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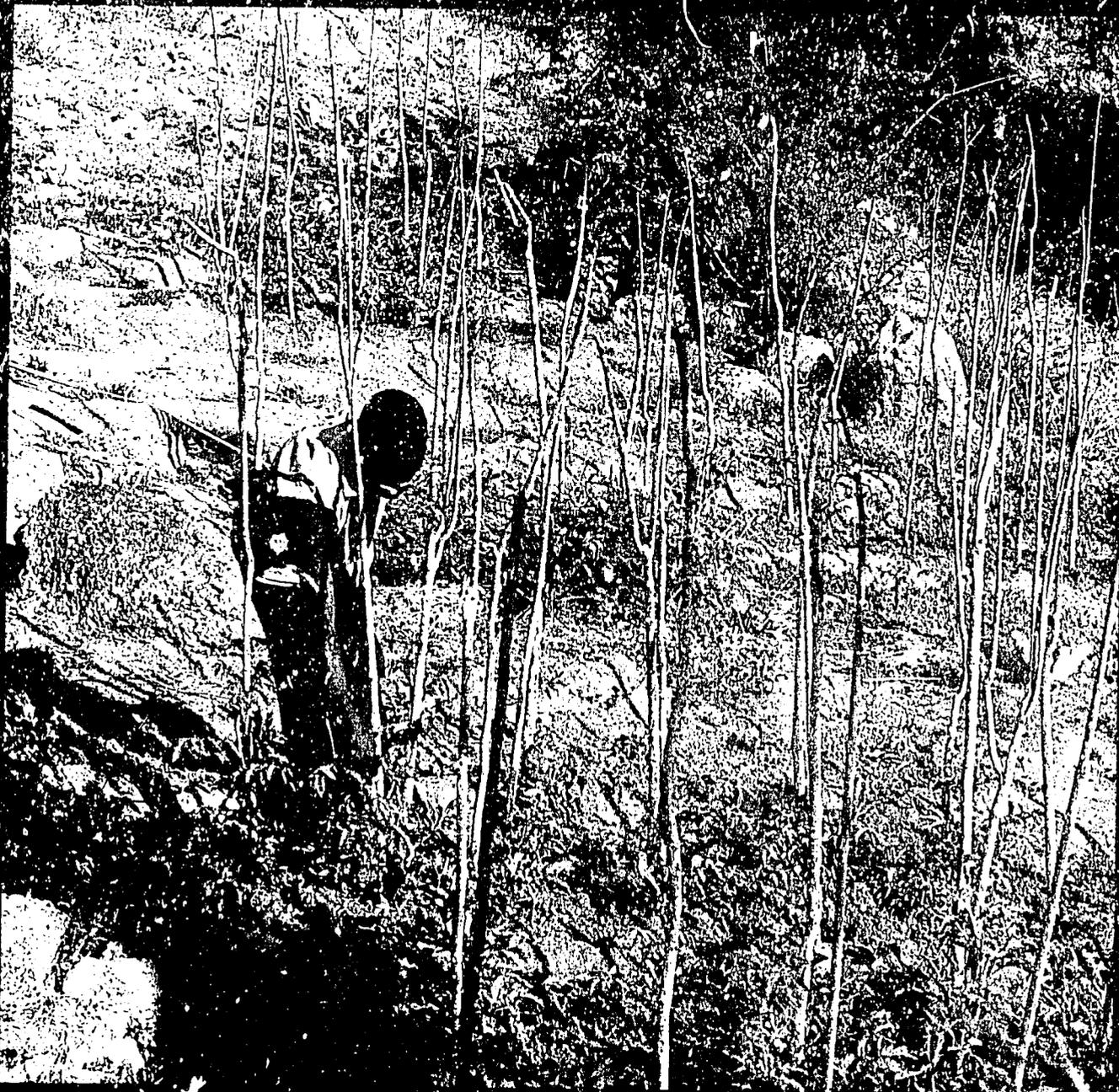
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FOOD AID NEEDS ASSESSMENT

Situation and Outlook Series

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Preface

This report continues the series of food assessments begun in the late 1970's. Global Food Assessments were done in 1990 and 1992, hence the GFA series. The 1991 report covered only Africa. The *Food Aid Needs Assessment* title used in the 1980's was restored this year because it is more descriptive of the contents of the report.

Food Aid Needs Assessment was approved by the World Agricultural Outlook Board. The summary was released on November 3, 1993.

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Summary

Sixty developing countries would need 14 million tons of food aid in 1993/94 to maintain per capita grain consumption at the average of the last 5 years (status quo target). Asia and Sub-Saharan Africa have the greatest needs. To meet the minimum nutritional standard (nutrition-based target), needs increase 64 percent to 23 million tons. The estimates are down from a year earlier, when 16 million tons were needed to meet status quo requirements and 27 million tons were required for nutrition-based needs. However, in 1992/93 the 60 countries received only 10.8 million tons of grain food aid.

World wheat production in 1993/94 is the second largest on record, and although coarse grain output will be down, large carryin stocks will bolster supplies. In addition, import demand for wheat and coarse grains remains weak in the major consuming countries. The resulting strong competition among major exporters is expected to maintain pressure on already low wheat and coarse grain prices. Rice prices, however, have risen sharply recently in response to a dramatic cut in production prospects in Japan.

Total food aid supplies are projected at 13 million tons for 1993/94, up slightly from 1992/93. The share of total food aid received by the 60 countries, however, is expected to decline because production has recovered in Sub-Saharan Africa. During the last 3 years, an average of 78 percent of world food aid was allocated to the 60 countries. The remainder went to Eastern Europe and elsewhere. A similar allocation in 1993/94 would give the 60 countries about 10.2 million tons of food aid--enough to satisfy only 74 percent of their status quo needs and 44 percent of nutritional needs.

In some countries, the gap between estimated needs and actual food aid receipts is even larger. The problem could be resolved by reallocating supplies from countries that meet minimum consumption targets with domestic resources to more vulnerable areas. For example, shifting some supplies from 1992/93 food aid destinations would help alleviate shortages in countries where needs have increased.

Sub-Saharan Africa's needs remain high but are below last year's needs because of the production recovery. The largest decline in food aid needs is in Southern Africa, where the 1993 grain harvest was more than double the drought-devastated harvest of a year earlier. The region's 1993/94 food aid

needs are estimated at 1.4 million tons, down from 4.0 million tons in 1992/93 and actual receipts of 3.4 million tons. Food supplies are adequate in most countries, but renewed civil war in Angola has disrupted food production and distribution, escalating 1993/94 food aid needs. Needs remain high in Mozambique, where years of civil war have destroyed the country's agricultural infrastructure.

Lower food aid needs are also evident in East Africa, where Somali and Ethiopian farmers have benefited from improved security. Ethiopia's food aid receipts declined in 1992/93 and are expected to decline further in 1993/94 as the government continues economic reforms. Continued needs in Sudan reflect severe food shortages caused by the war in the south, even though an average harvest is expected in the main grain-producing region. While Somalia's food situation has improved since late 1992, renewed fighting would disrupt food distribution channels and could lead to food shortages in 1994.

In North Africa, more than 1 million tons of cereal food aid are needed to meet the status quo target. Commercial imports are forecast up, especially in Morocco, where a devastating drought cut grain output for the second consecutive year.

For the nine Asian countries included in the food needs assessment, 1993/94 grain production is expected to remain near last year's record 274 million tons if the monsoon rains continue through the end of the season. The region will import an estimated 9 million tons of grain commercially. Status quo food aid needs are forecast at 6 million tons, up significantly from last year. Because of the region's large population--1.5 billion people--and inadequate nutrition, almost 9 million tons of aid would be needed to meet minimum nutritional requirements. In Bangladesh, rapid population growth and declining per capita consumption during the last 5 years have widened the nutritional food gap. The amount of food aid needed in Asia, although large in relation to food aid supplies, equals only 2 percent of the region's production.

Status quo food aid needs for the 11 Latin American countries are estimated at 1.6 million tons of grain for 1993/94, 5 percent below last year's receipts. Nutrition-based requirements are forecast at 2.8 million tons. Regional grain production increased 3 percent to 6.8 million tons and commercial imports are forecast at 3.4 million tons. Food aid needs are greatest in Peru, with status quo requirements of 632,000 tons.

Developments in Global Cereal Supplies

Exportable wheat supplies remain abundant due to good harvests in most exporting countries. Lower coarse grain production will be offset by large beginning stocks. Strong competition in the wheat market and weak demand in the coarse grain market are expected to maintain pressure on already low prices through 1993/94. Only the rice market is expected to experience higher prices due to record import demand. Low prices in the wheat and coarse grain markets will benefit low-income importers and food aid recipients. [Randy Schnepf]

Global Cereal Supplies Remain Abundant In 1993/94

In 1993/94, global grain production is expected to fall nearly 4 percent from the year-earlier record. However, the decline is offset by weak import demand for wheat and coarse grains by major consuming countries. Exportable supplies remain abundant for wheat, due to large harvests and beginning stocks in major exporting countries. The resulting strong competition is expected to maintain pressure on already low cereal prices, except for rice, through 1993/94 (figure 1).

Competition in the wheat market is expected to be heightened by large export subsidies by several exporting countries, most notably the European Community (EC) and the United States. Prices are expected to be up sharply in the rice market, despite relatively large exportable supplies. Japan's 2-million-ton production shortfall is expected to push global rice imports to a record high in 1993/94.

In October 1993, world grain production was projected at 1,705 million tons for 1993/94, down 4 percent from the previous year's record (table 1). The decline is in rice and coarse grains, which are projected 2 and 7 percent lower, largely because of weather-related production shortfalls for Japan's rice crop and the U.S. corn crop. Global wheat production is projected up 1 percent. Taken together, production of the two major food crops, rice and wheat, is projected at 910 million tons, down only marginally from last year.

Good harvests in several of the major consuming countries (Russia, China, India, Indonesia, Bangladesh, and Pakistan) are expected to reduce world grain trade in 1993/94 by 5 percent to 200 million tons. That volume would be the lowest since 1986/87, despite low cereal prices in international markets (table 2). Most of the decline will come in the wheat and corn markets. Rice trade is projected at a record 15 million tons, but rice comprises only 7 percent of world trade in cereals.

Russia's demise as a commercial grain importer is a major reason for weakened world import demand and weak prices. Also, a return to normal weather in Southern Africa and the continued contraction of the livestock sectors in Eastern Europe and Russia are expected to further reduce world demand for feed wheat and coarse grains.

Exporter Competition Projected To Remain Fierce in 1993/94

A small group of countries is responsible for the majority of world grain exports. The top seven grain exporters accounted for over 80 percent of world exports from 1989/90 to 1991/92. In 1992/93 these countries produced a record of 664 million tons of grain. Abundant exportable supplies of wheat are projected for 1993/94 in the United States, the EC, Canada, and Australia. U.S. corn production will be off sharply, but large stocks will be offsetting, and large crops are expected in China and Argentina. Large barley supplies are forecast in most non-U.S. exporting countries.

Government decisions about credit guarantees, subsidized exports, and food aid have become more critical in recent years in determining the volume of world trade. Exporters' desires to maintain their share in the shrinking market are likely to prevent any significant reduction in support for these programs.

The U.S. Government's Export Enhancement Program (EEP) was initiated to allow U.S. grains to compete with the subsidized grain exports of the EC. Price bonuses (subsidies) are used to lower the actual sales price. The initial 1993/94 EEP allocation for wheat is 32 million tons, nearly unchanged from the 1992/93 allocation. But because of intense competition from other suppliers, only 22 million tons were actually used in 1992/93. To encourage wheat exports in recent months, the United States has been forced to lower the EEP-adjusted export price by raising EEP bonuses.

Common Agricultural Policy (CAP) reform in the EC is expected to reduce grain output during the next 3 years through area restrictions and lower support prices. Under CAP policy, agencies in EC countries purchase grains offered to them during an announced intervention period at a guaranteed price. Grains acquired in this manner, called intervention stocks, are sold in international markets with substantial price discounts. Record intervention stocks will provide the EC with abundant export supplies through 1993/94, despite lower projected production.

In 1992/93 poor weather at harvest reduced the quality of wheat in Australia and Canada (table 3). Although significant price discounts were necessary to market the lower-quality wheat, much of it remained in stocks at the end of the 1992/93

Figure 1
Cereal Export Prices

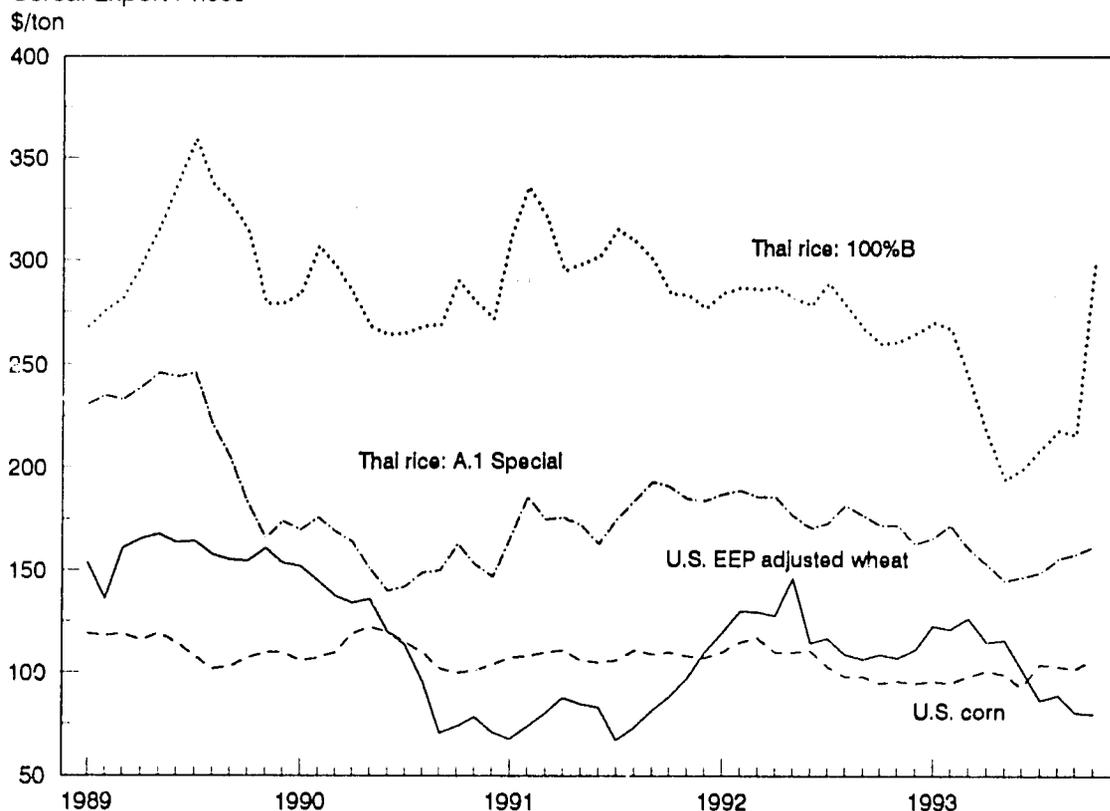


Table 1--World grain production and consumption

Cereal	Production			Consumption		
	1991/92	1992/93	1993/94	1991/92	1992/93	1993/94
	Million tons					
Rice	348	351	345	353	354	356
Wheat	542	560	564	559	550	562
Feed				118	109	116
Nonfeed				441	441	446
Rice and wheat	891	911	910			
Nonfeed				794	795	802
Coarse grains	803	858	795	810	833	831
Feed				539	544	544
Nonfeed				271	289	287
Total grains	1,694	1,769	1,705	1,722	1,738	1,748
Feed				654	650	651
Nonfeed				1,068	1,088	1,097

Table 2--Major grain consumers, exporters, and importers

Country	Production			Consumption			Ending stocks			Net exports 1/		
	-----			-----			-----			-----		
	1989/90- 1991/92	1992/93	1993/94									
	Million tons											
Major exporters	597	665	592	431	449	453	119	160	138	170	173	160
United States	290	350	277	214	232	228	60	79	54	89	87	74
Argentina	22	25	25	10	12	12	1	2	2	12	12	14
Australia	21	25	25	8	9	10	4	6	7	13	14	15
Canada	53	49	52	25	26	26	14	16	19	26	22	23
EC-12	175	169	167	146	140	146	33	44	41	24	27	23
Kazakhstan	19	29	30	17	17	19	5	11	13	2	7	9
Thailand	17	17	17	12	13	13	2	2	2	5	3	4
Major consumers	858	848	853	895	899	902	150	141	124	-42	-43	-33
Bangladesh	19	19	19	20	21	21	1	1	1	-2	-1	-1
Brazil	37	38	37	43	46	45	4	4	3	-5	-7	-6
China	329	341	337	328	339	343	73	79	67	-6	5	5
India	158	164	166	158	167	168	21	18	15	1	-2	-0
Indonesia	34	36	37	37	39	40	2	3	2	-2	-3	-3
Mexico	21	21	21	27	28	28	3	2	2	-7	-6	-7
Pakistan	19	20	21	20	21	22	4	4	4	-1	-2	-1
Eastern Europe	98	70	74	97	79	79	9	6	6	1	-5	-4
Russia	98	102	103	121	122	118	24	17	16	-21	-19	-14
Ukraine	44	35	37	44	38	38	10	8	8	0	-3	-2
Major importers	89	94	94	174	182	183	30	26	25	-66	-85	-87
Middle East	46	53	57	66	71	72	16	13	14	0	-17	-16
North Africa	23	21	20	40	42	42	3	3	3	-18	-19	-21
High-income Asia 2/	20	20	17	68	69	70	11	10	8	-48	-49	-51
Low-income importers	64	68	68	84	87	89	6	7	6	-18	-20	-21
Sub-Saharan Africa 3/	47	50	50	56	58	60	4	4	4	-8	-9	-9
Central America and Caribbean	5	5	5	10	10	10	1	1	1	-5	-5	-5
South America 4/	13	13	13	18	19	20	2	2	2	-5	-7	-7
Others	99	94	99	123	122	121	16	13	11	-86	-63	-59
World	1,707	1,769	1,705	1,708	1,738	1,748	322	347	304	212	211	200

Note: 1989/90-1991/92 average compared with 1992/93 estimate and 1993/94 forecast. (Official USDA data Oct. 1993.)

1/ Net trade = exports minus imports.

2/ Includes Japan, South Korea, Taiwan, Hong Kong, Singapore, Malaysia, and Brunei.

3/ Excludes the Republic of South Africa.

4/ Excludes Argentina and Brazil.

Table 3--Major wheat exporters, importers, and consumers

Country	Production			Consumption			Ending stocks			Net exports 1/		
	1989/90-		1989/90-	1989/90-		1989/90-	1989/90-		1989/90-		1989/90-	
	1991/92	1992/93	1993/94	1991/92	1992/93	1993/94	1991/92	1992/93	1993/94	1991/92	1992/93	1993/94
	Million tons											
Major exporters	212	226	217	118	118	125	50	62	65	90	99	89
United States	61	67	66	32	30	33	17	14	19	32	35	29
Argentina	10	10	10	5	5	5	0	0	0	6	6	6
Australia	13	16	16	3	3	3	3	5	6	10	11	11
Canada	30	30	28	7	9	9	9	11	11	21	20	18
EC-12	86	85	82	63	62	66	17	24	22	19	21	19
Kazakhstan	11	18	16	8	9	10	4	8	7	2	6	7
Major consumers	277	268	277	303	300	301	59	55	54	-25	-33	-23
Brazil	4	3	2	7	7	7	0	1	1	-4	-5	-5
China	95	102	105	107	109	112	23	24	23	-13	-7	-6
India	53	55	57	53	56	56	7	7	8	0	-3	-1
Pakistan	14	16	16	16	18	18	3	3	3	-2	-3	-2
Eastern Europe	40	27	30	39	31	33	4	4	4	2	-3	-3
Russia	44	46	48	55	59	55	15	12	11	-10	-13	-7
Ukraine	26	20	20	25	21	21	7	5	5	1	-1	-1
Major importers	41	45	46	72	76	78	15	14	14	-32	-31	-32
Middle East	29	34	36	36	39	40	11	9	9	-7	-4	-4
North Africa	11	10	9	24	25	25	2	2	2	-14	-15	-16
High Income Asia 2/	1	1	1	12	12	13	2	2	2	-11	-12	-13
Low-income importers	5	4	4	15	16	16	1	1	1	-11	-12	-12
Sub-Saharan Africa 3/	2	2	2	7	7	7	0	0	1	-4	-5	-5
Central America and Caribbean	0	0	0	3	3	3	0	0	0	-3	-3	-3
South America 4/	3	2	2	6	6	7	1	1	1	-3	-4	-4
Others	20	18	20	43	41	41	7	6	6	-37	-33	-32
World	554	560	564	552	550	562	132	138	141	104	109	100

Note: 1989/90-1991/92 average compared with 1992/93 estimate and 1993/94 forecast.

1/ Net trade = exports minus imports.

2/ Includes Japan, South Korea, Taiwan, Hong Kong, Singapore, Malaysia, and Brunei.

3/ Excludes the Republic of South Africa.

4/ Excludes Argentina and Brazil.

marketing years. In addition, quality problems have afflicted the 1993/94 wheat crops in the EC and Canada. As a result, supplies of high-quality milling wheat are likely to be limited in 1993/94, while lower-quality and cheaper wheat supplies are likely to remain abundant.

Argentina's 1993/94 wheat crop is expected to be up 5 percent from a year earlier. However, Argentina will probably avoid larger ending stocks by exporting its surplus, principally to Brazil.

Thailand's rice production has risen steadily for several years, helping to maintain the country's status as the world's top rice exporter (table 4). Despite the loss of Russia as a major commercial market, Thailand's export prospects have improved in 1993/94 due to record world import demand.

Vietnam's entry into the world rice market in 1989 has provided a reliable source of cheap rice for price-sensitive importers, particularly African destinations. No change from this export orientation is expected in the near term.

Wheat and Coarse Grain Prices Expected To Remain Low in 1993/94, Rice Prices Higher

In May 1993, rice and wheat prices fell dramatically during the last half of 1992 and into 1993, although wheat prices temporarily strengthened in early 1993 before dropping precipitously. Wheat export prices (U.S. Number 2, hard red winter, FOB Gulf port, less the average IEP bonus for all wheat classes) dipped to under \$80 per ton in October 1993, the lowest in 2 years.

Rice export prices reached 6-year lows of \$194 per ton and \$145 per ton, for high-quality (Thai 100 percent, grade B, FOB Bangkok) and low-quality (Thai A.1 Special, broken, FOB Bangkok) classes in May 1993. However, since September strengthening demand for high-quality rice has driven prices up sharply, to near \$300 per ton by late October.

Corn export prices (U.S. Number 3, yellow, FOB Gulf port) fell slowly through 1992 into 1993 until reaching their lowest point in 5 years at \$93 per ton in June 1993.

From July 1991 through June 1993, rice and corn export prices traded lower relative to wheat prices. However, that trend was reversed in July 1993. Growing wheat supplies relative to other cereals and aggressive wheat marketing subsidies could continue to raise the other cereals-to-wheat price ratios into 1994.

World Grain Consumption Continues To Trend Upward

World grain consumption has grown a steady 1 percent a year since 1988/89. Consumption for 1993/94 is projected at a record 1,748 million tons, up nearly 1 percent from 1992/93. Of this, a record 1,097 million tons are projected for nonfeed use. World cereal consumption, particularly rice and wheat, is driven principally by population growth. Coarse grain consumption has a stronger link to income via its relationship with the livestock, dairy, poultry, and aquaculture sectors where consumption is income driven.

Feed for livestock, poultry, and aquaculture accounts for about two-thirds of the world's annual coarse grain consumption and one-fifth of its wheat consumption. Most feed wheat is consumed in the countries where it is grown. On the other hand, much of the coarse grain traded in world markets is used as feed.

Steady Demand Projected from Major Regional Importers

A larger group of countries participate on the demand side of the international cereal market, but three regions dominate. The regions include the Middle East, North Africa, and selected high-income Asian countries led by Japan, which is the world's top import market for wheat and coarse grains.

Since 1989/90, the three regions have accounted for only 9 percent of consumption, yet they have purchased over 40 percent of all cereals traded in global markets. Most of this trade consists of coarse grain bound for high-income Asian countries (table 5). North Africa is the largest single regional import block for wheat, while the Middle East is the world's principal market for rice. As a group, the three regions account for over 50 percent of all coarse grain imports, about 33 percent of all wheat imports, and nearly 30 percent of rice imports.

Driven by rising income and population growth, demand for wheat and coarse grain is expected to continue growing in the high-income Asian countries. North African wheat imports, particularly in Algeria and Morocco, have been above average during the past 2 years due to drought-reduced cereal production. A return to normal weather could dampen demand in Algeria and Morocco, further contracting world markets. The Middle East, led by Saudi Arabia and Iran, has extensive petroleum-based wealth to back up its cereal import demand. However, recent production increases have lowered import demand.

Good Production Prospects Weaken Import Demand of Major Consumers

World trade also is affected by the actions of several major consuming countries, including China, India, and Russia. This group accounts for over half of the world's production and consumption of all cereals. However, the group's trade pattern is difficult to predict, as it is frequently driven by weather variability. In any given year, China or India may enter the cereal market as either a buyer or seller, while Russia's import needs vary widely depending on its grain production.

China's rice production is expected to fall as farmers shift area away from cereals towards cash crops and nonagricultural uses. Rice production in 1993/94 is projected down 5 percent from 1992/93. Declining area under high-yielding low-quality rice is expected to begin reducing China's low-quality rice exports by mid-1994. A record 1993/94 wheat crop and market reforms are expected to dampen China's wheat import demand, while another large corn crop will mean that its exports will remain large.

Table 4--Major rice exporters, importers, and consumers

Country	Production 1/			Consumption			Ending stocks			Net exports 1/		
	1989/90-		1993/94	1989/90-		1993/94	1989/90-		1993/94	1989/90-		1993/94
	1991/92	1992/93		1991/92	1992/93	1993/94	1991/92	1992/93	1993/94	1991/92	1992/93	1993/94
	Million tons											
Major exporters	43	44	45	33	34	35	5	4	3	10	10	11
United States	5	6	5	3	3	3	1	1	1	2	2	3
Australia	1	1	1	0	0	0	0	0	0	0	1	1
Burma	8	8	9	7	8	8	2	1	1	0	0	1
Pakistan	3	3	3	2	2	2	1	1	1	1	1	1
Thailand	13	13	13	9	9	9	1	1	1	4	4	5
Vietnam	13	14	14	12	12	12	NA	NA	NA	2	2	2
Major consumers	259	260	256	257	263	264	44	41	33	-0	-0	0
Bangladesh	18	18	18	18	18	18	1	0	0	-0	-0	0
Brazil	6	7	7	8	8	8	1	1	1	-1	-0	-1
China	129	130	124	126	129	128	26	28	23	1	1	1
India	74	73	74	73	75	76	14	9	6	1	0	0
Indonesia	29	31	31	29	30	31	1	2	2	-0	-1	0
EC-12	1	1	1	2	2	2	0	0	0	-0	-0	-0
Russia	1	0	1	1	1	1	NA	NA	NA	-0	-0	-0
Major importers	21	22	19	25	26	26	4	4	2	-3	-5	-5
Middle East	2	2	2	4	5	5	0	0	0	-3	-4	-3
North Africa	2	3	3	2	3	3	0	0	0	0	0	0
High Income Asia 3/	18	18	15	19	19	19	4	3	2	-1	-1	-2
Low-income importers	9	9	10	12	13	13	1	1	1	-2	-3	-2
Sub-saharan Africa 4/	5	4	5	7	7	7	0	0	0	-2	-3	-3
Central America and Caribbean	1	1	1	2	2	2	0	0	0	-1	-1	-1
South America 5/	3	4	5	3	4	4	1	1	1	1	1	1
Rest-of-world	16	15	15	19	17	19	2	2	2	-6	-6	-7
World	347	351	345	345	354	356	56	52	41	13	14	15

Note: 1989/90-1991/92 average compared with 1992/93 estimate and 1993/94 forecast.

1/ Milled basis.

2/ Net trade = exports minus imports. Rice trade is on a CY basis where 1993/94 = CY94.

3/ Includes Japan, South Korea, Taiwan, Hong Kong, Singapore, Malaysia, and Brunei.

4/ Excludes the Republic of South Africa.

5/ Excludes Argentina and Brazil.

Table 5--Major coarse grain exporters, importers, and consumers

Country	Production			Consumption			Ending stocks			Net exports 1/		
	1989/90-			1989/90-			1989/90-			1989/90-		
	1991/92	1992/93	1993/94	1991/92	1992/93	1993/94	1991/92	1992/93	1993/94	1991/92	1992/93	1993/94
	Million tons											
Major exporters	466	523	456	391	413	414	89	121	88	79	80	74
United States	224	278	205	179	199	192	42	63	34	55	50	42
Argentina	11	15	14	5	7	7	1	2	1	6	7	8
Australia	7	8	9	4	5	6	0	1	1	3	3	3
Canada	23	19	24	18	17	17	5	5	8	5	3	4
China	105	109	108	95	101	104	23	27	21	6	10	10
EC-12	88	83	83	81	77	78	15	20	19	5	6	5
Kazakhstan	8	11	11	8	8	10	2	3	4	-1	1	1
Major consumers	203	198	199	223	218	216	24	17	16	-20	-16	-15
Brazil	27	29	28	28	31	30	2	2	1	-1	-1	-1
India	31	37	36	31	36	36	1	2	2	0	0	0
Mexico	17	18	18	23	23	23	2	1	1	-6	-5	-5
Eastern Europe	58	43	43	58	49	46	6	4	4	-1	-3	-2
Russia	54	56	55	66	62	62	9	5	5	-11	-6	-7
Ukraine	17	16	19	18	17	19	3	3	3	-1	-2	0
Major importers	27	27	29	77	79	79	11	9	9	-30	-49	-50
Middle East	15	17	19	25	27	27	5	4	4	10	-9	-8
North Africa	10	9	8	15	14	14	1	1	1	-4	-5	-5
High Income Asia 2/	2	1	1	37	38	38	5	4	4	-35	-36	-36
Low-income importers	51	54	54	56	59	60	4	5	4	-5	-5	-6
Sub-saharan Africa 3/	40	44	43	42	44	45	3	3	3	-2	-1	-1
Central America and Caribbean	3	4	4	5	5	5	0	0	0	-2	-2	-2
South America 4/	7	7	7	9	9	10	1	1	1	-2	-3	-3
Rest-of-world	59	56	58	64	64	62	6	6	5	-40	-17	-14
World	805	858	795	811	833	831	134	158	122	95	88	85

Note: 1989/90-1991/92 average compared with 1992/93 estimate and 1993/94 forecast.

1/ Net trade = exports minus imports.

2/ Includes Japan, South Korea, Taiwan, Hong Kong, Singapore, Malaysia, and Brunei.

3/ Excludes the Republic of South Africa.

4/ Excludes Argentina and Brazil.

India's agricultural success and subsequently its trade posture, depend heavily on the Asian monsoons because nearly two-thirds of India's agriculture is rainfed. Traditionally, India exports rice, while importing wheat as the need arises. In 1993/94, India is projected to produce larger wheat and rice crops, thus reducing its net cereal imports.

Higher consumer prices in Russia, reduced government subsidies, and falling incomes have contracted the livestock sector, leading to declines in grain consumption and imports. Following its economic collapse, Russia has shifted from being the world's top commercial cereal importer during the 1970's and 1980's to almost total dependence on Western aid programs for grain in the 1990's.

Low-income Regions Are Residual Importers

The low-income regions of Sub-Saharan Africa, Central America and the Caribbean, and South America, excluding Argentina and Brazil, represent residual demand in the world market. The countries of these regions tend to be very price sensitive and are generally unable to compete with the major

grain importing countries for access to available market supplies. The current low wheat and coarse grain prices and abundant supplies are projected to produce greater import demand in 1993/94 from the low-income countries, particularly for wheat. Rice imports are projected to decline as improved production prospects and high international prices combine to lower import demand.

Barring a GATT Agreement, Grain Market To Stay Bearish

Despite lower production in 1993/94, large carryin stocks should maintain large exportable supplies of cereals. Assuming normal weather, no major production shortfalls in any major consuming or exporting country, and no resolution of the General Agreement on Tariffs and Trade (GATT), the loss of the Russian commercial grain market should continue to dominate the world grain market, thus sustaining the market's bearish tone beyond 1993/94. Successful completion of the GATT agreement would mean reduced subsidies that artificially lower world wheat prices. The price of wheat relative to coarse grains and rice would likely rise.

Outlook For Food Aid

Large cereal supplies in major exporting countries and weakening demand from major importers bode well for greater food aid availabilities. [Nydia R. Suarez]

The food aid outlook for 1993/94 (July/June) hinges upon supply, prices, and budgets in donor countries. However, cereal food aid availabilities are expected to remain above the 10-million-ton goal set almost 20 years ago at the 1974 World Food Conference. Food aid shipments have exceeded 10 million tons every year since 1983/84. Ample grain supplies in major exporting countries and weakening demand from major importers (due to projected increases in their output) are expected to boost ending stocks held by most major donors. Slightly higher donor supplies of wheat and lower wheat prices in particular bode well for greater food aid availabilities. However, food aid budgets of some major donors are likely to decline. The net effect is that food aid for 1993/94 is estimated at about 13 million tons, up slightly from 1992/93.

The United Nations' Food and Agriculture Organization (FAO) estimate of total food aid availabilities of cereals for 1992/93 stands at 12.8 million tons, slightly less than in 1991/92 (table 6). In addition, donors were expected to provide over 1.4 million tons of noncereal commodities, mainly vegetable oil, pulses, dairy products, meat, and fish in 1992, compared with 1.1 million tons the previous year.

Cereals account for more than 90 percent of world food aid. Among cereals, wheat and wheat flour comprise the bulk (73 percent), followed by coarse grains (almost 24 percent), and rice (3 percent). Food aid accounts for a dwindling share of world trade. The FAO estimate of 13 million tons of aid represents about 6 percent of world cereal imports in 1992/93, compared with about 10 percent in the early 1970's. Developing countries received more than 11 million tons of cereal shipments in 1992/93, compared with almost 12 million in 1991/92. Sub-Saharan Africa continued to be the major recipient of food aid in 1992/93, accounting for 50 percent of total shipments. Food aid to the region has been growing as food aid outpaces the growth of total cereal imports.

Under the Food Aid Convention (FAC), donor countries pledge to provide a minimum of 7.5 million tons of food aid. The minimum comprises a floor that should be made available regardless of market conditions. The minimum donor commitment has always been met and has often been surpassed by a considerable margin.

Food aid as a proportion of Official Development Assistance (ODA) has fallen from 10 percent in the mid-1980's to 6 percent in the early 1990's. Although food aid has generally increased over the period, ODA has grown faster. In 1991, (the latest year for which data are available) food aid totaled \$3.6 billion, compared with \$58.5 billion in ODA. Donors usually center on ways other than food aid to provide assistance to developing countries.

U.S. Food Aid

The United States is the world's major food aid donor, and provided an estimated 60 percent of the world total in 1992/93. However, the U.S. position as the largest supplier has decreased as other donors have increased their contributions. The U.S. share was 90 percent in the late 1950's and 70 percent in the 1970's. The U.S. food aid budget under Public Law (P.L.) 480 has averaged about \$1.6 billion annually since 1990 (table 7).

The FAO reported that U.S. cereal aid shipments amounted to 7.2 million tons in 1992/93, compared with 7.5 million a year earlier. Wheat and wheat flour represent more than 50 percent of the total, but rice, corn, and other agricultural commodities were provided. The fiscal 1993 program level for P.L. 480 food aid was almost \$1.7 billion. For fiscal 1994, the House and Senate appropriations conference committee approved a P.L. 480 program of \$1.6 billion. This includes \$496.4 million for Title I, \$821.6 for Title II, and \$280.1 million for Title III. These levels depend on final appropriations, however.

The United States provides food aid abroad through its P.L. 480, Section 416(b) of the Agricultural Act of 1949, and Food for Progress programs. Wheat and wheat products, feed grains, and rice are the major program commodities. High-value commodities such as vegetable oil, wheat flour, dairy products, and blended foods are exported under the P.L. 480 program. The largest recipients in order of magnitude in fiscal 1993 were Russia, India, Peru, Ethiopia, and the former Yugoslavia (table 8).

P.L. 480 is comprised of three program titles. Under Title I, the U.S. Government provides concessional, long-term financing for the sale of agricultural commodities. Recipient countries may use Title I commodities to build food stocks or resell the commodities internally and use the proceeds to support agricultural and economic development measures. The former Soviet Union (FSU) and Eastern Europe were allocated 46 percent of the value of Title I programs in fiscal 1993. Latin American and Asian countries received 21 percent and 16 percent, followed by the Near East region with 14 percent. African countries received the remainder. The Title I program is administered by the Department of Agriculture.

Under Title II, the United States donates agricultural commodities to needy countries to help alleviate famine, combat malnutrition, provide disaster relief, and encourage economic and community development. Donated commodities are distributed by private voluntary organizations, international organizations such as the World Food Program (WFP), and, in time of emergency, by the recipient government. African

countries received 43 percent of the total value of Title II shipments in fiscal 1993. Asian countries were allocated 24 percent, followed by Latin American countries with almost 20 percent. European and Near Eastern countries received 11 and 3 percent.

Title III was amended by the Food, Agriculture, Conservation, and Trade Act of 1990 to provide government-to-government food aid grants to support economic development projects and economic reform efforts of the recipient country. Promoting private sector participation in the host country's food system is another goal of the new program. Developing countries that meet certain poverty and food-deficit criteria are eligible for Title III. Top recipients of Title III shipments were Sri Lanka with almost 20 percent, Bangladesh with 12 percent, and Ethiopia with 11 percent. Both titles II and III are administered by the Agency for International Development.

Section 416(b) of the Agricultural Act of 1949, as amended, authorizes another food aid program using commodities held by the Commodity Credit Corporation (CCC). Each year, Section 416(b) donations are based on estimates of yearend uncommitted CCC stocks and the pattern of commodity use in current foreign donation programs. The commodities are donated to foreign governments, nonprofit humanitarian agencies, and international organizations. Although a number of commodities have been distributed under Section 416(b), recent programs have centered around dairy products, corn, and sorghum. Major recipients of Section 416(b) shipments in fiscal 1993 were the FSU republics.

Another program, Food for Progress (FFP), was created in 1985. Under this program, U.S. agricultural commodities may be donated or sold on concessional credit terms to support democratization and free market economic reform. The program permits the President to enter into agreements with governments of developing countries and countries that are emerging democracies, or with private voluntary organizations, to provide commodities to encourage agricultural reform. The funding and the commodities for the FFP program may be supplied through either Section 416(b), P.L. 480 Title I authorities, or purchases by the CCC.

The FFP program has supported democratization and economic reform in Africa, Asia, Central America, and Eastern Europe. More recently, it comprised a significant portion of the fiscal 1992 and 1993 humanitarian program to the republics of the FSU. In April 1993, President Clinton announced a \$700-million FFP program to Russia, and Congress lifted a cap on FFP shipments for the FSU republics. However, because the cap was lifted only for fiscal 1993, such aid programming may fall in fiscal 1994.

EC Food Aid

The FAO estimated that the EC cereal aid shipments for 1992/93 were 3.5 million tons, about the same as the previous year. Since 1990, the EC food aid budget in dollar terms increased at an annual rate of 20 percent, reaching more than \$1 billion in 1992. However, in 1993 the budget declined more than 30 percent. It should be noted that in 1991 and

1992, the EC approved special food aid programs valued at \$174 million and \$235 million. The underlying food aid budget has remained stable during 1990-91 (table 7).

The EC has provided food aid since 1968. The EC has reviewed the role and mission of its food aid several times and has become an active contributor to international food aid programs. As criteria for food aid allocation among recipients, the EC uses national income, population, nutritional level, and degree of dependence on food imports. The principal commodities provided are cereals (mostly wheat, rice, and corn), vegetable oils, powdered milk, sugar, and other products including pulses, meat or dried fish, and dried fruits.

In recent years, Bangladesh has consistently been the largest single beneficiary of EC food aid. EC food aid makes up about 25-30 percent of world cereal aid and accounts for a significant amount of what the EC devotes to assistance to developing countries. Most European food aid is produced internally. However, the EC also donates food that is purchased from developing countries with surpluses. In recent years, about 12 percent of the EC food aid budget has been devoted to this type of assistance. Such aid helps both developing countries with surplus production and the deficit countries. Commodities purchased under this program are often the same as those produced in the recipient countries.

Canadian Food Aid

The FAO reported that Canadian cereal aid shipments amounted to 1 million tons in 1992/93, about the same as a year earlier, but much higher than its minimum annual obligation of 600,000 tons. Cereals and vegetable oils are the mainstays of Canada's food aid program, with skim milk powder, fish and pulses provided to a lesser degree. The 1992/93 food aid program budget was about 9 percent lower (in U.S. dollars) than the 1991/92 food aid budget. The 1993/94 budget has been reduced further.

Canada has provided food aid since the early 1950's and ranks third behind the United States and the EC in total food aid. Canada stresses food aid to promote economic development, diminish malnutrition, and provide emergency relief for developing countries. Since the mid-1980's, Canada redirected the focus of its food aid programming through the Canadian International Development Agency in order to respond more effectively to the development needs of recipient countries.

All Canadian food aid is provided as a grant with over 50 percent distributed multilaterally, mostly through the WFP. Bilateral aid is highly concentrated on very poor and highly indebted low-income countries. Canadian food aid has shifted towards Sub-Saharan Africa, which has been the largest recipient region of Canadian aid since 1988. Mozambique and Ethiopia were the largest recipients within this region. However, overall, Bangladesh was the single largest recipient of Canadian food aid in fiscal 1993.

Australian Food Aid

The FAO reported that Australian cereal aid shipments for 1992/93 were 300,000 tons, almost 30 percent lower than in

1991/92. Main reasons for the drop were that the 1992/93 food aid budget, at \$67 million, was 17 percent lower (in U.S. dollars) than in 1991/92, and world wheat prices were higher. The 1993/94 food aid budget is slightly lower than that of the previous year.

Food aid has been part of Australia's overseas assistance programs since the country's early involvement in the Colombo Plan, under which it contributed wheat and wheat flour to Sri Lanka, India, and Pakistan. Under the FAC, Australia pledged to provide a minimum of 300,000 tons of cereals per year. The majority of the aid has moved bilaterally, although Australia has been a regular contributor to the WFP since its 1961 creation. The food that Australia provides is on grant terms. Australia purchases its food aid commercially and almost exclusively from Australian suppliers.

Japanese Food Aid

The FAO reported Japanese cereal aid shipments in 1992/93 to be about 350,000 tons, slightly less than in 1991/92. Most Japanese aid is provided bilaterally. In fiscal 1993, Japan provided African and Asian countries facing food shortages with bilateral aid of \$47 million. It provided an additional \$55 million to African refugees. Japan's food aid program was originally motivated to a limited degree by the need to dispose of surplus rice. Now, Japan provides financial assistance that is used to buy mostly wheat, rice, and corn for recipient countries. Most of these purchases come from developing countries, encouraging their food production.

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

Country	1984/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92 2/	92/93 3/	93/94 3/
	1,000 tons 4/									
Argentina	51	44	24	26	21	0	7	3	0	10
Australia	466	345	368	355	353	305	349	415	300	300
Canada	843	1,216	1,240	1,062	1,170	961	1,149	1,005	1,000	800
European Community	2,504	1,614	1,905	2,564	2,180	3,317	2,609	3,487	3,500	3,500
Finland	20	5	41	3	25	27	65	33	30	0
Japan	295	450	529	561	441	430	512	363	350	450
Norway	45	31	46	52	32	31	47	75	40	40
Sweden	88	69	74	115	132	82	96	128	90	90
Switzerland	39	22	58	70	64	35	103	44	50	50
United States	7,536	6,675	7,861	7,946	5,286	6,018	7,260	7,533	7,200	7,400
Others	623	478	455	749	545	109	159	436	240	360
Total	12,510	10,949	12,601	13,503	10,249	11,315	12,356	13,522	12,800	13,000

1/ July/June years.

2/ 1991/92 subject to revision.

3/ 1992/93 and 1993/94 figures are estimates.

4/ To express cereal food aid in grain equivalent, wheat, rice, and coarse grains are counted on a on-to-one basis; for grain products, appropriate conversion factors are used to determine the grain equivalent.

Sources: FAO. Food Outlook. June 1993 and ERS estimates.

Table 7--Food aid budgets by donor and year.

Donor	1990	1991	1992	1993	1994
\$ million					
Australia	91	79	81	67	64
Canada	314	327	349	317	242
EC	713	850	1,039	684	712
Japan	87	89	113	140	144
United States	1,522	1,576	1,623	1,699	1,598
Total	2,727	2,921	3,205	2,907	2,760

Table 8--U.S. food aid budget allocations, fiscal 1993 1/

Region and country	Value	Region and country	Value
	\$ million		\$ million
Albania	26.5	Angola	41.2
Armenia	55.9	Ethiopia	94.3
Georgia	72.9	Ghana	24.6
Kyrgyzstan	48.3	Kenya	55.8
Lithuania	25.0	Liberia	48.9
Moldova	24.9	Malawi	59.8
Russia	131.1	Mozambique	81.8
Turkmenistan	24.5	Rwanda	23.7
Ukraine	25.7	Somalia	81.5
Yugoslavia, former	90.0	Sudan	52.0
Others	52.1	Others	128.8
Europe total	576.9	Africa total	692.4
Bangladesh	72.1	Bolivia	46.9
India	149.2	El Salvador	38.0
Pakistan	47.7	Guatemala	28.8
Philippines	40.3	Haiti	38.0
Sri Lanka	68.9	Honduras	21.7
Others	36.3	Jamaica	35.0
Asia total	414.5	Peru	112.4
Jordan	30.0	Others	72.5
Morocco	25.9	Latin America total	393.3
Others	30.9		
Near East total	86.8		

1/ Total food aid including P.L. 480 Titles I, II, III, and Section 416. Includes countries receiving food aid worth more than \$20 million.

Food Aid Needs Overview

Grain food aid needs for 1993/94 are 14 million tons to maintain per capita consumption at the recent 5-year average and 23 million tons to support nutritional requirements. Needs are significantly lower than in 1992/93, mainly because of increased production in Southern Africa and Ethiopia. [Shahla Shapouri]

Grain food aid needs are estimated in this report for 60 developing countries in Africa, Asia, and Latin America.¹ The amount of aid needed to fill the gap between what can be produced or commercially imported and actual consumption requirements is forecast for 1993/94 and 1994/95. These needs are calculated using two criteria: 1) the amount of cereals needed to support 1988/89-1992/93 average per capita consumption, and 2) the aid needed to support minimum per capita nutritional standards.

Comparison of the two measures either for countries, regions, or in the aggregate indicates the need to raise or lower food aid shipments depending on whether the objectives are to provide consumption stability and/or to meet a nutritional standard. Large nutrition-based needs relative to status quo needs, for example, mean additional food aid must be allocated if improved nutrition in the country or region is the main objective. In cases where nutrition-based requirements are below status quo consumption needs, some reduction in aid would still be consistent with maintaining nutritional adequacy, on average. However, care must be taken in increasing aid shipments to meet needs that are significantly higher than past food aid receipts. In most low-income countries, weak market infrastructure limits the capacity to absorb imports that are sharply larger than historical maximums.

The needs assessments provided in this report can be used to assist decisionmakers with food aid budgeting. The principal strength of these estimates is that they are derived from methods applied consistently across all countries. As a result, they permit comparison of current country and regional aid receipts relative to two alternative consumption benchmarks.

Grain food aid needs for 1993/94 are estimated at 14 million tons to maintain per capita consumption and 23 million tons to support nutritional requirements. These estimates are significantly lower than the 1992/93 forecasts, 16 million tons to meet status quo needs and 27 million tons for nutrition-based requirements (figure 2). Improved production in Southern Africa and Ethiopia is the main reason for the decline. Southern Africa has recovered from its worst drought in decades and improved rural security in East Africa, especially in Ethiopia and Somalia, led to near normal grain production in the region. Southern Africa's 1993 grain output is double last year's (table 9). Some of the decline in African food aid needs is offset by higher needs in Asia, especially India.

Projected 1993/94 food aid availabilities are 10.2 million tons, down 5 percent from the actual 1992/93 food aid of 10.8

million tons for the 60 developing countries. This amount, if it is supplied, would satisfy 74 percent of the countries' status quo per capita consumption requirements 44 percent of their nutrition-based needs.

Some reallocation of supplies among regions and countries can reduce the discrepancies between estimated needs and actual aid receipts. In Southern Africa the status quo requirements are less than half of the food aid delivered last year (table 10). West Africa's needs, however, are 50 percent higher than 1992/93 receipts, because of increased vulnerability in Cote d'Ivoire, Liberia, and Sierra Leone. In North Africa, food aid needs are higher than historical receipts for the first time. This shift is caused by a sharp decline in Egyptian food aid receipts in 1992/93 and higher 1993/94 needs in Morocco.

In Central Africa and Latin America, the 1993/94 needs correspond closely to the previous year's receipts. In Asia, there is a significant gap between actual food aid receipts and needs. In fact, 1992/93 receipts were less than a third of the 1993/94 status quo needs and 27 percent of the nutritional requirements. Asia accounts for about 40 percent of the total nutritional needs of the 60 study countries. Asia has the largest number of chronically undernourished people, more than 500 million according to a 1990 estimate. Asian governments encourage domestic production and exports of food commodities. The governments also seek to protect domestic producers by opposing massive food aid imports.

Asia accounts for 43 percent of total status quo needs in 1993/94, followed by Sub-Saharan Africa with 37 percent, and Latin America with 12 percent. The 1994/95 outlook for the 60 countries indicates a 10-percent decrease in total status quo needs and 5-percent increase in nutrition-based consumption needs relative to 1993/94. India's status quo requirements are much lower in 1994/95 because of a forecast increase in production.

Per capita food aid calculations present a more accurate picture of the relative intensity of the problem among countries. On average for the 60 countries, 1993/94 status quo needs are 6 kilograms per capita and nutrition-based needs are 11 kilograms per capita (table 11). While Asia has the largest food gap, its needs on a per capita basis are below the 60-country average. Southern Africa and Latin America have per capita status quo needs near 20 kilograms and nutrition-based needs of over 30 kilograms. The countries with the highest status quo per capita requirements are war-torn Liberia and Somalia. Per capita nutritional needs are highest in Ethiopia, Somalia, Liberia, and Sierra Leone.

¹See Appendix 1 for list of countries covered.

Table 9--Summary of forecast grain food aid needs 1/

	Population	Production	Commercial imports	----Status quo--- Food use	Food aid needs 2/	-Nutrition-based- Food use	Food aid needs 2/
	Million	-----Million tons-----					
Central Africa							
1992/93	55	2.0	0.6	2.4	0.4	2.8	0.8
1993/94	57	2.3	0.4	2.5	0.1	2.9	0.5
1994/95	58	2.3	0.5	2.5	0.2	3.0	0.7
East Africa							
1992/93	177	17.4	0.9	18.8	3.5	22.5	7.2
1993/94	183	19.0	1.4	19.2	2.1	23.2	6.2
1994/95	189	20.4	1.5	19.9	1.8	24.0	6.2
Southern Africa							
1992/93	69	4.1	2.2	8.8	4.0	9.4	4.7
1993/94	71	8.8	0.9	8.9	1.4	9.7	2.3
1994/95	73	8.5	0.9	9.2	1.8	10.0	2.7
West Africa							
1992/93	190	20.5	3.1	21.4	1.7	22.5	2.8
1993/94	196	20.8	4.2	22.3	1.5	24.2	2.7
1994/95	202	21.8	4.3	23.1	1.7	25.0	3.2
North Africa							
1992/93	118	20.5	16.0	22.2	0.9	18.9	0.0
1993/94	121	20.2	19.0	22.9	1.1	19.9	0.1
1994/95	124	25.2	16.5	23.4	0.9	20.4	0.0
Sub-Saharan Africa							
1992/93	491	44.0	6.8	51.4	9.6	57.2	15.5
1993/94	507	51.0	7.0	53.0	5.1	60.1	11.7
1994/95	522	53.1	7.2	54.7	5.5	62.0	12.8
Africa total							
1992/93	609	64.5	22.8	73.6	10.5	76.1	15.5
1993/94	628	71.1	26.0	75.9	6.2	80.0	11.8
1994/95	646	78.3	23.6	78.1	6.4	82.4	12.8
Latin America total							
1992/93	76	6.2	2.9	7.4	2.5	8.6	3.7
1993/94	78	6.8	3.4	7.6	1.6	8.7	2.8
1994/95	80	7.1	3.4	7.7	2.0	8.9	3.2
Asia total							
1992/93	1,513	268.0	9.1	239.3	3.0	237.2	7.7
1993/94	1,543	273.4	9.0	248.3	5.8	252.5	8.7
1994/95	1,574	286.5	9.4	253.2	4.1	261.1	9.2
Total (60 countries)							
1992/93	2,198	338.7	34.8	320.3	16.0	321.9	26.9
1993/94	2,249	351.4	38.5	331.7	13.7	341.3	23.3
1994/95	2,300	371.8	36.5	339.0	12.5	352.4	25.1

1/ 1992/93 data are forecasts made for the 1992 report and are not strictly comparable to the 1993/94 and 1994/95 estimates because a change in the commercial import methodology. (See appendix 2).

2/ Food aid needs estimate includes stock adjustment.

Table 10--Historical cereal food aid receipts and projected needs for 1993/94 and 1994/95

Region/country	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94		1994/95	
							1/ Status quo	Nutrition based	Status quo	Nutrition based
1,000 tons										
Central Africa	185	60	111	110	47	58	91	546	228	698
Zaire	177	55	107	103	34	50	42	277	157	400
East Africa	1,912	960	1,086	1,703	1,772	1,942	2,118	6,242	1,809	6,191
Ethiopia	931	471	538	874	1,216	770	524	4,100	529	4,227
Rwanda	16	8	2	8	12	100	90	349	62	331
Somalia	154	74	90	66	83	470	335	622	332	625
Sudan	615	200	335	643	319	125	336	0	223	0
Southern Africa	1,003	931	865	770	998	3,382	1,424	2,309	1,799	2,667
Angola	109	80	113	75	153	135	151	485	127	470
Mozambique	514	400	493	507	458	1,100	555	817	718	990
Zimbabwe	14	10	13	15	25	640	371	41	488	149
West Africa	633	609	570	808	835	957	1,509	2,651	1,675	3,245
Liberia	56	28	28	105	125	145	169	217	178	228
Sierra Leone	58	38	37	43	55	60	132	379	131	384
North Africa	2,405	1,959	1,951	2,078	2,235	888	1,098	74	905	0
Morocco	340	237	219	200	203	168	1,069	74	851	0
Sub-Saharan Africa (36 countries)	3,733	2,560	2,632	3,391	3,652	6,339	5,142	11,748	5,511	12,801
Africa total (40 countries)	6,138	4,519	4,583	5,469	5,887	7,227	6,240	11,822	6,416	12,801
Latin America	2,062	1,579	1,293	1,582	1,791	1,725	1,639	2,795	1,974	3,152
Haiti	154	49	179	113	43	74	117	130	161	173
Peru	395	146	194	364	471	400	632	1,089	644	1,110
Asia	3,814	2,981	2,820	2,325	2,370	1,839	5,840	8,705	4,089	9,182
Bangladesh	1,589	1,397	1,320	1,134	1,414	752	2,084	5,862	1,912	5,779
India	223	308	456	217	298	319	2,105	0	0	0
Total (60 countries)	12,014	9,079	8,696	9,376	10,048	10,791	13,719	23,322	12,479	25,135
Total food aid contributions	13,503	10,249	11,315	12,356	13,522	12,800	NA	NA	NA	NA
---Percent of total food aid contributions---							--Percent of food aid needs--			
Share to Sub-Saharan Africa	28	25	23	27	27	50	37	50	44	51
Share to Africa	45	44	41	44	44	56	45	51	51	51
Share to Latin America	15	15	11	13	13	13	12	12	16	13
Share to Asia	28	29	25	19	18	14	43	37	33	37

NA = Not available.

1/ Partially estimated.

Figure 2

Food Aid Needs Forecasts, 1992/93 and 1993/94

Million tons

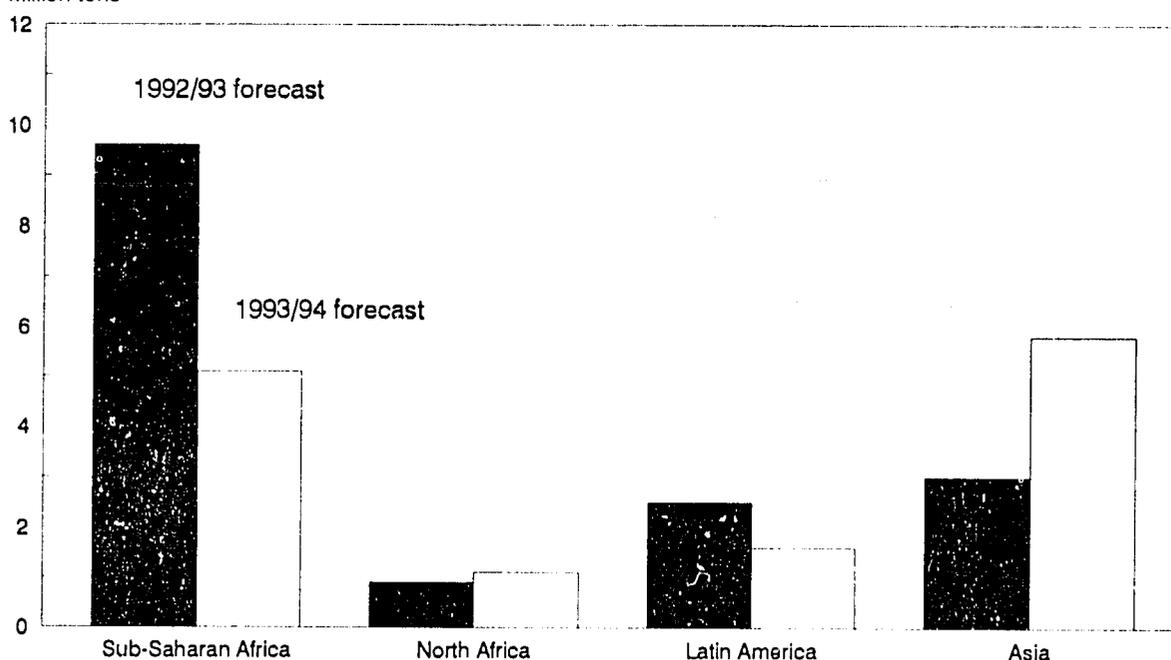


Table 11--Per capita food aid needs by region, 1993/94-1994/95

Region/country	Food aid needs 1993/94				Food aid needs 1994/95			
	----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 ton	Kg.	1,000 tons	Kg.
Central Africa 1/ Zaire	91 42	2 1	546 277	10 7	228 157	4 4	698 400	12 10
East Africa	2,118	12	6,242	34	1,809	10	6,191	33
Ethiopia	524	9	4,100	73	529	9	4,227	73
Rwanda	90	11	349	41	62	7	331	37
Somalia	335	45	622	84	332	44	625	83
Sudan	336	12	0	0	223	7	0	0
Southern Africa	1,424	20	2,309	33	1,799	25	2,667	37
Angola	151	17	485	53	127	14	470	50
Mozambique	555	35	817	51	718	42	990	58
Zimbabwe	371	34	41	4	488	41	149	12
West Africa	1,509	8	2,651	14	1,675	8	3,245	16
Liberia	169	59	217	75	178	60	228	77
Sierra Leone	132	29	379	84	131	28	384	83
	0							
North Africa	1,098	9	74	1	905	7	0	0
Morocco	1,069	40	74	3	851	30	0	0
Sub-Saharan Africa	5,142	10	11,748	23	5,511	11	12,801	25
Africa total	6,240	10	11,822	19	6,416	10	12,801	20
Latin America	1,639	21	2,795	36	1,974	25	3,152	39
Haiti	117	18	130	20	161	24	173	26
Peru	632	27	1,089	47	644	28	1,110	48
Asia	5,840	4	8,705	6	4,089	3	9,182	6
Bangladesh	2,084	17	5,862	48	1,912	15	5,779	46
India	2,105	2	0	0	0	0	0	0
Total (60 countries)	13,719	6	23,322	10	12,479	6	25,135	11

North Africa Overview

North Africa will require record commercial grain imports to offset a second year of drought in Morocco and reduced harvests in Algeria and Tunisia. Food aid shipments to Egypt have fallen as production and foreign exchange reserves have increased. [Linda Scott]

The four North African countries of Algeria, Egypt, Morocco, and Tunisia are expected to import commercially a record 19 million tons of grain in 1993/94 (table 12). This is up nearly 20 percent from actual shipments in 1992/93 and reflects weather-related production shortfalls and a regional trend towards increased substitution of cash and soft loan purchases for food aid programs. Just over 1 million tons of food aid will be required to maintain cereal consumption at current levels, while 74,000 tons will be needed to meet minimum nutritional standards.²

The region's grain output declined for the second straight year in 1993 following a record harvest in 1991. Production was down throughout the region except for Egypt, where market liberalization and good weather pushed output to a record for the seventh year in a row. Poor rainfall reduced production in Tunisia and in some regions of Algeria, while output was only 40 percent of the 5-year average in Morocco due to a second year of severe drought in that country.

Algeria's cereal production for 1993 is estimated at 2.8 million tons, down 16 percent from a near-record harvest in 1992. Drought in the wheat-producing western areas reduced total grain output. Despite high government support prices for grain producers, area planted declined 5 percent. Food aid needed to maintain per capita consumption in Algeria is forecast at 29,000 tons, while domestic production and commercial imports will be adequate to meet nutritional requirements. Commercial imports are estimated at a record 5.9 million tons.

Egypt will harvest another record cereal crop in 1993/94 with total grain output estimated at 12.7 million tons. Reduced government intervention, including the elimination of acreage controls and procurement requirements for wheat, and improved agronomic practices, have been largely responsible for the steady upward trend. Since 1986, wheat output has more than doubled, while corn production has grown 21 percent.

Egypt's food aid needs have historically been small compared with actual shipments. Egypt will not require food aid in 1993/94 and receipts are expected to continue their downward trend. A significant improvement in foreign exchange availability stemming from economic reforms and debt forgiveness and rescheduling, has reduced Egypt's dependence on food aid and increased the percentage of imports obtained on commercial terms. Total commercial imports are estimated at 7.3 million tons, up 17 percent from 1992. Egypt will continue to purchase most of its grain through cash discount programs, such as the U.S. Export Enhancement Program (EEP), for the foreseeable future.

A severe drought has reduced Morocco's grain output for the second consecutive year. Total cereal production is estimated at a 12-year low of 2.7 million tons. The shortfall is due primarily to insufficient rains during the fall and winter planting seasons that reduced seeded area and destroyed much of the crop that had already been planted. Reduced yields due to bird damage in the northeast further reduced output. Commercial imports are expected to approach a record 5 million tons. Morocco accounts for 97 percent of North Africa's 1993/94 status quo food aid needs. The government has taken steps to facilitate imports and minimize the drought's impact on vulnerable groups. These measures include increased sales of subsidized grains, the elimination of import duties on seeds for spring crops, and debt rescheduling for grain and livestock producers.

Tunisia's cereal output declined about 9 percent in 1993 to just under 2 million tons. Declining wheat output due to poor early season rainfall in major grain producing areas such as Beja, offset good harvests in the country's east and central regions. Commercial imports are estimated at just over 800,000 tons, more than double the 1992 figure. The imports will consist only of corn and hard wheat, as good harvests in 1991 and 1992 left Tunisia self-sufficient in durum wheat and barley. Tunisia will not require food aid to meet its consumption needs in 1993/94.

² See Appendix 2 for the guide to the country tables and the methodology.

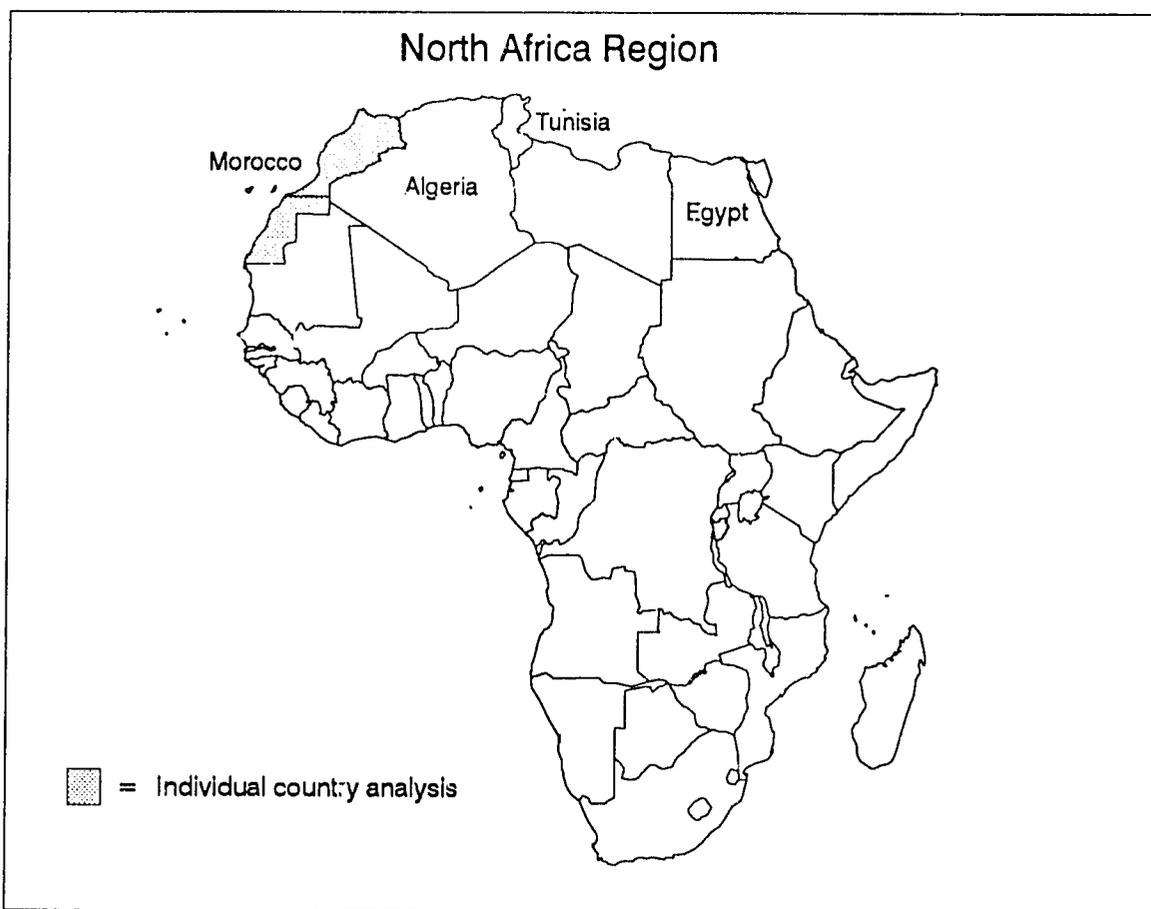


Table 12--Summary of grain balances for North Africa

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----									Million	-Kg-	-1,000 tons-
1983/84	13,622	14,192	2,383	54	7,326	3,505	2,166	17,591	19,974	95	211	---
1984/85	15,590	14,416	2,662	16	9,589	3,625	1,437	17,505	20,167	97	207	---
1985/86	17,685	13,916	2,024	92	9,845	3,851	1,669	17,581	19,605	100	197	---
1986/87	19,220	13,629	2,988	105	10,999	4,152	2,685	16,577	19,565	103	191	---
1987/88	17,060	15,283	2,405	168	10,973	3,992	2,377	17,518	19,923	105	189	---
1988/89	18,478	17,752	1,959	228	12,041	4,394	2,686	19,258	21,217	108	197	---
1989/90	19,908	14,851	1,951	32	12,723	4,449	2,666	17,575	19,526	110	177	---
1990/91	21,261	14,096	2,078	85	13,368	4,446	2,736	17,388	19,465	113	172	---
1991/92	26,890	13,938	2,235	160	12,885	4,940	4,094	21,485	23,720	116	205	---
1992/93	20,938	16,882	888	209	11,930	4,659	2,951	22,165	23,053	118	195	---
Status quo requirement forecasts												
1993/94	20,171	19,045	---	126	12,166	4,686	2,720	22,469	22,885	121	189	1,098
1994/95	25,204	16,462	---	129	13,156	4,789	3,287	23,025	23,394	124	189	905
Nutrition requirement forecasts												
1993/94	20,171	19,045	---	126	12,166	4,686	2,720	22,469	19,912	121	165	74
1994/95	25,204	16,462	---	129	13,156	4,789	3,287	23,025	20,355	124	165	0

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Morocco

A second consecutive year of drought put cereal output at a 12-year low. Commercial imports at almost three times the average of the last 10 years would still leave consumption below status quo requirements.

[Linda Scott]

Morocco's 1993 cereal crop was devastated by a second consecutive year of drought. Total grain production is 2.7 million tons, 7 percent below the 1992 harvest (table 13). Winter wheat output, estimated at 1.4 million tons, is 160,000 tons under last year's drought-reduced level and output of barley, Morocco's other major cereal crop, is the lowest in nearly 20 years (figure 3).

Despite expected record commercial grain imports, food aid needed to maintain per capita consumption will climb sharply to over 1 million tons. An estimated 74,000 tons of cereals will be needed to meet the population's nutritional requirements. Driven by low stocks and a poor harvest, Morocco's commercial cereal imports are likely to approach a record 5 million tons in 1993.

The drought is significantly affecting economic growth. Agricultural incomes have declined 30 percent while overall per capita output is expected to drop 5 percent. A sharp increase in grain prices, including a 20-percent rise in the price of wheat, has reduced the purchasing power of consumers who rely on cereals for more than 60 percent of total calories. Declining export revenues and unprecedented imports of cereals and other foods caused a \$400-million increase in the 1992 trade deficit. Decreased availability of irrigation water is expected to affect 1993/94 fruit and vegetable output and further reduce export revenues. Fresh fruits and vegetables account for more than 80 percent of Morocco's annual agricultural export value and 15 percent of total export earnings.

The government enacted a number of policy changes to facilitate imports and ease the drought's impact on consumers, farmers, and livestock producers. These measures include the temporary lifting of restrictions on barley imports, the subsidized sale of mixed feedstuffs, the elimination of duties on seed imports for spring crops, the rescheduling of farmers' debts, and the creation of jobs in rural areas. Import taxes, duties, and value added taxes on selected feedstuffs have also been eliminated.

The government's drought-related trade liberalization is part of a longer-term effort to reform the country's agricultural sector. Recent steps towards that goal include the removal

of government-set producer prices for corn, durum wheat, and barley, and the privatization of the seed industry. Future reforms are likely to include the implementation of fixed or variable levies for grain imports based on established reference prices, although trade will probably remain under government control. Corn imports are also likely to be liberalized, perhaps as early as next year.

Despite the unprecedented volume of cereal imports anticipated for 1993, Morocco's six ports are expected to have sufficient capacity to handle the inflow. Although only two of the ports are equipped with grain silos, the government was expected to maximize port capacity by importing a considerable quantity of grain during the less-congested summer months.

Morocco is rich in natural resources, including the world's largest phosphate reserves, abundant quantities of arable land, and an extensive coastline well suited for tourism and fisheries. Agricultural potential is strong, especially for high-value crops grown in irrigated areas. However, water constraints and rainfall variation will continue to constrain cereal production.

Morocco depends heavily on agriculture for employment, income, and export earnings, with the agricultural sector providing income for about 60 percent of the population and jobs for about 40 percent. Weather-induced fluctuations in agricultural output can therefore significantly affect economic growth. GDP fell 3 percent in 1992 due to the drought and is expected to be similarly affected this year.

The economy has responded well to the structural reforms of the past decade. Achievements include average annual income growth of 5 percent, low inflation, and a sharp reduction in the budget deficit to less than 2 percent of GDP in 1992. Government investment in irrigation and a proposed free trade agreement with the EC could help diversify the agricultural sector. The result would be increased export revenues from high-value products such as fruits and vegetables, and increased production of important domestic commodities including sugar, vegetable oils, and wheat.

Figure 3

Morocco: Wheat Area and Production

1,000 hectares

1,000 tons

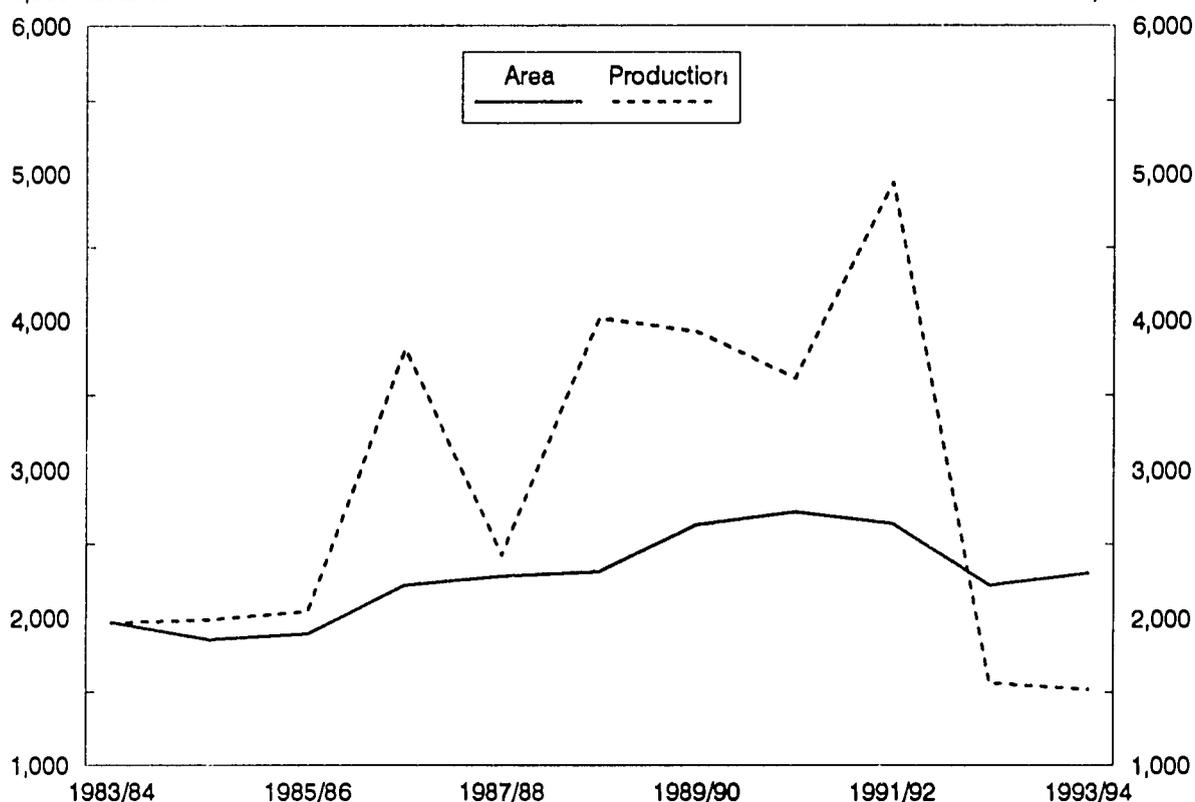


Table 13--Summary of grain balances for Morocco

	Supply			Nonfood use			Food availability and use				Food aid needs	
	Commercial Production	Food imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons----- Million -Kg- -1,000 tons-											
1983/84	3,528	2,322	448	4	1,136	931	249	3,981	4,429	22	201	---
1984/85	3,721	1,659	518	0	1,147	856	447	3,179	3,697	23	164	---
1985/86	4,677	1,468	142	0	1,401	894	649	3,648	3,790	23	165	---
1986/87	7,775	1,625	611	0	1,955	1,441	1,705	4,948	5,559	24	236	---
1987/88	4,279	1,304	340	60	1,887	1,010	734	3,597	3,937	24	164	---
1988/89	7,917	1,125	237	120	2,181	1,402	1,355	4,718	4,955	25	202	---
1989/90	7,404	1,358	219	0	2,352	1,437	1,175	5,153	5,373	25	214	---
1990/91	6,254	2,082	200	0	2,238	1,349	723	5,201	5,401	26	211	---
1991/92	8,636	1,846	203	0	2,586	1,538	1,614	5,467	5,670	26	217	---
1992/93	2,933	3,902	168	0	1,594	1,304	314	5,237	5,405	27	202	---
Status quo requirement forecasts												
1993/94	2,717	5,000	---	0	1,636	1,450	310	4,635	5,704	27	209	1,069
1994/95	7,160	2,140	---	0	2,385	1,480	775	4,970	5,821	28	209	851
Nutrition requirement forecasts												
1993/94	2,717	5,000	---	0	1,636	1,450	310	4,635	4,710	27	173	74
1994/95	7,160	2,140	---	0	2,385	1,480	775	4,970	4,806	28	173	0

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Central Africa Overview

Central Africa's 1993/94 food aid needs to maintain status quo consumption are estimated at 91,000 tons, as production is near last year's bumper crop. Zaire accounts for 44 percent of the 1993/94 status quo needs. [Stacey Rosen]

For the purposes of this report, Cameroon, Central African Republic (CAR), and Zaire comprise the Central African region. Food aid needs for 1993/94 are estimated at 91,000 tons, very close to average receipts during the last 5 years.

While harvesting of the first crops has only recently begun, the 1993/94 harvest should be near last year's bumper crop of 2.4 million tons. Early indications have been encouraging, as rains and growing conditions have been favorable. Commercial imports of 444,000 tons will meet the remaining consumption requirements (table 14).

Production in Cameroon and CAR is in the normal range as widespread rains benefited crops during the growing season.

Despite the political and economic crises in Zaire, production remains above average. However, malnutrition is prevalent in urban areas, where rioting and looting have disrupted food market activities.

The important grains in this region are corn and millet. However, grains generally account for only 25 percent of the diet, as roots and tubers contribute the principal share. Annual grain output has averaged nearly 2 million tons in the last decade and is not highly variable. This factor, combined with an adequate commercial import capacity, makes Central Africa less dependent upon food aid than other regions in Africa. Food aid receipts usually range between 50,000 and 150,000 tons and contribute less than 3 percent of consumption.

Zaire

Food is available in rural areas, but political turmoil and severe economic deterioration have disrupted the marketing system for the main towns, where the food supply situation is worsening. [Stacey Rosen]

Zaire's 1993/94 food aid needs are estimated at 42,000 tons, about the same as last year's receipts (table 15). Commercial imports of 225,000 tons will account for most of the country's import requirement. The 1993/94 grain harvest is expected to be above average, but will fall about 6 percent from last year's bumper crop of 1.4 million tons. Import requirements have not increased, because average per capita consumption in recent years was below last year's actual food use.

Despite two successive bumper harvests, malnutrition is widespread. Food is available in rural areas, but riots and looting in urban areas have disrupted food market activities, thereby worsening the food supply situation, particularly in Kinshasa, the capital. In 1993/94, 277,000 tons of food aid are needed to bring consumption in Zaire up to the minimal nutritional standard.

Zaire is experiencing a political and economic crisis. The government, led by President Mobutu, has been characterized by corruption and mismanagement. Mobutu continues to cling to power despite demands of Zaire's principal donors,

Belgium, France, and the United States, to relinquish his position.

Many of Zaire's economic problems can be attributed to the failure of "Zairianization"--the policy of nationalizing businesses-- and the subsequent stabilization and adjustment program initiated in 1983. The goals of the program were to improve the management of public resources, liberalize prices and trade, and increase private sector involvement in the economy. The policies necessary to support the reforms were adhered to for only a short time, then government spending soared and the economy deteriorated. Uncontrolled spending by Mobutu precipitated the spiral of hyperinflation and currency depreciation, resulting in an economic crisis. In April 1990, the government suspended political reforms and subsequently several cities have suffered intermittent civil unrest.

Zaire's vast natural resource base includes the world's second largest rain forest, fertile soils, and ample rainfall. These factors, and appropriate incentive policies for producers, should enable the country to supply its consumption requirements domestically.

Table 14--Summary of grain balances for Central Africa

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							Million	-Kg-	1,000 tons		
1983/84	1,837	364	62	5	50	432	32	1,711	1,773	41	43	---
1984/85	1,710	320	163	5	50	422	49	1,537	1,699	42	40	---
1985/86	1,960	515	124	5	50	478	48	1,944	2,068	44	47	---
1986/87	2,016	731	69	114	60	513	45	2,063	2,132	45	47	---
1987/88	1,948	620	185	79	65	506	46	1,917	2,102	47	45	---
1988/89	2,039	659	60	192	70	367	53	2,062	2,122	48	44	---
1989/90	2,043	660	111	177	72	366	52	2,088	2,199	50	44	---
1990/91	1,960	585	110	180	64	320	87	1,946	2,056	51	40	---
1991/92	2,193	513	47	200	64	348	109	2,072	2,119	53	40	---
1992/93	2,395	541	58	175	64	382	91	2,332	2,390	55	44	---
Status quo requirement forecasts												
1993/94	2,329	444	---	0	74	383	40	2,366	2,457	57	43	91
1994/95	2,318	465	---	0	76	396	42	2,309	2,537	58	43	228
Nutrition requirement forecasts												
1993/94	2,329	444	---	0	74	383	40	2,366	2,912	57	51	546
1994/95	2,318	465	---	0	76	396	42	2,309	3,007	58	51	698

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Table 15--Summary of grain balances for Zaire

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							Million	-Kg-	1,000 tons		
1983/84	934	238	53	0	50	188	25	934	987	29	34	---
1984/85	932	182	138	0	50	206	41	842	980	30	32	---
1985/86	961	307	101	0	50	194	36	1,029	1,130	31	36	---
1986/87	941	420	56	0	60	206	38	1,093	1,149	32	36	---
1987/88	994	239	177	0	65	215	41	949	1,126	33	34	---
1988/89	1,051	268	55	0	70	165	50	1,075	1,129	34	33	---
1989/90	1,038	228	107	0	72	150	48	1,047	1,154	35	33	---
1990/91	1,011	248	103	0	64	162	70	1,011	1,114	37	30	---
1991/92	1,114	217	34	0	64	158	82	1,097	1,130	38	30	---
1992/93	1,425	200	50	0	64	198	65	1,380	1,430	39	37	---
Status quo requirement forecasts												
1993/94	1,334	225	---	0	74	179	40	1,331	1,373	40	34	42
1994/95	1,264	250	---	0	76	185	33	1,260	1,418	42	34	157
Nutrition requirement forecasts												
1993/94	1,334	225	---	0	74	179	40	1,331	1,608	40	40	277
1994/95	1,264	250	---	0	76	185	33	1,260	1,660	42	40	400

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

East Africa Overview

Lower production in Kenya and Sudan has resulted in an estimated 2.1 million tons of food aid needs for East Africa in 1993/94, about 9 percent above last year's receipts. Food aid has increased grain availability in the region by more than 10 percent, yet less than three quarters of the nutritional needs are met. [Stacey Rosen]

The East African region is comprised of Burundi, Ethiopia, Kenya, Rwanda, Somalia, Sudan, Tanzania, and Uganda. The region's 1993/94 food aid needs are estimated at 2.1 million tons, about 9 percent above the previous year's receipts (table 16). Ethiopia accounts for a quarter of the needs. For the region as a whole, grain production is estimated to decrease only nominally to 19 million tons as production gains in Ethiopia, Somalia, and Tanzania nearly offset losses in Kenya and Sudan.

A bumper harvest is forecast for Ethiopia due to favorable weather conditions, high producer prices, increased fertilizer use, and an increased labor supply following the end of the civil war in 1991. As a result, Ethiopia's needs are estimated to fall to 524,000 tons, a significant drop from average shipments between 1990 and 1992.

In Somalia, improved security conditions that allowed farmers to return to their land and an extensive input distribution program generated increased agricultural output. Somalia received 470,000 tons of food aid in 1992/93. These needs are estimated to fall to 335,000 tons in 1993/94.

In Tanzania, favorable growing conditions yielded an above average crop of more than 3.8 million tons. Food aid needs are estimated at 68,000 tons. In Rwanda, a more than 10-percent drop in production will keep food aid needs much above the historical average. Civil strife has displaced 900,000 people and has hindered food marketing efforts. Food aid needs for Rwanda in 1993/94 are estimated at 90,000 tons.

In Kenya, a near 6-percent drop in grain production significantly increased needs. Grain output of 3 million tons in 1993 is about 90 percent of normal. As a result, needs are estimated at 666,000 tons. Kenya's food aid receipts are usually around 100,000 tons as most import needs are met commercially. The production shortfall can be attributed to excessive rains

early in the year that hampered land preparation for the main 1993/94 crop and to inadequate producer prices for corn. Escalating input costs, especially for seeds, fertilizers, and herbicides, continue to outstrip increases in producer prices. These inputs are principally imported and recent devaluations of the shilling have made imports more expensive. This factor and the deregulation of the wheat market have caused a shift in area from corn to wheat.

Sudan's 1993/94 grain production is estimated at 4.4 million tons, 17 percent below last year's bumper harvest. High input costs and low producer prices are expected to reduce yields and area harvested. As a result, Sudan's food aid needs are estimated at 336,000 tons, nearly three times 1992/93 receipts. During the last decade, Sudan's food aid receipts have ranged from 125,000 tons to 1.1 million tons.

The population of East Africa is about 180 million. For the most part, the region is characterized by drought-prone food importing countries. Kenya, Sudan, and Tanzania are intermittent exporters, however. Cereal output, which has expanded just over 2 percent per year during the last decade, has not kept pace with average population growth of 3 percent. Imports, two-thirds of which are concessional, compensate for the weak production performance. In the last decade, the import share of consumption has averaged 15 percent. Annual food aid shipments average 1.7 million tons. During the major droughts of 1984/85 and 1987/88, food aid allocations to the region reached 2 million tons. East Africa receives about a quarter of U.S. food aid shipments and about 15 percent of total donor shipments.

With respect to individual countries, Ethiopia is the region's largest grain producer, accounting for almost a third of output. Sudan, Tanzania, and Kenya are also important producers. Ethiopia and Sudan receive the largest shipments of food aid because they have suffered from frequent production shortfalls due to drought and civil war.

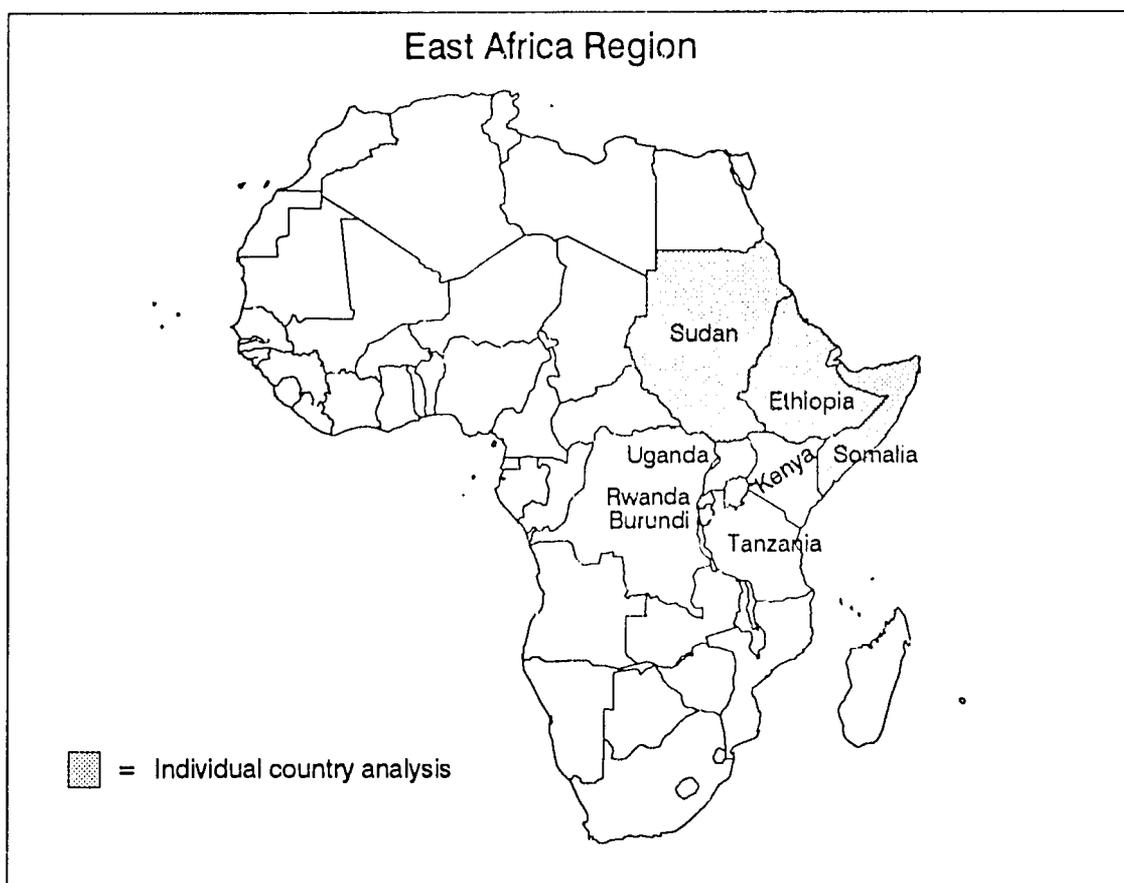


Table 16--Summary of grain balances for East Africa

	Supply		Nonfood use			Food availability and use				Food aid needs		
	Commercial Production	Food aid imports receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Popu- lation	Per cap. food use 1/	With stock adjustment	
	-----1,000 tons-----					----- Million		-Kg-	1,000 tons			
1983/84	14,252	606	1,321	207	100	2,316	938	13,124	14,444	133	109	---
1984/85	12,262	756	2,478	0	155	2,117	586	11,098	13,576	137	99	---
1985/86	17,645	371	1,992	320	207	2,460	2,268	13,346	15,338	141	109	---
1986/87	18,624	397	1,769	1,115	220	2,517	2,888	14,549	16,318	146	112	---
1987/88	15,650	427	1,912	631	235	2,285	1,612	14,202	16,114	151	107	---
1988/89	19,544	544	960	379	215	2,382	3,320	15,404	16,363	156	105	---
1989/90	18,032	699	1,086	367	235	2,505	2,306	16,638	17,724	161	110	---
1990/91	16,219	1,230	1,703	132	220	2,348	1,297	15,758	17,461	166	105	---
1991/92	18,074	923	1,772	75	215	2,483	1,579	15,942	17,714	172	103	---
1992/93	19,172	1,016	1,942	170	200	2,658	1,488	17,201	19,193	177	108	---
Status quo requirement forecasts												
1993/94	19,012	1,393	---	364	241	2,615	1,551	17,127	19,245	183	105	2,118
1994/95	20,397	1,511	---	375	249	2,702	1,932	18,206	19,876	189	105	1,809
Nutrition requirement forecasts												
1993/94	19,012	1,393	---	364	241	2,615	1,551	17,127	23,234	183	127	6,242
1994/95	20,397	1,511	---	375	249	2,702	1,932	18,206	24,004	189	127	6,191

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Ethiopia

Agriculture continues to improve following the end of the civil war.

Producers have responded favorably to reduced government intervention in the agricultural sector. [Stacey Rosen and Kim Jones]

Ethiopia's 1993/94 food aid needs are estimated at 524,000 tons, lower than recent actual shipments, as a large harvest is expected (table 17). This success can be attributed to favorable weather conditions, high producer prices, increased fertilizer use, improved security in rural areas, and an increased labor supply as soldiers returned to their land at the end of the civil war in 1991. Pockets of food insecurity persist, however. Several regions have been affected by drought, ethnic disturbances, and the movement of large numbers of people. Furthermore, the Ethiopian population at large remains malnourished. Even with recent food aid, 4 million tons of additional aid are needed to meet the minimum nutritional standard (figure 4).

Ethiopia's commercial imports have been limited, ranging from zero to 200,000 tons, due to a stagnant economy and low export earnings. Depressed world coffee prices have reduced Ethiopia's foreign exchange availability, as coffee generates 60 percent of export earnings.

Three decades of civil war left the Ethiopian economy in shambles. With a population of more than 50 million, Ethiopia is one of the poorest countries in the world with a per capita income barely exceeding \$100. Real GDP growth has not matched the near 3-percent annual population growth in the last two decades. Output of the agricultural sector, which accounts for 40 percent of GDP, 85 percent of exports, and 85 percent of employment, virtually stagnated from 1974 to 1990. This poor performance was attributed to restrictive economic policies and the diversion of resources from agriculture to the war effort.

The Transitional Government of Ethiopia (TGE) was established in July 1991 following the collapse of the Mengistu regime 2 months earlier. According to a unanimously adopted charter, the TGE will hold power until national elections are held in January 1994. The charter also called for a referendum on Eritrea's future status. That referendum for independence

was held in April 1993 and Eritrea declared itself a nation in May. One of the principal goals of the TGE is to replace the centrally planned economy with a market-oriented economy. In accordance with this goal, the government plans to limit its role, has encouraged private sector investment, and has promoted private sector involvement in the economy.

Reforms implemented in the agricultural sector include: guaranteeing land usership rights, eliminating restrictions on renting land and hiring labor, continuing the liberalization of pricing and marketing begun in 1990, and improving farmers' access to inputs and extension services. Since April 1992, the government has allowed the private sector to participate in the marketing and distribution of seeds and fertilizer to increase availability to farmers. In addition, the government intends to divest its holdings of state farms. Despite these advances, Ethiopia's agricultural sector will always be vulnerable to drought. However, with the implementation of improved price incentives, liberalization of marketing, increased availability of inputs, and increased labor supply, output is expected to rise in the medium term.

To stimulate the overall economy through export growth, the government devalued the currency and revised the export licensing system. In September 1992, the birr (local currency) was devalued 60 percent after remaining unchanged for more than two decades. To promote and diversify exports, the government has allowed for the automatic granting of export licenses since early 1992. The elimination of all export taxes, except those for coffee, has been proposed. Also, the import system was liberalized to increase the availability of inputs.

The new policy direction is expected to stimulate growth in the agricultural and manufacturing sectors and thereby improve growth in the economy. Ultimately, this will improve the foreign exchange situation and increase commercial import capacity.

Figure 4

Ethiopia: Per Capita Food Use Kilograms

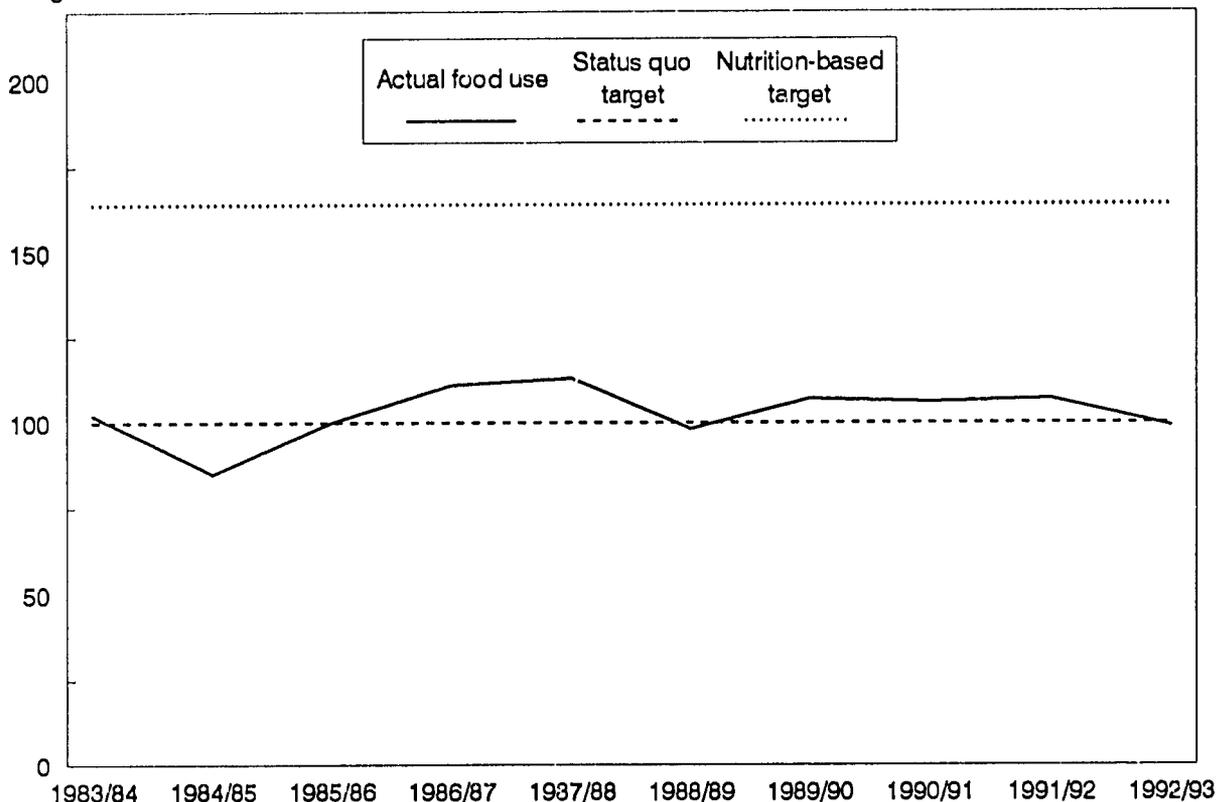


Table 17--Summary of grain balances for Ethiopia

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							----- Million		-Kg-	1,000 tons	
1983/84	4,414	0	252	0	0	457	0	3,958	4,210	41	102	---
1984/85	3,300	0	740	0	0	424	0	2,876	3,617	42	85	---
1985/86	3,820	34	939	0	0	481	0	3,374	4,312	43	100	---
1986/87	4,937	0	479	0	0	500	0	4,437	4,916	44	111	---
1987/88	4,556	196	931	0	0	538	0	4,214	5,145	46	113	---
1988/89	4,692	0	471	0	0	494	0	4,199	4,670	47	98	---
1989/90	5,118	149	538	0	0	531	0	4,736	5,273	49	107	---
1990/91	5,121	0	874	0	0	567	0	4,554	5,428	51	106	---
1991/92	4,945	31	1,216	0	0	582	0	4,394	5,610	53	107	---
1992/93	5,045	100	770	0	0	556	0	4,589	5,359	54	99	---
Status quo requirement forecasts												
1993/94	5,306	350	---	0	0	572	0	5,084	5,608	56	100	524
1994/95	5,463	400	---	0	0	591	0	5,272	5,800	58	100	529
Nutrition requirement forecasts												
1993/94	5,306	350	---	0	0	572	0	5,084	9,184	56	164	4,100
1994/95	5,463	400	---	0	0	591	0	5,272	9,499	58	164	4,227

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Rwanda

Ethnic conflict has disrupted food supplies. [Stacey Rosen]

Rwanda's 1993/94 food aid needs are estimated at 90,000 tons, down from 1992/93, but still about 10 times the average of shipments in the 1980's. The 1993 grain crop is estimated at 232,000 tons, down 12 percent from the 1990-92 average (table 18). While rainfall was below normal, the drop in output was principally due to lower area planted caused by input shortages and displacement of farmers by ethnic strife.

There are two main ethnic groups in Rwanda: The Hutus, who represent 85 percent of the population, and the Tutsis. In October 1990, exiled Tutsis invaded the country. Since then sporadic fighting has displaced thousands of people and disrupted agricultural activities. Fighting that escalated in early 1993 has caused the displacement of 900,000 people,

about 10 percent of the total population, and has hampered food marketing.

Rwanda's economic difficulties intensified during the 1980's. Declining terms of trade, an overvalued exchange rate, expansionary fiscal policies, and structural rigidities destroyed the economy. Real GDP per capita declined and domestic and external financial imbalances were routine. The government finally adopted a medium term structural adjustment program for 1991-1993. Initial results were promising, as GDP growth accelerated and the current account deficit fell sharply. However, the reforms have suffered setbacks due to the civil unrest and the economy has deteriorated.

Somalia

Grain output is expected to rise as improved security in most areas has allowed farmers to return to their land. Intermittent fighting continues to hinder distribution of supplies to farmers and people at risk.

[Stacey Rosen and Kim Jones]

Somalia's agricultural sector is expected to show signs of recovery in 1993/94. As a result, food aid needs are estimated at 335,000 tons, well below the 470,000 received last year (table 19). Prior to the war, however, Somalia was virtually self-sufficient in corn and sorghum, the major food crops. Wheat and rice, however, were imported to meet demand. These imports, about half of which were food aid, averaged approximately 200,000 tons annually in the 1980's.

Grain production for 1993/94 is estimated at 325,000 tons, up 40 percent from drought- and war-ravaged crops of the previous 2 years. Despite above average rains during the growing season, output falls well short of the harvests of the late 1980's that averaged around 600,000 tons. Improved security conditions in the main growing areas in the southern part of the country have allowed farmers to return to their land and area planted has increased. In addition, farmers benefited from extensive distribution of seeds and tools.

Besides disrupting production, the war hampered the delivery of food and relief supplies. An estimated half of the food aid received in late 1992 was looted. The United Nations-backed operation designed to protect seaports, airports, and internal

distribution routes was successful in allowing for safer delivery of relief supplies. However, the war displaced 1 million people who lived mainly in urban centers, leaving them without employment, shelter, or basic health care. They have only recently begun returning to their homes. More than 300,000 people are estimated to have died due to hunger and related diseases. In some areas, one of every four children under the age of 5 died. Intermittent fighting continues to hinder distribution of supplies to farmers and people at risk.

Somalia is one of the poorest countries in the world with a per capita income of \$120. Even with aid, Somalia will meet only about 60 percent of nutrition-based grain requirements. The agricultural sector accounts for 65 percent of GDP. Livestock is the sector's principal component, accounting for 40 percent of GDP and 65 percent of export earnings. The drought and fighting have devastated herds throughout the country. The disastrous state of the economy has severely restricted the ability to import food commercially. In the late 1980's, Somalia was commercially importing more than 100,000 tons of grain annually. Commercial imports in 1993/94 are estimated at less than half that level.

Table 18--Summary of grain balances for Rwanda

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							Million	-Kg-	1,000 tons		
1983/84	328	9	13	0	0	78	0	259	271	6	46	---
1984/85	255	0	25	0	0	62	0	194	219	6	36	---
1985/86	324	5	35	0	40	79	0	210	245	6	39	---
1986/87	272	1	25	0	30	62	0	181	206	7	31	---
1987/88	266	0	16	0	30	59	0	177	193	7	28	---
1988/89	274	1	8	0	30	69	0	177	185	7	26	---
1989/90	262	4	2	0	30	57	0	179	181	7	25	---
1990/91	269	16	8	0	30	58	0	198	206	8	27	---
1991/92	254	12	12	0	30	60	0	175	187	8	24	---
1992/93	264	25	100	0	30	84	0	175	275	8	33	---
Status quo requirement forecasts												
1993/94	232	13	---	0	34	71	0	140	230	9	27	90
1994/95	273	13	---	0	35	74	0	177	239	9	27	62
Nutrition requirement forecasts												
1993/94	232	13	---	0	34	71	0	140	489	9	57	349
1994/95	273	13	---	0	35	74	0	177	508	9	57	331

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Table 19--Summary of grain balances for Somalia

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							Million	-Kg-	1,000 tons		
1983/84	357	19	245	0	10	45	0	337	581	6	96	---
1984/85	494	0	180	0	15	45	0	434	614	6	98	---
1985/86	649	115	143	0	20	63	17	663	806	7	124	---
1986/87	599	141	161	0	15	68	9	665	826	7	122	---
1987/88	590	58	154	0	15	60	0	583	736	7	105	---
1988/89	639	114	74	0	15	64	0	674	748	7	106	---
1989/90	513	103	90	0	15	55	0	546	637	7	92	---
1990/91	477	133	66	0	20	45	0	545	611	7	88	---
1991/92	257	88	83	0	20	32	0	293	376	7	53	---
1992/93	232	50	470	0	20	56	0	206	676	7	93	---
Status quo requirement forecasts												
1993/94	325	50	---	0	19	51	0	305	639	7	87	335
1994/95	317	75	---	0	19	52	0	321	653	8	87	332
Nutrition requirement forecasts												
1993/94	325	50	---	0	19	51	0	305	926	7	125	622
1994/95	317	75	---	0	19	52	0	321	946	8	125	625

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Sudan

Grain output fell from the 1992/93 record as ideal weather ended and high costs and shortages of inputs continued. Reduced grain production and continued civil strife caused malnutrition and starvation to persist. [Stacey Rosen and Kim Jones]

Sudan's 1993/94 grain output is estimated to fall 17 percent from the 1992/93 record to 4.4 million tons. As a result, food aid needs in 1993/94 are forecast nearly three times higher than last year's shipments (table 20). Despite the increase, food aid needs are still significantly below the receipts of the early to mid-1980's. In 1983/84-1985/86, food aid averaged more than 730,000 tons annually and contributed more than 20 percent of Sudan's grain supplies (figure 5). In 1990/91-1992/93, food aid averaged about half that level and contributed to less than 10 percent of the grain supplies. The nutrition needs measure does not accurately reflect conditions in the country. Starvation exists because grain supplies are not being moved from surplus to deficit regions, and many people are too poor to purchase grain available in the market.

The estimated smaller 1993/94 grain harvest reflects more normal weather after 1992/93's exceptional conditions. High prices of inputs, such as fertilizers, pesticides, and fuel, continue to discourage planting and reduce yields. High costs of agricultural machinery and fuel, relative to producer prices, mean that some portion of the crops will remain unharvested.

Several regions, particularly in the south, suffer from malnutrition and starvation stemming principally from the decade long civil war. The split of the Sudanese People's Liberation Army (SPLA) in 1991 caused increased fighting between rival rebel factions in 1992-93. The deteriorated security situation led many private groups working in connection with the United Nation's (U.N.) Operation Lifeline Sudan to suspend their efforts in distributing food to the nearly 1 million needy people. A U.N. agreement instituted in December 1992 allowed for increased accessibility in the south and has begun to facilitate relief efforts.

The civil war between the fundamentalist Islamic government in the north and rebels of the Sudan People's Liberation Army (SPLA), mostly Christians and animists, in the south has been ongoing since 1983. The fighting has displaced nearly 3 million people. Widespread famine has been reported.

The civil war and weather conditions dictate the performance of the Sudanese economy. Both factors affect the agricultural sector, which accounts for more than a third of GDP. The civil war has diverted funds from agriculture to the military, disrupted marketing activities, resulted in extensive livestock losses, and destroyed infrastructure. Inadequate rainfall also has adversely affected agricultural output. Sudan has experienced three droughts in the last decade that cut production anywhere from one-third to one-half of normal levels.

In the late 1980's, the Sudanese economy was characterized by very low growth, high government expenditures, triple-digit inflation, and a widening trade deficit. In 1991, the government implemented a 3-year recovery program, the Economic Salvation Program (ESP). The program aims to stimulate the economy by deregulating price and profit controls, privatizing government parastatals, lifting subsidies on fuel and food, liberalizing the trade environment, and stabilizing the exchange rate.

The economy has shown signs of recovery since the implementation of these reforms, but many problems remain. Large trade and budget deficits persist. Imports are four times higher than exports. The cost of petroleum imports, which account for a quarter of total imports, has risen as supplies from Libya, Sudan's principal supplier, have become unpredictable. This has forced Sudan to purchase oil in the higher priced commercial market. Earnings from cotton, Sudan's principal export, have dropped considerably as international cotton prices have fallen and area has been diverted to wheat.

Sudan's agricultural potential is immense, as the central and northeastern regions of the country are rich with fertile soils. In the long term, a prosperous agricultural sector could stimulate the rest of the Sudanese economy. In the near and medium term, however, prospects are bleak, as civil strife, lack of foreign exchange, and high production costs will continue to hinder agricultural growth.

Figure 5

Sudan: Shifts In Grain Supply Sources

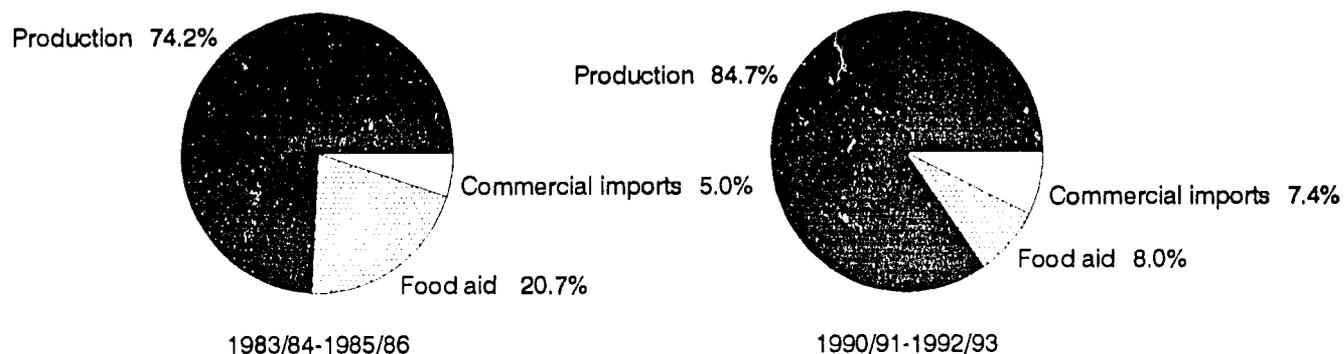


Table 20--Summary of grain balances for Sudan

	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 adjustment
	-----1,000 tons-----							Million	-Kg-	1,000 tons		
1983/84	2,299	68	450	100	0	328	429	2,471	2,921	22	134	---
1984/85	1,364	465	1,096	0	0	284	14	1,960	3,056	23	136	---
1985/86	4,227	0	658	170	0	411	1,299	2,361	3,019	23	128	---
1986/87	3,849	0	890	800	0	473	1,504	2,371	3,261	24	135	---
1987/88	1,648	112	615	441	0	261	204	2,358	2,973	25	120	---
1988/89	5,137	389	200	224	0	541	1,400	3,565	3,765	25	149	---
1989/90	2,467	251	335	189	0	398	600	2,931	3,266	26	127	---
1990/91	2,119	676	643	2	0	401	200	2,792	3,435	27	129	---
1991/92	4,145	155	319	0	0	431	1,000	3,069	3,388	27	124	---
1992/93	5,302	175	125	150	0	604	1,100	4,623	4,748	28	168	---
Status quo requirement forecasts												
1993/94	4,405	150	---	236	0	495	1,200	3,723	4,059	29	139	336
1994/95	4,598	200	---	243	0	508	1,301	3,945	4,169	30	139	223
Nutrition requirement forecasts												
1993/94	4,405	150	---	236	0	495	1,200	3,723	3,589	29	123	0
1994/95	4,598	200	---	243	0	508	1,301	3,945	3,686	30	123	0

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Southern Africa Overview

Food aid needs in 1993/94 are about half of 1992/93 receipts as normal rainfall more than doubled the harvest. Civil war has disrupted food production in Angola. Mozambique's food aid needs remain high because years of civil war have disrupted most agricultural activities.

[Margaret Missiaen]

A vastly improved regional cereal supply is anticipated during the 1993/94 marketing year³ because of a good harvest and the improved opening stocks following increased cereal import deliveries in recent months. Good rainfall in early 1993 dramatically increased grain yields following the devastating 1992 drought in Southern Africa. Although yields are better than last year in all countries except Angola, the potential for increased production was not fully realized because of widespread shortages of seed, fertilizers, and draft animals. The countries in this region are Angola, Lesotho, Madagascar, Malawi, Mozambique, Swaziland, Zambia, and Zimbabwe.

The 1993/94 import requirements are estimated at 2.3 million tons, less than half of last year's imports. Commercial imports are expected to fall from 1992/93's abnormally high level when many countries were forced to divert scarce foreign exchange from imports of capital goods to food (table 21). Food aid needs are 1.4 million tons to maintain per capita consumption and 2.3 million tons to satisfy minimum nutritional needs. Last year's food aid shipments still in the pipeline will be used to meet some of the 1993/94 needs.

Food supplies are adequate for most countries. However, current food security projections indicate that several countries will require grain imports during 1993/94. The renewed civil war has created famine conditions in Angola. Below-average crops were harvested in Lesotho and Swaziland. In Madagascar, an average harvest is anticipated despite a dry spell that caused losses of transplanted rice. In Malawi, Zambia, and Zimbabwe favorable weather and higher prices led to above-average output. Food aid needs remain high in Mozambique, where it will take years and heavy investment to rebuild the agricultural sector.

The 1992 drought led to a sharp rise in imports throughout the region. Imports in 1992/93 reached 6 million tons--more than half of which was food aid. Fears that transportation bottlenecks would prevent food from reaching the needy in time proved unfounded. Cooperation among donor and recipient governments and the good transportation networks in

South Africa and Zimbabwe facilitated movement of food to inland locations.

Except for winter wheat, Southern Africa's grain crops were mostly harvested by the end of June. Preliminary estimates indicate a 1993/94 crop of nearly 9 million tons, compared with only 4 million in 1992. Regional food security is also linked to production in the Republic of South Africa, which is an important food supplier for neighboring countries. While wide variations in rainfall cause large swings in production, South Africa exports corn in most years. The exports averaged 2 million tons annually during the 5 years prior to the drought.

South Africa imported more than 4 million tons of corn to meet domestic demand during 1992/93. Another 4 million tons were shipped through South Africa to its neighbors, especially Zimbabwe and Zambia. South Africa's 1993 corn harvest is estimated at 9.4 million tons, compared with only 3.1 million in 1992. The South African Maize Board has said that no export sales will be considered before the outlook for the 1994 crop is clear, despite the fact that carryover stocks are expected to be 1.5 million tons--more than the minimum required. White corn, preferred for food use, would find a ready market in Africa.

Malawi's 1993 grain crop is estimated at nearly 2 million tons, more than two times last year's harvest. Corn accounts for 98 percent of total grain output. Although plantings were slightly lower than last year, yields are up because of increased use of hybrid seed and fertilizers and favorable weather conditions. Domestic grain availability is adequate for the country's 1993/94 requirements, including a corn stock buildup to 180,000 tons and refugee needs of 165,000 tons.

Although Zambia's grain harvest is estimated at 1.8 million tons, compared with 600,000 tons in 1992/93, localized shortages are likely to persist, particularly in chronic food-deficit areas in the western and southern provinces. Moreover, unrecorded corn exports to Zaire are likely to increase beyond the usual 100,000 tons in the wake of food shortages in that country. The good 1993 harvest will pose severe storage and logistical problems.

³The 1993/94 marketing year in Southern Africa began in April and corresponds to the Northern Hemisphere's 1992/93 marketing year.

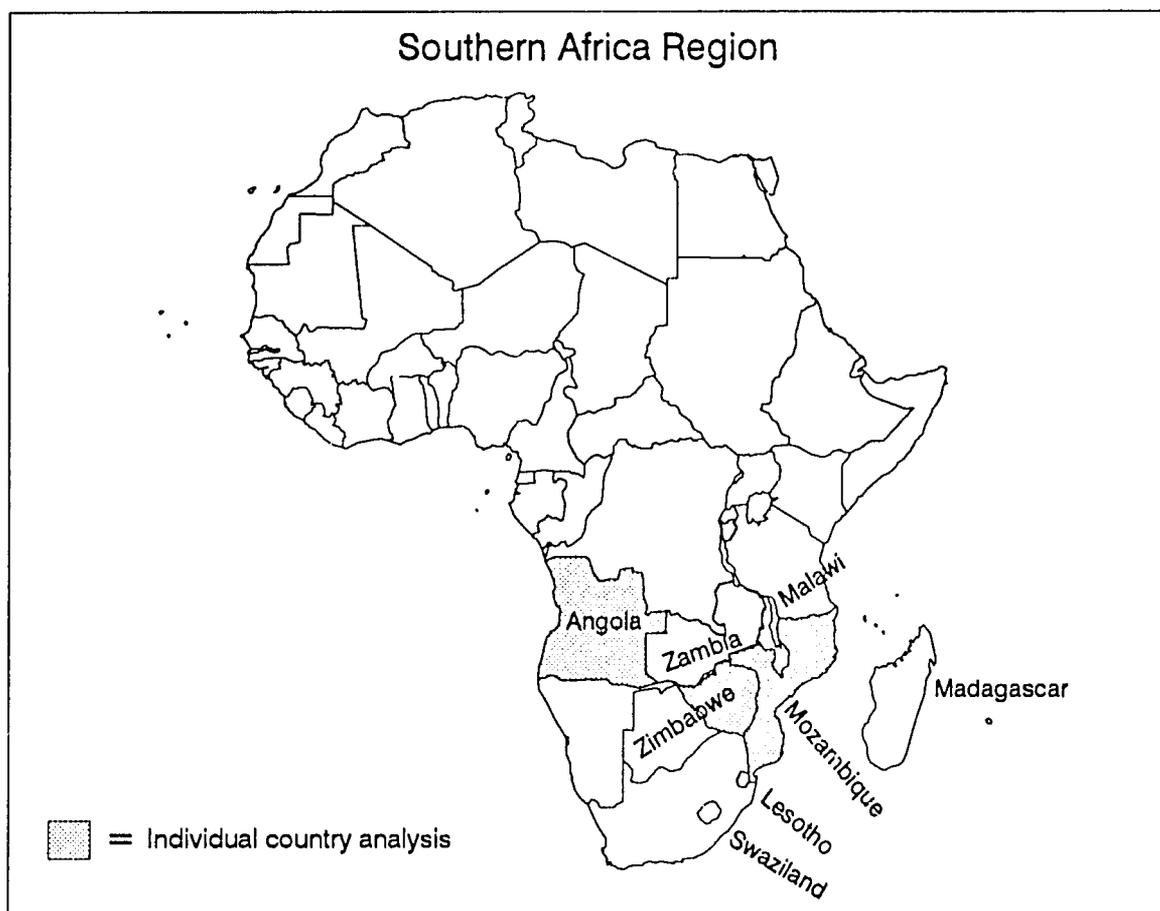


Table 21--Summary of grain balances for Southern Africa

	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 adjustment
	-----1,000 tons-----							Million	-Kg-	1,000 tons		
1983/84	6,228	1,143	665	358	322	1,154	600	6,394	7,059	53	133	---
1984/85	6,701	626	885	135	361	978	929	5,525	6,410	54	118	---
1985/86	8,693	599	509	363	436	1,159	1,869	6,394	6,903	56	123	---
1986/87	8,416	415	787	650	417	1,136	2,353	6,144	6,932	58	120	---
1987/88	7,319	375	1,003	225	420	1,176	1,927	6,299	7,302	60	123	---
1988/89	9,063	413	931	550	522	1,305	1,991	7,034	7,965	61	130	---
1989/90	8,691	592	865	492	460	1,312	1,531	7,479	8,343	63	132	---
1990/91	8,339	643	770	414	498	1,244	1,047	7,310	8,081	65	124	---
1991/92	7,741	1,042	998	192	478	1,291	636	7,233	8,231	67	123	---
1992/93	4,299	2,837	3,382	0	510	1,339	715	5,207	8,590	69	124	---
Status quo requirement forecasts												
1993/94	8,797	916	---	28	541	1,342	943	7,574	8,933	71	125	1,424
1994/95	8,526	933	---	382	556	1,382	682	7,401	9,200	73	125	1,799
Nutrition requirement forecasts												
1993/94	8,797	916	---	28	541	1,342	943	7,574	9,729	71	137	2,309
1994/95	8,526	933	---	382	556	1,382	682	7,401	10,024	73	136	2,667

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Angola

The renewal of the civil war has disrupted agricultural activities.

[Margaret Missiaen]

Angola's grain import requirement for 1993/94 is more than 300,000 tons. With commercial imports forecast at about 170,000 tons, food aid needs are 150,000 tons, compared with actual deliveries of 135,000 tons in 1992/93 (table 22). Grain production was down sharply this year, because of renewed hostilities and drought in the main grain-producing provinces. Two million of Angola's 11 million people will need food assistance in 1993/94. Angola's nutrition-based needs are more than three times its status quo requirements.

Economic activity failed to rebound in 1992 despite the mid-1991 peace agreement that ended decades of civil war. Angola's petroleum sector is the mainstay of the economy, accounting for 17 percent of GDP and more than 90 percent of exports. Oil output increased 11 percent, but real GDP grew only 1 percent in 1992. The government has failed to put together an adjustment program, and the economic outlook is poor. Total imports are expected to contract because of a decline in export receipts and a rise in external debt payments. Moreover, imports are likely to be skewed toward military equipment. While Angola records a trade surplus in most years, large service payments lead to current account deficits.

Grain production in Angola has shown a declining trend, despite year-to-year fluctuation. Although grain imports grew between 1983/84 and 1992/93, the resulting increase in food availability failed to prevent a fall in per capita consumption. During the past 10 years, imports provided half of total grain consumption. The food aid share of total imports ranged from 20 to 40 percent (figure 6).

Civil war has again engulfed most regions of the country since October 1992. Although distribution of seed and agricultural tools for the 1992/93 cropping season was successful, grain planting (mostly corn) was reduced due to civil disturbances. Normal cropping season activities could not be carried out because of population displacement, land mines, and general insecurity. Grain area planted is estimated down 20 percent.

Cassava planting was also down, which will affect the food security of the populations depending on root crops. Cassava shortfalls will have to be made up with grain imports. Grains supply 35 percent of the calories in the typical diet, while cassava supplies 30 percent.

Weather conditions in the main producing areas were fair for crop growth. Rainfall was normal from October to December, but January rainfall was inadequate all over the country. The important corn-producing areas of Huambo and Bie were seriously affected. The 1993 grain harvest is estimated at 317,000 tons, significantly below the previous year's 417,000 tons.

Even if the required amount of food aid arrives in Angola, distribution to needy people will be extremely difficult. The World Food Program estimates that monthly requirements are about 30,000 tons, while road and airlift capacities are currently less than 15,000 tons.

Angola is sparsely populated and well endowed with natural resources. Most of the country is situated in a fertile plateau with ample water supplies for agriculture, livestock, and hydroelectric generation. The growth of the petroleum industry in the 1980's did little to increase productivity in the economy as a whole. Despite this good resource base, civil war and the lack of a coherent framework of financial policies (including an overvalued exchange rate) distort resource allocation and limit economic performance, including farm output.

Little value added in the Angolan economy is invested in generating future growth based on renewable resources that could be sustained in the long term. The critical factors in Angola's medium-term outlook will be the duration of the war and government policies. Unless the government implements a coherent set of economic reforms, the accumulation of arrears and decline in net external credit will limit imports, including grain.

Figure 6

Angola: Commercial and Food Aid Imports

1,000 tons

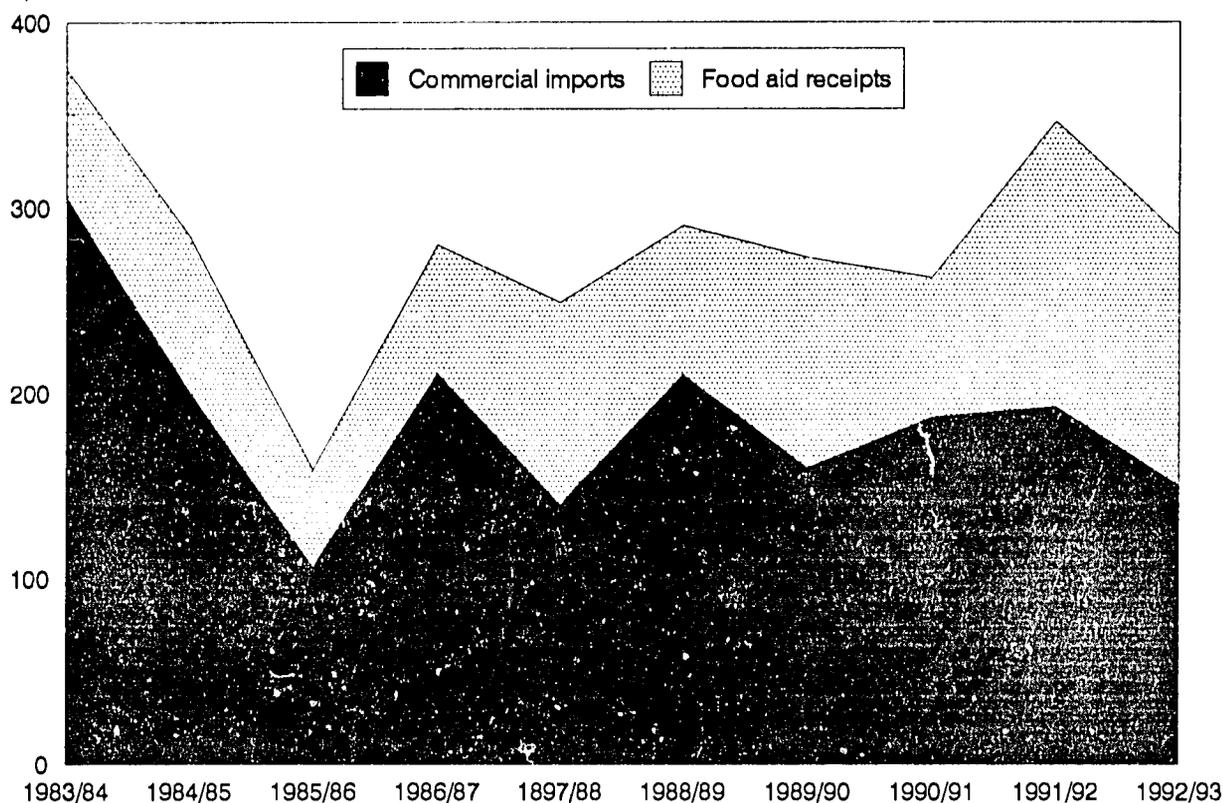


Table 22--Summary of grain balances for Angola

	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 adjustment
	-----1,000 tons-----						Million		-Kg-	1,000 tons		
1983/84	348	305	69	0	0	59	0	594	663	7	91	---
1984/85	329	201	84	0	0	52	0	477	561	7	76	---
1985/86	325	106	53	0	0	46	0	385	438	8	58	---
1986/87	315	211	69	0	0	53	0	473	542	8	70	---
1987/88	264	140	109	0	0	47	0	358	466	8	59	---
1988/89	237	210	80	0	0	41	0	406	486	8	60	---
1989/90	285	160	113	0	0	42	0	402	515	8	62	---
1990/91	216	187	75	0	0	34	0	369	444	8	53	---
1991/92	347	193	153	0	0	52	0	488	641	9	74	---
1992/93	417	150	135	0	0	53	0	515	649	9	73	---
Status quo requirement forecasts												
1993/94	317	168	---	0	0	47	0	438	589	9	64	151
1994/95	360	165	---	0	0	48	0	477	605	9	64	127
Nutrition requirement forecasts												
1993/94	317	168	---	0	0	47	0	438	922	9	101	485
1994/95	360	165	---	0	0	48	0	477	948	9	101	470

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Mozambique

A peace accord and an end to the drought improve the outlook for Mozambique. However, food aid needs remain high because years of civil war have destroyed most of the productive capacity of the agricultural sector. [Kim Jones and Margaret Missiaen]

Food aid needed in 1993/94 to maintain per capita consumption in Mozambique is equal to about half of the food aid received in 1992/93. Nutrition-based needs are 800,000 tons, compared with status quo needs of 555,000 tons (table 23). A return to normal weather and the October 1992 cease-fire agreement helped grain output, mostly corn, nearly double the previous year's harvest. Despite the improved 1993 harvest, domestic production is far below the amount needed to provide adequate food supplies for the nation, whose needs will increase with the expected return of 735,000 refugees during late 1993 and early 1994. Mozambique still lacks the foreign exchange to import grain commercially (figure 7).

Mozambique is one of the poorest countries in the world, with per capita income of \$80. Literacy and infant mortality rates, acute malnutrition, and life expectancy are among the worst in Sub-Saharan Africa. The 16-year civil war has caused severe disruptions in production, an almost complete breakdown in the rural marketing system, widespread destruction of basic infrastructure, and large-scale population displacement.

Massive infrastructural destruction and poverty (two-thirds of the population lives in extreme poverty) are still the major impediments to development. To alleviate poverty in rural areas, the government has attempted to maintain adequate producer prices and to minimize the impact of the drought on food security with external assistance. For the urban poor, it has organized similar schemes, such as direct income assistance and rationed subsidized food.

After the cease-fire agreement, the government unveiled the Program of National Reconstruction based on a two-phase plan to be implemented over several years. The first phase would focus on the resettlement of the 5.5 million displaced people. The second phase would redirect the thrust of public investment. To ease the transition to a democratic environment, the United Nations (U.N.) is directing the project rather than observing, as was done in Angola. The U.N. hopes that

disarmament will be expeditious so that elections may proceed as scheduled in October 1994.

Medium-term policy goals include fostering private sector growth and employment, raising public sector efficiency, and lowering external imbalances by stimulating exports. The government also hopes to improve rural living conditions by increasing access to agricultural inputs, health care, and education. Macroeconomic targets include an annual GDP growth rate of 3 percent, a decline in the fiscal deficit, a reduction of inflation to 18 percent by the end of 1994, and a reduction in the current account deficit.

Although a cease-fire was agreed upon, peace came too late to ensure increased supplies of farm inputs and agricultural labor. Erratic rainfall in Gaza and Maputo provinces reduced plantings, but overall, area and yields increased from last year. However, the marketing system and storage facilities are inadequate to handle a bumper harvest, and losses are likely to increase. Late-arriving food aid depressed prices in some markets.

GDP growth fell from 3 percent in 1991 to -2 percent in 1992, mainly due to the drought, reduced external financing, and the loss of export markets in the former Soviet Union. Mozambique continues to face severe constraints to realizing its economic potential, including lack of management capacity, severely underdeveloped human resources, widespread poverty and food insecurity, and poorly developed economic and financial infrastructure. The magnitude of these problems is so great that adjustment will be a lengthy process that will necessitate substantial external assistance.

Mozambique is hoping for economic recovery in the second half of the 1990's. A major source of growth would be the agricultural sector as millions of displaced persons are reintegrated into the rural economy. The sustainability of Mozambique's reform agenda depends on adequate external financing, including debt cancellation, and continued peace.

Figure 7

Mozambique: Grain Supply Sources

1,000 tons

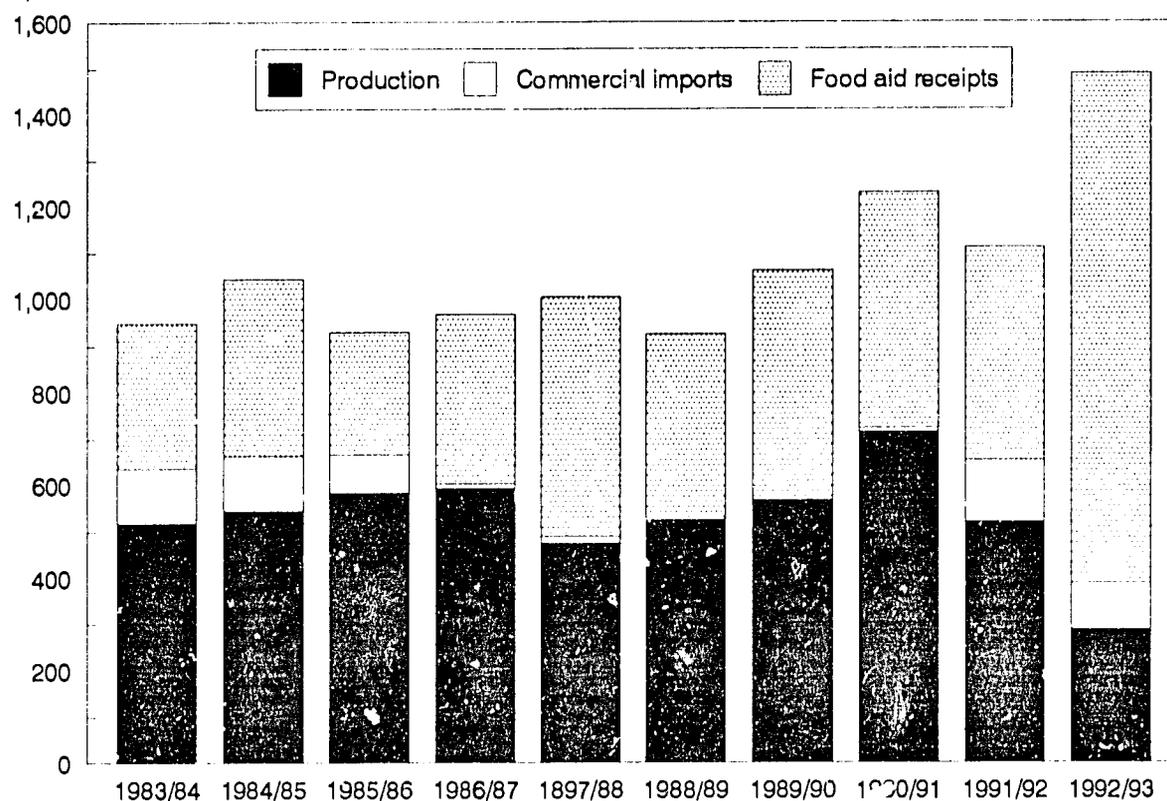


Table 23--Summary of grain balances for Mozambique

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons----- Million -Kg- 1,000 tons											
1983/84	518	119	311	0	0	84	17	550	861	13	66	---
1984/85	544	120	379	0	0	90	15	576	954	13	71	---
1985/86	584	82	262	0	0	82	15	585	846	14	61	---
1986/87	593	10	364	0	0	79	15	524	887	14	63	---
1987/88	475	15	514	0	0	83	10	412	926	14	66	---
1988/89	525	0	400	0	0	70	5	460	860	14	61	---
1989/90	568	0	493	0	0	85	5	483	976	14	69	---
1990/91	715	8	507	0	0	96	20	612	1,119	14	77	---
1991/92	521	132	458	0	0	88	5	580	1,038	15	70	---
1992/93	288	100	1,100	0	0	109	100	184	1,284	15	83	---
Status quo requirement forecasts												
1993/94	538	70	---	0	0	94	10	605	1,160	16	72	555
1994/95	547	70	---	0	0	97	40	489	1,207	17	72	718
Nutrition requirement forecasts												
1993/94	538	70	---	0	0	94	10	605	1,422	16	88	817
1994/95	547	70	---	0	0	97	40	489	1,479	17	88	990

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Zimbabwe

The good 1993 harvest and food aid will allow Zimbabwe to start replenishing stocks. [Margaret Missiaen]

Normal rainfall in early 1993 speeded Zimbabwe's recovery from 1992's devastating drought. The 1993 grain harvest was nearly four times that of the previous year (table 24). Total output is set at 2.5 million tons, including a corn crop of 2.1 million tons. Shortages of seed, draft oxen, and tools limited plantings in some areas. Even though heavy rains in February washed away fertilizer in some areas, yields for corn and sorghum were near average. With a continuing flow of 1992/93 commercial and food aid imports, carryover stocks have reached nearly 400,000 tons (figure 8). Food aid needed in 1993/94 to maintain per capita consumption and rebuild stocks is 370,000 tons.

With continued imports planned, total food supplies will be adequate, and improved pasture conditions and water supplies will allow some livestock replenishment, after last year's widespread losses. However, food security problems persist in rural areas. Because of the drought, many farmers borrowed heavily to purchase food and other necessities.

The need to import large quantities of food adversely affected Zimbabwe's balance of payments and contributed to a surge in inflation. Inflation will remain high in 1993/94 due to an increase in food prices and an exchange rate depreciation in early 1993. The prices of basic food commodities increased as costs were passed on to consumers, and the rate of inflation accelerated from 50 percent in 1991 to 46 percent in 1992. The government budget also came under pressure as drought relief assistance was extended to a large share of the population.

The government increased the prices of corn meal and bread (50 percent and 80 percent) in August 1992 to limit the cost of subsidies. A lower-than-expected import price for corn reduced the subsidy payable. However, payments to corn millers substantially exceeded expectations as a guaranteed cost-plus margin to millers led to higher subsidies. The demand for corn meal was higher than expected, as the distorted price structure led to use of corn meal for feed and cross-border trading.

Progress has been made in decontrolling prices, with over 80 percent of domestic production free of price controls at the

end of 1992. In early 1993, price controls on milk and bread were eliminated. The only prices now subject to cabinet approval are corn meal, cooking oil, and certain types of fertilizer. The government plans to require agricultural marketing boards to break even on their marketing operations by 1993/94. Some services for small farmers will continue to be subsidized through another channel.

The agricultural sector is sharply dualistic, with a limited number of commercial farmers producing on prime land with advanced technology, and a large number of smallholders engaged in farming on less fertile land. The issue of land distribution continues to be divisive. The government's recent moves to buy productive commercial farms at a price of its choosing has raised concerns that the resettling of untrained farmers may lead to declines in productivity.

Zimbabwe has a broad resource base. The country is rich in minerals, and soil and weather conditions are well suited for agriculture. The country has a diversified production base in agriculture, mining, and manufacturing, a sound infrastructure, and manageable external debt. Zimbabwe's economy shrank 8 percent last year because of the crippling drought. Agricultural output declined 28 percent, industrial and mining production 8 percent, and the major service categories by about 4 percent. High interest rates, low foreign investment, and policies such as the takeover of productive farms could hinder recovery. The early 1993 price crash in the world market for tobacco, Zimbabwe's largest export earner, points to a fairly static economy that is expected to grow less than 1 percent in 1993.

With improvement in export incentives, tight domestic financial policies, and recovery from the drought, the balance of payments was expected to improve in 1993. The external current account deficit (excluding official transfers) was expected to decline to 12 percent of GDP in 1993 from 18 percent in 1992. Continued growth in exports of horticultural products, minerals, cotton, textiles, and clothing will boost foreign exchange earnings. Authorities expect that the country should recover from the drought by 1995.

Figure 8

Zimbabwe: Grain Imports and Ending Stocks

1,000 tons



Table 24--Summary of grain balances for Zimbabwe

	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 adjustment
	-----1,000 tons----- Million -Kg- 1,000 tons											
1983/84	1,223	295	76	252	302	388	255	1,480	1,556	8	193	---
1984/85	1,667	22	131	4	311	214	558	857	988	8	118	---
1985/86	3,388	54	0	283	326	408	1,528	1,456	1,456	9	168	---
1986/87	3,044	9	38	650	302	377	1,980	1,273	1,310	9	146	---
1987/88	1,530	79	14	225	300	347	1,115	1,602	1,616	9	173	---
1988/89	2,969	42	10	500	303	383	1,184	1,751	1,761	10	182	---
1989/90	2,514	70	13	422	310	353	926	1,756	1,770	10	176	---
1990/91	2,799	65	15	414	350	371	876	1,779	1,794	10	173	---
1991/92	2,080	1	25	192	320	395	275	1,901	1,926	11	180	---
1992/93	670	1,605	640	0	385	419	388	1,358	1,998	11	181	---
Status quo requirement forecasts												
1993/94	2,510	115	---	0	365	396	600	1,652	2,022	11	178	371
1994/95	2,416	139	---	353	376	407	428	1,591	2,079	12	178	488
Nutrition requirement forecasts												
1993/94	2,510	115	---	0	365	396	600	1,652	1,692	11	149	41
1994/95	2,416	139	---	353	376	407	428	1,591	1,740	12	149	149

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

West Africa Overview

Normal rainfall patterns contributed to at least an average harvest in most of West Africa this season. The continuing civil war in Liberia has disrupted food supplies in that country and in neighboring Sierra Leone.

[Margaret Missiaen]

Food aid needs for the West African countries of Benin, Burkina Faso, Cape Verde, Chad, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo are estimated at 1.5 million tons, compared with receipts of less than 1 million tons in 1992/93 (table 25). Population growth of 3 percent requires an additional 700,000 tons of grain each year to maintain consumption at historical levels.

Because the harvest will not be completed until late 1993, production forecasts are conservative, near the average of recent years. Favorable weather conditions through mid-September indicate above-average yields. In the countries along the Gulf of Guinea, regular rains since March benefited development of the main corn and rice crops. Increased grain output is projected in both Cote d'Ivoire and Ghana. Production has risen steadily in Cote d'Ivoire for several years. Recovery from last year's reduced crop is anticipated in Ghana, where grain output varies because of fluctuations in rainfall and prices.

In the Sahelian countries, the 1993 rainy season started on time in the main producing areas, but early precipitation was irregular and poorly distributed. The rains arrived early this year in Chad, where a good coarse grain crop is expected, and in southern Mauritania, where yields were reduced by late rains last year. In Niger, plantings began late following a delayed start to the rains, but good rainfall continued through most of September, and an average harvest of almost 2 million tons is forecast. In Senegal, rainfall was adequate in the south, but below normal in the drier north. On average, a grain harvest of 870,000 tons is forecast, slightly above last year. Most of the agricultural areas in Burkina Faso and Mali received normal rainfall and crops and pasture conditions are satisfactory.

In Nigeria, prospects for the 1993 corn crop are satisfactory, reflecting favorable weather and better fertilizer distribution in the south where most corn is grown. Prospects for sorghum and millet are uncertain following irregular rains in the north. The impact of the reduced 1992 grain harvest should be mitigated by larger wheat imports following the suspension

of the import ban in late 1992. Gross imports in 1992/93 were estimated at 1.2 million tons, almost double the previous year.

West African countries vary widely in their dependence on food aid. Cote d'Ivoire and Senegal are major commercial grain importers, as is Nigeria following the suspension of the import ban. Reliance on food aid is decreasing in Senegal because of improved harvests in recent years. On the other hand, food aid shipments to Cote d'Ivoire have increased as the country's financial situation has deteriorated.

Cape Verde, an island nation with few natural resources, is the most dependent on food aid, relying on aid to meet more than half of its consumption requirements. Even if the country harvests a normal grain crop at the end of 1993, food aid needs will be 55,000 tons in addition to 20,000 tons of commercial imports.

Ghana was the largest food aid recipient in the region in 1992/93 with about 200,000 tons. Liberia followed with 145,000 tons. While food aid in Ghana is provided as balance-of-payments support in connection with policy reforms, food aid in Liberia is used to prevent starvation among persons displaced by the civil war. Good harvests in the Sahel have reduced food aid shipments in recent years, but these drought-prone countries continue to face the threat of food emergencies.

The financial situation in most West African countries continues to limit their capacity to import grains commercially. Most of the jump in the 1993/94 estimate of West African commercial imports is in Nigeria, where financial capacity has exceeded actual imports because of a ban on grain imports. Nigeria's import capacity is estimated at 1.5 million tons, compared with average imports of less than 700,000 tons during each of the last 5 years. Only in Cote d'Ivoire is commercial import capacity forecast to decline during the next 2 years. The sharp drop in world cocoa and coffee prices has reduced Ivorian export earnings. The country earned more than 40 percent of its foreign exchange from these commodities in 1991.

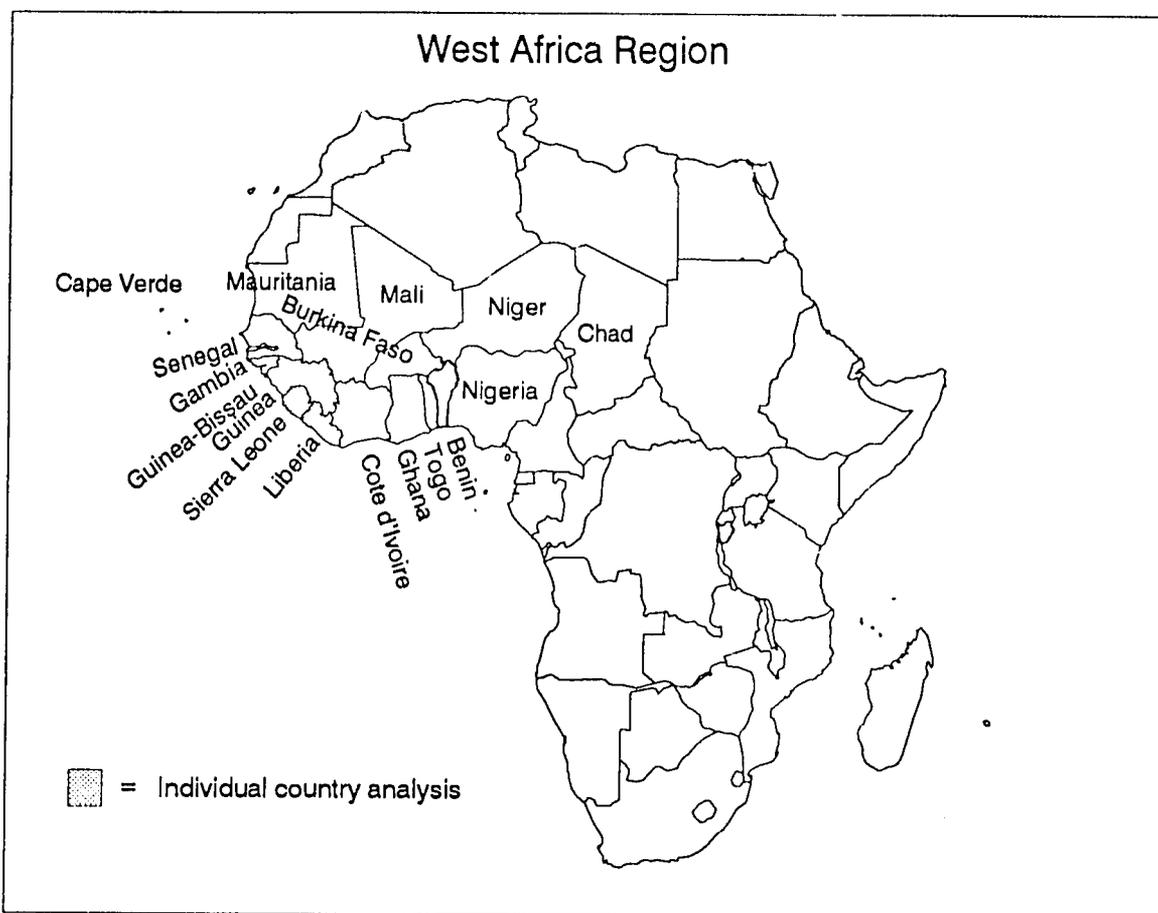


Table 25--Summary of grain balances for West Africa

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							Million		-Kg-	1,000 tons	
1983/84	15,063	3,583	849	45	422	2,571	478	15,990	16,839	145	116	---
1984/85	17,149	3,736	1,402	41	806	2,780	623	17,113	18,515	149	124	---
1985/86	19,387	3,006	957	23	645	3,193	1,390	17,765	18,722	154	122	---
1986/87	19,824	2,677	595	1	738	3,098	1,717	18,337	18,932	158	120	---
1987/88	17,500	2,681	633	101	606	2,943	640	17,608	18,242	163	112	---
1988/89	21,779	2,817	609	0	500	3,332	1,195	20,209	20,818	168	124	---
1989/90	20,677	2,890	570	62	444	2,947	1,476	19,833	20,403	173	118	---
1990/91	17,406	3,090	808	56	408	2,550	957	18,001	18,809	178	106	---
1991/92	21,720	3,203	835	94	430	3,172	1,577	20,608	21,444	184	117	---
1992/93	20,051	3,413	957	42	382	3,055	1,351	20,211	21,168	190	112	---
Status quo requirement forecasts												
1993/94	20,826	4,214	---	55	479	3,313	1,068	21,625	22,341	196	114	1,509
1994/95	21,810	4,260	---	57	495	3,419	1,456	21,866	23,050	202	114	1,675
Nutrition requirement forecasts												
1993/94	20,826	4,214	---	55	479	3,313	1,068	21,625	24,218	196	124	2,651
1994/95	21,810	4,260	---	57	495	3,419	1,456	21,866	24,982	202	124	3,245

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Liberia

Civil war continues to disrupt agricultural activities and food supplies in Liberia. [Kim Jones]

Liberia needs 170,000 tons of food aid in 1993/94 to maintain consumption even at the low levels of recent years. More than 200,000 tons are needed to bring diets to the nutritional minimum (table 26). The August 1993 cease-fire in Liberia's 3 1/2 year civil war has brought some hope that disarmament and rebuilding can begin. The war has curtailed virtually all economic activity and has displaced nearly half of Liberia's 2.5 million people, including 600,000 who fled to Guinea and Cote d'Ivoire. In addition to its own displaced people, Liberia has experienced an influx of Sierra Leonean refugees who also require food aid.

The distribution of food aid continues to be hampered by the war, heavy rains, and political infighting about distribution. In July 1993, a surge in fighting blocked relief efforts, leaving more than 200,000 Liberians facing starvation. The war also has caused the abandonment of many farms, further reducing crop production. A lack of seeds and tools is another impediment to planting, particularly of rice, which would have had good yields given the favorable weather that prevailed. The 1992 harvest was sharply below average and 1993 harvests are not expected to improve because the cease-fire went into effect well after the planting season.

Sierra Leone

Prospects for the 1993 grain harvest are unfavorable, reflecting irregular rains in some areas and disruption of farming by rebel activity spilling over from Liberia. [Margaret Missiaen]

Sierra Leone's 1993/94 food aid needs are estimated at 130,000 tons, more than double last year's receipts. While rice output is not expected to decline further, maintaining consumption at the level of the last 5 years would require 400,000 tons of grain, compared with less than 350,000 tons in each of the last 3 years (table 27). Insecurity in the countryside was expected to reduce 1993 coffee, cocoa, and mineral exports by 7 percent. Sierra Leone's commercial import capacity for grains has fallen to less than 70,000 tons.

The economic situation in Sierra Leone remains precarious. While positive steps have been taken to reform the economy

and reduce the government's role, large public debt and rebel activity have hampered recovery. In early 1991, rebel troops from Liberia took control of large areas in southern and eastern Sierra Leone, killing local inhabitants, forcing hundreds of thousand of others from their homes and farms, and destroying many homes and other buildings. The army recaptured most of the territory at the end of 1991, but during 1992 and 1993, rebel incursions continued to interrupt farming. The World Food Program (WFP) estimated that some 300,000 Sierra Leoneans remained displaced in July 1993. Emergency food assistance will be needed during 1993 and 1994.

Table 26--Summary of grain balances for Liberia

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
-----1,000 tons-----							Million		-Kg-	1,000 tons		
1983/84	174	66	47	0	0	33	17	211	258	2	123	---
1984/85	179	84	20	0	0	30	16	234	254	2	117	---
1985/86	173	41	76	0	0	31	17	182	258	2	116	---
1986/87	173	98	2	0	0	30	23	235	237	2	103	---
1987/88	179	46	56	0	0	32	22	194	250	2	105	---
1988/89	179	129	28	0	0	35	23	272	300	2	121	---
1989/90	168	43	28	15	0	18	13	187	215	3	84	---
1990/91	126	14	105	0	0	24	13	116	221	2	96	---
1991/92	120	24	125	0	0	25	13	119	244	2	118	---
1992/93	120	20	145	0	0	26	13	114	259	2	105	---
Status quo requirement forecasts												
1993/94	120	40	---	3	0	27	10	133	302	3	105	169
1994/95	135	35	---	3	0	28	14	134	312	3	105	178
Nutrition requirement forecasts												
1993/94	120	40	---	3	0	27	10	133	350	3	122	217
1994/95	135	35	---	3	0	28	14	134	362	3	122	228

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Table 27--Summary of grain balances for Sierra Leone

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
-----1,000 tons-----							Million		-Kg-	1,000 tons		
1983/84	367	37	16	0	0	65	3	340	355	4	101	---
1984/85	322	98	21	0	0	65	3	355	376	4	104	---
1985/86	341	75	49	0	2	63	6	348	396	4	107	---
1986/87	348	105	43	0	1	72	15	372	414	4	110	---
1987/88	362	61	58	0	1	66	15	356	414	4	107	---
1988/89	342	107	38	0	1	64	24	376	414	4	104	---
1989/90	345	109	37	0	1	67	26	384	421	4	104	---
1990/91	255	94	43	0	0	54	21	301	344	4	81	---
1991/92	255	91	55	0	8	55	16	287	343	4	78	---
1992/93	265	90	60	0	8	56	16	291	351	4	79	---
Status quo requirement forecasts												
1993/94	280	68	---	0	4	61	30	270	402	5	89	132
1994/95	282	62	---	0	4	62	26	282	413	5	89	131
Nutrition requirement forecasts												
1993/94	280	68	---	0	4	61	30	270	649	5	144	379
1994/95	282	62	---	0	4	62	26	282	666	5	144	384

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Asia Overview

A second consecutive good Asian grain harvest is expected in 1993/94. The removal of some trade restrictions caused a sharp increase in commercial grain imports in 1992/93, and may further alleviate the need for food aid shipments. India and Bangladesh account for over 70 percent of Asia's status quo food aid needs. [Anwarul Hoque]

Grain production increased substantially in 1992/93 in the Asian countries included in this report (table 28). India, Indonesia, Pakistan, and the Philippines had particularly good harvests. The 1993/94 crop may match 1992/93's if the weather remains favorable.

Increased grain production is expected in Southeast Asia (Indonesia, the Philippines, and Vietnam), but is not likely in South Asia (Afghanistan, Bangladesh, India, Nepal, Pakistan, and Sri Lanka). Production of rice, the major crop in Asia, is expected to go up in Indonesia, Sri Lanka, and the Philippines, while wheat production is expected to increase in Pakistan, Bangladesh, and India. Floods in India, Nepal, and Bangladesh in mid-1993 caused some damage to standing crops and food stocks and delayed timely planting for the next season. The delayed plantings could also bring down yields in these countries.

Despite production increases in 1992/93, Asia's commercial grain imports jumped to 12 million tons, from 9 million tons the previous year. The major importers were India, Pakistan, Indonesia, and the Philippines, with a combined total of 10 million tons. Large imports, in spite of the good 1992/93 harvest, were made primarily to build wheat stocks. Good crop harvests and large imports left the countries with normal stocks at the end of the 1992/93 crop year. In 1993/94, commercial food imports are expected to follow a normal trend. India is not likely to import wheat commercially unless procurement falls significantly below expectations.

Although South Asia receives large quantities of food aid every year, food aid accounts for only about 2 percent of consumption. Food aid needs persist due to production shortfalls and population growth, which are further accentuated by political disturbances and natural disasters. Civil wars and refugee concentrations created emergency relief needs in the

past decade in Pakistan, Sri Lanka, and Bangladesh. With improving political conditions and refugees being slowly repatriated, the need for emergency relief should decline. Food aid deliveries decreased in 1992/93. However, increased demand due to high population growth, even under status quo consumption levels, will maintain high food aid needs in South Asia in the near future.

Some Asian countries exported food grains even though they received food aid. Vietnam has emerged as a large rice exporter. The most recent entrant to the export market is Indonesia, which sold some of its stocks. Pakistan and India export only fine quality rice, but restrict exports of other qualities to maintain supplies for domestic consumption. Even though these countries export some rice, they continue to receive some food aid, mostly wheat.

While some Asian countries are moving toward grain self-sufficiency, others have been less successful. Shortfalls still exist in Afghanistan, Sri Lanka, Nepal, and Bangladesh, where political and weather problems cause production disruptions. Also, these countries need food aid because they are much less able to purchase supplies from the international market. However, with increased production estimates for 1994/95, food aid needs may decline.

Most countries in South and Southeast Asia are gradually liberalizing their trade policies to stimulate production and export growth. Further, economic reforms in India, Bangladesh, Indonesia, and other countries are improving their macroeconomic conditions. Strong export growth, import reduction, and increased workers' remittances are improving their balance-of-payments situation. Increased foreign exchange reserves would help these countries to commercially import larger quantities of grains and reduce dependence on food aid.

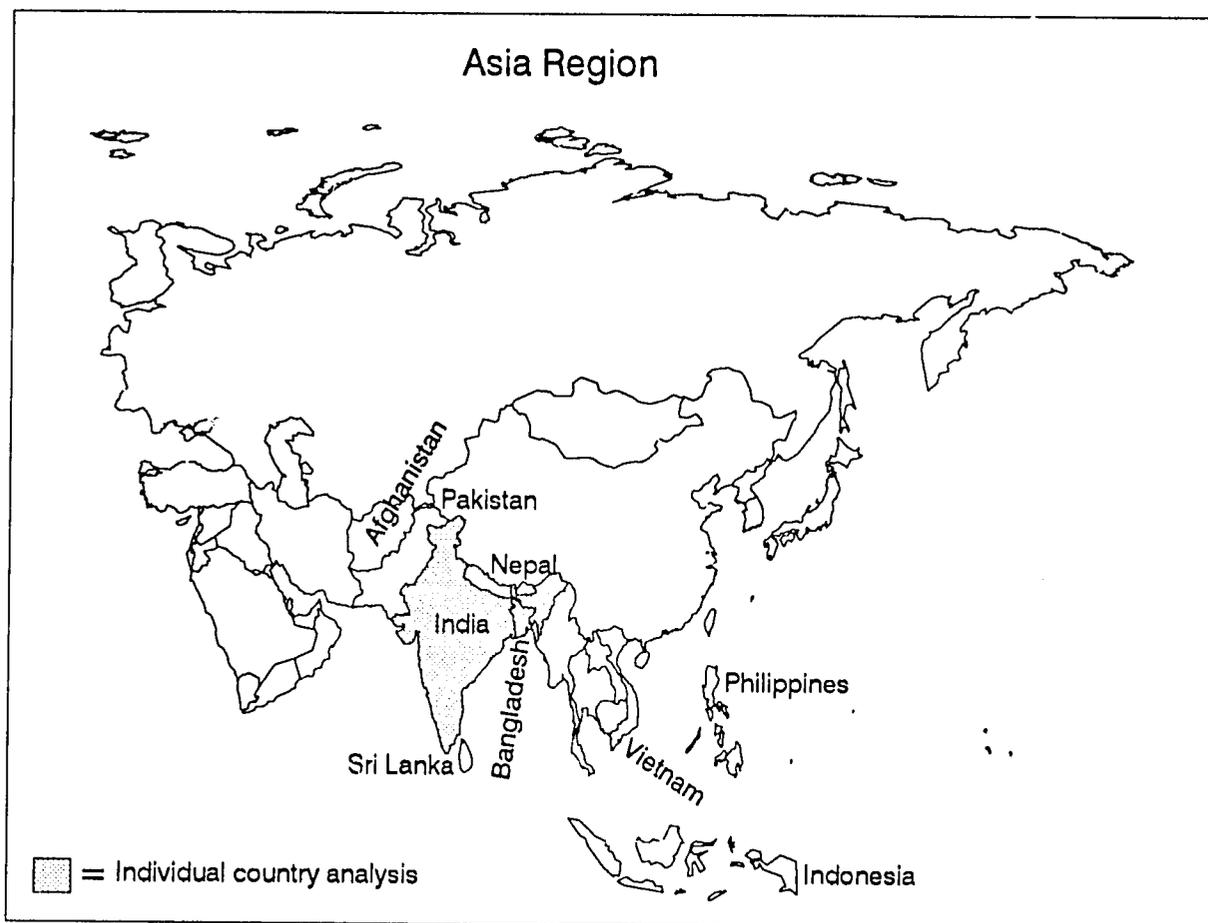


Table 28--Summary of grain balances for Asia

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							Million	-Kg-	1,000 tons		
1983/84	227,530	5,439	3,023	1,843	4,967	24,925	27,879	192,997	196,020	1,250	157	---
1984/85	227,522	5,118	2,620	1,460	5,016	24,035	32,577	197,431	200,051	1,279	156	---
1985/86	227,317	6,372	2,907	2,524	5,724	24,024	34,128	199,866	202,773	1,307	155	---
1986/87	230,969	3,210	3,172	2,663	6,486	23,892	35,028	200,238	203,410	1,336	152	---
1987/88	220,631	5,609	3,814	2,003	6,485	23,115	26,016	203,649	207,464	1,364	152	---
1988/89	247,596	8,663	2,981	2,933	7,250	25,774	27,664	218,654	221,635	1,394	159	---
1989/90	267,507	7,738	2,820	2,943	8,385	28,093	34,196	229,292	232,111	1,423	163	---
1990/91	263,808	6,095	2,325	3,075	9,250	27,177	32,784	231,813	234,138	1,453	161	---
1991/92	262,951	8,713	2,370	4,989	9,605	27,962	27,111	234,781	237,150	1,483	160	---
1992/93	273,753	11,959	1,839	3,460	10,575	28,994	27,678	242,116	243,955	1,513	161	---
Status quo requirement forecasts												
1993/94	273,397	9,017	---	3,710	9,535	28,522	24,483	243,841	248,300	1,543	161	5,840
1994/95	286,493	9,413	---	3,793	9,717	29,081	25,847	251,951	253,182	1,574	161	4,089
Nutrition requirement forecasts												
1993/94	273,397	9,017	---	3,710	9,535	28,522	24,483	243,841	252,546	1,543	164	8,705
1994/95	286,493	9,413	---	3,793	9,717	29,081	25,847	251,951	261,133	1,574	164	9,182

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Bangladesh

Grain production has increased since the early 1980's, but population growth has outstripped production gains. Although Bangladesh experiences chronic food grain shortages and declining per capita consumption, shortages are not expected to be acute in 1993/94, because of good harvests, adequate stocks, and liberalized trade. [Anwarul Hoque]

Grain import needs for Bangladesh in 1993/94 are forecast at 2.7 million tons, of which 600,000 are expected to be commercial imports (table 29). This forecast assumes annual grain consumption of 167 kilograms per person (the average of the last 5 years). Despite production increases averaging 2.4 percent annually since the early 1980's, per capita consumption has fallen from 171 kilograms in the late 1980's to 160 in 1992/93 (figure 9). If per capita consumption is held at the 1992/93 level, grain import needs would be about 1.2 million tons. Bangladesh meets its food deficit primarily through wheat imports, averaging 1.6 million tons annually. Most wheat is imported through concessional programs, but increasing amounts are imported commercially.

Grain production for 1993/94 is forecast to remain unchanged from last year at 19 million tons. Rice production is expected to be lower due to decreased area and yields, while wheat production increases slightly. Low rice prices in 1992/93 may have caused farmers to shift rice area into wheat production. Slightly lower rice yields have been mainly due to lower fertilizer use. Severe floods occurred in the northeastern and eastern parts of the country in mid-1993, but their effects on crops were minor because they occurred at the beginning of rice planting season, and weather conditions in the other two growing seasons were favorable. Rice production is considered adequate to meet domestic demand, and no imports are expected in 1993/94.

Since the late 1980's, the Government of Bangladesh has made fiscal and monetary adjustments to address severe trade and budget deficits. The adjustments have involved deregulating private investment, liberalizing foreign direct investment, privatizing public sector enterprises, and improving agricultural incentives. The currency was made convertible, and trade is being gradually liberalized. Macroeconomic conditions in Bangladesh have improved. In 1992, GDP grew moderately at around 4 percent, while agricultural sector growth was about 2 percent. Bangladesh has made modest progress in reducing trade and budget deficits, and lowering inflation.

Self-sufficiency in food production remains a key goal of agricultural policy in Bangladesh, but crop diversification and expansion of export crop production are increasingly important. The public sector has played a major role in all aspects of agricultural development, including subsidized inputs, infrastructure investment, and administered prices for rice and wheat. The government has gradually privatized input markets and reduced subsidies, notably on fertilizer. Consumer and producer prices for food grains are still administered by the government. Rice prices are set near world market levels, but wheat prices are below world prices. Wheat prices are expected to rise because low producer prices constrain output, and consumer subsidies require unsustainable budget outlays.

The government held a monopoly on food grain imports until 1992, when private flour mills were permitted to import wheat. The government has eliminated the rural public distribution system and increased the share of rice to substitute for wheat in urban rations shops. Private sector wheat imports are currently small, because the administered price for wheat is below the world market price, but liberalized trade has reduced pressure on the government to import wheat. If domestic prices are allowed to rise to world levels, private sector imports are likely to increase substantially.

Scarce land resources are the primary constraint to expanded food grain production in Bangladesh. Most area expansion has occurred during the dry season with the increased availability of irrigation. Ground water supplies are limited, however, and the growth in irrigation is slowing. Reducing the fertilizer subsidy has lowered fertilizer use and yields in the short run, but privatizing the distribution of fertilizer, seed, insecticides, and mechanical implements has given farmers greater access to inputs. As inputs become more available, distributional constraints are eased, and producer prices rise to world market levels, food grain yields should increase in the long run.

Figure 9

Bangladesh: Total and Per Capita Food Use

Million tons

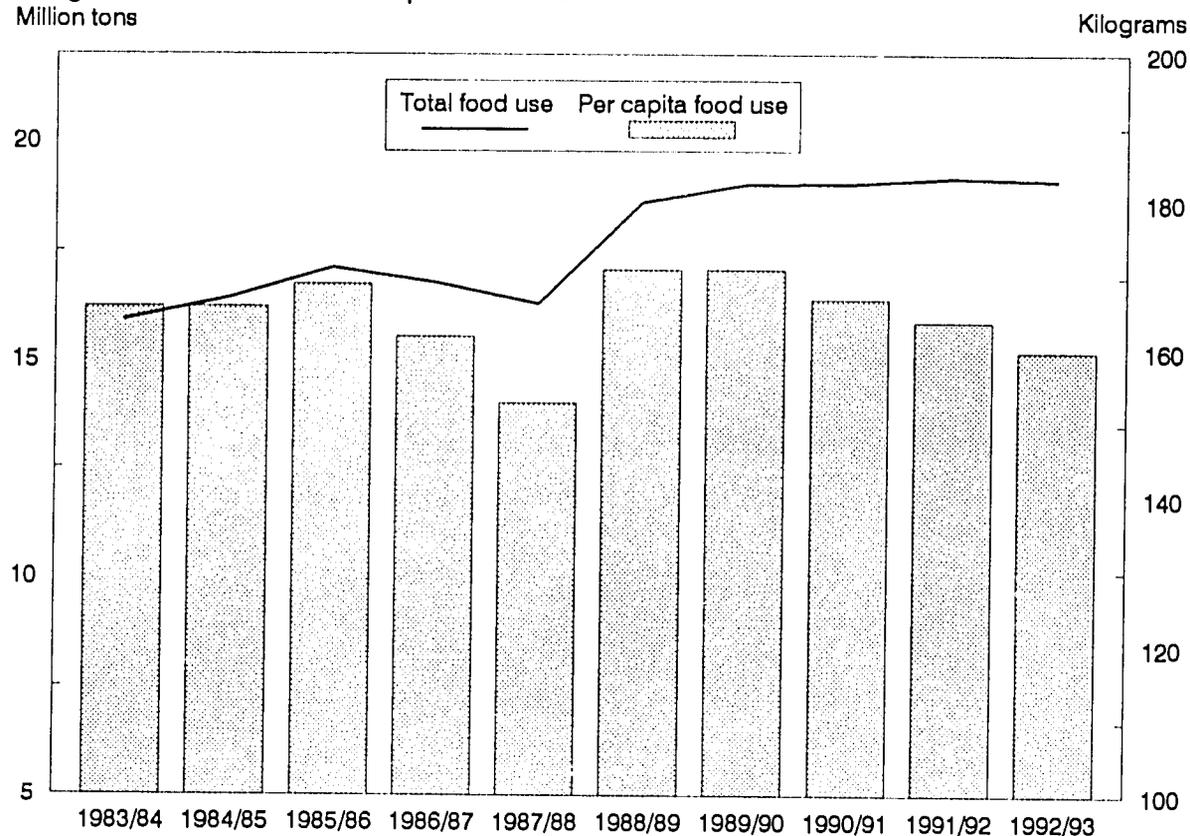


Table 29--Summary of grain balances for Bangladesh

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							Million	-Kg-	1,000 tons		
1983/84	15,762	582	1,252	0	7	1,492	800	14,671	15,923	96	166	---
1984/85	16,136	871	1,163	0	6	1,530	1,017	15,254	16,417	99	166	---
1985/86	16,134	1,083	1,500	0	6	1,631	976	15,620	17,121	101	169	---
1986/87	16,549	203	1,300	0	0	1,504	744	15,480	16,780	104	162	---
1987/88	16,551	182	1,589	0	0	1,375	1,389	14,713	16,302	106	153	---
1988/89	16,617	1,612	1,397	0	0	1,512	885	17,222	18,618	109	171	---
1989/90	18,797	884	1,320	0	0	1,709	1,148	17,709	19,029	111	171	---
1990/91	18,903	444	1,134	0	0	1,545	1,040	17,910	19,044	114	167	---
1991/92	19,362	150	1,414	0	0	1,612	1,171	17,769	19,183	117	164	---
1992/93	19,237	419	752	0	0	1,607	850	18,370	19,122	119	160	---
Status quo requirement forecasts												
1993/94	19,247	642	---	0	0	1,640	800	18,298	20,382	122	167	2,084
1994/95	20,171	658	---	0	0	1,679	996	18,953	20,864	125	167	1,912
Nutrition requirement forecasts												
1993/94	19,247	642	---	0	0	1,640	800	18,298	24,160	122	198	5,862
1994/95	20,171	658	---	0	0	1,679	996	18,953	24,732	125	198	5,779

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

India

India's food grain production in 1993/94 is expected to be near last year's record, despite the floods that damaged crops in some regions in July. India is implementing sweeping economic reforms that will expand commercial import capacity and may enhance agricultural production in the long run. [Anwarul Hoque and Terri Raney]

India had record grain production in 1992/93 and the forecast for 1993/94 is for the third largest crop in history. Coarse grain production, in particular, soared due to favorable monsoon rains in 1992/93. Although coarse grain output is not expected to reach the same level in 1993/94, wheat and rice production are expected to be better as long as the weather remains good (figure 10).⁴ The floods that struck the northern and northeastern parts of India in mid-1993 did no severe damage to crops.

Based on historical production, imports, and consumption, India's 1993/94 food aid needs are estimated at 2 million tons (table 30). However, the methodology used in this assessment and described in appendix 2 does not adequately reflect the changing policy structure in India. India has the political will and the financial capacity to import food grains commercially if domestic production falls short of consumption needs. Actual food aid is likely to be near the 300,000 tons received in recent years.

India implemented a sweeping stabilization and structural reform program in mid-1991 designed to alleviate a severe balance-of-payments crisis and to reduce government regulation and intervention in the economy. Significant progress has been made in dismantling the industrial, trade, and financial policies that had made India one of the most highly regulated economies outside the centrally planned group. The main elements of the program include lowering trade and investment barriers, privatizing state industries, and stabilizing the economy by controlling inflation and reducing the deficit.

Changes in agricultural and food policy are more modest and gradual, but they have important implications for Indian food security. India has historically maintained substantial wheat and rice stocks to supply the public distribution system and to stabilize prices. To do this, India has followed complex

food procurement and trade policies that have taxed agricultural production and distorted incentives to producers and consumers. With economic reforms currently in progress, these policies are changing.

Imports of most basic agricultural products, including cereals, are still controlled by the government, but the government has been increasingly willing to bring procurement prices closer to world market prices, and to use international commodity markets to support its food security goals. For example, in 1991/92, the government exported 1.4 million tons of grain to reduce stocks and earn foreign exchange. The following year, the government imported 3.2 million tons of grain to stem rising domestic prices and to augment public stocks.

The government has loosened export restrictions on high-quality cereals, such as durum wheat and long grain rice, to increase foreign exchange earnings. At the same time, tight controls remain on exports of staple grains to minimize price increases for food purchased primarily by the poor. Government-held grain stocks have declined steadily since 1989/90, and trade is increasingly being used to meet food needs and to dispose of surplus production. Procurement prices are likely to continue rising to ensure that output keeps pace with strengthening demand.

India receives about 300,000 tons of food aid every year, mostly through nongovernmental organizations. The food aid is primarily intended for needy groups falling below the safety net. India's capability to import food grains commercially has increased with improved economic conditions fostered by reforms implemented in the last few years. The budget deficit was reduced and inflation was cut to single-digit levels. In the external sector, the current account deficit is down and the emphasis on export growth and import restraint greatly increased foreign reserves. By making the rupee convertible, the exchange rate has stabilized. All these conditions have strengthened India's financial ability to meet its food supply needs.

⁴The final results of the 1993/94 crop season will probably be higher than the preliminary estimates used in this analysis.

Figure 10

India: Production of Major Grains

Million tons

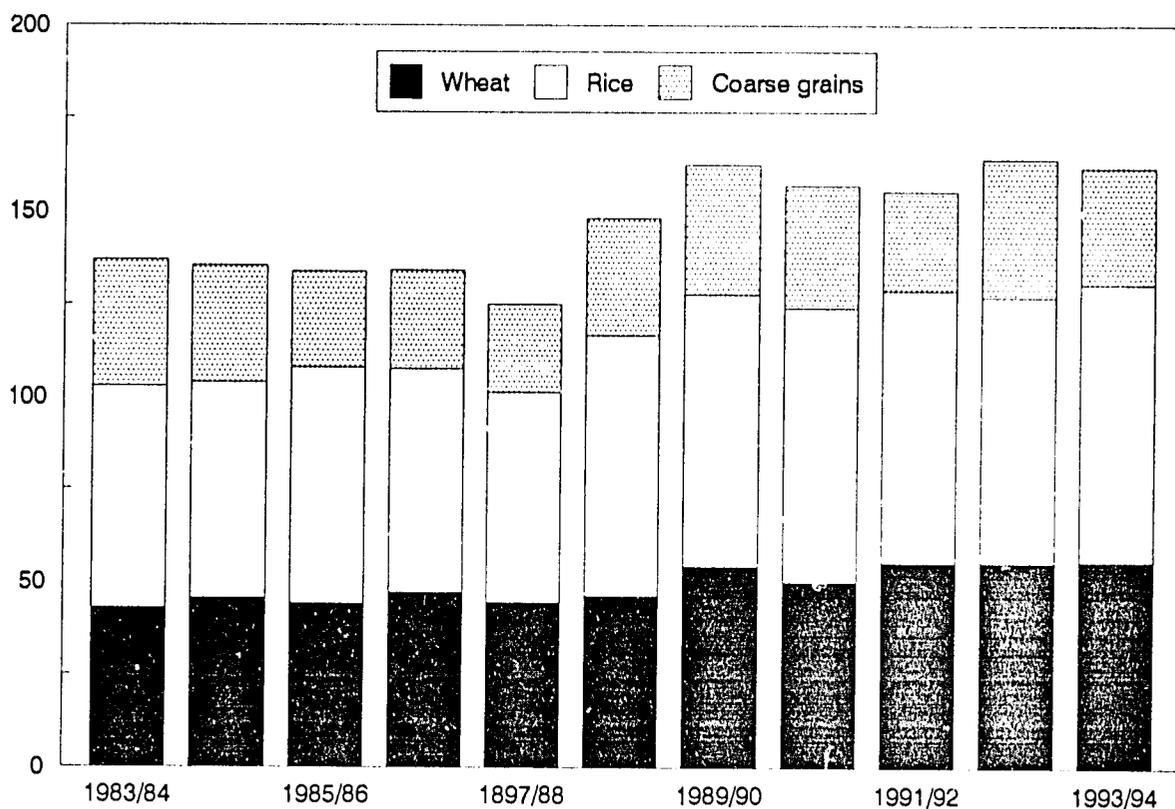


Table 30--Summary of grain balances for India

	Supply			Nonfood use			Food availability and use				Food aid needs	
	Commercial Production	Food aid imports	Food aid receipts	Exports	Feed	Other	Ending stocks	Avail. net of food aid	Food use 1/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----								Million		-Kg-	1,000 tons
1983/84	136,831	1,498	371	265	2,420	16,144	20,300	111,999	112,370	738	152	---
1984/85	135,261	1	303	271	2,370	15,159	23,900	113,862	114,165	754	151	---
1985/86	133,690	0	257	660	2,460	15,279	24,600	114,591	114,848	770	149	---
1986/87	134,041	100	208	855	2,460	14,782	25,450	115,194	115,402	786	147	---
1987/88	124,940	2,208	223	700	2,379	14,297	17,320	117,902	118,125	803	147	---
1988/89	147,987	696	308	470	2,700	16,786	19,910	126,137	126,445	819	154	---
1989/90	162,242	0	456	440	3,320	19,044	23,750	135,598	136,054	836	163	---
1990/91	156,694	129	217	700	3,810	18,110	22,320	135,633	135,850	853	159	---
1991/92	155,073	20	298	1,400	3,610	18,458	18,120	135,830	136,128	870	157	---
1992/93	163,840	3,234	319	500	4,500	19,577	17,220	143,396	143,715	886	162	---
Status quo requirement forecasts												
1993/94	161,700	918	---	740	3,787	19,036	14,750	141,525	141,630	903	159	2,105
1994/95	170,285	940	---	753	3,857	19,389	15,000	146,975	146,293	920	159	0
Nutrition requirement forecasts												
1993/94	161,700	918	---	740	3,787	19,036	14,750	141,525	139,250	903	154	0
1994/95	170,285	940	---	753	3,857	19,389	15,000	146,975	141,831	920	154	0

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Latin America Overview

Grain output is expected to increase in 1993/94. However, severe financial problems continue to limit commercial imports.

[Richard Brown and Miriam Stuart]

The status quo food aid requirement for the 11 countries included in this region⁵ is estimated at 1.6 million tons of grain for 1993/94, 1 million tons less than the estimate for a year ago (table 31). Similarly, the nutrition requirement is nearly 1.2 million tons higher than the status quo estimate. These forecasts represent the quantities of grain needed over and above production of 6.8 million tons in 1993/94 and commercial imports of 3.4 million tons.

The status quo requirements are slightly lower than the actual food aid received in the past 2 years. The forecasts appear reasonable given slight improvements in production in most countries after the drought of 1991/92. Severe financial problems continue to limit commercial import capacity of several countries because overall economic conditions have improved only slightly in recent months.

Many of the food aid recipients in Latin America are nearly self-sufficient in food production, and can survive with a minimum of imports for several months by reducing livestock production and consuming more traditional food crops. Latin American countries have become very adept at maintaining short-term national food supplies by substituting domestically-produced foods for imports. On the other hand, the populations of some Caribbean islands with limited production capacity are more vulnerable to food shortfalls.

Grain plays an important role in diets, supplying between one-third and two-thirds of calories in the Latin American countries included in this assessment. In Nicaragua, Honduras, El Salvador, and Guatemala, grains provide more than half the calories. In contrast, meat is not a primary source of energy in the poorer Latin American countries. For the 11 countries monitored, meat supplies an average of about 5 percent of total calories, and no more than 10 percent in any country. Pulses and starchy roots are a more important source

of calories, supplying an average of 8 percent of calories, except in Haiti where they make up nearly 20 percent.

Increased feed use has squeezed the supply of grain available for food in the more affluent countries. Feed use as a share of total grain use rose from 27 percent in 1983 to 35 percent in 1992. While total meat consumption increased, the per capita meat amount remained almost flat, fluctuating between 22 and 24 kilograms from 1976 to 1990. On the country level, meat consumption has risen slightly in Bolivia, Dominican Republic, and El Salvador, actually declined in Guatemala and Nicaragua, and remained unchanged for the other six countries.

During the past decade, these countries annually received between 1.2 and 2.1 million tons of grain as food aid, while commercial imports ranged from 2.0 to 3.7 million tons per year. Domestic grain production ranged from 5.7 to 7.0 million tons. Between 1983 and 1990, production increased at approximately the same rate as population, but has declined since then because of a series of natural disasters and socio-economic problems. A full recovery appears unlikely before 1995.

Economic policy changes taking place throughout Latin America are the result of attempts by governments to increase export earnings, reduce foreign debts, liberalize trade, encourage foreign investments, and raise per capita incomes. However, an equal or more important factor in long-term economic growth of some of these nations, including Peru, Nicaragua, Guatemala, and Haiti, will be their ability to achieve and maintain political stability.

The primary constraint to improved commercial import capacity in Latin America remains its historic inability to develop new employment opportunities and new products for export that would improve per capita incomes and purchasing power. Most nations in Latin America depend on a few traditional exports for the bulk of their foreign exchange earnings, but foreign markets for these products have improved little, if any, in recent years.

⁵ Latin American countries included in this assessment are Bolivia and Peru in South America; Jamaica, Haiti, and the Dominican Republic in the Caribbean; and Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama in Central America.

Latin America Region

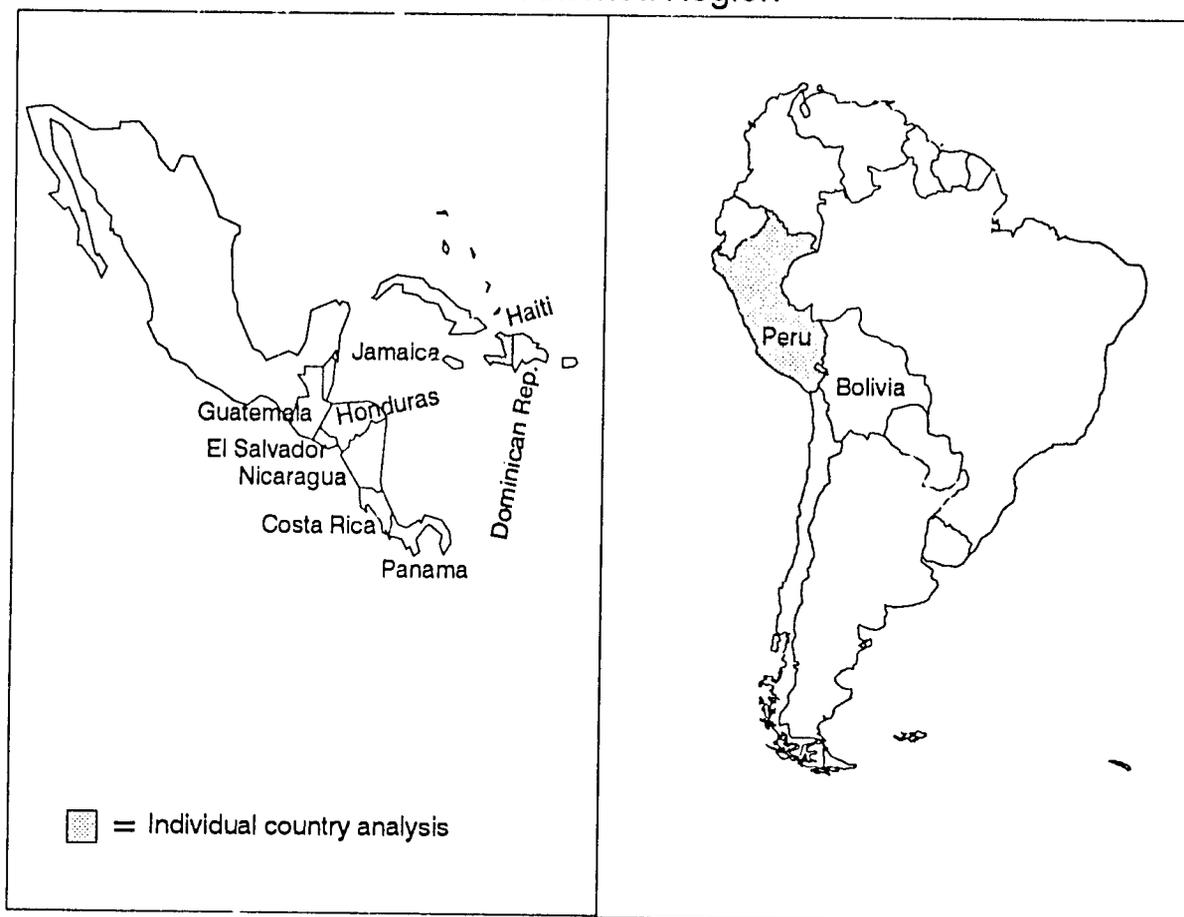


Table 31--Summary of grain balances for Latin America

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----									Million	-Kg-	-1,000 tons-
1983/84	5,688	2,190	1,224	46	2,248	745	963	4,798	6,021	62	97	---
1984/85	6,641	2,210	1,270	79	2,238	803	1,160	5,534	6,824	64	107	---
1985/86	6,424	2,073	1,537	146	2,278	822	1,010	5,401	6,940	65	107	---
1986/87	6,331	2,525	1,888	58	2,670	875	1,018	5,244	7,132	67	107	---
1987/88	6,733	2,010	2,062	10	2,909	906	1,142	4,794	5,856	68	101	---
1988/89	6,773	2,628	1,579	2	2,888	899	1,002	5,752	7,330	70	105	---
1989/90	6,970	2,816	1,293	13	3,261	890	1,068	5,556	6,849	71	96	---
1990/91	6,456	3,018	1,582	8	3,225	894	1,051	5,365	6,946	73	95	---
1991/92	6,194	3,394	1,791	29	3,419	912	1,107	5,172	6,963	75	93	---
1992/93	6,628	3,729	1,725	27	3,800	963	1,182	5,492	7,217	76	94	---
Status quo requirement forecasts												
1993/94	6,827	3,446	---	17	3,538	942	1,016	5,942	7,566	78	97	1,639
1994/95	7,078	3,436	---	17	3,613	962	1,181	5,758	7,731	80	97	1,974
Nutrition requirement forecasts												
1993/94	6,827	3,446	---	17	3,538	942	1,016	5,942	8,715	78	112	2,795
1994/95	7,078	3,436	---	17	3,613	962	1,181	5,758	8,906	80	112	3,152

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Haiti

Political events over the past 2 years have made Haiti's food situation precarious. Commercial imports of basic foods remained strong because they were exempt from the trade embargo imposed on Haiti by the Organization of American States.

[Richard Brown and Miriam Stuart]

Political events over the past 2 years have made Haiti's food situation even more precarious than it was previously. A military coup in September 1991 ousted democratically-elected President Aristide, and an Organization of the American States (OAS)-led embargo created more economic difficulties for this already troubled country. In August 1993, the military agreed to return Aristide to power and plans for lifting the embargo began.

Haiti needs 117,000 tons of food aid in 1993/94 to even maintain per capita consumption at the last 5 years' low level (table 32). Both food aid needs and commercial import capacity for 1993/94 are near the preembargo level. Nutrition-based food aid requirements are 130,000 tons. Grain production has not increased over the past decade, and in the last 2 years has fallen. An extended dry season in 1992 and the economic hardships imposed by the embargo pushed grain production to the lowest level in 7 years. The lifting of the embargo in August suggests that input supplies may increase and result in larger crops in 1994.

While U.S. exports to Haiti fell almost 60 percent in 1992, commercial imports of basic food items remained strong because they were exempt from the embargo. Ironically, commercial imports increased in 1991 and 1992 as Haiti had to divert scarce foreign reserves to food imports because international assistance was cut after the coup (figure 11). Sanctions also limited Haiti's export capability, further stressing the Haitian economy in 1992 and 1993.

Haiti is a food-deficit country with limited resources for food production. Investments in agriculture and a stable political and economic environment must be reestablished if food production is to be expanded either in the short run or the long run. In the interim, substantial quantities of food aid will be needed to prevent starvation and malnutrition.

Haiti's agricultural resource base is fragile and deteriorating. Slash and burn agriculture continues to denude the rugged terrain. Haitian agriculture is dominated by small-scale subsistence farms. Over 75 percent of the cultivated area is in farms of fewer than 4 hectares. Crops compose 85 percent of agricultural output, with the balance consisting primarily of livestock products for local consumption. Very little grain is fed to livestock. The primary subsistence crops are corn, sorghum, rice, beans, sugarcane, bananas, sweet potatoes, yams, and fruits. Mangoes and coffee are the largest export crops. Considerable investment in capital-intensive agriculture could boost output in the long run but it will be costly to develop. Even then, Haiti will need considerable imports of cereals and feedstuffs to improve diets, because the climate is not suitable for most temperate zone grain and oilseed crops.

Haiti's economic performance has been weak for years, suffering from chronic problems and civil unrest. The trade sanctions implemented since November 1991 have intensified chronic problems. Real GDP, which had declined for 5 years, fell sharply in 1992 (12.6 percent) after imposition of the OAS embargo. Shortages of goods pushed many prices higher, and cuts in fuel imports raised transportation costs and increased inflationary pressures throughout the economy. The production and marketing of agricultural products suffered as a result.

The medium-term economic outlook is weak even with the lifting of the OAS embargo. The embargo impeded the production of goods and cut capital investment and international assistance. The decline in capital investment resulted in even more rapid deterioration of an already weak economic infrastructure. Investor confidence is still shaky from the 1991 coup and will take years to recover.

Figure 11

Haiti: Grain Supply Sources

1,000 tons

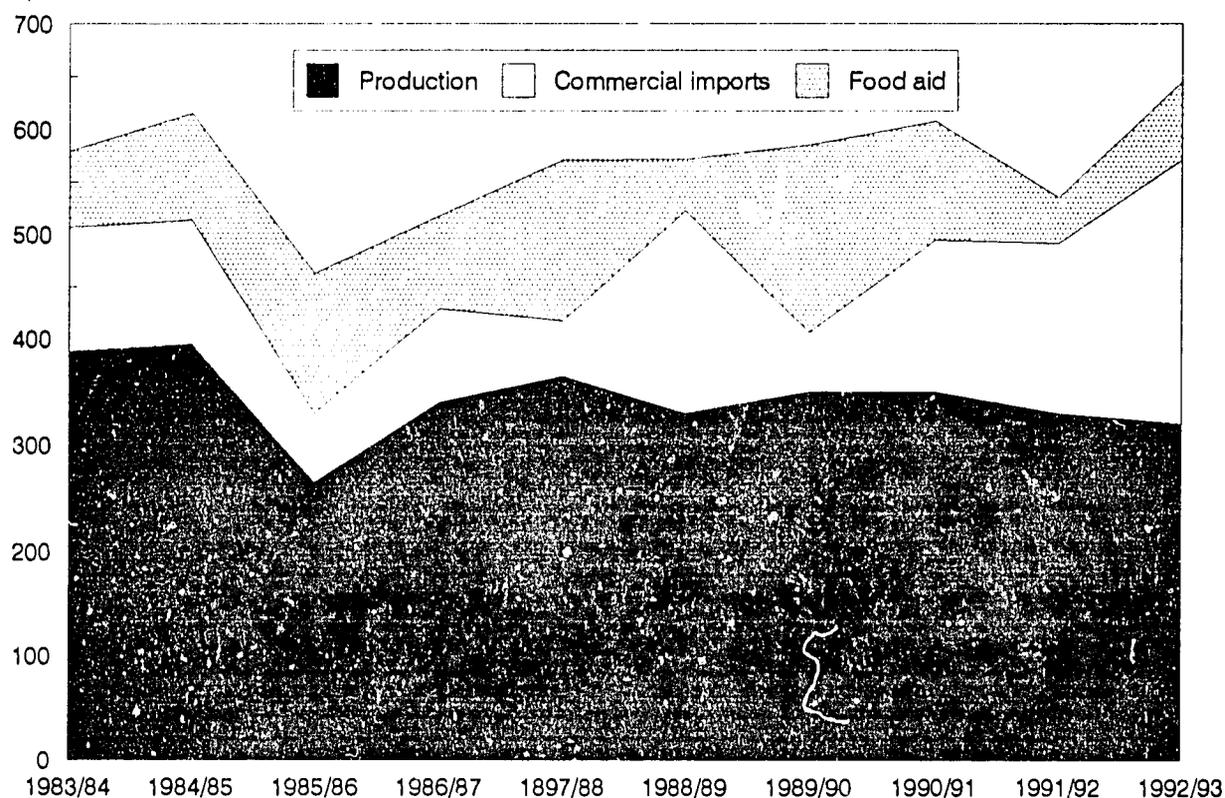


Table 32--Summary of grain balances for Haiti

	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/	Popu- lation	Per cap. food use 1/	with stock adjustment
	-----1,000 tons-----											
	----- Million -----											
	-----Kg-----											
	-----1,000 tons-----											
1983/84	388	119	72	0	75	42	20	390	461	5	88	---
1984/85	395	119	101	0	60	45	15	414	515	5	96	---
1985/86	265	65	133	0	17	36	9	285	417	5	76	---
1986/87	340	89	89	0	15	39	9	375	464	6	83	---
1987/88	365	52	154	0	15	43	9	358	512	6	89	---
1988/89	330	193	49	0	15	43	9	465	514	6	88	---
1989/90	350	56	179	0	15	40	20	340	519	6	87	---
1990/91	350	145	113	0	15	44	20	436	549	6	89	---
1991/92	330	160	43	0	15	43	30	427	470	6	75	---
1992/93	320	251	74	0	15	47	25	514	588	6	91	---
Status quo requirement forecasts												
1993/94	320	162	---	0	16	43	0	448	565	7	86	117
1994/95	331	157	---	0	16	44	10	417	578	7	86	161
Nutrition requirement forecasts												
1993/94	320	162	---	0	16	43	0	448	578	7	88	130
1994/95	331	157	---	0	16	44	10	417	591	7	88	173

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Peru

Peru's agricultural output fell as the country struggled with severe economic problems. Policy reforms and improved weather are expected to increase production in 1993/94. [Miriam Stuart]

Peru's grain production fell for the past 3 years because of weather, economic, and political factors. Commercial imports and food aid receipts increased to offset the shortfall. However, per capita grain consumption has fallen over the past 4 years. Peru's 1993/94 food aid needs are more than 600,000 tons.

Peru's grain production fell one-third between 1989/90 and 1992/93 (table 33) because of a severe drought beginning in December 1991, macroeconomic policies that cut generous farm credit and agricultural subsidies while encouraging food imports and discouraging exports, and terrorist attacks in rural areas that drove fearful citizens to urban areas. Grain production is expected to recover as some of these conditions improve.

Normal rains returned in late 1992 and early 1993. The capture of the leader of the Sendero Luminoso (Shining Path) leftist movement in September 1992 partially quelled the frequency of attacks and citizens' fears. While Peru's economic performance is still weak, some indicators show a recovery in response to the economic policies implemented by the Fujimori administration, in office since 1990. Help for agriculture came in May 1992 when the government declared a state of emergency in the agricultural sector and allocated \$150 million in production assistance.

A limited agricultural land base constrains Peru's self-sufficiency in grain production. Less than 3 percent of its total land area, only 3.7 million hectares, is cropland. Also curtailing Peru's ability to produce sufficient grain for domestic consumption is the annual population growth rate of more than 2 percent. Thus, Peru has been a significant grain importer over the past 20 years (figure 12).

Food imports received a boost in 1990 with the change in government. The new administration began to encourage imports by allowing the exchange rate to become overvalued. In addition, state control of the grain import market was relaxed, creating an opportunity for private grain importers

to fill consumer demand. With these policies, commercial food imports rose in 1991 even in the face of falling real incomes. While Peru's grain production is expected to recover, imports are still needed to fill the gap between production and demand.

Peru is among the poorest Latin American countries. Accordingly, Peru's food supply provides less than 2,100 calories per person per day (below the FAO recommendation, and less than 60 percent of U.S. consumption). The government has undertaken policies to alleviate poverty, but progress is slow because of continued tight fiscal discipline. The economic problems faced by President Fujimori in 1990 were quite severe, and the corrective policies implemented since he took office will take time to produce results.

Peru's reform program has achieved some positive results. Tightly controlled government spending combined with price and trade liberalization washed inflation from a peak of 36,000 percent in July 1990 to 57 percent in 1992. By the spring of 1993, Peru had cleared its arrears with the IMF and World Bank, and had implemented an economic adjustment and stabilization plan. Tax revenues were on the rise and a privatization program was well underway. However, problems remain. The government's tight fiscal policies precipitated a recession, and real GDP fell almost 3 percent in 1992. Unemployment and underemployment remain stubbornly entrenched, as in many Latin American countries.

The international community's growing faith in Peru's economic recovery was shaken in April 1992 when President Fujimori dissolved the legislature, radically altered the judiciary system, and suspended parts of the national constitution. Prompt and severe financial pressure from the international community forced the administration to back down. A new Congress was granted full legislative powers and charged with drafting a new constitution. In the future, Peru's economy may continue to improve if reforms are diligently sustained and political stability solidified.

Figure 12

Peru: Commercial and Food Aid Imports

1,000 tons

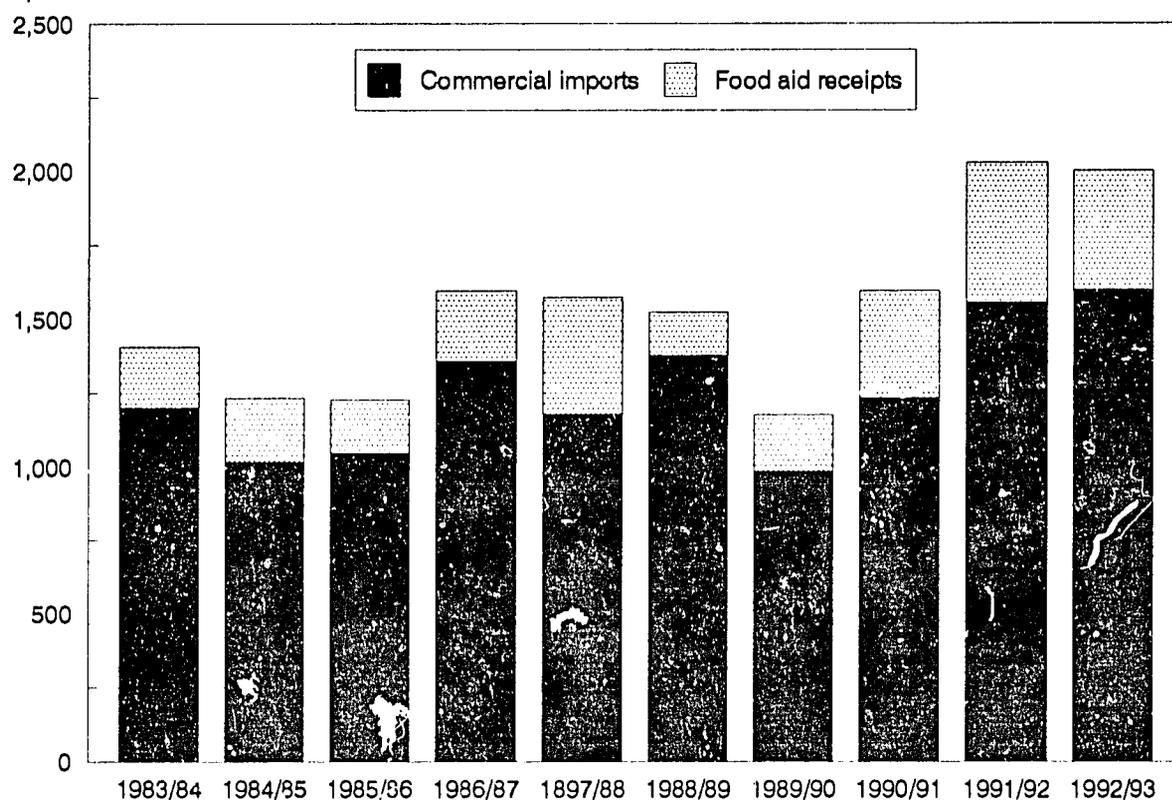


Table 33--Summary of grain balances for Peru

	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/	Popu- lation	Per cap. food use 1/	With stock adjustment
	-----1,000 tons-----							Million		-Kg-	-1,000 tons-	
1983/84	1,232	1,200	207	1	575	253	304	1,645	1,852	19	99	---
1984/85	1,632	1,016	216	1	546	268	379	1,758	1,974	19	103	---
1985/86	1,417	1,047	180	52	555	257	249	1,730	1,910	20	97	---
1986/87	1,551	1,357	237	2	792	321	279	1,763	2,000	20	100	---
1987/88	1,867	1,179	395	0	944	356	435	1,589	1,985	21	97	---
1988/89	1,890	1,377	146	2	857	342	309	2,192	2,338	21	111	---
1989/90	1,954	983	194	2	967	304	320	1,652	1,846	21	86	---
1990/91	1,424	1,232	364	5	883	310	223	1,555	1,919	22	88	---
1991/92	1,241	1,556	471	?	956	310	321	1,431	1,902	22	85	---
1992/93	1,287	1,600	400	2	1,212	307	470	1,217	1,617	23	71	---
Status quo requirement forecasts												
1993/94	1,522	1,199	---	3	1,032	328	411	1,417	2,049	23	88	632
1994/95	1,664	1,188	---	3	1,052	334	431	1,444	2,088	24	88	644
Nutrition requirement forecasts												
1993/94	1,522	1,199	---	3	1,032	328	411	1,417	2,507	23	108	1,089
1994/95	1,664	1,188	---	3	1,052	334	431	1,444	2,554	24	108	1,110

--- = Not applicable. 1/ 1993/94 and 1994/95 entries are targets (see "Methodology").

Maintaining Food Security

by

Stacey Rosen and Kim Jones

Abstract: National food security is ensured when countries are able to provide adequate food from domestic resources or commercial imports. This goal is unobtainable for one-third of developing countries in the medium term. Slow production growth due to inadequate producer incentives, civil strife, population pressure, and unfavorable climate is the principal contributor to food insecurity. The most food insecure countries are Afghanistan, Angola, Cape Verde, Liberia, Jamaica, Mauritania, Somalia, Mozambique, and Sierra Leone.

Keywords: Food security, production shortfalls, food gap, consumption requirements, resource constraints.

Causes and Implications of Food Insecurity

Developing countries are continually grappling with the issues of food security and self-sufficiency. Food self-sufficiency is not a requirement for food security. Food security comes from being able to obtain enough food for the population through imports or domestic production. Food insecurity is often exacerbated by financial constraints and slow or negative growth in sectors other than agriculture.

The importance of food security is reinforced by the fact that one-fifth of the people in developing countries are chronically undernourished. Protein-energy malnutrition is still widespread, diet-related diseases have increased, and deficiencies of micronutrients, such as iron, iodine, and vitamin A, are on the rise. Undernutrition retards growth and reduces physical activity in children, impairs resistance to infection, hinders intellectual development and cognitive abilities, and increases morbidity and mortality. The poverty-associated problems of unsanitary conditions and little access to educational services exacerbate the nutrition-related problems in the poverty stricken areas. Human capital neglect adversely affects the development efforts of these countries as more resources are drained from other sectors to treat preventable nutrition-related diseases. In addition, labor productivity does not reach its full capacity because of chronic undernutrition.

Solutions to Food Insecurity

Enhancing food security requires policies at the national level attuned to the particular needs of the implementing country. Improving household food security relies heavily on accelerated growth in the food and agricultural sector. Methods of promoting rural development include improving access to land and other inputs, especially for women, expanding credit for technological improvement, increasing employment opportunities, stabilizing food supplies, increasing female educational opportunities, and carefully targeting income transfer schemes.

Factors Contributing to Slow Production Growth

Slow production growth and instability have aggravated the situation and increased food vulnerability. Annual production growth rates in Africa between 1970 and 1991 ranged from -0.5 in East Africa to 2.1 in West Africa. Average per capita output declined throughout the continent during the last two decades.

One measure of potential food insecurity is the production shortfall index. The index was derived from measuring the country's shortfall in per capita production (when production fell below trend) and taking this number as a proportion of actual average per capita production for 1970-91. Results indicated that the African regions were the most vulnerable for a food crisis, while Southeast Asia was the least vulnerable region.

Among the most vulnerable countries (shortfall indices greater than 10) were Algeria, Morocco, Tunisia, Central African Republic, Cape Verde, Chad, Guinea, Mauritania, Sudan, Lesotho, Swaziland, Zimbabwe, Costa Rica, and Jamaica (table 34). Algeria, Morocco, Tunisia, and Costa Rica have the capacity to import commercially in an effort to compensate for shortfalls.

Factors behind the slow production growth include inadequate producer incentives, civil strife, unfavorable climate, and population pressure that has forced farmers to marginal lands. Governmental policies that favor urban consumers have often stifled agricultural development. Food prices are held below market levels to benefit politically influential urban consumers. These low prices adversely affect domestic output.

Exchange rate policies supporting overvalued currencies indirectly tax farmers and act as a disincentive to export crop production, thereby diminishing foreign currency earnings. Also, overvalued currencies make imported goods less expensive than domestically produced goods, further discouraging farmers from producing. Inaccessibility to extension services, inputs and credit, and government emphasis on in-

Table 34--Agricultural production shortfalls from trend

Region and country	Shortfall index 1/	Region and country	Shortfall index	Region and country	Shortfall index
	percent		percent		percent
North Africa--		West Africa--		South Asia--	
Algeria	-13.8	Benin	-5.6	Afghanistan	-5.5
Egypt	-3.1	Burkina Faso	-6.3	Bangladesh	-1.8
Morocco	-11.1	Cape Verde	-39.1	India	-2.3
Tunisia	-14.7	Chad	-11.2	Nepal	-2.9
Average	-10.7	Cote d'Ivoire	-2.6	Pakistan	-2.6
		Gambia	-8.8	Sri Lanka	-5.2
Central Africa--		Ghana	-7.9	Average	-3.4
Cameroon	-5.2	Guinea	-14.1		
Central African Republic	-14.4	Guinea Bissau	-8.8	Southeast Asia--	
Zaire	-3.2	Liberia	-3.0	Indonesia	-2.1
Average	-7.6	Mali	-6.1	Philippines	-2.3
		Mauritania	-17.5	Vietnam	-3.4
Southern Africa--		Niger	-8.2	Average	-2.6
Angola	-5.1	Nigeria	-4.1		
Lesotho	-10.7	Senegal	-9.1	Latin America--	
Madagascar	-1.6	Sierra Leone	-3.9	Bolivia	-4.3
Malawi	-3.9	Togo	-6.6	Costa Rica	-10.1
Mozambique	-7.6	Average	-9.6	Dominican Republic	-4.8
Swaziland	-14.9			El Salvador	-4.9
Zambia	-9.1	East Africa--		Guatemala	-3.1
Zimbabwe	-10.0	Burundi	-3.2	Haiti	-7.2
Average	-7.9	Ethiopia	-5.8	Honduras	-4.8
		Kenya	-5.3	Jamaica	-23.3
		Rwanda	-4.5	Nicaragua	-6.4
		Somalia	-9.6	Panama	-3.6
		Sudan	-10.4	Peru	-4.7
		Tanzania	-6.6	Average	-7.0
		Uganda	-4.6		
		Average	-6.2		

1/ The shortfall index was calculated by summing a country's shortfalls in per capita production in each year (1970-91) they occurred (when actual production fell below trend) and taking those as a proportion of actual per capita production.

dustry also have stymied agricultural production. While some of these issues are being addressed through structural adjustment programs, the new policies have not been in place long enough to significantly improve production.

Civil war has plagued Sudan, Liberia, Angola, and Mozambique. Somalia, Ethiopia, and Zaïre have also experienced political upheavals that have disrupted food deliveries. Weather variations, such as type of climate and seasonal rainfall, can reduce yields significantly. Drought is a chronic problem for African farmers. The most recent cases were in Angola, Malawi, Mozambique, Zambia, and Zimbabwe. Sub-Saharan Africa has the highest fertility rate worldwide and population growth exceeds 3 percent annually. This has increased competition for land and has forced farmers to less productive land.

Role of Food Aid

Food aid's legitimate role is to alleviate problems associated with short-term food shortages. Donors' policies vary and include a mix of their own political agendas and humanitarian concerns. For countries with chronic foreign exchange shortages and low nutritional intake, food aid is a welcome resource.

The distribution of food aid has changed through time. Initially, U.S. food aid was distributed to Europe in the 1950's to help with post-war reconstruction. By the early 1970's, U.S. food aid was concentrated in Southeast Asia where U.S. military involvement was high. The EC and Canada (the other major donors) also distributed food aid to Asia in the early 1970's but to a lesser extent than the United States. By the early 1980's, Africa had replaced Asia as the major recipient of food aid.

During 1980-1991, Africa's share of world food aid shipments averaged around 50 percent. Sub-Saharan Africa's share alone exceeded 25 percent. North Africa (Morocco, Tunisia, Algeria, and Egypt) received more than 40 percent of the food aid shipped to Africa, while East Africa received 27 percent. Ethiopia, Sudan, and Mozambique accounted for more than 50 percent of the region's total food aid receipts and more than 13 percent of shipments worldwide since the early 1980's.

Food aid has also increased as a percentage of total cereal consumption (cereals constitute more than 60 percent of calories in Sub-Saharan Africa). During the 1980's, food aid's share of cereal intake was the largest in East and Southern Africa (9 percent of cereal consumption in each region). Historically, cereal food aid has accounted for the greatest percentage of consumption in Ethiopia, Sudan, and Mozambique.

Production Growth Targets

Concern has emerged whether countries can maintain food security in the medium term without food aid. To estimate the food production growth needed to close the food gap, consumption requirements for 1993-98 were projected under two scenarios: constant per capita use; and minimum nutritional requirements. Then, commercial imports were projected (increasing at the same rate as population). Given a

no-food-aid assumption, production was the variable remaining to fill the gap between consumption and commercial imports. This resulted in two production growth series: one that satisfied constant consumption requirements, and the other that met nutritional requirements. The annual growth rates needed to meet these targets were calculated for 1993-98. These growth rates were then compared with historical production growth rates to identify countries in a vulnerable position with respect to food security (table 35).

Constant Per Capita Use Target

In more than a third of the 60 countries included in this study, historical production growth rates fall short of those needed to prevent a decline in per capita consumption. The production growth needed to fill the food aid needs gap (under the constant per capita consumption scenario) exceeded historical growth rates in 22 countries. More than three-fourths of these countries were in Sub-Saharan Africa. These countries are expected to remain in a food-deficit position and consequently will require food aid to ensure food security. The potential for increasing per capita commercial imports is limited by the severe financial constraints facing these countries.

The difference between historical food production growth rates and those needed to fill the gap diverged the most in Afghanistan, Cape Verde, Liberia, Jamaica, Mauritania, Somalia, and Mozambique. These countries have relied heavily upon food aid to meet consumption requirements and have also received the largest donations per capita.

Minimum Nutritional Target

Production growth rates fall short of what is needed to maintain nutritionally adequate consumption in about half of the study countries, with the largest gaps in Jamaica, Angola, Cape Verde, Liberia, and Sierra Leone.

Production growth rates are far above those needed to maintain per capita consumption in Costa Rica, Panama, Peru, Egypt, Guinea, Morocco, and Tunisia, where food security is likely to be maintained in the medium term. In addition, Costa Rica, Tunisia, and Morocco have the financial resources to import their food needs commercially. In about half of the countries, production growth even exceeds that needed to maintain nutritionally adequate consumption. Egypt, Morocco, Swaziland, and Dominican Republic are in the most favorable position.

Resource Constraints

The most vulnerable countries according to the two measures are Afghanistan, Angola, Cape Verde, Liberia, Jamaica, Mauritania, Somalia, Mozambique, and Sierra Leone. Jamaica, Cape Verde, and Mauritania depend almost entirely upon imports to satisfy consumption requirements because domestic production is negligible. In the remaining countries, per capita production declined for the last decade, except in Somalia where it increased 0.1 percent per year.

The poor production performance is rooted in poor yields. Crop yields for these countries average only 26 percent of world levels (table 36). Even compared with yields in other

Table 35--Agricultural growth rates, historical and growth needed to maintain consumption requirements

Region and country	Growth needed to maintain: status quo nutritional consumption requirements			Region and country	Growth needed to maintain: status quo nutritional consumption requirements		
	Historical	Percent			Historical	Percent	
Central Africa--				East Africa--			
Cameroon	0.2	0.9	4.8	Burundi	-1.2	-0.6	9.4
Central African Rep.	3.4	-0.4	0.5	Ethiopia	0.7	5.7	9.7
Zaire	2.1	1.9	4.8	Kenya	1.0	5.6	6.6
Southern Africa--				Rwanda	-1.0	-8.5	13.8
Angola	-2.6	7.4	16.5	Somalia	2.2	12.6	10.8
Lesotho	-1.6	-9.5	6.8	Sudan	-1.1	5.0	3.6
Madagascar	1.3	1.7	4.5	Tanzania	3.6	1.7	0.5
Malawi	1.7	2.0	1.5	Uganda	2.1	3.3	8.0
Mozambique	2.1	12.4	16.3	South Asia--			
Swaziland	5.8	0.3	-12.7	Afghanistan	3.4	19.2	21.2
Zambia	3.4	6.7	6.7	Bangladesh	2.7	1.6	7.0
Zimbabwe	-0.4	-2.1	-4.8	India	3.5	-0.5	-1.1
West Africa--				Nepal	3.7	-0.2	0.4
Benin	4.8	-1.3	-2.1	Pakistan	2.1	0.8	0.5
Burkina Faso	6.1	1.5	1.7	Sri Lanka	0.9	2.9	2.7
Cape Verde	3.0	38.0	32.9	Southeast Asia--			
Chad	3.3	1.2	3.4	Indonesia	3.2	-0.9	-3.0
Cote d'Ivoire	4.4	0.8	-0.8	Philippines	3.0	-5.1	-4.4
Gambia	4.1	1.7	0.4	Vietnam	4.5	-0.5	-0.5
Ghana	5.3	6.8	3.5	Latin America--			
Guinea	3.7	-18.4	6.4	Bolivia	1.4	-6.0	2.7
Guinea Bissau	8.9	0.1	-2.9	Costa Rica	-0.7	-35.8	---
Liberia	-1.6	16.1	18.6	Dominican Republic	0.2	---	-30.0
Mali	7.5	0.2	1.0	El Salvador	1.8	0.6	-0.8
Mauritania	8.4	20.7	15.1	Guatemala	1.2	0.2	-0.2
Niger	1.2	0.7	-1.4	Haiti	-2.4	7.2	9.2
Nigeria	-1.7	2.6	6.7	Honduras	3.0	-5.8	0.1
Senegal	2.6	0.5	-2.1	Jamaica	-14.4	---	55.2
Sierra Leone	-2.7	7.3	16.7	Nicaragua	1.9	5.2	2.5
Togo	3.7	-0.7	0.6	Panama	1.6	-13.6	-6.2
North Africa--				Peru	3.0	-11.1	-2.3
Algeria	1.8	---	---				
Egypt	4.5	-13.9	-22.1				
Morocco	7.5	-13.5	-19.6				
Tunisia	2.9	-22.9	---				

--- = Commercial imports are greater than targeted consumption.

Sources: USDA/FAS, PS&D database and ERS calculations.

developing countries, they are quite low. For example, wheat yields in Afghanistan are less than half of those of the developing countries of Asia and Latin America. Yields for rice in Liberia and Sierra Leone run about a third of those in Asia. Corn is the principal crop in Somalia, Angola, and Mozam-

bique. In Angola and Mozambique, yields were less than 20 percent of those in Latin America.

Limited resources, low input use, and little technology adoption are the principal factors constraining production potential in these countries. Arable land as a percent of total land area averages less than 5 percent in these countries as opposed to more than 10 percent for the world (table 37). This limited amount of arable land has forced producers to farm too intensively, thereby draining nutrients. In addition, it has driven farmers to marginal lands where yield potential is lower.

Given that rainfall in these countries can be highly variable, irrigated area could reduce production shortfalls when rainfall is inadequate. However, limited water resources in these countries mean only about 6 percent of arable land is irrigated (excluding Afghanistan where the irrigation data are unreliable). While this is typical of Africa, it is quite low compared with other developing regions. For example, 12 percent of arable land is irrigated in Latin America's developing countries and nearly 38 percent is irrigated in Asia. The world average is nearly 18 percent.

Use of capital inputs is also too low. On average, there are nearly 20 tractors per 1,000 hectares of arable land in use in the world. In this group of vulnerable countries, however, that number falls to fewer than two. This compares unfavorably to the developing countries of Latin America and Asia where there are 11 and 7 tractors for every 1,000 hectares of arable land. While the production process is not capital intensive relative to the rest of the world, it is certainly labor intensive. There are more than two laborers per hectare of arable land in this group of countries, on average, compared

Table 36--Comparisons of grain yields for vulnerable countries

Country	Wheat	Rice	Corn	Percent of world yields
	Ton/ha.			Percent
Afghanistan	1.1	NA	NA	41.4
Angola	NA	NA	0.4	11.2
Liberia	NA	1.3	NA	36.4
Somalia	NA	NA	1.1	27.7
Mozambique	NA	NA	0.3	8.4
Sierra Leone	NA	1.2	NA	32.2
Africa	1.7	2.0	1.6	40.4
Latin America 1/	2.2	NA	2.3	59.1
Asia 1/	2.8	3.6	3.4	85.0
World	2.6	3.6	3.9	NA

NA = Not applicable

1/ These regions include only the developing countries.

Table 37--Indicators of land and input use in vulnerable countries

Country	Arable/ total land	Irrigated/ arable land	Tractors/ 1,000 ha.	Fertilizer use per ha.	Growth in fertilizer use 1/	Labor/ ha.
	Percent	Percent	No./1,000 ha.	kilos/ha.	Percent	No./ha.
Afghanistan	12.1	34.9	0.1	6.4	0.0	0.3
Angola	2.3	NA	3.5	2.4	-4.8	1.0
Liberia	1.0	1.5	2.5	23.4	0.0	5.2
Somalia	1.6	11.5	2.0	2.9	10.0	2.1
Mozambique	3.5	3.5	2.0	1.7	-15.7	2.3
Sierra Leone	6.8	7.0	1.0	2.1	-6.3	1.8
Africa	5.5	7.0	3.4	22.1	0.9	0.9
Latin America 2/	6.6	12.0	10.8	56.0	1.8	0.3
Asia 2/	18.3	37.9	7.0	147.4	6.2	2.0
World	10.3	17.9	19.5	99.5	2.2	0.8

NA = not available.

ha. = hectare.

1/ Average annual growth from 1980-91.

2/ These aggregates include only the developing countries of the regions.

with less than one for the world average. The farms in developing Asian countries are nearly as labor intensive, however, with nearly two laborers per hectare. Latin America, on the other hand has only 0.3 laborer per hectare.

Fertilizer use is perhaps the overriding constraint to expanding production. In this group of vulnerable countries, fertilizer use is negligible, 6 kilograms per hectare of arable land, with no increasing trend. In fact, fertilizer use in Mozambique, Sierra Leone, and Angola even declined during the last decade. In Africa in general, fertilizer use averaged 22 kilograms per hectare and increased less than 1 percent per year. Fertilizer use was far greater in other developing countries, 56 kilograms per hectare in Latin America and 147 in Asia. The world average is nearly 100 kilograms. Even in regions where the absolute levels of fertilizer use are much greater than this study group, there is an increasing trend--nearly 2 percent in Latin America and more than 6 percent in Asia.

The limited amount and slow growth in Africa's fertilizer use stems from the fact that many countries in the region have no domestic production capacity and must rely on imports

for their supply. Like imports of many inputs, fertilizer was squeezed in the 1980's by the severe financial constraints facing these countries. In addition, demand for fertilizers by farmers has fallen in response to the reduction or elimination of subsidies by many governments. Until the use of improved inputs and technology increases, the food security of these countries will remain precarious and food aid will certainly play an important role in meeting domestic food requirements.

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Population Growth and Food Security in Sub-Saharan Africa: The Impact of AIDS

by

Courtney Harold and Shahla Shapouri

Abstract: Labor is a vital component of agricultural production, the major economic activity in Sub-Saharan Africa. Any changes in the size and structure of the labor force will directly affect food production and consumption. An estimated two-thirds of the world's HIV carriers are in Sub-Saharan Africa, which has less than 10 percent of the world's population. Little is known about the net effect of AIDS on the agricultural economy, but there is no question that agriculture in severely affected countries will be subjected to both supply and demand shocks.

Keywords: Sub-Saharan Africa, AIDS, population growth, food production, food demand, labor productivity

Changes in Population Growth and Food Markets

In Sub-Saharan Africa, population growth is the highest in the world, 3.2 percent during 1980-90. This growth rate will double population every 20 years. High population growth in Sub-Saharan countries resulted from sharp mortality declines in the 1950's due to improved health services. Rapid population growth occurred much earlier in industrial countries, between 1890 and 1920, and was supported by high-income growth and improvements in education and health. By contrast in Sub-Saharan countries, fertility rates remained high, undernutrition grew, incomes stagnated, and low educational levels persisted.

High population growth intensifies problems already existing on the supply side of African food markets. Limited use of modern technology and poor market infrastructure are two characteristics that have prevented increases in agricultural productivity. Crop yields in Sub-Saharan Africa are among the lowest in the world. Population growth has exacerbated the situation by increasing pressure on limited natural resources. All of these factors have reduced per capita production. With a few exceptions, food availability and use have not kept up with population growth over the past decade.

Population growth is the main force behind food demand growth in Sub-Saharan countries. Income, which also drives demand, has shown little, if any, growth. During the last decade, per capita income in most countries in the region declined. In 1990, per capita income averaged \$317, compared with \$357 in 1980 (table 38). Sub-Saharan Africa is the lowest per capita income region of the world, and as a result food demand is held artificially low. Because population growth is the primary food demand catalyst, demographic changes have immense implications for food supply and demand.

Impacts of AIDS on Population and The Economy

Although data are weak, a 1988 estimate showed about two-thirds of the world's Human Immunodeficiency Virus (HIV) carriers to be in Sub-Saharan Africa, which has less than 10 percent of the world's population. There are an estimated 13 million HIV carriers worldwide--8.5 million are in Sub-Sa-

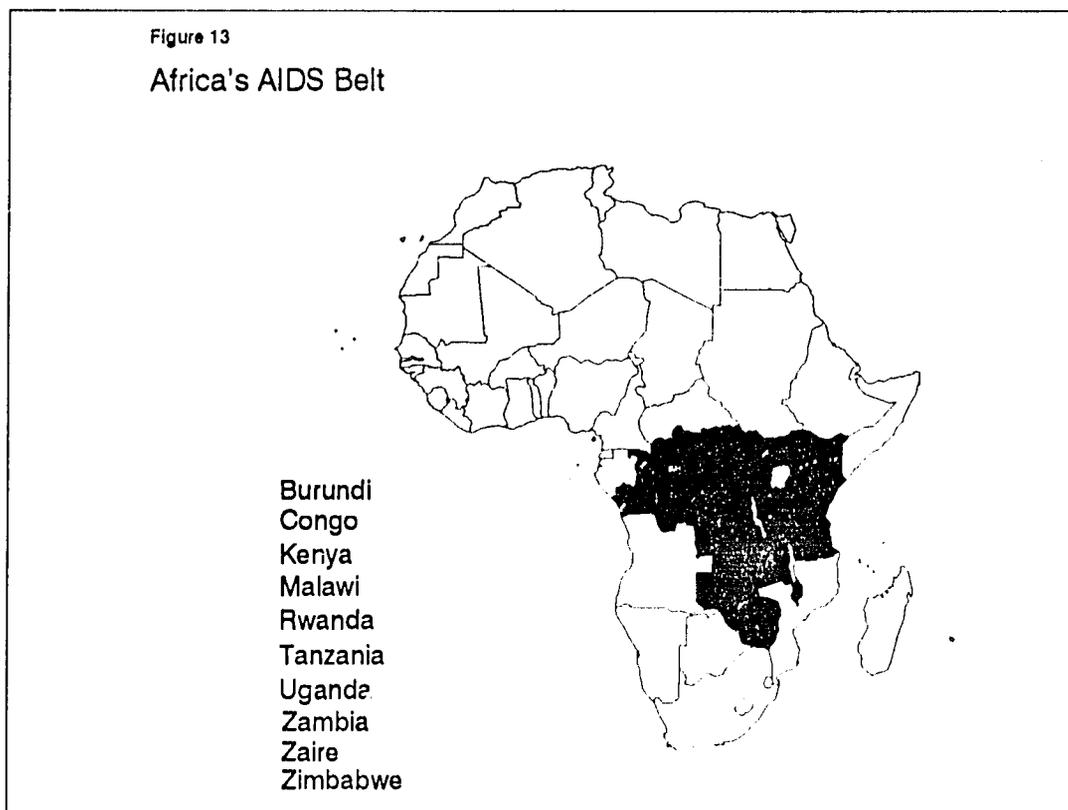
Table 38--Selected income indicators of AIDS belt countries, 1990

Country	Value	Share of	Per	
	added in agriculture	Total GDP 1/	agriculture in GDP	capita GDP
	Million dollars	Percent	Dollars	
Burundi	598	1,287	46	228
Congo	320	2,315	14	1,033
Kenya	2,440	9,159	27	376
Malawi	399	1,391	29	151
Rwanda	747	1,958	38	257
Tanzania	2,064	3,910	53	151
Uganda	2,753	5,223	53	290
Zaire	2,414	7,749	31	212
Zambia	254	2,216	11	272
Zimbabwe	752	6,182	12	595
Total AIDS belt	12,741	41,390	31	279
Sub-Saharan Africa	46,556	148,244	31	317

1/ Constant 1987 prices and exchange rates.
Sources: (8, 9).

Figure 13

Africa's AIDS Belt



haran Africa (12). AIDS may reduce the continent's population growth to 2.5 percent by the turn of the century versus the current projection of 3 percent.

The impact of AIDS on specific country populations in Sub-Saharan Africa will be very large. Roughly 90 percent of the recorded cases in Africa have occurred in a 10-country belt from Congo and Zaire to Kenya and Tanzania (figure 13).⁶ Among these countries there are differences in the prevalence of the virus and the rate of infection.

As of 1990, the highest level of HIV infection was in Uganda, followed by Zaire, Zambia, Malawi, and Tanzania. In Uganda alone, 1.0-1.5 million people (7 percent of the population) are estimated to be HIV-infected. In Tanzania, the number is 800,000 (3 percent of the population). To date, all estimates are very rough and based mainly on samples from urban areas. The most plausible estimates are reported here.

In these countries, it is the most productive age cohort, 15-45, that is dying the fastest from AIDS. This age cohort comprises nearly 50 percent of the population in the AIDS belt countries (table 39). Their deaths result in a disproportionately high number of old people and children in the population, including millions of orphans, who are less productive members of the economy. The population structure within the AIDS belt, unlike in the continent as a whole, will be affected.

High-risk population groups, such as prostitutes, other promiscuous heterosexuals, truck drivers, and members of the military, who primarily inhabit urban centers are the most

vulnerable to AIDS. In Uganda, between 40 and 80 percent of all soldiers are infected with HIV (5). HIV prevalence among high-income, urban, and relatively well-educated men and their families is as high or higher than among low-income and rural groups. In Rwanda, Zaire, and Zambia, the level of HIV infection in the highest socio-economic strata is 2 to 4 times that among those in the lowest category (10). This loss of human capital is staggering. Companies in these countries have resorted to training higher-level employees in excess of current demand because so many are dying of AIDS.

The high rate of HIV infection in urban areas may compound the negative effects on the economy, because typically the best-educated and most productive segments of the population center there. The bleakest economic outlook is for GDP growth in Sub-Saharan Africa to be cut in half by the turn of the century (5). A more mainstream view is that direct costs will be \$800 million by 2015 (10). To put this number in perspective, total GDP in 1990 in the 10 AIDS belt countries was about \$40 billion (8). Another prediction is that unless decisive policy action is taken, losses in Tanzania by the year 2015 could be 10 to 25 percent of GDP (4). Based on direct medical costs, losses in labor productivity may range from 2 to 4 percent of GNP (2). Access to health care in rural areas is much less than in urban areas. Therefore, estimating direct medical costs probably only captures the losses to *urban* labor productivity from AIDS.

These costs in particular are a troublesome outcome of AIDS, because public and private income in these countries has stagnated or declined in the last 20 years and any increase in public and private outlays on health care has to come at the expense of investment in economic development. Infrastructure improvement, new technology adoption, and deficit reduction efforts could be sacrificed. More immediately, health

⁶ While Cote d'Ivoire is typically included in this grouping, discussion is limited to the 10 countries in Central and Southern Africa.

Table 39--Social indicators of health for AIDS belt countries, 1990

Country	Total Population	Life expectancy at birth	Mortality of children under 5 years	Share of population with access to health services	Percent of population ages 15-64 in 1989
	1,000	Years	Number/1,000	-----Percent-----	
Burundi	5,646	50	98	45	52
Congo	2,242	54	165	NA	53
Kenya	24,342	59	96	30	49
Malawi	9,197	48	235	27	53
Rwanda	7,609	49	188	61	51
Tanzania	25,971	50	138	71	52
Uganda	18,016	49	149	41	51
Zaire	36,613	53	140	83	53
Zambia	8,154	54	109	90	50
Zimbabwe	10,394	64	50	40	53
AIDS Belt 1/	148,184	53	137	49	52

1/ Population figure is the ten-country total; other data are averages.

Sources: (8, 9)

care needs will be increasingly unmet due to prohibitive costs. For example, in Kenya a 60-day stay in the hospital costs about \$938, or three times the GNP per capita (1).

While the number of infected persons is higher in urban areas, the epidemic is growing more rapidly in rural areas. Problems of education, treatment, and lack of effective prevention are also more serious in rural areas. Further, the higher prevalence in urban areas means public funds may be diverted from rural areas and agriculture to care for AIDS-related problems in the cities.

AIDS and Food Markets

Most studies of Africa have focused on health costs in urban areas. Little is known about the extent and spread of AIDS in rural areas. By the same token, any quantification of the net effect of AIDS on the agricultural economy is preliminary. There is, however, little question that the agricultural sector will be subjected to both supply and demand shocks that will affect urban and rural consumers.

Shocks to Agricultural Productivity and Output from AIDS

AIDS will alter the structure, productivity, and growth of the labor force. Labor is the prime component of agricultural production, a major economic activity in the AIDS belt countries. The agricultural sector contributes about 31 percent of total GDP. A decrease in the labor force is expected to directly affect food production and consumption, but quantifying the impact is difficult.

Despite an excess supply of labor in some countries, changes in population growth may cut production in villages heavily affected by AIDS. The World Health Organization estimates that local crop losses from AIDS at the household or village level ranges from 10-50 percent in about 10 Sub-Saharan countries (1).

Besides direct reductions in the agricultural labor force from AIDS, a decline in healthiness will reduce labor productivity in rural areas (3). Among different groups, slightly more women are infected by AIDS than men. A decline in women's productivity from already low levels, will have enormous implications on nutrition and poverty through a decline in agricultural production. Many farms are headed by women and on other farms women provide a large proportion of total labor. For example, a study of two towns in Tanzania found that women provide 48 percent of the agricultural labor including land preparation, planting, weeding, and harvesting, while the men did most of the marketing. Economic consequences will be compounded by the fact that women are barred from owning land in many countries. If a husband dies, the wife's lack of collateral limits her ability to obtain credit to keep the farm in operation or to purchase labor-saving technology.

Also, an increase in the number of orphans places a burden on healthy women in the community, who must care for the sick and dying while simultaneously increasing their child care responsibilities. This compounds the negative impact of AIDS on agricultural production, because healthy women will have less time to farm and to gather fuel and water.

Reduced Agricultural Output Accompanied by Shifts in Crop Mix

A loss of productive labor can also change cropping patterns. For example, farmers may switch to fewer cash crops and more subsistence crops. A reduction in the production of cash crops will worsen foreign exchange earning potential and likely increase food import dependency, particularly food aid.

Among food crops, a shift from corn to cassava would conserve the amount of labor input needed. However, cassava is less nutritious than corn. Nutritional intake is already below minimum standards in several countries, including the AIDS belt countries. In 6 of the 10 countries examined, the per capita daily caloric intake is below the level required to attain a minimum nutritional standard (the calories required to sustain life with minimum food-gathering activity) (table 40). A domino effect follows: food supply deficits negatively affect agricultural productivity through increased undernutrition and decreased healthiness, which further reduces agricultural productivity, and may hasten the onset of AIDS in weakened, HIV-positive people.

Combatting the Loss in Food Production From AIDS

To combat a loss in food production caused by AIDS-related deaths, affected people can attract labor from other sectors or countries, or raise the productivity of the remaining labor. Both options, of course, have cost implications and limitations.

First, attracting labor from other sectors requires a reversal of the current rural-to-urban migration pattern, despite underemployment and unemployment problems in urban areas. For example, both Kenya and Zambia face the paradoxical situation of a rural labor shortage within a labor-surplus economy (7). Rural-to-urban migration occurred because urban wages remained higher than rural wages despite the downward pressure of excess urban labor. Higher urban wages reflected a higher level of labor productivity and the ability to get more value added for some export commodities. Urban products provide more foreign exchange.

Farming families affected by AIDS may be able to summon sons or absentee husbands back to the farm to assist them. In general, however, income and employment potential in urban areas is higher, thus reversing the current migration pattern is unlikely. Furthermore, family members returning from urban areas may be HIV-carriers themselves and may spread the disease.

Second, raising the productivity of remaining labor requires investment. Expanding mechanization, increasing credit, better access to farm chemicals and fertilizer, and use of extension services to promote labor-saving technology could all potentially raise agricultural productivity. The losses in productivity could be minimized with large international donor assistance and government investment, especially to modernize the agricultural sector. However, in a crisis situation, such as the AIDS pandemic, coping with death and sickness will drain the community's resources and make it extremely difficult to increase productivity.

Table 40--Comparison of macroeconomic indicators of Sub-Saharan Africa and other regions

Country	Population growth 1980-1990	Per capita GNP growth 1965-1990	Life expectancy 1990	Adult illiteracy females 1990	Adult illiteracy total 1990	Per capita daily caloric intake 1989	Secondary school enrollment 1989
	Percent	Percent	Years	Percent	Percent	Calories	Percent
Sub-Saharan Africa	3.1	0.2	51	62	50	2,122	18
East Asia and Pacific	1.6	5.3	68	34	24	2,617	46
South Asia	2.2	1.9	58	67	53	2,215	38
Europe	0.1	2.1	70	22	15	3,433	73
Middle East and North Africa	3.1	1.8	61	60	47	3,011	53
Latin America and the Caribbean	2.1	1.8	68	18	16	2,721	50
World total	1.7	1.5	66	45	35	2,711	52

Source: (11)

Effects of AIDS on Food Market Demand In Urban Versus Rural Areas

One effect of AIDS is to reduce living standards and, consequently, food demand through lower population and income growth. Because formal market activity is higher in urban areas, the spread of HIV there is likely to be more damaging to long-term economic growth and commercial purchasing power than its spread in the rural sector.

In most countries, the urban sector depends on domestic surplus agricultural production and imported food, while rural areas are nearly food self-sufficient. If purchasing power (effective demand) falls simultaneously and proportionately with food availability due to AIDS, the net effect will be no change or even a decline in commercial import dependency. However, undernutrition could rise in both urban and rural areas. If food production falls faster than purchasing power, the net effect will be increased demand for imports, commercial or aid.

However, in rural areas the implications of AIDS on food markets are not uniform. In most countries, the majority of farmers are subsistence producers and any reduction in their productivity means less food, reduced consumption, and increased nutritional vulnerability. Low levels of effective demand will decrease further. For farmers producing surplus food for market, any changes in productivity mean lower household incomes and declines in domestic food availability.

The economic consequences of AIDS in rural areas will come from reduced agricultural output and declines in labor productivity. Large investment and a concerted policy response by the affected governments must occur if these losses are to be minimized. Although the full magnitude of the AIDS problem on actual production is too difficult to quantify, it is expected to be very localized in rural areas, possibly decimating entire villages. While the effect of AIDS in rural areas will likely be smaller than in the urban sector, any reduction in agricultural output below the current low levels will have serious consequences for the whole economy.

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Appendix 1: Country list, per capita food use, cereal share in diet, and minimum caloric requirements

Country	Per capita food use	Share of cereals in diet	Minimum caloric requirement	Country	Per capita food use	Share of cereals in diet	Minimum caloric requirement
	--kg--	Percent	Calories/person/day		--kg--	Percent	Calories/person/day
Central Africa				West Africa			
Cameroon	71	34.2	2,040	Benin	104	39.1	2,097
Central African Republic	50	25.9	2,040	Burkina Faso	188	79.1	2,097
Zaire*	34	16.9	2,040	Cape Verde	201	50.6	2,097
East Africa				Chad	137	53.5	2,097
Burundi	49	19.8	2,088	Cote d'Ivoire	105	39.6	2,097
Ethiopia*	100	72.2	2,088	Gambia	183	64.5	2,097
Kenya	134	58.0	2,088	Ghana	73	29.9	2,097
Rwanda*	27	25.0	2,088	Guinea	79	46.5	2,097
Somalia*	87	51.1	2,088	Guinea- Bissau	200	66.1	2,097
Sudan*	139	53.2	2,088	Liberia*	105	46.4	2,097
Tanzania	120	48.1	2,088	Mali	202	77.5	2,097
Uganda	66	27.6	2,088	Mauritania	181	54.9	2,097
North Africa				Niger	233	72.3	2,097
Algeria	185	55.9	2,187	Nigeria	92	41.8	2,097
Egypt	185	62.1	2,187	Senegal	177	62.3	2,097
Morocco*	209	54.1	2,187	Sierra Leone*	89	53.4	2,097
Tunisia	172	54.0	2,187	Togo	90	47.9	2,097
Southern Africa				Asia			
Angola*	64	33.7	2,108	Afghanistan	204	77.7	2,039
Lesotho	145	76.0	2,108	Bangladesh*	167	84.2	2,039
Madagascar	118	59.3	2,108	India*	159	63.2	2,039
Malawi	161	66.3	2,108	Indonesia	169	69.9	1,989
Mozambique*	72	32.7	2,108	Nepal	196	80.4	2,039
Swaziland	190	50.0	2,108	Pakistan	153	60.5	2,039
Zambia	177	72.8	2,108	Philippines	139	25.0	1,989
Zimbabwe*	178	59.1	2,108	Sri Lanka	136	55.5	2,039
				Vietnam	171	72.5	1,989
				Latin America			
				Bolivia	71	43.9	2,133
				Costa Rica	91	36.1	2,024
				Dominican Republic	66	30.9	2,024
				El Salvador	141	55.3	2,024
				Guatemala	136	61.9	2,024
				Haiti*	86	37.9	2,025
				Honduras	97	52.9	2,024
				Jamaica	109	35.9	2,025
				Nicaragua	125	48.8	2,024
				Panama	78	41.9	2,024
				Peru*	88	45.2	2,133

Note: Food use is average 1988/89-1992/93

*Individual country analysis

Appendix 2: Guide to the Assessment Tables and Methodology

For estimation purposes, the 60 countries included in this report have been summarized in seven regions: Central Africa, East Africa, North Africa, Southern Africa, West Africa, Asia, and Latin America. Food aid needs are estimated on an aggregate basis for each region from individual country data. Detailed assessments of food aid needs are provided for selected countries listed in appendix 1. The selection was based on several criteria, including emergency aid needs, extraordinary refugee situations, and the importance of the country in the region.

Historical Data

Historical supply and use data for 1983/84 to 1992/93 for most variables are from USDA. Food aid and commercial import data are from the Food and Agriculture Organization (FAO). Historical nonfood-use data, including seed, waste, processing use, and other use, are estimated from the FAO *Food Balance* series.

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 low-income countries, cereals account for at least 50 percent of all calories consumed (see appendix 1). In addition, the bulk of all international food aid is provided in the form of cereals.

Food Aid Needs Definition

Food aid needs are defined as the gap between target consumption and the availability of cereals for food use. 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 allowance 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 Aid Needs Projection Methodology

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.

Target Food Use Projections

The procedures to estimate (project) target consumptions are:

1) *Status quo food use target.* The objective of the first consumption target is to support average per capita consumption of the recent past. The most recent 5-year average is used to estimate per capita consumption and eliminate short-term fluctuations.

2) *Nutrition-based food use target.* 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 several 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 are regional averages rather than country specific.

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 a relatively high standard 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 Projections

The calculation of cereal availability for human consumption is based on estimates of production, nonfood use (including exports, feed, seed, and waste), beginning and ending stocks, and commercial imports.

Production. Production for 1993/94 is based on USDA estimates as of August 1993. For most countries production in 1994/95 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. Exceptions to this method are cited by the authors.

Nonfood use. Historical nonfood use for seed and waste are estimated using the FAO Food Balance series. Export and feed use figures are USDA data. Except in the case of a country where an internal structural change called for exports, seed, feed, and other nonfood use are projected using a 10-year average (exceptions are cited by the authors). 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.

Stocks. For 1993/94, ending stocks are based on USDA forecasts. For 1994/95, ending stocks are determined based on projected production levels relative to those of 1993/94, and on the level of 1993/94 ending stocks relative to historical maximum and minimum levels in the past 10 years. If 1994/95 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 available for food use in poor production years and, therefore, help stabilize food aid needs. Exceptions to this method are cited by the authors.

Commercial Import Projections. The procedure for calculating commercial import capacity was changed for this report from using vector autoregression models to one that relies on historical economic relationships. For most countries the current method of forecasting commercial cereal imports for 1993/94 and 1994/95 uses the total value of merchandise imports and the total value of cereal imports. Total merchandise imports are first estimated for 1993/94 and 1994/95 using time-trend regression. The projections of the value of total merchandise imports are based on ten years of data and a log-log form regression is used:

$$\ln(\text{impval}) = \alpha_i + \beta_1 \ln(\text{YR})_i + \epsilon_i$$

Commercial cereal import values for 1993/94 and 1994/95 are found by applying a 5-year constant share of cereal imports to the value of total merchandise imports. Using a 5-year constant share of commercial cereal imports ensures that

year-to-year fluctuations in cereal imports due to weather or other factors, will not skew the projections for 1993/94 and 1994/95.

The quantity of total cereal imports is estimated using the projections of total cereal import values explained above, and cereal prices. From 1983/84 to 1992/93, the unit values (prices) were found by dividing the value of total cereal imports by their quantity. For the projected years, a unit value for grain was calculated using the USDA reference price for specific crops, weighted by the importance of that crop in the value of total grain imports (a 5-year share). Using the unit values, the quantity of total cereal imports for 1993/94 and 1994/95 was then found by dividing the total cereal import value by unit value.

The exceptions to this method are cited by the authors.

Tables Entitled "Region/Country/Summary"

Production Historical data to 1992/93. Forecasts for 1993/94-1994/95.

Beginning stocks Historical data to 1992/93. Forecasts for 1993/94-1994/95.

Commercial imports Historical data to 1992/93. Forecasts for 1993/94-1994/95.

Food aid receipts Historical data to 1992/93. Forecasts for 1993/94-1994/95.

Exports, feed and other nonfood use Historical data to 1992/93. Targets for 1993/94-1994/95.

Ending stocks Historical data to 1992/93. USDA estimates for 1993/94 and 1994/95 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 1992/93, and forecasts for 1993/94 and 1994/95.

Food use, per capita food use Historical data to 1992/93, with status quo and nutrition-based targets for 1993/94-1994/95.

Population Historical data to 1992/93. Forecasts for 1993/94-1994/95.

Appendix 3: Country indicators

Region and country	Grain production						Macroeconomic indicators					
	Population 1992	Population growth 1983-92	Average 1990-92	Growth 1983-92	Per Capita growth 1983-92	Coefficient of variation	Per capita GNP 1991	Per capita GNP growth 1980-91	GDP growth 1980-91	Export earnings growth 1980-91	Reserves/imports	Debt service ratio 1991
	,000	Percent	1,000 tons		Percent		U.S. dollars			Percent		
North Africa												
Algeria	26,667	2.9	2,899	2.1	-0.8	33.7	1,980	-0.7	3.0	2.4	12.9	73.7
Egypt	56,369	2.7	12,102	6.5	3.8	8.0	610	1.9	4.8	2.8	33.4	16.7
Morocco	26,709	2.3	5,941	6.3	4.0	27.4	1,030	1.6	4.2	5.9	36.2	27.8
Tunisia	8,446	2.5	2,088	11.8	9.3	39.5	1,500	1.1	3.7	5.6	19.9	22.7
Central Africa												
Cameroon	12,658	3.7	875	2.6	-1.1	15.4	850	-1.0	1.4	11.5	6.6	18.7
Central African Rep.	3,029	2.8	124	5.0	2.3	36.7	390	-1.4	1.4	1.3	60.1	11.4
Zaire	39,084	3.8	1,183	4.4	0.6	7.9	220	--	--	--	12.3	15.4
West Africa												
Benin	4,998	3.7	527	3.7	0.0	13.4	380	-0.9	2.4	11.3	18.5	6.2
Burkina Faso	9,654	3.3	1,862	9.0	5.8	15.7	290	1.2	4.0	6.5	57.7	9.1
Cape Verde	398	3.1	10	16.5	13.4	116.0	750	2.3	--	--	76.5	--
Chad	5,239	2.3	719	9.5	7.3	33.2	210	3.8	5.5	--	43.6	4.5
Cote d'Ivoire	13,497	4.5	1,054	4.1	-0.4	7.3	690	-4.6	-0.5	4.5	0.6	43.4
Gambia	902	3.4	104	6.9	3.5	22.6	360	-0.1	--	--	38.6	--
Ghana	16,185	3.8	1,040	9.5	5.7	21.8	400	-0.3	3.2	5.2	24.7	26.9
Guinea	7,784	3.8	530	5.5	1.6	33.9	460	--	--	--	5.3	17.9
Guinea-Bissau	1,047	2.7	161	9.2	6.4	22.8	180	1.1	3.7	-2.5	0.0	--
Liberia	2,462	0.9	122	-5.5	-6.4	7.7	--	--	--	--	1.1	--
Mali	8,641	2.6	1,995	7.3	4.7	15.9	280	-0.1	2.5	6.7	55.4	4.6
Mauritania	2,059	3.4	139	23.4	20.0	45.6	510	-1.8	1.4	5.6	19.3	16.8
Niger	8,053	3.4	1,909	5.7	2.3	20.1	300	-4.1	-1.0	1.8	54.4	50.4
Nigeria	92,134	3.3	8,043	9.6	-2.8	12.6	340	-2.3	3.1	1.2	78.1	25.2
Senegal	8,205	3.5	882	6.0	2.5	23.4	720	0.1	1.9	5.6	1.4	19.9
Sierra Leone	4,457	3.1	258	-4.0	-7.1	10.3	210	-1.6	1.1	-3.0	4.9	--
Togo	3,959	4.1	419	0.8	-3.3	16.2	410	-1.3	1.8	6.5	83.8	7.3
East Africa												
Burundi	6,022	3.6	352	2.2	-1.4	10.4	210	1.3	4.0	8.6	68.4	31.5
Ethiopia	54,270	3.5	5,037	3.7	0.2	13.9	120	-1.6	1.6	1.9	4.5	18.6
Kenya	26,164	4.3	2,977	4.3	-0.0	14.6	340	0.3	4.2	2.9	10.5	32.7
Rwanda	8,206	4.2	262	-1.7	-5.9	11.4	270	-2.4	0.6	--	29.6	17.6
Somalia	7,235	2.2	322	-7.9	-10.1	25.1	--	--	--	--	4.1	11.7
Sudan	28,305	3.3	3,855	13.5	10.3	27.3	--	--	--	-1.2	1.3	--
Tanzania	27,972	3.1	3	0.3	-2.8	17.2	100	-0.8	2.9	1.9	13.7	24.6
Uganda	19,386	4.3	1,525	1.0	-3.4	11.6	170	--	--	2.3	7.3	70.0

--Continued

Appendix 3: Country indicators (cont.)

Region and country	Population 1992	Population growth 1983-92	Grain production				Macroeconomic indicators					
			Average 1990-92	Growth 1983-92	Per Capita growth 1983-92	Coefficient of variation	Per capita GNP 1991	Per capita GNP growth 1980-91	GDP growth 1980-91	Export earnings growth 1980-91	Reserves/imports	Debt service ratio 1991
	1,000	Percent	1,000 tons		Percent		U.S. dollars			Percent		
Southern Africa												
Angola	8,902	2.6	327	1.7	-0.9	13.4	--	--	--	--	13.9	--
Lesotho	1,849	3.0	144	-1.4	-4.4	29.1	580	-0.5	5.5	--	11.6	4.6
Madagascar	12,596	3.6	1,601	0.4	-3.2	4.2	210	-2.5	1.1	0.3	59.2	32.0
Malawi	9,605	5.0	1,223	-2.9	-7.9	10.1	230	0.1	3.1	5.6	66.8	25.0
Mozambique	15,469	1.9	508	-3.9	-5.8	19.5	80	-1.1	-0.1	--	26.6	10.6
Swaziland	913	4.2	114	3.0	-1.2	35.9	1,050	3.1	--	--	35.8	--
Zambia	8,745	4.2	1,026	-1.2	-5.4	23.1	--	--	0.8	-3.2	24.1	50.3
Zimbabwe	11,033	4.0	1,850	-0.7	-4.7	27.3	650	-0.2	3.1	0.4	12.1	27.2
Asia												
Afghanistan		2.1	2,880	-5.8	-7.9	13.7	--	--	--	--	33.0	--
Bangladesh	119,412	2.7	19,167	2.7	-0.0	4.6	220	1.9	4.3	7.2	25.9	19.9
India	886,362	2.3	158,537	2.3	-0.1	6.0	330	3.2	5.4	7.4	16.9	30.7
Indonesia	195,684	2.1	35,118	2.3	0.2	5.6	610	3.9	5.6	4.5	43.6	32.7
Nepal	20,086	2.8	4,371	3.3	0.6	8.4	180	2.1	--	8.1	46.7	13.6
Pakistan	121,665	3.3	19,727	2.6	-0.8	6.1	400	3.2	6.1	9.9	6.0	21.1
Philippines	67,114	2.6	10,899	3.0	0.4	6.0	730	-1.2	1.1	3.3	18.2	23.2
Sri Lanka	17,632	1.6	1,598	-1.4	-2.9	13.3	500	2.5	4.0	6.3	21.1	13.9
Vietnam	68,964	2.5	14,541	4.7	2.3	8.1	--	--	--	--	--	13.8
Latin America												
Bolivia	7,323	2.8	744	3.4	0.5	12.2	650	-2.0	0.3	4.5	22.8	34.0
Costa Rica	3,187	3.1	177	-7.2	-10.3	24.0	1,850	0.7	3.7	4.6	46.6	18.4
Dominican Republic	7,516	2.4	338	-3.5	-5.8	13.0	940	-0.2	1.7	-1.5	12.4	11.6
El Salvador	5,574	2.4	816	3.7	1.3	11.3	1,080	-0.3	1.0	-2.7	31.0	17.2
Guatemala	9,590	3.2	1,389	1.6	-1.6	8.7	930	-1.8	1.1	-0.7	33.0	15.3
Haiti	6,432	2.6	333	-2.7	-5.2	20.9	370	-2.4	-0.7	-4.5	4.3	6.6
Honduras	5,093	3.3	700	3.5	0.3	11.3	580	-0.5	2.7	-0.7	6.0	30.6
Jamaica	2,507	1.0	4	-3.5	-4.4	65.2	1,380	0.0	1.6	0.8	8.6	29.4
Nicaragua	3,878	3.2	408	1.8	-1.4	16.8	460	-4.4	-1.9	-4.2	--	--
Panama	2,530	2.4	199	-1.1	-3.5	9.8	2,130	-1.8	0.5	0.0	8.6	3.9
Peru	22,768	2.5	1,317	-1.8	-4.3	12.4	1,070	2.4	-0.4	1.1	20.1	27.7

-- = data unavailable or not applicable due to inconsistent data set.

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