.7	16.6	11.5	10.5	10.7	10.7	11.3	11.3	11.5	11.3
Japan	10.9	10.5	10.8	10.9	10.6	38.4	37.7	37.6	37.8	37.2
Australia	20.1	21.4	21.7	22.8	19.1	8.1	7.6	7.3	8.5	8.5
New Zealand	1.0	0.8	0.7	0.9	0.9	1.0	1.0	0.9	1.0	1.1
Centrally planned countries	594.8	578.2	610.1	660.5	600.8	642.2	639.2	653.0	675.3	646.4
China	303.4	298.0	310.4	344.2	325.0	317.9	317.8	319.4	331.5	332.8
Eastern Europe	92.7	96.4	101.0	93.5	100.9	98.0	97.7	100.5	99.3	97.4
Soviet Union	198.7	183.8	198.8	222.9	174.9	226.2	223.7	233.0	244.5	216.2
Developing countries	463.2	507.2	510.0	516.0	522.7	551.0	576.3	594.1	595.3	601.8
Mexico	18.6	17.2	18.5	22.5	20.0	23.5	24.0	25.4	27.6	27.4
Central America/Caribbean	136.5	146.4	152.2	152.9	152.2	159.9	165.6	168.9	175.9	176.4
Brazil	39.6	40.0	33.0	33.7	36.7	39.1	41.0	40.7	40.7	41.5
Argentina	22.1	16.0	18.7	22.0	19.4	11.5	9.2	9.3	10.1	9.5
Other South America	13.6	14.1	13.7	12.9	13.4	20.2	18.5	18.0	18.3	18.0
North Africa	17.4	18.7	19.7	21.0	26.1	35.5	37.3	38.8	39.7	42.5
Middle East	42.0	50.0	37.4	45.0	47.2	65.1	66.4	67.5	64.7	65.6
Sub-Saharan Africa	44.0	52.0	49.5	43.7	46.2	53.5	56.7	57.4	53.1	53.9
India	124.9	148.0	162.7	157.5	157.0	133.3	147.9	158.0	155.2	157.0
Other Asia	4.5	4.7	4.7	4.8	4.4	9.5	9.8	10.1	10.6	10.1
World total	1612.1	1563.6	1684.8	1779.7	1694.5	1667.1	1656.1	1700.3	1744.1	1714.5
-----Million tons-----										
Region/country	Net imports 2/					Ending stocks				
	1987/88	1988/89	1989/90	1990/91	1991/92	1987/88	1988/89	1989/90	1990/91	1991/92
-----Million tons-----										
Developed countries	-125.0	-131.3	-135.0	-119.4	-120.2	228.8	139.0	113.7	132.0	118.8
United States	-96.4	-100.7	-103.8	-80.1	-78.1	169.4	86.1	61.1	72.1	53.5
Canada	-28.4	-14.8	-22.0	-26.3	-29.4	13.5	9.7	10.7	16.0	16.4
EC-12 3/	-14.6	-23.9	-21.0	-22.8	-27.7	30.9	28.5	26.4	28.8	34.2
Other Western Europe	0.1	0.1	-1.3	-2.5	-1.5	3.9	4.0	4.3	5.3	5.1
South Africa	-0.6	-4.8	-0.3	0.4	0.5	1.1	1.6	1.6	0.9	0.9
Japan	27.7	26.6	27.1	26.7	26.4	6.0	5.4	5.7	5.5	5.3
Australia	-12.8	-14.0	-14.0	-14.8	-10.6	3.6	3.4	3.7	3.3	3.4
New Zealand	-0.0	0.1	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.1
Centrally planned countries	46.1	51.2	49.4	32.2	43.0	114.2	104.4	110.9	128.4	125.8
China	11.0	11.8	10.3	2.9	9.0	67.8	59.8	61.1	76.8	77.9
Eastern Europe	3.7	1.0	0.8	3.6	-1.7	7.1	6.8	8.1	5.9	7.7
Soviet Union	31.3	38.5	38.3	25.7	35.8	39.3	37.8	41.8	45.8	40.3
Developing countries	76.2	76.3	87.4	79.1	74.9	65.1	72.2	75.4	75.3	71.1
Mexico	4.7	6.6	8.4	5.8	6.7	1.2	1.0	2.4	3.1	2.4
Central America/Caribbean	21.2	18.3	21.8	22.0	23.0	14.3	13.5	18.5	17.5	16.3
Brazil	1.6	1.6	3.2	6.0	5.0	6.9	7.5	2.9	1.8	2.1
Argentina	-10.1	-6.6	-10.4	-10.9	-10.5	1.4	1.5	0.5	1.4	0.8
Other South America	6.8	4.5	4.2	5.1	4.6	2.2	2.3	2.2	2.0	1.9
North Africa	18.3	18.7	18.8	18.9	17.2	2.5	2.6	2.4	2.5	3.4
Middle East	20.8	19.0	29.7	20.5	16.7	13.9	16.6	16.2	17.0	15.4
Sub-Saharan Africa	7.7	6.6	6.7	7.8	7.3	4.6	6.5	5.3	3.7	3.8
India	0.2	2.5	-0.3	-1.1	-1.1	17.3	19.9	24.3	25.5	24.5
Other Asia	5.0	5.1	5.4	5.2	5.6	0.7	0.8	0.7	0.7	0.6
World Total	-2.7	-3.9	1.7	-8.0	-2.4	408.1	315.5	300.1	335.7	315.7

1/ Data and forecasts as of October 10, 1991.
 2/ Negative numbers indicate net exports.
 3/ Adjusted to exclude intra-EC trade.

Table 2. Selected world cereal prices

Marketing year	Wheat	Rice	Corn
	1/	2/	3/
-----\$/ton-----			
1986/87	110	184	74
1987/88	120	267	95
1988/89	165	287	116
1989/90	164	284	112
1990/91	119	287	106
1991/92 4/	130-145	250-300	105-120

1/ #2, HRW, f.o.b. U.S. Gulf ports (June/May avg.).
 2/ 5% broken, f.o.b. Bangkok, Thailand (Aug./July avg.).
 3/ #3, yellow, f.o.b. U.S. Gulf ports (Sep./Aug. avg.).
 4/ 1991/92 figures are estimated ranges.

Table 3. Wheat: World production, consumption, net imports, and ending stocks 1/

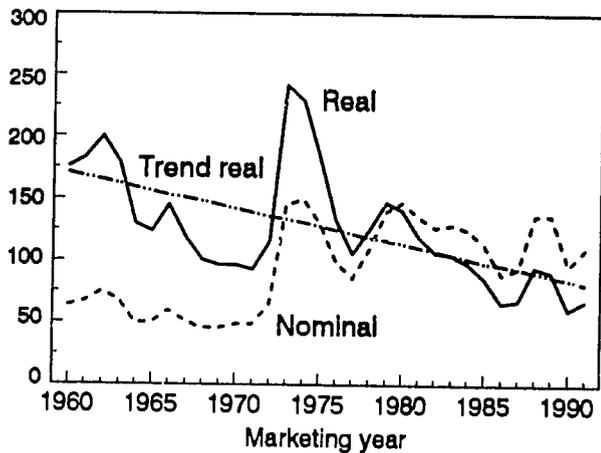
Region/country	Production					Consumption				
	1987/88	1988/89	1989/90	1990/91	1991/92	1987/88	1988/89	1989/90	1990/91	1991/92
-----Million tons-----										
Developed countries	179.5	166.4	183.8	215.2	195.5	116.5	111.7	110.7	125.1	121.5
United States	57.4	49.3	55.4	74.5	53.9	29.6	26.5	27.0	37.4	34.2
Canada	26.0	16.0	24.6	32.7	33.0	7.9	5.8	5.8	6.7	6.9
EC-12	75.5	78.4	82.0	84.7	90.3	62.7	63.6	62.3	64.1	64.4
Other Western Europe	4.0	3.8	4.4	5.1	4.1	3.6	3.9	3.8	3.9	3.8
South Africa	3.1	3.5	2.0	1.7	2.1	2.7	2.5	2.4	2.5	2.4
Japan	0.9	1.0	1.0	1.0	0.9	6.2	6.1	6.1	6.1	6.1
Australia	12.4	14.1	14.2	15.4	11.0	3.5	2.8	3.1	4.0	3.4
New Zealand	0.3	0.2	0.1	0.2	0.2	0.4	0.4	0.3	0.4	0.4
Centrally planned countries	205.0	211.0	223.8	247.3	216.7	241.4	243.6	247.4	266.0	251.8
China	85.8	85.4	90.8	98.2	94.0	102.8	104.4	104.5	106.0	107.5
Eastern Europe	35.8	41.1	40.7	41.1	39.7	37.0	38.8	39.4	40.7	37.3
Soviet Union	83.3	84.4	92.3	108.0	83.0	101.5	100.4	103.4	119.3	107.0
Developing countries	117.9	123.9	130.0	131.1	138.1	170.0	174.3	174.4	177.3	184.6
Mexico	3.7	3.2	4.0	3.9	3.5	4.3	4.2	4.2	4.4	4.5
Central America/Caribbean	0.0	0.1	0.0	0.0	0.0	2.8	2.8	2.8	2.9	2.9
Brazil	6.1	5.8	5.6	3.2	3.2	7.1	7.8	7.4	7.5	7.2
Argentina	8.8	8.4	10.2	10.5	9.0	4.5	4.7	4.5	4.8	4.6
Other South America	2.6	2.8	2.9	2.6	2.7	6.7	6.2	6.0	6.2	6.3
North Africa	7.6	7.8	8.5	9.9	12.9	20.9	22.4	22.5	23.7	25.0
Middle East	25.9	30.0	23.0	28.9	30.3	35.2	35.9	36.8	36.3	37.5
Sub-Saharan Africa	1.6	1.8	2.0	2.0	2.0	6.5	6.0	6.3	6.8	6.5
India	44.3	46.2	54.1	49.7	54.0	49.8	51.2	52.2	49.1	52.3
Other Asia	17.3	18.0	19.7	20.3	20.5	32.1	33.0	31.7	35.6	37.8
World total	502.4	501.3	537.6	593.6	550.3	531.2	531.8	534.1	572.4	557.2
-----Million tons-----										
Region/country	Net imports 2/					Ending stocks				
	1987/88	1988/89	1989/90	1990/91	1991/92	1987/88	1988/89	1989/90	1990/91	1991/92
-----Million tons-----										
Developed countries	-84.3	-76.4	-74.8	-74.9	-76.5	65.1	43.1	41.1	55.8	53.4
United States	-43.0	-38.0	-32.9	-28.1	-28.8	34.3	19.1	14.6	23.6	14.5
Canada	-23.5	-12.4	-17.4	-22.1	-24.0	7.3	5.0	6.4	10.3	12.4
EC-12 3/	-12.6	-18.5	-19.0	-18.1	-21.2	16.4	12.4	12.9	14.9	19.7
Other Western Europe	-0.4	-0.1	-0.4	-1.0	-0.4	2.0	1.8	2.1	2.3	2.3
South Africa	-0.3	-1.2	0.2	0.7	0.3	0.6	0.5	0.4	0.3	0.2
Japan	5.3	5.0	5.3	5.2	5.2	1.6	1.5	1.7	1.8	1.7
Australia	-9.9	-11.4	-10.7	-11.8	-7.7	2.8	2.6	3.0	2.7	2.6
New Zealand	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0
Centrally planned countries	37.2	29.2	25.3	23.5	32.3	54.8	51.4	53.1	57.9	55.0
China	15.0	15.5	13.0	9.5	14.5	25.7	22.3	21.6	23.3	24.3
Eastern Europe	1.2	-1.3	-1.8	-0.4	-2.7	2.1	3.1	2.6	2.6	2.3
Soviet Union	21.0	15.0	14.1	14.3	20.5	27.0	26.0	29.0	32.0	28.5
Developing countries	45.5	45.1	48.1	48.0	44.8	28.9	23.8	27.4	29.2	27.5
Mexico	0.7	0.9	0.1	0.5	1.0	0.5	0.4	0.3	0.2	0.2
Central America/Caribbean	2.8	2.7	2.8	2.9	2.8	0.3	0.3	0.3	0.4	0.3
Brazil	1.3	1.1	1.9	4.2	4.0	1.0	0.1	0.2	0.1	0.1
Argentina	-3.7	-4.0	-6.1	-5.3	-4.7	0.8	0.5	0.0	0.4	0.1
Other South America	4.0	3.2	3.0	3.5	3.6	0.9	0.7	0.6	0.6	0.7
North Africa	14.2	14.3	13.9	14.4	12.5	1.7	1.4	1.4	2.0	2.3
Middle East	7.9	6.3	15.3	8.4	5.2	8.3	8.7	10.2	11.2	9.2
Sub-Saharan Africa	4.8	4.3	4.4	4.8	4.6	0.4	0.5	0.6	0.7	0.7
India	-0.5	2.1	0.1	-0.6	-0.7	10.0	7.0	9.0	9.0	10.0
Other Asia	14.1	14.2	12.7	15.1	16.5	5.0	4.1	4.8	4.6	3.9
World total	-1.6	-2.0	-1.4	-3.5	0.7	148.8	118.3	121.7	142.9	135.9

1/ Data and forecasts as of October 10, 1991.

2/ Negative numbers indicate net exports.

3/ Adjusted to exclude intra-EC trade.

Figure 4
U.S. Wheat Prices, 1960-91
\$/mt



Soviet Union and China import. The outlook for Soviet imports is clouded by limited import capacity and Soviet dependence on the availability of assistance. Imports by the rest of the world are projected up only fractionally. Imports of wheat for feed, particularly by South Korea, also are projected to remain high as world wheat prices are expected to remain attractive relative to corn.

Competition for the world's wheat market is expected to be fierce. The EC, Canada, and smaller exporters are expected to benefit the most from any increase in world trade as tight supplies are likely to constrain exports from the United States, Australia, and Argentina. Record wheat exports are projected for both Canada and the EC. Sales by smaller exporters are also expected to rise, Turkey may export upwards of 3.5 million tons. The U.S. market share is projected to fall, as limited supplies restrict exports and U.S. stocks tighten significantly.

Despite rising exports, EC and Canadian carry-out stocks are projected to remain large at the end of the season. U.S. domestic wheat prices are projected up only modestly, still well below 1989/90 (figure 4). Effective export prices, however, are expected to remain relatively low because of large export subsidies. In the United States, average bonuses under the Export Enhancement Program (EEP) are relatively high, allowing the U.S. to match subsidized EC export prices in major markets and remain competitive.

For the world as a whole, this year's lower output and stronger exports will reduce stocks 5 percent, or 7 million tons, again depressing the stocks-to-use ratio.

World Rice Crop Near Record Level

World rice production in 1991/92 is forecast at 344 million tons (milled basis), down 2 percent from the 1990/91 record

(table 4). Most of the decline is expected in China and India which together produce over half of the world's rice. Both countries expect slightly lower areas and yields.

World rice use is forecast virtually unchanged at last season's high level; and, output will again about equal consumption. Trade in calendar year 1992 (marketing year 1991/92), however, is projected up 3 percent to 12.9 million tons, so that world ending stocks will decline.

Competitors' exports are forecast up 3 percent in 1992, with the largest gain expected in Thailand where production is forecast to rebound from last year's weather- and pest-damaged crop. Exports from India and China will be lower, as will Vietnam's; but these countries will remain net exporters. U.S. exports in calendar year 1992 are projected at 2.3 million tons, up from 2.2 million in 1991. U.S. market share will be up slightly to 17.8 percent. Tight U.S. supplies and high prices, relative to Asian exporters, will constrain U.S. exports.

Although world stocks are expected to slip somewhat at the end of 1991/92, rice stocks and stocks-to-use ratios remain well above the lows of 1987/88 and 1988/89. World market prices are expected to be unchanged as increased Thai exportable supplies offset increased global import demand.

Coarse Grains Output Forecast Lower, As Are Trade and Consumption

World coarse grain production in 1991/92 is forecast down 4 percent from 1990/91 (table 5). While consumption and exports are expected to decline, they will not fall as much as output and world ending stocks are forecast to tighten further. The stocks-to-use ratio is projected at a low level, while export prices are expected to rise. Global trade is forecast down 3 percent to 83 million tons, the lowest since 1987/88. Global imports, excluding the Soviet Union, are projected to decline 4 percent, whereas Soviet imports are projected up 3 percent.

While barley imports are projected at a record high, lower corn imports are expected to pull global coarse grain imports down. Barley trade is projected at a record-high of 18.7 million tons, while corn is estimated at 55.4 million tons, down 3 percent. Large foreign supplies and availability of exporter credit are expected to lead to sharply increased Soviet barley imports, while corn imports slip slightly. South Korea's corn imports will also remain weak, assuming relatively low-priced wheat continues to displace corn in feed rations.

The United States typically supplies more than 60 percent of the world's coarse grain trade. In 1991/92, U.S. coarse grain supplies are projected down 4 percent, despite larger carry-in stocks. The corn crop is projected off 5 percent. Because of sluggish corn demand and substitution of wheat and barley

Table 4. Rice: World production, consumption, net imports, and ending stocks 1/

Region/country	Production 2/					Consumption				
	1987/88	1988/89	1989/90	1990/91	1991/92	1987/88	1988/89	1989/90	1990/91	1991/92
-----Million tons-----										
Developed countries	15.6	16.1	16.5	16.8	16.7	14.6	14.6	14.8	15.0	15.1
United States	4.1	5.2	5.1	5.1	5.0	2.6	2.6	2.7	3.0	3.0
Canada	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2
EC-12	1.3	1.3	1.4	1.6	1.5	1.6	1.6	1.6	1.6	1.7
Other Western Europe	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2
South Africa	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.4
Japan	9.7	9.0	9.4	9.6	9.4	9.8	9.6	9.7	9.6	9.5
Australia	0.5	0.6	0.7	0.6	0.8	0.1	0.2	0.2	0.2	0.2
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Centrally planned countries	123.7	120.4	127.9	134.2	129.0	125.9	124.4	125.4	129.8	129.2
China	121.7	118.4	126.1	132.5	127.4	123.3	121.6	123.1	127.6	127.1
Eastern Europe	0.2	0.2	0.1	0.1	0.1	0.5	0.5	0.4	0.4	0.4
Soviet Union	1.7	1.9	1.7	1.6	1.4	2.1	2.3	1.9	1.8	1.7
Developing countries	175.2	194.4	200.1	201.3	198.2	179.7	188.1	198.1	202.3	201.6
Mexico	0.4	0.3	0.4	0.2	0.2	0.4	0.4	0.4	0.5	0.5
Central America/Caribbean	1.0	1.1	1.1	1.1	1.1	1.6	1.7	1.7	1.6	1.7
Brazil	8.0	7.5	4.9	6.3	6.8	7.1	7.4	7.4	7.5	7.4
Argentina	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2
Other South America	3.2	3.5	3.1	3.1	3.1	3.1	3.1	3.0	3.2	3.1
North Africa	1.6	1.4	1.4	1.8	2.1	1.6	1.5	1.6	1.8	2.0
Middle East	1.6	1.2	1.5	1.1	1.1	4.1	4.2	4.4	4.0	3.9
Sub-Saharan Africa	4.5	4.6	4.8	4.6	4.5	6.8	7.1	7.1	7.1	7.1
India	56.9	70.5	74.1	74.6	71.5	59.3	65.7	71.6	72.6	72.9
Other Asia	97.8	104.0	108.7	108.3	107.6	95.4	96.9	100.7	103.9	102.9
World total	314.5	331.0	344.6	352.3	343.9	320.2	328.7	337.9	348.0	346.3
-----Million tons-----										
Region/country	Net imports 3/					Ending stocks				
	1987/88	1988/89	1989/90	1990/91	1991/92	1987/88	1988/89	1989/90	1990/91	1991/92
-----Million tons-----										
Developed countries	-1.7	-2.4	-2.0	-1.9	-1.8	3.8	3.0	2.8	2.7	2.5
United States	-2.2	-2.7	-2.4	-2.2	-2.1	1.0	0.9	0.9	0.8	0.8
Canada	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0
EC-12 4/	0.3	0.2	0.2	0.1	0.0	0.4	0.4	0.5	0.5	0.3
Other Western Europe	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
South Africa	0.3	0.3	0.3	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Japan	0.0	0.0	0.0	0.0	0.0	1.9	1.3	1.1	1.0	0.9
Australia	-0.4	-0.5	-0.5	-0.5	-0.5	0.4	0.3	0.4	0.3	0.5
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Centrally planned countries	0.3	1.6	0.3	0.0	0.1	22.5	20.2	23.0	27.4	27.3
China	-0.4	0.9	-0.2	-0.5	-0.5	22.5	20.2	23.0	27.4	27.2
Eastern Europe	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0
Soviet Union	0.3	0.5	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0
Developing countries	1.5	-1.0	2.0	1.0	1.3	19.4	24.8	28.8	28.8	26.7
Mexico	0.0	0.2	0.1	0.3	0.3	0.0	0.1	0.1	0.1	0.1
Central America/Caribbean	0.6	0.5	0.6	0.5	0.6	0.1	0.1	0.1	0.1	0.1
Brazil	0.0	0.2	0.4	0.6	0.5	3.1	3.4	1.3	0.8	0.7
Argentina	-0.1	-0.2	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
Other South America	-0.1	-0.3	-0.1	0.0	-0.1	0.6	0.7	0.6	0.5	0.4
North Africa	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Middle East	2.4	3.1	2.9	2.6	3.0	0.4	0.5	0.5	0.2	0.4
Sub-Saharan Africa	2.5	2.5	2.3	2.5	2.5	0.6	0.6	0.6	0.5	0.5
India	0.5	0.2	-0.4	-0.5	-0.4	7.0	12.0	14.0	15.5	13.8
Other Asia	-4.2	-7.1	-3.8	-4.9	-5.0	7.3	7.4	11.6	11.1	10.8
World total	0.0	-1.7	0.3	-0.8	-0.3	45.6	47.9	54.6	58.9	56.5

1/ Data and forecasts as of October 10, 1991.

2/ Milled basis.

3/ Negative numbers indicate net exports.

4/ Adjusted to exclude intra-EC trade.

Table 5. Coarse grains: World production, consumption, net imports, and ending stocks 1/

Region/country	Production					Consumption				
	1987/88	1988/89	1989/90	1990/91	1991/92	1987/88	1988/89	1989/90	1990/91	1991/92
-----Million tons-----										
Developed countries	359.0	295.8	364.3	371.2	358.8	338.2	311.5	327.5	325.2	328.0
United States	217.0	149.7	221.4	230.7	218.3	184.4	157.6	173.4	178.7	180.6
Canada	25.5	19.7	23.5	26.1	23.5	20.1	18.7	19.2	20.3	19.6
EC-12	89.6	94.3	89.8	84.1	88.2	87.2	88.3	88.6	79.3	81.5
Other Western Europe	10.8	11.4	12.4	13.7	11.9	11.3	11.2	11.3	11.3	10.7
South Africa	7.9	13.0	9.5	8.8	8.6	7.7	8.5	8.6	3.7	8.5
Japan	0.4	0.4	0.4	0.4	0.4	22.5	22.0	21.7	27.1	21.6
Australia	7.2	6.7	6.8	6.9	7.3	4.5	4.6	4.1	4.3	4.9
New Zealand	0.7	0.6	0.5	0.7	0.7	0.5	0.6	0.6	0.6	0.7
Centrally planned countries	266.1	246.8	258.4	279.0	255.2	274.9	271.2	280.2	279.4	265.3
China	95.8	94.2	93.5	113.5	103.6	91.8	91.9	91.9	97.8	98.2
Eastern Europe	56.6	55.1	60.2	52.2	61.1	60.5	58.4	60.6	58.2	59.6
Soviet Union	113.7	97.5	104.8	113.3	90.5	122.6	121.0	127.7	123.4	107.5
Developing countries	170.1	188.8	179.9	183.6	186.4	201.3	214.0	221.6	215.6	215.5
Mexico	14.5	13.8	14.1	18.4	16.3	18.7	19.4	20.7	22.7	22.4
Central America/Caribbean	3.4	3.5	3.6	3.7	3.2	5.1	5.4	5.6	5.5	5.5
Brazil	25.5	26.7	22.5	24.2	26.7	24.9	25.8	25.9	25.8	26.9
Argentina	13.1	7.3	8.3	11.2	10.2	6.9	4.3	4.6	5.2	4.8
Other South America	7.7	7.8	7.7	7.3	7.6	10.4	9.2	9.0	8.9	8.6
North Africa	8.2	9.4	9.8	9.3	11.1	12.9	13.4	14.7	14.2	15.5
Middle East	14.5	18.9	12.8	15.0	15.7	25.8	26.3	26.3	24.4	24.1
Sub-Saharan Africa	38.0	45.6	42.7	37.1	39.8	40.2	43.6	43.9	39.1	40.2
India	23.8	31.3	34.6	33.3	31.5	24.2	30.9	34.2	33.5	31.8
Other Asia	21.5	24.5	23.8	24.3	24.1	32.3	35.7	36.5	36.4	35.8
World total	795.2	731.3	802.6	833.8	800.3	815.6	795.6	828.2	823.6	810.9
-----Million tons-----										
Region/country	Net imports 2/					Ending stocks				
	1987/88	1988/89	1989/90	1990/91	1991/92	1987/88	1988/89	1989/90	1990/91	1991/92
-----Million tons-----										
Developed countries	-53.7	-73.6	-79.2	-62.6	-65.0	160.0	92.8	69.8	73.6	62.9
United States	-51.1	-60.0	-68.5	-49.9	-47.2	134.1	66.2	45.7	47.8	38.3
Canada	-5.0	-2.5	-4.7	-4.3	-5.6	6.2	4.7	4.3	5.7	4.0
EC-12 3/	-17.1	-26.6	-23.2	-24.8	-29.5	14.0	15.7	13.1	13.4	14.2
Other Western Europe	0.3	0.0	-1.0	-1.7	-1.3	1.9	2.1	2.2	3.0	2.8
South Africa	-0.6	-3.9	-0.8	-0.7	-0.1	0.5	1.1	1.2	0.6	0.6
Japan	22.4	21.6	21.8	21.4	21.1	2.6	2.5	3.0	2.7	2.6
Australia	-2.5	-2.1	-2.9	-2.6	-2.4	0.4	0.5	0.3	0.3	0.3
New Zealand	-0.1	-0.1	0.0	-0.0	0.0	0.2	0.1	0.1	0.1	0.0
Centrally planned countries	8.6	20.4	23.8	8.7	10.6	36.9	32.8	34.8	43.1	43.5
China	-3.6	-4.6	-2.5	-6.1	-5.1	19.6	17.4	16.5	26.1	26.4
Eastern Europe	2.2	2.0	2.3	3.7	0.7	5.0	3.7	5.5	3.2	5.4
Soviet Union	10.0	23.0	23.9	11.1	15.0	12.3	11.8	12.8	13.8	11.8
Developing countries	29.2	32.1	37.3	30.1	28.7	16.8	23.7	19.2	17.3	16.9
Mexico	4.0	5.5	8.2	5.0	5.4	0.6	0.5	2.1	2.8	2.1
Central America/Caribbean	1.6	1.9	2.1	1.8	2.2	0.3	0.3	0.3	0.2	0.2
Brazil	0.2	0.3	0.9	1.2	0.5	2.7	4.0	1.4	1.0	1.3
Argentina	-6.3	-2.4	-4.3	-5.6	-5.8	0.6	1.0	0.5	0.9	0.6
Other South America	2.9	1.6	1.3	1.6	1.0	0.7	0.9	1.0	0.9	0.8
North Africa	4.0	4.4	4.7	4.4	4.7	0.8	1.2	1.0	0.6	0.9
Middle East	10.6	9.6	11.5	9.5	8.6	5.2	7.4	5.5	5.6	5.8
Sub-Saharan Africa	0.5	-0.2	0.0	0.5	0.6	3.5	5.3	4.1	2.5	2.7
India	0.3	0.2	0.0	0.0	0.0	0.3	0.9	1.3	1.0	0.7
Other Asia	11.3	11.2	12.8	11.7	11.6	2.1	2.1	2.2	1.8	1.7
World total	-15.9	-21.2	-18.2	-23.7	-25.7	213.6	149.3	123.8	134.0	123.3

1/ Data and forecasts as of October 10, 1991.

2/ Negative numbers indicate net exports.

3/ Adjusted to exclude intra-EC trade.

Table 6: Volume of cereal food-aid contributions by donors 1/

Country	1982/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90 2/	90/91 3/	91/92 3/
-----1,000 tons 4/-----										
Argentina	33	30	51	44	24	26	21	0	3	5
Australia	349	460	466	345	368	355	353	305	300	350
Canada	843	817	943	1,216	1,240	1,062	1,170	930	1,300	1,300
European Community	1,596	1,917	2,505	1,614	1,903	2,564	2,180	3,293	2,000	2,300
Finland	28	40	20	5	41	3	25	27	27	25
Japan	517	445	295	450	529	561	441	430	450	400
Norway	36	17	45	31	46	52	32	31	30	30
Sweden	87	85	88	69	74	115	132	82	40	80
Switzerland	29	30	39	22	58	70	64	35	30	50
United States	5,375	5,655	7,536	6,675	7,861	7,946	5,286	6,147	6,900	7,000
Others	345	355	522	478	457	749	545	110	100	460
Total	9,238	9,849	12,510	10,949	12,601	13,503	10,249	11,390	11,180	12,000

1/ July/June years.

2/ 1989/90 subject to revision.

3/ 1990/91 and 1991/92 figures are estimates.

4/ To express cereal food aid grain equivalent, wheat, rice and coarse grains are counted on a

Table 6: Volume of cereal food-aid contributions by donors 1/

for corn in key markets, U.S. coarse grain exports are forecast at 49 million tons, down 5 percent from 1990/91 and the lowest since 1986/87.

Although Thailand's exports are projected unchanged, competition is expected to remain strong in 1991/92. Among other exporters, Argentina and South Africa are expected to increase corn exports slightly. And, China is again expected to be the world's second largest corn exporter, providing sharp competition to the U.S. in Asian markets. Despite a decline in output from last year's record crop, China's corn supplies remain large. The largest gains in barley exports are expected from Canada and the EC.

Outlook for Cereal Food Aid Availabilities

Cereal Food Aid Shipments Lower In 1990/91

The FAO estimates that food aid in the form of cereal shipments for the July 1990-June 1991 trade year were 11.2 million tons, down 210,000 tons from 1989/90. This estimate would still be the seventh consecutive year in which the 1974 World Food Conference goal of 10 million tons of cereal aid was exceeded (table 6).

Although FAO's 1991/92 estimate for world cereal supplies shows a slight decline, cereal food aid availabilities are expected to remain well above the 10-million-ton goal. Forecasts project availabilities at about 12 million tons in 1991/92. However, final shipments will depend on changes in food aid funding and commodity prices.

Sources of Food Aid Continue To Be the Same

The major donors of cereal food aid continue to be the United States, the European Community, Canada, Japan, and Australia. The United States is estimated to have provided 62 percent in 1990/91, followed distantly by the EC with 18 percent, Canada with 12 percent, Japan and Australia with 4 and 3 percent, respectively.

Developed nations help third world countries import needed food and services and promote development in a variety of ways. Total official development assistance (ODA) donated by the 18 members of the Development Assistance Committee of the Organization of Economic Cooperation and Development (OECD) in 1989, (the latest year for which data are available), was \$46.8 billion. This represents a 3-percent decrease from 1988. Nevertheless, member countries have increased their ODA by an annual-average rate of 2.3 percent during the last 5 years, and have stated their commitment to increasing their contributions both in absolute terms and as a proportion of their Gross National Product (GNP).

The grant element of ODA rose from 64 percent in 1985 to almost 80 percent in 1989. However, the value of food aid fell 8 percent to \$3.2 billion in 1989, and food aid's share of total ODA declined slightly to 7 percent. Decreases by the two largest donors, the United States and the EC, were mainly responsible. The share of food aid provided through multi-lateral channels—mostly the World Food Program (WFP)—remained at about 20 percent.

Wheat and wheat flour comprised the bulk of the cereal shipments, followed by coarse grains and rice. In 1989/90, the latest year for which data are available, almost half of the

world cereal aid was shipped to Africa, with countries in Sub-Saharan Africa receiving about one-third. Asia received 28 percent, and Latin America, 15 percent. The major recipients were Egypt, Bangladesh, Ethiopia, Mozambique, and Tunisia. The distribution by country and commodity for 1990/91 is not yet available; however, it is expected to be similar to that of 1989/90.

At the end of March 1991, the FAO reported that pledges to the WFP's regular resources for the 1991-92 biennium totalled \$829 million. The target is \$1.5 billion. As yet, not all countries have made their pledges. The previous 1989-90 biennium pledges by 82 member-countries amounted to \$1.2 billion, 86 percent of the pledging target of \$1.4 billion.

Based on information as of August 1991, cereal aid pledges to Sub-Saharan countries for 1990/91 amounted to over 3.5 million tons. About 11 percent of these pledges are in the form of triangular transactions and local purchases. Through triangular transactions, donors provide aid commodities from third country sources. Local purchases are those for which donors obtain commodities in one part of the recipient country for distribution in another part.

Contributions to the International Emergency Food Reserve (IEFR), administered by the WFP, continue to fall from earlier levels. The 500,000-ton minimum target was not achieved in 1989, as only 417,419 tons were contributed. Furthermore, data available as of December 1990 showed that only 52 percent of the 1990 target had been contributed and that the 1990 goal was not met. By June 1991, pledges to the 1991 IEFR by 12 donors amounted to 298,297 tons of food commodities. Of this, 281,100 tons were in the form of cereals and 17,827 tons were noncereal foodstuffs. Of the total contributions, 75 percent were pledged through the WFP. In addition to IEFR contributions, 301,560 tons of cereals and 19,755 tons of noncereal food commodities were pledged under the subset of the WFP regular resources for meeting the requirements of protracted refugee situations.

The United States Changes P.L. 480 Legislation

The Food, Agriculture, Conservation, and Trade (FACT) Act of 1990 authorized major changes in P.L. 480's program structure and operations. P.L. 480 is the primary means by which the United States provides foreign food assistance. Congress has periodically revised P.L. 480 legislation to reflect domestic farm policy and foreign policy development. The Act became effective on January 1, 1991, for 5 years.

Title I continues as a concessional loan program for countries experiencing difficulties in meeting their food needs through commercial channels. It provides for discretionary repayment in local currencies. The local funds may be used to support market and agricultural development, re-

search, and for obligations to the United States. The Secretary of Agriculture is responsible for the implementation of Title I.

The 1990 FACT Act reauthorizes the Title II emergency and private assistance donations program. Under this title, food commodities are made available for distribution overseas by recipient-country governments in response to emergency conditions, or by private voluntary agencies and international organizations, including the World Food Program. The minimum tonnage is increased by 25,000 tons per year, beginning with 1.9 million tons in fiscal year 1991 and rising to over 2 million tons by fiscal 1995. A new provision requires that \$10 to \$13.5 million of Title II funds be provided each year to private voluntary organizations (PVO's) and cooperatives to support their overseas food aid activities. Implementation of Title II is assigned to the Administrator of the Agency for International Development (AID).

A new Title III Food for Development Program was authorized by the FACT Act. This program provides government-to-government grant food assistance to least developed and food deficit countries. Priority is to be given to the countries in greatest need that have the capacity to use food aid effectively, have a commitment to food-security policies, and have a long-term development plan. Responsibility for implementing the Title III program is also assigned to the Administrator of AID.

The P.L. 480 program in fiscal year 1991 (October 1990-September 1991) reflected an increase of nearly \$5.9 million from fiscal 1990 to \$1.5 billion. Of this, \$512 million was provided through Title I, \$721 million through Title II donations, and \$294 million through the new Title III grant program. The fiscal 1991 level is expected to provide about 6.6 million tons of commodity shipments, almost 5 percent more than in fiscal year 1990.

As of September 1991, more than 80 percent of the volume of Title I allocations was programmed as wheat and wheat flour, while about 7 and 5 percent were programmed as feed grains and rice, respectively. Beans, oilseeds/meal, and vegetable oils comprised the remainder. Asian and Near East countries (including North African countries) were allocated 61 percent and 52 percent of the volume and value of the Title I program shipments, respectively. Latin American countries were allocated about 33 percent and other African countries approximately 7 percent.

By September 1991, wheat and wheat flour allocations accounted for 47 percent of the volume of Title II allocations, followed by feed grains with 32 percent. Vegetable oils and rice accounted for 6-12 percent each, with other commodities accounting for lesser amounts. African countries were allocated more than half of the total value of Title II

shipments. Asian and Near East countries were allocated over 30 percent, and Latin American countries approximately 17 percent.

By August 1991, AID had signed agreements with 15 developing countries to provide more than 1.4 million tons of beans, corn, rice, soybean meal, tallow, and wheat under the new Title III. Bangladesh and Sri Lanka were allocated 45 percent of the volume of Title III shipments, while Bolivia, Haiti, Honduras, and Peru, were allocated 34 percent. Chad, Ghana, Guinea, Kenya, Mali, Mozambique, Senegal, Uganda, and Zaire were allocated approximately 20 percent.

A significant portion of U.S. food aid is comprised of donations from surplus Commodity Credit Corporation (CCC) stocks under authority of Section 416(b) of the Agricultural Act of 1949, as amended. The 1990 FACT Act amends section 416(b) to allow surplus CCC commodities to be used for the purpose of P.L. 480 Titles II and III, and the Food for Progress Program, with certain P.L. 480 restrictions and requirements also applying to section 416(b). As of August 1991, Section 416 transactions involved more than 1.3 million tons of corn, 382,196 tons of sorghum, 9,285 tons of buttermilk, 7,500 tons of butter, and 5,530 tons of nonfat dry milk.

The fiscal year 1992 P.L. 480 program has yet to be determined. The Administration has proposed a program level of \$1.4 billion, with \$464 million under Title I, \$627 million under Title II, and \$309 million under Title III. If approved by Congress, this would be a decrease of 8 percent in value and 5 percent in volume. However, actual tonnages shipped will depend on commodity prices and shipping costs during 1992.

The United States has consistently exceeded its 4.5-million-ton pledge to the Food Aid Convention (FAC), and is expected to do so again in 1991/92. The members of FAC, together, pledge a minimum of about 7.5 million tons of cereal aid annually.

EC Food Aid Likely To Rise

The FAO estimated that the EC shipped 2 million tons of cereal food aid in 1990/91. However, this total will likely be higher when final data become available. The EC is the second largest food aid donor after the United States, and all of its food aid is provided as grants. In 1991/92, deliveries by the EC are again expected to exceed its 1.7-million-ton pledge.

The EC food aid program is financed by the annual budget of the EC. In March 1991, the EC Commission announced a fiscal year 1991 food aid program of about 516 million ECU (almost \$620 million), slightly higher than 1990 but about the same volume. Also in March, the EC approved a com-

prehensive food aid program and food credit for the Soviet Union. A loan of 500 million ECU (\$600 million) will enable the Soviet Union to purchase EC agricultural goods over a maximum 3-year period. An agreement was to be signed between the EC and the USSR on the types and quantities of products to be purchased. In addition, 250 million ECU (\$300 million) will be made available for a food aid emergency program.

By June 1991, the EC had pledged almost 1 million tons of cereal food aid to Sub-Saharan Africa, mainly to Sudan, Mozambique, and Ethiopia. Almost one-fifth is pledged through triangular transactions and local purchases. In addition, in light of Africa's increasing food aid needs, the EC adopted a "Special Plan for Africa," that includes 400,000 tons of food worth 140 million ECU (\$168 million), with two-thirds going to the Horn of Africa.

Canada Shipped More Cereal In 1990/91 Because of Lower Prices

The FAO estimates that Canadian cereal aid shipments were 1.3 million tons in 1990/91, more than twice its minimum annual obligations of 600,000 tons and 40 percent more than 1989/90 shipments. Although Canada's food aid program was subject to severe budgetary constraints, the funds available bought more wheat because of lower international prices.

Canada's 1991/92 (April-March) food aid budget, estimated at C\$389 million (\$338 million), is about the same as 1990/91. Nearly half will be disbursed through multilateral channels such as the WFP, the Protracted Refugee Operation (PRO), and the IEF. The balance will be disbursed bilaterally, either as government-to-government assistance or through Canadian nongovernmental organizations. Canada's total cereal food aid is expected to remain near 1.3 million tons in 1991/92.

Most Canadian aid is government-to-government, with Asian countries receiving most, followed by Africa and Latin America. Wheat and wheat flour represented three-fourths of total shipments in 1990/91. Other commodities are vegetable oil, pulses, corn, skim milk powder, and fish. All food aid is provided as grants. As of June, Canada had pledged almost 300,000 tons of cereal aid to Sub-Saharan countries, with Mozambique, Ghana, Ethiopia, and Somalia the major beneficiaries.

Australian Cereal Shipments Up Slightly In 1990/91

Australia is one of the world's largest providers of food aid to developing countries, and all of its food aid is in the form of grants. Australia purchases its food aid commercially, almost exclusively from Australian suppliers, thereby providing support to its own producers. Traditionally, grains—mostly wheat and rice—make up the largest component of

Australian food aid, although beans and rolled oats were provided in 1990/91.

The FAO estimates that Australian cereal aid shipments for 1990/91 were 300,000 tons, the amount agreed to under the FAC. Despite a forecast lower wheat output in 1991/92, aid shipments are likely to be about 350,000 tons.

Although the 1990/91 funding level of A\$96.1 million (about \$72 million or 8 percent of Australia's aid budget) represented an 11-percent reduction from 1989/90, total cereal food-aid volume was up more than 10 percent because of lower wheat prices. In the 1990/91 program, food aid provided through bilateral programs was down 29 percent to A\$25 million (\$19 million). Bangladesh was the largest recipient of developmental food aid with 80,000 tons.

Emergency/refugee relief aid, to be used directly in feeding programs for refugees, and during emergency or disaster relief operations, was up 3 percent to A\$29 million (\$22 million). Wheat and flour, rice, vegetable oil, and high protein biscuits were provided to large-scale emergency/refugee relief operations in Ethiopia, Sudan, Mozambique, Malawi, Afghanistan, and Pakistan (for Afghanistani refugees) in 1990/91. Funding for food aid channelled multilaterally through the WFP was unchanged at A\$44 million (\$33 million).

In 1990/91, Australia provided almost 62,000 tons of cereal to Sub-Saharan Africa, with Mozambique (22,000 tons) and Ethiopia (19,000 tons) being the largest recipients. About one-fifth was in the form of triangular transactions. As of June 1991, Australia had pledged almost 26,000 tons of cereal to Sub-Saharan countries, with Tanzania being the top recipient.

Japan's Food Aid Up

The FAO estimates Japanese cereal aid shipments in trade year 1990/91 at 450,000 tons, almost 5 percent higher than in 1989/90 but below the 1987/88-peak of 561,000 tons.

In 1990, Japan became the world's largest donor of foreign aid when it provided about \$9 billion in ODA. The government of Japan pledged to increase its ODA to over \$50 billion over a 5 year period ending in 1992. The 1991 Japanese food aid budget (April 1990-March 1991) increased about 12 percent to 12.6 billion yen (about \$950 million). Since the mid-seventies, Japan has been the fourth largest food aid donor.

Traditionally, Japan purchases all the commodities it provides as food aid from other countries. It continues to buy its wheat and flour donations from the United States, its rice from Asian countries, and coarse grains from Zimbabwe, primarily for distribution to Africa. This year, however, with

a serious drought in Zimbabwe, the purchase of corn and sorghum from that country will decrease. Japan has pledged 126,000 tons of cereal to Sub-Saharan countries with Sudan, Ethiopia, and Mozambique the leading recipients.

Assessment of Cereal Aid Needs

For estimation purposes, the 40 countries included in this report have been divided into five regions: Central Africa, East Africa, North Africa, Southern Africa, and West Africa. Food aid needs are estimated on an aggregate basis for each region. Detailed assessments of food aid needs are provided for 19 countries (appendix 2). The selection was based on several criteria including emergency aid needs, extraordinary refugee situations, and regional interest. Major regional importers such as Algeria and Nigeria are also included.

Food Aid Needs

Food aid needs are determined by calculating the gap between target consumption and the availability of cereals for food use. Target consumption is derived from two alternative objective measures of per capita food use. Food availability depends upon production, commercial imports, and nonfood use allowances. The following provides a brief summary of the methods used. For a more detailed discussion of methodology, see appendix 3.

Food Use Targets

Needs are assessed against two alternative food-use targets. The objective of the first target—termed *status quo*—is to support average consumption in the near future close to that of the past. The most recent 5-year average is used to estimate per capita consumption and eliminate short-term fluctuations. The second target—termed *nutrition-based*—is derived from internationally recognized minimum caloric requirements. It is an estimate of the amount of cereals needed to satisfy cereal's share of each country's minimum caloric needs (see box 1).

Two food-use targets are used because it is difficult to define a single most appropriate target. The status quo measure embodies a "safety-net" criteria by supporting food use at recently achieved levels. The nutrition-based target assists comparisons of relative well-being. When status quo needs exceed nutrition-based needs, it is an indication of relatively high standards of well-being and a less urgent need to support consumption with food aid. When status quo needs are below nutrition-based needs, it is an indication of a more urgent need to support consumption with food aid, if it can be effectively absorbed by the local economy. It should be noted that all assessments are based on national aggregate data and may mask acute needs resulting from uneven food distribution within individual countries.

Food Availability

The calculation of cereal availability for human consumption is based on estimates of production, nonfood use (including exports), feed, seed, waste, beginning and ending stocks, and commercial imports. Production, is based on USDA forecasts for 1991/92 and ERS projections for 1992/93, assuming normal weather. Historical nonfood use for seed and waste are estimated using the FAO Food Balance Sheet series. Exports and feed use are USDA data. All nonfood-use items are projected using a 10-year per capita average.

Stocks

Two alternative estimates of ending stocks are employed in computing food aid needs. For 1991/92, ending stocks are based on USDA forecasts. For 1992/93, stocks are adjusted upward if projected production is equal to, or above, that of the previous year, and downward if production is forecast to decline. This approach attempts to incorporate stock-building behavior that would reduce year-to-year variability in aid needs resulting from supply shocks.

Commercial Imports

Commercial cereal import forecasts for 1991/92 and 1992/93 are made using vector autoregression models (VAR). These models simply project commercial imports based on historical movements in production and commercial imports, without accounting for future developments. The VAR approach does not allow for external shocks or policy changes which may seriously affect commercial import capacity or availability. Therefore, for some countries, actual import levels may differ significantly from projected ones. Depending on the country, such a change may substantially affect food aid needs.

Box 1

The Nutrition-Based Food-Use Target

The food-use targets used to determine nutrition-based cereal needs are derived from the minimum daily caloric intake standards recommended by the United Nations. These country-specific caloric requirements are based on numerous variables, including the age and sex distribution of the population and the physical size of the people. Caloric requirements also vary with assumed physical activity levels.

The caloric requirements used in this assessment are those necessary to sustain life with minimum food-gathering activity. They are comparable to the activity level for a refugee they do not allow for play, work, or any activity other than food gathering. In addition, the caloric requirements used in this report are regional averages rather than country specific.

Box 2

Guide to the Assessment Tables Entitled "Region/Country/Summary"

Production. Historical data to 1990/91. Forecasts for 1991/92-1992/93.

Commercial imports. Historical data to 1990/91. Forecasts for 1991/92-1992/93.

Food aid receipts. Historical data to 1990/91. Forecasts for 1991/92-1992/93.

Exports, feed and other nonfood use. Historical data to 1990/91. Targets for 1991/92-1992/93.

Ending stocks. Historical data to 1990/91. USDA estimates for 1991/92 and 1992/93 forecasts.

Availability net of food aid. Cereals available for human consumption before food aid. This is the sum of production, beginning stocks, and commercial imports, less the sum of exports, feed, other use, and ending stocks. Historical data to 1990/91, and forecasts for 1991/92 and 1992/93.

Food use, per capita food use. Historical data to 1990/91, with status quo and nutrition-based targets for 1991/92-1992/93.

Population. Historical data to 1990/91. Forecasts for 1991/92-1992/93.

Food aid need without stock adjustment. 1991/92-1992/93 forecasts based on status quo and nutrition-based targets with stocks held constant at the level of 1990/91 ending stocks.

Aggregate Food Aid Needs and Availabilities

Cereal food aid needs in 1991/92 for 40 African countries are somewhat higher than historical receipts despite an anticipated recovery in total cereal production. Needs are greatest in heavily populated West Africa, followed closely by East and Southern Africa where poor weather and ongoing civil conflict have resulted in large-scale population movements and severely curtailed food supplies. In North Africa commercial imports are forecast to increase.

For those countries requiring food aid in 1991/92, an estimated 6 million tons of cereals would be needed to maintain per capita consumption at the 1986-90 average (table 7).

Table 7. Summary of forecast cereal food aid needs

	Production	Commercial imports	Food aid needs					
			----- Status quo -----			----- Nutrition-based -----		
			Food use	With stock adjustment	Constant stocks	Food use	With stock adjustment	Constant stocks
-----Million tons-----								
Central Africa								
1991/92	2.30	0.46	2.31	0.15	0.17	2.66	0.50	0.51
1992/93	2.32	0.56	2.39	0.13	0.14	2.74	0.48	0.49
East Africa								
1991/92	18.40	0.68	18.49	1.95	2.46	20.19	3.97	4.30
1992/93	20.00	0.68	19.10	2.54	1.76	20.86	4.60	3.58
Southern Africa								
1991/92	7.89	0.82	8.35	1.30	1.56	9.34	2.30	2.57
1992/93	8.61	0.87	8.57	1.42	1.22	9.59	2.44	2.22
West Africa								
1991/92	20.58	2.60	21.29	2.71	2.44	23.17	4.59	4.32
1992/93	21.34	2.75	21.95	2.53	2.32	23.89	4.47	4.28
North Africa								
1991/92	24.94	16.72	22.09	0.00	0.00	16.98	0.00	0.00
1992/93	24.19	17.63	22.63	0.00	0.15	17.38	0.00	0.00
Sub-Saharan Africa								
1991/92	49.17	4.56	50.43	6.11	6.61	55.36	11.36	11.70
1992/93	52.28	4.86	52.01	6.62	5.44	57.05	11.99	10.57
Africa total								
1991/92	74.11	21.28	72.53	6.11	6.61	72.73	11.36	11.70
1992/93	76.37	22.49	74.63	6.62	5.60	74.46	11.99	10.57

However, to meet the United Nation's (U.N.) minimum caloric standard would require 11.4 million tons. Both estimates significantly exceed the 3.5 million tons of food aid received by these countries in 1990/91.

In Africa, cereals typically account for more than 40 percent of all calories consumed and comprise the bulk of all international food aid. According to the FAO, global cereal food aid in 1990/91 was 11.2 million tons and is projected to increase to 12 million tons in 1991/92. Because these countries typically receive about 30 percent of world food aid shipments, aid available to meet their needs in 1991/92 is estimated at 3.6 million tons, significantly below projected needs.

Despite some discrepancy between estimated needs and availabilities for 1991/92, the results do not necessarily constitute a recommendation for expanded cereal food aid. The estimates are one measure intended for use with information provided by agencies involved in food aid delivery. Other essential information includes logistical (e.g. port facilities, fuel, trucks) and economic constraints to the delivery and absorption of aid, acute needs arising from uneven food distribution within countries, and emergency needs.

These estimates were derived from methods applied consistently across all countries and permit comparison of current aggregate and regional aid levels relative to alternative consumption benchmarks (status quo and nutrition-based).

Status Quo and Nutrition-Based Estimates

The status quo estimates indicate the amount of cereal aid needed to support recently achieved levels of per capita consumption. The nutrition-based estimates indicate the aid needed to support per capita cereal availability at a level consistent with the minimum caloric standards set by the FAO. Comparison of the two measures, either in aggregate or for individual countries or regions, therefore, indicates the need to raise or lower current aid in order to achieve rough nutritional adequacy. Where estimated nutrition-based needs exceed status quo needs by relatively large margins, there is a need for additional aid to move closer to nutritional adequacy. In cases where nutrition-based needs are below status quo needs, some reduction in aid would still be consistent, on average, with maintaining nutritional adequacy.

Care must be taken in relying on the nutrition-based estimates as a basis for determining aid allocations, particularly when they are significantly higher than the status quo assessments. Because the nutrition-based estimates are derived from a consumption target, rather than historical aid, they may exceed what is logistically feasible or economically desirable. On the other hand, status quo needs, by definition, tend to support levels of cereal availability that have been absorbed by a nation's economy and infrastructure in the past and therefore could be expected to be absorbed in the future. However, in some cases, primarily when large production shortfalls boost import and aid needs well above historical maximums, even status quo needs may be too large to be feasible.

Table 8. Historical cereal food aid receipts and projected needs for 1991/92 and 1992/93

Region/country	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91 1/	1991/92		1992/93	
							SQ	NB	SQ	NB
-----1,000 tons-----										
Central Africa	112	62	141	131	105	108	153	495	132	483
East Africa	1,864	1,588	1,776	1,211	1,389	1,774	1,947	3,969	2,540	4,596
Ethiopia	770	514	1,052	446	912	897	740	2,044	737	2,086
Kenya	139	107	171	90	44	74	113	265	346	503
Somalia	161	154	73	176	82	62	347	350	202	205
Sudan	690	725	410	410	301	664	341	336	604	600
Tanzania	66	55	36	63	19	10	269	0	477	167
Southern Africa	609	665	968	985	794	714	1,298	2,303	1,415	2,438
Angola	53	69	108	116	77	68	106	302	111	312
Malawi	5	10	109	167	227	123	0	68	242	327
Mozambique	362	244	506	506	410	467	507	818	426	742
Zambia	85	116	102	112	33	20	229	381	306	463
Zimbabwe	0	38	14	0	0	20	152	172	134	154
West Africa	565	680	538	547	496	926	2,707	4,590	2,534	4,469
Ghana	66	100	88	88	77	123	172	14	170	7
Cote d'Ivoire	1	0	1	19	0	59	191	146	205	157
Liberia	2	23	34	33	28	138	205	257	129	182
Nigeria	0	0	0	0	0	0	1,082	2,655	1,023	2,644
Senegal	80	109	53	67	58	32	237	147	209	116
North Africa	2,024	2,988	2,405	1,961	2,159	2,210	0	0	0	0
Algeria	4	4	5	39	0	0	0	0	0	0
Egypt	1,799	1,977	1,646	1,433	1,469	1,695	0	0	0	0
Morocco	142	611	340	205	212	184	0	0	0	0
Tunisia	80	396	415	284	479	331	0	0	0	0
Sub-Saharan Africa (36 countries)	3,150	2,996	3,424	2,874	2,785	3,522	6,105	11,356	6,621	11,987
Africa total (40 countries)	5,175	5,984	5,829	4,835	4,943	5,733	6,105	11,356	6,621	11,987
Total food aid Contributions	10,949	12,601	13,503	10,249	11,390	11,180	NA	NA	NA	NA
Share to Sub-Saharan Africa(%)	28.8	23.8	25.4	28.0	24.5	31.5	NA	NA	NA	NA
Share to Africa total(%)	47.3	47.5	43.2	47.2	43.4	51.3	NA	NA	NA	NA

1/ Estimated.

Notes: SQ = Status quo; NB = Nutrition-based; projected 1991/92 and 1992/93 needs with stock adjustment.

Sources: FAO and ERS estimates.

Analyzing Assessed Needs for 1991/92

Table 8 summarizes the forecast cereal food aid needs for 1991/92 and 1992/93 for the five major African regions included in this report. For most regions and countries, nutrition-based needs exceed status quo needs, with relatively large differences in Central and West Africa. Nutrition-based needs are smaller than status quo needs in some countries, such as Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Mauritania, Niger, Senegal, and Tanzania.

Regional shares of food aid receipts in 1990/91 and projected status quo and nutrition-based need shares for 1991/92 are illustrated in figure 5. These charts indicate that the distribution of aid receipts in 1990/91 is very similar to the pattern of status quo needs estimated for 1991/92 in East and Central Africa. However, historical food aid receipts were substantially lower than forecast food aid needs for West and Southern Africa. The distribution of the 1991/92

nutrition-based estimates is similar to that of the status quo forecasts. It indicates relatively more need in some regions compared to 1990/91 receipts, particularly in West and Southern Africa, and certainly less in North Africa, where both status quo and nutrition based needs are zero.

Because of disparities in population size across Africa, the relative intensity of needs can be better assessed on per capita terms (table 9). In all regions, with the exception of North Africa, nutrition based, per capita needs, exceed status quo per capita needs in 1991/92, by a substantial margin. The greatest regional needs lie in Southern Africa at 19 and 34 kilograms, respectively (figure 6). At the country level, Liberia has the largest per capita needs estimated at 68 kilograms.

In other regions, 1991/92 per capita nutrition-based needs are high relative to both status quo needs and 1990/91 receipts. For the 36 Sub-Saharan countries assessed in this

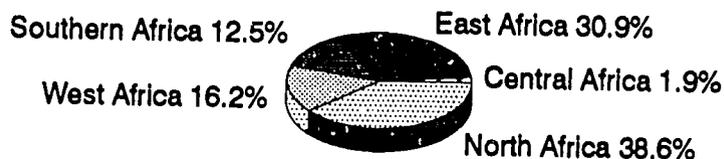
Table 9. Per-capita food aid needs by region: 1991/92-1992/93

Region	Food aid needs 1991/92				Food aid needs 1992/93			
	Status quo		Nutrition-based		Status quo		Nutrition-based	
	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita
	1,000 tons	-Kg-	1,000 tons	-Kg-	1,000 tons	-Kg-	1,000 tons	-Kg-
Central Africa	153	3	495	10	132	2	483	9
East Africa	1,947	11	3,969	23	2,540	14	4,596	26
Ethiopia	740	14	2,044	39	737	13	2,086	38
Kenya	113	4	265	10	346	13	503	19
Somalia	347	43	350	44	202	22	205	23
Sudan	341	13	335	13	604	23	600	23
Tanzania	269	10	0	7	477	17	167	6
Southern Africa	1,298	19	2,303	34	1,415	21	2,438	35
Angola	106	12	302	34	111	12	312	35
Malawi	0	0	68	8	242	24	327	33
Mozambique	507	34	818	55	426	28	742	49
Zambia	229	29	381	48	306	34	463	51
Zimbabwe	152	14	172	16	134	12	154	14
West Africa	2,707	12	4,590	21	2,534	11	4,469	20
Ghana	172	11	14	1	170	11	7	0
Cote d'Ivoire	191	15	146	11	205	16	157	12
Liberia	205	68	257	86	129	43	182	61
Nigeria	1,082	9	2,655	22	1,023	8	2,644	21
Senegal	237	30	147	18	209	26	116	15
North Africa	0	0	0	0	0	0	0	0
Algeria	0	0	0	0	0	0	0	0
Egypt	0	0	0	0	0	0	0	0
Morocco	0	0	0	0	0	0	0	0
Tunisia	0	0	0	0	0	0	0	0
Sub-Saharan Africa (36 countries)	6,105	12	11,356	22	6,621	13	11,987	23
Africa total (40 countries)	6,105	10	11,356	18	6,621	10	11,987	19

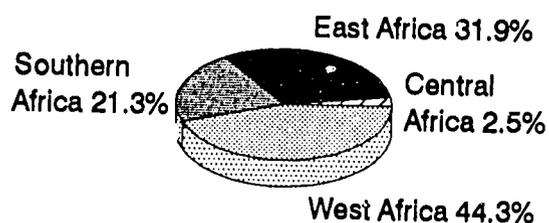
1/ Regional totals are aggregated from individual-country results.

Figure 5
Regional Shares of Food Aid Receipts in 1990/91
and Projected Shares in 1991/92

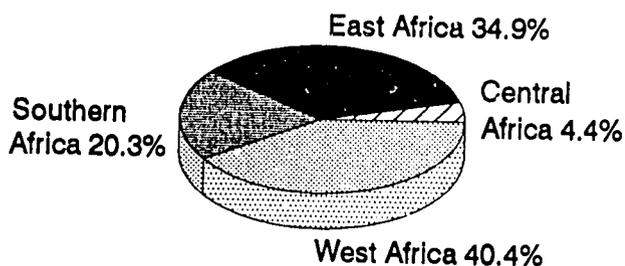
1990/91 receipts = 5.7 million tons



1991/92 status quo
forecasts = 6.1 million tons



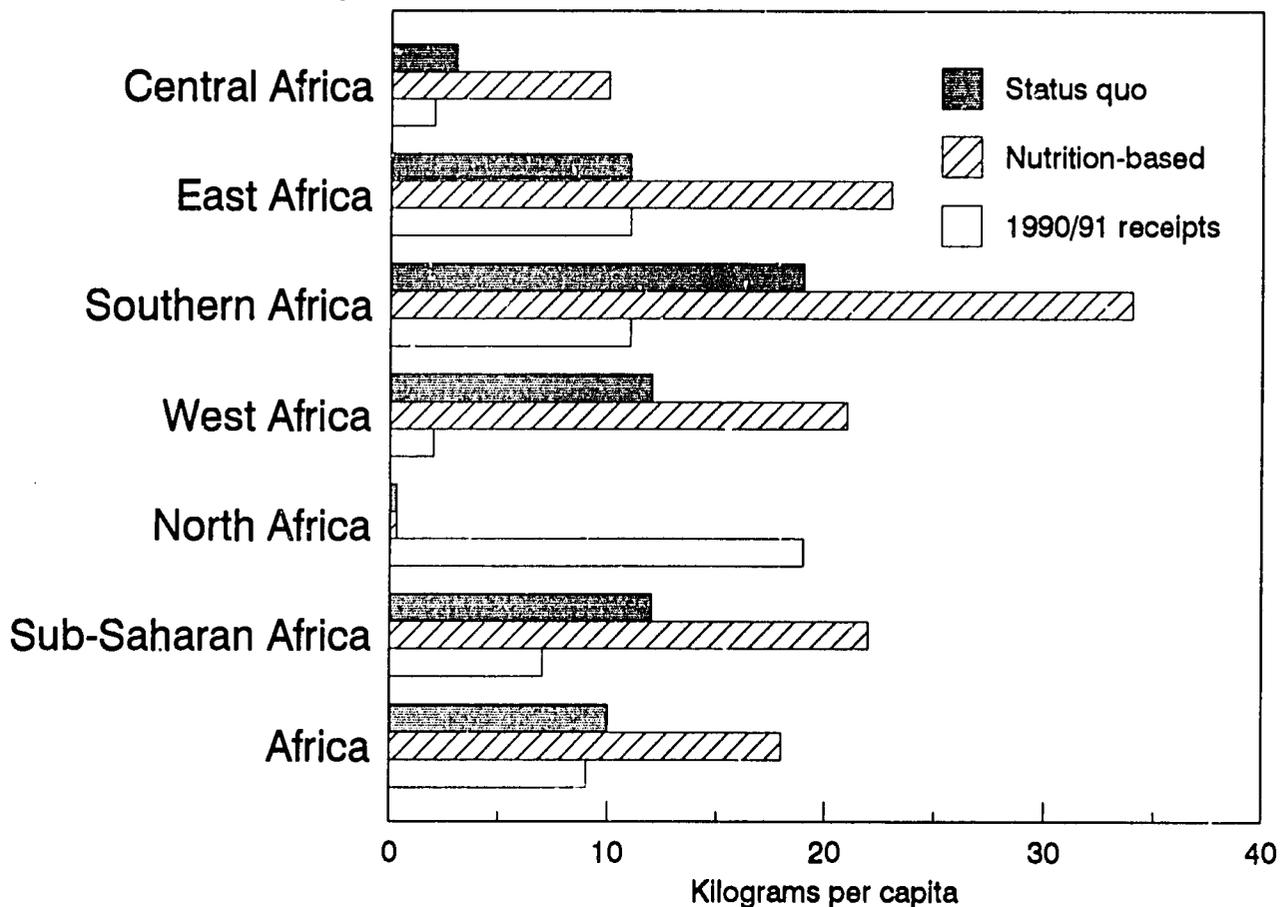
1991/92 nutrition-based
forecasts = 11.4 million tons



Note: No needs in North Africa.

Figure 6

Estimated Per Capita Food Aid Needs, 1991/92



report, nutrition-based per capita food aid needs are 45 percent above those of status quo estimates, with the largest differences in West, Southern and East Africa. Such disparities suggest the need for additional allocations, if attainable.

Projected Needs for 1992/93

The projections of needs for 1992/93 are also summarized in tables 7 and 8. They indicate a nominal increase in food aid needs by the 40 countries covered in the report. An increase in both status quo and nutrition-based needs are projected in East Africa with stock adjustment, but a decline when stocks are held constant. In Central Africa, both need indicators are down somewhat; in West Africa, estimated needs are down marginally. In the Southern African region, projected needs increase with stock adjustment, but decline sharply with constant stocks, 22 percent and 14 percent, respectively (SQ and NB).

The 1992/93 projections are based on important assumptions regarding weather, policy, and macroeconomic events and do not account for potential emergency needs, such as refugee movements which are common in Sudan, Ethiopia, and Mozambique. Because of the volatility of these vari-

ables, particularly weather and often exogenous factors, e.g. oil and commodity prices, actual needs for individual countries or regions could be significantly higher or lower than these projections.

The 1992/93 projections show many of the same patterns as the 1991/92 estimates. Comparisons suggest many similar adjustments to align assessed needs with availabilities. Projected status quo needs are high relative to nutrition-based needs in Tanzania and many countries in West Africa, including Senegal, Niger, and Cote d'Ivoire.

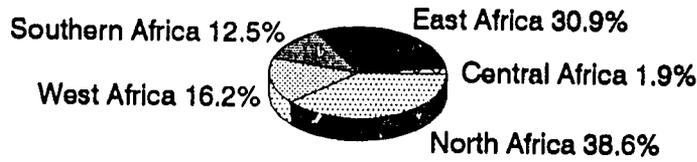
Figure 7 contrasts regional needs for 1992/93 with 1990/91 receipts. As was the case with the 1991/92 estimates, projected nutrition-based needs tend to be large relative to the status quo, and 1990/91 receipts in all regions except North Africa where both status quo and nutrition-based needs are zero.

The comparison of projected 1992/93 per capita needs in figure 8 indicates that per capita needs are relatively small in Central Africa, and that large gaps between per capita nutrition-based needs and the status quo persist in the other Sub-Saharan regions.

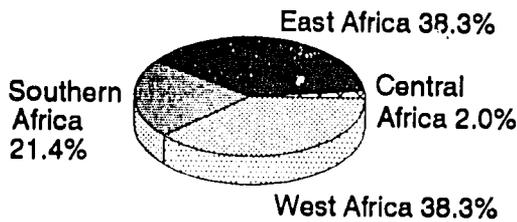
Figure 7

Regional Shares of Food Aid Receipts in 1990/91 and Projected Shares in 1992/93

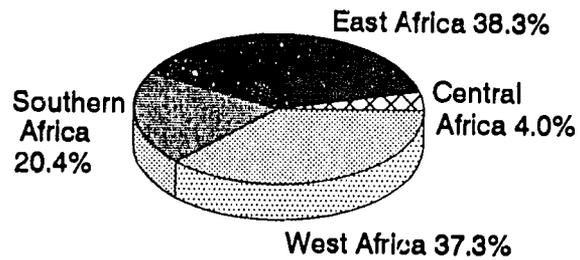
1990/91 receipts = 5.7 million tons



1992/93 status quo forecasts = 6.6 million tons



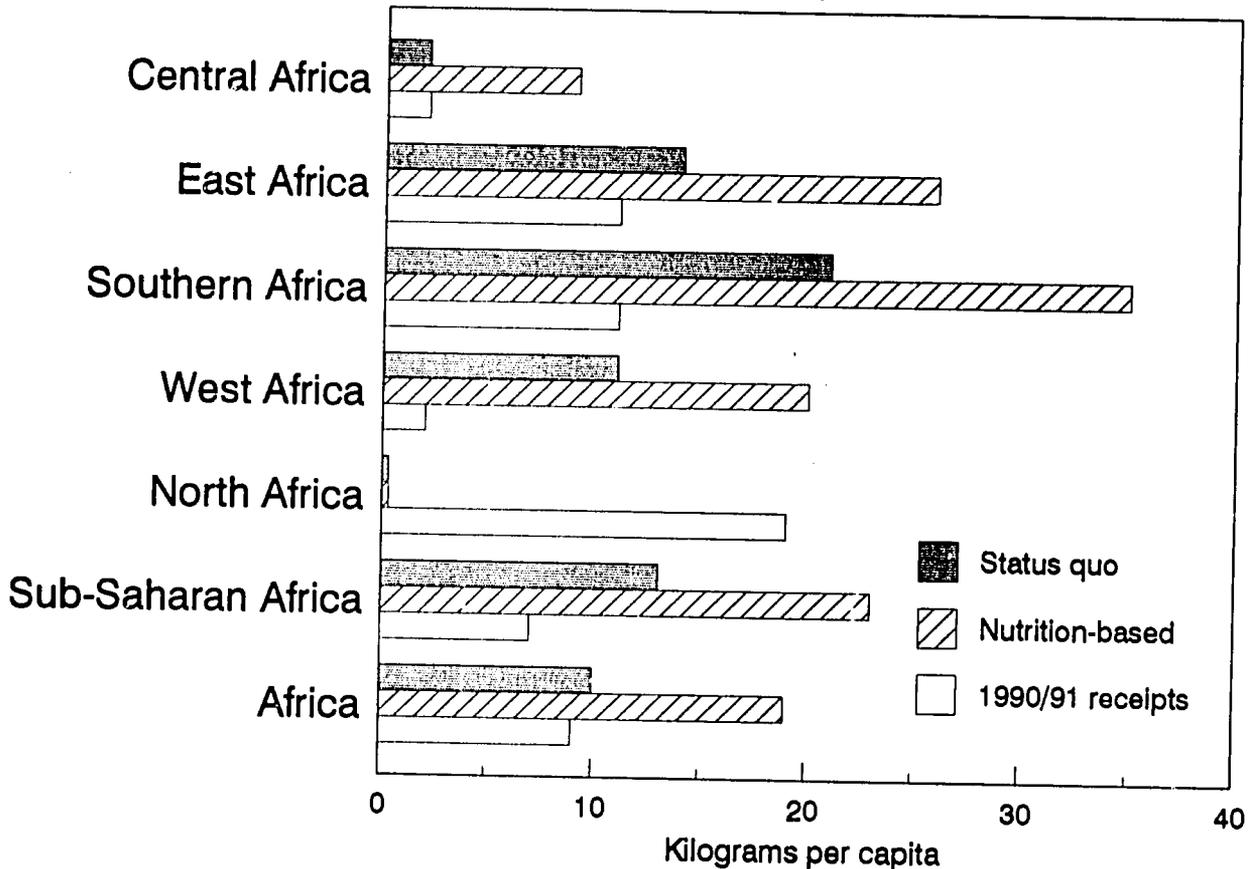
1992/93 nutrition-based forecasts = 12 million tons



Note: No needs in North Africa

Figure 8

Estimated Per Capita Food Aid Needs, 1992/93



North Africa

Total cereal production in the region (including Algeria, Egypt, Morocco, and Tunisia) was a record 20.8 million tons in 1990/91 and is estimated nearly 20 percent higher in crop year 1991/92. There were larger cereal harvests in all countries, especially Algeria, where favorable weather produced a record 2.4 million tons, up 60 percent from 1990/91. Egypt's 1991/92 cereal output including rice was estimated up 8 percent, to 12.4 million tons. After a below-average harvest in 1990/91, Moroccan cereal output is estimated at nearly 8 million tons, a result of good rains in the

main wheat growing areas. Tunisia's 1990/91 cereal harvest rebounded from the drought of 1989/90 and is estimated to have increased another 35 percent to 2.2 million tons, a result of good weather and price incentives. At the end of 1990/91, cereal stocks were either unchanged or higher in all countries, except Morocco.

Food security in North Africa is heavily dependent on each country's ability to import cereals. All have a limited arable land base and rapid population growth. Morocco, Algeria, and Tunisia are subject to erratic rainfall patterns and wide production swings. Only Egypt, with its extensive perennial irrigation, is somewhat insulated from this weather-induced variability. However, since 1987, Egypt has become increasingly concerned about its supply of irrigation water originating from the Nile river. Successive droughts and unabated civil disturbances in the watershed areas pose a threat to areas downstream. Poor rains in the Ethiopian highlands have lowered the availability of water behind the Aswan High Dam in some years. Civil war in the Sudan prevents the completion of the Jongeli Canal, which would have diverted water from marshes and increased the volume of the Nile. Another threat to Egypt's water supply is the development of large scale irrigation projects, in the upstream countries of Uganda, Kenya, Rwanda, Burundi, Tanzania, and Zaire. Big irrigation projects, especially those close to Lake Victoria, would divert water from the tributaries of the Nile and increase Egypt's vulnerability.

Figure 9
Commercial Cereal Imports: North Africa
1983/84-1992/93

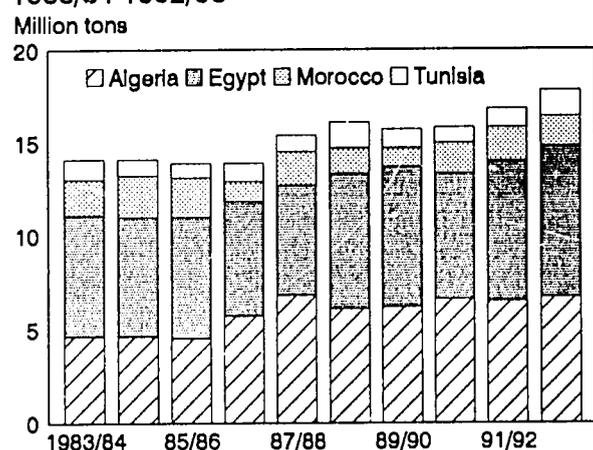


Table 10. North Africa regional summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----										---1,000 tons---		
1981/82	12,914	11,794	2,535	32	4,828	2,855	3,825	16,443	18,978	90	210	---	---
1982/83	15,364	10,926	2,114	27	6,838	3,205	2,833	17,213	19,326	93	208	---	---
1983/84	13,622	14,034	2,383	54	7,326	3,310	2,171	17,628	20,011	95	210	---	---
1984/85	15,590	14,175	2,662	16	9,589	3,518	1,442	17,371	20,033	98	205	---	---
1985/86	17,685	13,899	2,024	92	9,845	3,559	1,674	17,856	19,880	100	198	---	---
1986/87	19,220	13,946	2,988	105	10,999	3,906	2,333	17,496	20,485	103	199	---	---
1987/88	17,060	15,399	2,405	168	10,973	3,644	2,485	17,522	19,927	106	188	---	---
1988/89	18,478	16,088	1,961	300	12,056	3,946	2,614	18,134	20,095	109	185	---	---
1989/90	19,521	15,645	2,159	32	12,730	4,095	2,370	18,553	20,711	111	186	---	---
1990/91	20,818	15,801	2,211	85	13,056	4,180	2,573	19,095	21,306	114	187	---	---
Status quo requirement forecasts:													
1991/92	24,944	16,722	----	101	12,867	4,122	2,902	24,247	22,091	117	189	0	0
1992/93	24,089	17,626	----	104	13,180	4,220	2,096	25,017	22,628	120	189	0	153
Nutrition requirement forecasts:													
1991/92	24,944	16,722	----	101	12,867	4,122	2,902	24,252	16,978	117	145	0	0
1992/93	24,089	17,626	----	104	13,180	4,220	2,096	25,022	17,383	120	145	0	0

--- = Not applicable.

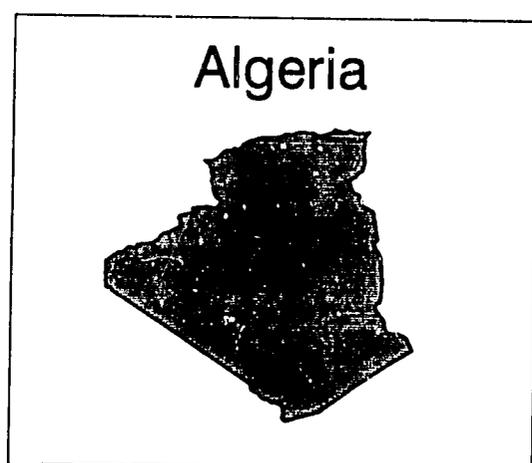
1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

Faced with external imbalances and deteriorating creditworthiness during the 1980's, all countries in the region adopted stabilization and adjustment programs aimed at strengthening balance of payments and promoting economic efficiency. Algeria, Morocco, and Tunisia have pursued vigorous reforms, while Egypt's program has followed a more gradual path. Foreign exchange constraints have lessened in Morocco and Tunisia due to reforms and fortuitous external developments. Egypt's foreign exchange availability has also improved, due to substantial debt relief and additional economic assistance afforded by industrialized powers and oil-rich Gulf states as a reward for Egypt's prominent role in the Persian Gulf War.

Algeria's position remains more tenuous as a result of political unrest in May and June of 1991. The declared state of siege and the indefinite postponement of elections create a wait and see attitude among investors, who are essential to finance the privatization of public enterprises and start new enterprises.

The region's 1991/92 commercial imports of cereals are forecast at 16.7 million tons, up 6 percent from the previous year (figure 9). The increase is paced by Tunisia, which had strong growth in imports compared to a marginal increase in Egypt, and by smaller-than-expected increases for Morocco and Algeria. Projections for 1992/93 show further growth in imports, primarily because of better economic growth in Egypt, the region's largest economy.

Status quo and nutrition-based food aid needs for the region are forecast at zero for the next 2 crop years (table 10). These data are considerably below historical receipts but are plausible, given the record domestic production and the higher commercial import capacity.



Lower oil prices following the Gulf War and the unstable political and social situation worked to undermine economic progress in Algeria. The government faces increasing social unrest as inflation soars, the dinar is heavily devalued, unemployment increases, revenues fall, and foreign debt becomes more difficult to service. The evolution of the Algerian economy from 1985-90 demonstrated its vulnerability to exogenous developments. Foreign exchange availability and droughts have determined the pattern of real GDP growth in recent years.

Algeria is in transition from socialism to democratic capitalism. From independence in 1962 until mid-1986, it was a centrally planned economy, pursuing a development strategy of import substitution, industrialization, and collectivized agriculture. Large oil and gas exports generated substantial earnings which were mostly invested in industrial and infrastructural projects, fueling rapid economic growth and development. During the 1970's, average annual GDP growth was 6.6 percent. Per capita income rose from \$180 in 1962 to \$2,284 in 1988, placing Algeria in the ranks of middle-income developing countries.

In the 1980's, the average-annual GDP growth in constant prices was 3.5 percent. Investment, as a percent of GDP, fell from an annual average of 46 percent for the 1973-80 period, to 34 percent in the 1981-88 period. Algeria's external debt rose from \$18 billion in 1980 to \$27 billion by 1990. Large current account deficits appeared in the mid-eighties and Algeria's international creditworthiness deteriorated, as indicated by the ratio of external debt to export earnings. In 1980 that ratio was 129 percent, by 1989 it was 281 percent. Similarly, the debt-service ratio moved from 26 percent in 1981 to 95 percent in 1989. The deterioration in the ability to borrow to finance current account gaps will probably force import reductions and slow economic growth.

The decisive move toward democracy and a market economy occurred in 1986 when a 49-percent decline in oil prices triggered a series of radical policy and institutional reforms. These included: the drafting of a constitution guaranteeing individual rights; the sanctioning of free, multi-party elections; trade and price liberalization; the granting of autonomy to all but eight public enterprises; and the dissolution of the state farming sector which had controlled most farmland. These reforms grew out of dissatisfaction with economic performance in the early eighties, especially that of the state agricultural sector. Prior to the mid-eighties, oil surpluses had masked the ill effects of central planning.

Since the 1986 reforms, economic and living conditions have generally worsened. Per capita consumption has fallen, unemployment has risen, the inflation rate has increased, and food imports have grown. The combination of rapid population growth (3.1 percent per annum), massive open un-

Table 11. Algeria summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	2,186	3,371	5	0	1,119	362	456	3,805	3,810	19	196	---	---
1982/83	1,525	4,075	2	0	1,067	391	337	4,261	4,263	20	212	---	---
1983/84	1,289	4,565	7	0	1,035	401	337	4,418	4,424	21	213	---	---
1984/85	3,051	4,643	2	0	1,729	521	405	5,376	5,378	21	251	---	---
1985/86	3,089	4,532	4	0	1,843	521	405	5,257	5,261	22	238	---	---
1986/87	2,404	5,738	4	0	2,396	613	260	5,278	5,282	23	232	---	---
1987/88	2,076	6,776	5	0	2,360	612	260	5,880	5,885	23	251	---	---
1988/89	1,037	6,111	39	0	2,440	456	108	4,404	4,442	24	184	---	---
1989/90	1,606	6,175	0	0	2,574	524	219	4,572	4,572	25	184	---	---
1990/91	1,492	6,550	0	0	2,660	536	420	4,645	4,645	26	182	---	---
Status quo requirement forecasts:													
1991/92	2,382	6,459	---	0	2,704	576	420	5,560	5,427	26	206	0	0
1992/93	2,130	6,662	---	0	2,778	592	264	5,579	5,575	27	206	0	153
Nutrition requirement forecasts:													
1991/92	2,382	6,459	---	0	2,704	576	420	5,560	2,306	26	88	0	0
1992/93	2,130	6,662	---	0	2,778	592	264	5,579	2,369	27	88	0	0

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

employment (22 percent in 1988), and falling cereal grain self-sufficiency (from 91 percent in 1962 to 18 percent in 1990) has created political and economic strains.

In May 1991, opposition parties accused the ruling party of gerrymandering electoral districts and organized a general strike. The strike was accompanied by civil unrest and created a political crisis. General elections originally scheduled for late June were indefinitely postponed and a state of emergency was declared.

Agricultural production in Algeria is constrained by a limited arable land base, 7.5 million hectares or 3 percent of total area, and highly erratic rainfall patterns. On average, rainfall is more than 10 percent below trend in 4 out of 10 years. Most production is concentrated on a narrow coastal littoral that receives 500-800 millimeters of rainfall per year. The government has attempted to lessen the negative impacts of droughts by investing in irrigation.

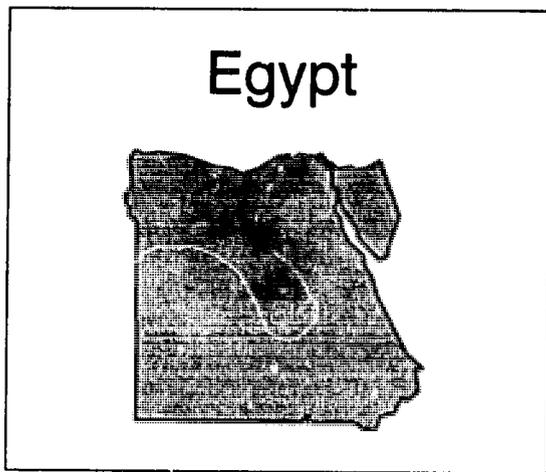
Twenty-two percent of Algeria's population, 25 million in 1989, is rural and directly dependent on agriculture for its livelihood. The most important crops are wheat and barley, which cover about two-thirds of the cultivated area. Cereal production has been erratic, partly due to weather. Livestock production, in contrast, has been on an upward trend. Red meat and poultry output increased dramatically in the 1970's but tapered off in the 1980's. Orchard crops, such as wine grapes, dates, citrus, and olives, all traditional exports, have either declined or remained steady. Vegetable and pulse output have shot up dramatically from very small bases.

Algerian agricultural growth and import capacity will hinge on the interplay of petroleum earnings, devaluation effects, changes in trade regimes, investments, institutional reforms, and weather. Algeria will remain a large net agricultural importer, especially for grains, oilseeds, and dairy products. Its agricultural imports averaged \$2.3 billion in 1986-87 and \$3.1 billion in 1989. The EC, Argentina, Brazil, Canada, Cuba, Turkey, Thailand, and the United States have been its main suppliers.

Cereal output in the 1991/92 crop year was estimated at a record 2.4 million tons, due to exceptional rain and good growing conditions (table 11). Wheat production is estimated at 1.2 million tons, up 58 percent from the previous year. About 75 percent of the wheat is durum. Barley output is estimated at 1.1 million tons, substantially higher than the 700,000 of 1990. Rice, corn, and oats are of minor importance.

Serious organizational and material constraints exist that will have to be overcome for production to surpass the 1991/92 record. Uncertainties still abound from the decollectivization of agriculture, namely some 16,000 disputed land allocations, and the unclear nature of rules governing transfer and leaseholder rights. In addition, rural credit is especially tight due to high default rates and unfamiliarity with the new banking system. Fertilizer is in good supply but prices are higher, reducing usage. Equipment and spare parts shortages are prevalent and constrain yield performance.

As a result of the large harvest in 1991/92 and improved foreign exchange earnings, a windfall, stemming from the escalation of oil prices during the Persian Gulf war, commercial imports are estimated to be virtually double, reducing food aid needs to zero.



Egypt's economic performance in the 1980's deteriorated sharply compared to that of the 1970's. From 1975 to 1980, GDP, fueled by large increases in foreign receipts (especially oil), worker remittances, Suez Canal tolls, tourism, and foreign aid, grew at 8 percent per annum in real terms. Then the oil market degenerated and merchandise exports fell from a peak \$3.9 billion in 1981 to a decade low of \$2.6 billion in 1986. This reduced purchasing power and cut imports from \$7.9 billion to \$7.1 billion. Between 1981 and 1986, overall economic growth averaged 5.9 percent in real terms. This strong performance came at the expense of worsening balance-of-payments deficits and increased foreign borrowing as a means of financing the growing resource gap. Deficits averaged \$1 billion per year in the 1970-79 period and \$1.5 billion in the 1980-86 period.

From late 1986 to 1991, Egypt implemented a series of reforms intended to restore growth, balance external accounts, and regain international creditworthiness. These included large hikes in administered prices; a small increase in interest rates; a reduction in the number of exchange rates; tariff reform; the imposition of a general sales tax; a partial liberalization of agriculture; and sharp cuts in fertilizer, petroleum, and electricity subsidies. The impact of the reforms has been varied. The cut in subsidies helped reduce the fiscal deficits. However, weaknesses in production, credit, and labor markets persisted due to policy interventions and institutional rigidities. For example, the fiscal deficit, as a percentage of GDP, fell from 18 percent in 1986/87 to 13 percent in 1990/91. Real GDP growth was 3.2 percent in 1988 but declined to 1 percent in 1989. The current account deficit improved significantly from \$1.8 billion in 1987 to \$245 million in 1988, due to increased merchan-

disc exports. However, it deteriorated in 1989 to \$1.1 billion as a result of substantially higher debt service payments. Inflation increased to 21 percent in 1989. Lastly, the combination of scarce foreign exchange and limited investment funds made the importation of inputs difficult and throttled economic activity and employment creation.

Egypt is a surplus labor economy, and this fact shapes social and economic policy. Migration and overstaffing in the public sector have been the two means of dealing with this potentially explosive problem. A population growth of 2.5 percent per annum and a free university system produce many skilled workers each year, which the private sector has been unable to absorb. The public sector is therefore the employer of last resort, accounting for one-third of the labor force. Partly because of this, an estimated 4 million Egyptians (7 percent of the population) have migrated, mostly to oil-producing Gulf states, and have repatriated an average of \$3.3 billion per year. The Persian Gulf War initially sharply diminished this flow and led to the return to Egypt of several hundred thousand workers and their families, placing an enormous strain on the economy. However, the reconstruction of Kuwait and the Kuwaiti and Saudi Arabian preference for Egyptian workers should help alleviate this problem in the medium term. In the long run, smaller family size and steady economic growth offer more permanent solutions.

Although Egypt has a limited arable land base (3 percent of total area), its soils are fertile and virtually all are under perennial irrigation, allowing for intensive production. Double and triple cropping are possible in most areas. Mechanization is generally limited to land preparation, but use of chemical inputs and improved seeds is high. In 1988, agriculture employed 36 percent of the labor force and contributed 20 percent of GDP. Egypt's principal crops are wheat, cotton, berseem (a clover used for animal fodder), rice, and sugar, which occupy about 80 percent of cultivated land. The remainder is used mainly for fruits and vegetables.

The main goal of the Egyptian Government has been to increase output, especially of cotton, wheat, rice, and sugar. These are either important items in the diet or, as in the case of cotton, a major source of foreign exchange and an essential input to the large domestic textile industry. Egypt's agricultural imports averaged \$4.1 billion a year for the 6-year period 1984-89, with the U.S. share roughly 20 percent of the market.

The 1990 Persian Gulf War and Egypt's prominent role in it led the United States and Saudi Arabia to forgive Egypt a total of \$15 billion of its foreign debt, which totaled \$49 billion at the end of 1989. The debt writeoff, plus other balance of payments support, reduced Egypt's interest payments from \$1.7 billion in 1989 to less than \$1 billion in 1990 and

Table 12. Egypt summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	7,424	5,187	1,957	22	2,448	1,491	2,509	8,329	10,285	43	237	---	---
1982/83	7,714	4,749	1,816	21	4,255	1,557	1,915	7,224	9,040	45	203	---	---
1983/84	7,883	5,498	1,783	50	4,708	1,734	1,490	8,315	10,097	46	221	---	---
1984/85	7,794	6,373	1,951	16	6,237	1,784	570	7,050	9,001	47	192	---	---
1985/86	7,852	6,462	1,799	92	5,750	1,703	340	6,999	8,798	48	183	---	---
1986/87	8,434	6,103	1,977	105	6,230	1,697	220	6,624	8,602	49	174	---	---
1987/88	8,807	5,895	1,646	108	5,849	1,658	920	6,388	8,033	51	158	---	---
1988/89	9,240	7,150	1,433	100	6,773	1,861	920	7,656	9,089	52	175	---	---
1989/90	9,890	7,514	1,469	32	7,075	1,979	883	8,356	9,824	53	184	---	---
1990/91	11,465	6,736	1,696	85	7,419	2,077	883	8,620	10,316	55	189	---	---
Status quo requirement forecasts													
1991/92	12,422	7,478	---	71	7,169	2,009	900	10,633	9,859	56	176	0	0
1992/93	12,580	8,050	---	73	7,343	2,058	907	11,149	10,099	57	176	0	0
Nutrition requirement forecasts													
1991/92	12,422	7,478	---	71	7,169	2,009	900	10,638	8,799	56	157	0	0
1992/93	12,580	8,050	---	73	7,343	2,058	907	11,154	9,013	57	157	0	0

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

1991. This, plus exchange and interest rate reforms, are expected to pave the way for a significantly higher rate of economic growth than foreseen before the Gulf conflict.

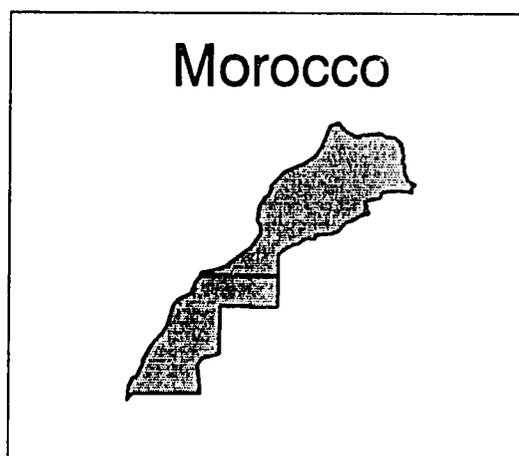
Cereal output in 1991/92 is estimated at 12.4 million tons, up 8 percent from 1990/91 (table 12). Wheat output is estimated at 4.8 million tons in 1991/92, the fifth consecutive record crop. Continued hikes in wheat producer prices and generous input subsidies led to expanded wheat area and the wide adoption of modern technology, especially improved seed varieties and mechanical seeders. These, along with fertilizers, have led to substantial yield gains, 6.4 tons per hectare in 1991, compared with 5.8 in 1990.

Production of corn, the main summer crop, is estimated at 4.7 million tons. Rice output is expected to be 2.1 million tons, and barley output 170,000 tons. Import restrictions on meat and dairy products and incentives for the livestock sector created a large demand for feed grains, making corn one of the most profitable crops grown in the country. Because of the fixed and small arable land base, wheat competes with cotton and berseem clover. The government set a maximum target of 840,000 hectares of wheat in 1991 amid fear that further expansion would dangerously threaten cotton, an important export crop.

Policy liberalization continues in the agricultural sector. Sugar and cotton are the only two remaining government-procured crops. In 1991, forced delivery of rice ceased. Input subsidies were generally reduced except for fertilizer and pesticides. The government, nonetheless, has promised multi-

lateral donors that it will eliminate all subsidies except for cotton by 1993. By the middle of the decade, the monopoly handling of sugar and cotton should also cease.

As a result of the record domestic grain harvest and slightly improved commercial import capacity, Egypt has no status quo or nutrition-based food aid needs. In 1991/92, commercial imports are forecast 10 percent higher than the previous crop year, and stocks are expected to rise slightly then decline the following year.



Morocco possesses the world's largest and richest phosphate reserves, an increasingly active private sector, a large work force, a tourist industry that earned over \$1.2 billion in 1990 and enormous capacity for further development. It has excellent agricultural potential, particularly for early season fruits and vegetable exports to the EC, and has access to some of the richest fisheries in the Atlantic Ocean. Morocco also has a high population growth rate which has only recently begun to decline, bleak employment prospects for its youthful population, a low-yielding cereals sector, a heavy debt burden, a bloated bureaucracy, and continued vulnerability to exogenous influences in the economy.

Since the financial crisis in 1983, brought about partly by drought, high energy costs, declining phosphate prices, and high interest rates, Morocco has undertaken a wide range of stabilization and structural adjustment measures centered on restrictive monetary policies, reduced budget expenditures, tax reforms, deregulation of financial markets, trade liberalization, and export promotion. In recent years, its GDP, particularly in the agricultural and export sectors, has grown faster than population. Agriculture comprised 17 percent of GDP in 1990. Agriculture provides income for over 60 percent of the population and employment for well over 50 percent of the population. While agricultural production has improved in recent years, crops in rain-fed areas account for about 90 percent of the total arable land, with 10 percent in irrigated areas. Morocco now obtains 45 percent of its total agricultural value added, and 60 percent of its agricultural exports, from modern, irrigated areas. The rain-fed sector which involves 75 percent of the rural population,

remains largely traditional. The vulnerability of the agricultural sector to climatic conditions is compounded by the use of relatively poor technologies on small farms, which represent 80 percent of total farms.

Policy reforms started in 1983 continue apace. Most of the attention focuses on improving and privatizing marketing channels, increasing cost recovery in government managed, large-scale irrigation schemes, and strengthening agricultural research and policy planning agencies. Agricultural development and self-sufficiency continue as public priorities. Food imports have weighed heavily on the trade deficit but, with good harvests in recent years, the self-sufficiency ratio for some products has increased.

For several years the government has opted for a policy of increasing the irrigated sector, reflected in the construction of large dams and extension of irrigated areas. Currently, irrigated areas from dams totals 432,000 hectares and accounts for about half of Morocco's agricultural production, on a value basis.

Livestock raising remains extensive, but pastures are vulnerable to climatic conditions and production varies accordingly. The fishing sector continues to grow steadily as a result of both the efforts of the government and foreign investment.

Cereal output in the 1991/92 crop year is estimated at nearly 8 million tons, up 27 percent from the previous year (table 13). Favorable growing conditions in the main wheat-

Table 13. Morocco summary

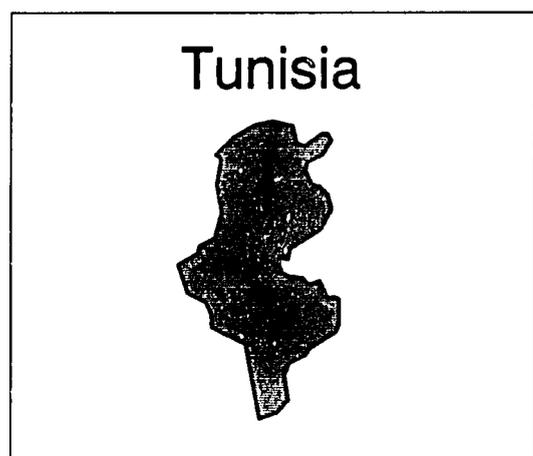
	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	2,071	2,180	477	0	593	718	634	2,951	3,428	21	163	---	---
1982/83	4,870	1,338	142	0	987	990	451	4,414	4,556	22	211	---	---
1983/84	3,528	1,867	448	4	1,136	915	249	3,542	3,990	22	181	---	---
1984/85	3,721	2,252	518	0	1,147	954	447	3,675	4,192	23	186	---	---
1985/86	4,677	2,077	142	0	1,401	1,014	649	4,136	4,279	23	186	---	---
1986/87	7,775	1,074	611	0	1,955	1,309	1,743	4,491	5,102	24	217	---	---
1987/88	4,279	1,817	340	60	1,887	1,051	732	4,110	4,449	24	185	---	---
1988/89	7,917	1,427	205	200	2,181	1,387	1,278	5,030	5,236	25	213	---	---
1989/90	7,404	959	212	0	2,352	1,335	1,040	4,913	5,125	25	204	---	---
1990/91	6,260	1,721	184	0	2,244	1,277	779	4,721	4,905	26	191	---	---
Status quo requirement forecasts													
1991/92	7,967	1,783	---	28	2,261	1,220	928	6,092	5,295	26	202	0	0
1992/93	7,570	1,558	---	29	2,310	1,246	589	5,883	5,408	27	202	0	0
Nutrition requirement forecasts													
1991/92	7,967	1,783	---	28	2,261	1,220	928	6,092	4,552	26	174	0	0
1992/93	7,570	1,558	---	29	2,310	1,246	589	5,883	4,649	27	174	0	0

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

growing areas in the north and northwest sections of the country resulted in substantially increased yields. Higher durum prices encouraged farmers to plant more. Despite poor rains in the south, the main barley area, large increases in the area planted offset low yields, with output rising slightly over 1990. The favorable winter rains also encouraged more corn planting and higher output.

The higher grain output, combined with greater projected commercial imports, have resulted in zero food-aid needs.



Tunisia's total cereal output in 1991/92 is estimated at 2.2 million tons, higher than the previous year, and well above

the average for the last 5 years (table 14). Durum wheat output is officially estimated at a record 1.5 million tons, compared with 1.1 million tons in 1990. Barley production is estimated at 654,000 tons, 37 percent (178,000 tons) higher than last year. More favorable weather, compared to the previous 4 years and higher producer prices explain the larger output.

Despite the 36-percent increase in domestic cereal production, commercial grain imports are estimated to rise more than 200,000 tons.¹ Increases in feed demand will absorb much of the additional imports. Because of the higher production and commercial imports, status quo and nutrition-based food aid needs are zero.

Since 1986, the Government of Tunisia has undertaken a program of structural adjustment. In the agricultural and food sectors, the principal reforms have included: producer price liberalization for cereals, reduced input subsidies, increased rural credit, and a minimum tariff of 15 percent duty on imports. Further reforms contemplated are reduced government intervention in cereal marketing, privatization of feed grain imports, and better targeting of food subsidies. Historically, the Cereals Office controlled about half of the grain marketed domestically and all imports. It also distrib-

¹ Vector Autoregression estimates may have overstated import values due to high historical values in 1988-89.

Table 14. Tunisia summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	1,233	1,056	96	10	668	284	226	1,359	1,455	7	220	---	---
1982/83	1,255	765	154	6	529	267	130	1,314	1,467	7	217	---	---
1983/84	922	1,104	146	0	447	260	95	1,354	1,500	7	218	---	---
1984/85	1,024	906	192	0	476	259	20	1,270	1,462	7	208	---	---
1985/86	2,067	827	80	0	851	320	280	1,463	1,543	7	214	---	---
1986/87	607	1,031	396	0	418	287	110	1,103	1,499	7	203	---	---
1987/88	1,898	910	415	0	877	324	573	1,145	1,559	8	206	---	---
1988/89	284	1,400	284	0	662	242	308	1,045	1,329	8	172	---	---
1989/90	621	997	479	0	729	257	228	712	1,190	8	150	---	---
1990/91	1,601	794	331	0	733	291	491	1,109	1,439	8	177	---	---
Status quo requirement forecasts													
1991/92	2,173	1,002	---	2	732	317	654	1,961	1,510	8	182	0	0
1992/93	1,809	1,356	---	2	749	325	337	2,406	1,545	9	182	0	0
Nutrition requirement forecasts													
1991/92	2,173	1,002	---	2	732	317	654	1,961	1,322	8	159	0	0
1992/93	1,809	1,356	---	2	749	325	337	2,406	1,352	9	159	0	0

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

tributed improved seeds, fertilizers, herbicides, credit, and provided extension services. On the consumer side, another parastatal, the General Compensation Fund (CGC), subsidized bread, semolina, and pasta prices. With new reforms, the private sector plays a larger role in importation and input delivery.

According to World Bank studies, Tunisian agriculture can improve productivity through the use of more modern cultivation practices and the consolidation of fragmented plots. The aim of Tunisia's adjustment program is to restore balance in external accounts and stimulate efficient production. With added investments, price incentives, and better extension services, Tunisian agricultural productivity should improve, but highly variable rainfall will continue to be the major determinant of crop size.

Central Africa

For the purposes of this report, Cameroon, Central African Republic (CAR), and Zaire comprise the Central African region. The most important grains in this region are corn and millet. However, on average, grains account for only 25 percent of the diet, as roots and tubers contribute the major share. Annual grain output has averaged 2 million tons in recent years, while consumption usually exceeds 2.1 million tons. Food aid receipts have recently ranged between 100,000 and 150,000 tons.

The outcome of the 1991/92 crop will not be certain until the end of 1991, as harvesting of the first crops has only recently begun. Early indications are encouraging, as rains have been favorable. As a result, output in the region is forecast higher, with anticipation of a recovery in Cameroon from last year's drought-affected crop.

Box 3 Political Disturbances Cause Food Shortages in Zaire

Civil unrest which began in late September in Kinshasa and spread to other cities has disrupted food supplies in Zaire. The political crisis which precipitated several days of rioting and looting in the capital still had not been resolved by early November. The disturbances destroyed food stocks and disrupted marketing activities causing prices to soar. The food distribution network depends on a functioning banking system, adequate fuel supplies, and security in the countryside. All of these services have been severely curtailed.

Kinshasa, a city of more than 4 million people, is most seriously affected by the food shortages. Importers lost much of their food stocks and are hesitant to bring in new supplies until the security situation improves. Foreign exchange is still very scarce. Food availability in rural areas has not been disrupted, but little food is moving into the cities. Locally produced foods such as cassava, corn, beans, peanuts, and rice are important staples in urban areas.

Zaire's food aid needs were estimated at 100,000 tons before the unrest began. These needs could easily double if the political crisis is not resolved quickly.

For the region, status quo consumption requirements for 1991/92 are estimated at 2.3 million tons (table 15). To meet these requirements, 153,000 tons of food aid will be needed. Nearly 500,000 tons of food aid will be required to satisfy nutritional requirements of 2.7 million tons. The recent unrest in Zaire will likely disrupt food availability and needs will probably increase.

Table 15. Central Africa regional summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	1,803	632	111	5	85	410	110	1,917	2,019	38	52	---	---
1982/83	1,895	432	124	5	85	423	59	1,865	1,982	40	50	---	---
1983/84	1,837	527	76	5	90	408	67	1,852	1,917	41	47	---	---
1984/85	1,710	439	162	5	90	380	79	1,662	1,810	42	43	---	---
1985/86	1,960	513	112	5	90	437	83	1,936	2,043	43	47	---	---
1986/87	1,901	618	62	5	95	466	75	1,961	2,021	45	45	---	---
1987/88	1,948	653	141	5	100	444	81	2,045	2,179	46	47	---	---
1988/89	2,039	494	131	5	105	412	88	2,004	2,135	48	45	---	---
1989/90	2,044	557	105	5	112	449	82	2,041	2,146	49	44	---	---
1990/91	1,945	575	145	4	99	438	92	1,969	2,114	51	42	---	---
Status quo requirement forecasts													
1991/92	2,302	466	---	6	113	499	79	2,162	2,315	52	52	153	168
1992/93	2,320	562	---	6	117	514	71	2,254	2,385	54	50	132	139
Nutrition requirement forecasts													
1991/92	2,302	466	---	6	113	499	79	2,162	2,657	52	45	495	508
1992/93	2,320	562	---	6	117	514	71	2,254	2,737	54	47	483	491

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

East Africa

Burundi, Ethiopia, Kenya, Rwanda, Somalia, Sudan, Tanzania, and Uganda comprise the East African region. Per capita food use in the region has declined slowly through the 1980's, from about 115 kilograms in the early part of the decade to 106 kilograms in the later part. Expansion of cereal output, which averaged about 2.5 percent a year through the 1980's, did not keep pace with population growth, which averaged close to 3 percent per year. Food aid receipts fluctuate in response to production shortfalls, but usually are in the range of 1.2 to 2 million tons. In recent years, concessional imports have contributed about 10 percent of consumption.

Figure 10
1991/92 Food Aid Needs: East Africa
Million tons

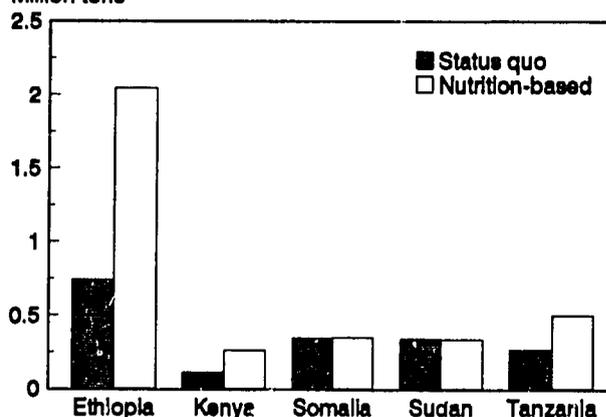


Table 16. East Africa regional summary

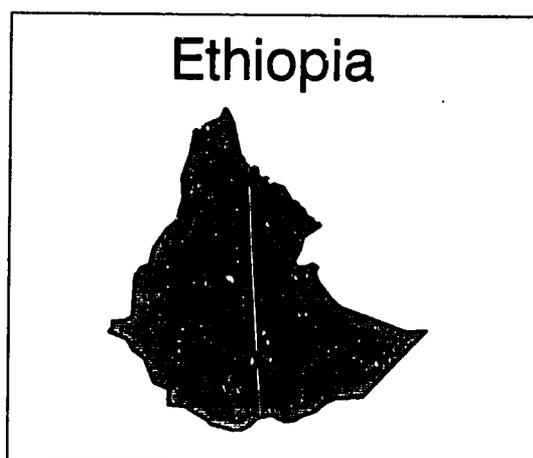
	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	16,642	347	1,252	253	117	1,944	2,189	13,273	14,298	125	115	---	---
1982/83	15,853	401	1,347	470	115	2,041	1,827	13,989	15,109	129	117	---	---
1983/84	14,347	176	1,962	207	100	2,025	947	13,071	14,827	133	112	---	---
1984/85	12,281	545	2,453	0	155	1,863	597	11,158	13,383	137	98	---	---
1985/86	17,419	814	1,864	320	207	2,135	2,329	13,839	15,435	141	109	---	---
1986/87	18,548	550	1,588	1,115	220	2,369	2,947	14,776	16,097	146	110	---	---
1987/88	15,791	800	1,776	490	235	2,177	1,642	14,994	16,483	151	109	---	---
1988/89	19,644	451	1,211	555	215	2,126	3,279	15,562	16,586	156	106	---	---
1989/90	17,778	545	1,389	228	235	2,331	2,530	16,279	17,346	161	107	---	---
1990/91	16,623	957	1,856	300	240	2,295	1,660	15,614	17,225	167	103	---	---
Status quo requirement forecasts													
1991/92	18,401	679	----	167	218	2,850	1,150	16,355	18,485	172	115	1,947	2,437
1992/93	20,009	683	----	173	225	2,946	1,928	16,564	19,097	178	117	2,540	1,757
Nutrition requirement forecasts													
1991/92	18,401	679	----	167	218	2,850	1,150	16,065	20,185	172	110	3,969	4,301
1992/93	20,009	683	----	173	225	2,946	1,928	16,271	20,860	178	109	4,596	3,578

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

Ethiopia is the region's largest producer, accounting for almost a third of total output. Sudan, Tanzania, and Kenya are also important producers. Ethiopia and Sudan receive the largest volume of food aid, as they experience frequent production shortfalls due to drought and civil war.

The region's 1991/92 cereal output is estimated at 18.4 million tons, a 11-percent increase from last year. This increase is attributed to Sudan, where output is expected to recover from a drought-affected 1990/91 crop (table 16). Given commercial imports of 679,000 tons, 1.9 million tons of food aid are needed to meet 1991/92 consumption requirements (figure 10). Ethiopia and Sudan account for well over half of these needs. In order to meet nutritional requirements, 4.0 million tons of food aid are required.



In May 1991, the government of Col. Mengistu Haile Mariam collapsed after a 17-year reign. Two leading rebel groups were victorious. The Eritrean People's Liberation Front (EPLF), which has been fighting the government for a separate administration since 1962, is now in control of Eritrea. The Ethiopian People's Revolutionary Democratic Front (EPRDF), comprised primarily of rebels from Tigray, has taken control of the rest of Ethiopia.

The two victorious rebel groups have formed a provisional government, which appears to favor continuing agricultural reforms that were put in place at the end of the Mengistu regime. These include the abolition of quotas for grain, which farmers had to deliver to the Agricultural Marketing Corporation at below-market prices. In addition, the distribution of low-priced grain to urban areas has stopped.

Cereal production in 1990/91 varied widely. The northern regions of Eritrea and Tigray experienced almost total crop failures, as they suffered from the second consecutive drought and from the effects of the civil war. Other regions harvested above-average crops, which can be attributed to policy reform and adequate rains. Total production was estimated at 5.1 million tons, a 3-percent increase from the previous year.

In the northern regions, as well as in Hararge and Ogaden, a large-scale relief effort is needed to avoid widespread loss of life. Before the 1991 harvest, an estimated 1 million tons of food aid was needed for approximately 7 million people who are vulnerable to famine. In Eritrea and northern Tigray alone, an estimated 4 million people are susceptible to famine, a result of the combined effects of successive droughts, and three decades of civil war. Hundreds of

Table 17. Ethiopia summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----												
1981/82	4,240	0	278	0	0	426	0	3,814	4,092	39	104	---	---
1982/83	5,277	44	301	0	0	530	0	4,791	5,092	40	127	---	---
1983/84	4,414	2	750	0	0	487	0	3,929	4,679	41	114	---	---
1984/85	3,300	49	667	0	0	378	0	2,971	3,638	42	86	---	---
1985/86	3,820	203	770	0	0	452	0	3,572	4,342	43	100	---	---
1986/87	4,937	95	514	0	0	509	0	4,524	5,037	45	113	---	---
1987/88	4,556	104	1,052	0	0	543	0	4,117	5,169	46	112	---	---
1988/89	4,692	0	446	0	0	493	0	4,199	4,645	48	97	---	---
1989/90	4,992	0	912	0	0	556	0	4,436	5,348	50	107	---	---
1990/91	5,121	0	900	0	0	567	0	4,554	5,454	52	106	---	---
Status quo requirement forecasts													
1991/92	5,558	7	---	0	0	595	0	4,970	5,710	53	107	740	740
1992/93	5,774	13	---	0	0	616	0	5,171	5,908	55	107	737	737
Nutrition requirement forecasts													
1991/92	5,558	7	---	0	0	595	0	4,970	7,013	53	131	2,044	2,044
1992/93	5,774	13	---	0	0	616	0	5,171	7,256	55	131	2,086	2,086

--- = Not applicable.

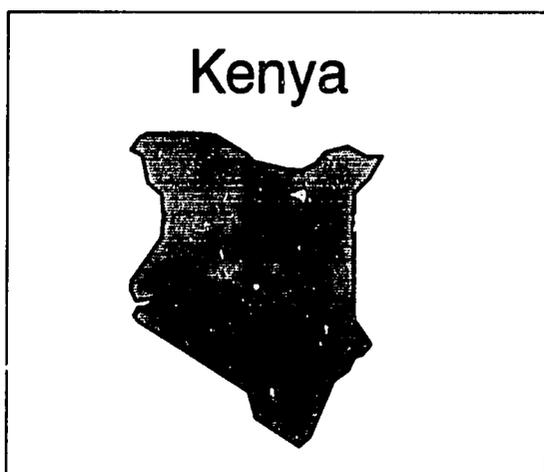
1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

thousands of Ethiopians have sought refuge in northern Somalia, Djibouti, and Sudan. Insecurity, particularly in the east, southeast, and west, has constrained efforts to reach those in need.

One of the major problems has been the distribution of food aid and the problems encountered in the region's ports. Now, with the secession of hostilities, port reopening should facilitate the relief efforts. The Assab Port, which is important for the Southern Line feeding operation into Tigray and Wello, reopened in June. Shipments through this line are expected to reach 10,500 tons a month. The movement of fertilizer from the port has reduced congestion. Reopening of the Massawa Port at the end of 1990 allowed for the expansion of the relief operation in Eritrea. However, a tonnage restriction for vessels remains in effect until the port is rehabilitated. Stocks at the Djibouti Port have been accumulating, but offtake as of September has improved with transshipment to Massawa and airlift operations to the Ogaden.

With respect to coffee production (the largest export earner), state farms have been dismantled and land has been distributed to peasants. Also, restrictions on planting on individual plots have been removed, which has resulted in a 50-percent increase in the rate of planting.

Timely and widespread rainfall has prepared the land for the main crops of the 1991/92 season which were planted in June. Despite the limited availability of inputs, production is forecast at 5.6 million tons (table 17). Estimated food needs, however, remain high, at 740,000 tons. Ethiopia has virtually no commercial import capacity due to the country's weak financial condition. In the late 1980's, the trade deficit averaged \$600 million and reserves were less than \$50 million. According to the World Bank, Ethiopia is the second poorest country in the world, with per capita income of \$120.



Output from Kenya's 1991/92 grain crop harvested in August is estimated at 3.3 million tons (table 18). The long rains began late and precipitation has been below normal. Yields in the main surplus-producing areas in the west were lower than last year's below-average levels. Conditions were better in the southern regions. Tight credit, coupled with high input costs, resulted in reduced area planted to corn. Low prices dampened the incentive to plant wheat. Consumption requirements for 1991/92 are estimated at 3.4 million tons. Food aid needed to satisfy these requirements is 113,000 tons.

As a result of the poor 1990/91 harvest, stocks are being drawn down. Corn stocks are expected to fall by 200,000 tons, and in the interest of national food security, the government imposed a ban on cereal exports in May. The ban has since been lifted, however, in order to participate in the cross-border emergency relief operations in Somalia and Sudan. Kenya will export corn and beans in exchange for grains, primarily wheat, supplied by international donors.

The government's agricultural reform program, first implemented in 1986, had two objectives. The first was to improve the balance of payments position by expanding exports of coffee, tea, horticultural crops, and pyrethrum. The second was to achieve self-sufficiency.

In the late 1970's, government pricing policies resulted in undervalued goods flowing from rural to urban areas. These policies provided little incentive to producers, and thus, resulted in a stagnation of the sector. In 1980, the government began pricing wheat and corn at import-export parity prices, and this stimulated production.

Considering the limited availability of arable land, increases in agricultural output will stem mostly from improved yields. Recognizing that increased fertilizer use improves yields, the government decontrolled fertilizer prices in January 1990. To facilitate import procedures, the government abolished the quota allocation system for commercial imports.

The government is currently in the process of privatizing the marketing system. Historically, the National Cereals and Produce Board (NCPB) had a monopsony in grain marketing which resulted in high marketing costs. This led to producer prices below and consumer prices above the levels which would have prevailed had marketing been competitive. Currently, private traders are permitted a role in the corn marketing system and the maximum allowable quantity which can be marketed freely has been gradually increased.

In corn marketing, the NCPB's share of the primary market (purchases from producers) has fallen from 30 percent of production in 1985/86, to 20 percent in 1989/90. In the secondary market (sales to millers), NCPB's share fell from

Table 18. Kenya summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	3,171	22	127	0	30	222	605	2,529	2,656	17	153	---	---
1982/83	2,909	110	165	77	30	225	766	2,527	2,691	18	149	---	---
1983/84	2,549	39	122	107	30	224	436	2,557	2,679	19	143	---	---
1984/85	2,061	217	340	0	80	194	513	1,927	2,267	20	116	---	---
1985/86	3,318	140	139	150	75	235	884	2,627	2,766	20	136	---	---
1986/87	3,419	72	107	315	100	270	1,125	2,565	2,671	21	126	---	---
1987/88	2,980	86	171	100	100	255	1,070	2,667	2,837	22	129	---	---
1988/89	3,453	123	90	125	95	211	1,154	3,062	3,151	23	138	---	---
1989/90	3,421	128	44	148	95	268	1,092	3,100	3,144	24	133	---	---
1990/91	3,167	267	74	200	95	280	731	3,220	3,294	25	134	---	---
Status quo requirement forecasts													
1991/92	3,307	152	---	145	87	294	400	3,264	3,377	26	132	113	444
1992/93	3,762	194	---	150	91	305	651	3,159	3,505	27	132	346	95
Nutrition requirement forecasts													
1991/92	3,307	152	---	145	87	294	400	3,264	3,528	26	138	265	596
1992/93	3,762	194	---	150	91	305	651	3,159	3,662	27	138	503	252

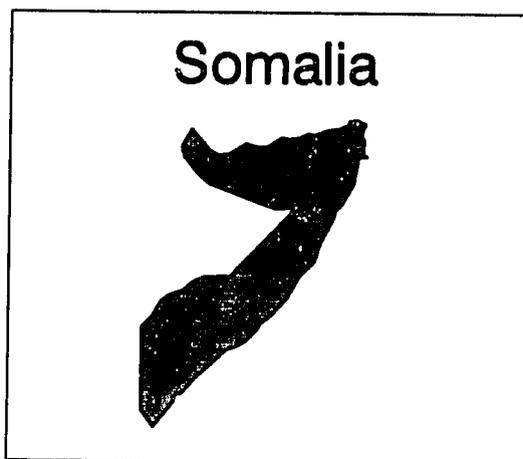
--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

100 to 73 percent, during the same period. By 1992, the goal is to reduce the NCPB share to 15 percent in the primary market and 60 percent in the secondary market. Eventually, the role of the NCPB will be limited to intervening strictly to stabilize corn prices and maintaining adequate reserves during shortfalls.

Coffee and tea contribute almost half of Kenya's total export earnings. Since mid-1990, the coffee sector has performed poorly, a result of the collapse of the International Coffee Agreement in July 1989 which cut prices significantly. Low prices, coupled with rising production costs, reduced profit margins and caused farmers to neglect their trees. In order to promote farmer confidence in the industry, plus reduce government intervention and liberalize the marketing system, the government is currently reviewing the roles of the Coffee Board and the Kenya Planters Cooperative Union (KPCU).

Tea has been a success story in Kenya and is now the country's second largest source of foreign exchange, following tourism. Recent expansion in tea output was a result of favorable weather and improved yields. However, continued prosperity for the tea sector may prove difficult as supplies in traditional markets are saturated and competition from other beverages is increasing.



The government of President Siad Barre was overthrown in January 1991, and, as a result, food aid deliveries were interrupted. The lack of security, particularly in southern Somalia, has made the food supply situation precarious. It is estimated that half of Somalia's 8 million people need food assistance. Sharp price hikes resulting from the limited food supplies have made food unaffordable to most of the population. Food supplies, particularly in urban areas, are scarce. The population of the southern city of Kismayo has soared from 60,000 to 1 million in recent years. The city's already-poor infrastructure has been stretched beyond limits. In the north, thousands of Somali refugees are returning from Ethiopia because of food shortages in that country.

Somalia's real GDP has declined for 3 successive years (1988-90). The 1990 inflation rate exceeded 200 percent. The country's external debt has become a significant prob-

Table 19. Somalia summary

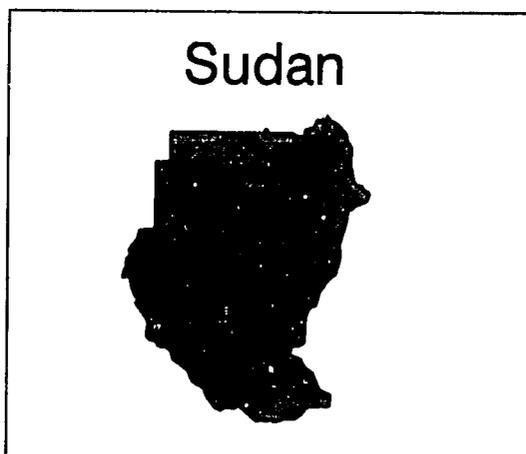
	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	369	205	189	0	17	61	0	507	695	7	104	---	---
1982/83	390	72	177	0	20	49	15	378	555	7	80	---	---
1983/84	357	16	248	0	10	50	0	328	576	7	80	---	---
1984/85	494	86	143	0	15	57	0	508	651	7	89	---	---
1985/86	649	101	161	0	20	70	17	643	804	7	109	---	---
1986/87	599	177	154	0	15	79	9	690	844	8	112	---	---
1987/88	590	163	73	0	15	61	0	686	759	8	98	---	---
1988/89	639	70	176	0	15	69	0	625	801	8	100	---	---
1989/90	513	109	82	0	15	55	0	551	634	8	77	---	---
1990/91	477	136	100	0	20	56	0	537	637	8	76	---	---
Status quo requirement forecasts													
1991/92	420	106	---	0	18	68	0	439	786	8	93	347	347
1992/93	586	92	---	0	18	69	0	591	793	9	93	202	202
Nutrition requirement forecasts													
1991/92	420	106	---	0	18	68	0	439	789	8	93	350	350
1992/93	586	92	---	0	18	69	0	591	796	9	93	205	205

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

lem. It is approaching \$2 billion, about three times the value of GDP and almost 30 times the value of export earnings.

The 1991/92 cereal crop, harvested in August, was estimated at 420,000 tons (table 19). However, the FAO reports that output is unlikely to reach even 300,000 tons, about half of a normal crop. As a result of the civil unrest, the agricultural infrastructure was destroyed, farm implements were unavailable, and seeds were eaten instead of planted. The status quo consumption requirements are nearly 800,000 tons. Given Somalia's limited commercial import capacity of 106,000 tons, the additional food needs for 1991/92 are estimated at 347,000 tons. This estimate, which is much higher than the actual levels of food aid received through the 1980's, can be considered an indicator of the severity of the food supply situation.



Below-average agricultural output, a continuing civil war, and an economy in a state of ruin have made for the worst food crisis since 1984's disastrous drought. Although it is difficult to accurately assess, the food supply situation can be expected to deteriorate before the next harvest. According to the United Nations and donor countries and organizations, an estimated 8 million people are at risk of starvation.

Sudan's 1990/91 cereal harvest totalled about 2.1 million tons (table 20), including a record wheat crop estimated by the FAO at more than 620,000 tons that resulted from an 80-percent rise in area planted. Aggregate output, however, was well below normal for the second consecutive year.

Sudan's disastrous economic state precludes importing enough food commercially to cover the production shortfall. Per capita GDP declined an estimated 1.6 percent annually between 1980 and 1990. At the same time, the real value of imports and exports declined sharply. The government budget deficit has averaged 13 percent of GDP during the last 5 years. Inflation is running well over 100 percent and the country's external debt exceeds \$9 billion. In recent months, some reforms have been introduced with an aim of reducing fiscal and external imbalances. However, the efforts are limited and are not comprehensive enough to restore growth.

Table 20. Sudan summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	4,007	107	330	253	0	360	1,434	2,503	2,833	19	145	---	---
1982/83	2,448	1	450	393	0	336	961	2,193	2,644	20	131	---	---
1983/84	2,268	7	654	100	0	379	429	2,327	2,981	21	144	---	---
1984/85	1,457	48	1,100	0	0	341	14	1,579	2,679	21	125	---	---
1985/86	4,001	0	690	170	0	360	1,349	2,137	2,826	22	126	---	---
1986/87	3,773	14	725	800	0	444	1,554	2,338	3,063	23	133	---	---
1987/88	1,665	293	410	300	0	273	224	2,715	3,124	24	133	---	---
1988/89	5,027	200	410	400	0	520	1,350	3,175	3,582	24	150	---	---
1989/90	2,307	241	301	50	0	377	810	2,661	2,962	24	122	---	---
1990/91	2,119	500	700	50	0	425	310	2,644	3,344	25	134	---	---
Status quo requirement forecasts													
1991/92	3,417	319	---	0	0	439	500	3,107	3,448	26	134	341	151
1992/93	3,485	263	---	0	0	452	851	2,944	3,549	26	134	604	253
Nutrition requirement forecasts													
1991/92	3,417	319	---	0	0	439	500	2,816	3,152	26	123	336	0
1992/93	3,485	263	---	0	0	452	851	2,645	3,245	26	123	600	0

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

Cereals are either unavailable or priced well beyond the purchasing power of most consumers. In 1990, prices increased between 400-700 percent above the previous year. In Darfur, a 90 kilo sack of millet cost 525 Sudanese pounds in August. In December, the price rose to 1,800, and by March 1991 it was 3,400 Sudanese pounds. In Khartoum, sorghum prices rose threefold between April 1990 and April 1991.

The prohibitive grain prices were also reflected in animal trade. Farmers sell animals in order to purchase grain. Last year, the sale of one goat provided enough sorghum to supply a family for 1-2 months. This year, one goat can be exchanged for a supply of only 2-5 days.

The food supply situation is particularly severe in the south and in Darfur, Kordofan, and the eastern provinces. As of September, the most serious food emergencies existed in southeastern Sudan, as 200,000 refugees returned from Ethiopia. The area's limited accessibility, coupled with rains, made airdrops the only viable option for relief distribution. The food security situation is also serious in Darfur (particularly North Darfur), although limited access to the affected areas has made it almost impossible to assess the severity of the situation. In some villages, more than two-thirds of the families are eating wild foods and 15 to 70 percent depend entirely on famine foods.

The distribution of grain has been hampered by the lack of fuel, high transportation costs, and inadequate storage. The onset of the rainy season has made delivery even more difficult. Relief operations seem to be working well in North Kordofan which has prevented further migration and en-

couraged a return to villages. The situation in South Kordofan is critical, however, as fuel shortages and strong rains have hampered emergency food delivery.

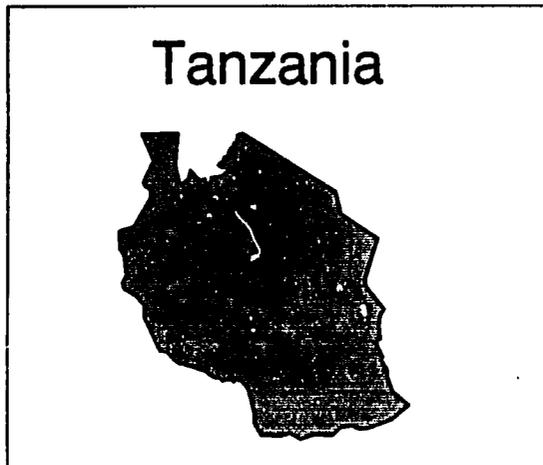
The delivery of 200,000 tons of relief grain and the unexpected arrival of 400,000 tons of commercial wheat and wheat flour imports since January 1991 has augmented food availability. As a result, market prices have fallen.

The 1991/92 harvest is currently winding up. The government had planned to expand area planted in the mechanized and irrigated sectors by almost 200 percent for the 1991 agricultural season. However, given the current economic malaise, this probably did not occur.

Until June, rainfall equalled or exceeded the 30-year average throughout Sudan, with the exception of Darfur. Since then, rains have fallen off. Among the traditional areas in the south, the most seriously rain deficient is North Darfur. However, in El Geneina, a surplus producing area, rainfall is far above normal. South Darfur is only slightly below average. Areas in Kordofan have received above-average rainfall. In the north, rainfall in irrigated areas was less than half of normal. In some traditional and mechanized areas, rainfall was about one-third of normal.

Vegetation in North Darfur, parts of southern North Kordofan, and all of eastern South Kordofan, has been below average. Output in North Darfur should be below normal, with the exception of El Geneina.

If status quo food requirements are to be met, the estimated food need for 1991/92 is 341,000 tons. This includes an assumption that Sudan will harvest an average crop of 3.4 million tons. However, if production fails for the third consecutive year, needs could exceed the approximately 1 million tons estimated by relief agencies for the current year.



Output from Tanzania's 1991/92 harvest will fall short of last year's below-average crop of 3.6 million tons. Yields were low and area planted to wheat, rice, and corn, fell. The low yields were due to a delayed start of the short and long rains, the dry spell between them, pest damage, and low input use. Conditions were particularly dry in the northern and central regions, and these have the greatest deficits. Rainfall was closer to normal in the main growing region, the Southern Highlands.

Two successive poor harvests have tightened food supplies, and raised prices sharply. In March, average corn prices, in real terms, were at their highest since 1984. To stabilize prices and augment supplies, the government released approximately 45,000 tons of corn from its Strategic Grain

Reserve (SGR) between January and March. By the end of June, the SGR had less than 16,000 tons, a sharp drop from 140,000 tons a year earlier. Reserves in Dar es Salaam cover only one week's supply. The preferred stock level for the SGR is 125,000 tons.

Given Tanzania's limited commercial import capacity of 81,000 tons, the additional food needs to meet consumption requirements are estimated at 269,000 tons for 1991/92 (table 21). Since 1984/85, food aid receipts have not exceeded 100,000 tons.

In 1986, the government introduced an Economic Recovery Plan (ERP) with the objectives of increasing agricultural output, rehabilitating the physical infrastructure, increasing industrial activity, and restoring financial stability. As a result of these reforms, some key economic indicators have moved in the right direction in 1990. Inflation fell to less than 20 percent from 25 percent in 1989, and GDP growth accelerated to 4.4 percent.

Agriculture's weak performance through the 1980's has been attributed to a poor transportation system and extensive government intervention. Before the adoption of the recent reforms, the government set producer prices and controlled the marketing of crops. The National Milling Corporation (NMC) was the exclusive buyer of grain. As a result of the reforms, private traders now compete with the NMC in the purchasing, distribution, and final sale of grain. Market forces establish crops prices and, in 1990, the government instituted a policy of announcing only indicative producer prices. The eventual role of the NMC will be that of a commercial milling enterprise. With private sector participation, cash payments to farmers have become more certain, thus providing a greater incentive to produce. Also, grain purchases by the NMC and cooperatives have declined as they have been unable to compete with the private trade.

Table 21. Tanzania summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	3,012	0	266	0	70	386	150	2,554	2,594	19	134	---	---
1982/83	2,895	112	213	0	65	387	85	2,620	2,605	20	131	---	---
1983/84	2,746	91	141	0	60	352	82	2,428	2,364	21	115	---	---
1984/85	3,014	145	125	0	60	389	70	2,722	2,619	21	123	---	---
1985/86	3,487	336	66	0	72	458	79	3,284	3,082	22	141	---	---
1986/87	3,666	167	55	0	75	494	259	3,084	2,872	23	127	---	---
1987/88	3,811	144	36	90	90	478	348	3,208	2,956	23	126	---	---
1988/89	3,531	20	63	30	75	301	775	2,718	2,593	24	107	---	---
1989/90	4,473	52	19	30	95	550	628	3,997	3,695	25	147	---	---
1990/91	3,565	27	12	50	95	420	619	3,036	2,802	26	108	---	---
Status quo requirement forecasts													
1991/92	3,510	81	---	22	90	803	250	3,045	3,314	27	123	269	638
1992/93	3,980	92	---	23	93	830	425	2,950	3,427	28	123	477	302
Nutrition requirement forecasts													
1991/92	3,510	81	---	22	90	803	250	3,045	3,014	27	112	0	338
1992/93	3,980	92	---	23	93	830	425	2,950	3,117	28	112	167	0

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

West Africa

In West Africa, prospects for this year's harvests are good in the countries along the Gulf of Guinea. Widespread showers during August, the most critical month for agriculture in this region, were largely responsible for the good outlook. In Ghana, Niger, and Nigeria, output of cereals is expected to be larger than last year, while good harvests are also anticipated in Benin, Cote d'Ivoire, Guinea, and Togo. In Liberia, the aftermath of the civil war has again disrupted production and there is a continuing need for emergency food aid. A smaller crop is also forecast in Sierra Leone, as unrest spreads from Liberia. To the south, August showers left variable rainfall totals in the cocoa-belt countries, creating satisfactory conditions for planting of secondary corn, which typically takes place in September.

In the Sahelian countries, harvest prospects are favorable in the eastern and central parts (Chad, Niger, Burkina Faso, and Mali). The rains began early in most areas and continued throughout the season with only minor interruptions. The only regions with abnormal weather patterns were in the western Sahel. A late start to the season delayed plantings and necessitated replanting in Gambia, Guinea-Bissau, Mauritania, and Senegal. Above-normal rainfall in August relieved crop stress in most areas. Poor grain harvests are expected only in northern Senegal and Mauritania. In Cape Verde, where the rains arrived later, drought in September significantly reduced yield potential.

In 1991/92, grain production in West Africa could reach 21 million tons, slightly below the 1988 record harvest (table

22). Rice output is down in both Liberia and Sierra Leone, where civil strife disrupted agricultural activities. This is the second growing season which has been disrupted in Liberia, and the country will be heavily dependent on food aid in 1991/92.

Despite the anticipated recovery of grain production in 1991, West Africa's food aid needs are forecast near 3 million tons, significantly above historical receipts (figure 11). Cote d'Ivoire and Nigeria, countries which have not previously been food aid recipients, are included and both have substantial aid needs. Nigeria's deficit of more than 1 million tons is caused by maintaining per capita consumption at the average

Figure 11
1991/92 Food Aid Needs: West Africa
Million tons

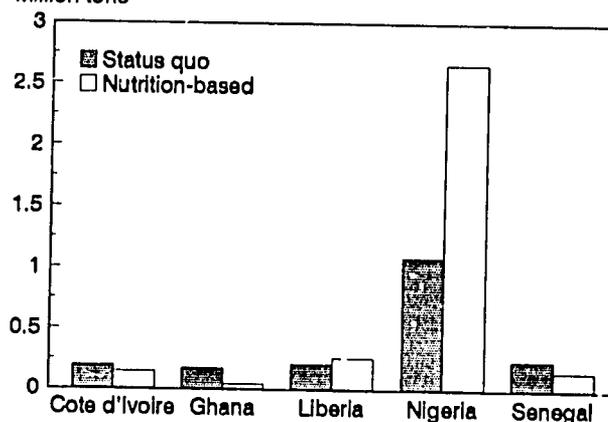


Table 22. West Africa regional summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	17,613	4,810	646	5	537	3,023	756	18,834	19,480	163	120	---	---
1982/83	17,720	4,835	824	12	574	3,053	860	18,812	19,636	168	117	---	---
1983/84	15,056	4,459	1,247	45	422	2,837	488	16,582	17,829	172	104	---	---
1984/85	17,152	4,363	1,157	41	831	2,927	628	17,576	18,733	177	106	---	---
1985/86	19,378	3,518	565	23	645	3,060	1,400	18,396	18,961	182	104	---	---
1986/87	19,859	3,202	680	1	744	3,231	1,738	18,747	19,428	187	104	---	---
1987/88	17,581	3,107	538	101	606	2,841	828	18,050	18,588	193	97	---	---
1988/89	21,558	2,940	547	0	475	3,370	1,343	20,137	20,684	198	104	---	---
1989/90	20,506	2,865	496	60	458	3,194	1,444	19,558	20,054	205	98	---	---
1990/91	17,715	2,468	1,061	25	413	2,941	931	17,317	18,379	211	87	---	---
Status quo requirement forecasts													
1991/92	20,575	2,602	---	37	679	3,595	1,213	18,584	21,291	217	98	2,707	2,425
1992/93	21,342	2,746	---	38	700	3,708	1,439	19,416	21,949	224	98	2,534	2,320
Nutrition requirement forecasts													
1991/92	20,575	2,602	---	37	679	3,595	1,213	18,584	23,174	217	107	4,590	4,319
1992/93	21,342	2,746	---	38	700	3,708	1,439	19,416	23,885	224	107	4,469	4,275

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

of the last 5 years. During that period, grain consumption declined significantly while consumption of root crops increased. Nigeria's ban on imports of wheat, rice, and corn have reduced commercial imports below the country's ability to purchase them.

Cote d'Ivoire



Since 1986, the Ivorian economy has experienced massive external shocks—a 40-percent decline in the terms of trade brought about by a sharp fall in world market prices for cocoa and coffee, the decline in the value of the dollar and the currencies of Cote d'Ivoire's competitors, and a large negative transfer of resources as the country was faced with heavy external debt accumulated since the early 1980's.

In response, policy reforms were undertaken but they were difficult to implement because of the structural weaknesses of the economy, especially excessive intervention by the government in economic mechanisms and the poor functioning of the banking system. Between 1985 and 1990, GDP declined 14 percent in nominal terms, and per capita GDP shrank by 27 percent.

In 1990, GDP declined by about 3 percent. The primary sector increased by about 3 percent, with an increase in food and raw material production for local processing. However, the industrial and service sectors continued to fall. The contraction in household consumption and reduction in public expenditures caused secondary and service sector production to slip by 5 percent and 4.5 percent, respectively.

Faced with the persistently unfavorable economic environment, the Government adopted adjustment measures supported by the International Monetary Fund (IMF) and the World Bank. Its new economic strategy, announced in April 1990, relies mainly on broadening the tax base, reducing non-wage expenditures, and reinforcing tax administration. It also aims at accelerating the process of structural reforms in key areas, especially agriculture, energy, and privatization.

Agricultural reform has focused on restructuring the Agricultural Price Stabilization Fund (CSSPPA). Measures already implemented include a reduction in the producer price of cocoa and coffee from 400 to 200 CFA per kilo, a new

Table 23. Cote d'Ivoire summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	697	542	1	0	33	190	106	1,004	1,005	9	115	---	---
1982/83	763	595	0	0	35	200	167	1,062	1,062	9	117	---	---
1983/84	683	570	0	35	36	194	129	1,026	1,026	9	108	---	---
1984/85	913	450	0	41	36	200	157	1,058	1,058	10	107	---	---
1985/86	888	464	1	6	41	211	140	1,112	1,112	10	109	---	---
1986/87	841	610	0	1	42	216	170	1,162	1,162	11	109	---	---
1987/88	866	669	1	1	45	221	243	1,195	1,196	11	108	---	---
1988/89	1,039	554	19	0	55	259	237	1,286	1,305	12	113	---	---
1989/90	1,067	472	0	0	55	241	214	1,266	1,266	12	106	---	---
1990/91	1,043	441	59	0	58	261	69	1,311	1,369	12	110	---	---
Status quo requirement forecasts													
1991/92	1,095	465	---	11	53	271	69	1,224	1,416	13	109	191	191
1992/93	1,127	488	---	12	55	282	69	1,267	1,472	13	109	205	205
Nutrition requirement forecasts													
1991/92	1,095	465	---	11	53	271	69	1,224	1,370	13	106	146	146
1992/93	1,127	488	---	12	55	282	69	1,267	1,424	13	106	157	157

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

10-percent import tax, and the direct transfer of EC Stabex² funds to cocoa and coffee exporters for partial payment of debts. The charter of the CSSPPA was amended in April 1991, limiting its operations to the cocoa and coffee sectors where domestic marketing procedures were liberalized. Its quality control and direct export activities were eliminated. The fund implemented a new policy of forward sales and a system for setting producer prices on the basis of the realized export prices of the forward sales. This was implemented with the start of the new crop season in late 1991.

Cote d'Ivoire's agricultural policy aims to encourage quality production of export crops to enhance their market price in a period of world market surpluses. The government has instituted quality price differentials for the major export crops. Other policy objectives include: organization of producers into cooperatives to pool their production resources in marketing, input procurement and to improve their credit worthiness, diversification of agricultural production, and promotion of intensive reforestation.

Although the economic adjustment program is being accompanied by a fall in imports, continued low export prices do not allow a sufficient trade surplus to finance debt repayment. Cote d'Ivoire maintains a positive trade balance despite declining world prices for its major export crops.

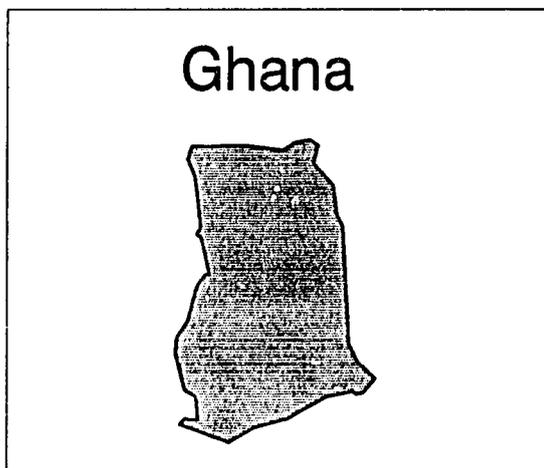
² Support funds provided to developing countries associated with the EC to compensate for reduced export earnings caused by low commodity prices.

During the last 5 years, Ivorian imports averaged \$2.1 billion, while exports averaged \$3.2 billion per year. Between 1986 and 1990 the value of cocoa exports slumped from \$1.1 billion to \$738 million and coffee earnings plunged from \$618 million to \$265 million. Earnings from other exports, especially wood and wood products, cement, and cotton, increased during this period. The terms-of-trade index fell from 100 in 1987 to 66 in 1990. The current account deficit is more than \$1 billion, partially due to large debt service payments.

In 1990, the trade surplus showed a substantial improvement, increasing to 14 percent of GDP, despite a 24-percent decline in the value of cocoa and coffee exports, and a 17-percent drop in the value of total agricultural exports. The value of total imports also declined by some 15 percent in 1990, primarily because of sharply lower volumes of intermediate and capital imports resulting from the contraction of domestic income and final demand and a decline in average import prices.

Policy reforms were expected to improve the 1991 economic climate. Agricultural production was projected up 4 percent, with growth in both food and export crop production. Export crop output was expected to increase in 1991, despite difficulties with financing coffee marketing. Coffee export prices have fallen to such low levels that commercial financing results in losses, hence, commercial banks are reluctant to participate, and the government cannot find funds for the normal functioning of the marketing season.

The 1991 rainfall accumulation was somewhat above normal by the end of August and a good harvest is expected. Unusually heavy rainfall during July caused flooding in some southern regions. Following several successive good harvests, the overall food supply situation is satisfactory. The cereal import requirement for 1991/92 commercial and food aid imports is estimated at 650,000 tons (table 23). Recognizing the country's serious balance-of-payments difficulties, donors have increased their food aid allocations to substitute for commercial imports. In addition, emergency food assistance is being provided to 300,000 Liberian refugees in the western region.



Since the mid-1980's, Ghana has undertaken wide-ranging financial and structural reforms within the overall context of the government's Economic Recovery Program (ERP). The reforms have entailed a major shift from a centralized economic system with pervasive government controls, to a market-determined environment. In the early years following 1983, stabilization was the primary objective. Since 1988, the ERP has emphasized financial sector reform, reduction of civil service payrolls, restoration of social services, restructuring of state-owned enterprises, and incentives for export sectors.

The ERP, aided by relatively high levels of international assistance, has had some positive results. Strong economic performance from 1984 to 1989 owed much to favorable rains, improved infrastructure, aid inflows, producer incentives, and trade liberalization. Ghana's GDP in 1989 grew a robust 6.1 percent. But in 1990, after a year of rising inflation, a mediocre food harvest caused by late rains, and low international cocoa prices, it fell to 2.7 percent. Four gasoline price increases in 1990 exacerbated the higher cost of living.

For 1991, the government reduced its target growth in real GDP to 4 percent, partly because of low world cocoa prices. The balance of payments improved, as international creditors extended repayments and provided new grants at low interest

rates. Economic restructuring in Ghana depends on large infusions of aid, about \$570 million in 1990 alone.

Despite strong GDP growth, underlying structural and social problems remain. Consumer incomes remain extremely low. Farmers are slowly improving their lot. Real revenues for cocoa producers have increased sharply, but the average Ghanaian consumer, including many in the rural areas, may have become worse off as incomes failed to keep pace with sharply rising costs of consumer goods, services, and input costs. In 1990, for the first time in recent years, the increase in the minimum wage (from 170 to 218 cedis per day, or about \$0.75 per day) slightly exceeded the estimated inflation rate.

Ghana's policy reforms have followed the guidelines recommended by the World Bank and IMF. The key elements are devaluation of the cedi, improvement of infrastructure and extension, elimination of subsidies and government direct production projects, reduction of the staff of the Cocoa Board and other bureaucracies, and privatization of parastatals. Import restrictions have been liberalized and the government seems to have a fairly strong resolve to follow the IMF/World Bank policy prescriptions.

In 1990, imports totalled \$1.1 billion and exports \$793 million. Through 1989, cocoa revenues accounted for over half of Ghana's export earnings, however, they fell to 39 percent in 1990. The \$300-million trade deficit is financed by grants and long-term concessional loans. Ghana's debt-service-ratio declined, from a high of 68 percent in 1988 to 40 percent in 1990, and is expected to fall to 29 percent in 1991, as new grants and credits are extended and past debts are rescheduled at more favorable terms. Concessional loans and grants are expected to total \$630 million annually for 1991 to 1993.

Ghana maintains a liberal import policy for most products. In early 1989, the government abolished import licensing. In 1990, it imposed higher sales taxes on certain luxury imports; these taxes were reduced in 1991. Foreign exchange is readily available for those able to pay for it. Some import monopolies by parastatals have ended. For example, malt may now be imported directly by breweries. The import monopoly remains for wheat.

Grain output declined markedly in 1990 due to the vagaries of rainfall. Cocoa production fell because of the removal of input subsidies. Planting of many crops occurred later than normal and there was some crop shifting from corn to cassava. Unusual rainfall in late 1990 improved early 1991 production of cocoa, root crops, and plantains, resulting in better food supplies. Also, to boost production, the government increased the price paid to cocoa farmers from 36 per-

Table 24. Ghana summary

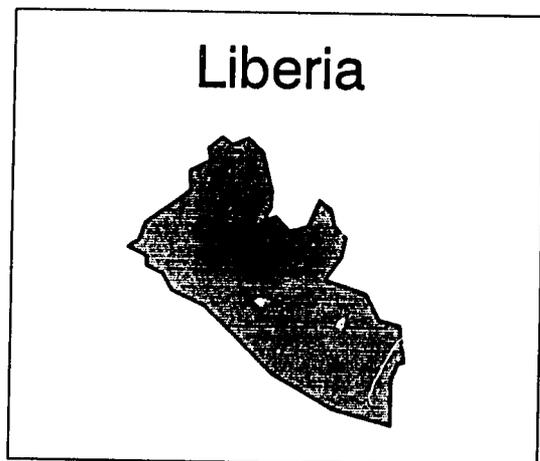
	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----												
1981/82	693	113	58	0	50	25	15	716	774	11	71	---	---
1982/83	532	155	75	0	32	22	13	635	710	11	64	---	---
1983/84	295	97	96	0	19	14	26	346	442	12	37	---	---
1984/85	890	40	96	0	34	28	97	798	894	12	72	---	---
1985/86	748	63	66	17	40	27	50	775	841	13	65	---	---
1986/87	877	124	100	0	50	36	52	913	1,013	13	75	---	---
1987/88	905	140	88	0	45	27	55	969	1,057	14	76	---	---
1988/89	1,095	116	88	0	50	40	65	1,111	1,199	14	84	---	---
1989/90	1,176	155	77	25	59	39	120	1,153	1,230	15	84	---	---
1990/91	811	178	123	0	58	34	60	956	1,079	15	71	---	---
Status quo requirement forecasts													
1991/92	959	169	---	5	52	35	44	1,052	1,224	16	78	172	188
1992/93	1,050	163	---	5	54	36	69	1,093	1,263	16	78	170	145
Nutrition requirement forecasts													
1991/92	959	169	---	5	52	35	44	1,052	1,066	16	68	14	30
1992/93	1,050	163	---	5	54	36	69	1,093	1,100	16	68	7	0

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

cent of the average f.o.b. price in 1987/88, to about 50 percent in 1990/91.

Ghana's grain production is expected to recover to 960,000 tons in 1991 (table 24). Rainfall during the early part of the growing season was plentiful. Continued heavy showers in August interfered with the early corn harvest and some losses were reported. Overall food supplies will increase in 1991/92, relieving pressure on prices. Ghana's forecast food aid needs are high relative to historical levels, reflecting, in part, the very high consumption in 1988 and 1989. If a good harvest materializes, actual food aid receipts will not exceed 1990/91.



The civil war in Liberia which began in late 1989 completely disrupted all aspects of life in the country. Thousands of traumatized Liberians were displaced from their homes; more than 750,000 fled to neighboring countries. As of 1991, an estimated 1.2 million persons inside Liberia were in need of assistance. Between 10,000 and 15,000 people were killed during the conflict. A five-nation, West African peacekeeping contingent, which includes troops from Sierra Leone, Guinea, Gambia, Nigeria, and Ghana, is still in Liberia to enforce the cease fire established in late 1990. An interim government has been formed, but some of the rebels have refused to accept the new leadership. By mid-1990, virtually all economic activity ceased, except for the selling of looted merchandise and small amounts of food at exorbitant prices.

In early 1991, there was minimal resumption of regular commercial activity but complete recovery will take years. Destruction of the economic infrastructure was extensive, especially in the Monrovia area. Water, sanitation, electrical power, and telephones were all unavailable. The loss of the Mount Coffee hydroelectric dam (caused by erosion from unopened spill gates) is perhaps the most costly event of the war. The dam generated all of Monrovia's electricity for 7-8 months of the year. Its loss means total dependence on costly electricity from aging, often nonworking generators. Only partial water service and sporadic electrical power had resumed by mid-1991.

By August, the relief effort in Monrovia, coordinated by SELF (Special Emergency Life Food), a local voluntary organization, was proceeding smoothly. There was a greater

Table 25. Liberia summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	147	59	57	0	0	28	9	173	230	2	117	---	---
1982/83	160	55	47	0	0	27	21	176	223	2	110	---	---
1983/84	173	93	20	0	0	31	17	239	259	2	124	---	---
1984/85	179	27	76	0	0	30	16	177	253	2	117	---	---
1985/86	173	125	2	0	0	32	17	265	267	2	119	---	---
1986/87	173	99	23	0	0	31	26	232	255	2	110	---	---
1987/88	179	69	34	0	0	30	23	221	255	2	107	---	---
1988/89	179	110	33	0	0	34	27	251	284	2	115	---	---
1989/90	168	90	28	15	0	30	17	223	251	3	98	---	---
1990/91	126	14	145	5	0	30	17	105	250	3	95	---	---
Status quo requirement forecasts													
1991/92	120	0	---	2	0	36	17	82	287	3	105	205	205
1992/93	150	61	---	2	0	38	20	168	297	3	105	129	125
Nutrition requirement forecasts													
1991/92	120	0	---	2	0	36	17	82	339	3	124	257	257
1992/93	150	61	---	2	0	38	20	168	350	3	124	182	179

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

supply of food commodities in the commercial markets, although there was still little or no disposable income for the majority of residents. Over the last few months, the nutritional status of the population at risk in Monrovia has improved significantly, and many children no longer attend supplementary feeding programs. School feeding programs began in July, and more than 20,000 students and staff were receiving meals provided at the schools.

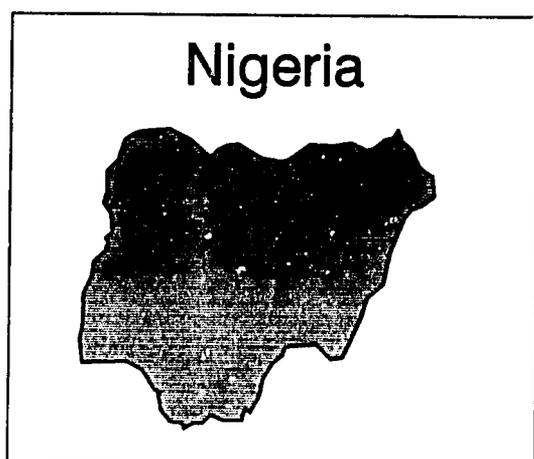
Relief officials have raised concerns regarding the sale of donated commodities and efforts are underway to tighten the distribution system. The official number of people registered by SELF is just over 900,000 residents, a figure believed to be inflated by 25 to 30 percent. SELF was in the process of undertaking a new census before finalizing plans for the ninth general distribution of food aid in August. It was hoped this change would reduce abuses in the registration and distribution of emergency foods.

The Ministry of Planning's recent census for the Monrovia area calls for the distribution of 3,000 tons of rice, 1,500 tons of blended foods, and 400 tons of vegetable oil per month. This is considerably less than the 6,400 tons of food provided in the eighth general distribution. Relief commodities are being transported from Monrovia to the outlying areas, and voluntary organizations are expanding their efforts to reach at-risk populations in the rural areas and buffer zones surrounding Monrovia.

Liberia's weather has been mostly favorable for the planting of upland rice and other food crops such as cassava. However, the rice harvest will again be poor because of the disruptive effects of the civil strife on all economic activities. Some Liberian refugees are returning from neighboring countries, but they will not be able to influence this year's harvest as the season is well advanced. Even in the areas where land preparation has been possible, plantings have been restricted by lack of seeds and implements.

In view of the sharp decline in output, substantial food aid will be needed in 1991/92. There has been some improvement in the food supply situation in Monrovia, but many rural areas still have limited access to emergency food supplies because roads are not yet opened. Cassava has become the major staple available for much of the population. Food aid pledges for 1991 amount to about 138,000 tons but deliveries and distribution have been slow. The start of heavy rains in June made internal movement of supplies very difficult.

Liberia's 1991/92 food aid needs are estimated at 205,000 tons, several times the actual receipts through 1989/90 (table 25). While Liberia has imported significant amounts of grain commercially, no such imports are forecast for 1991/92. Needs will drop sharply in 1992/93 if commercial imports and production recover as predicted.



In 1990, Nigeria continued its World Bank sponsored Structural Adjustment Program focusing on economic policy reform and trade liberalization. GDP growth was a solid 4.3 percent, the third consecutive year of per capita income growth. Agricultural production, hampered in some areas by drought, increased 4 percent in real terms. Inflation remained moderate, with consumer prices rising 13 percent.

Because of the increase in petroleum prices in late 1990, Nigeria's financial picture brightened considerably and foreign exchange reserves rose. Its export earnings from petroleum were \$13 billion, a net of \$8.5 billion, after accounting for foreign exchange expenses essential to generate these revenues. In recent years, petroleum has accounted for over 75 percent of federal revenues. At the end of 1990, foreign exchange reserves reached \$4 billion, but weak oil prices in 1991 led to concern that budgeted expenditures would have to be reduced.

Grain consumption in Nigeria fell during the 1980's as a shortage of foreign exchange forced the government to restrict imports. Per capita food use of grains dipped from 112 kilos in 1981/82 to an estimated 57 kilos in 1990/91 (table 26). Cross-border trade now supplies about 500,000 tons of grain per year compared to official imports of 3 million tons at the beginning of the decade. This sharp decline in grain availability has led to increased consumption of other foods, especially cassava and yams. However, the other foods have not completely offset the deficit and total caloric intake has slipped, especially among low-income urban dwellers.

A sizable portion of Nigeria's export earnings are allocated for payments of its external debt, estimated at \$33 billion in 1990. In 1988, debt service peaked at 87 percent of export earnings. Rescheduling of both public and private debt have greatly improved the situation since then. In 1990, rescheduling lowered the debt-service-ratio from 54 to 35 percent. In 1990, the government paid the targeted 30 percent of export earnings for debt service.

An attempt to reflate the economy in 1988 resulted in sharp price increases. In an effort to control inflation and avoid further foreign borrowing, the 1989-91 budgets were more austere. The 1991 budget maintained the grain import bans

Table 26. Nigeria summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----												
								-Million-		-Kg-		---1,000 tons---	
1981/82	9,234	3,035	1	5	445	1,422	519	10,391	10,393	93	112	---	---
1982/83	9,692	2,936	0	12	480	1,463	527	10,665	10,665	96	111	---	---
1983/84	7,262	2,511	0	10	355	1,175	159	8,601	8,601	98	88	---	---
1984/85	9,311	2,630	0	0	739	1,383	181	9,797	9,797	100	98	---	---
1985/86	8,990	1,660	0	0	460	1,148	935	8,288	8,288	103	81	---	---
1986/87	9,195	1,320	0	0	525	1,237	1,310	8,378	8,378	105	79	---	---
1987/88	7,380	742	0	100	390	1,003	340	7,599	7,599	109	70	---	---
1988/89	9,050	543	0	0	235	1,044	870	7,784	7,784	112	70	---	---
1989/90	8,700	591	0	0	125	1,072	920	8,044	8,044	115	70	---	---
1990/91	6,928	565	0	0	125	904	620	6,764	6,764	119	57	---	---
Status quo requirement forecasts													
1991/92	8,960	612	---	15	467	1,404	920	7,386	8,468	122	69	1,082	782
1992/93	9,122	656	---	15	481	1,447	1,050	7,704	8,727	126	69	1,023	893
Nutrition requirement forecasts													
1991/92	8,960	612	---	15	467	1,404	920	7,386	10,041	122	82	2,655	2,355
1992/93	9,122	656	---	15	481	1,447	1,050	7,704	10,349	126	82	2,644	2,514

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

and essentially continued past policies to promote agriculture, including the strategic grain reserve. The main goals are stable policies, inflation restraint, and reliance on private market forces in preparation for the 1992 transition to civilian rule. New budget initiatives included strengthened funding for credit programs, creation of large parastatal farm authorities in each state, and an agreement of duty-free treatment for a number of products imported from neighboring ECOWAS (Economic Community of West African States) countries. If implemented, this accord would likely increase Nigeria's imports of cotton and oilseeds from its neighbors.

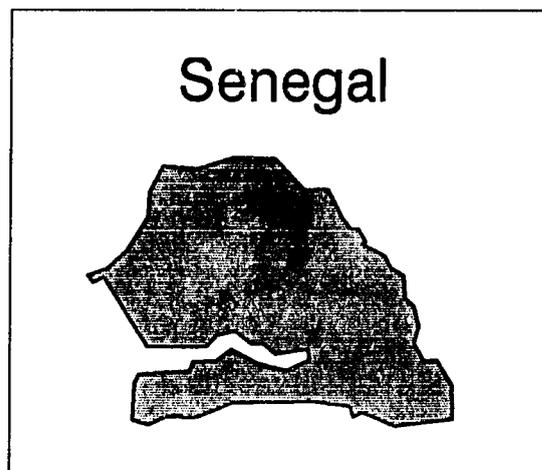
The import bans on grains have been among the most controversial of Nigeria's recent domestic economic policies. Prior to 1986, Nigeria annually imported 3 million tons of grain (wheat, rice, corn, and barley malt). Import bans and high prices cut grain imports to about half a million tons in 1988. The import bans raised food prices, squeezed urban consumers' incomes, and exacerbated the instability of supplies of food and raw materials. Because Nigerians spend a large portion of their disposable income on food, their response was to reduce consumption of higher priced food in favor of cheaper, local foods, thus bidding up the price of cheaper food as well.

Nigeria's grain harvest in 1990 was poor, mostly because of bad weather. Rain started late in some areas and was erratic thereafter in a number of grain-producing areas. As a result, the price of corn and sorghum increased sharply. Prices of other staple foods remained fairly stable. Gari (cassava flour) supplies have expanded in the past few years and compensated somewhat for a low grain harvest in 1991. Subsistence farmers in the far north were hurt by a shortage of sorghum and millet, the basis of their diet and main source of income.

Low consumer incomes, tight monetary policy, and a low level of industrial processing activity has helped to dampen upward price pressures. The shortage of corn and sorghum and high prices in early 1991 probably encouraged farmers to expand area planted at the expense of other crops such as cotton, peanuts, or soybeans. Rice prices have been fairly attractive to producers and area planted is expected to continue to increase. Peasant farm production seems to be on an upward trend, while large-scale farming is not doing well and seems unlikely to expand. Labor shortages, lack of credit, and soil infertility appear to be the major constraints to expanding output rapidly.

Rainfall through August 1991 was near normal for all regions of Nigeria. Occasional heavy rain in the south caused localized flooding. The 1991 harvest is expected to be better than the 1990 crop. Nigeria needs more than 1 million tons of grain food aid to maintain consumption at the average of the last 5 years. Commercial imports for 1991/92 and 1992/93 are estimated near recent levels of 500-600,000

tons. If the import bans were lifted, commercial imports would probably increase significantly. Nigeria has not received food aid in recent years.



Over the past 5 years, the Senegalese economy has progressed under its fourth structural adjustment program, which focuses on increasing the role of the private sector and strengthening public resource management. Recent IMF and World Bank assessments confirm that, despite some problems, the program is making progress. However, prospects for growth are constrained by low export prices for peanut oil, the low level of agricultural productivity, a shortage of public funds for investment, the poor performance in the industrial sector, and the country's large external debt.

From 1986 to 1990, Senegal's economy grew at an average annual real rate of 3.6 percent, in large measure due to good rainfall but also to the financial and economic reforms undertaken during the period. Economic prospects for 1991 are positive, despite an extremely difficult budget situation. GDP growth for 1991 is therefore projected at only 1.5 percent. During the 1980's, long-term resource transfers from donor nations composed a large portion of the Senegalese budget. At the end of the decade these transfers were nearly 55 percent higher in real terms than at the start of the decade. Balance-of-payments data suggest that donor contributions of more than \$4 billion in the 1980's were used to finance consumption rather than investment.

Domestic consumption, which accounted for virtually the entire GDP in the first half of the 1980's, has begun to decline following the compression of private consumption. Domestic savings, which were negative in the early 1980's, recovered to 9 percent of GDP in 1990. The government's fiscal stance has steadily improved through measures to manage demand and increase revenues. However, the fiscal situation remains fragile as evidenced by a significant

Table 27. Senegal summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	882	403	91	0	9	172	52	1,104	1,195	6	203	---	---
1982/83	735	394	151	0	27	160	52	942	1,092	6	180	---	---
1983/84	484	531	131	0	12	144	47	864	994	6	159	---	---
1984/85	658	378	118	0	12	141	75	856	973	6	151	---	---
1985/86	1,192	432	80	0	7	200	182	1,310	1,390	7	209	---	---
1986/87	706	313	109	0	5	152	92	952	1,061	7	155	---	---
1987/88	1,003	408	53	0	5	182	97	1,219	1,272	7	181	---	---
1988/89	813	619	67	0	9	195	52	1,273	1,339	7	184	---	---
1989/90	1,026	461	58	0	8	190	79	1,262	1,320	7	176	---	---
1990/91	925	490	60	0	8	187	64	1,235	1,295	8	168	---	---
Status quo requirement forecasts													
1991/92	870	480	---	0	12	203	60	1,138	1,375	8	173	237	241
1992/93	998	473	---	0	13	209	101	1,209	1,418	8	173	209	168
Nutrition requirement forecasts													
1991/92	870	480	---	0	12	203	60	1,138	1,285	8	162	147	151
1992/93	998	473	---	0	13	209	101	1,209	1,325	8	162	116	75

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

revenue shortfall in 1990. As imports fell, the current account deficit improved from 18 percent of GDP in 1982 to 8 percent in 1990.

Growth in export earnings continues to outpace import growth. Fish, phosphates, and peanuts dominate, averaging about 60 percent of total export earnings. Food imports continue to account for nearly a third of total imports. A combination of debt rescheduling and debt cancellations have ameliorated Senegal's external debt situation.

In recent years, there has been a shift in production from cash crops to food crops, because of relatively low prices offered for cash crops and the return to subsistence farming to feed a growing population. Senegal produces only 55 to 60 percent of its national cereal consumption. Residents of Dakar and other major cities rely heavily on imported rice and wheat as dietary staples. Senegal must import over 500,000 tons of rice and wheat annually to satisfy urban demand.

Senegal's new agricultural policy was initiated in 1984, and the cereals policy, formulated in 1986. The cereals policy emphasizes privatization and elimination of subsidies and price controls. As part of the reform, fertilizer subsidies were reduced and then eliminated in 1988, as were price and marketing controls on all cereals except rice.

Following a below-average harvest in 1990, the food supply position is difficult in some drought-affected areas of the north and center of the country. Cereal production in 1990/91 declined 10 percent from 1989/90 due to poor rainfall (table 27). Average cereal prices in early 1991 were above those of a year earlier at both the producer and consumer level. The food supply situation was further exacerbated by civil disturbances arising from problems between Senegal and neighboring countries and from internal protests.

The rainy season began late this year. First rains in early June permitted plantings in the north but very little rain fell in late June and early July, requiring extensive replanting. The rains began late in the south and were scarce up to mid-July. In the southeast, the first rains came in early July, permitting early plantings. In the center and north, the first substantial rains arrived in late July. Widespread rains fell across the Sahel in mid-August. Up to 150 millimeters fell in Senegal's peanut basin and virtually eliminated lingering dryness, although harvest prospects remained unfavorable due to the poor start of the rainy season.

Senegal's food aid needs are more than 200,000 tons, excluding commercial imports of almost 500,000 tons. Needs are high because of low stocks and the anticipated poor harvest.

Southern Africa

The Southern Africa region includes Angola, Lesotho, Madagascar, Malawi, Mozambique, Swaziland, Zambia, and Zimbabwe. Two successive years of unfavorable weather and ongoing civil war in Angola and Mozambique have worsened the already precarious food security of many households. Stock levels in the region, prior to the current harvest, were at their lowest level in 4 years, with food shortages reported in Angola, Malawi, Zambia, and Mozambique. The situation is particularly acute in Angola and Mozambique, where civil conflict has interrupted agricultural production and displaced more than 2 million rural residents. Widespread food shortages and malnutrition are

reported there, while over 900,000 Mozambique refugees, requiring ongoing emergency assistance, have crossed into Malawi. Relief efforts have been complicated by the closure of important transportation routes through Mozambique, which have disrupted commodity movements and increased import costs.

With the 1991 harvest completed, cereal output in the region excluding South Africa, is estimated at just under 8 million tons, a slight drop from the previous year but the lowest crop since 1987 (table 28). An early season drought reduced plantings across much of the region, while a dry spell late in the season reduced yields. The corn crop in the region's two major exporting countries, Zimbabwe and South Africa, dropped 10 percent. Zimbabwe has suspended corn exports. Other countries seriously affected by poor weather include Mozambique and Lesotho where cereal output declined more than 40 percent, and Madagascar, where rice output was significantly reduced. Favorable rainfall late in the season increased yields and production in Zambia, Swaziland and Angola, despite significant disruptions caused by civil conflicts there. An increase in plantings and favorable rainfall late in the season led to a record cereal harvest in Malawi.

The suspension of corn exports in Zimbabwe, combined with the smaller harvest in South Africa, will further exacerbate the region's already tenuous food situation. Although the region's commercial imports are projected at 815,000 tons in 1991, they are most likely to be affected by reduced regional export availability. Countries that are able to import

Figure 12
1991/92 Food Aid Needs: Southern Africa
Thousand tons

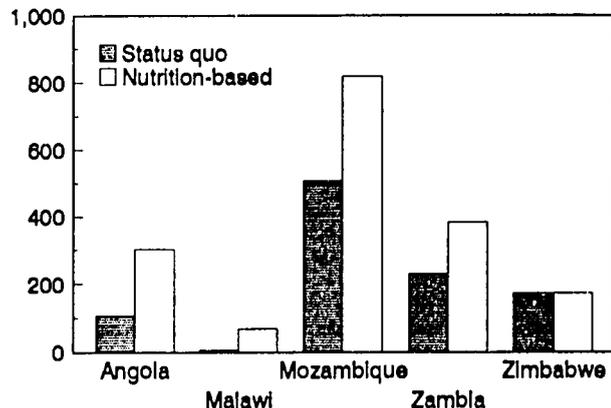


Table 28. Southern Africa regional summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	8,312	952	447	373	400	1,115	1,368	6,329	6,776	50	136	---	---
1982/83	7,028	906	537	609	327	1,058	1,466	5,842	6,379	51	124	---	---
1983/84	6,168	792	628	350	331	1,105	557	6,075	6,703	53	127	---	---
1984/85	6,771	982	886	135	380	1,087	903	5,805	6,691	54	123	---	---
1985/86	8,799	767	609	363	416	1,192	1,940	6,558	7,168	56	128	---	---
1986/87	8,358	546	665	510	419	1,171	2,405	6,339	7,004	58	121	---	---
1987/88	6,548	563	968	393	432	1,161	1,269	6,262	7,230	59	122	---	---
1988/89	8,976	732	985	314	494	1,332	1,999	6,838	7,823	61	128	---	---
1989/90	8,576	871	794	174	503	1,383	1,924	7,462	8,273	63	131	---	---
1990/91	8,039	800	848	414	548	1,307	1,447	7,046	7,895	65	121	---	---
Status quo requirement forecasts													
1991/92	7,887	815	---	10	510	1,381	1,184	7,064	8,346	67	125	1,298	1,561
1992/93	8,605	867	---	10	525	1,420	1,541	7,159	8,575	69	125	1,415	1,221
Nutrition requirement forecasts													
1991/92	7,887	815	---	10	510	1,381	1,184	7,064	9,339	67	140	2,303	2,566
1992/93	8,605	867	---	10	525	1,420	1,541	7,159	9,592	69	140	2,438	2,224

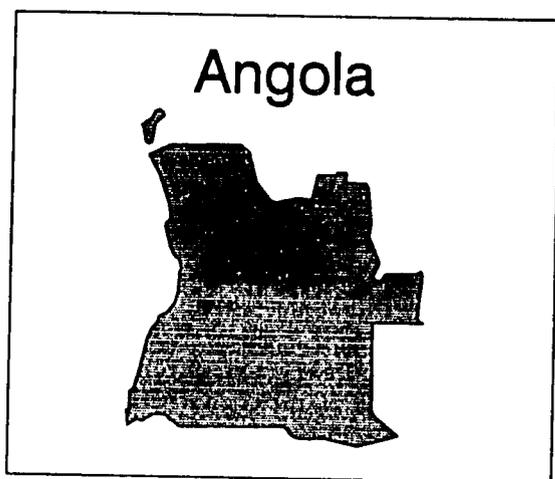
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1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

from outside the region will face increased costs and longer delivery times. Food aid shipments may also be negatively affected as foreign donors, who have traditionally relied heavily on Zimbabwe as a local source of corn for food aid distribution, must go elsewhere for surplus commodities. In recent years, Zimbabwe has supplied highly preferred white corn to needy countries in the region in exchange for wheat obtained from foreign donors under tripartite arrangements.

For the southern African region, status quo food aid needs for 1991/92 are estimated at nearly 1.3 million tons (figure 12). Aggregate needs are greatest in Mozambique, which accounts for more than 40 percent of the total, and in Madagascar, where needs are estimated at more than 240,000 tons. Per capita needs are greatest in Mozambique, 34 kilograms per person, and Lesotho, where 31 kilograms per individual are required. The regional total does not include emergency food aid requirements for Mozambique refugees in Malawi. Food aid needs for this group in 1991 are estimated at nearly 150,000 tons. The regional figure also excludes emergency relief for Angola under the UN Special Relief Program.

Nutrition-based needs, estimated at 2.3 million tons, are somewhat higher than the status quo estimate, reflecting the precarious food security situation of many households in the region. Nutritional needs are greatest in Mozambique, Madagascar and Zambia. These countries, along with Lesotho, also have the highest per capita requirements.



Angola is one of the most richly endowed countries in Sub-Saharan Africa. It has coastal fishing, extensive petroleum and mineral reserves, and a diversified agricultural potential. Sixteen years of civil conflict and misdirected government policies, however, have significantly reduced agricultural output and disrupted economic activity. Large portions of the rural population have been displaced by the fighting,

which has also affected the movement of agricultural inputs, and disrupted marketing channels. Agricultural exports, once an important source of government revenue, have come to a virtual halt. The country, which 15 years ago was self-sufficient in major crops such as rice, sugar, bananas and palm oil, must now import a large percentage of its food and has become a food aid recipient. Daily per capita intake has declined 21 percent since 1980 to 1,787 calories, the third lowest in Africa.

Angola obtains most of its revenues and foreign exchange earnings from petroleum and diamonds. In 1990, petroleum accounted for more than 90 percent of total export earnings and nearly 60 percent of GDP. Between 1988 and 1990, oil exports accounted for more than 80 percent of total government revenues. Daily output through 1991 has averaged 460,000 barrels, with more than 50 percent exported. Diamond output, an important source of pre-independence export earnings, declined rapidly during the 1980's. But from 1987 to 1989, it grew from 266,000 carats to an estimated 1.3 million. Production is now beginning to rebound to pre-independence levels. The relative success of these two sectors were primarily responsible for the 13-percent increase in total GDP that occurred between 1986 and 1988.

Although oil revenues have enabled the government to maintain food imports and finance the war effort, fluctuations in world oil prices, growing import needs, and the enormous cost of the war have taken an increasing toll on the government budget. Non-oil per capita GDP declined steadily throughout the 1980's, while, in recent years, military expenditures have consumed more than 25 percent of total output. In 1989, Angola's external debt was nearly \$7 billion, more than 90 percent of GDP. Reduced oil and agricultural production resulted in a GDP gain of less than 1 percent in 1989.

A peace agreement signed in May 1991 between the ruling MPLA (People's Movement for the Liberation of Angola), and UNITA (National Union for the Total Independence of Angola) guerrillas, and the scheduling of the country's first free democratic elections for later next year, offer some hope of reversing the country's deteriorating social and economic condition. The government has signaled renewed interest in implementing parts of an economic reform program known as the SEF, planned in 1987 but never implemented. Under the reform, Angola was to gradually move towards a free-market economy, which included the gradual removal of consumer and producer price controls, a reduction in government budget deficits, and interest and exchange rate adjustments. To date, few serious policy changes have been enacted under the plan. A major challenge for any newly elected government will be to implement significant components of this or a similar adjustment program.

Table 29. Angola summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----							-Million-	-Kg-	---1,000 tons---			
1981/82	321	217	75	0	0	55	0	482	557	7	80	---	---
1982/83	319	286	61	0	0	60	0	545	606	7	85	---	---
1983/84	348	274	69	0	0	62	0	560	629	7	87	---	---
1984/85	329	345	84	0	0	68	0	606	690	7	93	---	---
1985/86	325	203	53	0	0	52	0	475	528	8	70	---	---
1986/87	315	281	69	0	0	59	0	537	606	8	78	---	---
1987/88	289	308	108	0	0	64	0	532	640	8	81	---	---
1988/89	332	309	116	0	0	68	0	573	689	8	85	---	---
1989/90	285	328	77	0	0	62	0	551	628	8	76	---	---
1990/91	216	285	100	0	0	54	0	447	547	9	64	---	---
Status quo requirement forecasts													
1991/92	342	296	---	0	0	69	0	568	674	9	77	106	106
1992/93	371	281	---	0	0	71	0	581	692	9	77	111	111
Nutrition requirement forecasts													
1991/92	342	296	---	0	0	69	0	568	870	9	99	302	302
1992/93	371	281	---	0	0	71	0	581	893	9	99	312	312

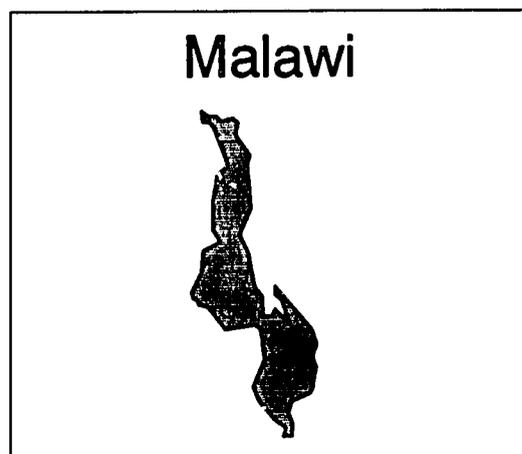
--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

Two years of successive drought, 1989 and 1990, combined with ongoing political and economic turmoil, have further undermined household food security throughout Angola. Many regions are still suffering the effects of last year's severe drought which left an estimated 2.5 million persons at risk of starvation. Widespread malnutrition has been reported, with the situation particularly acute in the central and southern provinces. Relief efforts are currently being coordinated by the United Nations Special Relief Program (UNSRP) for Angola. Continuing assistance in the form of inputs and infrastructure repairs will be needed to ensure the successful planting of the 1992 crop.

The 1991 cereal crop is estimated at 342,000 tons, the best harvest since 1983, representing a 58-percent increase from 1990's drought-reduced output (table 29). Timely rainfall early in the season partially compensated for disruptions in planting caused by the civil conflict, while favorable weather throughout the growing season led to improved yields, particularly of the corn crop. Output was highest in Huila, Bie, Cuanza-Sul, and Cunene provinces.

Status quo food aid needs for 1991/92 are estimated at 106,000 tons, slightly higher than last year's receipts but about average. Commercial imports are estimated at 296,000 tons, up slightly from 1990. Nutrition-based needs of 302,000 tons reflect a nutritional deterioration that has taken place over the post-independence period. Neither the nutrition-based nor status quo estimates include emergency aid currently being distributed under the UNSRP.



Malawi is a small, densely populated, landlocked country, whose economy depends heavily on export revenues from a handful of agricultural commodities. Agriculture employs an estimated 85 percent of the labor force and accounts for more than one-third of total GDP. Seventy-five percent of the country's agricultural output, including most of the corn crop, is produced by a large number of smallholders, with little access to modern inputs or irrigation. A small number of externally oriented estate growers produce tobacco, tea, and sugar, primarily for export. Production from this sector accounts for most of the country's foreign exchange earnings. In 1990, tobacco alone accounted for nearly 70 percent of Malawi's total export revenues.

By many measures, Malawi has recovered from the economic downturn of the early and mid-1980's precipitated by a number of factors including, the closure of transportation routes through Mozambique, which reduced export competitiveness and increased import prices, unfavorable weather, which decreased agricultural output, and a steady influx of refugees fleeing the war in Mozambique. Between 1980 and 1987, real per capita GNP declined 20 percent.

A structural adjustment program implemented in 1988, including import liberalization, exchange rate adjustment, and public enterprise reform, has been successful in increasing Malawi's overall level of economic growth, as reflected by a steady increase in GDP over the past 4 years. GDP growth accelerated from 3.3 percent in 1988 to nearly 5 percent in 1990. Improved input availability, a substantial infusion of foreign capital, and a significant increase in estate sector output were primarily responsible for the increase. Between 1987 and 1990, total output from the estate sector grew at an average annual rate of 8.3 percent, led by an expansion in export capacity and higher tobacco prices.

Despite the success of recent reforms, Malawi remains one of the poorest countries in the world. Susceptibility to drought, rapid population growth, limited land availability and government agricultural policies favoring the estate sector have left most smallholder households virtually untouched by recent GDP growth. In fact, GDP generated by this sector stagnated throughout the latter half of the 1980's and declined by more than 4 percent in 1990. Such a lop-

sided growth pattern leaves a large portion of the population living in widespread poverty and food insecurity. Per capita GDP of \$219 is among the lowest in Africa. An estimated 50 percent of children under 5 years of age are stunted because of chronic malnutrition. The country's infant mortality rate, at 149 per 1,000 live births, is the third highest in the world.

Recent changes in agricultural policy have attempted to extend the economic successes of the estate sector to smallholder households. Among these are producer price increases, the redirection of agricultural research funds to address the needs of the smallholder sector, and the lifting of planting restrictions which had prevented smallholders from growing the lucrative burley-type tobacco. Estate growers had previously had a monopoly on burley tobacco production.

In 1990, Malawi suffered a devastating drought which placed an estimated 2.8 million people at risk of hunger. Average rainfall was 60 percent below normal during the critical pollination months of January and February. Subsistence farmers who rely primarily on rain-fed crops were the most severely affected. Emergency food distributions to high-risk households were successful in circumventing widespread drought-related starvation and have now been terminated. Food shortages, however, were still reported at major distribution points in April and May, prior to the current harvest.

Table 30. Malawi summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	1,267	72	2	58	0	184	0	1,097	1,099	6	178	---	---
1982/83	1,437	24	3	102	0	157	263	938	941	6	148	---	---
1983/84	1,391	16	4	106	0	181	306	1,078	1,081	7	164	---	---
1984/85	1,420	16	5	131	30	183	337	1,061	1,066	7	157	---	---
1985/86	1,377	17	5	80	35	205	224	1,187	1,192	7	170	---	---
1986/87	1,318	6	10	30	30	153	156	1,180	1,190	7	163	---	---
1987/88	1,243	1	109	0	30	219	50	1,101	1,210	8	156	---	---
1988/89	1,371	58	167	0	30	264	76	1,109	1,275	8	154	---	---
1989/90	1,540	37	227	0	30	236	234	1,153	1,380	9	157	---	---
1990/91	1,372	54	135	0	40	243	100	1,277	1,412	9	154	---	---
Status quo requirement forecasts													
1991/92	1,741	27	---	8	27	254	100	1,480	1,464	9	157	0	0
1992/93	1,460	33	---	8	27	259	50	1,250	1,491	10	157	242	292
Nutrition requirement forecasts													
1991/92	1,741	27	---	8	27	254	100	1,480	1,548	9	166	68	68
1992/93	1,460	33	---	8	27	259	50	1,250	1,576	10	166	327	377

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

For 1991, normal rainfall late in the crop year and increased planting of hybrid corn varieties resulted in above-average yields. In addition, the purchase of farm inputs grew significantly, led by a 20-percent increase in fertilizer sales. As a result, the 1991 cereal crop is forecast at a record 1.7 million tons, 22 percent above last year's output (table 30).

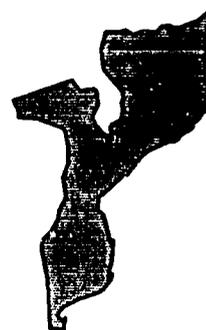
Although the bumper harvest has improved conditions for last year's drought victims, segments of the population remain in need of emergency assistance. Avalanches and flash flooding in the Phlombe district in mid-March destroyed an estimated 17,000 hectares of crops and claimed hundreds of lives. Flooding in the Zomba, Lilwonde, Mzuzu, and Karinga areas resulted in the loss of another 3,400 hectares, including 1,900 hectares of corn. The Government of Malawi has requested \$19 million in relief assistance for these regions.

The ongoing influx of refugees from Mozambique continues to complicate Malawi's food security situation. The enormity of the refugee population, now approaching 900,000, has severely strained Malawi's infrastructure and agricultural resources. Worst off are the southern regions of Chikewawa and Nsanje, which received particularly large inflows of refugees at the end of 1990. Barring an unforeseen improvement in Mozambique's security situation, the refugee population is projected to increase at an average rate of 9,000 per month during the coming year. According to the FAO, total refugee food needs for the 1991/92 marketing year are estimated at 150,000 tons, with approximately three-quarters of it needed in the form of corn.

Due to the harvesting of a record grain crop, status quo food aid needs for 1991/92 are zero. However, this figure does not account for emergency assistance being provided to the refugee population. Nutrition-based needs, estimated at 68,000 tons, reflect the chronic food deficiencies faced by smallholder households.

Commercial imports for the coming year are forecast at 27,000 tons, somewhat below average, which reflects only past trends and does not account for ongoing external events which may negatively affect Malawi's import capacity. Increased import costs, associated with a shortage of exportable surpluses in the region, and the shut down of important routes through Mozambique may reduce imports further. Closure of the Tete corridor, for example, is expected to increase transportation costs into Malawi between 10 and 15 percent. Emergency aid, currently being provided to the country's refugee population, is being funded through foreign grants and will not directly affect Malawi's domestic import position, although logistical difficulties may significantly complicate relief efforts.

Mozambique



Mozambique is heavily dependent on food aid. Domestic grain production, mostly corn, contributes less than 60 percent of the country's needs, and a severe shortage of foreign exchange prevents importing commercially. Food aid averages about 500,000 tons a year.

Of an estimated population of 15 million, over 1.9 million are displaced and require basic relief items such as seeds and tools. In most rural areas, the nutritional situation is precarious. Mozambique continues to have one of the world's highest mortality rates, with 1 out of 3 children dying before reaching 5 years of age.

Mozambique's economic performance in the second half of the 1980's reversed the decline of the first half but was insufficient to generate a more self-reliant economy. In January 1987, the government launched a structural adjustment program beginning the process of domestic and external liberalization of the economy. Real GDP growth averaged 5 percent annually from 1987 to 1990. The inflation rate fell from 165 to 40 percent. The outlook for 1991 was less favorable as agricultural production declined and prices rose.

Despite the adjustment efforts, Mozambique continues to experience severe macroeconomic imbalances and remains one of the poorest countries in Africa. In recent years, aid inflows have averaged \$600-700 million annually (49 percent of GDP in 1990). Debt relief averaged \$400 million a year. By the end of 1990, external accounts remained in severe deficit, with exports of about \$120 million and imports of \$900 million. The country's foreign debt of \$4.8 billion is almost 300 percent of GDP.

Balance-of-payments data indicate that Mozambique's external terms of trade deteriorated significantly in 1990 because of lower export prices and higher import prices. Increases in nontraditional exports, mostly clothing and shoes, were offset by a decline in cashew nut exports. A larger deep-sea

Table 31. Mozambique summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	483	171	149	0	0	62	14	588	737	12	59	---	---
1982/83	568	97	210	15	0	67	14	583	793	13	62	---	---
1983/84	518	0	274	0	0	62	17	453	728	13	56	---	---
1984/85	544	51	379	0	0	76	15	521	900	13	67	---	---
1985/86	584	38	362	0	0	77	15	545	907	14	66	---	---
1986/87	593	0	244	0	0	67	15	527	771	14	55	---	---
1987/88	465	1	506	0	0	78	10	393	899	14	64	---	---
1988/89	525	0	506	0	0	78	5	452	958	14	68	---	---
1989/90	553	7	410	0	0	76	5	484	894	14	63	---	---
1990/91	697	7	493	0	0	93	5	611	1,104	15	76	---	---
Status quo requirement forecasts													
1991/92	523	20	---	2	0	80	5	461	968	15	65	507	507
1992/93	591	47	---	2	0	81	5	555	982	15	65	426	426
Nutrition requirement forecasts													
1991/92	523	20	---	2	0	80	5	461	1,279	15	86	818	818
1992/93	591	47	---	2	0	81	5	555	1,297	15	86	742	742

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

shrimp catch contributed to a moderate increase in shrimp exports which account for about 30 percent of export earnings. Higher world petroleum prices added about \$25 million to the import bill in 1990. Higher private transfers and lower debt service payments kept the current account deficit near the 1989 level of \$375 million.

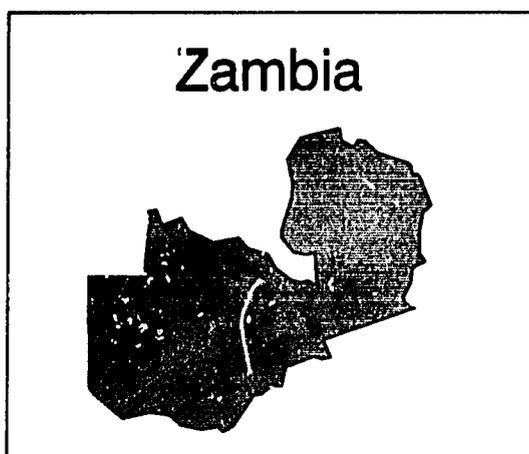
Agricultural export performance in 1990 was disappointing. Cashew production, one of Mozambique's primary sources of foreign exchange, was down 52 percent. The fishing sector continues as Mozambique's best foreign exchange earner, bringing in an estimated \$42 million in revenues in 1990. Starting in 1990, all new investments in shrimp fishing must include a local joint-venture partner.

The 1991 harvest produced mixed results. Rains started late throughout the country but in some areas continued steadily, and, combined with improved price and marketing incentives, resulted in good localized harvests. Sofala and Manica Provinces had exceptionally poor rains and small harvests, whereas Nampula Province, had its best cereal harvest in years. According to the FAO, the 1991 harvest is estimated at 523,000 tons of cereals, 3.6 million tons of cassava, and 63,000 tons of beans. Donors will continue to provide close

to 30 percent of Mozambique's total food requirements. Production of cereals declined 25 percent, cassava 9 percent and beans 30 percent. In the central and southern provinces, the late arrival of rains and a midseason dry spell caused widespread losses to corn. Weather conditions were favorable in the northern provinces.

Despite market liberalization, the volume of corn marketed is likely to decline from last year. In addition, difficulties stemming from dilapidated infrastructure and ongoing civil strife severely limit the movement of farm products through both public and private channels. There will be limited opportunities to utilize marketed surpluses available from some provinces.

The need for food imports will rise sharply in 1991. With the considerable decline in 1991 production and severely constrained commercial import capacity, Mozambique's grain food-aid requirements for 1991/92 are estimated at over 500,000 tons (table 31). About half is required for relief operations, with the remainder going to supply urban and rural markets. Further logistical support, including the rehabilitation of roads, and transportation generally, is also needed.



agricultural production. Zambia is now the most urbanized country in Africa, with over 50 percent of its population residing in urban areas.

With the country so heavily dependent on a single industry, the sudden collapse of world copper prices in 1975 sent the economy into a rapid and dramatic decline from which it is still attempting to recover. Export revenues, which declined more than 70 percent between 1975 and 1984, significantly curtailed foreign exchange availability and substantially reduced imports. Between 1975 and 1988, real GDP per capita fell more than 50 percent.

The government initially compensated for the foreign exchange shortage by borrowing externally to maintain import and consumption levels. By 1982, however, the continued decline in revenues made such a heavy debt burden untenable. Between 1982 and 1987, Zambia, in conjunction with the IMF and World Bank, worked to implement a series of structural adjustment programs designed to stabilize the economy. These programs included export diversification, cuts in domestic expenditures through subsidy reductions, and exchange rate adjustments. A key component of the early adjustment process was a foreign exchange auction designed to alleviate the country's chronic foreign exchange deficit. These initial adjustment efforts met with limited success but were abandoned in 1987, largely as a result of domestic political pressures.

By late 1988, mounting inflation, unmanageable budget deficits, and a severe shortage of consumer goods due to

Since the early 1980's, Zambia has grappled with a multitude of economic problems, including runaway inflation, burdensome external debt obligations, budget deficits, and an inefficient agricultural sector. An ongoing series of external shocks and poor policy decisions have resulted in more than a decade of economic stagnation.

Since independence in 1964, Zambia's economy has been almost wholly dependent on the copper industry. The industry's success in the early post-independence period encouraged the development of an import-dependent economy, heavily reliant on export revenues to finance its extensive system of consumer subsidies and social programs. Government policies favoring industrial growth over the agricultural sector encouraged rural-urban migration and discouraged

Table 32. Zambia summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	1,321	150	100	0	25	157	29	1,284	1,384	6	238	---	---
1982/83	851	122	83	0	25	106	22	849	932	6	154	---	---
1983/84	1,052	138	72	0	20	126	24	1,042	1,114	6	177	---	---
1984/85	998	124	116	0	24	124	20	977	1,094	7	167	---	---
1985/86	1,259	116	85	0	29	137	110	1,119	1,204	7	178	---	---
1986/87	1,320	49	116	0	39	133	219	1,088	1,203	7	171	---	---
1987/88	1,149	33	102	0	34	141	64	1,162	1,264	7	172	---	---
1988/89	2,043	7	112	0	74	160	700	1,180	1,291	8	170	---	---
1989/90	1,806	90	33	0	73	208	710	1,605	1,654	8	210	---	---
1990/91	1,200	39	20	0	73	159	379	1,338	1,358	8	167	---	---
Status quo requirement forecasts													
1991/92	1,369	64	---	0	48	174	379	1,211	1,441	8	172	229	229
1992/93	1,468	61	---	0	50	180	489	1,188	1,494	9	172	306	196
Nutrition requirement forecasts													
1991/92	1,369	64	---	0	48	174	379	1,211	1,592	8	190	381	381
1992/93	1,468	61	---	0	50	180	489	1,188	1,651	9	190	463	353

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

smuggling and foreign exchange shortages, prompted the government to enact a new series of policy reforms. These included a 25-percent devaluation of the kwacha, interest rate adjustments, and a threefold increase in consumer corn meal prices. A coupon system was introduced to insulate low-income consumers from the full effect of the price increases.

The government is currently in the midst of an ambitious adjustment program, formally undertaken in 1989, in conjunction with the IMF and World Bank. Several significant policy changes have already taken place under this new framework. Producer price controls for all major commodities, although still officially intact, have been replaced with an informal system of floor and ceiling prices. Price controls have been removed on all consumer goods, with the exception of corn and fertilizer. The national agricultural parastatal, NAMBOARD, has been abolished, allowing private traders to participate in the corn marketing system for the first time. In order to ease the country's foreign exchange constraints, the government has also established a dual-window exchange rate system. This coincided with a depreciation of the kwacha.

The adjustment program has thus far met with mixed success. Growth in the money supply has slowed and inflation declined from 162 percent in 1989 to 105 percent in 1990. The budget deficit has been reduced and real growth in non-traditional exports was 30 percent in 1990.

Political pressures associated with the country's first multi-party elections and the IMF's temporary suspension of funding, because of the government's failure to meet debt obligations, slowed the reform process in the closing months of 1991. The overwhelming defeat of President Kenneth Kaunda and his United National Independence Party (UNIP), which has ruled Zambia since independence in 1964, may speed the reform process. Zambia's new president, Frederick Chiluba and his Movement for Multiparty Democracy (MMD) which won the October election with more than 75 percent of the vote, has pledged to speed economic reforms.

Reforms include reductions in government spending through civil service cuts, subsidy reductions, and privatization of the huge public enterprise system. A major challenge for the new government will be to implement the full removal of price controls on corn meal, originally scheduled for mid-

1991. Price increases on this staple led to serious rioting in urban areas in 1987 and 1990.

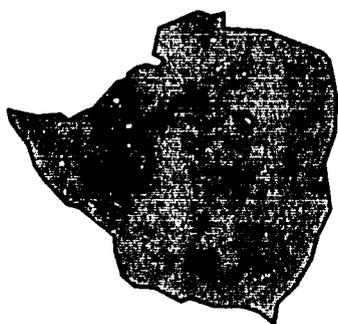
The poor performance of the agricultural sector continues to be an obstacle to Zambia's economic growth. Production remains highly susceptible to weather variations, with droughts in 1987 and 1990 resulting in widespread food shortages. Climatic problems have been compounded by poorly coordinated government policies, including late payments to producers that delay input purchases and planting, lower real producer prices and late price announcements, delayed fertilizer distribution, and inadequate storage facilities. Real GDP generated by the agricultural sector declined 7.3 percent in 1990, a result of poor weather and a 1989 electrical plant fire which disrupted power supplies to the irrigated sector.

The 1991 cereal crop, estimated at nearly 1.4 million tons, is up 14 percent from 1990's drought-reduced harvest (table 32). A reduction in area planted, brought about by late rains, poor credit and input availability, as well as diversion of acreage to soybeans and yellow feed corn, was somewhat off-set by increased yields. Poor harvests, however, did occur in several districts, including portions of the southern and eastern provinces, where yields were reduced by a prolonged dry spell.

The success of the 1991 crop has not alleviated domestic corn shortages. Preharvest corn stocks were low, with widespread shortages of corn meal—the country's staple food—particularly evident in urban areas. The marketing of the current crop has been slowed by the government's failure to announce corn prices for the coming year. As a result, much of the 1991 harvest remains on the farm, with many producers holding their crops in anticipation of future price increases. A prolonging of this situation may further reduce food availability through storage losses. In addition, inter-province corn shipments have been affected by sporadic shortages of diesel fuel.

Status quo food needs for 1991/92 are estimated at 229,000 tons, somewhat higher than historical receipts. Commercial imports are estimated at 64,000 tons, also above average. Nutrition-based needs are higher at 381,000 tons.

Zimbabwe



Zimbabwe's role as a grain supplier in Southern Africa will be severely curtailed in 1991/92 due to drought. A draw-down of corn stocks may enable the country to avoid corn imports; however, white corn, will not be available to donors for swap arrangements with neighboring countries. Zimbabwe will still need to import wheat, and hard currency for these imports will be scarce. The shortages may encourage steps towards reduced government intervention in the grain market as proposed in Zimbabwe's policy reform package.

In 1990, Zimbabwe's GDP grew about 2 percent, compared with 5.4 percent in 1989. The drop resulted from a poor crop year and reduced imports, which slowed the expansion of domestic industry. Despite sharply higher energy and

transport prices, a result of the Gulf crisis, the mining and industrial sectors expanded. Reduced output of corn and cotton was offset by a near-record tobacco crop. Although continued shortages of foreign exchange and a deteriorating transport system persevere, the economy is projected to grow 4 to 5 percent in 1991.

The comprehensive economic reform program announced in early 1991 forecasts sweeping economic changes and should move Zimbabwe much closer to a free-market economy. Some initial measures implemented include: aggressive exchange rate management, modest price deregulation, new investment guidelines, flexibility in price and wage setting, a foreign exchange retention system, and a moderate expansion of the Open General Import License (OGIL).

Low import growth enabled Zimbabwe to maintain a trade surplus, but high costs for transport and other services resulted in a balance of payments deficit. Zimbabwe's trade surplus fell from \$271 million in 1989 to \$115 million in 1990. Its current account deficit increased from 3 to 6 percent of GDP. While tobacco and gold sales increased, falling prices for other commodities led to negligible growth in export earnings.

Zimbabwe's budget deficit remained at 9 percent of GDP because of heavy spending on defense and education and on subsidies to parastatals. Much higher fuel costs and eased price and wage controls contributed to an estimated 20-percent inflation.

Table 33. Zimbabwe summary

	Supply			Nonfood use				Food availability and use				Food aid needs	
	Production	Commercial imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Population	Per cap. food use 1/	With stock adj.	Constant stocks
	-----1,000 tons-----									-Million-	-Kg-	---1,000 tons---	
1981/82	3,242	28	0	310	375	323	1,325	1,225	1,225	8	162	---	---
1982/83	2,214	5	6	492	302	318	1,167	1,265	1,272	8	163	---	---
1983/84	1,176	0	75	252	311	329	210	1,241	1,316	8	163	---	---
1984/85	1,730	238	132	4	326	298	531	1,019	1,151	8	138	---	---
1985/86	3,465	153	0	283	302	382	1,591	1,591	1,591	9	184	---	---
1986/87	3,004	17	38	480	300	408	2,015	1,409	1,446	9	161	---	---
1987/88	1,655	33	14	393	308	333	1,145	1,524	1,538	9	165	---	---
1988/89	2,831	84	0	314	310	412	1,218	1,806	1,806	10	186	---	---
1989/90	2,489	53	0	174	350	439	975	1,822	1,822	10	181	---	---
1990/91	2,568	51	20	414	400	376	963	1,441	1,461	10	141	---	---
Status quo requirement forecasts													
1991/92	2,115	48	---	0	399	391	700	1,636	1,788	11	167	152	415
1992/93	2,740	77	---	0	411	403	997	1,707	1,840	11	167	134	0
Nutrition requirement forecasts													
1991/92	2,115	48	---	0	399	391	700	1,636	1,808	11	169	172	435
1992/93	2,740	77	---	0	411	403	997	1,707	1,861	11	169	154	0

--- = Not applicable.

1/ 1991/92 and 1992/93 entries are targets (see "Methodology").

Zimbabwe's 1991 coarse grain harvest was estimated at 1.8 million tons (corn, 1.6 million tons; millet, 150,000 tons; sorghum, 74,000 tons), 20 percent below the average harvest of 1990. Stocks are adequate, but a significant drawdown will occur to meet domestic requirements.

Corn area was down nearly 10 percent in 1991 in response to relatively unattractive prices and a switch to more lucrative crops. The decline was greatest in the large-scale commercial sector. Corn yields were down because of patchy rainfall and a lower fertilizer use by communal and small-scale farmers. Planting of all field crops was delayed by a late start to the rains. Subsequent precipitation benefitted late-planted crops in the main growing areas of the north, but early planted crops in central and southern provinces were badly water stressed. Current prospects are that the output of irrigated wheat will fall sharply from last year's record because water levels in reservoirs are inadequate in some provinces.

Corn deliveries to the Grain Marketing Board (GMB) during the current season are forecast at 600,000 tons, compared to last year's 780,000 tons. Annual domestic consumption from GMB supplies averages 800,000 tons, but this could rise substantially in the current post-drought period as many peasant farmers lack their own private stocks. Cereal output will not cover consumption requirements but large carryover stocks will be drawn down to meet domestic needs. Despite the smaller harvest, wheat imports are expected to be close to last year's 50,000 tons because of large carryover stocks. In order to save foreign exchange in the past, Zimbabwe has taken part in triangular swap arrangements with donor countries in which Zimbabwean white corn was shipped to neighboring countries in exchange for wheat delivered to Zimbabwe by the donor country. All wheat imports in 1990 were under swap arrangements. As there is no surplus white corn this year, wheat imports will have to be donated or paid for with scarce foreign exchange.

In an effort to redress the long-term decline in corn area, the government announced a 20-percent producer price increase for the 1991/92 crop. However, producers from all sectors expressed disappointment at the increase. Of the corn consumed in Zimbabwe, 80-85 percent serves as the dietary

staple. As the population strongly prefers white cornmeal, the output of white corn must keep pace with population increases. The increasing standard of living of the urban population has little impact on reducing their cornmeal consumption.

Zimbabwe's food aid needs for 1991/92 are estimated at 152,000 tons, including a stock drawdown of 263,000 tons (table 33). If the situation deteriorates further, the GMB could reduce stocks below the targeted level of 700,000 tons, as it did following the 1983 and 1984 droughts.

APPENDIX 1: Country coverage list

Central Africa

Cameroon
Central African Republic
Zaire

East Africa

Burundi
Ethiopia*
Kenya*
Rwanda
Somalia*
Sudan*
Tanzania*
Uganda

North Africa

Algeria*
Egypt*
Morocco*
Tunisia*

Southern Africa

Angola*
Lesotho
Madagascar
Malawi*
Mozambique*
Swaziland
Zambia*
Zimbabwe*

West Africa

Benin
Burkina Faso
Cape Verde
Chad
Cote d'Ivoire*
Gambia
Ghana*
Guinea
Guinea-Bissau
Liberia*
Mali
Mauritania
Niger
Nigeria*
Senegal*
Sierra Leone
Togo

*Individual country analyses.

APPENDIX 2. Share of cereals in the diet and minimum caloric requirements

Country	Share of cereals in the diet	Minimum caloric requirements	
		Current	Previous
	Percent	— Calories/person/day —	
Algeria	60.0	2,187	2,187
Angola	35.0	2,108	2,350
Benin	37.0	2,097	2,300
Burkina Faso	73.0	2,097	2,370
Burundi	34.0	2,088	2,330
Cameroon	39.0	2,040	NA
Cape Verde	57.0	2,097	2,350
Central African Republic	21.0	2,040	2,260
Chad	52.0	2,097	2,380
Cote d'Ivoire	40.0	2,097	NA
Egypt	61.5	2,187	2,510
Ethiopia	60.0	2,088	2,330
Gambia	63.0	2,097	2,380
Ghana	27.0	2,097	2,300
Guinea	52.0	2,097	2,310
Guinea-Bissau	64.0	2,097	2,310
Kenya	56.0	2,088	2,320
Lesotho	75.0	2,108	2,280
Liberia	48.0	2,097	2,310
Madagascar	60.0	2,088	2,270
Malawi	70.0	2,097	2,320
Mali	75.0	2,097	2,350
Mauritania	54.0	2,097	2,310
Morocco	65.0	2,187	2,420
Mozambique	33.0	2,108	2,340
Niger	70.0	2,097	2,350
Nigeria	34.0	2,097	NA
Rwanda	25.0	2,088	2,320
Senegal	61.0	2,097	2,380
Sierra Leone	57.0	2,097	2,300
Somalia	45.0	2,088	2,310
Sudan	51.0	2,088	2,350
Swaziland	55.0	2,108	2,350
Tanzania	45.0	2,088	2,320
Togo	40.0	2,097	2,300
Tunisia	57.0	2,187	2,390
Uganda	35.0	2,088	2,330
Zaire	15.0	2,108	2,220
Zambia	70.0	2,108	2,310
Zimbabwe	66.0	2,108	2,390

NA = Not available.
Source: FAO

APPENDIX 3: Methodology

Food aid needs are defined as the gap between target consumption and the availability of cereals for food use. Target consumption is derived from alternative objective measures of per capita food consumption. Availability of cereals for food use depends on production, imports, and nonfood use allowances.

The first step in assessing food aid needs is to project the availability of cereals for human consumption. This is decomposed into two parts—supply of cereals and al-

lowance for nonfood use of cereals. Supply is defined as production, plus stocks, plus commercial imports:

$$\text{Supply} = \text{production} + \text{beginning stocks} + \text{commercial imports} \quad (1)$$

Nonfood use includes exports, feed use, other nonfood uses (such as waste, seed use, and processing), and stock accumulation:

$$\text{Nonfood use} = \text{exports} + \text{feed use} + \text{other nonfood use} + \text{ending stocks} \quad (2)$$

The quantity of cereals available for food use is equal to supply less nonfood use:

$$\text{Food availability} = \text{supply} - \text{nonfood use} \quad (3)$$

Finally, food aid needs are computed as the gap between target food use and food availability:

$$\text{Food aid need} = \text{target food use} - \text{food availability} \quad (4)$$

Food-Use Targets

Two alternative food-use targets are used to assess needs. The objective of the first target—called the status quo—is to support average consumption in the near future close to that of the past. A 5-year average is used in an effort to capture recent changes in food-use patterns and provide a standard for evaluation of all countries.

The second target takes into account internationally recognized minimum caloric requirements. The nutrition-based target is the amount of cereals needed to satisfy the minimum recommended caloric intake. It is computed from minimum caloric requirements, adjusted for the share of cereals in the diet, and the nutritional content of the cereals. The minimum requirements used are derived from standards recommended by the United Nations. They are based on numerous variables such as the age and sex distribution of the population and the physical size of the people. Caloric requirements also differ with assumed physical activity levels.

The caloric requirements used in this assessment are those necessary to sustain life with minimum food-gathering activity. They are comparable to the activity level of a refugee—they do not allow for play, work, or any activity other than foodgathering. In addition, the caloric requirements used are regional averages rather than country specific. This strict definition is different from that used in the *World Food Needs and Availabilities* (WFNA) series, which were country specific caloric requirements and also included a 10-percent allowance for activity. The current caloric requirements are compared to those used in the WFNA series in appendix 2.

Commodity Coverage

This report assesses the food aid needed to meet cereal consumption requirements. Because of data limitations, accurate estimates of the supplies of noncereal foods such as pulses, roots and tubers, vegetable oils, and milk frequently are not available. The omission of noncereals from this analysis may misrepresent food aid needs in those countries where cereals are a small share of the diet. However, in many African countries, cereals account for at least 50 percent of all calories consumed (see appendix 2). In addition, the bulk of all international food aid is provided in the form of cereals.

Data and Procedures

Historical supply and use data for 1981/82 to 1990/91 for most variables are USDA data. Food aid and commercial import data are from the FAO. Historical nonfood-use data, including seed, waste, processing use, and other use, are estimated from the FAO Food Balance Sheet series. Procedures for 1991/92 and 1992/93 estimates are described below:

Production. Production for 1991/92 is based on USDA estimates as of September 1991. Production in 1992/93 is projected assuming normal weather and no external world macroeconomic shocks that could affect production. However, expected trends in domestic producer incentives and policies are factored into the production projections.

Stocks. For 1991/92, ending stocks are based on USDA forecasts of stock levels. For 1992/93, ending stocks are determined based on projected production levels relative to those of 1991, and the level of 1991/92 ending stocks relative to historical maximum and minimum levels in the past 10 years. If 1992/93 beginning stocks are below the historical minimum, stocks are raised to the minimum. If beginning stocks are above the historical maximum, stocks are lowered to the maximum. If beginning stocks are within the range of the minimum and maximum, stock adjustments depend on projected production. If production is at, or above, that of the previous year, stocks are allowed to build towards the maximum. If production is forecast to decline, stocks are reduced towards the minimum to augment domestic supplies. The allowance for stock use or buildup is made under the assumption that stockpiling of cereals in normal production years can help reduce fluctuations in cereals availability for food use in poor production years and, therefore, help stabilize food aid needs.

Nonfood use. Exports, seed, feed, and other nonfood use are projected using a 10-year average. This method assumes that nonfood use of cereals will continue at historic rates and increase in aggregate terms at the same rate as population growth.

Commercial Cereal Import Forecasts: Vector Autoregression Models. The application of the vector autoregression (VAR) approach for forecasting purposes is simple. It uses little economic theory in obtaining the desired forecasts by avoiding the theoretical restrictions which are required in estimating structural models. It avoids the risk of estimating a misspecified structural model, as well as the needed distinction between exogenous and endogenous variables. Therefore, the VAR approach will generally provide us with accurate forecasts while sidestepping the consequences of generating forecasts from structural models which may be misspecified.

In a VAR approach, each variable in the system depends on its own past values and a subset of lagged values of all the other variables which are forecast. For example, with a lag length of 3, the VAR equation for commercial imports is:

$$CM_t = a_0 + a_1 CM_{t-1} + a_2 CM_{t-2} + a_3 CM_{t-3} + a_4 QP_{t-1} + a_5 QP_{t-2} + a_6 QP_{t-3} + \varepsilon_{it}$$

Where:

CM_{t-i} = commercial imports in period $t-i$ (lagged i periods),

QP_{t-i} = production,

ε_{it} = error term

In this specification, the lag length (i) has important implications for the precision of the forecasts. Too many lags will result in a loss of precision in the estimates, while too few

lags will result in biased estimates because of omitted variables. Both will cause loss of precision in the forecasts.

The appropriate lag length will be determined using a likelihood ratio test (using RATS software) with a chi-square distribution of log determinants to two sets of residuals. The test is:

$$((T-c) [\log \det \Sigma_1 - \log \det \Sigma_2])$$

where T is the number of observations, c is a correction factor which equals the number of variables in each unrestricted equation, \det is determinant, Σ_1 and Σ_2 are the covariance matrices of VAR with m and $m-1$ ($m-1$) lags respectively. Two variables were included in the VAR analysis for each country: commercial grain imports and total grain production.

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