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FOOD SECURITY ASSESSMENT



Situation and Outlook Series

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Preface

This report continues the series of food assessments begun in the late 1970s. Global Food Assessments were done from 1990 to 1992, hence the GFA series. In 1993, the title was changed to Food Aid Needs Assessment to more accurately reflect the contents of the report, which focuses on selected developing countries with past or continuing food deficits. In 1997, we widened our analysis beyond the assessment of aggregate food availability to include more aspects of food security. We therefore changed the title to Food Security Assessment.

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Food Consumption in 30 of 67 Developing Countries Likely To Lag Nutritional Standards in 2009

Broad trends in food production and prices indicate a decline in the share of people who do not have access to adequate food levels. However, the aggregate figure masks variation in food security among regions, countries, and income groups within countries. The food security position of low-income countries is evaluated by projecting the gaps between food consumption (domestic production, plus commercial imports, minus non-food use) and consumption targets through the next decade. The targets are: 1) maintaining per capita food consumption at 1996-98 levels (also referred to as status quo), and 2) meeting minimum recommended nutritional requirements.

In 1999, the food gap to maintain per capita consumption at 1996-98 levels in 67 low-income developing countries is estimated at nearly 13 million tons, about 2 million tons more than estimated for 1998. Around 400,000 tons of the increase arose from adding a new country, North Korea, to the analysis this year. The gap to meet minimum nutritional requirements is estimated to be higher at 15 million tons. Despite the increase in the gap, the share of people who do not have access to adequate food levels is projected to decline from 34 percent in 1999 to 32 percent in 2009. The 67 countries in the study either have been or may become food aid recipients. In the projections, however, the availability of food aid is excluded. Therefore, depending upon future food aid availabilities, some or all of the projected food gaps can be eliminated.

During the next decade, the food gaps with respect to both consumption targets are projected to widen. The gap to maintain per capita consumption increases 37 percent to 17.4 million tons in 2009, while the nutritional gap expands 54 percent to more than 23 million tons. Food consumption is projected to fall short of the nutritional requirement in 30 countries, while 45 countries are expected to face a decline in per capita consumption in 2009.

Unequal purchasing power exacerbates food insecurity in the 67 countries. As would be expected, the estimated results show food consumption in the lowest income quintile to be much lower than that of the highest income quintile. For example, food consumption by people in the lowest income quintile in the Latin American countries—the region with the most skewed income distribution—is estimated to equal only 79 percent of the minimum nutritional requirement in 1999, compared with 126 percent in the highest income quintile.

For the 67 countries as a whole, the “distribution gap” (the amount of food needed to raise consumption of each income group to the minimum nutritional requirement) is projected

to widen 17 percent over the next decade and exceed 33 million tons in 2009. The growth of this gap surpasses the growth in the number of people becoming food insecure. In fact, the number of people failing to meet nutritional requirements is projected to grow less than 13 percent to nearly 1 billion by 2009. This implies that the distribution-related problems will intensify more than they will spread.

Sub-Saharan Africa is projected to account for about 50 percent of the food gap to maintain consumption and 70 percent of the nutritional gap of the 67 countries in 2009. Despite significant growth in the region’s agricultural production, the relatively high population growth and limited financial resources that constrain imports will lead to declining per capita consumption.

The distribution gap, which incorporates the impact of skewed income distribution, is projected to be 33 percent higher than Sub-Saharan Africa’s average national nutritional gap. Based on the estimated distribution gap, the number of people who fail to meet their nutritional requirement is projected to jump 40 percent over the next decade to 438 million in 2009. This means that 60 percent of the region’s population will be food insecure.

Afghanistan, Bangladesh, and North Korea account for all of the nutritional food gaps in the Asian region. The number of people who can not meet their nutritional requirements is projected to decline 19 percent through 2009.

Per capita food consumption in the Latin American and Caribbean countries is expected to stagnate over the next decade. The projected distribution gap for the region is more than two times the average national nutritional gap in 2009. The number of people who can not meet their nutritional requirement is projected to increase 32 percent between 1999 and 2009. The region’s food import dependency is projected to rise to 47 percent by 2009, indicating that foreign exchange availability to support food imports will be crucial to the food security of Latin America and the Caribbean over the long term.

Per capita food consumption in North Africa, on average, is projected to remain above nutritional requirements during the next decade. However, a relatively small food gap to maintain base per capita consumption levels is projected, primarily in Algeria and to a lesser extent in Egypt.

Of the five New Independent States included in the study, only Tajikistan is projected to be vulnerable to food insecurity in the long term. Consumption in the other four countries is projected to rise, assuming continued peace.

Global Food Security: Overview

Food insecurity in many low-income countries is projected to intensify, and unequal distribution of food within countries exacerbates the situation. Significant increases in export earnings leading to larger food imports can improve food security positions, but the gains are not uniform across countries. This implies that in addition to trade, internal performance of the food production systems of the low-income countries will be critical in improving food security. [Shahla Shapouri]

Food Insecurity Grows Over Time

The broad trends in global food production and prices indicate an improvement in food security and a decline in the proportion of people who do not have access to adequate food.

The aggregate figure, however, masks the variation in food security among regions, countries, and income groups. The nature of food security problems also differs both in magnitude and in causes among countries. In lower income countries, inadequate resources, both physical and financial, are the root causes of the food security problem. In higher income, developing countries, food insecurity stems from the unequal distribution of food resulting from wide disparities in purchasing power. The differences in the causes of food insecurity influence the assessment of the amount of food needed and strategies required to achieve food security.

The future food security position of the 67 developing countries included in this study is evaluated by projecting the gaps between food consumption (domestic production, plus commercial imports, minus nonfood use) and two different consumption targets through the next decade. It should be emphasized that the availability of food aid is excluded in these projections. The two consumption targets are: 1) maintaining per capita consumption at 1996-98 levels (also referred to as status quo) and 2) meeting minimum recommended nutritional requirements (see box "How Food Security Is Assessed"). The estimated nutritional gap only measures the gap in calorie consumption and does not consider other factors such as poor utilization of food due to inadequate consumption of micronutrients and lack of health and sanitary facilities.

These national level analyses mask the impact of unequal incomes on food security. People in lower income groups have larger nutrition gaps than wealthier people. The distribution gap is the amount of food required to raise food consumption for each income group to the level that meets the nutritional requirement.

What Is New in This Report...

This report focuses on 67 lower income developing countries, one country—North Korea—more than was included in the 1998 Food Security Assessment report. All historical and

projected data have been updated. The food production estimates for 1999 are based on USDA data as of October 1999. The most significant changes in projection results are due to the use of the latest United Nations population projections that show a much faster decline in population growth than their earlier projections (see box "Population Estimates").

In this report, we have included an accelerated export growth scenario that examines the implications of faster export earnings growth on food security of the study countries (see box "Accelerated Export Growth Scenario").

This report also includes an overview section on the issues important to developing countries with respect to upcoming trade liberalization rounds. Trade issues that are particularly important for Sub-Saharan Africa, lower income Latin America, and South Asian countries are highlighted in separate articles.

Lower Population Growth Reduces the Size of the Food Gaps

The long term food gaps for the 67 countries are lower than those reported in last year's assessment, principally due to lower rates of population growth. The regional pattern of food insecurity, however, remains the same. Slow production growth continues to be a threat to the food security of countries facing foreign exchange constraints that limit their ability to use food imports to compensate for production shortfalls. The status quo food gaps (or food needed to maintain per capita consumption at the 1996-98 base level) are estimated at 13 million tons for 1999. The food gaps to meet minimum nutritional requirements are estimated at 15 million tons. Weather-related production shortfalls account for about 62 percent of the status quo and 9 percent of nutritional gaps in 1999.

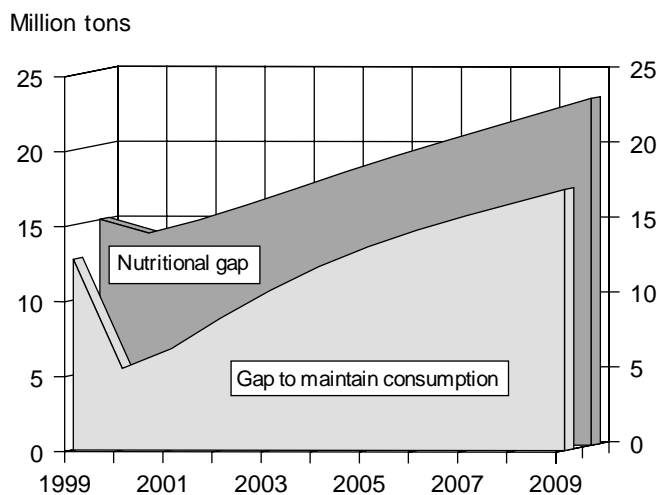
Depending on the future availability of food aid, a portion or all of the projected food gaps can be eliminated. For example, in 1998 roughly 7.1 million tons of food aid were distributed globally. If the same amount is provided in 1999, it would fill more than 70 percent of the calculated gap to maintain per capita consumption and nearly half of the nutritional gap. The latest forecast for 1999 global food aid is much higher, 9.65 million tons, but the amount going to low-

Table 1--Food Availability and Food Gaps for 67 Countries

Year	Grain production	Root production (grain equiv.)	Commercial imports	Food aid receipts (grains)	Aggregate availability of all food	Population
			---1,000 tons ---			Million
1990	359,382	48,863	29,893	10,136	558,363	2,141
1991	374,218	52,856	30,353	10,638	577,435	2,188
1992	378,099	55,535	42,585	10,189	597,221	2,262
1993	386,545	57,389	44,549	8,224	619,280	2,310
1994	395,402	58,559	46,570	7,757	625,951	2,358
1995	397,171	59,428	54,204	6,117	656,991	2,406
1996	419,032	61,053	48,269	5,516	668,989	2,454
1997	406,284	60,912	56,816	4,690	697,155	2,503
1998	423,931	61,318	68,143	5,034	706,255	2,552
Projections				Food gap*		
				SQ	NR	(w/o food aid)
1999	423,891	62,609	62,534	12,709	15,023	694,736
2004	472,056	67,726	69,179	12,245	18,204	766,722
2009	514,343	73,213	78,561	17,427	23,141	840,095

*SQ stands for *status quo* and describes the amount of grain equivalent needed to support 1996-98 levels of per capita consumption and NR stands for *nutritional requirements* and describes the amount needed to support minimum nutritional standards (see box "How Food Security Is Assessed.")

Figure 1
Food Gaps in All 67 Countries, 1999-2009



income, food-deficit countries is estimated to be below 7 million tons, less than half of the estimated nutritional gap.

The long term projections indicate growing food gaps with respect to both consumption targets in the 67 countries. Forty-five of the countries are expected to face a declining per capita consumption trend through the next decade. Food consumption is projected to fall short of nutritional requirements in 30 countries in 2009.

When the impact of unequal incomes is taken into account, the estimated results show food consumption in the lowest income quintile to be much lower than the national average. For example, the lowest income quintile in the Latin American countries—the region with the most skewed income distribution—is estimated to consume only 79 percent of the nutritional requirement in 1999, compared to 126 percent in the highest income quintile. The distribution gap (the amount of food need to raise consumption of each income group to meet the minimum nutritional requirement) in all study countries is projected to increase more than 17 percent during the next decade, exceeding 33 million tons in 2009. This gap is 43 percent wider than the regions' average national nutrition food gap.

Based on the estimated distribution gaps, we calculated the number of people (in each income quintile) whose consumption falls short of the minimum nutritional requirement in each country. For the 67 countries, the number of people failing to meet the nutritional target is projected to grow less than 13 percent during the next decade, reaching 978 million by 2009. (It should be noted that in the 1998 Food Security Assessment Report, this number was higher because of the higher population growth projections—1.14 billion for 2008). The results also indicate that the estimated growth of the distribution gap—17 percent—surpasses the growth in the number of people becoming food insecure. This means distribution-related nutritional problems will intensify more than they will spread.

Table 2--Ratio of Food Consumption to Nutritional Requirements

Region	Year	Income quintiles				
		Lowest	Second	Third	Fourth	Highest
North Africa	1999	1.10	1.18	1.24	1.30	1.41
	2009	1.21	1.27	1.32	1.37	1.48
Sub-Saharan Africa	1999	0.81	0.90	0.96	1.03	1.19
	2009	0.80	0.88	0.95	1.01	1.17
Asia	1999	0.95	1.02	1.07	1.13	1.23
	2009	0.97	1.04	1.10	1.15	1.27
Latin America & Caribbean	1999	0.79	0.94	1.02	1.10	1.26
	2009	0.83	0.93	1.01	1.08	1.28
NIS 1/	1999	0.78	0.88	0.93	0.99	1.08
	2009	0.96	1.05	1.11	1.18	1.30

1/ Based on average regional income distribution.

Sub-Saharan Africa Remains the Most Vulnerable Region

Sub-Saharan Africa (37 countries) is projected to account for about 50 percent of the food gap to maintain consumption and 70 percent of the total nutritional gap (of the 67 study countries) in 2009. Despite significant growth in Sub-Saharan Africa's agricultural production, relatively high population growth, and limited financial resources that constrain imports, will lead to declining per capita consumption. Projected production growth of 2.1 percent per year through the next decade is slightly lower than the projection included in the 1998 assessment because of slower growth in the availability of labor, the principal input in production. It should be noted that in the Food Security model, the marginal productivity of labor is assumed constant over the projection period. For the Sub-Saharan countries, this may be an overestimation because the decline in population growth is in part due to the spread of AIDS, which affects the most productive segment of the population, those aged 15 to 45. This age cohort comprises nearly 50 percent of the region's population. Their deaths lead to a disproportionately high number of old people and children, including millions of orphans, who are less productive members of the economy.

The decline in per capita consumption is reflected in an almost twofold increase in the status quo food gap and a 44-percent increase in the region's nutrition gap over the next decade. Of the 37 countries covered in the study, on average, per capita food consumption is projected to rise in only 8 countries, and 15 countries should be able to supply adequate food to meet their nutritional requirement in 2009.

The distribution gap, which incorporates the impact of skewed income distribution, is projected to rise from more than 15 million tons in 1999 to more than 21 million tons in 2009, 33 percent higher than the national average nutrition gap. Based on the estimated distribution gap, the number of people in different income quintiles who fail to meet their nutritional requirement is projected to jump 40 percent to

438 million in 2009. This increase is roughly triple the rate of the 67 countries as a whole.

The 1999 estimates of food gaps are highly influenced by production variability, either weather-related or due to civil strife. Food aid shipments to these countries have declined through time, from 8.1 million tons or about 50 percent of total food imports in the early 1980s, to roughly 2 million tons or 13 percent in 1998. Without a significant increase in food aid, per capita food consumption will certainly decline for the next decade.

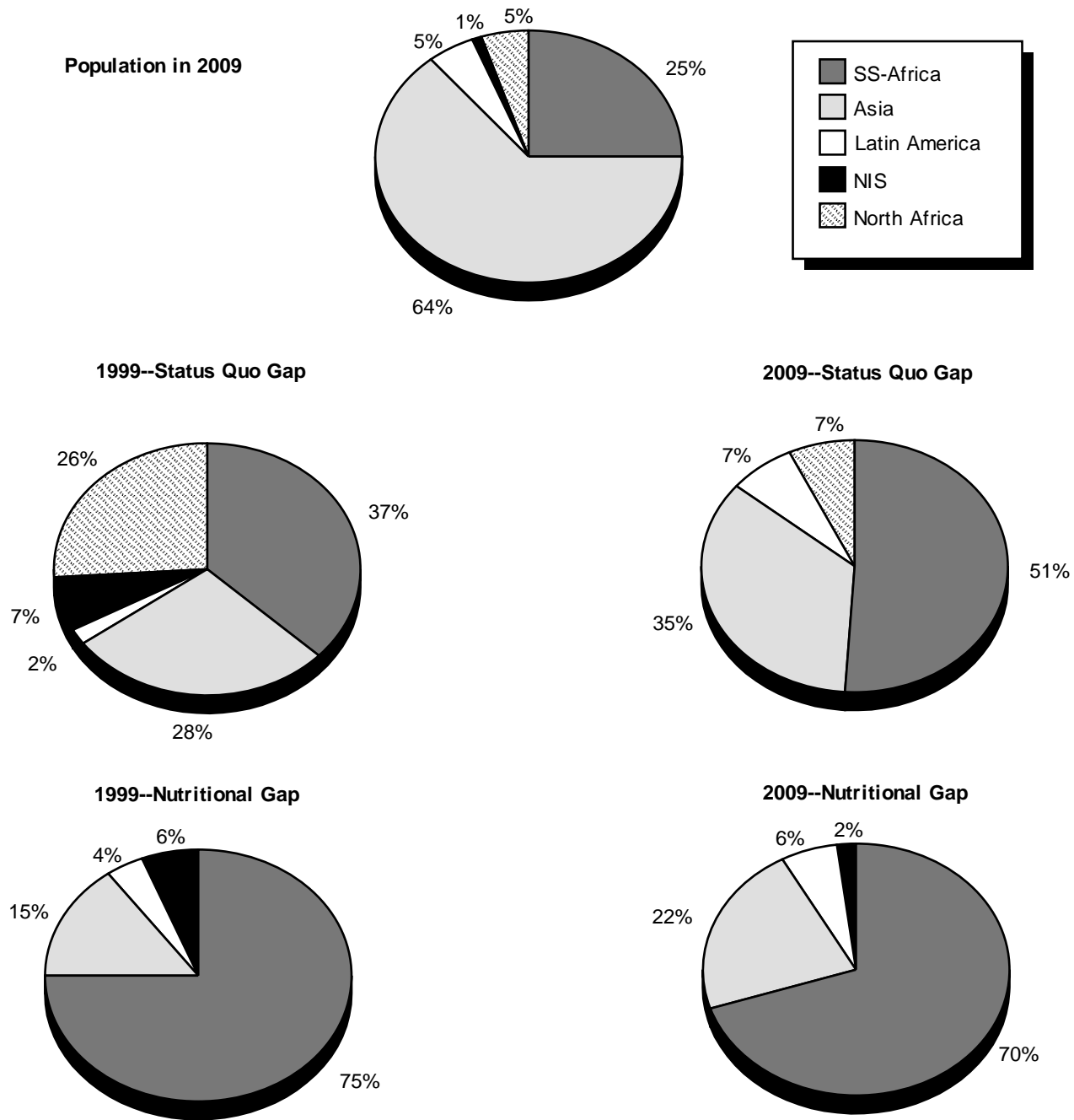
Low-income Asia and Latin America Face Consumption Declines and Distribution Problems

The 10 countries in the Asian region studied here are projected to face declining per capita consumption levels, on average, and the food required to maintain per capita consumption and the minimum nutritional standard is projected to double during the next decade. Afghanistan, Bangladesh, and North Korea account for all of the region's nutrition gaps during the projection period. The region's distribution gap is projected to decrease 11 percent between 1999 and 2009, and the number of people who cannot meet their nutritional requirement is projected to decline 19 percent over the next decade. However, the region is still projected to account for nearly half of the people who cannot meet their nutritional requirement in the study countries in 2009.

Per capita food consumption in the lower income Latin American and Caribbean countries (eleven countries) is expected to stagnate over the next decade. Despite a relatively slow increase in food production of 1.7 percent per year, strong commercial import growth of 2.1 percent will raise food supplies sufficiently to keep up with population growth. The average regional performance masks the individual country situation. Among countries, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, and Peru are projected to experience declining per capita consumption

Figure 2

Sub-Saharan Africa Has Only 25 Percent of the Population of the 67 Countries, But Accounts for 75 Percent of the Nutritional Gap in 1999



How Food Security Is Assessed

The commodity coverage in this report has been expanded from the Food Security Assessment published in 1998. In addition to grains and root crops, the commodity coverage includes a group called “other.” The three commodity groups in total, account for 100 percent of all calories consumed in the study countries. This report projects food consumption and access in 67 lower income developing countries—37 in Sub-Saharan Africa, 4 in North Africa, 11 in Latin America and the Caribbean, 10 in Asia, and 5 in the NIS (see appendix 2 for a list of countries and appendix 1 for a detailed description of the methodology). The projections are based on 1996-98 data. The periods covered are 1999 (current), 2004 (5 years out), and 2009 (10 years out). Projections of food gaps for the countries through 2009 are based on differences between consumption targets and estimates of food availability, which is domestic supply (production plus commercial imports) minus nonfood use. The estimated gaps are used to evaluate food security of the countries.

The food gaps are calculated using two consumption targets: 1) *maintaining base per capita consumption or status quo (SQ)*, which is the amount of food needed to support 1996-98 levels of per capita consumption, and 2) *meeting nutritional requirements (NR)*, which is the gap between available food and food needed to support a minimum per capita nutritional standard (for definitions of terms used see the methodology in appendix 1). Comparison of the two measures either for countries, regions, or the aggregate, indicates the two different aspects of food security: consumption stability and meeting the nutritional standard.

The aggregate food availability projections do not take into account food insecurity problems due to food distribution difficulties within a country. Although lack of data is a major problem, an attempt was made in this report to project food consumption by different income groups based on income distribution data for each country. The concept of the income-consumption relationship was used to allocate the projected level of food availability among different income groups. The estimated “*distribution gap*” measures the food needed to raise food consumption of each income quintile to the minimum nutritional requirement. Finally, based on the projected population, the number of people who cannot meet their nutritional requirements is projected.

The common terms used in the reports are: *domestic food supply*, which is the sum of domestic production and commercial imports; *food availability*, which is food supply minus nonfood use such as feed and waste; *import dependency*, which is the ratio of food imports to food supply, and *food consumption* which is equal to food availability.

levels. The distribution gap that stems from highly skewed purchasing power intensifies food insecurity in Latin America and the Caribbean. The projected distribution gap for the region in 2009 is more than two times the average national nutritional gap. Based on the estimated distribution gap, the number of people who cannot meet their nutritional requirement is projected to increase 32 percent between 1999 and 2009.

The food import dependency of the 11 countries in the region is growing. During the 1980s, the import share of food supplies averaged around 30 percent. In 1999, it is estimated at 45 percent and is projected to reach 47 percent in 2009. This means foreign exchange availability to support food imports will play an important role in the region’s food security over the long term.

North Africa and NIS Faced With Risk of Financing Imports

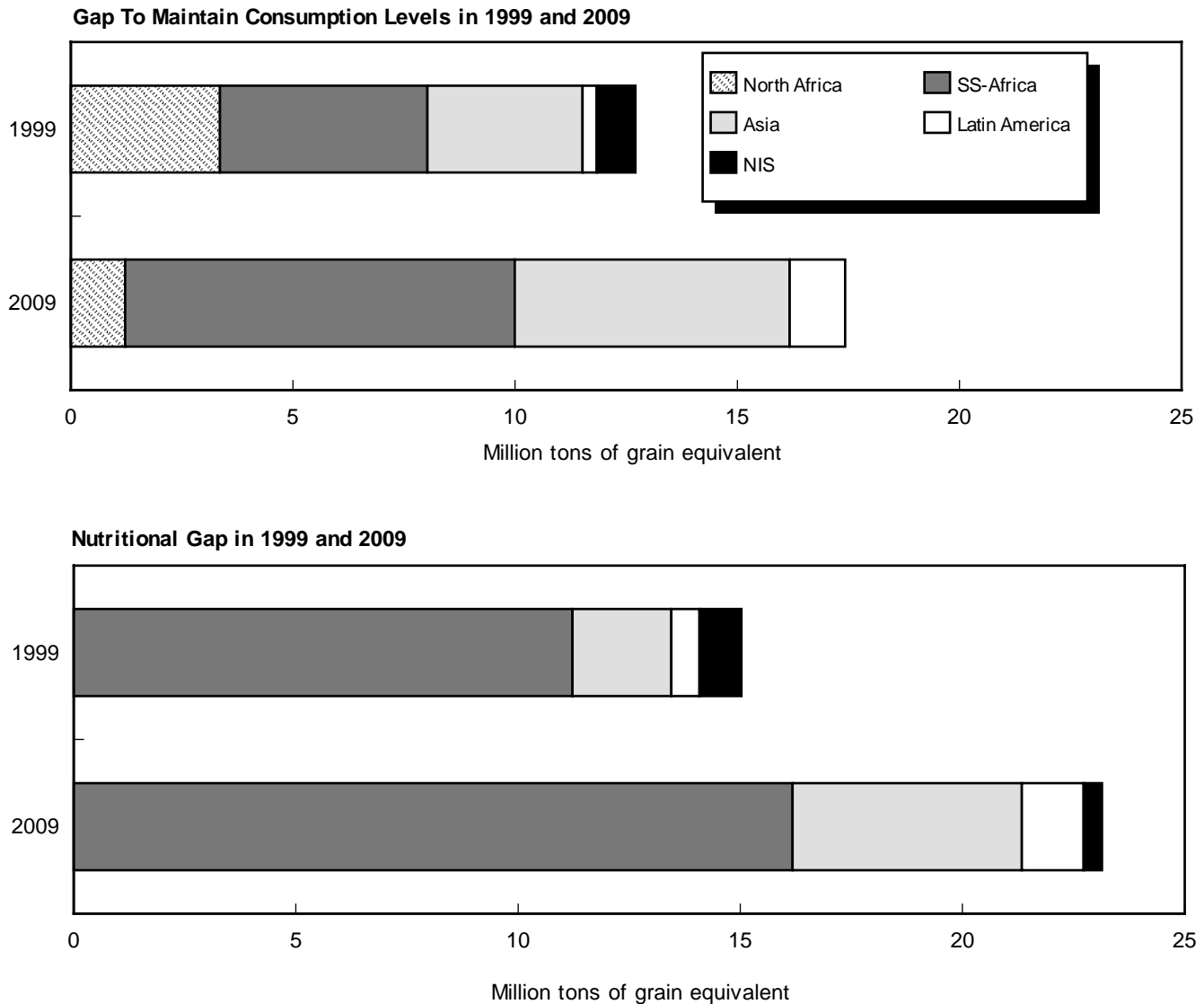
Food imports make up about 42 percent of North Africa’s consumption needs and this level is projected to continue through 2009. Financing this level of imports in the next decade may be difficult. The region’s two largest food importers, Egypt and Algeria, are, to varying degrees,

dependent on oil and gas revenues (directly through exports and also indirectly for Egypt through worker remittances from neighboring OPEC countries). With the real prices of oil and gas recovering, these countries should be able to cover their import needs.

Per capita consumption in Algeria, and to a lesser extent Egypt, is projected to fall short of the base (1996-98) level during the entire projection period. Drought in Morocco in 1999 will reduce food supplies significantly unless food imports are increased 3 million tons above their normal level. The two dominant features of food production in the region are scarcity of physical resources and highly variable output due to erratic rainfall (except in Egypt where irrigation is prevalent).

Of the five NIS countries covered in this report, only Tajikistan is vulnerable to food insecurity in the long term. Consumption in the four other countries is projected to rise during the next decade, assuming continued peace. Political and economic uncertainty is a major issue in the region. Armenia and Azerbaijan have had an uneasy truce over the Karabakh region for a few years now, and Azerbaijan and Turkey continue their trade embargo of Armenia. Georgia

Figure 3
Food Gaps



has on-going internal tensions. Recently, Kyrgyzstan has been battling rebels in the southern part of the country. In Tajikistan, despite its recent peace agreement, there are on-going concerns of rebel activity. In each instance, there is a possibility that conflicts could re-emerge and disrupt agricultural production and trade.

Demand for Food Aid Is Increasing

Food aid, although valuable to food-insecure countries, remains inadequate both in terms of availability and distribution to alter the food security prospects of low-income countries. Food aid shipments for 1998/99 are estimated at roughly 9.5 million tons, about 52 percent larger than the previous year. The main source of the hike in donations was the United States, but the European Union and Japan increased their allocations as well. Although this is the largest food aid donation during the last 5 years, the quanti-

ties allocated to low-income, food-deficit countries did not increase much.

The allocation of the available food aid is not necessarily based on nutritional needs. Other factors such as political instability, collapse of internal marketing systems, and financial difficulties that disrupt commercial imports can play an important role in food aid allocations among countries. For example, in 1999, the bulk of the increase in U.S. food aid was allocated to Russia. Indonesia, which is facing internal political problems, is the third largest recipient of food aid (900,000 tons) after Bangladesh. The share of food aid going to Sub-Saharan Africa—the most food insecure region according to our estimates—is only 23 percent. This food aid will cover only 20 percent of the region’s estimated nutritional gap in 1999.

Population Estimates

This year's analysis was based on the 1998 Revision of UN population estimates and projections. The highlights of those estimates include:

World population reached 6 billion in 1999. Between 1995 and 2000, the world population is projected to grow at 1.3 percent per year, considerably less than the 2 percent per year achieved in 1965-70. In mid-1998, 80 percent of the world's population was living in the less developed regions, and Asia accounted for 61 percent of the world total. Africa's population of almost 750 million has surpassed Europe's (730 million). Latin America and the Caribbean are estimated to exceed 500 million. Ninety-seven percent of the world population increase takes place in the less developed regions.

In the 1998 Revision, population estimates and growth rates are lower than estimated a couple of years ago. The difference is in part due to lower fertility rates in Eastern Europe, but mainly to the devastating impact of AIDS, especially in Sub-Saharan Africa, where 29 countries were studied. In those 29 countries, life expectancy declined to 47 years in 1995-2000 whereas it could have reached 54 years in the absence of AIDS. The region's population growth rate projections have declined from 2.8 percent to 2.5 percent. According to the UN Children's Fund, Sub-Saharan Africa accounts for 48 percent of the world's AIDS cases. The disease has surpassed armed conflict as the number one killer in the region. AIDS killed 1.4 million people in East and Southern Africa in 1998 and left 6 million children orphaned.

What impact does the change in population estimates have on our food security assessment?

This year's food gap projection for 2009 is based on population estimates that are almost 2 percent lower than estimated in last year's report. Latin America and the Caribbean is the only region where population estimates were revised upward (by 2.5 percent). Sub-Saharan Africa shows the most drastic decline, where our 37 countries are projected to have 7 percent less people by 2009 than previously projected. Consequently, food gaps are projected to be lower there, as available food has to be divided among fewer people.

The latest Food Aid Convention, which set the minimum food aid commitment in July 1999, will be implemented for a period of 3 years. Under this latest convention, there is increased flexibility in the list of eligible commodities and distribution methods. The new commodity list includes some products that are part of the diet of the low-income, vulnerable countries such as root crops, cassava, potatoes, and sugar. These products, however, should be limited to less than 20 percent of each donor's commitment, and each individual commodity should not exceed more than 3-7 percent of each donor's total commitments. Under the new convention, the total volume of food aid that the donors have committed to provide is less than the 1995 level, 4.895 million tons versus 5.35 million tons. Although this figure represents a minimum commitment for the donors, it may be an indicator of future trends. If this is the case, future food aid allocations cannot be expected to rise significantly and therefore, certainly not play a role in closing the food gaps for the most vulnerable countries.

Food Security Response to Increased Export Earnings

Since the conclusion of the last multinational trade negotiations, the issue of food security of low-income, food-importing countries, has been the subject of frequent debate. One major concern for developing countries is their ability to finance food imports. Food import dependency among developing countries has grown through time and global

agricultural liberalization is expected to reduce food aid availability as export subsidies fall and food import prices rise. Between 1980 and 1998, grain imports accounted for 43 percent of food supplies in North Africa, on average. The Latin America region was close behind with an import share of 34.3 percent. Sub-Saharan Africa and Asia relied on imports to a much lesser extent, with dependency ratios of 6.3 and less than 3 percent. The low growth of food imports in Sub-Saharan Africa stems from its financial problems, while Asia's policy of self-sufficiency dampens its imports.

A reduction in trade barriers, the subject of multilateral trade negotiations, is expected to boost global trade. In this report, we examined the likely impact of increased export earnings—above projected levels—of the countries on food security (see box "Accelerated Export Growth Scenario"). The accelerated export growth scenario resulted in a 28-percent jump in commercial imports for all the countries combined by 2009. As for the implications for food security, 2009 status quo gaps are projected to fall 35 percent and nutritional gaps by 10 percent, on average, under this scenario. The number of people who fail to meet their nutritional requirement is reduced 9 percent, or 89 million people, by 2009 compared to the baseline projection.

The greatest impact, with respect to a reduction in the nutrition food gap, is expected in the NIS region, 40 percent, followed by Latin America, 33 percent, and Asia, 11 percent. In Sub-Saharan Africa, commercial imports remain small

relative to overall food supplies despite the fact that they are 33 percent higher in this scenario. Consequently, the reduction in the nutrition gap is small, measuring only 7 percent.

In sum, the analysis clearly shows that improved export performance can enhance the food security of the countries, but the impact is much less in the lowest income countries. In many cases, the export growth needed to boost import capacity enough to close the food gaps is simply unrealistic. For example, in Sub-Saharan Africa, commercial food imports must grow nearly 10 percent annually to close the average nutritional gap by 2009.

The parameters used in the model assume that the response of food imports to changes in foreign exchange availability is less than one-to-one (in the range of 0.5 to 0.8, varying by country, with estimates based on cross-country data). This means that, everything being equal, to achieve a 1-percent

growth in food imports, foreign exchange availability must grow 1.3 to 2 percent. Foreign exchange earnings are the sum of net flow of credit and export earnings.

For Sub-Saharan Africa, exports would have to grow about 13 percent per year to achieve the 10-percent growth requirement for imports (assuming net inflow of credit also grows at this rate). Clearly, achieving such a high growth in export earnings in this region is unlikely. Export earnings growth in Sub-Saharan Africa has been very slow through the 1990s. Export volumes have increased marginally, on average, and prices for the commodities exported by the region have not rebounded from their peaks in the early 1980s. This also means that ensuring food security in the poor countries is a complicated task and requires a comprehensive strategy to both increase export earnings and domestic production.

North Africa

Morocco had the largest food gap in the region in 1999 (estimated at 3 million tons), due to a harvest that was 39 percent below trend. Algeria is projected to have the largest food gap over the next decade as there is doubt about its ability to commercially import the grain volumes necessary to sustain current per capita consumption. [Michael Kurtzig and Michael Trueblood]

Over the next decade, average per capita food consumption throughout North Africa is projected to remain above nutritional requirements. However, a relatively small food gap to maintain per capita consumption (2 percent, or about 1.2 million tons) is projected in the region by 2009, primarily in Algeria and to a lesser extent Egypt. Algeria's problems are more political, which has affected the performance of all sectors of the economy. Egyptian grain production growth is expected to slow from a very high rate (5 percent) in the historical period (1980-98). Such productivity gains result from improved seeds and area expansion and are not likely to be sustained. Between 1980 and 1997, North Africa was the most import-dependent region in this study, with imports contributing 44 percent of food supply, on average. This trend is projected to continue during the next decade.

Short term production shortfalls continue to cause food security problems for North Africa, where grain production varies more than in any other region (see appendix 3). Egypt is an exception because most of its crops are irrigated. Morocco's 1999 grain harvest is estimated 44 percent lower than in 1998, and is expected to lead to a food deficit of about 3 million tons based on 1996-98 per capita consumption levels. A country that has become less reliant on food aid in the last few years, Morocco has to double its commercial imports from the 1996-98 average to fill this gap.

Algeria May Be Able To Sustain Current Consumption Levels—While our projection shows a decline in per capita consumption in Algeria, there are signs that the economic situation may improve because of the recently improved political climate. The new government's recent peace agreement with the Islamic opposition may reduce civil strife, which has plagued the country for years. Still, pressing economic problems persist, including high unemployment and a

burdensome foreign debt. The turnaround in oil prices is a positive development because outside the country's hydrocarbon sector, foreign investment remains weak. Algerian agriculture suffers from low yields, inadequate inputs, lack of credit, confusing land reform regulations, insufficient irrigated area, and high dependence on rainfall. As a result, a food gap based on 1996-98 per capita consumption levels is projected for both 2004 and 2009. Closing this food gap from production alone is unlikely. Alternatively, the food gap could be filled by imports if the current growth in oil prices continues, thereby improving the country's financial situation. Currently, imports contribute more than half of food consumption and import dependency is projected to grow in the next decade.

Improvement in Export Performance Could Enhance Food Security—This year's report considers the potential impact of trade liberalization on import capacity. Under the higher export earnings scenario, imports as a share of aggregate availability of all food increase from 42 percent to 48 percent and commercial imports rise about 19 percent, from 24.8 million tons to 29.4 million. Under this scenario, the food gap that is projected in Algeria, with a baseline deficit estimated at 1.1 million tons by 2009, would be eliminated. The higher export earnings can become a reality because all countries in the region have been liberalizing their trade in recent years and have become more outward oriented. Egypt, Morocco, and Tunisia are members of the World Trade Organization; Algeria has applied for accession and currently has observer status. Trade in the region could be affected by the recent Association Agreement with the European Union (AAEU) since the EU has accounted for about 50-80 percent of the export market of the four North African countries in recent years. The AAEU offers trade openings and is a catalyst for trade growth in the region.

Table 3--Food Availability and Food Gaps for North Africa

Year	Grain production	Root production (grain equiv.)	Commercial imports	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	21,261	988	13,277	2,604	36,710
1991	26,890	1,162	13,219	1,345	39,293
1992	20,765	1,085	15,013	831	38,884
1993	19,082	1,053	16,731	418	39,710
1994	24,645	945	19,083	239	41,968
1995	19,881	1,318	19,656	249	47,412
1996	33,105	1,476	16,268	204	45,047
1997	22,440	1,201	20,446	169	46,350
1998	26,990	1,266	20,000	65	45,755
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	24,206	1,382	20,680	3,360	0
2004	29,562	1,507	22,355	1,047	0
2009	31,946	1,639	24,761	1,223	0

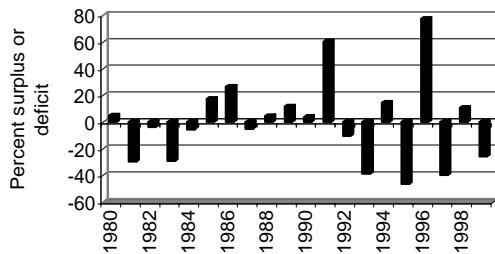
North Africa:
135 million people

North Africa's per capita food consumption is projected above the nutritional requirement level. Major production fluctuations disguise the region's growing import dependency.

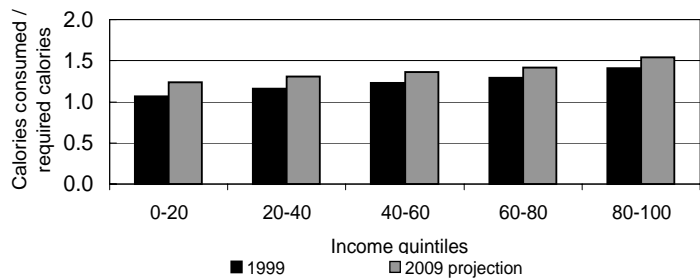
Morocco's low harvest in 1999 will create a food gap of 3.4 million tons based upon recent consumption levels. Algeria faces the most serious food gap over the next decade (1.1 million tons).

There are regional concerns about future export earnings, which are heavily dependent on unstable sources such as oil, tourism, and worker remittances.

North Africa's Grain Production Deviations From Trend (Excludes Egypt)



North Africa's Average Food Consumption Levels Meet Nutritional Requirements



Impact of Accelerated Export Growth Compared to Baseline in 2009

	Commercial grain imports		Nutritional food gap	
	High-export scenario	Baseline	High-export scenario	Baseline
	-----1,000 tons-----			
North Africa	30,213	24,761	0	0
Algeria	7,346	6,206	0	0
Egypt	15,415	12,564	0	0
Morocco	4,959	3,951	0	0
Tunisia	2,493	2,040	0	0

Sub-Saharan Africa

Sixty percent of this region's population is projected to consume below the minimum nutritional requirement in 2009. Even an assumption of accelerated export growth rates, resulting from a new round of trade negotiations, would leave commercial imports too low to compensate for production shortfalls. Increases in domestic agricultural productivity are also needed to close food gaps. [Stacey Rosen]

Per capita consumption in Sub-Saharan Africa stagnated during the last two decades even though annual agricultural production grew 2.5 percent—a rate that met or exceeded that of all the other regions included in this report, except North Africa. With limited financial resources constraining imports, this growth was not sufficient to offset the high population growth rate of more than 2.8 percent per year. While food aid has often played a key role in augmenting food supplies—raising per capita consumption 5-10 percent in many years—it has not been able to accelerate the per capita consumption trend. Moreover, food aid as a share of total imports declined from roughly 50 percent in the early 1980s to 25 percent in more recent years despite the fact that, of all the regions, food aid has played the most significant role in Sub-Saharan Africa. This declining trend is reflective of overall trends in global food aid allocations to food-deficit countries.

The region's production growth is projected to slow to about 2 percent per year through the next decade, slightly lower than the projection included in the 1998 assessment. The main reason for the slower growth is the cut in the population growth rate which lowers the availability of labor. In Sub-Saharan Africa, labor is the principal input in production. In the model, the marginal productivity of labor is assumed constant for the projection period. In Sub-Saharan Africa, this may be considered an overestimation because AIDS is the principal reason for the slower population growth. This being the case, the disease reduces productivity of the most productive segment of a population, those aged 15-45. Nevertheless, the growth in yields is expected to more than double during the projection period relative to the historical period (1980-98). Sub-Saharan Africa's grain yields remain the lowest in the world and with increased use of fertilizer and improved seed varieties, yields could improve considerably. During the historical period, most of the production growth stemmed mainly from an increase in area planted, but that is projected to slow considerably as the land suitable for agriculture diminishes and population pressures limit the potential for expansion.

The region's poor financial position has long constrained the capacity to import and compensate for inadequate production. In the base period (1996-98), imports accounted for only 12 percent of food supplies. In addition to export earn-

ings, net flow of credit is an important determinant of import capacity in the region. During 1980-98, almost half of the region's import bill was supported by external assistance. For the projection period, this inflow is assumed to remain constant. This means that higher export growth will be needed to raise imports.

Although Sub-Saharan Africa's commercial imports are projected to rise 2.6 percent annually through 2009, the import share of food supplies will reach only 16 percent. Therefore, performance of the agricultural sector remains key to the region's food security. Given that production growth is projected to fall short of population growth, per capita consumption will decline 0.3 percent annually through 2009.

The decline in per capita consumption is reflected in the growing status quo food gap, which measures the amount of food needed to maintain per capita consumption at base levels. The gap is estimated at 4.7 million tons in 1999, and increases nearly twofold by 2009. The region's nutrition gap, which measures the amount of food needed to maintain the minimum nutritional requirement, is projected to rise from 11.2 million tons in 1999 to 16.2 million in 2009. The nutrition food gap is projected to exceed commercial imports by 17 percent in 2009.

Poverty and skewed income distribution exacerbate the food insecurity of the region by limiting purchasing power. While the two food gaps mentioned above measure food security at the aggregate level, the "distribution gap" measures food security across five income groups within a country. This gap, which measures the amount of food necessary to raise consumption of each income group to the minimum nutritional target, is projected to rise from more than 15 million tons in 1999 to 21.5 million in 2009, 33 percent higher than the nutrition gap. Examining per capita consumption by income group, the projections indicate that consumption in only the two highest income groups will exceed the minimum nutritional target in 2009. Consumption in the second highest group barely exceeds the target at 101 percent. Fifty-four percent of the region's population is estimated to consume below the nutritional requirement in 1999. This figure is projected to jump to 60 percent (or 438 million people) in 2009.

Table 4--Food Availability and Food Gaps for Sub-Saharan Africa

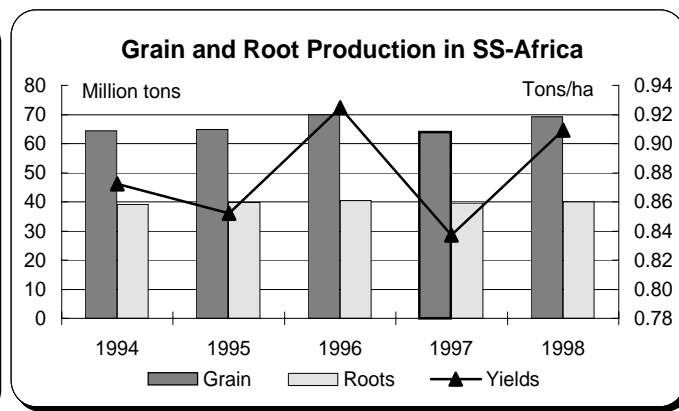
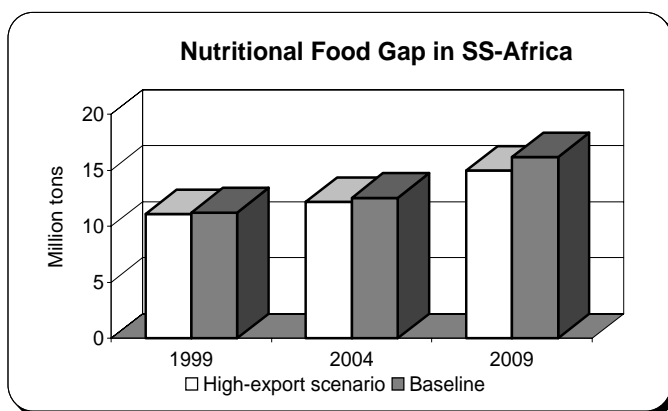
Year	Grain production	Root production (grain equiv.)	Commercial imports	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	53,026	31,012	4,661	3,586	107,988
1991	59,185	34,512	5,292	4,756	116,527
1992	57,345	36,283	6,597	5,687	118,380
1993	61,122	38,123	7,681	3,485	126,047
1994	64,370	39,199	8,029	3,040	130,280
1995	64,872	39,727	7,285	2,091	134,070
1996	69,804	40,397	7,383	2,159	139,242
1997	63,880	39,486	9,352	1,857	138,207
1998	69,242	39,973	12,215	1,789	147,216
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	69,224	41,425	10,935	4,664	11,222
2004	80,715	45,104	12,136	5,254	12,542
2009	89,724	49,066	13,875	8,769	16,175

Sub-Saharan Africa
574 million people in 1998.

Only eight of the 37 countries are projected to have rising per capita consumption trends through the next decade.

While Sub-Saharan Africa will have only 25 percent of the population of the study countries in 2009, it is projected to account for 70 percent of the total nutrition gap.

Sixty percent of the region's population is projected to consume at levels below the minimum nutritional requirement in 2009.



	Commercial grain imports		Nutritional food gap	
	High-export scenario	Baseline	High-export scenario	Baseline
				-----1,000 tons-----
SSA	18,559	13,875	15,647	16,175
Angola	632	443	742	1,001
Cameroon	431	326	0	106
Kenya	3,066	2,150	0	0
Lesotho	366	295	0	42
Madagascar	227	166	567	635
Tanzania	656	538	585	733

The model results for 1999 are based on actual data and therefore reflect the current situation in these countries. Unfavorable weather conditions and civil strife continue to hinder agricultural output for many countries in 1999. In Ethiopia, inadequate rainfall in some areas and untimely rainfall in other areas have contributed to a smaller harvest. Output in Somalia has been severely affected by the long-term civil war and little rainfall. In an area of the country known for its sorghum production, output of the crop for 1999 is estimated at only 20 percent of pre-war production in the mid-late 1980s. In Kenya, inadequate rainfall has led to dry conditions and a smaller crop. Production of corn, the country's staple crop, is estimated to have fallen 20 percent below the recent average and consequently, food prices have risen. Continued civil strife in Southern Sudan has disrupted agricultural activities and prompted a need for relief assistance. Fighting in parts of the Democratic Republic of Congo has heightened insecurity and created food shortages. Despite favorable weather conditions in Angola, the food supply situation is precarious as renewed fighting in December 1998 has displaced farmers and interrupted food distribution.

With the exception of Sierra Leone, West Africa has escaped the ravages of war and unfavorable weather conditions in 1999. As a result, food prospects are good. Bumper crops were harvested in 1998 in Burkina Faso, Chad, Mali, and Niger, and the 1999 harvests are expected to be above average as well.

Depending on the responsiveness of import capacity to export earnings and the importance of imports in food supplies, the boost to exports stemming from trade liberaliza-

tion could significantly affect food security in Sub-Saharan Africa. Export earnings have grown slowly in the region through the 1990s. Export volumes have increased marginally, on average, and prices for the commodities exported have not rebounded from their peaks in the early 1980s. The low level of export earnings has constrained import capacity. The import share of food supplies averaged just over 12 percent in the base period and is projected to rise only marginally through 2009. Despite the fact that commercial imports under the high export scenario (see box "Accelerated Export Growth Scenario") exceed those under the base scenario by 34 percent in 2009, the impact of this change on food security is minimal. The import share of food supplies remains relatively small (9 percent in 2009) and the nutritional food gap is projected to be only 7 percent smaller in this scenario than that of the base scenario in 2009.

It should be noted that the assumption of significant increases in export earnings for this region is highly optimistic. Most studies indicate that the gains will be small following global trade liberalization unless additional investment is made in the export sector (see article "Trade Liberalization and the Sub-Saharan African Countries.") The countries in this region need to make significant policy changes that will promote export growth. Diversification of exports is one possible answer in that the region would be less dependent on a small number of commodities and less vulnerable to the price variability of those commodities. Another possibility is to encourage output of manufactured goods where price variation would be less of a consideration than agricultural exports.

Asia

The number of people in this region who are consuming below the nutritional target is projected to decline nearly 20 percent during the next decade. The region's most nutritionally vulnerable countries are Afghanistan, Bangladesh, and North Korea. [Stacey Rosen and M.S. Deepak]

Ten countries constitute the Asian region for this study—Afghanistan, Bangladesh, India, Indonesia, Nepal, North Korea, Pakistan, Philippines, Sri Lanka, and Vietnam. The region faces increasing food insecurity in selected countries during the next decade as the amount of food needed to maintain consumption at the base (1996-98) level—also known as the status quo food gap—is projected to nearly double, reaching more than 6 million tons in 2009. The nutrition food gap, the amount of food needed to raise consumption to the minimum nutritional standard, is projected at 5.2 million tons in 2009.

Throughout the projection period, the nutritional food gap is forecast to be smaller than the food gap to maintain consumption. In all other regions (except North Africa) in this study, the opposite is true. The results are principally driven by Pakistan, where the nutrition gaps are zero, but the gaps to maintain consumption are projected to grow nearly threefold between 1999 and 2009. Despite the fact that the country has no nutrition gap, this increase in the status quo gap represents a decline in the standard of living.

Results vary considerably by country. North Korea (included in this study for the first time), Afghanistan, and Bangladesh are the only countries in the region projected to have both nutritional and status quo food gaps. In each case, the nutrition gap is the larger gap, meaning that base consumption levels are below the minimum nutritional target. In Afghanistan, grain output is projected to follow pre-war trends, but the growth is not adequate to keep pace with the high population growth, which averages 3.8 percent per year through 2009. While Bangladesh is projected to face food gaps, they are quite small relative to overall food supplies as growth in grain output and commercial imports are nearly sufficient to meet food requirements. For example, the nutrition food gap as a share of aggregate food availability is projected at only 4 percent. By comparison, this share in Afghanistan measures 52 percent. North Korea's agricultural sector continues to be depressed, suffering from a lack of fertilizers, old machinery, and energy shortages. Grain output in 1999 is estimated at about 40 percent of the 1990 level. The small harvest and limited commercial import capacity resulting from a stagnant economy are expected to create large food gaps. While grain output is projected to grow through the next decade, the rate of growth will be slow and food gaps will widen as commercial imports will remain quite small.

India and Vietnam are projected to be able to maintain base consumption levels and meet minimum nutritional targets through 2009. In other words, the gaps for both countries are zero. In both India and Vietnam, growth in grain output is not expected to match the high rates achieved in the historical period (1980-98). However, domestic food supplies will be sufficient to meet food requirements due to a considerable slowing of the population growth rate.

The common thread among Indonesia, Nepal, Pakistan, the Philippines, and Sri Lanka is that these countries will face food gaps to maintain consumption, but not to meet minimum nutritional requirements. This means that they are projected to have an adequate supply of food with respect to the nutritional standard, but not necessarily enough to maintain recent per capita consumption levels. Pakistan is projected to have the largest status quo gap—rising from an estimated 505,000 tons in 1999 to about 1.4 million tons in 2009. A slowdown in the growth in grain area relative to the historical period, and a 2.5-percent annual population growth rate are the main factors behind the widening gap.

Unequal access to food due to skewed income distribution intensifies food insecurity in several countries. This is reflected in the difference between the region's nutrition gap and the "distribution gap," which measures the amount of food needed to raise consumption in each income group to the minimum nutritional target. Asia's distribution gap is projected to be 8.2 million tons in 2009, 3 million tons higher than the nutrition gap. While India, Nepal, and Sri Lanka are projected to have no nutritional gaps at the aggregate level, they will face distribution gaps as consumption in the lowest income groups in these countries is projected to fall short of the minimum nutritional target.

The depth of food insecurity is clearly illustrated in Afghanistan and North Korea, where consumption in every income group is projected to fall below the nutritional target in 2009 in the absence of external assistance and/or significant gains in agricultural performance. As a result, distribution gaps in these countries will be higher—roughly 10 percent—than the aggregate level nutrition gaps. Conversely, consumption is projected to exceed the nutritional target across all income groups in Indonesia, Pakistan, the Philippines, and Vietnam in 2009, assuming no major political disruptions. This means that distribution gaps in these countries will be zero.

Accelerated Export Growth Scenario

The Uruguay Round of multilateral trade negotiations, which took place during 1986-94, is projected to have significant positive implications on global trade. Global market liberalization is expected to increase market access for exports from developing countries and generally enhance market efficiency. The trade gains will vary by country, and larger countries with diversified exports are in a better position to benefit than the small countries that are dependent on only a few export commodities.

To reflect this possible impact on food security of the study countries, we used the Food Security model and assumed a very optimistic export growth path. In this scenario, export growth rates were increased over the base scenario rate by 25 percent for the first 5 years of the projection period and by 50 percent during the last 5 years. For example, if export earnings grow 4 percent per year in the base scenario, the growth rate under this export scenario would be 5 percent for the first 5 years and 6 percent for the last 5 years. It is important to note that this is a highly optimistic scenario, particularly for the lower income countries.

The expected result of the higher export growth is an increase in commercial import capacity of the countries. In the food security model, commercial imports are specified to respond positively to an increase in commercial import capacity, which is assumed to be the sum of export earnings and net flow of credit (see appendix 1). A 1-percent increase in foreign exchange earnings is projected to lead to a 0.5- to 0.8-percent increase in commercial imports (estimated based on cross-country times series of 60 of the study countries). It is important to note that based on this assumption we have ignored the internal multiplier impact of growth in export earnings and any changes in the policy responses of the countries.

The impact of changes in export growth on food security of the countries also depends on their baseline export growth projections and the extent of their food import dependencies. For example, if the baseline export growth rate is 2 percent, a 25-percent increase raises the annual rate to 2.5 percent in the scenario. On the other hand, when the baseline rate is 8 percent, the 25-percent increase generates a 10-percent growth rate. Similarly, if half of the food availability consists of imports, a 1-percent growth in imports will increase total food availability by 0.5 percent. If the import share is smaller, say 10 percent, a 1-percent increase in food imports will increase food availability by only 0.01 percent.

It is worth noting that the distribution gap for the region as a whole shrinks between 1999 and 2009, reflecting some convergence in food consumption among income groups. Consistent with this finding is the decline in the number of hungry people in the region during the next decade. It is estimated that 548 million people—32 percent of the region's population—are food insecure in 1999. This number is projected to fall to 442 million—or 22 percent—in 2009.

The accelerated export growth scenario (see box “Accelerated Export Growth Scenario”) results in a 33-percent jump in commercial imports in 2009 as compared with the base scenario. Consequently, the food gap to maintain

consumption is projected to fall by almost half while the nutrition gap falls 11 percent. Bangladesh, India, Pakistan, the Philippines, and Vietnam have the greatest import response to the higher export earnings. This result can be attributed to a combination of already high export growth and, in most cases, a higher responsiveness of import capacity to changes in foreign exchange availability. In the case of Vietnam, commercial imports jumped roughly 50 percent. Because of the higher imports, status quo food gaps were eliminated in Indonesia, Pakistan, and the Philippines. Commercial imports in Afghanistan and North Korea increased only marginally in this scenario, and therefore the impact on food security was negligible.

Table 5--Food Availability and Food Gaps for Asia

Year	Grain production	Root production (grain equiv.)	Commercial imports	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	271,078	14,370	7,950	2,522	385,781
1991	274,715	14,717	7,429	2,721	393,738
1992	285,767	15,563	11,147	1,859	402,754
1993	291,725	15,248	11,264	1,792	416,880
1994	293,315	15,363	10,728	1,952	416,878
1995	299,597	15,133	17,790	2,231	437,115
1996	302,485	15,932	14,560	1,798	445,704
1997	305,950	16,764	15,885	1,962	472,909
1998	313,692	16,617	23,282	2,367	471,575
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	302,931	16,387	18,457	3,495	2,225
2004	331,774	17,488	21,058	5,049	4,260
2009	363,683	18,659	24,617	6,185	5,160

Asia

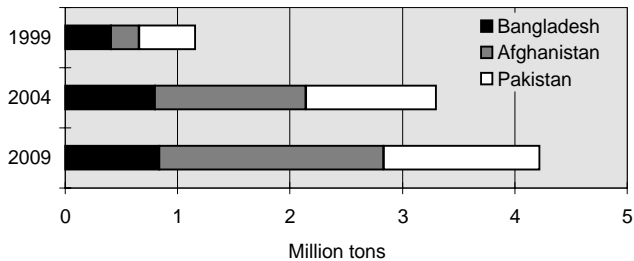
1,650 million people

By 2009, Asia's population--64 percent of the population of the 67 study countries--is projected to account for 22 percent of the nutritional food deficit.

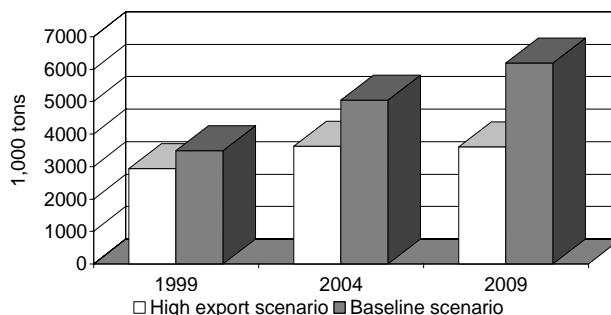
As food production growth slows and food aid to the region shrinks, commercial imports become increasingly important in feeding the burgeoning population.

By boosting their export earnings, Asian countries can augment their food imports to cut their collective nutritional gap 25 percent and their status quo gap 50 percent by 2009.

Status Quo Gaps in Selected Asian Countries



Status Quo Food Gap in Asia



Impact of Accelerated Export Growth Compared to Baseline in 2009

	Commercial grain imports		Nutritional food gap	
	High-export scenario	Baseline	High-export scenario	Baseline
	-----1,000 tons----			
Asia	32,799	24,617	4,569	5,160
Bangladesh	2,269	1,785	709	1,263
India	3,513	2,539	0	0
North Korea	280	263	1,239	1,263
Pakistan	5,249	4,026	0	0
Philippines	7,462	5,470	0	0
Vietnam	1,262	863	0	0

Latin America and the Caribbean

Commercial grain imports will become even more crucial in providing food security to the region. However, for the five countries with food gaps—Bolivia, Guatemala, Haiti, Honduras, and Nicaragua—increasing domestic production by investment in the agricultural sector is the more promising path to food security [Birgit Meade].

Average per capita food consumption in the eleven Latin American and Caribbean countries¹ is projected to stagnate over the next decade. Despite relatively slow increases in food production of 1.7 percent per year, strong commercial import growth of 2.8 percent will increase food supply enough to keep pace with population growth.

Among individual countries, however, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, and Peru will experience declining per capita consumption. Among that group, all except for Ecuador but also Bolivia face status quo and/or nutritional food gaps over the next decade. Four of these countries were severely affected by Hurricane Mitch in 1998. The destruction of crops, plantations, and infrastructure will have a long-lasting impact on agricultural production and export earnings.

Of the five countries with nutritional food gaps, (Bolivia, Guatemala, Haiti, Honduras, and Nicaragua) all but Haiti have the resources to close the food gap during the next decade provided they adopt policies to attract investment in the agricultural sector. Domestic production still provides the bulk of food consumption. Historical annual growth in grain yields in these countries ranged from -0.4 percent in Haiti to 1.6 percent in Bolivia. Much higher growth is required to satisfy food needs. To simply keep up with population growth, food production must grow 2.4 to 2.8 percent per year in these countries. Closing food gaps requires even higher growth rates.

Between 1980 and 1998, per capita consumption increased less than 1 percent per year. Because food production did not keep up with population growth, rising imports prevented declines in per capita consumption in all countries, except Nicaragua. Not all food imports are commercial. During the 1980s, imports consisted to a large extent of food aid. In 1987, food aid's share of total imports reached a high of 42 percent. This share dropped dramatically to 2 percent by 1998, in response to improved commercial import capacity in the region and declining food aid availability. Improved import capacity driven by rising export earnings has made Latin America and the Caribbean one of the most import-dependent regions in the world. During the

1980s, imports' share of food supplies averaged around 30 percent. By 1999, it has increased to 45 percent and is projected to reach 47 percent in 2009.

In the accelerated export growth scenario (see box "Accelerated Export Growth Scenario") imports' share of food supplies is projected to reach 53 percent by 2009, which translates into a 3.4-million-ton increase in commercial grain imports, compared to the baseline scenario. The food gaps would be reduced on average by about half a million tons. The increase in regional commercial imports is projected to be much larger than the decline in gaps because the impact of the accelerated export growth is most dramatic in countries without food gaps. Those countries tend to start out with a relatively high percentage rate in export growth, thus giving more weight to the high-export scenario. Furthermore, the impact is stronger in the import-dependent countries.

By contrast, the five countries with nutritional food gaps are precisely those whose imports provide the smallest shares of total supplies. Commercial imports by the five countries would average less than 30 percent, while the other group's share reaches 53 percent in 1999 and is projected to exceed 60 percent by 2009.

In Latin American countries, the most difficult dimension of food security is the distribution of food within countries. Poverty is widespread and income distribution is more unequal than in other parts of the world. For this reason our projection shows that the number of people unable to consume the nutritional minimum will increase from 57 to 75 million by 2009. The problem becomes more severe in Guatemala, Honduras, and Nicaragua, where food insecurity will affect larger parts of the population if current trends persist.

The amount of food necessary to raise consumption of each income group to the minimum nutritional target, the "distribution gap", is projected to reach about 3 million tons by 2009. The distribution gap would therefore be twice as big as the nutritional gap, which measures nutritional needs on an average national level. Close to 75 percent of this distribution gap arises in Bolivia, Guatemala, Haiti, Honduras, and Nicaragua, even though they comprise only one-third of the population. Haiti has the largest distribution gap of 670,000 tons. Without any food aid, Haiti's lowest income group is projected to consume only half the nutritional requirement.

¹The countries studied here are four Central American countries: El Salvador, Guatemala, Honduras, and Nicaragua; three Caribbean countries: the Dominican Republic, Haiti, and Jamaica; and four South American countries: Bolivia, Colombia, Ecuador, and Peru.

New Independent States (NIS)

In 1999, there are food gaps for all of the NIS countries, reflecting below average harvests or chronic food deficits. Tajikistan is the only NIS country projected to have food gaps over the next decade. The regional outlook will continue to depend on political stability, oil and gas developments, and responses to the Russian ruble situation. [Michael Trueblood]

This report monitors the food security of five New Independent States: Armenia, Azerbaijan, Georgia, Kyrgyzstan, and Tajikistan. Food gaps based on current consumption levels are estimated for the 1999 in all five countries. However, only Tajikistan is projected to have sizable short run and long run nutrition-based food gaps due to widespread poverty and recovery from war. The other NIS countries are expected to reduce poverty and hunger with economic growth over the longer term, assuming continued peace. In the short run, though, lower income groups in several of these countries are projected to consume below nutritionally recommended levels.

Most of the NIS countries have achieved macroeconomic and agricultural stability in recent years. Inflation has been brought under control compared to previous years with many of the countries achieving positive economic growth. The dramatic contraction of the livestock sector related to the removal of subsidies, which affected the feed sector, may be leveling off. Grain used for human consumption has remained somewhat stable on a per capita basis in recent years, despite all the economic and agricultural changes, in part due to food aid. The challenge remains to improve domestic agricultural productivity and increase the capacity to commercially finance food imports in order to achieve pre-reform consumption levels and improve nutrition for vulnerable groups without relying on food aid.

Political and economic uncertainty is a major issue in the region—There are three sources of uncertainty that are expected to significantly affect economic growth, food production, and food consumption in the short- and medium-run: the Russian currency devaluation, questions about political stability, and the progress and speed of oil and gas developments.

The Russian currency devaluation in August 1998, had important direct and indirect effects on the former Soviet republics. As a direct effect, the devaluation hurt Russian purchasing power, thereby depressing demand for these countries' exports and lowering their export earnings. Indirectly many countries suffered because they still rely heavily on trade with Russia and the other NIS states (ranging from 41 percent of total trade in Armenia to 77 percent in Georgia). The devaluation pressured several of these countries to devalue their currencies to maintain their export

competitiveness, which led to a short run inflationary surge in a few countries as import prices rose. In the case of Armenia, remittances from Russia were severely reduced. The devaluation appears to have worked its way through most of the NIS economies, but fears of another devaluation are having an important psychological effect on investment and may be inducing capital flight. The episode also has highlighted the vulnerability of some countries that are largely dependent upon trade with other NIS countries.

Questions about peace persist in each of these five NIS countries. Armenia and Azerbaijan have had an uneasy truce over the Karabakh region for a few years now, but Azerbaijan and Turkey continue their trade embargo of Armenia. Georgia has on-going internal tensions, with President Shavardnaze surviving two assassination attempts in recent years. The current military battles between Russia and Chechna/Dagestan also are potentially destabilizing to these Caucasus countries. Recently, Kyrgyzstan has been battling rebels in the southern part of the country. Tajikistan has managed to move forward with its peace agreement, but there are on-going concerns of rebel activity and fears of potential refugees coming from Afghanistan. In each instance, the possibility exists that conflicts could re-emerge and disrupt agricultural production and trade.

The future of oil and gas discoveries in the Caspian Sea will have strong economic implications for Azerbaijan and have spillovers to the rest of the region. However, there are several question marks and layers of intrigue. One question is the actual size of reserves, as recent drilling has led to mixed results. Another contentious issue has been the negotiation of acceptable pipeline routes between countries. At least four different routes have been proposed for the pipeline (going over Turkey, Georgia, Russia, or Iran), complicated by environmental (earthquake) concerns. Another obstacle is the financing of such a large venture among large companies, possibly backed by government credit guarantees by unstable governments. Additional questions have been raised regarding the long term downward trend for oil and gas prices and what that could mean for these investments. A final issue, most relevant to this report, is whether the potential wealth will be distributed among some of the lower income groups and lead to improved economic and food security.

Table 7--Food Availability and Food Gaps for NIS

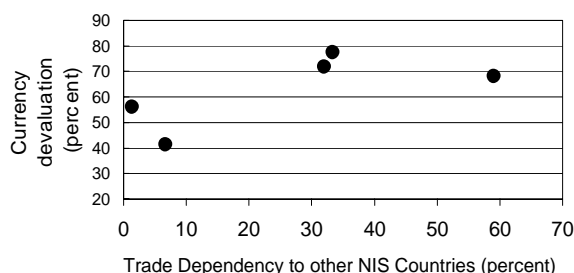
Year	Grain production	Root production (grain equiv.)	Commercial imports	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	4,070	---	---	---	---
1991	3,814	---	---	---	---
1992	3,799	---	4,219	---	---
1993	3,551	246	3,147	1,159	7,396
1994	2,911	250	1,160	1,524	6,279
1995	2,808	291	851	1,112	5,935
1996	3,697	308	730	1,061	6,049
1997	4,254	328	1,460	342	6,758
1998	4,154	382	1,407	558	6,893
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	3,582	326	1,325	874	945
2004	4,741	353	1,474	13	410
2009	5,074	382	1,727	0	415

NIS

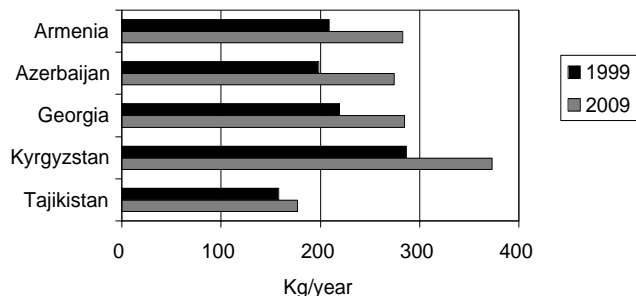
27 million people

Production in 1999 is down throughout the region, leading to short run food gaps in each country based on recent consumption levels. Tajikistan is projected to have on-going nutrition-based food gaps as it continues to recover from war. Food security in the short and medium term will depend on lingering Russian currency devaluation effects, political stability, and oil and gas developments. Tajikistan would benefit in terms of food security from trade liberalization, but it has not even begun the WTO application process.

NIS Countries' Currencies Devalued To Keep Exports Competitive After Russian Devaluation



NIS Current and Projected Average Per Capita Grain Consumption Levels



Impact of Accelerated Export Growth Compared to Baseline in 2009

	Commercial grain imports		Nutritional food gap	
	High-export scenario	Baseline	High-export scenario	Baseline
NIS	2,275	1,727	251	415
Armenia	380	296	0	0
Azerbaijan	823	609	0	0
Georgia	467	357	0	0
Kyrgyzstan	137	103	0	0
Tajikistan	468	363	251	415

Short run food gaps exist throughout the region, but only Tajikistan is projected to have long run nutrition-based food gaps—Tajikistan, which is still recovering from war, is estimated to have a relatively small food gap in 1999 based on current consumption levels (about 10 percent below requirements), but relatively large nutrition-based food gaps through the next decade (about 33 percent below requirements). However, data used in this analysis are very weak. Last year's grain production appears to have been substantially overestimated as some land reportedly sown to wheat was diverted to cotton. Nonetheless, Tajikistan's poverty and low food consumption levels extend to the upper income groups, resulting in consumption that is much below recommended nutrition levels. Over the next 10 years, the nutrition-based food gap is projected to narrow but remain a problem (the only NIS country with this projection outcome).

Production is down this year in the other four NIS countries, which is expected to lead to short-run food gaps based on recent per capita consumption levels. Armenia's grain pro-

duction is down about 22 percent from the previous years due to a poor harvest. Azerbaijan's production is down almost 27 percent, reflecting growing import competition, inadequate marketing channels, and land privatization, which has led to greater household food production. Georgia's production is about the same as last year, but the modest food gap highlights the role that food aid has played in meeting previous per capita consumption levels.

Trade liberalization will have a limited impact on NIS food security—At this time, only Kyrgyzstan has been accepted into the World Trade Organization, while Armenia and Georgia have been making good progress to join. Azerbaijan's negotiations are not as far along. The country that would benefit the most in terms of food security from increased export earnings in trade liberalization modeling scenarios—Tajikistan—has not even started the process of joining. The other NIS countries are projected to eliminate their food security gaps with economic growth, even without trade liberalization.

Food Aid for Russia

In 1999 the Russian grain harvest will again be relatively low, keeping alive concerns about the country's food security. Despite the disappointing harvest, food grain production should be sufficient to maintain per capita consumption of bread products on a par with average levels during the past decade. Russian agricultural officials are in fact arguing that the country does not need food grain or other foodstuffs, but rather animal feed, to help stem the severe contraction of the livestock sector that began during the reform period. Adding to concerns about low output is the distribution problem that grain surplus-producing regions are restricting outflows to deficit regions, which can result in local shortages.

According to September 1999 USDA figures, Russian grain output in 1999 is projected at 55 million metric tons, following 48 million in 1998, the country's worst harvest in decades. These figures compare to an average output of 70 million tons over the last 5 years.

However, the critical variable affecting human consumption is the output of food grain. During the reform period, Russian food grain consumption averaged no more than 20 million tons a year. In 1998, Russia's food grain production was only slightly below this level, and the quality was high. Another factor that mitigated the poor 1998 harvest is that Russia carried over large stocks of grain from the bountiful 1997 crop of 88 million tons. Although by mid-1999 Russian grain stocks had been drawn down to less than 2 million tons (according to USDA figures), food grain output will again be close to 20 million tons, and quality once more will be good.

Russian agricultural officials have publicly stated in 1999 that the country does not need more food aid (that is, aid in the form of food grain or other foodstuffs for human

consumption), and rather are requesting additional aid in the form of animal feed. They have expressed specific interest in feed wheat, corn, soybeans, and soybean meal. Since reform began in the early 1990s, the Russian livestock sector (both animal inventories and production) has contracted by about half, and the downsizing continues. Preliminary Russian figures indicate that from August 1998 to August 1999 Russian production of meat and milk fell by about 8 and 4 percent.

A mitigating point concerning how the livestock sector's downsizing is affecting food security is that the contraction can be viewed as a necessary and inevitable part of market reform. Livestock production and consumption drop to levels more consistent with the country's real wealth and income. In 1990, per capita meat consumption in Russia was about twice as high as in other countries with the same level of per capita GNP, and equal to consumption in rich OECD nations. Reform has substantially reduced the large producer and consumer subsidies that were necessary to support the artificially high levels of livestock production and consumption.

However, a point that justifies any additional grain to Russia (whether food or feed grain) is that stocks have fallen to low levels. Adding to this concern is that most grain surplus-producing regions within Russia are restricting the outflow of foodstuffs, which can prevent deficit regions from obtaining necessary supplies.

In 1998/99 the United States and EU gave Russia food aid packages, with wheat and meat being the main commodities provided. The United States agreed to give 3.2 million tons of commodities worth \$1.1 billion (with \$520 million being a trade credit), and the EU 1.8 million tons of products worth \$470 million. [William Liefert]

Low-Income Developing Countries and Trade Liberalization: An Overview of the Issues

Michael Trueblood and Shahla Shapouri¹

Abstract: The next round of trade negotiations will continue agricultural trade negotiations in the areas of market access, domestic support, and export competition. These issues have major implications for the food security of low-income food-importing countries. Other issues with direct or indirect impacts on the food security of developing countries that may be examined or renegotiated in the next round (or in concurrent international negotiations) include food aid, special preference arrangements, technical assistance, state trading enterprises, biotechnology, and production process issues.

Introduction

Food insecurity of the low-income countries is deeply rooted in many factors that are not all affected by global trade policies. However, with the increasing role food imports play in low income countries, global agricultural market conditions could significantly affect the food security of these countries. Decisions in the new round of trade negotiations can affect food security of the low-income countries through: 1) world price levels and variability; 2) the ability of food insecure countries to increase export earnings, which often come from agricultural products; and 3) availability of food aid for emergency assistance as well as development.

The Uruguay Round of international trade negotiations, which took place over 1986-94, gave heightened attention to agriculture. The resulting Uruguay Round Agreement on Agriculture (URAA), which was signed by a majority of countries, will condition future policies of countries both at the international and national level. Therefore, it is important to understand the main features of the agreement and the likely issues that could be negotiated in an upcoming round.

In this overview, we highlight the major issues that are likely to emerge in the next trade round, especially those that are important to developing countries. Issues that are particularly important for different geographic regions are highlighted in the following articles.

Issues Relevant to Developing Countries in the Next Round

The most important components of the URAA are the “three pillars”—market access, domestic support, and export competition. Highlights of the changes agreed to in the last

round are presented in table A-1. In the area of market access, an element of the agreement was the conversion of nontariff barriers into bound tariff levels and the reduction of existing tariffs. This has set the stage for deeper cuts in future rounds. In the area of domestic support, countries determined which policies were permitted and which were subject to discipline. Domestic support policies were placed into different categories (“amber box,” “green box”, and “blue box”), depending on how distorting the policies are to world markets. Trade distorting domestic support levels are scheduled for reductions based on an “Aggregate Measurement of Support” (AMS), which is an index that measures the monetary value of total government support to a sector. In the area of export competition, countries agreed to reduce their existing export subsidy programs and to not introduce new subsidy programs.²

Other agreements that are likely to affect agriculture but are not explicitly included in the URAA are the Sanitary and Phytosanitary (SPS) Agreement and the establishment of the dispute resolution mechanism. The SPS Agreement recognizes each country’s sovereignty in establishing levels of SPS protection, but requires that such measures be science-based and non-discriminatory. The dispute resolution mechanism established a panel system to arbitrate trade disagreements and enforce decisions regarding all Uruguay Round agreements, including those for agriculture.

Not all of the above issues are equally important for all countries. For example, the farm policies and programs of the exporting countries have direct implications for food security of low-income countries. If domestic price supports are reduced, the expected effect would be a decline in the production of staple foods and an increase in world prices (other market conditions being constant). Such a policy would have different implications for the food security of

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² For more information on these and other issues, see USDA (1998).

Table A-1--Highlights of Commitments from the Uruguay Round Agreement on Agriculture (URAA)

Category/item	Developed countries (DCs)	Less developed countries (LDCs)	Least developed countries
Market access:			
Tariffication:	Convert all nontariff barriers to tariffs	Same as DCs	Same as DCs
	Reduce tariffs by 36 percent in 6 years; min. 15 per line	Reduce tariffs by 24 percent in 10 years; min. 10 per line	Exempt from reductions, but must at least bind tariffs
	Imports of staple foods at least 4-8 percent of supplies by 6 years	Imports of staple foods at least 1-4 percent by 10 years; allow "appropriate market access" for other agricultural products in return for more lenient terms	Same as LDCs
Tariff rate quotas:	Increase access from 3 to 5 percent	Same as DCs	Same as DCs
Most-favored nation:	No special regional schemes unless offered to all	Same as DCs	Same as DCs
Special safeguard:	Duties allowed on tariff-rate quota commodities if import volume or prices meet certain criteria	Same as DCs	Same as DCs
Export subsidies:			
New subsidies:	Disallowed	Disallowed	Disallowed
Reductions of old:	Reduced 21 percent over 6 years from base	Reduced 14 percent over 10 years from base	Exempt, but no increases either
Credits/guarantees:	To be negotiated further	Same as DCs	Same as DCs
Domestic support			
Categorization of policies:	"Amber box", "green box", and "blue box"	Same as DCs	Same as DCs
Aggregate Measurement of Support (AMS):	Reduce 20 percent over 6 years	Reduce 13.3 percent over 10 years	Same as LDCs
	"De minimus" provision exempts commodity if less than 5 percent of total value of production	"De minimus" provision exempts commodity if less than 10 percent of total value of production	Same as LDCs
	---	Investment, input and diversification subsidies exempt	Same as LDCs

Source: Derived from Valdes and McCalla (1996).

developing countries. Those developing countries that have adequate agricultural resources, produce similar or substitutable crops, and have open economic policies would be faced with a higher price incentive to produce. This would increase their domestic food availability and food access and decrease their dependence on food imports to meet overall food needs.

In the short run, however, the impact of higher world prices could hurt the resource-poor countries with high food import dependency, increasing the costs of food imports and reducing foreign exchange earnings for alternative uses. Another related effect of lowering domestic subsidies in exporting countries is that it could reduce stocks, which could increase global price variability. For developing countries, stability in food import prices reduces short-term financial difficulties of importing and allows a more stable flow of capital goods that are important to economic growth.

Foreign exchange availability to finance food imports for food insecure countries is closely linked to the issue of market access. Agricultural commodity exports are a major source of foreign exchange earnings for developing countries. Prices of the primary commodities have been declining for the last two decades. The World Bank estimates that the loss in foreign exchange earnings to developing countries from declining commodity prices totaled \$100 billion a year from 1980 to 1993. While complete liberalization of the global market may not reverse the long term decline in commodity market prices, protection of commodities such as sugar and peanuts limits market access and therefore demand, thereby reducing prices of commodities exported by low-income countries. Consequently, this reduces their ability to import foods.

The next round is expected to follow the URAA agenda and continue negotiation in the areas of market access, domestic support, and export competition.³ In the area of market access, possible areas for negotiation include continuing efforts to finish converting nontariff barriers to tariff barriers, lowering existing tariffs, increasing minimum access levels for tariff-rate quotas (TRQs), and reducing export taxes. With domestic support, continued reductions in subsidies and further clarification as to which policies and programs distort trade are key subjects for negotiation. With export competition, continued negotiated reductions in existing export subsidies is a significant negotiating objective for many countries.

Several other agricultural trade issues are likely to receive attention in the next round, although it is unclear at this point whether new protocols will be opened. These include:

- ✱ *Food aid.* This is an important issue for developing countries. Among some donors, there are concerns that food aid may be used as a hidden export subsidy (relatedly, export credits have come under similar criticism). For the recipient countries, there are concerns that food aid quantities have dropped sharply in recent years, despite provisions in place to address possible adverse consequences for food security.⁴ With the end of government-held surpluses, food aid availability could become essentially a budgetary issue and a pressing consideration for both emergency and developmental programs if high food aid needs coincide with periods of high prices.
- ✱ *Preferential trade arrangements.* Many trade arrangement programs provide special market access for developing countries' commodities and goods. The margin of preference has varied by commodity and time, but for some commodities (such as sugar) the prices received by exporters to the EU and U.S. market have been two to three times the world price since 1980. While these arrangements provide economic benefits to producers in these countries, the arrangements also discriminate against other countries that may be able to produce the same goods more efficiently and at lower cost. If the arrangements are removed, the current producers may not be able to compete effectively in the future, suggesting that these protections may need to be phased out to allow for adjustment.
- ✱ *Technical assistance.* Many developing countries signed the Uruguay Round agreements, but lacked the capacity to implement and enforce them. These countries are likely to demand more specific language and funding to support such activities.
- ✱ *State trading enterprises (STEs).* Some STEs have monopoly trading power, although countries disagree over the effects of STE privileges on world trade and prices. Given that STEs exist in both developed as well as in developing countries, disciplines imposed on STEs would affect developing countries directly and indirectly.
- ✱ *Biotechnology.* Many consumer groups have raised concerns about the possible health and environmental effects from crops using genetically modified organisms (GMOs). Developing countries may be affected by any new standards or regulations that ultimately influence prices as well as the way in which such standards may restrict trade with some developed countries.
- ✱ *Production process issues.* Production practices have come under greater international scrutiny and may be addressed through trade negotiations. Examples of these issues include animal welfare (confinement) and different types of fishing nets. Developing countries already have been

³ The following two sections synthesize the discussions of Valdes and McCalla (1996), IATRC (1997), Hanrahan (1998), Salinger (1998), Thompson (1998), and Valdez and Young (1998). In addition, the authors have benefited from attendance at several recent seminars and conferences sponsored by the Federal government, think tanks and other research institutions.

⁴ These provisions are detailed in Part X, Article 16 of the Uruguay Round Agreement ("Measures Concerning the Possible Negative Effects of the Uruguay Round Agricultural Reform Program on Least-Developed and Net Food-Importing Developing Countries").

affected directly by new regulations for the way in which they produce some items (notably fishery products). They also could be affected by rising prices of food exports from developed countries (for example, higher poultry prices if new animal confinement regulations are adopted).

Developing Countries May Have a More Important Role in the Next Trade Round

Many observers believe that the developing countries will have a greater influence in the next trade round compared with the Uruguay Round. Membership in the WTO (previously GATT) has grown very rapidly in the past decade, especially among developing countries. For example, only 48 countries participated in the Kennedy Round negotiations in the mid-1960s, but by the end of the Uruguay Round 118 countries were participants (FAO, 1998). Several countries have new membership applications in progress, some of which have the United Nations "least developed" country status or may seek to join the WTO as a developing country.

Sorting and understanding the developing countries' trade interests is a daunting task. Middle-income developing countries like Argentina and Brazil are leading food exporters and advocate free trade in agriculture. Other lower income countries, many in Sub-Saharan Africa, are net food importers and are vulnerable to external shocks (particularly commodity price shocks) and favor "special and differential treatment" trade provisions. For example, these provisions allow developing countries to make relatively smaller tariff reductions over longer periods of time compared with the developed countries (see table A-1).

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Trade Liberalization and the Sub-Saharan African Countries

Michael Trueblood and Shahla Shapouri¹

Abstract: The Sub-Saharan African countries could benefit more from participation in the next round of trade negotiations than they did in the last Uruguay Round if they improve their overall economic competitiveness. This could allow them to increase foreign market access for export goods in which they have a comparative advantage and for traditional export commodities. They also could make potentially significant gains if they are able to reduce foreign tariff escalation on value-added goods that they could process in their home countries. These countries also will need to continue monitoring food security issues related to the availability of food aid and the growth and volatility of prices of staple import commodities. Finally, Sub-Saharan African domestic reforms could have more impact than trade reform. The countries will benefit by using the international trading system to help re-enforce domestic policy reforms.

Introduction

A new round of multilateral trade negotiations will aim to cover a broad set of rules that will affect global production and trade of agricultural commodities. Both exports and imports of agricultural commodities are vital to the economic development and food security of the Sub-Saharan countries. Agriculture contributes about 35 percent to the region's gross domestic product (GDP), more than any other region in the world. The share of agriculture is about 40 percent of total export earnings, while imports of food products have been growing. The slow growth of food production and the sluggish performance of exports, which are necessary to finance imports, mean that the region is very food insecure. With more than half of the population dependent on the agricultural sector in Sub-Saharan Africa, it is imperative that these countries take measures to improve their agricultural and trade performance.

However, there are also reasons to be optimistic about several countries.² Since the mid-1980s, these countries adopted structural adjustment policies aimed at liberalizing their markets and adjusting their macroeconomic policies, in particular exchange rate policies to improve their trade performance. The implications include: positive recent per capita GDP growth rates, increased macroeconomic stability (inflation, fiscal deficits, trade deficits), privatization efforts, efforts to improve legal systems, and improvement in agricultural performance.

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² The countries include Angola, Benin, Botswana, Côte d'Ivoire, Equatorial Guinea, Ethiopia, Guinea-Bissau, Lesotho, Mauritius, and Uganda (see Fischer, Hernández-Catá, and Khan, 1998).

Trade could play an important role for the Sub-Saharan African countries. Economically, trade offers short- and long-run opportunities to improve economic efficiency, raise incomes, and increase the variety and quality of consumer goods at lower prices—all of which raise living standards over time. Politically, trade also can help “lock in” domestic reforms that lead to greater stability and peace.

Background Profile

The agricultural sector has a crucial role in the long-term development of most countries in the region. Agriculture remains the most important source of employment in the region. It has been argued that the poor performance of the African agricultural sector is what has prevented the typical economic structural transformation, that is, the decline in the relative contribution of agriculture to the economy that has been experienced in other developing regions. Internal political situations are often blamed for some of these problems. Currently, of the 508 million people in Sub-Saharan Africa, 12 percent live in countries that are at war, 46 percent live in countries with unstable macroeconomic environments (defined as countries with inflation of greater than 25 percent annually), 19 percent live in minimally economically stable countries, and 23 percent live in strong performing countries (Collier et al., 1997) (table B-1).

Quantitatively, trade flows in Sub-Saharan Africa are distinguished by three features. The first is that Sub-Saharan Africa's share of world trade has been shrinking, from 3.7 percent in 1960-62 to 1.5 percent in 1994-96 (World Bank, 1998). The second feature is that Sub-Saharan Africa continues to be highly dependent upon European trade partners (recently about 51 percent, down from around 80 percent in

Table B-1--Selected Macroeconomic, Trade, and Transportation Indicators

Country	Per capita GNP (1996) U.S. dollars	Collier et al. stability category 1/ (1996)	WTO status 2/	Openness ratio [(X+M)/GDP]* 3/ (1994-96) Ratio	Avg. OECD tariff, industrial exports (1994)	Avg. post-UR bound tariff, agriculture (1995) -----Percent-----	Freight costs/ exports (1991)
Benin	350	A	3	0.60	0.7	80	15.1
Botswana	3,210	---	2	0.83	0.9	---	---
Burkina Faso	230	A	3	0.41	1.1	150	25.0
Burundi	170	D	3	0.28	6.9	---	---
Cameroon	610	B	2	0.40	3.4	310	38.1
Central Af. Rep.	310	---	3	0.46	3.7	---	47.6
Chad	160	B	3	0.74	---	---	60.5
Congo, Dem. Rep.	130	C	3	0.58	---	---	13.7
Congo, Rep.	670	B	2	1.49	2.1	30	9.4
Cote d'Ivoire	660	A	2	0.79	7.6	215	7.4
Ethiopia	100	A	4	0.37	---	---	55.0
Gabon	3,950	---	2	0.96	0.5	260	6.8
Gambia	320	A	3	1.24	9.6	---	21.1
Ghana	360	C	2	0.63	4.3	98	10.6
Kenya	320	B	2	0.73	7.6	100	21.4
Lesotho	660	B	3	1.40	9.1	---	---
Madagascar	250	C	3	0.50	11.1	280	14.2
Malawi	180	C	3	0.66	---	---	56.2
Mali	240	A	3	0.60	1.2	110	52.6
Mauritania	470	A	3	1.06	3.9	54	7.0
Mauritius	3,710	---	2	1.24	55.8	135	11.0
Mozambique	80	C	3	0.88	---	---	18.3
Namibia	2,250	---	2	1.08	0.8	40	---
Niger	200	C	3	0.40	0.1	132	20.7
Nigeria	240	C	2	0.34	0.6	230	8.3
Rwanda	190	D	3	0.45	---	---	---
Senegal	570	A	2	0.69	7.4	180	18.8
Sierra Leone	200	---	3	0.41	2.1	---	15.6
South Africa	3,520	---	1	0.49	---	40	---
Swaziland	1,210	---	2	1.75	67.5	40	---
Tanzania	170	C	3	0.62	9.9	240	40.6
Togo	300	C	3	0.71	2.2	---	13.4
Uganda	300	A	3	0.31	---	80	71.1
Zambia	360	C	3	0.84	---	124	12.0
Zimbabwe	610	B	2	0.86	---	161	6.2

Key:

--- = Not available.

1/ WTO Status: 1-Developed; 2-Developing; 3-Least Developing; 4-Nonparticipant.

2/ Collier et al.: A - Stable and high growth; B - Stable macroeconomics;

C - Unstable macroeconomics; D - War torn or unrest.

3/ * X = Exports of merchandise and goods and services, M = imports of merchandise and goods and services.

Sources: W. Bank, STARS CD-ROM database; Yeats et al. (1997); Harrold (1995); Collier et al. (1997).

the 1960s) (IMF, 1999). Third, exports continue to be highly dependent on primary commodities despite efforts to diversify. In Sub-Saharan Africa, 29 out of 47 countries depend on three primary commodities to provide at least 50 percent of their export revenues (UNCTAD, 1998).

Qualitatively, imports in Sub-Saharan Africa have been inhibited by tariff and nontariff trade barriers. The Sub-Saharan African countries have higher import tariffs than the rest of the world. According to the World Bank, in 1992-94 average tariffs in Sub-Saharan Africa were about 27 percent, compared with 9 percent for the fast growing exporters and 6 percent in OECD countries (Yeats et al., 1997). Even after the Uruguay Round, Sub-Saharan Africa's tariffs, which were already high by world standards, have remained relatively unchanged. The nontariff barriers in Sub-Saharan Africa also are high compared with other countries: 34 percent on average compared with 4 percent in the fast growing exporters and OECD countries (Yeats et al., 1997).

Trade in Sub-Saharan Africa also has been strongly affected by trade preference arrangements. The major preference arrangement for Sub-Saharan Africa is the Lomé agreement for the African, Caribbean, and Pacific (ACP) countries (currently Lomé IV; Lomé V is being negotiated now), in which the EU offers preferential trade access for goods from Sub-Saharan African countries. The United States has also offered preferential treatment under the General System of Preferences (GSP), but historically this program has not been that significant in promoting trade between the United States and Sub-Saharan Africa. In both regions, tariffs on goods from Sub-Saharan Africa rise sharply if the goods involve value-added processing ("tariff escalation").

Two related aspects of trade preferences are emerging that could affect trade patterns in Sub-Saharan Africa. One phenomenon is that there has been a rise in regional free trade agreements around the world in recent years. Most of these regional agreements appear to have contributed to increased intra-regional trade. These agreements generally are believed to have led to trade creation (USDA, 1998; Robinson and Thierfelder, 1999). There are currently efforts to negotiate (or re-negotiate) trade agreements in Sub-Saharan Africa (such as the Common Market for East and Southern Africa or COMESA; and the Southern African Development Community or SADC), but historically these agreements have not increased trade much in the region. Another aspect of trade preferences is the WTO's trading system, which allows nations to self-select their country status in order to take advantage of the special and differential treatment (SDT) provisions (see table A-1 in overview article). Of the Sub-Saharan African countries, one country (South Africa) has chosen to be a "developed country," 13 countries have chosen to be considered "less developed countries," 24 countries are considered "least developed countries" because of their designation as such by the United Nations, and 9 countries are not members of the World Trade Organization.

Finally, given the importance of agriculture to Sub-Saharan Africa, it is important to understand that only three countries (South Africa, Uganda, and Zimbabwe) are self-sufficient in grain consumption (slight grain exporters) in recent years. On average during 1996-98, 19 countries required imports to meet about 3-20 percent of their consumption needs, while another 25 countries required imports to meet at least 20 percent of their consumption needs. Higher prices for food on world markets for these import-dependent countries can significantly affect their capacity for commercial imports of food and nonagricultural commodities. Currently, due to limited financial capacity, 18 of 46 countries rely on food aid to meet at least 20 percent of their grain imports (table B-2).

Economic Policies and Performance

There is general agreement in the economic literature that policy accounts for much of economic performance. There is also abundant available research confirming that countries that choose to trade openly perform better. As for Sub-Saharan African countries, most studies have reached the conclusion that sustained domestic reforms are the keys to economic recovery.

Since the mid-1980s, most Sub-Saharan African countries have liberalized their markets. In the area of trade policy, many countries have significantly liberalized and adjusted their exchange rates. In general, the region can be divided into two groups of countries based on their exchange rate policies. One group, the Western and Central African countries, has adopted a monetary union and has pegged (fixed) its exchange rates to the French franc (the CFA franc zone). This group has been able to avoid foreign exchange rationing, with less import restriction policies, and have been required to maintain fiscal discipline. The second group (non-CFA countries) has adopted a variable exchange rate policy. The countries in this group have erected tariff and nontariff trade barriers. Among this group, only Mauritius and Ghana have come close to completely liberalizing their foreign exchange markets. Some countries in this group, such as Zimbabwe and Kenya, initially had less distorted exchange rates and financial problems, but have not completed the policy reforms necessary to achieve full liberalization.

In Sub-Saharan African countries, nontariff barriers are mainly in the form of government licenses or approval of imports. The problem with this type of trade distortion is the lack of transparency that could significantly change the price signals that are important incentives for trade. Since the mid-1980s, progress has been made by most countries to reduce the number of products requiring prior approval of imports.

Tariff reform in the region typically has been proceeding in three steps. The first step has been to rationalize tariffs, which reduces the number of tariff rates and systematically organizes any exceptions. This step has been implemented in most countries. The second step has been to reduce the

Table B-2--Selected Agricultural Indicators (most recent data available)

Country	Per capita calorie	Cereal	Cereal food aid	Primary commodity
	consumption	prod. / cereal use	imports / total cereal	export dependency
	per day 1/ (1994-1996)	(1995-1997)	imports (1995-1997)	ratio 2/ (1995)
	Ratio	Number	Ratio	Percent
Angola	1,927	0.46	0.39	94.5
Benin	2,362	0.89	0.17	93.8
Botswana	2,253	0.26	0.00	---
Burkina Faso	2,254	0.96	0.22	99.0
Burundi	1,711	0.91	0.08	87.9
Cameroon	2,200	0.90	0.01	---
Central African Rep.	1,928	0.87	0.07	55.7
Chad	1,902	0.96	0.46	60.9
Comoros	1,828	0.34	0.04	70.5
Congo, Dem. Rep.	1,880	0.83	0.06	81.5
Congo, Rep.	2,125	0.15	0.10	99.0
Côte d'Ivoire	2,378	0.76	0.06	55.0
Djibouti	1,886	0.00	0.25	---
Eritrea	1,638	0.41	0.34	---
Ethiopia	1,781	0.95	0.99	79.0
Gabon	2,497	0.23	0.00	99.0
Gambia	2,271	0.51	0.05	---
Ghana	2,561	0.87	0.20	67.4
Guinea	2,135	0.71	0.02	91.3
Guinea-Bissau	2,426	0.73	0.06	92.0
Kenya	1,991	0.82	0.11	56.0
Lesotho	2,169	0.45	0.07	---
Liberia	2,098	0.38	0.40	---
Madagascar	1,991	0.96	0.26	---
Malawi	2,048	0.85	0.21	88.8
Mali	2,099	0.97	0.31	73.8
Mauritania	2,632	0.42	0.00	87.8
Mauritius	2,975	0.00	0.10	---
Mozambique	1,719	0.75	0.38	58.1
Namibia	2,164	0.46	0.04	---
Niger	2,090	0.95	0.36	95.7
Nigeria	2,554	0.95	0.00	---
Rwanda	2,064	0.44	0.96	78.8
Senegal	2,391	0.58	0.01	---
Seychelles	2,411	0.00	0.00	---
Sierra Leone	2,017	0.61	0.15	---
Somalia	1,579	0.73	0.10	---
South Africa	2,881	1.00	0.00	---
Sudan	2,355	0.92	0.19	55.7
Swaziland	2,529	0.59	0.04	---
Tanzania	2,016	0.94	0.14	---
Togo	2,096	0.89	0.05	63.3
Uganda	2,196	1.02	0.99	81.5
Zambia	1,940	0.90	0.20	99.0
Zimbabwe	2,035	1.07	0.01	53.0

--- = Not available.

1/ UNFAO recommends a nutritional minimum 2,100 calories per person per day.

2/ Top 3 primary commodity exports / total merchandise exports.

Sources: UNFAO FAOSTAT internet database; UNCTAD.

dispersion of tariffs, which is done by increasing the lowest tariffs and reducing the highest tariffs. This step also has been implemented by most countries. The third step has been to reduce overall protection by lowering average tariffs. This has been implemented in selected countries (Kenya, for example).

In addition to tariff reform, several countries in the Southern African region have cooperated regionally to harmonize their trade policies, which could enhance trade for both the individual countries and the region. For example, the cross-border initiative in South/East Africa is in its final stage, which will eliminate tariffs on intra-regional trade and harmonize external tariffs for all imports.

Several countries also have taken steps to promote exports using various means. Export licences and controls have been significantly reduced, export taxes have been lowered, the role of marketing boards have been reduced, and economic processing zones (EPZs) promoting exports have been established (examples include Madagascar, Kenya, Nigeria and Zambia).

Foreign direct investment (FDI) could be an important stimulant to economic development. However, the share of FDI in the Sub-Saharan African countries has declined from 6 percent in 1984-89 to 3 percent in 1994-95 (two-thirds was accounted for by Nigeria). A World Bank study found that the reasons for the low inflow of FDI to the region were low GDP growth rates, low trade openness, and highly variable real effective exchange rates (World Bank, 1997). Another study found that "red tape" was extensive, expensive, and time-consuming in many countries, which discouraged trade and investment (Lancaster, 1991). FDI also has been discouraged by poor market infrastructure, which has meant that there are high costs to exporting and less flexibility to take advantage of international market opportunities.

Domestic policy reforms have tended to reduce the government role at the sectoral level. As for the agricultural sector, most countries eliminated the role of marketing boards, allowing markets to determine prices for both products and inputs. However, transportation policy remains an important source of inefficiencies. The region's anti-competitive cargo reservation policies that favor domestic carriers have led to high shipping costs, recently estimated to be 20 percent above the world average. One recent study projected that lowering shipping costs to average world levels would have a much greater impact than any trade policy changes (Hertel, Master, and Elbehri, 1998). Burdensome domestic regulatory policies or nationalized transportation carriers also have raised transportation costs over time (Carbajo, 1993). Finally, transportation freight costs escalate for value-added products, which contributes toward dependency on primary commodity exports.

How Did the Uruguay Round Affect Sub-Saharan Countries?

Most of the quantitative analysis reported here was done during and immediately following the Uruguay Round. These studies are at the regional level and have been computable general equilibrium (CGE) models. Most studies projected that there would be very slight negative impacts (-0.2 to -0.5) on African GDP growth compared to the status quo of no global trade liberalization (Golding and van der Mensbrugge, 1995; Harrison, Rutherford and Tarr, 1995). Most African countries already received high preferential treatment, so uniformly lowering developed country tariffs has the greatest benefit for other exporting regions (especially Asia). This reduces the market shares of Sub-Saharan African countries. Other studies have made qualitative judgements about the impact of the Uruguay Round, reviewing each region's or country's trade structure, the nature of the trade barriers, and the trade commitments. These studies argue that the Uruguay Round was likely to have very little impact on African countries. The basis for this conclusion was the argument that African countries are not fully committed to trade reforms, at least in the short run (Sorsa, 1996).

One must be cautious about over-interpreting the results of these studies because most of the studies are based upon inadequate data, which limit the quality of the results. The overall evaluation of the previous studies indicates that results are highly dependent on the assumptions related to the flexibility and responsiveness of the economies of these countries.

Trade Issues Particularly Important To African Countries

One area particularly important to African countries is food security. Four aspects of food security concerns are: higher food prices, more volatile food prices, declining food aid, and export taxes/restraints. A preliminary assessment of the first two issues shows that so far international food prices have not risen or become more volatile because of the Uruguay Round Agreement on Agriculture, but these issues will continue to be monitored by the United Nations Food and Agriculture Organization (FAO) so that guidelines may be adopted for providing foodstuffs concessionally (Greenfield, de Nigris, and Konandreas, 1996; Sharma et al., 1996; FAO, 1996; Sarris, 1997).

There are at least three other areas of special concern to Sub-Saharan African countries. One area is the erosion of special preferences such as the General System of Preferences (GSP), but especially the EU's Lomé Treaty, which has created preferential access to the EU market. Currently, the African countries face almost no tariffs to Europe for their export products (but the reverse is not true), so there is not much room to negotiate. However, as developed countries have lowered their tariffs to other developing countries (especially Asian countries), this has eroded the

Table B-3--Decomposition of Agricultural Trade, Selected Sub-Saharan African Countries (SSA), 1995-97 averages

	Total merch.	Agri.	Cereals	Meats	Dairy	Fruits & veg.	Bev. crops	Oil- seeds	Sugar	Other
	--- \$ billion ---					----- Percent -----				
Exports										
Benin	0.41	0.20	0	0	0	2	0	9	0	89
Cameroon	1.75	0.57	0	0	0	13	50	0	0	36
Chad	0.20	0.14	0	0	0	0	0	0	0	100
Côte d'Ivoire	4.09	2.24	1	0	0	8	75	0	1	16
Ethiopia	0.49	0.45	0	0	0	3	69	2	0	25
Ghana	1.49	0.55	1	0	0	4	91	1	0	4
Kenya	2.13	1.16	4	0	0	12	60	0	2	21
Madagascar	0.32	0.14	1	3	0	17	64	0	4	11
Malawi	0.51	0.38	1	0	0	1	10	0	7	81
Mali	0.48	0.28	0	0	0	0	0	1	0	98
Mauritius	1.76	0.44	2	3	0	0	1	0	89	6
Namibia	1.38	0.20	0	43	1	0	0	0	0	56
Nigeria	16.25	0.52	0	0	0	5	39	3	0	54
South Africa	29.61	2.41	16	3	2	36	2	1	6	34
Sudan	0.57	0.54	4	5	0	3	0	22	3	63
Swaziland	0.91	0.30	0	1	0	11	0	1	47	39
Tanzania	0.72	0.44	0	0	0	19	38	2	2	39
Togo	0.23	0.13	1	0	1	0	23	1	0	73
Uganda	0.60	0.46	4	0	0	4	83	2	0	6
Zimbabwe	2.36	1.09	7	2	1	3	5	1	8	73
SSA	83.49	13.74	4	2	1	12	35	2	7	38
Imports										
Benin	0.67	0.12	34	11	6	8	1	0	11	29
Cameroon	1.18	0.12	50	2	7	4	1	0	7	29
Chad	0.25	0.05	41	2	6	2	2	0	21	26
Côte d'Ivoire	3.07	0.44	47	2	11	4	1	0	4	30
Ethiopia	1.09	0.20	58	0	1	2	0	0	6	32
Ghana	1.73	0.24	45	7	5	4	1	0	24	15
Kenya	3.14	0.38	43	0	1	3	1	0	4	47
Madagascar	0.54	0.08	44	0	7	1	1	0	7	40
Malawi	0.57	0.08	58	1	7	3	1	0	0	30
Mali	0.78	0.10	26	0	16	10	16	0	17	14
Mauritius	2.21	0.34	24	10	15	11	2	0	4	35
Namibia	1.55	0.10	20	7	0	44	0	1	23	5
Nigeria	15.67	1.36	31	0	17	0	1	0	16	33
South Africa	27.79	1.99	23	9	3	5	6	2	1	52
Sudan	1.37	0.29	45	0	3	7	16	0	0	28
Swaziland	1.09	0.10	19	11	12	16	6	1	0	36
Tanzania	1.42	0.20	26	0	2	4	0	0	13	54
Togo	0.44	0.07	33	5	8	4	2	0	7	40
Uganda	0.86	0.06	40	0	4	1	0	0	22	32
Zimbabwe	2.87	0.23	33	0	2	8	2	4	2	49
SSA	84.49	10.36	34	5	8	6	3	1	8	35

relative competitive edge of Sub-Saharan African countries. This process of tariff reduction will probably continue in the next round, which will add further pressure on the Sub-Saharan African economies to perform better.

Another area of special concern is tariff escalation. Sub-Saharan African countries, similar to other developing countries, typically face high tariff rates from developed countries as they engage in value-added production. Less well known, however, is that developing countries have even greater escalating tariff rates than the developed countries, which discourages trade among developing countries.

Conclusions

Over time, the economic benefits of trade liberalization include rising incomes, a greater variety of consumer goods at lower prices, and greater production efficiency. The Sub-Saharan African countries are aware of the importance of the next WTO negotiations, and many intend to be more active participants than they were in the Uruguay Round. They hope to protect their trading interests, learn about new trading opportunities, discipline their economies, and attract foreign investment.

Analysis of the Uruguay Round suggests that Sub-Saharan African countries would not be affected by the global trade commitments, but this analysis requires some caution because of data limitations and the assumptions about countries' commitments to trade liberalization. In the next trade round, the Sub-Saharan African countries will need to continue monitoring food security issues, in particular regarding the effects of the agreements on food import bills. It would be to their benefit if they could increase foreign market access for export goods in which they have a comparative advantage (such as textiles, shoes, and leather goods) as well as for traditional export goods (such as sugar, cocoa and coffee) (table B-3). They also could make potentially significant gains if they are able to reduce foreign tariff escalation on value-added goods, which they could process in their home countries.

Eroding trade preference arrangements and the further erosion likely in the next trade round make policy reform critical to Sub-Saharan African countries. Domestic reforms may hold more promise for improving economic performance than trade policy reforms such as lowering tariffs. Any cost-cutting measure is very important to helping the countries be competitive in foreign trade. For example, elimination of cargo preferences that lead to competitive shipping rates and streamlining regulations of domestic transportation carriers and freight could promote exports of value-added goods. The Sub-Saharan countries should also use the international trading system to help re-enforce domestic policy reforms.

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Trade Issues for Low-Income Countries in the Latin America and Caribbean Region

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Abstract: The Latin American and Caribbean (LAC) countries and the United States are significant trade partners, but the LAC region has very diverse economies and trade interests. Since the debt crisis in the 1980s, many countries have displayed much more trade openness. Commitments from regional trade agreements, which continue to proliferate, are often more stringent than the Uruguay Round commitments for the larger countries, that may use the more demanding commitments in the next trade round. The smaller low-income net food-importing countries have struggled to form coalitions that allow them to voice their trade concerns. The loss or erosion of special trade preference arrangements may have negative short run effects on many of the smaller low-income countries.

Introduction

The Latin America and Caribbean (LAC) region is very heterogeneous in many ways, including the types of agricultural goods that are produced, consumed, and traded. In this article, we review some of the key agricultural trade issues that are likely to be important to the region in the next trade round.

The major theme that will emerge in this article is the trend over the past 15 years of greater trade openness. This trend has its roots in major policy changes that occurred in response to the debt crisis of the 1980s. The result for most countries has been greater macroeconomic stability and rapid economic and trade growth. However, income inequality has remained a stubborn problem throughout the region, despite this growth.

In this article, we identify some of the major regional agricultural trade interests, examine the net food-importing countries such as those monitored in this report, review the relative importance of multilateral and regional trade negotiations, and discuss the outlook for a few key regional trade agreements currently being negotiated that may affect the extent to which some LAC countries participate in the WTO negotiations.

Background and Trade Interests Of the LAC Region

Compared with other developing regions, the LAC region is relatively well off. The region's per capita income averages \$3,390 per year, in contrast to \$910 in East Asia and \$510 in Sub-Saharan Africa (World Bank, 1998). Food

calorie supplies also are relatively high at 2,812 calories per person per day, compared with 2,706 in East Asia and 2,164 in Sub-Saharan Africa (FAO, 1999). Other socioeconomic indicators also suggest that the region is relatively well off. However, these simple national averages mask relatively more skewed income distributions compared with other regions, meaning that the consequences of suffering from poverty are widespread among some of the lower income groups.

The LAC region is host to a wide variety of agricultural trading interests. The region is a net food exporter with an average food trade surplus of \$9.4 billion in 1995-97. However, if Argentina and Brazil—two of the largest net food exporters among all developing countries—are excluded, then the region is a net food importer (\$0.3 billion deficit). In general, most countries in Central and South America are exporters of beverage crops, fruits and vegetables, and sugar; they tend to be importers of grains, oilseed products, and dairy products. The Caribbean countries are largely service-oriented economies that typically depend on agricultural imports to meet the bulk of their food supplies.

Several countries are among the top producers or exporters for different commodities. Argentina is the world's fifth largest wheat exporter, second largest coarse grain exporter, and third largest soybean exporter. Brazil is the largest coffee exporter in the world, followed closely by Colombia. Brazil is also the second largest soybean exporter. Ecuador is the world's largest banana exporter. Costa Rica is the world's second largest exporter of both bananas and pineapples. Chile is the largest exporter of grapes, while Cuba is the fourth largest sugar exporter.

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It is also important to note that this region is a very important trading partner for the United States. In 1997, the United States exported \$57.2 billion in agricultural products to the world, of which \$10.4 billion (18.2 percent) went to this region. U.S. agricultural imports totaled \$36.3 billion in the same year, of which \$12.2 billion came from Latin America (33.6 percent). Mexico is the United States' third largest export market (after Japan and Canada) at \$5.2 billion (USDA, 1998a).

The Net Food Importing Countries Monitored in This Report

Economic and trade structure. To some extent, the countries monitored in this annual report exemplify the diversity of the region, representing South America (Bolivia, Colombia, Ecuador, and Peru), Central America (El Salvador, Guatemala, Honduras, and Nicaragua), and the Caribbean (Dominican Republic, Haiti, and Jamaica). However, all these countries are net food importers.

The monitored countries all fall below the LAC region's average per capita income level of \$3,940, ranging from \$380 in Haiti to \$2,610 in Peru (table C-1).² All of these countries (except for Haiti, which has suffered from political instability) have followed the regional pattern of showing a decline in per capita income growth in the 1980s compared with the 1970s, followed by a rebound in the 1990s. Reasons for this pattern will be discussed later. In 1996, agriculture represented on average about 17 percent of gross domestic product (GDP) for the 11 countries compared with only 8 percent of the LAC region as a whole (World Bank, 1998). Industry represented about 30 percent of GDP on average while services represent about 53 percent.

The countries also have kept pace with the regional trend of greater trade openness (table C-2). One commonly used indicator of openness is total trade (exports plus imports) as a percentage of gross national product (GNP). By this measurement, nearly every one of the 11 countries has become more open since the debt crisis in the mid-1980s. Jamaica is typical of the smaller, service-oriented economies in the Caribbean where trade is very dominant, which shows up as a very high openness ratio (typically over one).³

Agricultural exports are a significant share of total merchandise exports for these countries, accounting for about 31 percent in 1995-97 (table C-3). The largest component of exports is beverage crops (44 percent), followed by fruits and vegetables (25 percent). Agricultural imports represent a smaller share of imports, accounting for about 12 percent. The largest component of agricultural imports is cereals at

² Data are for 1997 using the Atlas method. Only Haiti is classified by the United Nations as a Least Developed Country. This allows it to claim Least Developed status in the Uruguay Round's Special and Differential Treatment (SDT) provisions (see table A-1, overview article).

³ Larger countries tend to have smaller openness ratios as domestic markets serve a larger role in their economies.

Table C-1--Per Capita Income Levels and Growth Rates

Country	Income	Growth rates		
	1997	1970-1979	1980-1989	1990-1997
	\$U.S.	--- Percent per year ---		
Bolivia	970	NA	NA	1.41
Colombia	2,180	3.45	0.85	2.26
Dominican Rep.	1,750	5.74	1.00	2.09
Ecuador	1,570	5.77	-0.50	1.35
El Salvador	1,810	1.19	-3.10	3.29
Guatemala	1,580	3.30	-1.72	1.43
Haiti	380	1.86	-1.48	-3.38
Honduras	740	2.29	-0.70	0.46
Jamaica	1,550	-0.41	0.11	0.74
Nicaragua	410	-3.03	-4.43	2.25
Peru	2,610	0.80	-2.00	3.67
LAC region	3,940	3.44	-0.16	1.18

NA = Not available.

Source: World Bank, World Development Indicators, 1999.

Table C-2--Trade Openness in Latin America

Country	1980-81	1984-86	1989-91	1994-96
	------(X+M)/GDP*-----			
Bolivia	0.35	0.32	0.44	0.50
Colombia	0.21	0.20	0.23	0.35
Dominican Rep.	0.46	0.42	0.42	0.96
Ecuador	0.54	0.46	0.50	0.57
El Salvador	0.45	0.38	0.38	0.57
Guatemala	0.49	0.32	0.37	0.44
Haiti	0.18	0.20	0.28	0.34
Honduras	1.10	0.92	0.88	0.86
Jamaica	0.86	1.07	1.17	1.29
Nicaragua	0.88	0.62	0.72	1.00
Peru	0.25	0.21	0.22	0.27
LAC region	0.21	0.19	0.24	0.32

*X = Exports of merchandise and goods and services,
M = Imports of merchandise and goods and services.

Source: World Bank, World Development Indicators, 1999.

38 percent, followed by dairy products (8 percent) and fruits and vegetables (7 percent).

Policies. To appreciate the current policy setting, it is important to have some understanding for the region's economic history. The LAC region traditionally was known for import substitution industrialization (ISI) policies, about which much has been written. The ISI policies were established with the primary goal of achieving rapid industrialization. It was believed that the agricultural sector suffered from declining long run real output prices and by itself would never lead to an effective development strategy. Industry and manufacturing were artificially stimulated at the expense of agriculture by using policy instruments such as overvalued exchange rates, import quotas, and export taxes on agricultural commodities.

Several countries achieved high economic growth rates during the 1950s and 1960s, but the deeper problems with ISI policies eventually were exposed during the 1980s with the debt crisis. In the late 1970s, "petrodollars" from the oil and petroleum exporting countries (OPEC) countries were

Table C-3--Decomposition of Agricultural Trade for the 11 Selected Countries, 1995-97 Averages

Country	Total					Fruits/	Beverage	Oil-	Sugar	Other
	merch.	Agri.	Cereals	Meats	Dairy	Veg.	crops	seeds		
	--- \$ billion. ---					----- Percent -----				
Exports										
Bolivia	1.15	0.34	1	1	0	12	6	22	6	50
Colombia	10.68	3.52	1	0	0	15	58	0	6	19
Dominican Rep.	0.83	0.39	0	3	0	13	33	0	31	20
Ecuador	4.86	1.67	3	0	0	67	19	0	1	10
El Salvador	1.95	0.59	4	0	1	2	70	1	7	14
Guatemala	2.18	1.36	4	0	0	18	42	3	17	16
Haiti	0.13	0.03	0	0	0	23	72	0	0	5
Honduras	1.33	0.51	0	2	0	35	57	0	1	5
Jamaica	1.40	0.30	3	1	1	27	12	0	35	21
Nicaragua	0.66	0.32	2	14	3	10	39	8	10	13
Peru	6.07	0.57	1	0	0	30	45	0	6	18
Total 11	31.25	9.60	2	1	0	25	44	2	8	17
Imports										
Bolivia	1.61	0.17	51	1	10	5	4	3	0	26
Colombia	14.30	1.62	40	2	3	12	1	6	1	36
Dominican Rep.	3.05	0.53	37	1	15	3	1	0	2	42
Ecuador	4.35	0.42	31	1	3	8	4	1	6	47
El Salvador	3.42	0.49	25	5	12	8	2	1	0	47
Guatemala	3.38	0.47	31	3	9	7	2	1	0	47
Haiti	0.65	0.32	42	1	7	6	0	0	16	27
Honduras	1.79	0.30	34	2	10	7	1	2	0	44
Jamaica	2.95	0.36	31	13	11	6	2	1	7	28
Nicaragua	1.18	0.20	36	1	8	9	1	1	0	44
Peru	8.01	1.24	45	2	10	4	1	1	8	28
Total 11	44.69	6.11	38	3	8	7	2	2	4	37

invested in western banks. Given the general commodity boom of the 1970s and overall investment optimism of the time, these banks lent large sums of money to the developing countries, which borrowed the funds to help survive the oil price shocks. However, several countries quickly became overextended when their economies experienced downturns. In particular, the large outstanding foreign debts of Argentina, Brazil, and Mexico threatened the global financial system. However, several other smaller countries, such as Bolivia and Peru, were also very overexposed with total debt to gross domestic product ratios near or above one.

The debt crisis of the mid-1980s led to a series of major policy changes throughout the region. ISI policies came to be viewed as unsustainable over the long run, leading to economic problems such as high inflation, import rationing, and a lack of spare parts. Under pressure to improve overall economic performance, particularly exports for debt servicing obligations, many countries abandoned ISI policies and embarked on several major policy reforms. Substantial macroeconomic changes brought many countries under monetary and fiscal discipline, resulting in lower inflation and budget deficits. Legal reforms also improved the protection of property rights and foreign investment.

While the macroeconomic reforms have been very important in establishing stability and encouraging investment, the trade reforms that were implemented have been quite remarkable, particularly in light of the region's economic

history. Exchange rates have been unified and allowed to drop to market levels. Quantitative import restrictions have been eliminated for the most part. Tariffs have been dramatically lowered and simplified (table C-4). The dispersion of tariff rates within countries was also significantly reduced while export taxes have been eliminated. As indicated above, export growth has increased over the past decade in most countries.

As part of the goal to improve economic and trade performance over the past 15 years, countries in the LAC region have become much more active in negotiating trade agreements, both multilaterally through the World Trade Organization (WTO) and via regional trade agreements.

LAC Region and the Multilateral Trade Negotiations

Prior to the Uruguay Round, only 18 LAC countries were signatory members of the General Agreement on Tariffs and Trade (GATT, now WTO). However, as the negotiations continued, several more countries joined. Today, nearly every country in the LAC region is a member of the World Trade Organization.

The Uruguay Round was helpful in advancing the trade interests of the LAC region. For example, Argentina and Brazil became prominent members of the Cairns Group, which has gained influence by promoting free trade in agriculture. Several countries, particularly in the Caribbean,

Table C-4--Trade Regime Indicators, Pre- and Post-Reform Periods for Selected Countries

Country	Period		Average unweighted bound tariff rates		Tariff range, bound tariff weight		Coverage of quotas on imports	
	Pre-reform	Post-reform	Pre-reform	Post-reform	Pre-reform	Post-reform	Pre-reform	Post-reform
	Bolivia	1985	1991	12a	8	---	5-10	---
Colombia	1984	1992	61	12	0-220	5-20	99	1
Ecuador	1989	1992	37b	18	0-338b	2-25c	100	0
Guatemala	1985	1992	50b	15b	5-90	5-20	6d	0d
Honduras	1985	1992	41b	15b,e	5-90	5-20	---	0
Jamaica	1981	1991	---	20	---	0-45	---	0f
Peru	1988	1992	---	17	0-120	5-25	100	0d

(--) Negligible.

a. Import weighted average tariff. b. Including tariff surcharges. c. Ecuador also has a specific tariff of 40 percent on automobiles.

d. Percentage of domestic product. Guatemala has significant quotas for health and safety reasons; pre-reform they covered 29 percent of domestic manufacturing production. e. Including tariff surcharges. f. Some quotas exist for health and safety reasons.

Source: Rajapatirana 35, (1997).

were strong advocates for the development of the General Agreement on Trade in Services (GATS). This agreement has “three pillars” that are comparable to those of the Agreement on Agriculture⁴—general obligations (for example, most favored nation (MFN) treatment, transparency, etc.), market access commitments, and sectoral annexes. The three are expected to have a positive effect on the trade of services.

To get further insight on the next round of multilateral trade negotiations, it is useful to review the projected benefits and costs from the Uruguay Round.⁵ Quantitative models of the Uruguay Round projected that global trade would increase income by \$212-510 billion (Nguyen, Perroni, and Wigle, 1994; Francois, McDonald, and Nordstrom, 1994). The models provided a range of estimated impacts upon the LAC region, from -0.3 to 1.68 percent of additional national income growth, although most of the studies suggest a positive economic effect for the LAC region. Much of the modeled regional gains were due to projected agricultural price increases from the Uruguay Round Agreement on Agriculture (URAA), which were expected to have positive effects on Argentina and Brazil, two of the dominant food-exporting countries. Conversely, many of the net food importing countries were expected to be hurt by rising food prices.⁶

⁴ The “three pillars” of the Agreement on Agriculture are market access, export subsidies, and domestic support.

⁵ One must be careful about overinterpreting these results, given the rapidly changing economic environment in the LAC region and older data used for the modeling projections. The results discussed here are only meant to be suggestive.

⁶ As it has turned out, grain prices have continued to go down, despite a short run weather-related price bubble in 1996. Five of the LAC countries monitored in this report (Colombia, Dominican Rep., Haiti, Jamaica, and Peru) particularly would be hurt in the short run by rising grain prices since imports comprise at least 45 percent of their total supplies. Jamaica is an extreme case with nearly 100 percent of its grain supplies coming from imports. There has been very little research on the impact of trade liberalization on smaller net food importing countries. Many economists argue that any short run losses would be more than offset by long run dynamic gains.

Another reason why some studies projected that there might be regional losses is the erosion of preference arrangements. In the LAC region, two preference arrangements that are important are the Generalized System of Preferences (GSP) with the United States and the Lomé Agreement with the European Union for the African, Caribbean, and Pacific (ACP) countries (which is currently being renegotiated). The erosion of the preference arrangements for some countries was projected to allow other regions (notably Asia) to gain.

The issues of preferences recently has pitted some of the LAC countries against each other. In the Central American and the Caribbean regions, exports of bananas, sugar and coffee—commodities typically covered by preferences—account for 40-60 percent of total agricultural exports in recent years (as much as 73 percent for a country like Ecuador). The recent WTO battle over the legality of EU preferences for bananas set the high-cost, less efficient banana producers in the Caribbean, who have benefited from the preferences, against the interests of low-cost producers in Central and South America who have not had such preferential arrangements (Rajapatirana, 1996). This and other WTO rulings may signal the end of preference arrangements over the long run, which might have important implications for production and trade patterns in certain countries (Josling and Tangermann, 1999).

Regional Trade Agreements Have Become Increasingly Important to the Region

A very important force for the LAC countries has been the bilateral and regional trade negotiations between LAC countries. Regional trade agreements (RTAs)—there are now 40 separate trade treaties in effect throughout the LAC region—have proliferated rapidly. Some of the larger treaties include the North American Free Trade Agreement (NAFTA), the Common Market of the Southern Hemisphere (known as MERCOSUR), the Andean Group, the Central American Common Market (CACM), the Caribbean Community

(CARICOM), and the Organization of the Eastern Caribbean States (OECS). NAFTA, which covers inter-regional trade of about \$500 billion, is by far the largest RTA (table C-5). The share of trade with other countries within the LAC region has increased from about 15 percent of all regional trade in 1988 to 21 percent in 1997 (IMF, 1998).

Regional trade agreements have stimulated much economic debate about whether RTAs enhance or hinder global trade. Some economists argue that a world of regional trading blocs would lead to a relatively high cost trading system compared with a multilateral trading system. However, defenders of RTAs argue that it depends on the circumstances. RTAs can be useful catalysts in stimulating deeper concessions in multilateral trade negotiations that might not otherwise occur without the RTAs. RTAs also can be viewed as stepping stones for some countries to move towards multilateral trade openness (USDA, 1998c).

Several LAC countries, particularly the larger ones, now have more stringent or binding trade agreements with other LAC countries because of the regional trade agreements. For these countries, such binding RTA commitments may be used as leverage to extract deeper concessions from other countries in the multilateral negotiation process. That is, a country may not be interested in a particular proposal if it already has more stringent commitments with important trade partners in a regional agreement. Therefore it may take a disinterested negotiating position in order to obtain deeper concessions from other countries in the WTO negotiations. However, many of the smaller low-income net food importing countries will have very little negotiating leverage by themselves. For these countries, the challenge will be whether they will be able to join other countries with similar interests to voice their trade concerns, such as the Caribbean countries are doing through CARICOM.

Status of New Regional Trade Agreement Initiatives

The short- to medium-run trade outlook could be affected by a few key regional trade agreements that are currently being negotiated. Whether these negotiations will lead to signed agreements is unclear at this time. However, the potential agreements discussed below could affect some of the low-income net food-importing countries directly by their possible membership inclusion or indirectly by their exclusion.

NAFTA-Chile. Currently the North American Free Trade Agreement is between Canada, United States, and Mexico. However, there have been discussions about allowing Chile to join this agreement.⁷ Trade between the present three NAFTA countries has been accelerating in recent years. It is unclear the extent to which the three are willing to consider a fourth trading partner in the agreement. Recent data show

⁷ It should be noted that there are bilateral treaties currently in effect between Canada-Chile and Mexico-Chile, but not between United States-Chile.

Table C-5--Selected Regional Trade Agreements

Acronym	Full name	1997 Intra- regional exports (\$ million)
NAFTA	North American Free Trade Agreement	496,423
MERCOSUR	Southern Common Market	20,761
---	Andean Group	5,102
CACM	Central American Common Market	1,736
CARICOM	Caribbean Community	1,006
OECS	Organization of Eastern Caribbean States	59

Source: World Bank 1999, 6.5.

Mexico's exports to the other NAFTA partners have grown 13.6 percent on average during 1994-98, compared with 7.9 percent by Canada and 8.6 percent by the United States (IMF, 1999). Recent agricultural trade data also show that U.S. agricultural imports from Mexico have grown 12 percent for the same period, while agricultural imports from Canada have grown 10.8 percent (USDA, 1999).

EU-MERCOSUR. The European Union and the MERCOSUR countries (Argentina, Brazil, Paraguay, and Uruguay) began a 3-year trade negotiation period in August 1999. It is very unclear at this time if such an agreement will be successfully negotiated. Agriculturally, these trading blocs face large obstacles since the MERCOSUR (exporting) countries compete with the EU countries in several arenas. The MERCOSUR countries would like to see EU agricultural subsidies eliminated and want increased access to the EU market.

Free Trade Agreement in the Americas. The free trade zone for all of the Americas—from Canada to Chile—was originally proposed at the first Summit of the Americas in December 1994. Formal negotiations began at the second formal summit with 34 heads of state in April 1998. With such a large number of countries, the agreement obviously faces many potential economic, political, legal, and technical obstacles. However, the potential agreement offers the opportunity to simplify the Americas' many bilateral and multilateral trade agreements. Preliminary modeling projections suggest that the agreement would have a very minor economic impact on the United States and that most LAC countries would stand to gain to varying degrees (USDA, 1998b). Again, this potential agreement might put pressure on the MERCOSUR and NAFTA countries to make important economic alliance choices. The agreement could also strain U.S.-EU relations if the EU thinks it has been effectively excluded from this market.

Conclusions

The LAC region is relatively well off compared to other developing regions and has much economic and agricultural diversity. The economic policy environment in most countries is now conducive to macroeconomic stability, investment, and trade opportunities. The LAC countries will be

engaged in the WTO trade negotiations, but the many regional trade agreements are likely to continue to have a strong influence on the trade environment.

The low-income net food-importing countries in the LAC region are likely to express their on-going concerns about agricultural trade issues that affect their food security. These issues include projected food price rises, more volatile food prices, and declining food aid availability. Many of these countries also are concerned about eroding trade preference arrangements, such as the Lomé Agreement for ACP countries. The recent WTO ruling against the EU on its preference arrangements for bananas illustrates how competition is likely to intensify between high-cost, less efficient producers in developing countries who benefit from preference arrangements and lower cost producers who do not enjoy such arrangements.

Little is known at this time about trade liberalization impacts on the food security of smaller countries, but it may be fair to conjecture that there will be both winners and losers. Some of these countries may face the unpleasant choice of either liberalizing trade (via regional trade agreements, for example) and hoping for positive results or not joining any trade treaties and getting left behind.

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Trade Liberalization and the South Asian Economies: Adjusting to the Challenges of Globalization

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Abstract: The new round of WTO negotiations presents special opportunities and challenges for the South Asian countries. Active participation by South Asian countries may enable them to secure better market access for their exports. It may also preserve or secure changes in the existing regulations that will enable them to fully integrate in the global trading system, while allowing them to meet their developmental goals. However, to achieve a favorable agreement, South Asian countries, especially India, will need to reform their own protectionist trade and domestic policies. Despite significant trade liberalization within the last two decades, the regional supply of agricultural commodities remains constrained by trade restrictions and anti-agricultural bias in domestic policies. Reforming regional domestic and trade policies will facilitate negotiations, provide impetus for increased agricultural production, stimulate trade and further economic growth, and enhance the overall food security situation in South Asia.

Introduction

Despite significant improvements during the past two decades to combat poverty and hunger, more reform policies need to be adopted to improve food security in South Asia. With about 263 people for every square kilometer, South Asia represents the world's most densely populated region (World Bank, 1999). The region is characterized by large income disparities, with 43 percent of its population living below the poverty line (UNDP, 1997). The overall food supply, although sufficient in quantity, is not distributed uniformly, with Bangladesh and Nepal in danger of shortfalls. Trade is, therefore, vital in alleviating regional food shortfalls, and can also play an important role in generating further policy reform and economic growth. Exports from South Asia increased on average by over 12 percent annually during 1991-95, and the World Bank (1997) estimates that, led by India, South Asia has the potential to have the world's fastest growth in exports for the next 20 years. Exports from the region have also witnessed a large shift from primary agricultural products to manufactured goods, and a significant proportion of high-tech products—primarily from India.

South Asia—A Background Profile

South Asia's economy encompasses traditional village farming, modern agriculture, handicrafts, a wide range of modern industries, and a multitude of support services. Production, trade, and investment reforms implemented during the past two decades have provided new opportunities and generated faster economic growth. Unlike other Asian

countries, this region has generally avoided financial problems, attracted some foreign investment, and revived confidence in economic prospects for the sub-continent.

Although the overall macro-economic indicators in the region remain fairly strong, Pakistan is currently experiencing political and financial problems, government instability has plagued Nepal's economic development, and further policy changes are needed in India to restore the momentum of reform, especially by continuing reductions in the remaining government regulations.

Despite growing optimism for the region, South Asia's share of global trade has remained unchanged, around 1-percent. The primary exports from this region are textiles, garments, carpets, leather products, and agricultural commodities such as cotton, rice, and tea. In recent years, there has been a significant shift from food and primary product exports to exports of manufactured products. The share of manufactures in South Asia's total exports increased from 53 percent in 1980 to 76 percent in 1996 (World Bank, 1999).

Although textiles and apparels dominate the manufactures exports, there is a small but increasing share of machinery and equipment exports from the region. Led by India, South Asia is also increasingly exporting science-based high technology products.

Capital and intermediate goods represent the major imports in South Asia. These include petroleum, petroleum products, machinery, fertilizer, and chemicals. Unlike Sub-Saharan Africa which largely depends on the European market for its trade, South Asia's trading partners are diverse and include Western Europe, as well as the United States, Hong Kong, Japan, and many other countries. Although the European

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Table D-1--Comparative Development Indicators

	GDP per capita	GDP growth	Trade share of GDP		Regional trade share	Agriculture share of GDP	Labor force in agriculture
			1970	1990			
	\$ U.S.		--- Percent ---				
Bangladesh	360	4.6	15	31	7	24	65
India	370	4.3	8	27	67	25	64
Nepal	220	1.7	13	64	1	41	83
Pakistan	500	2.5	22	37	16	25	52
Sri Lanka	800	5.9	54	80	9	22	48
South Asia	380		12	31	1(global trade) 2 (global ag trade)	25	63

Source: 1999 World Development Indicators, The World Bank. 1997 FAO data.

Union and the United States remain major destinations for South Asian exports, exports to East Asia have increased significantly in recent years, accounting for over 19 percent of total exports in 1995.

Regional trade within South Asia is limited, accounting for less than 4 percent of the region's total trade (World Bank, 1997). This figure does not take into account the illegal trade between neighbors, which is thought to be substantial. India maintains a growing trade surplus in the region with its 1995 regional exports accounting for 5 percent of its total exports. By contrast, its imports from the region account for only half a percent of its total imports. Regional trade in South Asia is hampered by India's protectionist policies and the long standing political conflict between India and Pakistan. India's refusal to provide transit facilities to Nepal and Bhutan for regional export, and its growing trade surplus are also considered by its neighbors to be impediments toward improving regional trade.

In December 1985, the South Asian countries formed the South Asian Association for Regional Cooperation (SAARC) to promote economic, social, and cultural cooperation. Members of SAARC include Bhutan and Maldives in addition to the five countries covered in this paper (Bangladesh, India, Pakistan, Nepal, and Sri Lanka). Due to the ongoing political conflict between India and Pakistan, SAARC has achieved little in promoting regional economic cooperation.

In 1993, the South Asian Preferential Trade Agreement, SAPTA, was initiated to promote greater regional economic cooperation. Although SAPTA allows for negotiations on a sectoral basis, the approach taken to date has been to negotiate trade concessions on a product-by-product basis. Therefore, except for a few minor tariff concessions, not much has been accomplished through SAPTA. Studies on regional integration in South Asia point out that unilateral trade liberalization rather than regional trade arrangements will be most beneficial for South Asia (de Melo and Rodrik, 1993). However, other studies indicate that the small economies in the region, such as Nepal and Bangladesh, would gain considerably from a regional trade agreement (Srinivasan, 1994).

Excepting Nepal, which has a very open trade policy, trade in South Asia has been inhibited by restrictive and interventionist government policies. Import tariffs are high, averaging about 39 percent between 1994-98, compared with about 6 percent for OECD countries (UNCTAD, 1994 and 1999). Nontariff barriers, such as quantitative restrictions on imports and the control of imports by parastatal government monopolies, are prevalent in the region. Exports of many commodities are also restricted or controlled by parastatal monopolies designed to manage domestic supply and to protect the domestic manufacturing sector. Despite these barriers, South Asia has come a long way since the early 1970s in opening its market to imports. Current tariffs, although very high, are less than half of those prevailing in the 1970s, the frequency of nontariff barrier use has declined by about 85 percent (UNCTAD, 1994 and 1999), and parastatal control of commodity trade is currently limited primarily to India.

Government policies in South Asia have historically discriminated against agriculture through measures designed to protect the manufacturing sectors. The policies include exchange rate overvaluation, direct control of agricultural commodity trade, and taxes on agricultural exports (Pursell, 1999).

Nevertheless, agriculture has remained an important sector in the economy, accounting for about 25 percent of total GDP and employing over 60 percent of the labor force. In 1997, South Asia produced 29 percent of the world's rice crop, 24 percent of the world's cotton, 15 percent of the world's wheat, and 11 percent of the world's oil crops (FAO, 1999).

South Asia is generally self-sufficient in cereals and the overall food supply, expressed as 2,449 calories per capita per day, exceeds the FAO recommended minimum level of 2,100 calories. However, this figure is below the world average of 2,782 calories per capita per day. Moreover, the food supply is not distributed evenly in the region, and the 1997 per capita daily calorie supply in Bangladesh was below the FAO recommended nutritional minimum. USDA/ERS projections of supplies of grain and other commodities in Bangladesh suggest that per capita calorie supplies will not increase over the next 10 years. Although, excepting Bangladesh, projected regional food supplies are sufficient

Table D-2--Food Availability Indicators

	Wheat production	Rice production	Cereal self-sufficiency	Per capita daily calorie supply
	-----1,000 mt-----		Percent	Number
Bangladesh	1,803	28,293	88	2,085
India	66,000	122,244	100	2,496
Nepal	1,030	3,641	105	2,366
Pakistan	18,694	6,587	94	2,476
Sri Lanka		2,692	54	2,302
South Asia	87,532	163,507	98	2,449
World	588,841	563,188		2,782
South Asian share of world production (%)	15	29		

Source: 1997 FAO data.

to meet the minimum nutritional requirements of the population, regional per capita food availability is expected to decline between 1999 and 2009.

The share of food aid in South Asia's total imports has declined during the 1990s. However, food aid continues to play an important role in meeting food demand in the region, exceeding 1.2 million metric tons in 1997. Bangladesh received over 44 percent of the region's food aid in 1997, while India, Pakistan, and Bangladesh together accounted for about 90 percent of the total aid. Although food aid's share of total food imports has generally declined, it has been increasing in Nepal. This reflects Nepal's increasing vulnerability to food shortfalls due to growing population pressures and a sluggish economy.

Economic Policies and Performance

Starting with Sri Lanka in the 1970s, South Asian countries embarked on an economic liberalization that accelerated significantly in the 1990s. The liberalization was driven by a general disenchantment with economic planning implemented in individual countries, and the feeling that the region was missing the growth and development opportunities that East Asian countries were enjoying. Multilateral trade negotiations did not influence the liberalization process. The process was, however, facilitated by substantial devaluation of South Asian currencies that occurred between

the 1980s and 1990s. For example, the Indian rupee was devalued in real terms by about 130 percent between 1985 and 1992.

In recent years, reform in government policies has also been undertaken under the International Monetary Fund's (IMF's) structural adjustment program. Nevertheless, trade liberalization has not been uniform within the sub-continent, with India, Bangladesh, and Pakistan still implementing several interventionist policies. Between 1970 and 1997, Nepal's indicator of trade openness (measured as total imports plus exports as a percentage of GDP) increased from 13 to 64 percent. Although Sri Lanka's trade openness indicator changed by only 26 percent, Sri Lanka has a relatively open economy, as indicated by its 1997 trade openness measurement of 80 percent. The remaining three countries, especially India with the lowest measure at 27 percent, would benefit from further reform to liberalize their trade.

Market access reform in South Asia, in general, was launched with the objective of streamlining procedures, reducing and harmonizing tariffs, and gradually removing import prohibitions. The average applied tariff rate on imports decreased about 37 percent between the 1980s and 1990s (UNCTAD, 1994 and 1999). However, current tariff rates remain high, averaging about 39 percent. There is a large difference in applied tariff rates across the region. Nepal has no tariffs on primary products, and tariffs on most other products range between zero and 20 percent (Pant, 1999). The applied tariff rates in India and Pakistan, on the other hand, often exceed 50 percent (Sharma 1999; Qureshi, 1999).

South Asia's nontariff barriers declined more than 85 percent between the 1980s and 1990s (UNCTAD, 1994 and 1999). Nevertheless, import restrictions and prohibitions remain on over a quarter of all tariff lines in India and on a very small number of commodities in other South Asian countries (Athukorala and Kelegama 1999; Chowdhury et al. 1999). Given the recent WTO ruling against India, on a

Table D-3--Share of Food Aid in Total Food Imports

	Share of food aid in total imports		Food aid 1997	Food imports 1997
	1991	1997		
	----Percent-----		----Metric tons----	
Bangladesh	76	44	548,340	1,257,553
India	32	8	310,251	3,879,714
Nepal	8	25	40,833	164,714
Pakistan	22	7	203,551	2,997,453
Sri Lanka	29	6	137,669	2,392,491
South Asia	41	11	1,245,903	10,840,607

Source: FAO.

case brought up by the United States, the Government of India is expected to accelerate the phase-out of all import restrictions.²

Export restrictions, licensing, monopoly control, and export taxes generally burdened the agricultural sector in South Asia. Since the reform policies implemented in the 1990s, export restrictions have been removed on almost all agricultural commodities in Bangladesh, Pakistan, and Sri Lanka, and on a number of agricultural commodities in India. However, parastatal control of exports and licensing requirements continue to inhibit the export of most major agricultural commodities in India and some agricultural commodities in Pakistan.

South Asia's domestic policies in the 1990s have been characterized by reform measures such as privatization of state enterprises, reduction of subsidies to industries, liberalization of capital markets, and other reforms that encourage trade and foreign investment. Liberalization of trade regimes and deregulation of domestic markets have created new business and export opportunities. Although the overall climate in the region looks very promising, there are significant hurdles on the horizon. Sri Lanka's robust economy is constantly burdened by the fighting between the Sinhalese and the minority Tamils. Bangladesh's progress is often halted by recurring natural disasters. Pakistan has been battling financial problems stemming from years of loose fiscal policies. Nepal's growth is inhibited by its landlocked geographic position and the frequent change of governments. Finally, India's economic growth has been hampered by the slow pace with which the government implements reform.

What Were the Estimated Impacts from the Last Round on South Asian Countries?

Most of the studies that looked at the impact of the Uruguay Round on developing countries noted that the implementation of the Uruguay Round may marginally increase agricultural commodity prices (Goldin and van der Mensbrugge, 1996; Ingco, 1997). However, analysis of agricultural commodity prices indicates that such increases did not occur. Studies on the Uruguay Round's impact also point out that the negative impacts of increased food prices on consumers can be more than offset by gains arising from reforms in domestic policy. All studies emphasize that the gains from multilateral trade agreements are particularly large in developing countries that open their trade regimes. In general, the studies have estimated the impacts of the Uruguay Round on South Asia to be positive (Ingco, 1997; Sharma et al., 1999).

For a major agricultural producing region such as South Asia, where yields (despite some improvements brought

about by the Green Revolution) have remained well below the world average, increased commodity prices and reduction of trade barriers provide incentives for increased production and exports. Sharma et al. (1999) indicate that the Uruguay Round Agreement may result in a net trade surplus of over US\$1.3 billion in South Asia, with food imports reduced by about \$1 billion and additional exports of about \$300 million.

The manufacturing sector of South Asia, which produces mainly textiles and apparel, has actually been estimated to benefit more from the Uruguay Round than agriculture (Majd, 1995). The eventual elimination of the Multi-Fibre Arrangement (MFA) by 2005 is expected to increase South Asia's textile output by 17 percent and exports by 26 percent. Hertel et al. (1996) have further argued that the gains from MFA reform will amount to about 27 percent of South Asia's overall gains from implementation of the Uruguay Round Agreement. Martin (1999) points out that although South Asian textile and apparel industries are poised for rapid growth, South Asia will need to implement complementary domestic policy reform to take full advantage of the MFA reform.

WTO Issues Particularly Important To South Asia

Market access for export commodities is a top priority for South Asia, especially access for textiles and apparel. Tariffs on textiles and apparel were generally excluded from the Uruguay Round reduction commitments and have remained high. Because the MFA will be fully implemented by 2005 and textiles may not be on the negotiating table, tariffs on textiles will be a difficult issue to tackle in the next trade negotiations. It has often been noted that importing countries have chosen to phase out textile quotas in such a way that very little liberalization occurs during the phase-out period (Martin, 1999). Exporting countries, including South Asian countries, are concerned that having deferred a significant proportion of the liberalization to the end of the phase-out period, it may be politically impossible for importing countries to carry out their Uruguay Round obligations by 2005.

Maintaining, in some form, the provisions of the "special and differential treatment" accorded to developing countries under the Uruguay Round Agreement is important for South Asia. The value of this provision has often been debated by those who question whether exemptions and lesser reform requirements for developing countries have contributed to their smaller gains from the Uruguay Round Agreement. Nevertheless, special provisions, especially those that will provide flexibility in reducing domestic support measures, are very important to South Asian countries. Many developing countries, including South Asian countries, did not set up a domestic support reduction schedule after the Uruguay Round Agreement, thus precluding themselves from implementing support programs for agriculture outside of "Green

² In April 1999, a WTO Dispute Settlement Panel ruled that India's continued use of quantitative restrictions on imports of a wide range of consumer goods under the Balance of Payments provisions of GATT Article XVIII:B was inconsistent with the GATT guidelines and called for their removal.

box” policies and in excess of *de minimus* levels (see Overview table A-1).

However, the special and differential treatment provisions currently allow developing countries to implement these programs to support their agricultural and rural sectors. If the special and differential treatment provisions are not extended in the a round, many developing countries will be unable to provide any support to their agriculture. South Asian countries are also concerned that the current domestic support provisions do not take into consideration the impacts of inflation and currency exchange rate fluctuations on a country’s ability to comply with its WTO obligations.³

Given the important role that imports and food aid play in meeting South Asia’s food demand, most countries in the region consider it a priority that a new round take into consideration the concerns of net food-importing developing countries and adopt measures to ensure that the outcome does not result in higher food prices and decreased food availability. South Asian countries, like many other net food-importing countries, seek assurances from exporting countries that food export supplies will remain reliable and not subject to sudden restrictions. Additionally, importing countries also argue that since global food sufficiency does not always address local food insecurity concerns, especially when the purchasing power of a food-insecure country is limited, a new round will need to consider special measures to address food security concerns of food-importing countries.

Conclusions

The next round of WTO negotiations represents an opportunity for South Asian countries to seek better access for their export products, especially textiles. Further reform of the global trading system will likely require accelerated reform in the domestic policies of South Asian countries. Reforms in domestic policy and global trade rules have the potential to propel additional growth in a region that is already on a rising economic growth path.

Reform in domestic policies and agricultural trading rules will create incentives to remove the anti-agricultural bias existing in the region. This should lead to significant increases in agricultural production in the sub-continent, where average yields are well below the world average. Likewise, South Asia’s manufacturing sector, especially textiles and apparel, is estimated to be poised for major expansion with the impending open trade environment. Increased food production, and rising economic growth brought about by trade liberalization should substantially enhance regional

³ Under the Uruguay Round Agreement on Agriculture, the comparison of current domestic support with the base period support level is done using nominal prices. The use of nominal prices can cause current support to exceed the base levels even when the actual level of support has decreased.

food security and improve general living conditions for many in the region.

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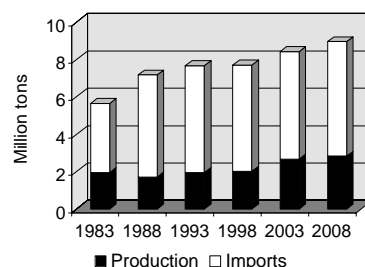
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Statistical table 1--Algeria (North Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,619	206	4,741	26	7,564
1991	3,730	275	4,190	19	8,361
1992	3,348	295	4,688	15	8,639
1993	1,563	272	5,482	18	8,362
1994	959	183	6,939	24	9,595
1995	2,137	306	5,719	17	11,580
1996	4,883	294	3,690	0	9,294
1997	886	242	5,791	0	9,388
1998	3,023	285	5,490	0	10,027
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	2,172	303	5,454	348	0
2004	2,702	334	5,784	660	0
2009	2,867	367	6,206	1,105	0

Algeria is projected to have the largest projected food gap of the North African countries. Production growth will remain static, leading to growing reliance upon imports. Future commercial import capacity will depend on gas and oil exports, which account for 80 percent of all exports.

Algeria's Historical and Projected Grain Sources

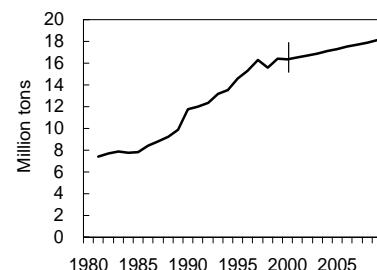


Statistical table 2--Egypt (North Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	11,787	460	6,076	2,003	17,189
1991	12,016	508	6,440	1,026	17,733
1992	12,329	460	6,545	482	17,680
1993	13,205	466	6,717	230	18,272
1994	13,510	398	8,886	180	19,980
1995	14,578	721	7,658	215	21,456
1996	15,323	731	8,437	202	21,364
1997	16,301	523	9,908	167	23,112
1998	15,580	574	9,934	52	22,813
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	16,427	672	10,298	0	0
2004	17,101	719	11,195	387	0
2009	18,107	767	12,564	118	0

Egypt may develop a small food gap based upon recent per capita food consumption levels. The recent high yield growth is projected to slow down in the next decade. Food aid has become relatively negligible recently, reflecting production gains and better commercial import capacity.

Egypt's Historical and Projected Grain Production

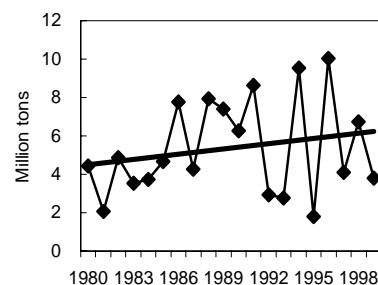


Statistical table 3--Morocco (North Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	6,254	268	1,390	204	8,776
1991	8,636	325	1,758	203	9,610
1992	2,933	276	2,860	234	8,830
1993	2,753	265	3,531	124	9,843
1994	9,530	312	1,683	13	9,384
1995	1,800	232	3,602	0	9,880
1996	10,037	374	2,905	2	10,720
1997	4,101	355	2,772	2	9,996
1998	6,733	335	3,076	13	9,298
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	3,791	332	3,209	3,012	0
2004	7,670	372	3,526	0	0
2009	8,706	416	3,951	0	0

Morocco's grain production is 39 percent below trend in 1999. Stocks may help buffer this shock, but consumption levels could decline this year without large imports. There are no projected long run food gaps based on trends, but frequent production-related food deficits are the norm.

Morocco's Grain Production is Down 39 Percent in 1999

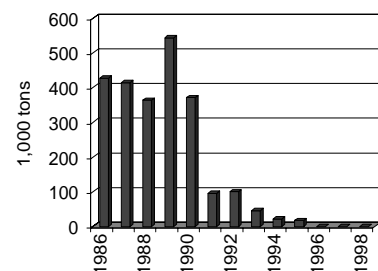


Statistical table 4--Tunisia (North Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,601	54	1,070	371	3,180
1991	2,508	55	831	96	3,589
1992	2,155	54	920	100	3,735
1993	1,561	49	1,001	46	3,233
1994	646	52	1,576	22	3,009
1995	1,366	58	2,678	18	4,497
1996	2,862	78	1,236	0	3,668
1997	1,151	81	1,975	0	3,853
1998	1,654	72	1,500	0	3,617
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,816	75	1,719	0	0
2004	2,089	82	1,849	0	0
2009	2,265	90	2,040	0	0

Tunisia's grain harvest is above average in 1999, so there is no short run food gap. There are no food gaps projected over the next decade based upon production and consumption trends, but Tunisia's production volatility will lead to occasional short run food gaps.

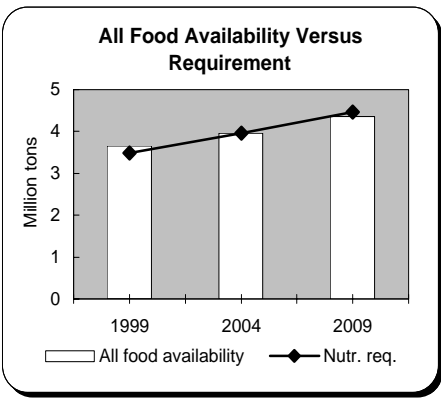
Tunisia's Food Aid Has Declined in Recent Years



Statistical table 5--Cameroon (Central Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	826	755	381	10	2,979
1991	950	747	253	13	3,007
1992	868	755	434	1	3,132
1993	878	784	307	2	3,098
1994	892	778	417	2	3,236
1995	1,140	749	314	4	3,370
1996	1,240	892	118	4	3,413
1997	1,065	926	225	2	3,421
1998	1,155	830	258	3	3,506
Projections					
1999	1,215	906	267	6	3,652
2004	1,293	987	293	195	3,962
2009	1,425	1,075	326	329	4,352
				Food gap	
				SQ	NR (w/o food aid)
				6	0
				195	0
				329	106

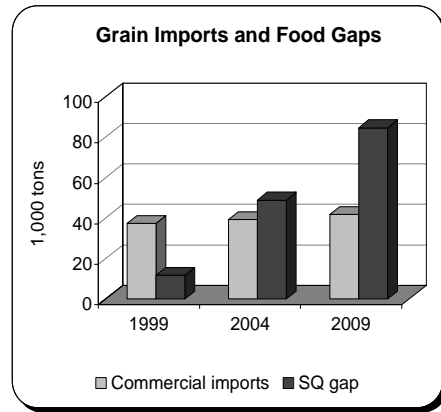
Production is projected to grow at an annual rate of 1.8 percent through 2009, marking a slowdown from the historical trend. This rate is well below the projected population growth rate of 2.5 percent. As a result, per capita consumption is projected to fall about 0.7 percent annually.



Statistical table 6--Central African Republic (Central Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	123	258	32	4	683
1991	129	270	22	3	691
1992	93	281	25	5	673
1993	93	279	24	6	682
1994	85	271	43	1	709
1995	105	281	28	0	720
1996	110	298	14	0	739
1997	120	315	31	0	789
1998	120	324	37	2	816
Projections					
1999	120	304	37	12	788
2004	122	321	39	49	827
2009	129	339	42	85	874
				Food gap	
				SQ	NR (w/o food aid)
				12	71
				49	114
				85	156

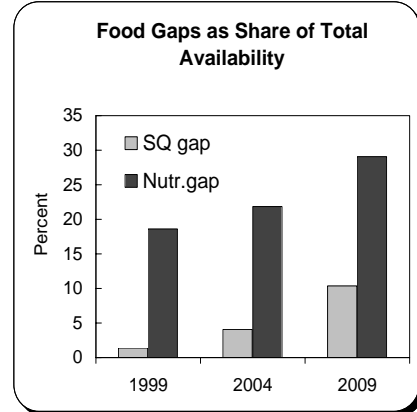
The nutritional situation is projected to deteriorate during the next decade. Production growth of just over 1 percent per year will not be sufficient to fill nutritional requirements and imports will continue to play a minimal role in contributing to domestic food supplies.



Statistical table 7--Congo, Democratic Republic (Cental Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,011	6,590	318	86	8,726
1991	1,229	6,826	164	129	9,120
1992	1,408	6,968	238	27	9,548
1993	1,567	6,668	246	31	9,910
1994	1,545	6,744	223	86	9,858
1995	1,452	6,841	333	35	10,046
1996	1,465	5,974	275	8	9,359
1997	1,305	5,974	258	7	9,123
1998	1,585	5,867	248	2	9,391
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,445	6,474	276	136	1,838
2004	1,756	7,096	275	455	2,421
2009	1,935	7,766	279	1,254	3,533

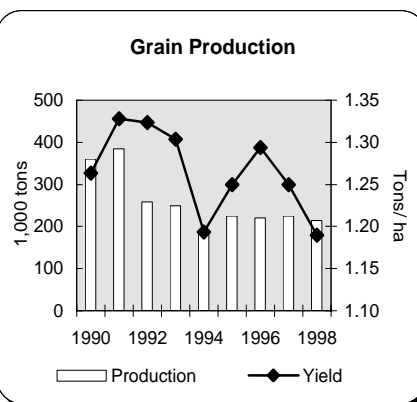
Consumption in each income group is projected to fall short of that needed to fulfill minimum nutritional requirements. Production would need to grow at double the projected annual rate of 1.9 percent to close the nutritional food gap.



Statistical table 8--Burundi (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	360	380	19	3	1,284
1991	385	389	33	1	1,339
1992	258	399	18	6	1,225
1993	249	389	0	28	1,196
1994	185	339	34	78	1,140
1995	225	356	45	5	1,159
1996	220	366	10	3	1,145
1997	225	389	17	0	1,168
1998	215	355	42	1	1,166
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	220	379	30	22	401
2004	236	410	30	85	513
2009	280	444	30	107	587

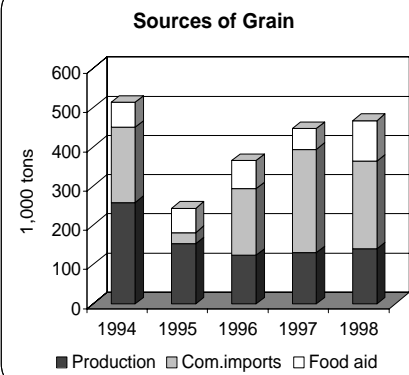
Even though projected production growth far outstrips the historical trend, food supplies will not be sufficient to meet nutritional requirements through the next decade. Consumption in even the highest income group is projected at only 84 percent of the nutritional target in 2009.



Statistical table 9--Eritrea (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	72	--	--	100	72
1991	72	--	--	253	72
1992	198	--	--	39	198
1993	87	23	--	235	334
1994	259	23	192	63	668
1995	153	23	29	62	406
1996	124	23	169	72	520
1997	130	23	264	54	617
1998	140	23	224	103	646
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	150	24	237	80	307
2004	148	26	250	151	411
2009	161	28	273	193	485

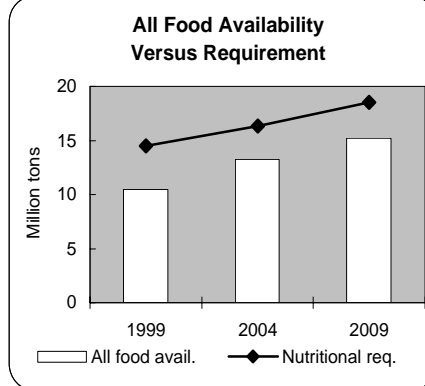
Slow growth of production and imports, each roughly 1.4 percent per year, will lead to widening food gaps through the next decade. The nutritional situation is expected to deteriorate as per capita consumption is projected to decline 1.2 percent annually.



Statistical table 10--Ethiopia (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	5,052	---	---	808	4,560
1991	4,876	---	---	1,046	4,401
1992	5,342	---	---	543	4,824
1993	5,276	746	---	942	8,048
1994	5,702	767	336	687	8,972
1995	6,922	773	244	403	10,057
1996	9,076	780	88	354	12,091
1997	6,870	780	0	394	9,813
1998	8,185	785	62	546	11,402
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	7,925	806	77	901	4,023
2004	10,343	892	80	0	3,057
2009	11,909	987	86	0	3,270

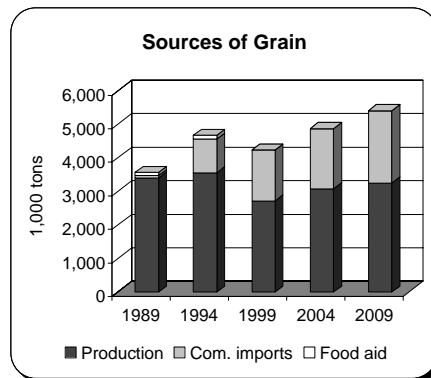
Production growth through the next decade will be sufficient to maintain base per capita consumption levels. Despite this growth--a continuation of the strong post-war trend--food supplies are projected to fall short of nutritional requirements.



Statistical table 11--Kenya (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	2,723	485	296	65	5,996
1991	3,033	480	136	186	6,168
1992	3,085	500	359	288	5,789
1993	2,220	525	312	236	4,907
1994	3,554	520	1,004	111	6,445
1995	3,227	571	284	56	6,718
1996	2,778	606	593	32	5,944
1997	2,930	644	1,506	75	7,309
1998	3,030	651	1,875	76	7,831
Projections				Food gap	
				SQ	NR
1999	2,715	626	1,513	209	249
2004	3,075	685	1,791	0	0
2009	3,251	749	2,150	0	0
				(w/o food aid)	

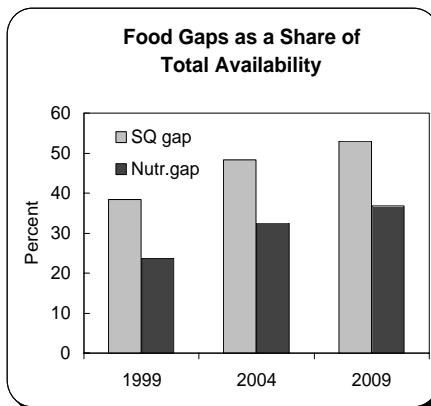
The population growth rate is projected at 1.6 percent per year, significantly below the 3 percent between 1980 and 1998, due to more widespread use of birth control and the impact of AIDS. This trend, combined with strong import growth, is projected to result in a food secure environment through 2009.



Statistical table 12--Rwanda (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	269	629	15	15	1,582
1991	254	739	19	11	1,585
1992	267	673	0	90	1,597
1993	188	598	46	90	1,505
1994	149	499	0	272	1,272
1995	154	480	0	244	1,337
1996	174	526	71	218	1,542
1997	214	548	0	232	1,611
1998	214	557	58	142	1,642
Projections				Food gap	
				SQ	NR
1999	194	520	56	527	326
2004	238	565	55	724	488
2009	254	613	55	848	588
				(w/o food aid)	

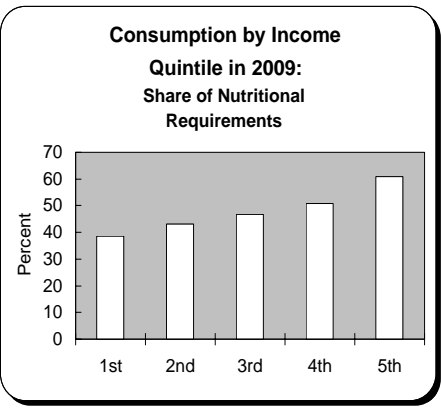
Production fails to return to pre-war levels before the end of the projection period and commercial imports stagnate. As a result, food supplies will fall well short of those required to maintain base per capita consumption levels and to meet minimum nutritional requirements.



Statistical table 13--Somalia (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	477	16	97	100	1,290
1991	257	16	77	132	1,117
1992	202	14	0	312	1,188
1993	162	14	125	75	1,133
1994	228	13	115	13	1,210
1995	293	16	81	12	1,263
1996	313	18	84	12	1,336
1997	320	18	100	5	1,379
1998	254	18	265	17	1,547
Projections					
				Food gap	
				SQ NR (w/o food aid)	
1999	204	18	160	192 882	1,327
2004	320	19	160	355 1,189	1,481
2009	346	21	163	589 1,567	1,565

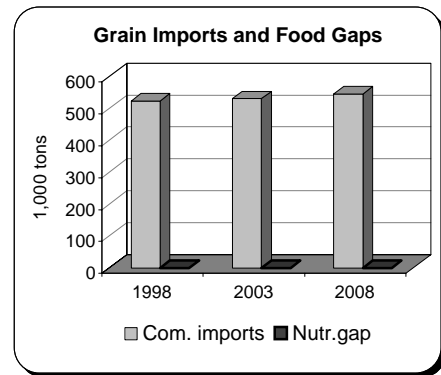
The 1999 grain crops have been adversely affected by insufficient rainfall, pests, and high temperatures. The precarious food situation is exacerbated by localized fighting, which displaces populations and interrupts agricultural activities and food distribution.



Statistical table 14--Sudan (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	2,119	36	120	513	5,244
1991	4,488	49	488	711	7,179
1992	5,307	49	334	286	7,546
1993	3,087	47	93	293	5,869
1994	5,152	50	682	134	7,909
1995	3,307	51	319	64	6,375
1996	5,207	52	362	40	8,116
1997	4,507	52	596	46	8,398
1998	5,707	53	509	63	8,424
Projections					
				Food gap	
				SQ NR (w/o food aid)	
1999	5,272	52	522	67 0	8,478
2004	5,925	55	530	130 0	9,360
2009	6,587	58	545	178 0	10,339

Grain output growth is projected to slow considerably relative to the historical period due to a slowing of area expansion. However, the projected growth of 1.9 percent per year will be more than sufficient to meet minimum nutritional requirements and nearly adequate to maintain base per capita consumption levels.

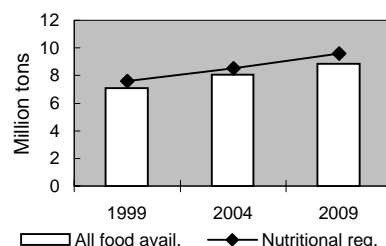


Statistical table 15--Tanzania (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	3,565	1,966	43	34	6,245
1991	3,540	1,736	111	18	6,688
1992	3,390	1,648	154	36	6,495
1993	3,700	1,593	150	47	6,556
1994	3,305	1,681	228	108	6,460
1995	4,355	1,451	194	25	6,813
1996	4,180	1,450	146	22	6,862
1997	3,355	1,368	227	5	6,471
1998	3,925	1,491	637	25	7,594
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	3,685	1,440	467	351	536
2004	4,410	1,555	495	251	458
2009	4,867	1,677	538	501	733

Although production growth rates are projected to exceed those of the historical period, they will not keep pace with the annual population growth rate of 2.3 percent. As a result, the food gaps are projected to widen and consumption in only the highest income group will exceed the nutritional target in 2009.

All Food Availability Versus Requirement

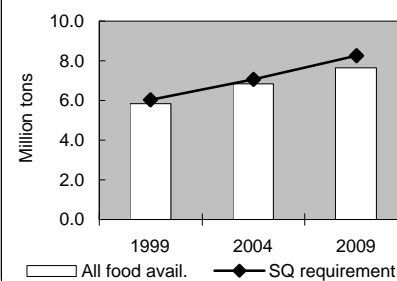


Statistical table 16--Uganda (East Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,520	1,858	0	74	5,163
1991	1,460	1,834	0	30	5,147
1992	1,666	1,765	0	40	5,254
1993	1,794	1,886	36	46	5,569
1994	1,900	1,593	0	60	5,518
1995	2,020	1,688	0	41	5,797
1996	1,750	1,431	16	20	5,451
1997	1,550	1,582	105	21	5,610
1998	1,680	1,579	25	0	5,742
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,670	1,599	45	178	0
2004	2,127	1,777	47	209	0
2009	2,400	1,973	51	586	0

While the projected production growth rate of roughly 2.6 percent per year is adequate to provide enough food to meet nutritional requirements, it falls about 1 percentage point short of that needed to maintain base per capita consumption levels.

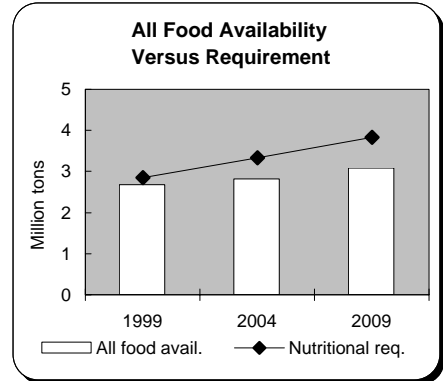
All Food Availability Versus Requirement



Statistical table 17--Angola (Southern Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	227	617	210	124	1,946
1991	346	633	162	142	1,988
1992	452	714	200	116	2,207
1993	317	707	103	222	2,019
1994	261	887	173	229	2,235
1995	302	950	185	224	2,397
1996	473	938	276	228	2,667
1997	513	876	208	154	2,541
1998	443	1,181	358	151	2,962
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	603	964	314	105	366
2004	547	1,035	366	437	742
2009	588	1,111	443	650	1,001

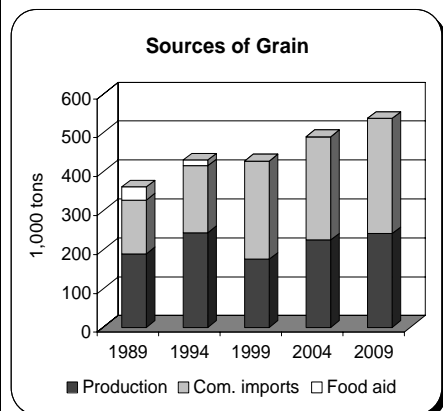
Per capita consumption is projected to decline 1.3 percent per year through the next decade as production growth slows considerably relative to the historical period. Even if historical rates were maintained, Angola would still face food gaps.



Statistical table 18--Lesotho (Southern Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	214	13	167	36	458
1991	148	14	195	37	439
1992	75	16	173	45	343
1993	151	17	187	32	408
1994	243	20	172	15	405
1995	106	20	318	28	526
1996	261	20	287	30	615
1997	210	22	285	32	571
1998	135	23	127	8	395
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	175	21	252	49	44
2004	224	23	266	39	34
2009	241	24	295	47	42

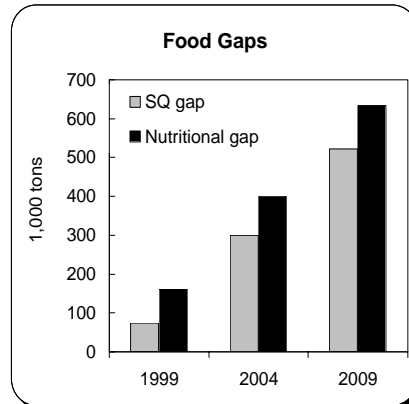
Food aid imports averaged more than 25,000 tons per year during the base period. If this volume is maintained through 2009, it will cover more than half of the projected food gaps.



Statistical table 19--Madagascar (Southern Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	1,700	926	99	38	2,984
1991	1,553	932	28	54	2,836
1992	1,715	916	73	59	3,051
1993	1,812	953	77	34	3,141
1994	1,670	972	123	20	3,056
1995	1,780	956	131	21	3,204
1996	1,830	962	63	28	3,230
1997	1,830	986	98	18	3,324
1998	1,700	981	176	38	3,328
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,875	1,000	126	75	162
2004	2,008	1,084	143	300	400
2009	2,172	1,174	166	521	635

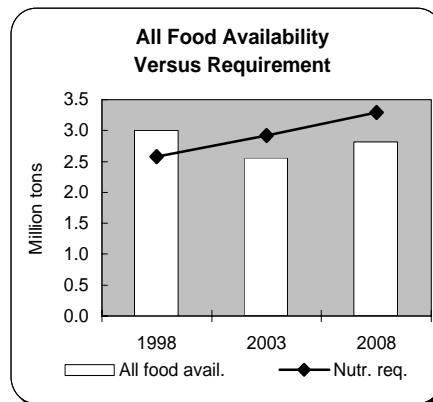
Per capita consumption is projected to drop 1 percent per year as food production remains near historical trends. Production would need to grow at nearly two times the projected rate of 1.64 percent per year to close the nutritional food gap.



Statistical table 20--Malawi (Southern Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	1,373	108	90	65	2,051
1991	1,629	116	0	285	2,320
1992	670	105	0	605	1,760
1993	2,016	128	493	67	2,603
1994	1,093	118	221	284	2,409
1995	1,628	124	194	105	2,254
1996	1,833	125	0	222	2,344
1997	1,270	127	0	99	1,949
1998	1,795	128	113	4	2,476
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	2,400	127	132	0	0
2004	1,895	139	140	216	362
2009	2,093	152	153	316	481

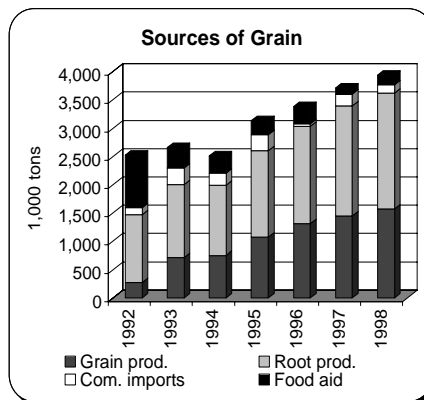
A record grain crop was harvested in 1999 due to abundant rainfall throughout the growing season. As a result, food supplies are estimated to be adequate to maintain base level per capita consumption (status quo) as well as to meet nutritional requirements in 1999.



Statistical table 21--Mozambique (Southern Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	706	1,674	0	523	3,319
1991	544	1,355	0	664	3,071
1992	278	1,193	123	929	2,953
1993	715	1,292	297	356	3,284
1994	756	1,238	214	304	3,158
1995	1,080	1,528	276	251	3,617
1996	1,313	1,727	43	302	3,854
1997	1,453	1,941	213	109	4,159
1998	1,573	2,049	152	165	4,482
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,623	1,779	137	144	656
2004	1,861	1,907	141	191	751
2009	2,148	2,043	149	59	663

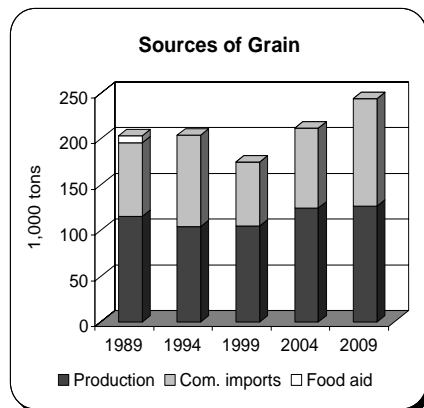
Mozambique's dependence on food aid continues to fall as production remains on an upward trend. By 2009, food supplies derived from domestic production and imports will be nearly sufficient to maintain base level per capita consumption.



Statistical table 22--Swaziland (Southern Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	85	2	84	4	279
1991	158	2	89	5	352
1992	59	2	57	40	268
1993	78	2	78	10	271
1994	104	2	100	1	313
1995	81	2	60	12	264
1996	140	2	56	6	319
1997	105	2	65	6	295
1998	105	2	62	0	291
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	105	2	70	16	0
2004	124	2	88	10	0
2009	127	2	118	4	0

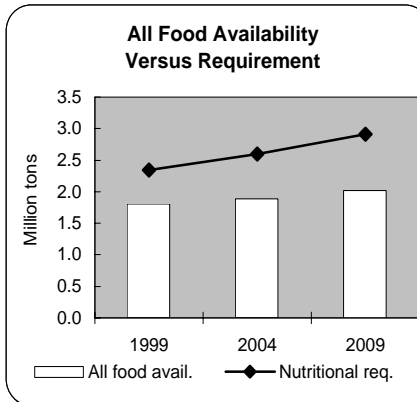
Growth in grain production and imports will be sufficient to provide enough food to meet nutritional requirements through the next decade. Consumption in all income groups, except the lowest, will exceed the minimum nutritional target.



Statistical table 23--Zambia (Southern Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,195	214	0	110	2,115
1991	1,309	234	0	56	1,999
1992	597	227	0	715	1,760
1993	1,759	252	342	11	2,290
1994	1,195	243	54	12	1,656
1995	929	239	78	74	1,602
1996	1,563	251	88	58	2,020
1997	1,157	280	114	4	1,776
1998	702	322	369	2	1,686
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,157	261	209	30	538
2004	1,199	278	222	145	708
2009	1,283	295	240	265	897

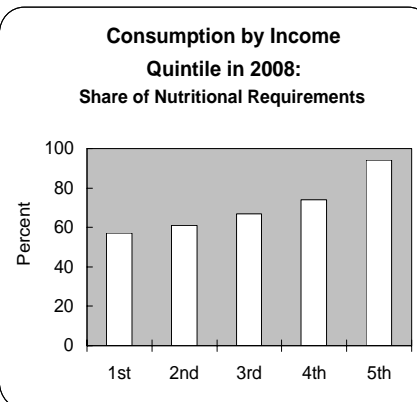
The projected production growth rate would need to nearly triple to achieve the growth necessary to close the nutritional food gap. Consumption in all income groups is projected to fall short of the minimum nutritional requirement in 2009.



Statistical table 24--Zimbabwe (Southern Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	2,758	45	0	54	2,690
1991	2,139	47	0	41	2,776
1992	675	52	583	896	2,178
1993	2,249	57	586	16	2,673
1994	2,622	58	86	5	2,188
1995	1,225	64	117	4	2,406
1996	2,900	65	452	0	3,234
1997	2,417	68	214	1	2,944
1998	1,870	69	543	7	2,958
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,945	67	470	454	420
2004	2,430	70	586	0	0
2009	2,526	74	742	0	0

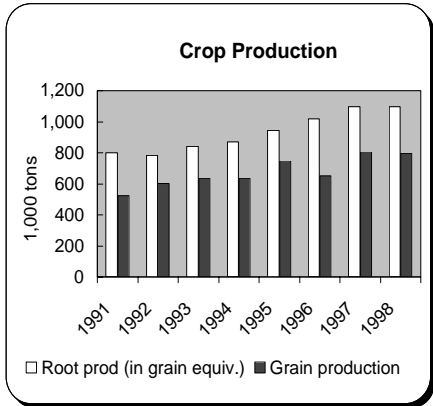
Higher export earnings are projected to support strong growth in import capacity. The imports will offset the sluggish growth in grain output. As a result, food supplies will be adequate to maintain base per capita consumption levels and meet minimum nutritional requirements in the long term.



Statistical table 25--Benin (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	522	717	146	9	1,382
1991	524	802	138	7	1,470
1992	602	782	161	19	1,560
1993	635	843	106	26	1,620
1994	635	868	85	15	1,613
1995	746	946	85	18	1,786
1996	651	1,018	84	9	1,747
1997	805	1,098	85	32	1,903
1998	795	1,098	111	10	1,915
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	835	1,073	107	0	0
2004	887	1,192	134	101	0
2009	987	1,322	178	136	0

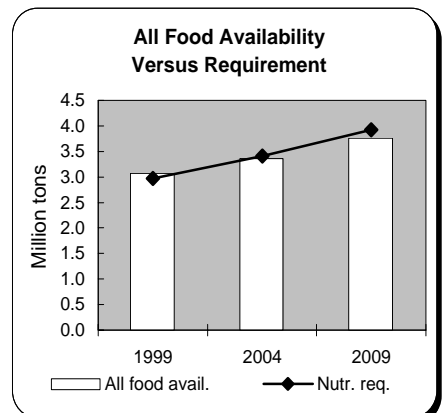
Production growth between 1980-98 exceeded 5 percent per year. Although this is projected to slow to just over 2 percent through 2009, food supplies will be adequate to meet minimum nutritional requirements. Consumption in all income groups will exceed the nutritional target in 2009.



Statistical table 26--Burkina Faso (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,547	20	0	124	1,975
1991	2,220	21	167	42	2,673
1992	2,438	25	126	31	2,851
1993	2,515	22	115	27	2,987
1994	2,453	19	104	19	2,871
1995	2,265	23	82	37	2,702
1996	2,425	23	101	26	2,911
1997	1,965	20	120	16	2,438
1998	2,640	20	195	21	3,204
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	2,590	21	150	0	0
2004	2,828	23	163	40	49
2009	3,161	24	186	150	160

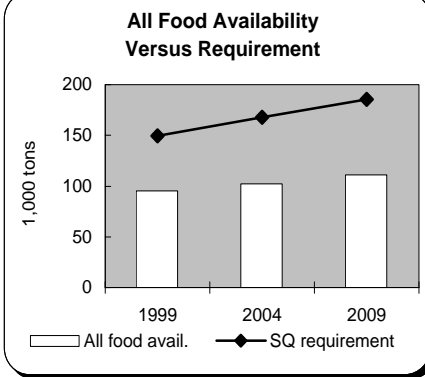
Grain production is projected to grow 2.3 percent per year through 2009. This rate would need to rise to 2.8 percent to close both the status quo and nutritional food gaps.



Statistical table 27--Cape Verde (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food	
			---1,000 tons ---			
1990	10	5	0	76	132	
1991	4	3	0	76	128	
1992	10	2	85	45	192	
1993	12	4	11	58	141	
1994	9	3	18	64	145	
1995	10	2	27	50	151	
1996	10	2	23	46	135	
1997	10	2	10	61	134	
1998	10	2	36	46	146	
Projections						
				Food gap		
				SQ	NR	(w/o food aid)
1999	10	2	25	54	3	96
2004	13	2	27	65	8	102
2009	14	3	31	75	11	111

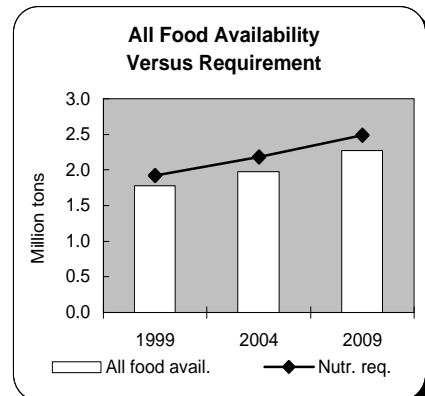
Cape Verde is more dependent upon imports than domestic production to fulfill food requirements. Import growth is projected to be slow--roughly 2 percent per year--and food gaps will grow as a result. Consumption in only the highest income group will exceed the minimum nutritional target.



Statistical table 28--Chad (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food	
			---1,000 tons ---			
1990	536	240	0	33	1,111	
1991	794	212	0	67	1,390	
1992	836	183	51	0	1,407	
1993	671	187	58	17	1,285	
1994	846	186	33	15	1,400	
1995	779	215	24	11	1,457	
1996	786	215	17	28	1,490	
1997	916	209	31	26	1,688	
1998	1,236	220	64	22	2,071	
Projections						
				Food gap		
				SQ	NR	(w/o food aid)
1999	1,096	218	43	0	141	1,781
2004	1,196	239	54	0	211	1,976
2009	1,377	264	73	0	209	2,276

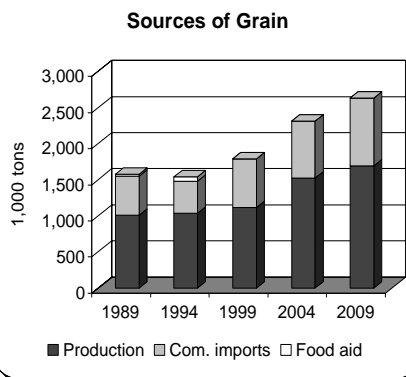
Grain production grew a strong 4 percent per year during the last two decades due principally to acreage expansion. While growth is projected to slow to under 3 percent per year through 2009, it will be adequate to maintain base per capita consumption levels.



Statistical table 29--Côte d'Ivoire (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons---					
1990	972	1,486	495	59	3,577
1991	1,031	1,579	572	36	3,774
1992	962	1,619	557	41	3,759
1993	1,009	1,629	597	45	3,792
1994	1,042	1,669	443	56	3,708
1995	1,092	1,270	678	30	3,716
1996	1,160	1,744	517	47	4,043
1997	1,440	1,786	708	52	4,644
1998	1,245	1,715	603	23	4,298
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,115	1,635	682	187	0
2004	1,526	1,795	789	0	0
2009	1,696	1,971	941	0	0

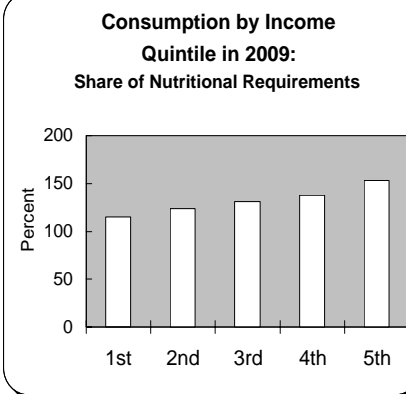
Production growth of more than 2 percent per year, coupled with import growth of more than 3 percent, is more than adequate to provide enough food to meet nutritional requirements. Consumption in each income group is projected to exceed the minimum nutritional target.



Statistical table 30--Gambia (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons---					
1990	100	2	77	14	288
1991	108	2	80	10	305
1992	87	2	78	6	285
1993	93	2	66	11	286
1994	101	2	85	2	295
1995	101	2	92	4	313
1996	101	2	95	4	322
1997	83	2	98	7	322
1998	94	2	116	6	355
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	94	2	120	0	0
2004	102	2	154	0	0
2009	109	2	208	0	0

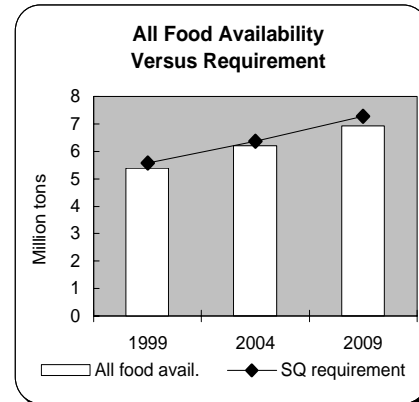
Gambia is projected to be in a secure position with respect to food availability through the next decade. Even when accounting for skewed income distribution, consumption in all income groups is projected to exceed the minimum nutritional requirements in 2009.



Statistical table 31--Ghana (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	813	1,184	244	76	2,877
1991	1,375	1,690	197	215	3,180
1992	1,198	1,799	323	75	3,531
1993	1,582	1,969	252	126	3,953
1994	1,532	2,382	401	101	4,752
1995	1,737	2,724	224	36	4,959
1996	1,673	2,936	284	40	5,104
1997	1,550	2,936	334	84	5,228
1998	1,610	3,074	419	52	5,554
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,635	3,027	386	135	0
2004	2,107	3,270	440	118	0
2009	2,436	3,531	520	291	0

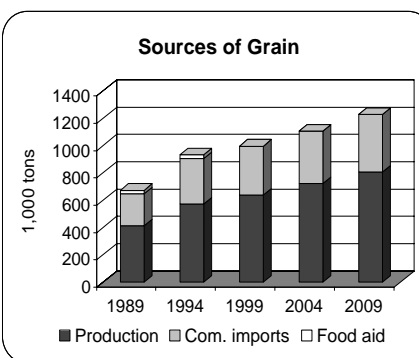
Production between 1980-98 grew at a remarkably strong rate of nearly 8 percent per year due to large increases in area planted and significant gains in yields. While production growth is projected to slow to 2.3 percent per year, food supplies will be adequate to meet nutritional requirements.



Statistical table 32--Guinea (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	475	198	241	12	1,340
1991	581	232	236	30	1,523
1992	505	255	284	30	1,577
1993	553	277	243	46	1,661
1994	574	284	331	29	1,723
1995	600	298	380	5	1,833
1996	610	319	282	7	1,822
1997	630	346	296	3	1,845
1998	630	372	403	7	1,991
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	640	329	357	0	0
2004	723	358	384	0	0
2009	808	389	422	0	0

Production and import growth are adequate to supply enough food to maintain consumption levels and meet nutritional requirements through 2009. However, skewed income distribution does limit access for the two lower income groups. As a result, consumption for roughly 40 percent of the population will fall below the nutritional target in 2009.

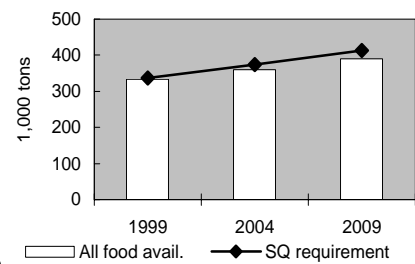


Statistical table 33--Guinea-Bissau (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food	
			---1,000 tons ---			
1990	152	24	38	9	291	
1991	172	22	42	21	323	
1992	125	24	72	9	307	
1993	134	24	61	9	296	
1994	154	24	64	2	313	
1995	152	25	60	2	311	
1996	150	26	66	6	320	
1997	145	26	68	5	319	
1998	125	26	103	1	333	
Projections						
1999	145	26	85	Food gap SQ NR (w/o food aid) 4 0		333
2004	164	27	87	14 0		360
2009	183	28	90	23 0		390

During 1980-98, food aid contributed little to overall food supplies. Food aid, which is excluded from the projections, will not be necessary to meet nutritional requirements at the aggregate level. Food supplies, however, are projected to fall just short of those needed to maintain base per capita consumption levels.

All Food Availability Versus Requirement

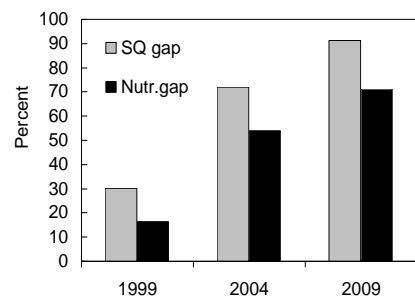


Statistical table 34--Liberia (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food	
			---1,000 tons ---			
1990	126	173	2	69	500	
1991	120	135	31	143	554	
1992	61	141	0	142	485	
1993	39	127	42	138	494	
1994	30	131	19	119	477	
1995	35	99	114	104	533	
1996	60	116	93	117	573	
1997	100	146	48	130	617	
1998	125	158	95	105	707	
Projections						
1999	160	123	86	Food gap SQ NR (w/o food aid) 173 95		574
2004	108	131	88	390 293		543
2009	115	140	93	524 409		574

Favorable growing conditions and improved security conditions have resulted in an improved harvest for 1999. However, food supplies are estimated to fall well short of those needed to maintain base consumption levels and meet nutritional requirements.

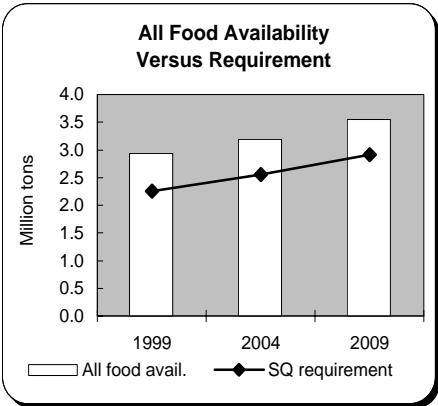
Food Gaps as a Share of Total Availability



Statistical table 35--Mali (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	1,807	7	29	47	2,304
1991	2,245	8	184	51	2,991
1992	1,714	6	63	35	2,322
1993	1,965	9	53	29	2,490
1994	2,234	7	22	16	2,798
1995	2,050	8	83	11	2,655
1996	2,075	10	70	5	2,660
1997	2,000	8	56	25	2,437
1998	2,275	8	84	10	2,806
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	2,320	9	78	0	2,939
2004	2,498	10	89	55	3,190
2009	2,773	10	107	148	3,553

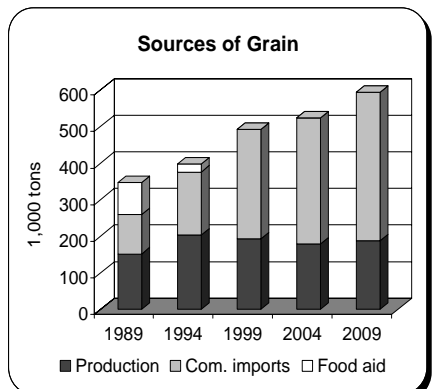
Grain output grew nearly 5 percent per year between 1980 and 1998, supported mainly by a large jump in area planted. Although this growth is projected to slow during the next decade as area expansion slows, it will be adequate to meet nutritional requirements through 2009.



Statistical table 36--Mauritania (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons---		
1990	85	2	62	116	524
1991	96	2	274	50	672
1992	103	1	163	45	572
1993	158	1	187	63	677
1994	204	1	172	22	673
1995	210	1	175	25	724
1996	195	1	240	27	763
1997	108	1	265	24	732
1998	158	1	303	17	826
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	193	1	299	0	832
2004	180	1	344	6	904
2009	188	1	405	7	1,025

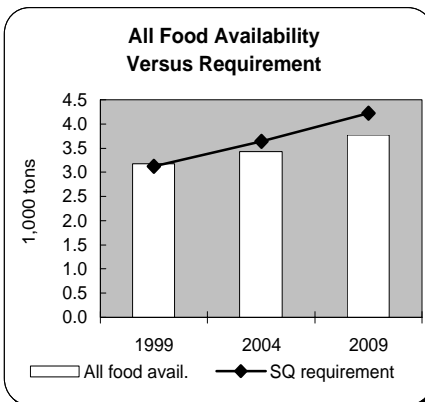
Growth in imports, which provide the bulk of food supplies, is projected to be strong enough to fulfill nutritional requirements, at the aggregate level, through the next decade.



Statistical table 37--Niger (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,596	108	22	91	2,020
1991	2,290	110	88	45	2,703
1992	2,227	111	95	28	2,637
1993	2,119	112	91	31	2,509
1994	2,190	114	67	39	2,628
1995	2,153	114	40	27	2,594
1996	2,296	116	53	6	2,813
1997	2,195	115	54	13	2,904
1998	2,940	117	479	26	4,129
Projections					
				Food gap	
				SQ NR (w/o food aid)	
1999	2,645	118	209	5 0	3,173
2004	2,860	127	214	281 90	3,425
2009	3,156	137	222	533 311	3,767

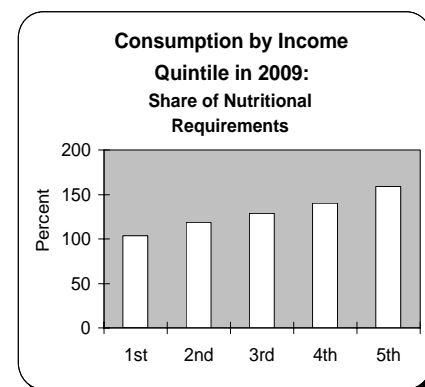
Grain output is projected to grow just under 2 percent per year through the next decade. This is 1 percentage point below the projected population growth rate. As a result, per capita consumption will decline more than 1 percent per year and the food gaps will widen.



Statistical table 38--Nigeria (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	16,345	9,831	422	0	26,165
1991	17,531	12,885	750	1	28,727
1992	18,248	14,684	976	0	31,004
1993	19,278	15,544	1,572	0	34,110
1994	19,897	16,269	922	0	34,084
1995	20,810	16,305	995	0	35,657
1996	18,885	16,807	1,216	0	35,031
1997	18,700	15,251	1,755	1	35,300
1998	19,340	15,251	1,845	0	35,904
Projections					
				Food gap	
				SQ NR (w/o food aid)	
1999	19,245	16,884	1,740	365 0	36,018
2004	23,349	18,357	1,859	0 0	41,622
2009	25,929	19,937	2,044	0 0	45,876

Growth in food supplies is projected to basically match the population growth rate. Consequently, per capita consumption is projected to hold steady at base levels and there will be no food gaps in the long term. Consumption across all income groups is projected to exceed nutritional requirements in 2009.

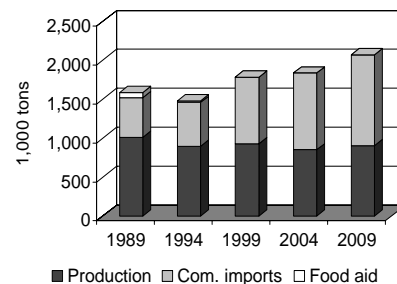


Statistical table 39--Senegal (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons ---					
1990	912	29	669	47	2,212
1991	900	14	552	65	2,202
1992	817	20	524	71	2,198
1993	1,029	19	558	38	2,468
1994	895	31	564	18	2,350
1995	1,005	23	693	9	2,454
1996	917	16	769	11	2,590
1997	707	17	606	8	2,329
1998	686	20	896	2	2,684
Projections					
				Food gap	
				SQ NR	(w/o food aid)
1999	928	19	853	0 0	2,777
2004	851	19	985	0 0	2,954
2009	907	20	1,166	0 0	3,342

Production and import growth are projected to be strong enough to provide sufficient food supplies to meet status quo and nutritional requirements on the aggregate level. However, consumption is projected to fall short of nutritional requirements for 40 percent of the population due to skewed income distribution in 2009.

Sources of Grain

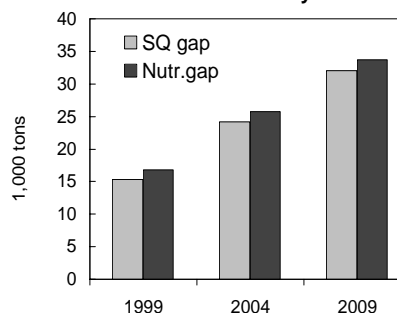


Statistical table 40--Sierra Leone (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons ---					
1990	264	50	135	20	746
1991	268	50	115	66	783
1992	315	48	114	29	732
1993	321	44	116	29	774
1994	270	104	238	30	922
1995	193	93	234	46	934
1996	260	118	177	117	974
1997	275	129	193	100	831
1998	235	129	206	88	859
Projections					
				Food gap	
				SQ NR	(w/o food aid)
1999	255	119	208	138 151	902
2004	273	124	212	228 242	941
2009	290	130	220	315 331	984

Recovery of the agricultural sector and the overall economy is projected to be slow in this country, which has been adversely affected by civil strife. Consumption across all income groups is projected to fall short of the nutritional requirement in 2009.

Food Gaps as a Share of Total Availability

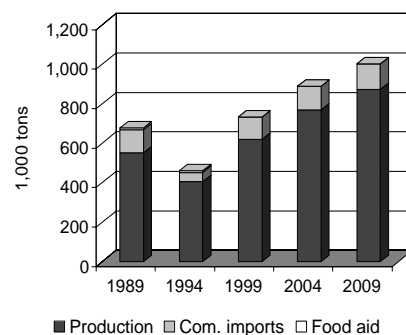


Statistical table 41--Togo (West Africa)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	389	365	109	16	878
1991	427	327	88	14	833
1992	492	302	155	4	973
1993	611	351	55	11	1,008
1994	405	289	48	8	712
1995	450	416	68	4	961
1996	600	423	88	4	1,144
1997	705	470	103	7	1,266
1998	565	468	119	3	1,150
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	620	451	112	50	14
2004	769	500	118	15	0
2009	874	554	127	37	0

The nutritional food gap, on the aggregate level, is projected to be zero in the long term. Skewed income distribution, however, will preclude 60 percent of the population from consuming a nutritionally adequate diet in 2009.

Sources of Grain

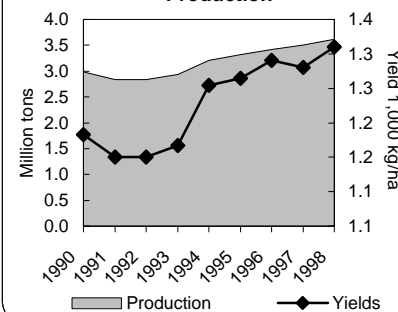


Statistical table 42--Afghanistan (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	2,980	86	248	41	3,955
1991	2,830	86	82	56	3,626
1992	2,830	86	45	108	3,675
1993	2,930	88	144	71	3,777
1994	3,210	88	0	151	3,953
1995	3,320	90	73	127	4,319
1996	3,420	90	0	194	4,315
1997	3,510	90	93	150	4,436
1998	3,620	90	562	145	3,743
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	3,630	93	230	248	681
2004	3,780	100	229	1,341	1,890
2009	4,037	108	232	1,999	2,635

The growth rate of Afghanistan's food imports is expected to fall from 4.3 percent in 1988-98 to 0.1 percent in 1999-2009, while its population is projected to grow 4 percent annually. As a result, the nation's nutritional gap will nearly quadruple by 2009.

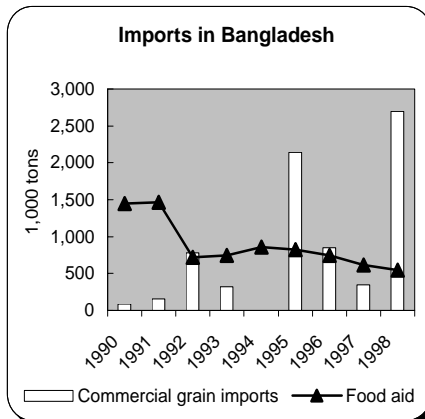
Afghanistan's Grain Production



Statistical table 43--Bangladesh (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food	
			---1,000 tons ---			
1990	18,903	387	89	1,452	23,406	
1991	19,301	422	157	1,469	23,609	
1992	19,452	454	777	719	24,140	
1993	19,264	446	325	745	23,617	
1994	18,011	457	0	858	21,807	
1995	18,979	467	2,145	825	25,535	
1996	20,299	472	851	743	25,772	
1997	20,413	469	346	618	25,223	
1998	20,985	478	2,698	549	26,999	
Projections						
			Food gap			
			SQ	NR	(w/o food aid)	
1999	21,445	481	1,432	410	773	26,464
2004	23,012	513	1,572	801	1,196	28,468
2009	24,850	548	1,785	834	1,263	30,845

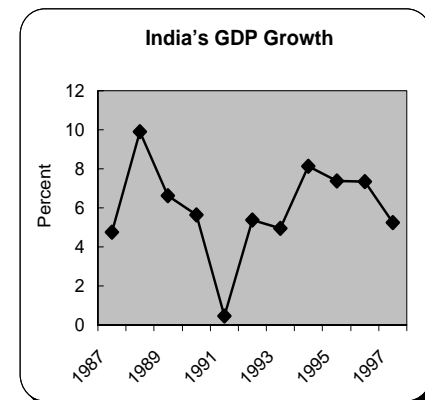
A marked reduction in average food aid to Bangladesh from 1.37 million tons during 1981-90 to 816,000 tons during 1991-98 has exerted additional pressure on domestic production and commercial import capacity to satisfy the country's growing food needs.



Statistical table 44--India (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food	
			---1,000 tons ---			
1990	156,694	5,029	88	217	225,406	
1991	155,744	5,248	0	187	228,960	
1992	165,337	5,597	1,262	351	235,310	
1993	168,530	5,239	67	336	240,334	
1994	170,844	5,906	0	271	243,357	
1995	174,870	5,845	0	313	250,830	
1996	177,758	6,102	410	257	258,974	
1997	182,592	7,701	2,129	208	285,560	
1998	181,847	7,701	2,264	208	269,778	
Projections						
			Food gap			
			SQ	NR	(w/o food aid)	
1999	186,186	6,766	1,817	0	0	269,250
2004	203,640	7,317	2,107	0	0	293,086
2009	221,071	7,909	2,539	0	0	318,842

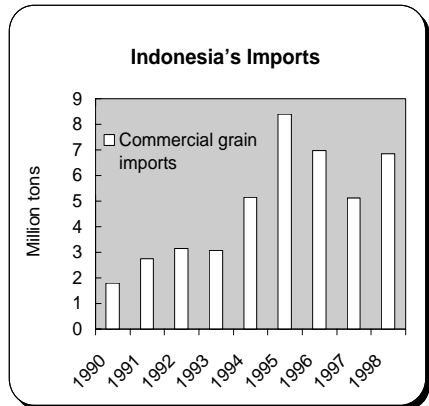
Sustained growth in grain production, a significant enhancement of commercial food import potential, and a slowdown in population growth will enable India to reduce its distribution gap nearly 75 percent by 2009.



Statistical table 45--Indonesia (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	34,042	5,686	1,810	46	51,457
1991	36,750	5,713	2,760	59	53,998
1992	36,968	5,977	3,155	41	56,860
1993	35,715	6,218	3,075	52	56,582
1994	38,433	5,693	5,154	15	57,649
1995	39,215	5,755	8,388	12	63,970
1996	38,034	6,204	6,965	18	63,617
1997	36,283	5,496	5,126	0	57,372
1998	38,661	5,406	6,858	0	62,568
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	37,845	5,956	5,787	1,841	0
2004	42,489	6,269	6,867	0	0
2009	45,962	6,595	8,044	0	0

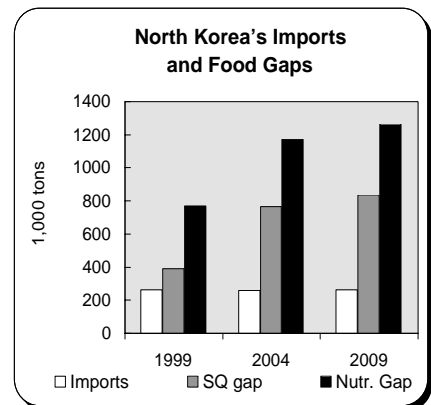
A severe drought and a crippling financial crisis created a transitory status quo food gap in 1999 but pose no threat to Indonesia's long-term food security since base consumption levels are well above the recommended nutritional minimum.



Statistical table 46--Korea, D.P. Rep. (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	8,071	255	596	0	6,568
1991	8,836	250	1,570	0	8,446
1992	8,681	277	1,130	0	6,028
1993	9,137	129	1,570	0	10,079
1994	7,215	184	495	75	6,239
1995	3,662	43	219	736	4,858
1996	2,491	164	239	470	3,513
1997	2,786	164	335	849	6,054
1998	4,148	164	579	1,197	8,324
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	3,093	126	264	391	771
2004	3,335	134	261	767	1,173
2009	3,512	143	263	836	1,263

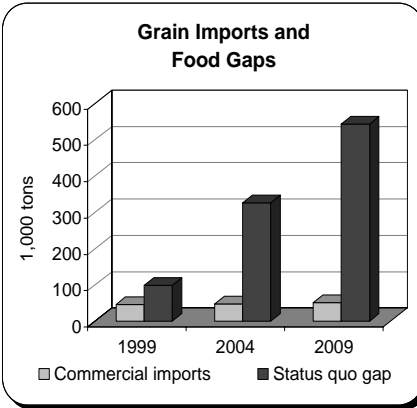
International food aid has lately provided substantial relief to vulnerable population groups in North Korea. In the long run, however, large-scale agricultural rehabilitation measures are necessary to bolster domestic production capacity.



Statistical table 47--Nepal (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	4,674	185	20	1	5,211
1991	4,437	199	4	8	4,973
1992	4,003	198	41	18	4,621
1993	4,075	199	15	44	4,764
1994	4,427	211	49	26	5,224
1995	4,585	223	14	43	5,422
1996	4,985	237	53	33	5,735
1997	5,110	259	48	6	5,871
1998	5,140	253	24	5	5,918
Projections					
1999	5,238	247	46	100	5,991
2004	5,676	262	48	326	6,492
2009	6,157	278	52	543	7,041
				Food gap	
				SQ	NR (w/o food aid)
				100	0
				326	0
				543	0

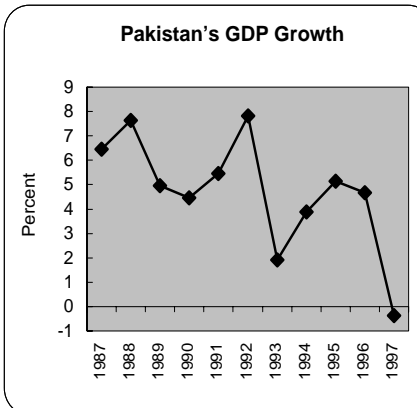
Although grain yields are projected to grow twice as rapidly as in the past decade, smaller acreage gains and a sharply curtailed capacity for commercial imports will give rise to a growing status quo food gap in Nepal during the next decade.



Statistical table 48--Pakistan (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	19,445	261	1,673	380	32,590
1991	19,390	248	603	373	31,543
1992	20,458	279	1,813	236	32,984
1993	21,915	301	2,831	67	36,166
1994	20,537	331	1,817	103	35,556
1995	22,833	343	2,679	18	38,671
1996	23,013	336	1,971	15	38,714
1997	22,834	316	2,503	8	38,732
1998	25,178	422	4,148	173	43,151
Projections					
1999	24,620	343	3,147	505	41,524
2004	27,770	371	3,486	1,161	46,580
2009	31,185	400	4,026	1,390	52,461
				Food gap	
				SQ	NR (w/o food aid)
				505	0
				1,161	0
				1,390	0

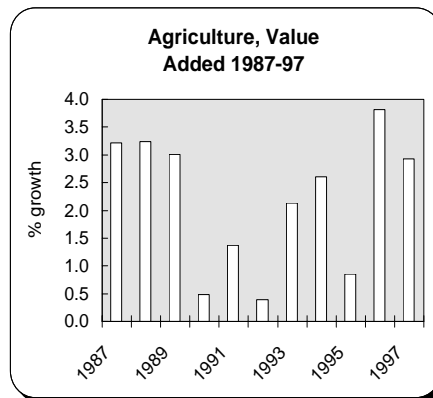
A steep decline in the growth of commercial food imports and a modest slowdown in domestic food production threaten Pakistan's ability to maintain current consumption levels over the next decade. However, nutritional adequacy will not be impaired.



Statistical table 49--Philippines (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	11,527	913	2,625	109	17,856
1991	10,426	902	1,642	48	17,497
1992	11,000	901	1,956	53	17,209
1993	11,480	924	2,140	52	18,485
1994	11,343	954	2,380	44	19,213
1995	11,587	948	2,786	17	18,760
1996	11,480	942	2,398	11	19,833
1997	10,033	951	3,610	40	20,271
1998	11,465	874	4,600	9	21,239
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	11,581	962	3,947	0	21,493
2004	11,859	999	4,538	537	22,721
2009	12,521	1,036	5,470	402	24,904

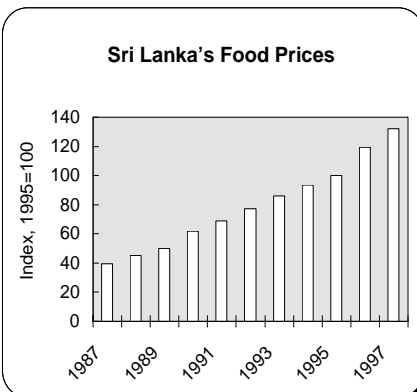
By reversing a downward trend in grain acreage, the Philippines is projected to double the growth rate of its domestic food production relative to the past decade, despite slower growth in grain yields.



Statistical table 50--Sri Lanka (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,678	173	700	201	4,159
1991	1,691	162	421	439	4,267
1992	1,649	140	813	249	4,414
1993	1,748	145	803	338	4,512
1994	1,905	140	590	346	4,861
1995	1,679	138	1,022	120	4,775
1996	1,502	137	1,221	57	4,747
1997	1,758	118	1,216	83	5,028
1998	1,783	107	999	82	5,046
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,765	132	1,222	0	4,983
2004	1,750	136	1,266	115	5,072
2009	1,800	140	1,344	181	5,282

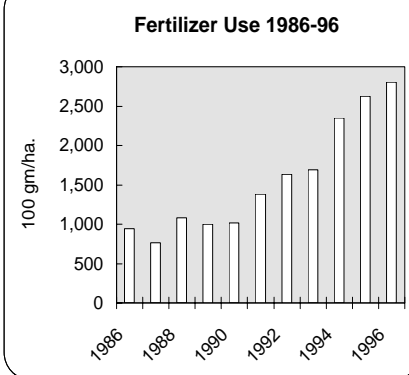
Smaller annual increases in domestic grain output and a diminished capacity for commercial food imports are expected to lead to a modest but growing status quo food gap in Sri Lanka from 2004 through 2009.



Statistical table 51--Vietnam (Asia)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	13,064	1,394	99	75	15,174
1991	15,310	1,488	190	80	16,821
1992	15,389	1,654	156	84	17,512
1993	16,931	1,561	293	87	18,564
1994	17,390	1,400	242	64	19,018
1995	18,867	1,281	464	21	19,975
1996	19,503	1,246	451	0	20,483
1997	20,632	1,198	479	0	24,362
1998	20,865	1,120	550	0	24,808
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	20,979	1,281	565	0	23,703
2004	22,827	1,387	684	0	25,879
2009	24,684	1,502	863	0	28,171

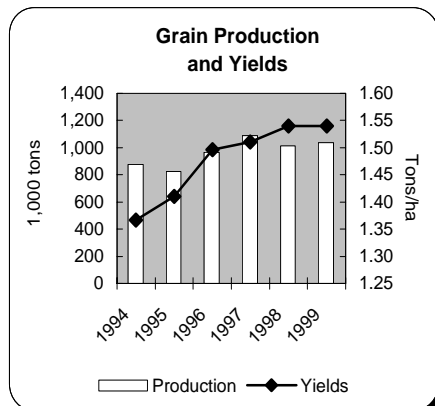
Because of slower population growth, Vietnam will continue to remain food secure despite much lower growth rates of food production and commercial imports and increased grain exports.



Statistical table 52--Bolivia (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	692	288	0	235	1,618
1991	760	309	143	238	1,794
1992	780	291	130	243	1,806
1993	1,055	318	89	205	1,917
1994	875	268	155	176	1,773
1995	825	272	274	67	1,847
1996	965	296	160	75	1,866
1997	1,090	338	89	130	2,034
1998	1,015	247	322	68	2,099
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,035	314	207	118	244
2004	1,251	347	210	61	202
2009	1,427	383	216	30	186

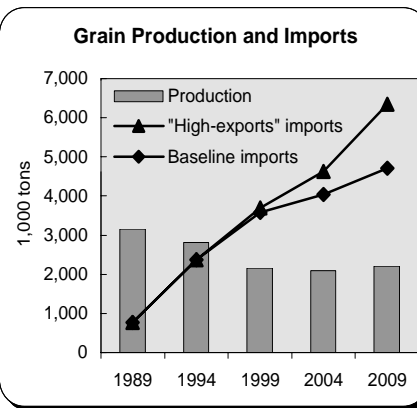
Growth in grain, root, and tuber production has been strong and is projected to stay at 2.5 percent per year through 2009. This will be enough to virtually eliminate Bolivia's status quo gap, but not its nutritional gap.



Statistical table 53--Colombia (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons ---					
1990	3,093	1,150	952	1	9,701
1991	2,816	1,053	791	8	9,102
1992	2,688	1,037	1,590	17	9,894
1993	2,806	1,250	1,694	31	9,741
1994	2,811	1,257	2,373	15	10,237
1995	2,394	1,236	2,572	0	10,843
1996	2,159	1,176	3,272	0	11,597
1997	1,834	1,258	3,286	0	11,057
1998	1,924	1,258	2,991	0	11,050
Projections					
				Food gap	
				SQ	NR (w/o food aid)
1999	2,164	1,254	3,574	0	12,115
2004	2,086	1,314	4,046	0	13,067
2009	2,201	1,376	4,718	0	14,650

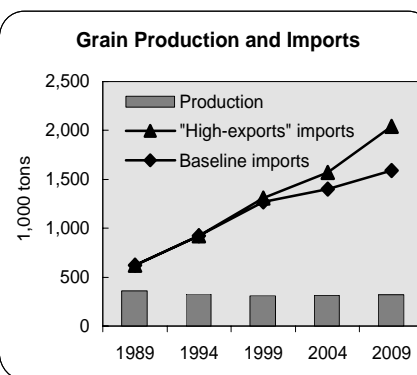
Colombia has the highest per capita income (\$2,600) of the group of 11 countries. However, its income distribution is among the most unequal, and the lowest income quintile--i.e. about 8.3 million people in 1999--is estimated to fall short of nutritional requirements. Projections indicate improvements by 2009.



Statistical table 54--Dominican Republic (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons ---					
1990	323	73	682	6	1,803
1991	343	76	731	14	1,693
1992	390	84	785	7	1,709
1993	350	57	972	7	1,944
1994	329	63	924	3	1,903
1995	316	85	1,018	1	1,997
1996	360	78	1,036	0	1,971
1997	301	63	1,151	2	2,178
1998	282	76	1,191	0	2,183
Projections					
				Food gap	
				SQ	NR (w/o food aid)
1999	307	77	1,270	0	2,383
2004	314	79	1,404	0	2,598
2009	323	81	1,590	0	2,931

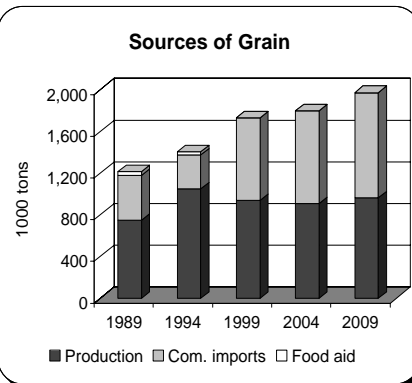
By 2009, the Dominican Republic is projected to reach a level of food security where everybody should be able to consume above the minimum nutritional requirements. Despite some negative lingering impact of Hurricane Georges (fall 1998) general economic growth is strong for the second year in a row, exceeding 7 percent.



Statistical table 55--Ecuador (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food	
---1,000 tons ---						
1990	865	116	365	98	2,651	
1991	956	104	416	45	2,800	
1992	1,028	128	346	14	2,810	
1993	1,104	113	271	12	2,677	
1994	1,050	137	321	32	2,880	
1995	1,009	123	377	1	2,807	
1996	767	120	433	8	2,992	
1997	831	164	646	17	3,000	
1998	811	164	1,022	7	3,450	
Projections						
1999	941	134	788	0	0	(w/o food aid) 3,393
2004	909	140	886	0	0	3,591
2009	965	146	1,007	0	0	3,942

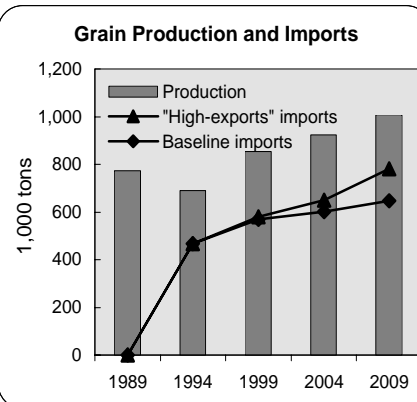
Ecuador suffers from a very unequal income distribution that leaves about 40 percent of the population with insufficient purchasing power to consume the minimum nutritional requirements. In 1998, the country suffered from three adverse shocks: El Niño, low international prices for petrol, and repercussions from the financial crisis in Russia.



Statistical table 56--El Salvador (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food	
---1,000 tons ---						
1990	795	10	72	84	1,294	
1991	699	11	368	86	1,556	
1992	953	15	141	131	1,463	
1993	858	14	212	79	1,393	
1994	690	32	467	7	1,537	
1995	873	27	415	13	1,543	
1996	841	26	402	0	1,377	
1997	860	26	571	0	1,706	
1998	790	25	575	0	1,630	
Projections						
1999	855	27	569	0	0	(w/o food aid) 1,664
2004	922	29	601	22	0	1,765
2009	1,006	31	647	24	0	1,915

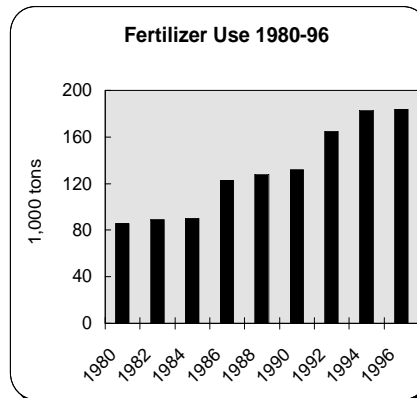
El Salvador has suffered set backs --like other countries in the region-- due to natural disasters (El Niño and Hurricane Mitch) and due to the international financial crisis that reduced foreign capital flows into the region. We project a slight status quo gap to persist during the next decade.



Statistical table 57--Guatemala (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons ---					
1990	1,398	16	185	171	2,153
1991	1,355	14	176	252	2,252
1992	1,454	16	280	109	2,281
1993	1,400	17	275	151	2,253
1994	1,343	17	430	144	2,353
1995	1,423	17	462	30	2,378
1996	1,436	17	616	25	2,294
1997	1,258	17	563	40	2,455
1998	1,235	17	972	13	2,652
Projections					
1999	1,285	18	801	73 0	2,533
2004	1,413	20	871	243 54	2,726
2009	1,524	23	969	409 196	2,950

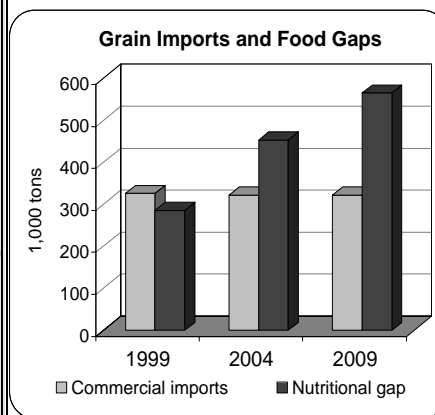
Economic growth in Guatemala has been steady but not sufficient to prevent the prospect of widening food gaps. Total and grain imports have been increasing at a very fast rate. Unless export earnings accelerate, this trend is not expected to continue into the medium term future.



Statistical table 58--Haiti (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons ---					
1990	350	224	254	42	1,421
1991	330	225	218	55	1,378
1992	320	231	268	75	1,445
1993	340	223	217	114	1,412
1994	330	216	159	117	1,355
1995	345	219	336	81	1,593
1996	345	215	276	86	1,550
1997	405	211	245	104	1,663
1998	455	213	420	115	1,928
Projections					
1999	455	219	326	75 285	1,620
2004	427	232	322	224 453	1,615
2009	453	246	322	317 565	1,677

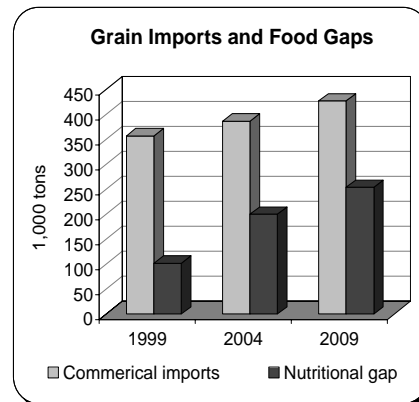
Even though Haiti's political crisis remains unresolved, the economic situation improved somewhat during 1998. This year, however, the impact of Hurricane George's destruction of agricultural infrastructure led to a slowdown in overall economic growth. Poverty and hunger continue to afflict the overwhelming majority of the population.



Statistical table 59--Honduras (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	684	8	88	84	1,047
1991	693	7	100	160	1,074
1992	710	8	73	64	1,058
1993	690	8	66	149	1,131
1994	617	7	250	73	1,190
1995	780	7	233	42	1,217
1996	679	8	190	58	1,096
1997	730	8	385	32	1,378
1998	601	9	371	23	1,318
Projections			Food gap		
				SQ	NR (w/o food aid)
1999	730	8	357	0	102
2004	791	9	387	56	200
2009	876	9	427	93	254

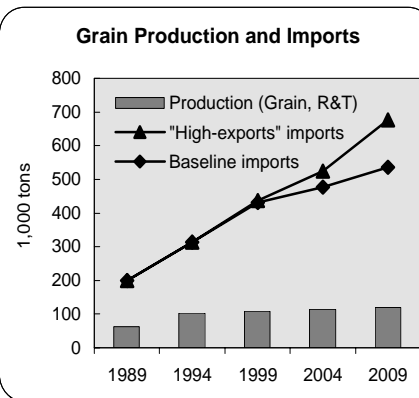
Honduras, the country most severely affected by Hurricane Mitch, is fortunate to obtain substantial financial and technical aid. Cheap imports and food aid, however, lead to suppressed prices that might drive producers to switch from grains to more profitable crops such as tobacco and sugar.



Statistical table 60--Jamaica (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	2	68	172	163	618
1991	3	72	131	323	753
1992	4	84	251	201	735
1993	5	92	298	157	795
1994	5	97	313	53	675
1995	5	102	385	49	722
1996	5	108	312	0	651
1997	5	90	359	0	689
1998	5	90	500	0	826
Projections			Food gap		
				SQ	NR (w/o food aid)
1999	5	104	431	0	0
2004	5	109	477	0	0
2009	5	115	537	0	0

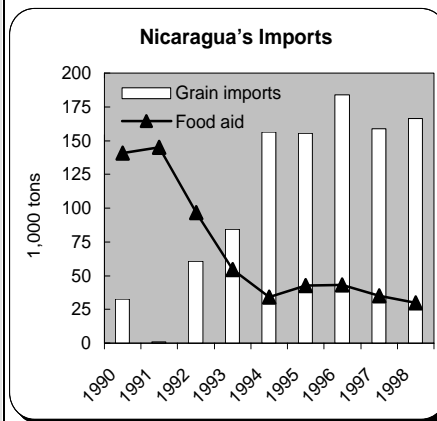
Jamaica is the only country in this region where even the lowest income group is projected to meet nutritional requirements. Current trends, however, indicate a continued decline in GDP growth for the 4th year in a row. Export earnings fell 6.5 percent to 1.6 billion dollars in 1998, mainly due to declining banana and coffee exports.



Statistical table 61--Nicaragua (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food		
			---1,000 tons ---				
1990	357	20	33	141	891		
1991	409	20	1	145	911		
1992	427	20	61	97	938		
1993	485	21	85	55	954		
1994	290	21	156	34	932		
1995	409	21	155	43	1,028		
1996	557	21	184	43	1,160		
1997	494	22	159	35	1,090		
1998	490	21	166	30	1,162		
Projections							
1999	530	22	186	50	0	(w/o food aid)	1,144
2004	556	23	191	177	82		1,190
2009	585	25	201	297	190		1,247

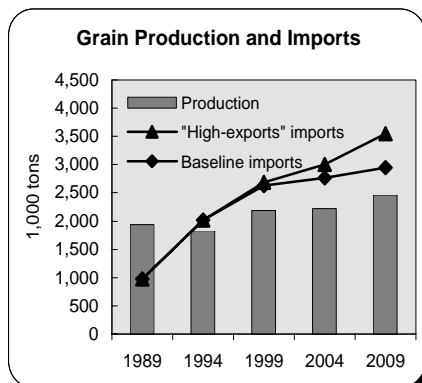
Nicaragua benefits from good weather conditions that raise expectations for an above average grain harvest. Corn and rice production are expected to increase 25 and 20 percent compared with last year's hurricane-reduced output.



Statistical table 62--Peru (Latin America and the Caribbean)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food		
			---1,000 tons ---				
1990	1,388	521	1,202	398	4,688		
1991	1,250	575	1,339	492	4,565		
1992	1,669	455	1,684	377	4,984		
1993	1,972	607	1,549	410	5,031		
1994	1,821	686	2,021	348	5,712		
1995	1,634	850	2,396	108	6,484		
1996	1,827	877	2,447	0	6,393		
1997	1,953	935	2,219	0	5,682		
1998	2,245	959	2,710	0	6,518		
Projections							
1999	2,190	913	2,627	0	0	(w/o food aid)	6,499
2004	2,226	971	2,761	100	0		6,723
2009	2,456	1,033	2,945	80	0		7,266

Peru's fast growing economy came to a virtual standstill in 1998 due to the wave of international financial crises and El Niño, which reduced agricultural output 1.7 percent. Income losses and destruction of infrastructure reduced GDP nearly 5 percent. Positive but slow growth is expected to resume in 1999.

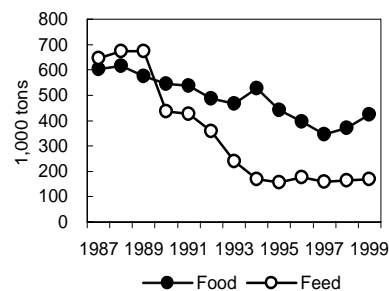


Statistical table 63--Armenia (New Independent States)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons---					
1990	246	---	---	---	---
1991	292	---	---	---	---
1992	292	62	380	117	709
1993	301	80	189	277	719
1994	213	77	64	366	804
1995	236	87	106	279	966
1996	306	82	147	200	927
1997	290	69	258	101	924
1998	320	82	251	138	965
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	250	80	239	150	96 737
2004	400	86	258	0	0 941
2009	429	93	296	0	0 1,040

Armenia faces a food gap in 1999 due to a below average grain harvest. Meeting the food gap will be difficult this year due to the Russian ruble devaluation, which has hurt Armenia's exports as well as remittances from Armenians living in Russia.

Armenia's Food and Feed Use Are Stabilizing

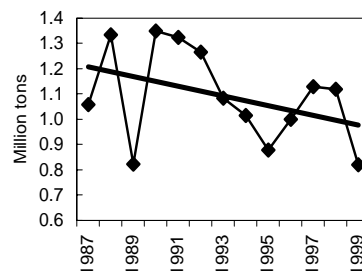


Statistical table 64--Azerbaijan (New Independent States)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
---1,000 tons---					
1990	1,349	---	---	---	---
1991	1,324	---	---	---	---
1992	1,266	30	894	6	2,137
1993	1,084	29	810	58	1,827
1994	1,015	29	204	424	1,779
1995	878	30	38	180	1,253
1996	1,000	41	360	187	1,748
1997	1,130	43	474	33	1,854
1998	1,120	60	370	60	1,855
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	820	41	445	287	290 1,528
2004	1,233	44	508	0	0 2,050
2009	1,316	47	609	0	0 2,289

Azerbaijan faces a sizable food gap in 1999 due to a 20-percent production shock from a bad harvest. Development of the petroleum sector should help the economy in the medium term, but importing the necessary grain commercially this year may be difficult.

Azerbaijan's Grain Production is Down 20 Percent in 1999

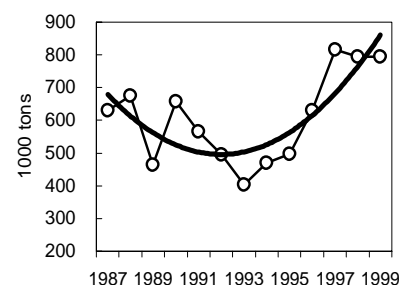


Statistical table 65--Georgia (New Independent States)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	658	---	---	---	---
1991	565	---	---	---	---
1992	496	41	443	194	1,377
1993	403	49	69	585	1,046
1994	470	58	152	569	1,209
1995	497	69	398	281	1,356
1996	630	56	114	381	1,185
1997	815	60	196	92	1,217
1998	795	78	447	160	1,472
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	795	65	276	79	84
2004	914	68	305	0	0
2009	967	71	357	0	0

Georgia's 1999 grain harvest is about the same as last year, which is still not quite adequate to meet recent consumption levels. Georgia, which is very reliant upon trade with Russia, was hurt by the ruble devaluation but is projected to recover well in the medium term.

Georgia's Grain Production Has Recovered Recently

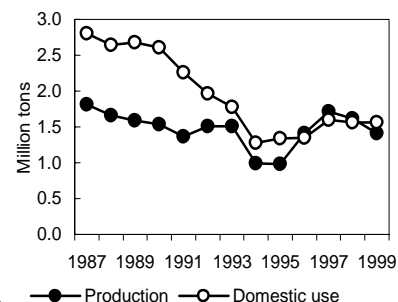


Statistical table 66--Kyrgyzstan (New Independent States)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	1,535	---	---	---	---
1991	1,369	---	---	---	---
1992	1,510	70	1,017	91	2,003
1993	1,511	59	694	156	1,732
1994	993	60	45	61	1,043
1995	985	83	0	165	1,216
1996	1,415	108	4	154	1,389
1997	1,713	130	145	19	1,676
1998	1,613	139	59	72	1,614
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	1,411	110	77	255	0
2004	1,793	122	87	0	0
2009	1,934	135	103	0	0

Kyrgyzstan could face a short run food gap due to a grain harvest that is below the levels achieved in the past 2 years. The country should be able to avoid food gaps in the future if it can maintain peace and sustain its economic development.

Kyrgyzstan Has Been a Grain Exporter in Recent Years



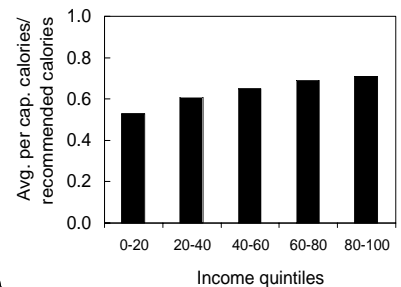
Statistical table 67--Tajikistan

(New Independent States)

Year	Grain production	Root production (grain equiv.)	Commercial imports (grains)	Food aid receipts (grains)	Aggregate availability of all food
			---1,000 tons ---		
1990	282	---	---	---	---
1991	264	---	---	---	---
1992	235	32	1,485	71	1,854
1993	252	28	1,384	82	2,073
1994	220	26	696	104	1,444
1995	212	22	309	206	1,144
1996	346	21	106	139	799
1997	306	25	386	97	1,086
1998	306	23	280	128	986
Projections				Food gap	
				SQ	NR (w/o food aid)
1999	306	29	288	103	475
2004	400	33	316	13	410
2009	428	36	363	0	415

Tajikistan faces severe short- and long-run nutrition-based food gaps. Poverty extends to upper income groups within the country, which also do not consume adequate amounts of food. Rebuilding from war will take time.

Tajikistan's Nutritional Food Gaps Extend to All Income Quintiles



Appendix 1—Food Security Model: Definition and Methodology

The Food Security Assessment model used in this report was developed at the USDA-ERS for use in projecting food consumption and access, and food gaps (previously called food needs) in 67 low-income countries through 2009. This year, North Korea was for the first time included in the analysis. The reference to food includes grains, root crops, and a category called “other,” which includes all other commodities consumed, thus covering 100 percent of food consumption. All of these commodities are expressed in grain equivalent.

Food security of a country is evaluated based on the gap between projected domestic food consumption (produced domestically plus imported commercially minus nonfood use) and a consumption requirement. Although food aid is expected to be available during the projection period, it is not included in the projection of food consumption. It should be noted that while projection results will provide a baseline for the food security situation of the countries, they depend on assumptions and specifications of the model. Since the model is based on historical data, it implicitly assumes that the historical trend in key variables will continue in the future.

Food gaps are projected using two consumption criteria:

1) *Status quo target*, where the objective is to maintain average per capita consumption of the recent past. The most recent 3-year average (1996-98) is used for the per capita consumption target in order to eliminate short-term fluctuations.

2) *Nutrition-based target*, where the objective is to maintain the minimum daily caloric intake standards recommended by the UN’s Food and Agriculture Organization (FAO). The caloric requirements (based on total share of grains, root crops, and “other”) used in this assessment are those necessary to sustain life with minimum food-gathering activities. They are comparable to the activity level for a refugee—they do not allow for play, work, or any activity other than food gathering.

The status quo measure embodies a “safety-net” criterion by providing food consumption stability at recently achieved levels. The nutrition-based target assists in comparisons of relative well-being. Comparing the two consumption measures either for countries or regions provides an indicator of the need depending on whether the objectives are to achieve consumption stability and/or to meet a nutritional standard. Large nutrition-based needs relative to status quo needs, for example, mean additional food must be provided if improved nutrition levels are the main objective. In cases where nutrition-based requirements are below status quo consumption needs, food availability could decline without risking nutritional adequacy, on average. Both methods,

however, fail to address inequalities of food distribution within a country.

Structural Framework for Projecting Food Consumption in the Aggregate and by Income Group

Projection of Food Availability—The simulation framework used for projecting aggregate food availability is based on partial equilibrium recursive models of 67 lower income countries. The country models are synthetic, meaning that the parameters that are used are either cross country estimates or are estimated by other studies. Each country model includes three commodity groups, grains, root crops and “other.” The production side of the grain and root crops are divided into yield and area response. Crop area is a function of 1-year lag return (real price times yield), while yield responds to input use. Commercial imports are assumed to be a function of domestic price, world commodity price, and foreign exchange availability. Foreign exchange availability is a key determinant of commercial food imports and is the sum of the value of export earnings and net flow of credit. Foreign exchange availability is assumed to be equal to foreign exchange use, meaning that foreign exchange reserve is assumed constant during the projection period. Countries are assumed to be price takers in the international market, meaning that world prices are exogenous in the model. However, producer prices are linked to the international market. The projections of consumption for the “other” commodities is simply based on a trend that follows the projected growth in supply of the food crops (grains plus root crops). Although this is a very simplistic approach, it represents an improvement from the previous assessments where the contribution to the diet of commodities such as meat and dairy products was overlooked. The plan is to enhance this aspect of the model in the future.

For the commodity group grains and root crops (*c*), food consumption (*FC*) is defined as domestic supply (*DS*) minus nonfood use (*NF*). *n* is country index and *t* is time index.

$$FC_{cnt} = DS_{cnt} - NF_{cnt} \quad (1)$$

Nonfood use is the sum of seed use (*SD*), feed use (*FD*), exports (*EX*), and other uses (*OU*).

$$NF_{cnt} = SD_{cnt} + FD_{cnt} + EX_{cnt} + OU_{cnt} \quad (2)$$

Domestic supply of a commodity group is the sum of domestic production (*PR*) plus commercial imports (*CI*) and changes in stocks (*CSTK*).

$$DS_{cnt} = PR_{cnt} + CI_{cnt} + CSTK_{cnt} \quad (3)$$

Production is generally determined by the area and yield response functions:

$$PR_{cnt} = AR_{cnt} * YL_{cnt} \quad (4)$$

$$YL_{cnt} = f(LB_{cnt}, FR_{cnt}, K_{cnt}, T_{cnt}) \quad (5)$$

$$RPY_{cnt} = YL_{cnt} * DP_{cnt} \quad (6)$$

$$RNPY_{cnt} = NYL_{cnt} * NDP_{cnt} \quad (7)$$

$$AR_{cnt} = f(AR_{cnt-1}, RPY_{cnt-1}, RNPY_{cnt-1}, Z_{cnt}) \quad (8)$$

where *AR* is area, *YL* is yield, *LB* is rural labor, *FR* is fertilizer use, *K* is indicator of capital use, *T* is the indicator of technology change, *DP* is real domestic price, *RPY* is yield times real price, *NDP* is real domestic substitute price, *NYL* is yield of substitute commodity, *RNPY* is yield of substitute commodity times substitute price, and *Z* is exogenous policies.

The commercial import demand function is defined as:

$$CI_{cnt} = f(WPR_{ct}, NWPR_{ct}, FEX_{nt}, PR_{cnt}, M_{nt}) \quad (9)$$

where *WPR* is real world food price, *NWPR* is real world substitute price, *FEX* is real foreign exchange availability, and *M* is import restriction policies.

The real domestic price is defined as:

$$DP_{cnt} = f(DP_{cnt-1}, DS_{cnt}, NDS_{cnt}, GD_{nt}, EXR_{nt}) \quad (10)$$

where *NDS* is supply of substitute commodity, *GD* is real income, and *EXR* is real exchange rate.

Projections of food consumption by income group—

Inadequate economic access is the most important cause of chronic undernutrition among developing countries and is related to the level of income. Estimates of food gaps at the aggregate or national level fail to take into account the distribution of food consumption among different income groups. Lack of consumption distribution data for the countries is the key factor preventing estimation of food consumption by income group. An attempt was made to fill this information gap by using an indirect method of projecting calorie consumption by different income groups based on income distribution data¹. It should be noted that this approach ignores the consumption substitution of different food groups by income class. The procedure uses the concept of the income/consumption relationship and allocates the total projected amount of available food among different income groups in each country (income distributions are assumed constant during the projection period).

Assuming a declining consumption and income relationship (semi log functional form):

¹ The method is similar to that used by Shlomo Reutlinger and Marcelo Selowsky in "Malnutrition and Poverty", World Bank, 1978.

$$C = a + b \ln Y \quad (11)$$

$$C = C_o/P \quad (12)$$

$$P = P_1 + \dots + P_i \quad (13)$$

$$Y = Y_o/P \quad (14)$$

$$i = 1 \text{ to } 5$$

where *C* and *Y* are known average per capita food consumption (all commodities in grain equivalent) and per capita income (all quintiles), *C_o* is total food consumption, *P* is the total population, *i* is income quintile, *a* is the intercept, *b* is the consumption income propensity, and *b/C* is consumption income elasticity (point estimate elasticity is calculated for individual countries). To estimate per capita consumption by income group, the parameter of *b* was estimated based on cross-country (67 low-income countries) data for per capita calorie consumption and income. The parameter *a* is estimated for each country based on the known data for average per capita calorie consumption and per capita income.

Historical Data

Historical supply and use data for 1980-98 for most variables are from a USDA database. Data for grain production in 1999 for most countries are based on a USDA database as of October 1999. Food aid data are from the UN's Food and Agriculture Organization (FAO), and financial data are from the International Monetary Fund and World Bank. Historical nonfood-use data, including seed, waste, processing use, and other use, are estimated from the FAO *Food Balance* series. The base year data used for projections are the average for 1996-98, except export earnings that are 1995-97.

Endogenous variables:

Production, area, yield, commercial import, domestic producer price, and food consumption.

Exogenous variables:

Population—data are medium UN population projections as of 1998.

World prices—data are USDA/baseline projections.

Stocks—USDA data, assumed constant during the projection period.

Seed use—USDA data, projections are based on area projections using constant base seed/area ratio.

Food exports—USDA data, projections are either based on the population growth rate or extrapolation of historical trends.

Inputs—fertilizer and capital projections are, in general, an extrapolation of historical growth data from FAO.

Agricultural labor—projections are based on UN population projections, accounting for urbanization growth.

Food aid—historical data from FAO, *no food aid* assumed during the projection period.

Gross Domestic Product—World Bank data.

Merchandise and service imports and exports—World Bank data.

Net foreign credit—is assumed constant during the projection period.

Value of exports—projections are based on World Bank (*Global Economic Prospects and the Developing Countries*, various issues), IMF (*World Economic Outlook*, various issues), or an extrapolation of historical growth.

Export deflator or terms of trade—World Bank (*Commodity Markets—Projection of Inflation Indices for Developed Countries*).

Income—projected based on World Bank report (*Global Economic Prospects and the Developing Countries*, various issues) or extrapolation of historical growth.

Income distribution—World Bank data. Income distributions are assumed constant during the projection period. (Shahla Shapouri)

Appendix 2a--List of Countries and Their Food Gaps in 1999

	1999 food gaps				1999 food gaps		
	Status quo	Nutrition	Distribution		Status quo	Nutrition	Distribution
	---Million tons---				---Million tons---		
Cameroon	6	0	138	Algeria	348	0	88
Centr. Afr. Rep.	12	71	128	Egypt	0	0	0
Congo (Zaire)	136	1,838	2,136	Morocco	3,012	0	483
Burundi	22	401	451	Tunisia	0	0	0
Eritrea	80	307	321	North Africa	3,360	0	571
Ethiopia	901	4,023	4,285				
Kenya	209	249	1,016	Afghanistan	248	681	1,045
Rwanda	527	326	351	Bangladesh	410	773	1,757
Somalia	192	882	932	India	0	0	5,416
Sudan	67	0	54	Indonesia	1,841	0	0
Tanzania	351	536	872	Korea, North	391	771	931
Uganda	178	0	93	Nepal	100	0	71
Angola	105	366	516	Pakistan	505	0	0
Lesotho	49	44	88	Philippines	0	0	0
Madagascar	75	162	371	Sri Lanka	0	0	0
Malawi	0	0	0	Vietnam	0	0	0
Mozambique	144	656	1,086	Asia	3,495	2,225	9,221
Swaziland	16	0	3				
Zambia	30	538	635	Bolivia	118	244	337
Zimbabwe	454	420	651	Colombia	0	0	252
Benin	0	0	0	Dominican Rep.	0	0	39
Burkina Faso	0	0	147	Ecuador	0	0	217
Cape Verde	54	3	8	El Salvador	0	0	40
Chad	0	141	251	Guatemala	73	0	285
Côte d'Ivoire	187	0	7	Haiti	75	285	419
Gambia	0	0	1	Honduras	0	102	235
Ghana	135	0	71	Jamaica	0	0	0
Guinea	0	0	45	Nicaragua	50	0	98
Guinea-Bissau	4	0	4	Peru	0	0	291
Liberia	173	95	139	Latin Am.	316	632	2,214
Mali	0	0	31				
Mauritania	0	0	1	Armenia	150	96	121
Niger	5	0	81	Azerbaijan	287	290	346
Nigeria	365	0	0	Georgia	79	84	131
Senegal	0	0	61	Kyrgyzstan	255	0	4
Sierra Leone	138	151	202	Tajikistan	103	475	514
Togo	50	14	95	NIS	874	945	1,116
SSA	4,664	11,222	15,268	Total	12,709	15,023	28,390

Appendix 2b--List of Countries and Their Food Gaps in 2009

	2009 food gaps				2009 food gaps		
	SQ	Nutrition	Distribution		SQ	Nutrition	Distribution
	---Million tons---				---Million tons---		
Cameroon	329	106	350	Algeria	1,105	0	143
Centr. Afr. Rep.	85	156	203	Egypt	118	0	0
Congo (Zaire)	1,254	3,533	3,899	Morocco	0	0	0
Burundi	107	587	646	Tunisia	0	0	0
Eritrea	193	485	501	North Afr.	1,223	0	143
Ethiopia	0	3,270	3,651				
Kenya	0	0	813	Afghanistan	1,999	2,635	2,887
Rwanda	848	588	618	Bangladesh	834	1,263	2,310
Somalia	589	1,567	1,626	India	0	0	1,378
Sudan	178	0	83	Indonesia	0	0	0
Tanzania	501	733	1,141	Korea, North	836	1,263	1,396
Uganda	586	0	265	Nepal	543	0	187
Angola	650	1,001	1,136	Pakistan	1,390	0	0
Lesotho	47	42	98	Philippines	402	0	12
Madagascar	521	635	791	Sri Lanka	181	0	36
Malawi	316	481	534	Vietnam	0	0	0
Mozambique	59	663	1,208	Asia	6,185	5,160	8,207
Swaziland	4	0	1				
Zambia	265	897	1,005	Bolivia	30	186	326
Zimbabwe	0	0	293	Colombia	0	0	63
Benin	136	0	0	Dominican Rep.	0	0	0
Burkina Faso	150	160	375	Ecuador	0	0	180
Cape Verde	75	11	15	El Salvador	24	0	25
Chad	0	209	344	Guatemala	409	196	509
Côte d'Ivoire	0	0	0	Haiti	317	565	671
Gambia	0	0	0	Honduras	93	254	352
Ghana	291	0	129	Jamaica	0	0	0
Guinea	0	0	73	Nicaragua	297	190	285
Guinea-Bissau	23	0	8	Peru	80	0	579
Liberia	524	409	446	Latin Am.	1,249	1,391	2,990
Mali	148	0	145				
Mauritania	7	0	9	Armenia	0	0	6
Niger	533	311	445	Azerbaijan	0	0	9
Nigeria	0	0	0	Georgia	0	0	0
Senegal	0	0	152	Kyrgyzstan	0	0	0
Sierra Leone	315	331	377	Tajikistan	0	415	447
Togo	37	0	107	NIS	0	415	462
SSA	8,769	16,175	21,487				
				Total	17,427	23,141	33,288

Appendix 3--Country Indicators

Region and country	Population 1998	Population growth rate	Grain production		Root production growth 1981-96	Projected annual growth in supply	Per capita GNP 1996	Macroeconomic indicators			Months of import coverage in reserves 1996	Debt service ratio 1996
			Growth 1981-96	Coefficient of variation 1981-95				Per capita GNP growth 1996	GDP growth 1996	Export earnings growth 1996		
	1,000		-----Percent-----				U.S. dollars	----- Percent-----			Number	Percent
North Africa												
Algeria	30,481	2.2	-1.3	43.9	5.6	2.1	1,520	1.8	3.8	9.6	--	9.7
Egypt	66,009	1.9	5.0	5.3	2.4	1.5	1,080	3.5	5.0	8.4	10.8	3.4
Morocco	31,004	2.0	3.9	51.1	5.0	2.4	1,290	10.4	11.5	6.3	3.9	8.9
Tunisia	9,326	1.6	2.8	63.2	5.1	2.6	1,930	-0.4	7.0	0.5	--	8.0
Central Africa												
Cameroon	14,762	3.0	0.5	8.0	1.6	1.6	610	4.5	5.0	6.3	0.0	6.3
Central African Rep.	3,399	1.8	1.8	16.7	-1.4	0.8	310	-5.0	-2.8	-1.4	--	1.2
Zaire	48,371	3.1	3.5	8.3	2.4	1.8	130	-0.1	1.3	29.9	--	0.8
West Africa												
Benin	6,101	3.4	4.4	10.6	5.4	2.5	350	3.2	5.8	20.0	--	2.0
Burkina Faso	11,295	2.6	6.6	13.7	-5.9	2.3	230	3.3	6.1	1.8	--	1.9
Cape Verde	476	2.9	11.8	89.1	-0.9	0.9	1,010	-24.6	4.7	25.0	--	1.4
Chad	5,961	2.2	3.8	18.8	1.2	2.4	160	0.5	2.8	7.5	--	2.7
Côte d'Ivoire	16,320	3.3	3.9	7.4	2.4	2.4	660	4.6	5.9	24.1	1.5	13.8
Gambia	1,085	3.1	3.8	16.9	0.0	3.0	--	--	--	--	4.0	--
Ghana	19,439	3.0	3.2	22.2	6.7	3.6	360	2.3	5.0	19.8	4.4	7.6
Guinea	7,036	2.4	3.5	9.8	1.2	2.1	560	1.8	4.5	-3.2	1.0	3.0
Guinea-Bissau	1,206	2.4	9.3	16.1	2.6	1.8	250	3.7	5.2	8.9	--	4.2
Liberia	3,392	3.3	-6.0	40.7	9.2	1.0	--	--	--	--	--	--
Mali	10,185	2.8	6.5	13.9	-0.1	2.9	240	1.2	4.0	6.4	--	4.5
Mauritania	2,478	3.0	12.9	47.1	-0.6	1.7	470	1.8	4.5	7.4	--	11.6
Niger	10,205	3.0	2.2	16.0	1.7	2.1	200	-0.1	3.3	--	--	2.9
Nigeria	111,081	3.0	0.2	18.2	10.3	2.6	240	1.9	3.5	15.9	4.1	8.1
Senegal	9,894	3.2	2.2	20.1	3.3	1.7	570	3.2	5.6	4.8	--	5.4
Sierra Leone	5,143	2.7	-2.6	11.3	4.6	0.9	200	7.6	4.8	6.5	--	6.4
Togo	4,897	3.4	4.8	16.1	0.2	2.3	300	4.3	6.2	-0.9	--	4.0
East Africa												
Burundi	6,669	2.1	-1.1	19.6	1.9	1.7	170	-11.1	-8.8	-49.3	--	2.7
Eritrea	4,270	3.1	1.0	--	1.3	1.3	--	--	--	--	--	--
Ethiopia	60,310	2.7	2.0	11.0	1.3	3.0	100	7.2	10.3	4.9	5.1	5.8
Kenya	30,975	2.6	1.1	14.8	2.3	2.0	320	3.1	4.3	13.3	2.5	9.4
Rwanda	9,280	2.5	-2.5	14.6	-1.6	2.2	190	7.8	11.4	40.5	4.9	1.4
Somalia	8,596	3.3	-1.8	37.1	0.5	1.1	--	--	--	--	--	--
Sudan	33,060	3.3	2.9	39.0	-5.0	1.8	--	--	--	--	0.9	--
Tanzania	30,481	2.2	1.4	12.6	0.3	2.2	170	--	--	--	2.3	4.5
Uganda	21,042	2.1	2.6	6.0	1.3	2.6	300	6.2	9.1	19.2	3.8	2.5

See note at end of table.

Appendix 3--Country Indicators (continued)

Region and country	Population 1998	Population growth rate	Grain production		Root	Projected annual growth in supply	Per capita GNP 1996	Macroeconomic indicators			Months of import coverage in reserves 1996	Debt service ratio 1996
			Growth 1981-96	Coefficient of variation 1981-95	production growth 1981-96			Per capita GNP 1996	GDP growth 1996	Export earnings growth 1996		
	1,000		-----Percent-----				U.S. dollars	----- Percent-----			Number	Percent
Southern Africa												
Angola	10,913	2.7	-1.9	19.3	4.5	1.7	270	-1.7	7.0	12.8	--	20.1
Lesotho	2,088	2.4	1.2	30.2	9.2	1.7	660	6.7	11.9	9.0	--	2.9
Madagascar	15,243	3.2	1.4	3.1	2.1	1.6	250	0.5	2.0	9.7	2.5	1.9
Malawi	11,018	2.4	3.0	21.7	0.2	2.3	180	13.0	14.5	1.5	--	4.1
Mozambique	19,728	2.9	1.4	24.7	0.4	2.4	80	5.0	6.1	14.5	--	11.3
Swaziland	1,066	3.3	2.5	30.8	0.0	2.4	1,210	-0.3	2.5	3.3	2.4	3.2
Zambia	10,178	2.4	2.0	31.7	4.6	1.7	360	3.4	4.9	-3.5	--	9.8
Zimbabwe	12,084	2.2	1.1	37.4	5.4	1.1	610	5.8	7.3	12.2	--	9.2
Asia												
Afghanistan	26,519	6.1	-3.6	7.9	-0.5	1.2	--	--	--	--	--	--
Bangladesh	137,240	2.3	2.2	4.0	0.3	1.6	260	3.8	5.3	10.6	2.9	2.2
India	985,921	1.7	2.9	5.2	2.9	1.7	380	5.1	7.5	7.5	5.1	3.6
Indonesia	213,133	1.5	2.0	3.3	1.7	1.2	1,080	5.8	7.6	6.3	--	9.9
Nepal	23,202	2.5	3.2	8.3	7.2	1.6	210	1.8	5.3	0.5	4.5	1.9
Pakistan	141,030	2.6	2.2	4.8	6.0	2.3	480	0.3	4.6	2.0	0.9	5.1
Philippines	78,229	2.2	2.5	4.5	0.4	2.1	1,160	4.5	5.7	20.3	--	6.6
Sri Lanka	18,969	1.1	0.9	9.1	-4.6	1.0	740	0.5	3.8	3.9	3.7	3.1
Vietnam	78,147	1.6	0.9	5.0	-1.9	1.7	290	--	9.3	--	--	1.5
Latin America												
Bolivia	8,435	2.2	3.1	15.2	0.6	2.0	830	2.6	--	--	7.8	6.5
Colombia	38,014	1.6	-3.5	6.2	0.0	2.5	2,140	-0.5	2.0	4.4	5.6	6.6
Dominican Republic	8,366	1.7	0.1	9.7	2.5	2.6	1,600	5.7	7.4	13.3	0.8	3.5
Ecuador	11,915	1.9	0.7		0.0	2.0	1,500	1.2	1.9	3.6	4.1	7.4
El Salvador	6,226	1.9	2.7	10.4	9.0	2.7	1,700	0.0	2.5	7.4	--	3.0
Guatemala	11,841	2.4	2.0	4.3	1.7	1.0	1,470	8.6	3.0	6.1	3.0	2.3
Haiti	6,807	1.4	-1.8	8.3	0.4	1.8	310	0.0	2.0	20.7	1.7	1.0
Honduras	5,737	2.6	3.1	12.0	4.3	2.4	660	-0.3	3.1	15.0	--	14.1
Jamaica	2,609	0.7	-6.4	60.2	3.2	1.7	1,600	-1.9	-1.7	1.0	--	15.9
Nicaragua	4,537	2.5	1.7	16.1	4.2	2.7	380	4.2	4.7	37.9	1.5	13.2
Peru	25,393	1.7	2.0	13.9	0.8	2.0	2,420	0.0	2.8	10.1	10.9	4.9
New Independent States												
Armenia	3,469	0.1	2.0	53.6	0.8	2.1	630	7.4	--	--	2.2	3.0
Azerbaijan	7,793	0.7	2.0	52.7	0.8	2.1	480	-1.3	1.2	--	--	0.3
Georgia	5,145	-0.6	2.0	52.6	0.8	1.8	850	12.7	--	--	--	0.3
Kyrgyzstan	4,566	0.6	2.0	51.8	0.8	1.5	550	4.1	5.6	--	60.5	3.1
Tajikistan	6,124	1.8	2.0	51.2	0.8	1.9	340	-8.4	-4.4	--	--	0.0

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

Source: Population=Census data.

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