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1983 World Wheat Facts and Trends

Report Two: An analysis of rapidly rising Third World consumption and imports of wheat

Acknowledgements

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We are particularly honored by the number of people who took time to provide first-hand information on producer and consumer prices. We hope the assembly of this information showing the diversity across countries is some reward for their efforts. Special thanks to: Victor Palma, Roque Tomasini, Miguel Peretti, Tom Stilwell, Guillermo Mercader, Sergio Ruano, Antonio Silva, Dagoberto Flores, Victor Cardoso, Jim Chapman, Michael and Barbara Yates, Ram Krishnaiah, Liu Zhicheng, A. C. Gangwar, Qazi Mesbahul Alam, Pradeep Tulachan, N.P. Rajbhandi, Yuksel Erdil, Kamil Yakar, Maarteen van Ginkel, Ahmed Mazid, Imtiaz Basa, Magni Bjarnason, Peter Wyeth, R.J. Foote, A.M. Shafi Ali, Kwasi Bruce, Steve Franzel, Hank Bonthuis, Mohammed Abdul Razig, Tomas Eponou, Siaka Sielengah, Michel Petit, Francisco Bagulho, Samion Bin Haji Abdullah, Helena Alvarez, Howard Bouis, J. Whang, Prasarn Trairatvorakul, Ola Roberts, Barbara Huddleston, John Lynam, Greg Scott, Alam Khan, Thomas Mbaedjimbi, Suleiman Arabyat, Larry Butler, Jim Bingen.

Cover: The map shown on the front and inside covers indicates those countries that exported (in green) and imported (in yellow) more than 100,000 tons of wheat, 1979-81.

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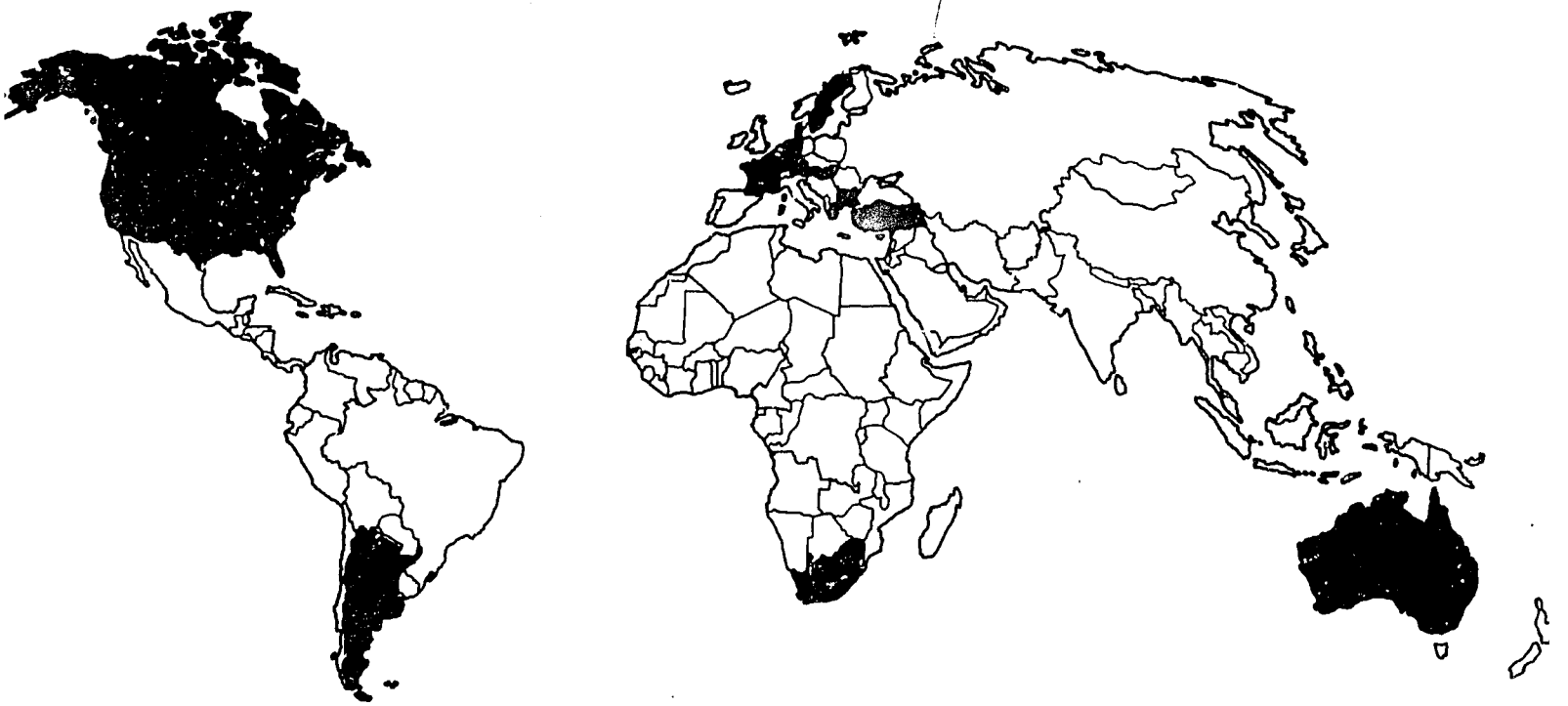

1983
World Wheat Facts and Trends

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Preface

The first issue of *World Wheat Facts and Trends* focused primarily on wheat production in the Third World. In this issue, we examine and interpret developing country trends in the consumption and importation of wheat. Rising wheat consumption and increasing wheat imports in much of the developing world have, to date, received little attention in analyses of the world food economy. Moreover, recent long-term projections of world wheat supplies and demand considerably underestimated the pace of change in developing countries. For example, USDA and FAO projections to 1985 of wheat imports by developing countries (projections that were made in 1977/78) had already been exceeded by over 25 percent in 1981.

The world wheat economy has dramatically changed over the last three decades. In the period immediately following World War II, wheat trade was dominated by the developed market economies. The USA, Canada and Australia were exporting wheat destined primarily for Western Europe and Japan. Throughout the 1960s and particularly the 1970s, developing countries of the world, as well as Eastern Europe and the USSR (though to a lesser extent), imported increasingly large amounts of wheat. During this same period Western Europe emerged as a net exporter of wheat. The developing countries' share of world wheat imports rose from one-fourth of the total in 1955 to two-thirds in 1982. Today, the consumption of wheat has essentially levelled off in most developed nations, while consumption in the developing world continues to rapidly increase.

For some developing countries, rapid increases in wheat consumption have been made possible by rapid gains in wheat yields and domestic production (see *World Wheat Facts and Trends, Report One*). However, many developing countries have increasingly turned to wheat imports to meet domestic demand, and appear destined to rely on imports in the future. Moreover, some developing countries in the tropics have responded to the costs of increased wheat imports by establishing wheat research and production programs.

An understanding of trends in wheat consumption and imports by developing countries, as well as the underlying reasons for these trends, is of timely interest to CIMMYT as we see the gap between wheat production and consumption widening in many countries and, in particular, as we receive requests from national programs and donors to develop wheats for the more tropical areas. Hence, this issue of *World Wheat Facts and Trends* describes these trends and underlying reasons in some detail. Subsequent issues will concentrate on such themes as wheat marketing and processing margins, producer pricing policies, and the real costs of wheat production in different environments.

R.D. Havener

Introduction

This, the second issue of *World Wheat Facts and Trends*, consists of three major sections. The first section provides a fairly detailed description and analysis of wheat consumption and imports in the developing world. It begins with an overview of the pertinent trends of the last decade, during which wheat consumption and imports in developing countries rapidly accelerated. This leads to a more in-depth description of wheat consumption and imports, respectively. Finally, the major reasons underlying these realities are examined and some implications for wheat production and consumption policies in developing countries are then suggested.

Section two provides a descriptive overview of the current global wheat situation: production in 1982 and 1983, trade, prices (including freight rates and fertilizer prices), and the short-term outlook.

Section three presents in tabular form selected statistics relating to wheat production, consumption, trade and prices. Data are presented for developing countries that either grow over 100,000 hectares of wheat or annually consume over 100,000 tons of wheat (or both). Data for important developed country producers are also provided.

The information contained in this report comes from many sources (see Annex 1, page 37) and the major article is based on a CIMMYT Economics Working Paper, number 83/4, entitled "The Increasing Role of Wheat Consumption and Imports in the Developing World." For a more detailed analysis, single copies of this working paper are available upon request.

Wheat Consumption and Imports in the Developing World

Trends in the 1970s

World wheat production increased by 114 million tons (Mt) in the decade from 1969-71 to 1979-81. Although developing countries accounted for only 29 percent of world wheat production at the beginning of the decade, they produced half of the total increase in production during the 1970s (Figure 1). The five largest wheat producers in the developing world (China, India, Turkey, Pakistan, and Argentina) were responsible for most of the developing world's increased production (about 93 percent of the total increase). These five countries, which represent roughly two-thirds of the developing world population, expanded their wheat production at an annual rate of 5.4 percent. This encouraging rise in production was accomplished largely through yield increases. In the remaining developing countries, which have some 24 million hectares of wheat, production increased by about 5Mt in the 1970s. This represents an annual growth rate of only 1.5 percent, which is considerably less than the average population growth rate for these countries.

In developed countries, a similar pattern of increasing wheat production emerged. The four major wheat exporting countries (the USA, Canada, France and Australia) provided 33 percent of all developed country production in 1969-71. These exporting countries accounted for 80 percent of the increase in wheat production in the developed world in the 1970s (Figure 1). The USA alone produced an additional 26Mt, or nearly half the increase. A larger area planted to wheat, rather than yield increases, accounted for the bulk of this additional production.[1/] In contrast, wheat production stagnated in the USSR, the world's largest wheat producer.

1/ The relaxation of government restrictions on wheat area with the increased wheat prices of the 1970s was a major factor in this area expansion; low yield increases were in part due to producers bringing less favorable land into production.

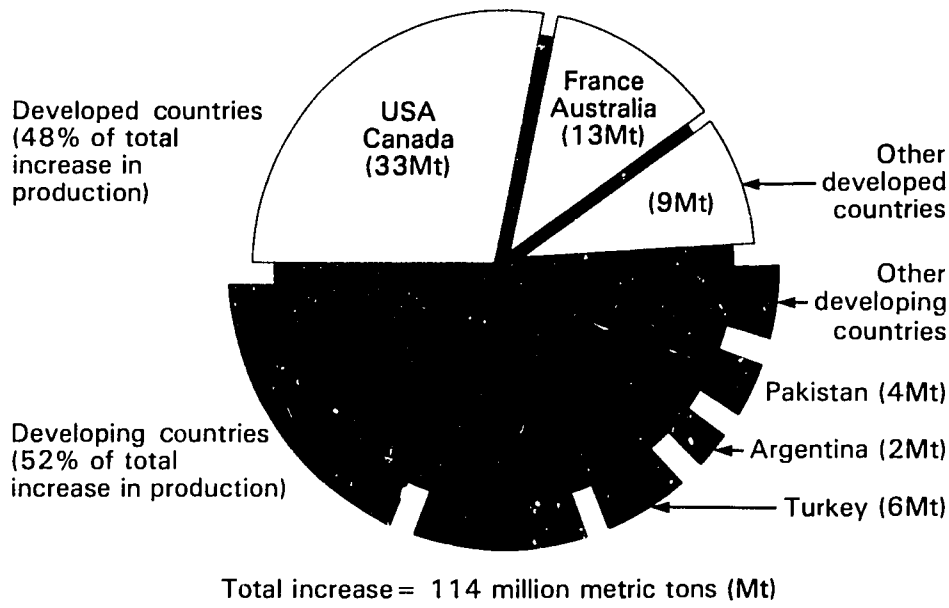


Figure 1. Expansion in world wheat production, 1969-71 to 1979-81, and where the additional production occurred.

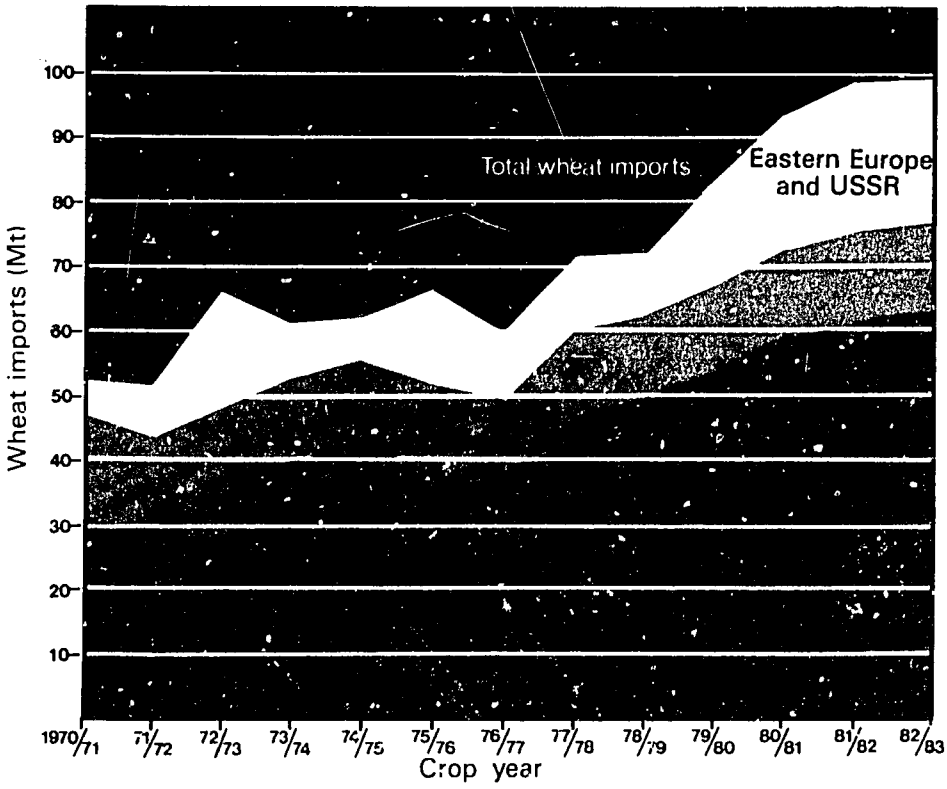


Figure 2. Trends in world wheat imports, crop years 1970/71 to 1982/83.

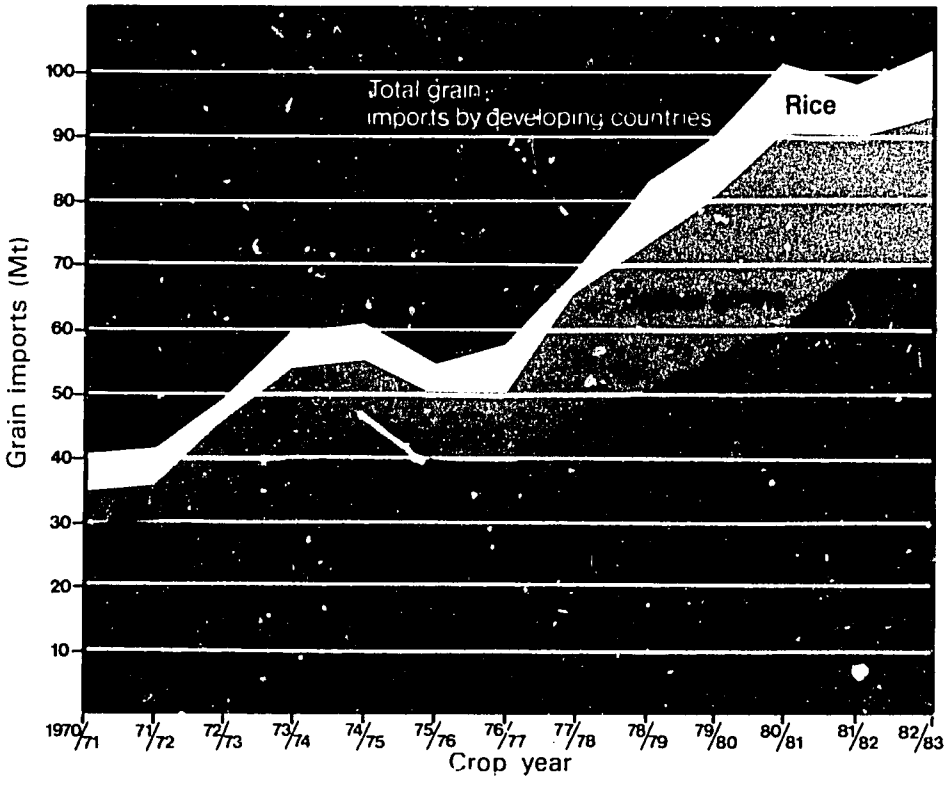


Figure 3. Trends in grain imports by developing countries, crop years 1970/71 to 1982/83.

World wheat trade almost doubled during the 1970s, from just over 50Mt in 1969-70 to 100Mt in 1981. Nearly all of the *additional* wheat produced by the four major exporting countries entered world trade.

Wheat imports by developing countries have continually increased, setting new records every year since 1976. From 1976 to 1982, developing countries imported on average an additional 4Mt of wheat *every year* (Figure 2). Their total imports reached 63Mt in 1981, double the amount imported in 1971. The portion of wheat imports going to the USSR also increased sharply over the same period, and accounted for about 20 percent of the total, although year-to-year variability was quite high. Wheat imports by developed countries (Western Europe and Japan) have barely changed (about 14Mt) and their share of total wheat trade fell from 30 percent to 14 percent.

Wheat has become increasingly dominant as a food grain import in developing countries. Although imports of coarse grains by developing countries rose very rapidly in the 1970s (Figure 3), most of these imports were destined to middle-income countries for animal feed. Only about 0.5Mt of maize were imported for food purposes.[2] Imports of rice, the single most important food staple of developing countries, increased much more slowly than wheat. At the end of the 1970s, wheat accounted for 86 percent of the food grains imported by the developing world.

Rapidly rising levels of wheat production and imports throughout the decade led to extremely rapid increases in wheat consumption in developing countries.

2/ For more details see CIMMYT *World Maize Facts and Trends, 1981*.

Total wheat consumption, which is approximated here by adding together domestic production and net imports, has grown by 5.4 percent annually and nearly doubled from 1969 to 1982. This startling rise has resulted almost entirely from increases in the direct consumption of wheat as food.[3/]

Nearly two-thirds of all the wheat consumed by developing countries is consumed by the five major producers (China, India, Turkey, Pakistan and Argentina). Fortunately, their production has increased faster than their consumption in the aggregate; less than 10 percent of the wheat consumed by these five countries is imported and most of this by China (Figure 4).

Perhaps the most striking aspect of the trend in wheat consumption in the rest of the developing world over the last two decades is the growing gap between production and consumption (Figure 5). Wheat consumption in these countries has risen much faster than production; consumption grew at an average annual rate of 5.8 percent, relative to a growth in wheat production of only 1.5 percent. Imports of wheat by these countries have grown extremely rapidly, by about 10 percent per year throughout the decade of the 1970s. As a group, these nations now account for nearly 80 percent of all wheat imports by the developing world, and nearly half of all global wheat trade. At the beginning of the 1970s they imported 40 percent of the wheat they consumed; by the end of the decade this figure had increased to 62 percent.

During the 1970s, wheat consumption by developing countries (other than the five major producers) increasingly outstripped production. It was a decade of unprecedented expansion in global wheat production, particularly for the developed world wheat exporters (Figure 6); over 80 percent of the additional wheat produced was consumed by the developing world. By the beginning of the 1980s, all developing countries (except Turkey and Argentina) were net wheat importers.

3/ Animal feed use of wheat has also expanded (at over 5 percent annually) but still represents only about 3 percent of the wheat consumed in developing countries and is concentrated in a few countries.

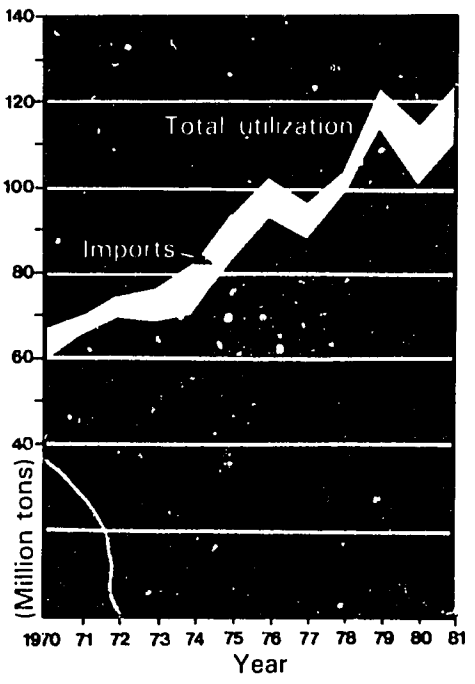


Figure 4. Growth in wheat production, imports and utilization in the large wheat-producing developing countries (China, India, Turkey, Pakistan and Argentina), 1970 to 1981.

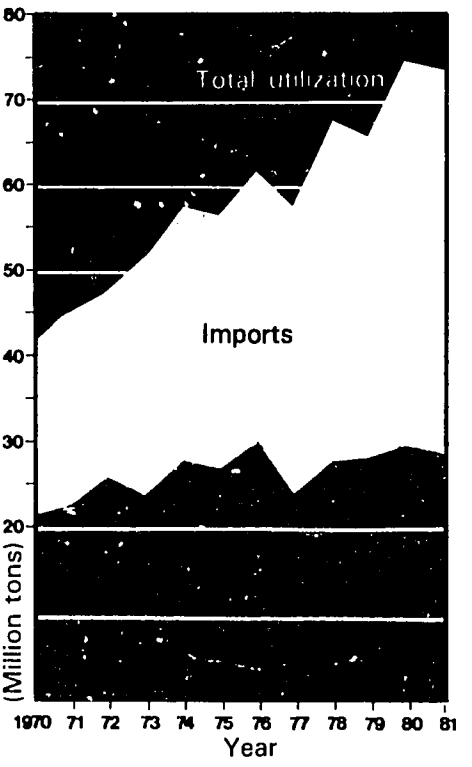


Figure 5. Growth in wheat production, imports and utilization in all other developing countries (note the change in the vertical scale from that used in Figures 4 and 6), 1970 to 1981.

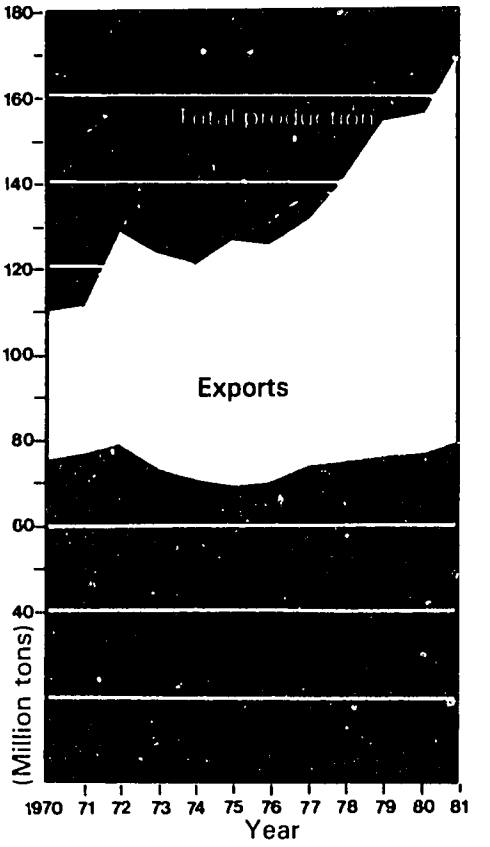


Figure 6. Growth in wheat production, utilization and net exports of the major wheat-exporting developed countries, 1970 to 1981.

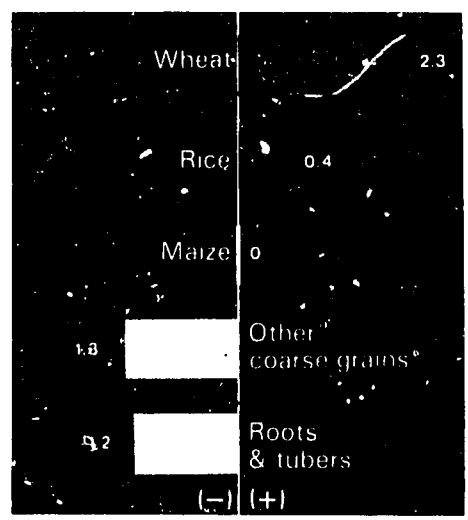
Wheat Consumption in the Developing World: A Closer Examination

Starchy staples (cereals, roots and tubers) provide close to 70 percent of the total calories consumed in developing countries, compared to 35 percent in the developed world. Starchy staples also provided about half the *increase* in calories supplied to consumers in developing countries over the last two decades. By far the largest contribution to this increase came from wheat: the per capita direct consumption of wheat grew by an average of 2.3 percent per year from 1961 onward. Rice consumption also increased, but at a much slower rate (0.4 percent). The direct consumption (as food) of coarse grains declined (especially sorghum and millet), as did the consumption of roots and tubers (Figure 7). Rice is clearly the most important single food source in developing countries; wheat is second and now contributes as many calories as all coarse grains combined. In less than 15 years, wheat has moved from providing 20 percent of cereal calories in developing countries to a 27 percent share.

In developing country regions where wheat traditionally has been consumed (North Africa and the Middle East) the growth rates in per capita wheat consumption were between 0.7 and 1.5 percent per year. In regions where wheat traditionally has not been consumed, such as West Africa and Southeast Asia, growth rates were over 5 percent per year. Rice also made an important contribution to the additional supply of calories in six of the ten regions delineated for this study (see Annex 2, page 38).

In all regions where the consumption of wheat increased, there were other staples that registered significant declines (i.e., a degree of substitution occurred). In some cases, these declines were in the major staple for the region, such as maize in Mexico and Central America, or rice in South Asia. Wheat actually replaced maize as the most important staple for the Andes. In other cases, the declines were in staples of medium importance, such as millets and sorghum in West Africa, or barley in the Middle East.

The aggregation of increases in wheat consumption by region and by country masks considerable variation within countries. First, the consumption of wheat is usually higher in urban areas of the developing world than in rural areas. Wheat consumption also tends to rise with incomes, usually at a rate faster than that for any other staples, including rice. The direct correlation between the increasing consumption of wheat and rising incomes reflects not only greater total food consumption, but also considerable substitution of wheat for other starchy staples. The major exceptions to these trends are found in the traditional wheat-producing countries of North Africa and the Middle East, where wheat consumption is high at all income levels and in rural and urban areas alike.



[a] Includes sorghum, millet, barley and other minor cereals

Figure 7. Average annual growth rates of per capita direct consumption of staple foods in developing countries, 1961-65 to 1975-77.

Wheat Imports by Developing Countries: A Closer Examination

The changing pattern of wheat imports by developing countries is shown in Figure 8. Five major groups of developing countries are displayed. The countries of the traditional wheat belt of the Middle East and North Africa are the most important wheat importers. Their wheat imports increased dramatically during the 1970s, from 7Mt in 1970-72 to 16Mt in 1978-80 (estimated in 1982/83 to be 19Mt). Some 10Mt of that (12Mt in 1982/83) was destined for North Africa alone. The growth of wheat imports in this region was to some extent associated with increased oil export earnings in several countries. However, other countries that were net importers of oil, especially Morocco and Tunisia, also at least doubled their wheat imports in the 1970s. Turkey is a notable exception among these countries. Rapid increases in Turkish wheat production substituted for imported wheat in the early 1970s and enabled some exports of wheat in recent years.

A second major wheat-importing region is East Asia, dominated by China but with the Republic of Korea also consistently importing 1.5-2.0Mt annually. Chinese wheat imports jumped to about 13.5Mt in the last two years, to make that country the world's second largest wheat importer after the USSR.

Third, the wheat-producing countries of Latin America (with the exception of Argentina) have more than doubled wheat imports in the 1970s, to reach 6Mt by the end of the decade.

The last major group of wheat-importing countries consists of those nations lying entirely between 23°N and 23°S latitude. This tropical belt includes nearly all of sub-Saharan Africa, Southeast Asia, Central America and the Caribbean (less Mexico), as well as the Andean area.

Together these countries have a population of nearly 900 million people, a little over one-quarter of the developing world's population. Wheat is now successfully grown in this tropical belt only at higher elevations and, in fact, the combined wheat production of these countries is only one percent of the total production of the developing world. Together they imported 15Mt of wheat in 1978-80 (estimated at 17Mt in 1982/83), nearly 30 percent of all wheat imports by developing countries. The growth of wheat imports by this group has been a steady 6 to 7 percent per year during the 1960s and 1970s.

In contrast to this pattern of increasing imports by developing countries, wheat imports by South Asia (excluding Sri Lanka) have fallen from 6Mt to 3Mt, largely due to rapid production increases in India and Pakistan. These countries, which held the largest share of wheat imports in the 1960s, now account for only 5 percent of the wheat imported by developing nations (Figure 8), although they constitute a quarter of the developing world's population.

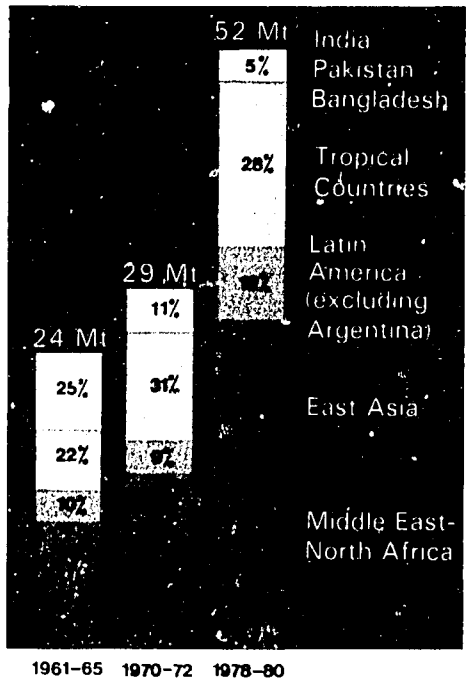


Figure 8. Changing shares of total wheat imports by developing country regions, 1961-65 to 1978-80.

Wheat imports in the 1970s were widely distributed across countries. The five largest importers (USSR, China, Japan, Egypt and Brazil) each imported over 4Mt and together accounted for over 40 percent of total wheat imports in 1978-80. In the 1978-80 period, there were 22 countries (including 14 developing nations) importing over 1Mt of wheat annually. Some 70 countries (including 54 developing nations) imported over 100,000 tons annually (Table 1).

Table 1. Distribution of world wheat imports, 1978-80*

	Annual wheat imports (net), 1978-80					
	Over 4Mt (44 percent share)	2-4Mt (12 percent share)	1-2Mt (18 percent share)	0.5-1.0Mt (15 percent share)	0.2-0.5Mt (7 percent share)	0.1-0.2Mt (2 percent share)
Developing Countries	China (9.3Mt) Egypt (5.2Mt) Brazil (4.3Mt)	Algeria	Korea Rep. Morocco Bangladesh Iraq Vietnam Iran Pakistan Cuba Nigeria Indonesia	Chile Mexico Sri Lanka Peru Saudi Arabia Venezuela Philippines China (Taiwan) Tunisia Lybia	Malaysia Korea D.P.R. Colombia Yemen Arab Rep. Syria Singapore Lebanon Jordan Bolivia Ethiopia Sudan Ecuador Kuwait	Hong Kong Ivory Coast Thailand Zaire Jamaica Dominican Rep. Ghana Angola Mozambique India Haiti Senegal Zambia Yemen Dem. Cameroon Guatemala El Salvador
Developed Countries	USSR (11.9Mt) Japan (5.7Mt)	Italy Poland United Kingdom		Portugal Germany D. R. Czechoslovakia Yugoslavia Israel Netherlands	Belgium-Luxemburg Switzerland Norway Ireland Finland	

*Order of countries reflects a declining level of net imports

Aggregate import figures do not accurately reflect the degree of reliance on wheat imports among countries of different sizes. This reliance is best expressed either by *per capita* imports, or by the percentage of wheat consumed that is imported. Figure 9 shows that, in fact, per capita wheat imports are highest in North Africa and the Middle East, the region of highest per capita utilization where wheat products are the staple of the diet. Wheat imports in these regions in 1978-80 average 154kg/capita in the Middle East (excluding Turkey) and a very high 118kg/capita in the five countries of North Africa, which collectively imported nearly two-thirds of the wheat they consumed.

The next highest level of per capita wheat imports occurred in Latin America. Excluding Argentina and Mexico, Latin America imported 39kg/capita out of a total wheat utilization of 56kg/capita in 1978-80. Cuba, with 122kg/capita, had the highest wheat imports in this group of countries. The Andean region, as well as the Central American and Caribbean countries, imported over 90 percent of their wheat requirements.

South Asia and East Asia are also important wheat-consuming regions, but per capita imports are lower than in other regions. This reflects a dynamic domestic wheat industry, as well as a large population base.

The two tropical regions of sub-Saharan Africa and Southeast Asia had the lowest per capita wheat utilization (13-16kg/capita), but almost all of it was imported. However, given that most wheat in these regions is destined to urban areas, per capita wheat consumption in urban areas is quite high in many of these countries.

Increasing reliance on imports–Table 2 shows the relationship between production, consumption and imports of wheat by developing country regions. In the last two decades, per capita wheat utilization has increased most (in absolute terms) in those regions where wheat is traditionally consumed (e.g., North Africa and the Middle East). In relative terms, however, wheat utilization increased more rapidly in the tropical regions (e.g., Western Africa and Southeast Asia) where wheat consumption was minimal in the early 1960s.

Increases in the production of wheat have not kept pace with rising consumption in some regions and countries, leading to a greater reliance on imports. Per capita wheat production increased in three regions, and in one of these (South Asia) production outpaced consumption, leading to some import substitution (Table 2). Per capita wheat production was unchanged in three regions–East Africa, the Middle East (excluding Turkey), and Mexico-Central America–while it significantly declined in North Africa and was cut in half in the Andean region.

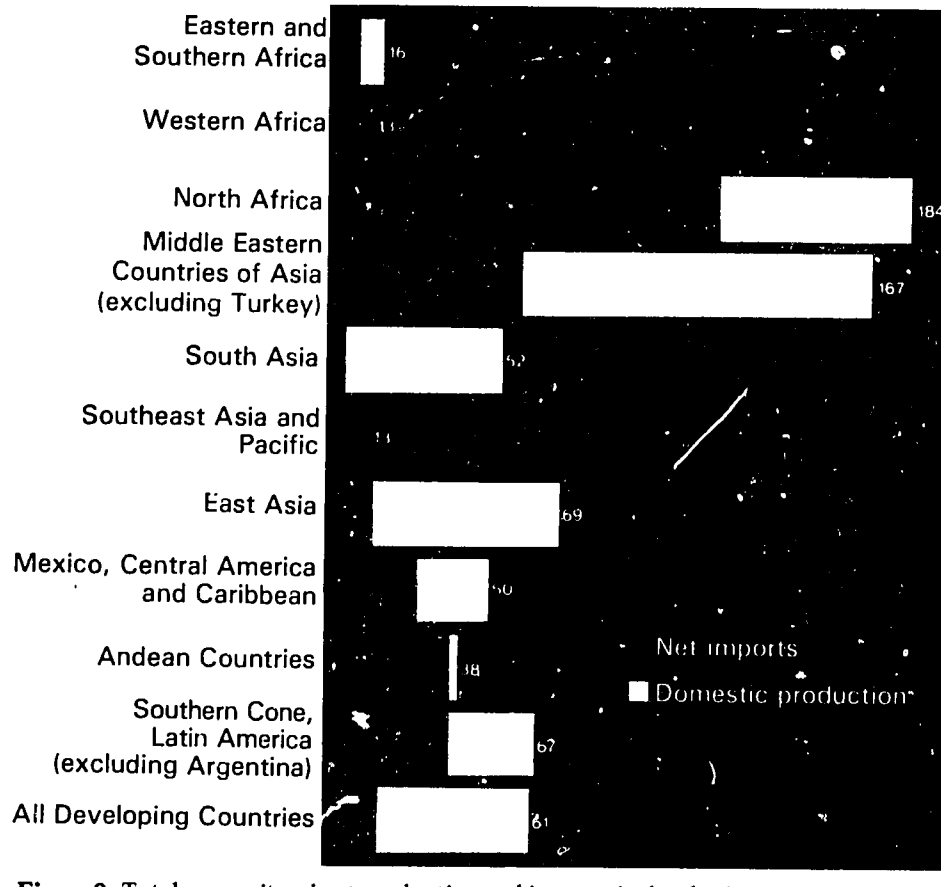


Figure 9. Total per capita wheat production and imports in developing country regions, 1978-70 averages (all figures are in kg/year).

The picture that clearly emerges is one of rapid increases in per capita wheat consumption, which was and continues to be made possible in a few countries by increased domestic production, but which in most countries has been supported by increased imports. Imports accounted for over 50 percent of the *increase* in consumption in all regions (except South Asia and East Asia) and provided for practically all of the increase in consumption in sub-Saharan Africa, North Africa, Southeast Asia, and the Andean Region.

Almost all wheat-consuming developing nations (those consuming 100,000 tons or more annually) became more reliant on wheat imports, as measured by the percentage of imports in consumption. Only in Turkey, India, Pakistan and Zimbabwe did per capita wheat imports decline, and in seven other countries production increased faster than consumption so that the proportion of wheat imported declined. Five of these countries (Sudan, Bangladesh, Libya, Brazil, and Tanzania) still imported well over half of the wheat they consumed.

Among the wheat-producing countries (those producing 100,000 ha or more annually), the proportion of countries producing at least two-thirds of their requirements dropped from 67 to 41 percent between 1961-65 and 1978-80. Meanwhile, wheat imports continued at a high level in the tropical countries. Only 5 countries in this group of 35 produced even one-third of the wheat they required in 1978-80.

Table 2. Relationship between wheat utilization and imports in major developing-country regions (see also Figure 9)

	Increase in Wheat Utilization/cap 1961-65 to 78-80	Percent of Increased Utilization Imported	Growth Rate 1961-65 to 78-80 Wheat Util/cap	Growth Rate 1961-65 to 78-80 Wheat Prod/cap
	(kg/cap/year)		(percent/year)	
Eastern and Southern Africa	4.1	66	1.8	0
Western Africa	8.6	100	6.6	c/
North Africa	54.0	90	2.2	-1.6
Middle Eastern Countries of Asia (excluding Turkey)	39.0	51	1.2	0
South Asia	16.2	a/	2.3	4.0
Southeast Asia and Pacific	7.4	100	5.2	c/
East Asia	32.8	17	4.0	4.1
Mexico, Central America and Caribbean	13.1	70	1.9	-0.2
Andean Countries	4.5	100 b/	.8	-6.2
Southern Cone, Latin America (excluding Argentina)	16.3	59	3.3	1.3
All Developing Countries d/	20.0	26	2.5	2.4

a/ Production increased faster than utilization so that imports decreased
b/ Production decreased so that imports increased to maintain per capita utilization
c/ Regions that do not produce wheat
d/ Includes Argentina and Turkey

Increasing Wheat Consumption and Imports by Developing Countries: Some Reasons Why

Recent research points to some of the major reasons for increased wheat consumption and imports by developing countries. This research includes country-level studies of the wheat industry, as well as CIMMYT's own cross-country regression analysis of wheat imports. This analysis focused on 55 countries that do not produce wheat and whose per capita wheat imports varied from 3kg to 120kg. Tentative results suggest that several key economic variables explain up to 80 percent of the variation in wheat consumption across this group of countries. These variables can be classified into five major groups that affect the demand and/or supply sides: 1) rising incomes and urbanization, 2) lagging production of staple foods, 3) food aid, 4) consumer pricing policies, and 5) market promotion and institutional arrangements in the wheat processing industry.

Rising incomes and urbanization--As described earlier, wheat consumption in most countries is closely related to income levels and is significantly higher in urban areas. Cross-sectional analyses across countries clearly show that national per capita income and associated levels of urbanization are the major factors explaining variation in wheat consumption across countries. There are several aspects to this relationship. First, people tend to prefer wheat products to other staple foods; as their incomes rise they are likely to substitute wheat products for other staples in their diets, particularly coarse grains. Relatively high and rapidly rising incomes have been very important in promoting increased wheat consumption in the Middle East and North Africa.

Second, the extent of urbanization is closely associated with national per capita income, and urbanization affects wheat consumption in a number of ways. On the demand side, urban dwellers are often willing to pay a premium for convenience foods that require little or no preparation, especially for meals other than the main meal. This reflects the higher opportunity cost of preparing food in the home, due to higher incomes, women participating in outside employment, and the higher costs of fuel for cooking in urban areas. These factors particularly favor bread consumption, even though the price of bread is often nearly double the price of wheat flour, and is also usually higher than traditional staple foods.

On the supply side, government marketing agencies are faced with providing food to rapidly expanding urban populations at reasonable prices. In some countries, such as India, rapidly increasing domestic production of wheat has enabled governments to rely on the availability of adequate local supplies. However, many developing countries find it easier to turn to imports than to procure urban food supplies from rural areas, especially in those countries where large cities are located on coastal waters. Imports for urban consumers help overcome bottlenecks in domestic transportation, limited rural storage, year-to-year fluctuations in supplies and problems of quality control.

This urbanization/wheat import linkage is very apparent in Latin American countries, where over half the population now lives in urban areas. In the Andean region, for example, wheat is now the most important cereal staple, and nearly all of it is imported. The recent jump in wheat imports by China is also due to a policy of supplying large urban areas on the east coast with imported food, again wheat. Not surprisingly, the eight countries of sub-Saharan Africa with per capita wheat consumption below 5kg annually in 1976-78 [4/] are land-locked countries with very low levels of urbanization. In this situation, importing wheat loses some of its cost advantage relative to domestic cereal production, primarily because of high overland transportation costs.

The burden of feeding urban populations is most acute in sub-Saharan Africa, where population growth in 35 major capitals now averages 9 percent annually. At this rate, not only the marketed food surplus but also the associated marketing, transportation, and storage capacity must *double* in size every eight years simply to maintain per capita urban food consumption at current levels. It is not surprising then that sub-Saharan Africa has one of the highest growth rates of wheat consumption (7 percent) based on imported wheat, in spite of the fact that average per capita incomes and food availability have declined over the last decade. Moreover, this trend is likely to continue; only about 20 percent of the sub-Saharan population currently lives in cities (Table 3).

[4/] Mali, Upper Volta, Niger, Chad, Central African Republic, Rwanda, Burundi and Malawi.

Table 3. Selected economic characteristics of regional aggregates

	Percent Population in Urban Areas 1979-81	GNP Per Capita 1979-81 (US$1980)	Cereal Production Per Capita 1979-81 (kg/cap/year)
Eastern and Southern Africa	16	301	139
Western Africa	25	642	107
North Africa	45	1235	166
Middle Eastern Countries of Asia	48	2470	290
South Asia	22	231	210
Southeast Asia and Pacific	23	685	240
East Asia	15	354	299
Mexico, Central America and Caribbean	58	1691	212
Andean Countries	67	1582	113
Southern Cone, Latin America (excluding Argentina)	71	2110	345

Food aid–Wheat imports through food aid have also been a factor in increased wheat consumption in some countries (see box). The most direct effect is to lower the real price of wheat imports often to half (or less) of the price of commercial imports. In many cases, wheat is provided free of charge. A complex of other factors, however, determines the final effect of food aid on total wheat imports: the elasticity of commercial wheat imports with respect to foreign exchange saved by food aid; the impact on domestic agricultural production; and the long-term impact of possible changes in preferences for specific foods, especially wheat products, imported under food aid.

As might be expected, countries that receive significant amounts of wheat food aid (e.g., Bangladesh, Bolivia and the Sudan) have higher per capita wheat imports than non-food-aid countries of comparable levels of incomes and urbanization. Furthermore, current commercial imports of wheat are positively correlated with the amount of food aid received as wheat in the past. For example, Sri Lanka, The Republic of Korea and Brazil have among the highest cumulative imports per capita of wheat as food aid and are now relatively high consumers and commercial importers of wheat This historical relationship between food aid and commercial imports of wheat reflects a) an established consumer exposure and even preference for wheat products, b) the market promotion activities often associated with food-aid programs, and c) institutionalization of consumer subsidy programs for wheat products.

The possible negative impact of food aid on domestic food production is a subject of continuing controversy. In the Andean region, domestic wheat production declined in response to reduced producer prices for wheat during the 1960s when most wheat was imported as food aid. In other cases, such as Brazil, the price of wheat received by domestic producers was supported at a level above the world price and domestic production increased rapidly as a result; the cost was made up to consumers through a subsidy program in part financed by food-aid imports.

Wheat Imports and Food Aid

Most food aid is provided in the form of wheat or wheat flour. In recent years, about 80 percent of cereal food aid has been comprised of wheat, primarily because of the increased contributions of Canada, Australia and the EEC under the Food Aid Convention of the International Wheat Council.

In the early 1960s, an average of 11Mt of wheat was provided each year as food aid to the developing world, nearly all of it by the USA. This amounted to 46 percent of all wheat imports by developing countries. In several major wheat-importing countries (e.g., India and Egypt) wheat food aid averaged around 90 percent or more of wheat imports.

Over the last two decades, the amount of wheat imported as food aid has declined to 6.3Mt (in 1978-80), and now amounts to only 12 percent of total wheat imports by developing countries. Some recipient countries, however, continue to import substantial quantities of wheat as food aid. Egypt, after a hiatus in the early 1970s, is now the largest importer of wheat as food aid, receiving nearly one-third of all wheat food aid. The region of South Asia, particularly Bangladesh and Sri Lanka, also continues as an important recipient, although its share of total food aid has declined. Latin American and Middle Eastern countries that were important recipients in the early 1960s now account for only a small proportion of the total. In contrast, countries of Eastern Africa and Southeast Asia have seen significant increases in both the absolute amount and their proportionate share of wheat food aid compared to the early 1960s.

Except for Eastern Africa, the proportion of wheat imported as food aid is now much lower for all regions than it was in 1961-65. For the largest recipients, food aid is now typically 20-33 percent of total wheat imports. The major exception is Bangladesh, which imports 80 percent of its wheat on concessional terms or as grants. Some smaller countries, especially in East Africa, also import over half their wheat as food aid.

Consumer pricing policies—In the developing world there has been a persistent and widespread market intervention by governments seeking to provide food to urban consumers at "reasonable"prices. This intervention is often most complete in the case of wheat and is least developed for coarse grains. Its result is that wheat products based on imported wheat are often cheaper relative to other grains.

The most common form of intervention has been through direct subsidies for wheat flour and bread. In many cases these subsidies represent 50 percent or more of the cost of providing the product to consumers. The largest subsidies for bread are found in Middle Eastern and North African countries, nearly all of which import wheat. Bread prices in these countries are often only a quarter of prices prevailing in such countries as Hong Kong and Panama, which might be regarded as having "world prices."

The highest subsidy is found in Egypt, the second largest wheat importer in the developing world. Large subsidies for bread also occur in many Latin American countries, although there is a movement to eliminate subsidies in several countries of this region (e.g.. Colombia and Peru have already done so). The countries of South Asia also subsidize wheat products, although subsidies are lower (generally 15-30 percent) and are targeted toward poorer urban consumers through ration shops. A similar level of subsidy is found in China. Even in sub-Saharan Africa and Southeast Asia, where nearly all wheat is imported, several countries subsidize bread; however, these subsidies are often lower and high milling and marketing margins may result in fairly high bread prices, as in the case of Indonesia. Finally, some relatively high income countries, such as Poland, the USSR, and South Africa, have substantial bread subsidies.

The impact of subsidies is to not only reduce the absolute prices of wheat products, but also to reduce their prices relative to other food staples. A comparison of the price of bread and the price of rice in a number of countries, especially those with relatively open economies and little government control of the wheat industry, reveals price ratios of bread to rice of between one and two. However, many countries (generally those with large wheat subsidies) have bread prices well below the price of rice. These include some countries, such as Sri Lanka and Brazil, where rice is a staple food. In contrast, bread is expensive relative to rice in a number of Southeast Asian nations due to import tariffs on wheat and policies that keep the price of domestically produced rice low.

The bias in pricing policies in favor of wheat products is generally even stronger in the case of coarse grains than for rice. In countries with free trade policies for cereals, wheat flour based on imported wheat is about 2.0-2.5 times more expensive than locally produced maize. Recent data (Table 4) show that this is the case in such countries as Honduras and Haiti. In other cases (such as Ecuador, Egypt and the Ivory Coast), a subsidy is applied to wheat flour but not to maize grain. The result is that the price of maize is actually higher than wheat flour.

Table 4. Consumer prices of wheat flour and maize grain for selected countries in 1982

	Wheat Flour (US cents/kg)	Maize Grain (US cents/kg)	Price Ratio of Wheat Flour to Maize Grain
Bolivia	18	28	0.6
Costa Rica	36	23	1.6
Dominican Republic	40	40	1.0
Guatemala	45	21	2.1
Egypt	9	19	0.5
Ecuador	26	62	0.4
Ghana[a/]	131	255	0.5
Haiti	59	26	2.3
Honduras	48	23	2.1
Ivory Coast	31	36	0.9
Kenya	33	24	1.4
Lesotho	43	26	1.7
Nigeria	58	52	1.1

a/ Relatively high prices are due to an overvalued currency

In recent years, some countries have instituted two-tiered exchange systems with a lower exchange rate for essential imports (e.g., Ecuador and Bolivia); wheat is generally included in this category. There are also a number of countries (e.g., Nigeria) in which tariff rates are higher for maize relative to wheat, presumably to protect local maize growers.

Pricing policies for wheat and wheat products have often resulted in reduced real bread prices to consumers over time. Figures 10 and 11 display price indices for bread and wheat flour prices in the 1970s (prices deflated by the consumer price index) in several wheat-importing countries. In each case, the real prices declined relative to an index of flour or bread prices in the USA or Hong Kong. In many cases, the real price fluctuations shown do not reflect the sharp jump in world prices experienced in 1974/75. There are also some countries where real bread prices increased due to changes in pricing policies (e.g., the reduction of subsidies in Senegal – see Figure 11).

To some extent, these declining real prices reflect changes in the world wheat price, as well as changes in exchange rates associated with favorable terms of trade for wheat-importing countries. This is particularly true for oil-exporting countries, where the price of wheat (deflated by the unit value of exports) has fallen over 80 percent in the 1970s (Figure 12). Meanwhile, the price of wheat to developing countries that do not export oil is similar to the price prevailing at the beginning of the decade, and has probably increased in the last two years of declining prices for developing country exports. In addition, many of these countries have suffered from increasingly overvalued exhange rates, which have reduced the real price of wheat products relative to locally produced grains (e.g., Ghana in Table 4). In most cases, however, the decline in the real price of bread products reflects an increase in consumer subsidies, as governments have been reluctant to raise prices in line with inflation and have absorbed the differences in their budgets.

There are undoubtedly many reasons for pricing policies that favor wheat products. Urban populations, particularly the middle and upper income groups that consume much of the imported wheat, are an important political power base capable of influencing policy. In some cases, too, governments have instituted subsidy programs targeted to the urban poor. Wheat products are favored for urban food subsidy programs; it is easier for governments to control the price of imported wheat because it usually passes through a small number of flour mills. Also, in some Latin American countries subsidies were instituted when food aid was phased out, again to avoid sharp rises in consumer prices.

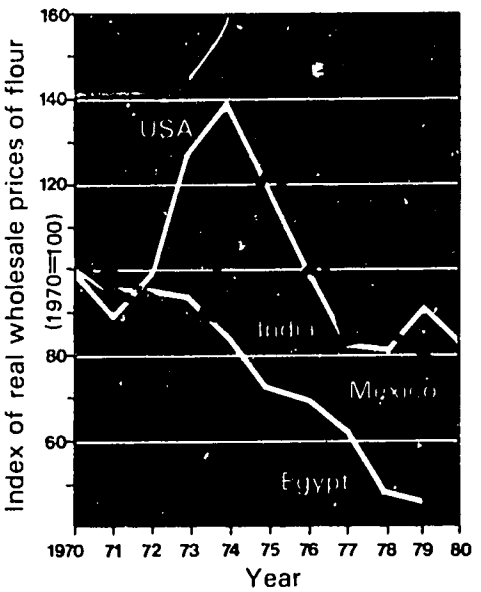


Figure 10. Trends in the indicies of real prices of wheat flour in selected countries, 1970 to 1980.

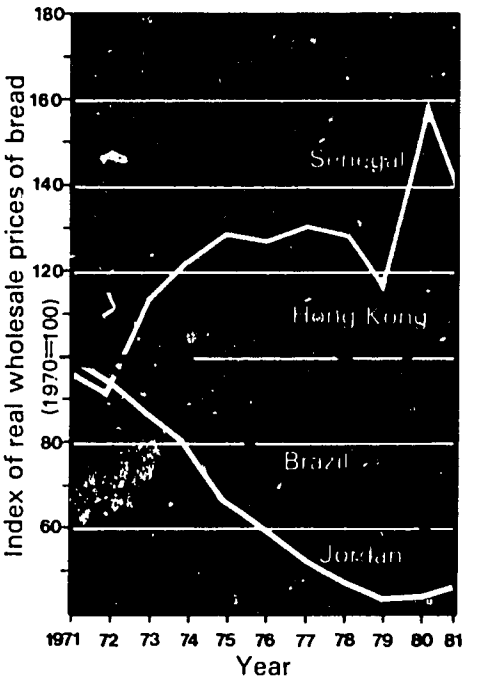


Figure 11. Trends in the indicies of real prices of bread in selected wheat-importing countries, 1971 to 1981.

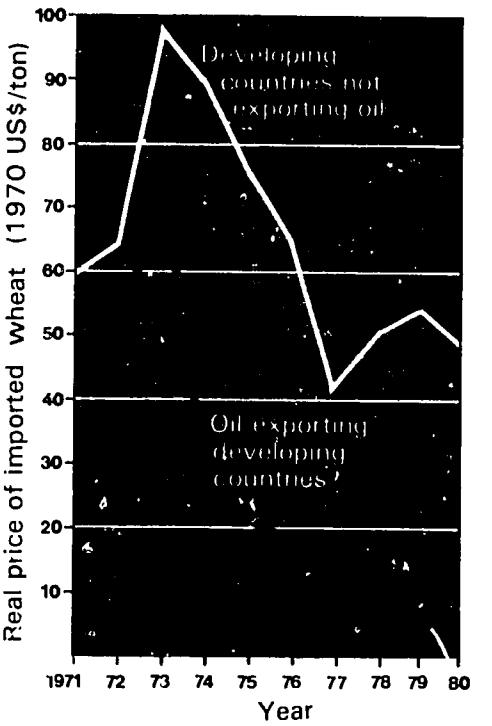


Figure 12. Trends in the real prices of imported wheat to developing countries that do, and do not, export oil, 1971 to 1980.

Recently, economic difficulties in many countries and pressure from international financial agencies have led to efforts to reduce or eliminate food subsidies, but subsidies on bread are generally the last stronghold. In the Sudan, for example, most consumer subsidies were recently removed, except for those on bread.

There is ample evidence that the level of wheat consumption is sensitive to prices, especially in countries where wheat is a secondary food. Estimated price elasticities of demand for wheat (which show the percent change in wheat consumption with a 1 percent change in wheat prices) range from about -0.3 in Egypt and India, to -0.5 and -0.7 in the Philippines and sub-Saharan Africa, to -1.8 in Indonesia. These price elasticities, combined with sharp declines in real prices, may explain half or more of the rapid increase in wheat consumption in many countries. A recent study from Egypt indicates that commercial wheat imports would be eliminated if wheat prices to producers and consumers reflected world prices.

Staple food production–High levels of wheat imports are also associated with lagging domestic food production. Countries possessing agricultural sectors with an export crop orientation (such as Sri Lanka and Bolivia) have relatively low per capita staple food production and high per capita wheat imports. Likewise, countries with significantly declining per capita food production (such as Nigeria and Somalia) have relatively high growth rates of wheat imports. Increased wheat imports to North Africa reflect the fact that this region has had a negative per capita growth rate of production of its staple food, wheat (-1.6 percent/year).

Promotion of wheat products–Although it is difficult to quantify the effects, wheat consumption has been actively promoted by exporting countries. Food-aid programs of developed country exporters often have an explicit market development objective that largely emphasizes wheat. Marketing agencies of the exporting countries actively provide technical aid and training to help establish local wheat products industries, both in traditional wheat-consuming countries and in those countries where wheat is not a traditional food. Comparatively less promotional activity is devoted to rice, and coarse grains are usually only promoted as livestock feed.

A related phenomena is the development of an influential milling and baking industry in developing countries, sometimes with strong ties to grain exporting firms, the milling industry of developed countries, or to grain shipping interests. Over the last decade, this industry has developed particularly rapidly in the tropical belt; flour imports have been increasingly replaced by wheat grain to be milled locally, and consumers have switched from flour to processed wheat products, especially bread. This local wheat processing industry, of course, has a vested interest in maintaining wheat imports and consumption.

Summary and Policy Implications

The story of increasing wheat consumption and imports in the developing world has few parallels, both in the rate of change and the almost universal nature of the change across a large number of countries. Wheat consumption has grown rapidly in nearly all developing countries, and usually more rapidly than for any other cereal. Much of this increase has come about through the substitution of wheat for other staple foods, especially coarse grains and roots and tubers.

The largest absolute increases in wheat consumption have occurred in the traditional wheat belt of the Middle East and North Africa and, except for Turkey, the gap between production and consumption has widened throughout this region. Imports have supplied the bulk of the increase, especially in North Africa where per capita wheat production is actually falling.

In the large, mixed-cereal economies of India, Pakistan and China, significant increases in wheat consumption have occurred. However, due to rapid production increases the gap between production and consumption has decreased. By the end of the 1970s, in fact, these countries had become less reliant on wheat imports. Although China has rapidly increased wheat imports in the last three years, the proportion of total consumption that is imported is still low relative to most other countries.

Perhaps the most interesting trend is the rapid increase in wheat consumption by countries in the tropical belt (23°N to 23°S), where wheat is not a staple food and is currently grown only at higher elevations. These countries import over 90 percent of the wheat they consume; their food imports nearly always favor wheat, even though rice, maize, or sorghum/millets are usually the staple cereals.

Despite the diversity among countries, the reasons underlying these changes are much the same. On the demand side they include increasing population, rising per capita incomes and rapid urbanization. These factors are combined in many cases with pricing policies that favor wheat products, especially in relation to other cereals. On the supply side, the major factor is the lag in local food production, combined with policies and physical infrastructures that encourage the feeding of urban populations through imports. Reliable supplies of wheat in the world market have favored wheat imports over other cereals, and food aid in the form of wheat has also played a part in some countries.

It is unlikely that future growth in wheat consumption and imports will occur at the rapid pace of the 1970s. The most immediate prospect for a slow-down in the trend is in the Middle East and North Africa countries, where wheat consumption has reached very high levels and cannot be expected to continue increasing at the same rate. In the high-income countries of this region, per capita consumption is expected to level off and even decline. Moreover, there is clearly a high potential for increasing wheat production in this region, as demonstrated by the rapid increase in dryland wheat production in Turkey in the 1970s.

In South Asia and East Asia, there may be a slow-down in the rate of increase of wheat production in the 1980s. Rapid production gains in the late 1960s and 1970s were achieved in large part through increased irrigation, in combination with the use of high-yielding varieties and more intensive management practices, especially fertilizer. However, the development of newly irrigated lands has slowed (and in some cases declined due to salinity problems), and the use of high-yielding wheat varieties has reached high levels (90 percent of the wheat farmers, for example, in Haryana and Punjab States of India use HYVs). While there is still much potential for increasing yields, these gains may come more slowly in the future. Hence, wheat imports by China are likely to remain at high levels and India may periodically return to the wheat market as a significant wheat importer.

Finally, in the tropical belt there is little immediate prospect for efficient local wheat production, except in a few countries with extensive highland areas (e.g., Ethiopia, Colombia). Typically, wheat consumption in these countries increases quite rapidly from a very low base in the early stages of development, as is occurring in much of sub-Saharan Africa and Southeast Asia. For middle income countries, such as those of Central America and the Andean region where per capita consumption averages 35kg/person, growth tends to be much slower. Consumption may peak at 50 to 60kg/person, as evidenced by such relatively high income countries as Venezuela and Singapore, where per capita consumption levelled out at these rates of consumption in the 1970s. However, much also depends on the local food production strategies followed by governments, as well as the consumer pricing policies established for wheat products and other staple foods. The increasing foreign exchange constraints faced by many countries and the pressure to reduce budget deficits by cutting food subsidies might cause some slowing of the trend. However, despite the adverse global economic conditions of the last two years, wheat imports by developing countries have continued to increase, even though imports of other cereals have stagnated or fallen.

The rising consumption of wheat and increasing reliance on wheat imports in most developing countries is to some extent to be expected in a dynamic and increasingly interdependent world economy. Some countries have chosen to focus production efforts on export commodities in which they have a comparative advantage, and then to import food. The Ivory Coast and Malaysia offer good examples of agricultural investments being targeted on export crops; food imports are used to satisfy urban food requirements. Furthermore, there is a natural tendency everywhere for consumers with increasing incomes to diversify their diets. This means that countries which traditionally consume rice tend to import wheat, while rice is often imported by countries in which wheat is a staple.

Yet the speed of change and the increasingly heavy reliance on wheat imports raise questions about the desirability of seeing this trend continue. First, some regions rely very heavily on wheat imports, such as North Africa at 120kg/person (65 percent of consumption) and the Andean region at 35kg/person (92 percent of consumption). The basic food supply in these regions is thus evidently exposed to variations in the international market. Furthermore, many developing countries are facing serious foreign exchange deficits, which will cause increasing pressure to substitute for food imports.

A second point is that the level of wheat imports in many cases reflects investments and pricing policies that discriminate against the development of local food production potential and favor imports. It is important to note that an increasing reliance on wheat imports is to some extent a self-fulfilling, if not irreversible, process. Food supply systems for urban consumers are built around investments in port facilities, infrastructure, and marketing that may not be easily converted to handling locally produced food grains. This is particularly true in the case of tropical countries that do not produce wheat; the investment in wheat milling and baking industries is highly wheat specific and provides a vested interest in continuing wheat imports even when local food production can meet demand.

It is beyond the scope of this study to provide concrete policy recommendations, but there do emerge a number of important research areas that merit further attention. In many countries of sub-Saharan Africa and Latin America, for example, the best alternative to wheat imports for urban populations may be increased production of local coarse grains, especially maize. But in addition to increasing production and developing associated marketing facilities, greater acceptance of maize and other coarse grains will require the development of more convenience-type foods. One possibility that has recently received some research attention is the use of composite flours for bread making. At present, one of the major constraints to this approach seems to be pricing policies that favor imported wheat over locally produced cereals. This renders it unprofitable to use flour mixtures, even when technically feasible.

On the supply side, food deficit countries can also consider alternative forms of cereals imports. White maize is often preferred to yellow maize for food consumption, although international trade in white maize is very limited and imported maize is seldom promoted for food use. Food aid could also be targeted more specifically to the food staple of the country, with tropical countries receiving cereals other than wheat. Imports of wheat in the form of flour by countries that do not produce wheat would also provide a more temporary nature to wheat imports than does the establishment of local milling industries. There has been a tendency for the proportion of flour in wheat trade to decline, even though there is little evidence that it is efficient for countries where wheat is not produced to establish a capital-intensive local milling capacity (the high levels of protection on local flour mills is evidence of this).

Finally, an increasing number of countries in the tropical belt have reacted to increased wheat consumption by establishing local wheat research and production programs. Decisions to initiate such programs should be based on an assessment of both the technical feasibility of growing wheat, as well as the real costs of the research and production resources needed to do so. These assessments should be made before long-term investments are committed. Government strategies to reduce reliance on wheat imports should thus consider both the demand and supply sides, within a broader food policy context that includes wheat and competing staples.

The Current World Wheat Situation*

World Wheat Production in 1981 and 1982

Developed countries–At 452Mt, world wheat production in 1981 was, at that time, the highest ever; it reached a new record of 481Mt in 1982. The largest production increases occurred in North America (the USA and Canada) where bountiful harvests established new production records in 1980, '81 and '82. In 1980/81, wheat production in Canada and the USA exceeded 100Mt for the first time. This harvest was 25Mt above the three year average for 1978 to 1980, and 17Mt above the record of 1979/80. Despite the implementation of goverment programs to reduce area, record yields in the USA resulted in an additional 2.5Mt of production in 1981/82.

Recent wheat crops were also above average in Western Europe. The EEC produced an unprecedented crop in 1982, about 60Mt, although area changed little between 1981 and 1982. The UK alone, with an estimated yield of 6.2t/ha on 1.7 million hectares, set a new standard for wheat yields over a large area. Following a reasonably good year in 1981, Australia experienced a major drought and production dropped in 1982 to little more than half of the 1978-80 average. In addition, the USSR experienced a series of poor harvests in recent years. The 1981 and 1982 harvests (80Mt and 85Mt, respectively) were sharply below the 120Mt harvested in 1979.

Developing countries–Wheat production in developing countries was also near record levels in both 1981 and 1982. This was largely due to progress in South and East Asia, where India, Pakistan, Bangladesh, and Nepal all harvested record crops in 1981. Together these countries produced about 50Mt, or 14 percent more than the 1978-80 average. These production levels were maintained in 1982; India set a new record of 38Mt. After two relatively dry years and a decline in the area planted to wheat because of increased emphasis on other crops, China harvested 68Mt in 1982, nearly 10 percent more than its previous record in 1979.

Drought severely reduced the harvest in Morocco in 1981, and dry weather also affected the 1982 crop in Syria and Algeria. Turkey, the largest producer in its region, recorded two harvests of around 17Mt, slightly above the level of recent years. Overall, production in the Middle East and North African regions in 1981 and 1982 showed little change from the previous 3-year period.

Results in Latin America were mixed. A 50 percent reduction in wheat area in Chile and low yields in Brazil (0.6 t/ha in 1982) resulted in below average production in those two countries. At the other extreme, Mexico's harvest in 1982 was 50 percent over the previous 3-year average, while Argentina's production was almost double its 1979-81 average.

New records for wheat trade–World wheat trade reached 101Mt in the 1981/82 crop year, some 10Mt above the record of 1980/81. Part of this expansion came from imports of 20Mt by the USSR, due to their recent poor harvests. More importantly, developing country importers continued their rapid increase in wheat imports, reaching 61Mt in 1981/82. The geographic pattern of imports by developing countries was similar to that of the 1970s, with continued increases in the North Africa/ Middle East market and the tropical countries of sub-Saharan Africa and Southeast Asia. China also continued to import large amounts of wheat (around 13Mt), and in 1981/82 India imported wheat (2.5Mt) for the first time in several years.

By contrast, world wheat trade declined slightly in 1982/83, after continuously increasing for six years. This change was due largely to a decrease in wheat imports by Eastern Europe, which reflects improved harvests, as well as serious foreign exchange constraints in some countries.

Wheat imports by developing countries, however, rose yet again in 1982/83, with increased shipments to Korea, Bangladesh, and North Africa. India once again joined the list of significant wheat importing countries, purchasing about 4Mt in 1982/83. In total, 17 developing countries each purchased over 1Mt of wheat and 27 countries over 0.5Mt each in 1982/83. Twenty-three of these 27 countries imported over 50 percent of the wheat they consumed. These purchases were made despite near record levels of wheat and other cereal production in developing countries and despite the unfavorable state of the world economy (economic recession, high interest rates, a strong US dollar, and the serious foreign exchange shortages and debt burden of many developing countries). This situation contrasts sharply with the stagnation or decline in rice and coarse grain imports by developing countries over the last four years and is further evidence of the special place of wheat in the diets of people in developing countries.

* The information for this section is based on data available to CIMMYT as of June 1, 1983.

The reduction of world wheat trade in 1982/83, combined with record harvests in the major wheat exporting countries of North America and Western Europe, led to increasing competition for market shares. Argentina, the EEC and Canada increased wheat exports in 1982/83, while Australia, because of the drought, and the USA, largely because of declining sales to the USSR, both reduced exports. In an effort to increase exports, the USA announced a "blended credit" program to stimulate exports of surplus agricultural comodities. This program provides loans consisting of interest-free government credits and government guaranteed private loans to selected importers. Meanwhile, the EEC subsidy on wheat exports has come under increasing attack in international trade forums.

Lower export prices of wheat—Export prices for wheat have declined steadily since their peak at the end of 1980 (Figure 13). Export prices for Hard Red Winter wheat (No. 1) at US Gulf ports, were about $157/ton in 1982/83, a decrease of 7 percent from 1981/82 and 12 percent lower than in 1980/81 (Table 5). However, this is not a large decline, given that the exporting countries have produced 20-25Mt of additional wheat in 1981 and 1982 compared to 1980, which was a record crop year for these countries. Moreover, from the vantage point of most importing countries, much of this price decline was offset by the increase in the value of the US dollar against most other currencies.

Two classes of wheat have suffered an even greater price decline (Figure 13). Durum wheats, which commanded a 50 percent premium in the 1981/82 crop year over HRW wheats in the export market, were selling for about the same price as HRW wheats in 1982/83. Although world trade in durums reached a record 5.3Mt in 1981/82 in response to increased demand from North Africa, a record durum crop in North America in 1981 has depressed prices for the last 18 months and provided sufficient stocks to satisfy demand for 2 years.

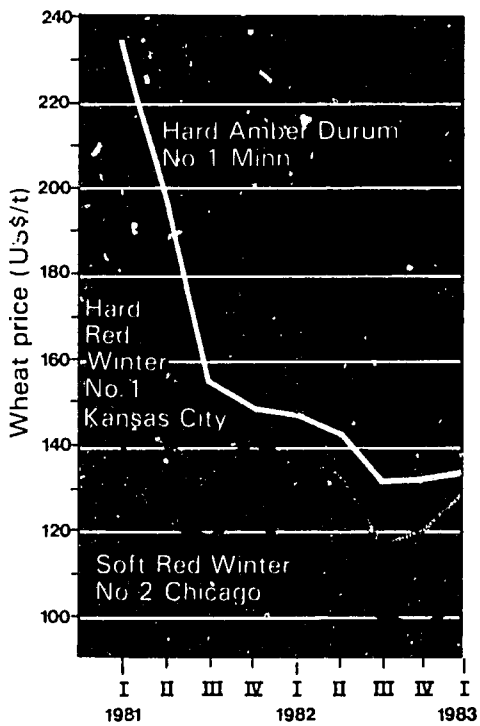


Figure 13. Wholesale prices of wheat in the US, by class of wheat.

Prices for soft wheats have declined faster than for hard wheats. This reflects efforts of the EEC, which largely exports soft wheat, to increase exports even at a considerable cost in subsidies.

The above price quotations are generally based on export prices from U.S. Gulf ports. The farm price, the cash price in Kansas City, and the c.i.f. price in Rotterdam have all moved quite consistently in the last two years, as shown in Figure 14. The average difference between the Rotterdam import price and the US farm price has been about $70/t, divided as follows: farm to wholesale price $20/t, wholesale price to export price $15-20/t, and export price to import price to cover freight and handling, $25-35/t.

Table 5. Export prices of grains and fertilizers, and the average freight rate (US Gulf ports to Egypt), 1980/81 to 1982/83

	Average Annual Prices[a/] (US$/t)		
	1980/81	1981/82	1982/83[b/]
Export Price Wheat (No. 1 HRW, US Gulf ports)	179	169	157
Export Price Maize (No. 2 Yellow, US Gulf ports)	142	118	108
Export Price Rice (5% Broken, Bangkok)	477	290	270
Export Price Urea (Bagged, Europe)	236	176	147
Export Price Triple Phosphate (US Gulf ports)	169	143	137
Freight Rate - US Gulf ports to Egypt	40	26	18

a/ Crop year, July to June.
b/ Based on data up to April, 1983.

Furthermore, in the face of record or near record world cereal production in 1981 and 1982, wheat prices have declined less than for other cereals (see Table 5). Maize export prices in 1982/83 were 8 percent below a year earlier and 24 percent below 1980/81. The two large US maize crops in 1981 and 1982 and the adverse world economic situation contributed to this decline. Rice prices that reached a peak of $524/t (Thai, 5 percent broken, Bangkok) in July, 1981, have declined substantially (falling to $258/t in November, 1982) after a large rice crop in 1981 and a reduction of imports by Indonesia and Korea. For the first time in several years, rice prices are less than twice the wheat price in world markets.

Freight rates–The most significant price change affecting wheat trade in 1981 and 1982 was the steep decline in freight rates for ocean transport of grain (Figure 15). Toward the end of 1982, freight rates were only about half of those prevailing a year earlier (see Table 5) and had fallen relative to grain prices. This price change reflected increased capacity in ocean shipping resulting from the high freight rates of recent years, combined with a general slow down of world trade because of the economic recession. It is unlikely that rates will decline much further, and the increased shipping capacity should provide some stability to freight rates in the near future, even with economic recovery.

Fertilizer prices–Export prices of nitrogenous and phosphate fertilizers fell sharply in 1981 and 1982 (see Table 5 and Figure 15). This price change largely reflected a drop in demand for fertilizer (in response to lower grain prices) in such major fertilizer-consuming countries as the USA. The largest decline occurred in nitrogenous fertilizer prices. Increased production capacity in Eastern Europe and the USSR, and in several third world countries, such as Mexico, the levelling off of oil and natural gas prices, and the world economic recession (which reduced the demand for ammonia for industrial uses) also contributed to the decline.

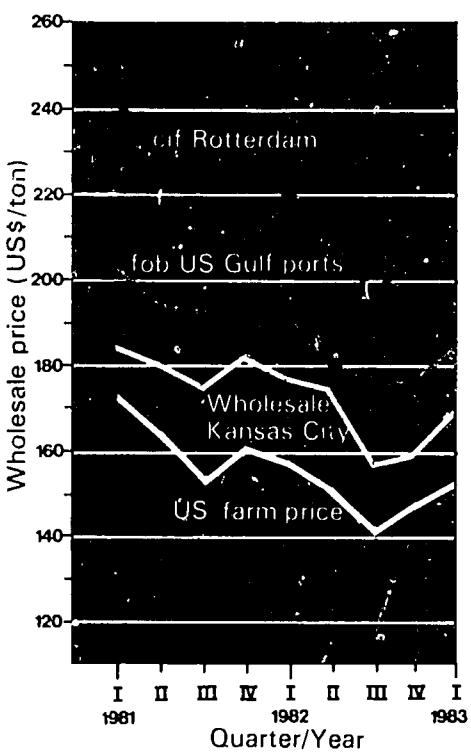


Figure 14. Farm, wholesale, export and import prices for US No. 2 HRW wheat.

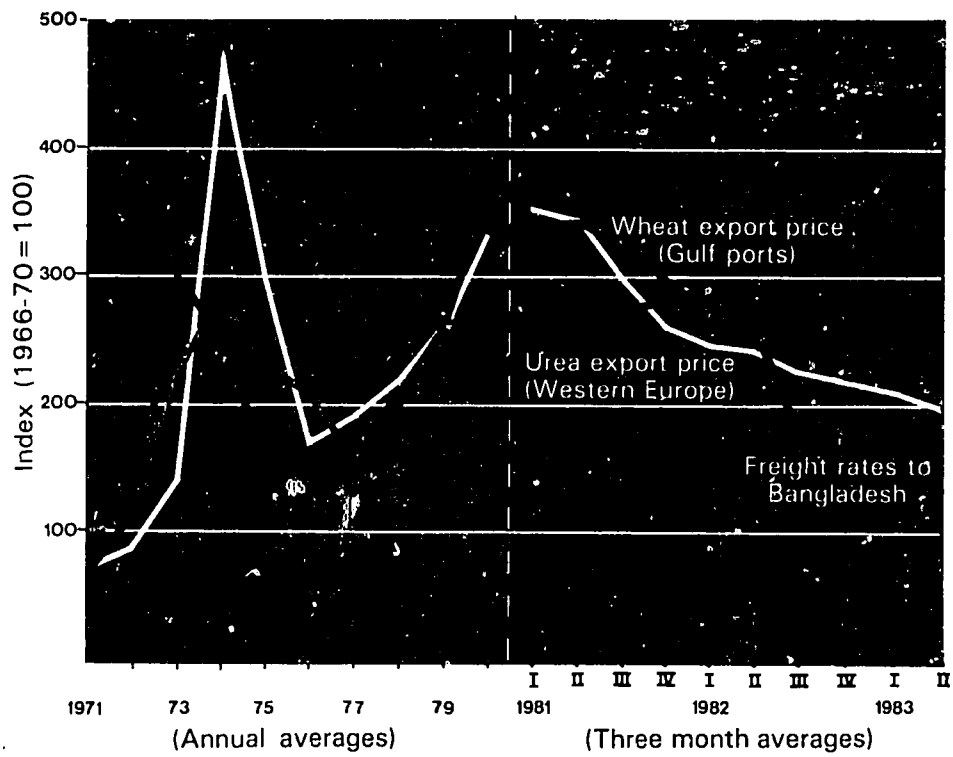


Figure 15. Trends in the indices of wheat prices, urea prices and freight rates.

Table 6. Farm level prices for wheat and nitrogen fertilizer in selected countries

	1980/81 Crop Year			1981/82 Crop Year		
	Wheat Price[a] ($US/ton)	N Price[b] ($US/ton)	Price Ratio of N/Wheat	Wheat Price[a] ($US/ton)	N Price[b] ($US/ton)	Price Ratio of N/Wheat
Kenya	na	na	na	198	882	4.5
Egypt	91	211	2.4	80	129	1.6
Syria	221	436	2.0	213	449	2.1
Turkey	na	na	na	122	326	2.7
China	207	575	2.8	205	512	2.5
Bangladesh	183	329	3.6	260	391	1.5
India	151	447	2.9	150	550	3.6
Pakistan	132	278	2.2	136	352	2.6
Nepal	172	457	2.7	208	562	2.7
Mexico	155	350	2.2	144	190	1.3
Argentina	157	980	6.3	102	792	7.8
Brazil	na	na	na	235	718	3.1
France	na	na	na	157	476	3.0
Portugal	na	na	na	247	385	1.6
USA	140	290	2.1	120	313	2.6
Australia	na	na	na	115	626	5.4
Canada	na	na	na	131	390	2.4

a/ Generally based on the farm gate price.
b/ Based on the price of urea, except in France and Turkey (where ammonium nitrate is employed), Brazil (where ammonium sulphate was used for the calculations), and the USA and Canada (where anhydrous ammonia is applied).

Keeping Up-To-Date on the World Wheat Situation

CIMMYT's interest in the world wheat economy springs largely from a desire to understand longer term trends in production, consumption and prices. Those who seek up-to-date information on short term changes in the wheat situation are referred to a number of excellent sources. The FAO *Food Outlook* (published monthly) contains estimates of production and trade in major countries, as well as the latest export prices for wheat and fertilizers. The FAO *Monthly Bulletin of Statistics*, *Production Yearbook* and *Trade Yearbook* give detailed country data on production, trade and export prices. The *Market Report* of the International Wheat Council (usually published monthly) also gives detailed information on production, trade and prices. These data are assembled and reviewed on an annual basis in their *Review of the World Wheat Situation* and *World Wheat Statistics*. The US Department of Agriculture publishes a quarterly *Wheat Outlook and Situation*, which gives particular emphasis to the US wheat situation. The USDA also publishes a monthly *Foreign Agricultural Circular-Grains* with the latest forecasts for grains, price information, and some reporting of changes in the pricing policies of various countries. Finally, *Milling and Baking News* (Sosland Publishing Co., Kansas City) is published weekly and contains many articles related to the wheat industry.

Export prices for urea dropped 30 percent from early 1981 to early 1982, and fell an additional 20 percent to between $140 and $150/t in April, 1983 (Table 5). Export prices of urea are now lower than the export price of wheat (No. 2 HRW), just as they were in the late 1960s when urea prices were at a minimum. In addition, lower freight rates reduced import prices of fertilizer to developing countries even further.

In the short term, prices of nitrogenous fertilizer will increase as the general economic situation improves and as grain prices rise, but no sharp jump is foreseen in the next year or two. In the longer term (to 1985) there is concern about the production capacity for nitrogenous fertilizer, given the closure of many ammonia plants in the USA due to current low prices, and a general global slow-down in the construction of new plants.

Farm level prices—The prices received for wheat, and those paid for nitrogenous fertilizer by farmers in a number of countries are shown in Table 6. Differences in prices for 1981 and 1982 (expressed in US dollars) reflect the changes in prices in local currency, as well as variable exchange rates. Farm prices in the USA are slightly lower than in 1981. In most other countries, price differences between 1981 and 1982 are not large, except for Latin America where large devaluations in 1982 reduced the US dollar price paid to farmers in Mexico and Argentina. Such countries as Brazil and Portugal, where farm prices are over US$200/ton, are probably paying farmers above the import price, while prices below $150/t in importing countries and $125/t in exporting countries reflect farm prices below world prices. Egypt, Turkey and Argentina represent these cases.

The largest changes in farm level nitrogen prices occurred in India and Pakistan, where efforts are being made to reduce the subsidy on fertilizer. Given a world price ratio of about 2 to 1, nitrogen to wheat, and adding appropriate transport margins, farmers in Kenya and Argentina appear to be paying above world prices for nitrogen while farmers in Mexico and Portugal pay relatively low prices.

The Short Term Outlook

Although wheat prices have declined in the face of large world harvests in the past two years, the decrease has been moderated by expanded world wheat trade. Total world wheat consumption has shown little growth over the last two to three years, but this largely reflects the balancing of decreased consumption in the developed countries (especially the USSR) against continued growth of wheat consumption in the developing countries.

At the same time, world wheat production has set new records and, as a result, world wheat stocks have increased sharply in the last two years, reaching 122Mt at the end of the 1982/83 crop cycle. However, most of the increase in wheat stocks occurred in the USA, which now accounts for 35 percent of world wheat stocks. Most USA stocks are held under government grain reserve programs and are not immediately available to the market. Furthermore, wheat stocks *as a percent of total utilization* are not high when compared to stocks of recent years (see Figure 16). By contrast, stocks of coarse grains reached very high levels by the end of the 1982/83 cycle.

The USA has responded to the increased availability of wheat and lower prices by instituting stronger incentives for farmers to reduce production. These incentives include an expanded area-reduction program and, in particular, a new Payments-In-Kind program (PIK) from which farmers receive wheat from government stocks in return for cutting back their own production. These programs were expected to lead to a 16 percent reduction in the 1983 wheat crop, as compared with 1982. However, there were indications elsewhere of increased production by the other major wheat exporters. In addition, it was confidently forecast that the major wheat producers of Asia—India, China and Pakistan—would have large wheat harvests.

At this writing, it is thought that the combined effect of these events and some recovery in the world economy will result in little change in wheat prices through mid-1984. In the longer term, with continued growth in world wheat consumption, it seems probable that the current surplus situation will be followed by years of tight supplies and higher prices. This projected pattern is similar to, but is forcasted to be less extreme than, the pattern that prevailed in the 1970s.

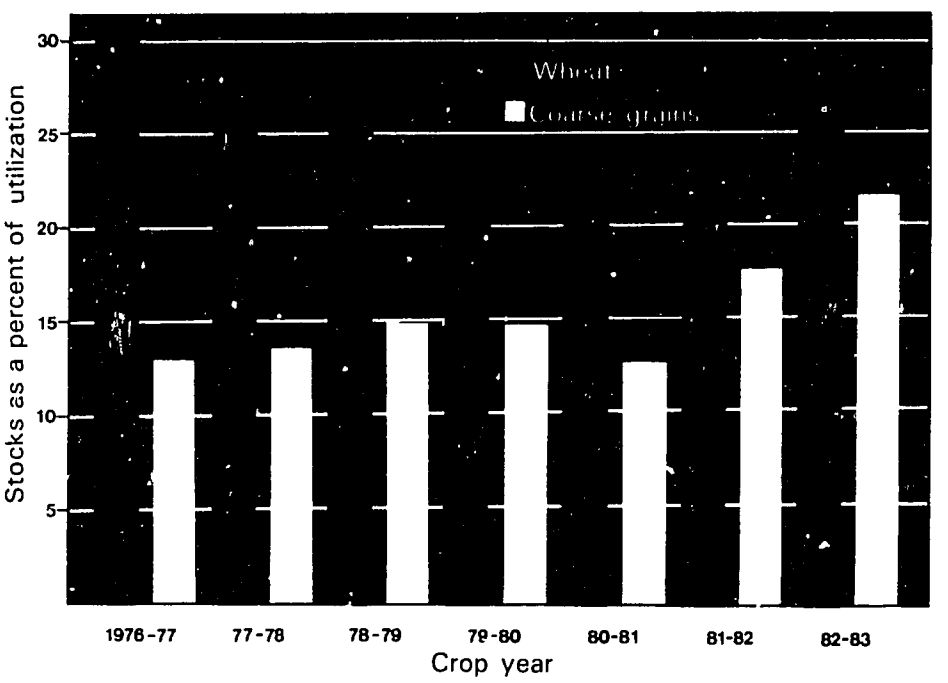


Figure 16. End-of-year stocks as a percentage of world utilization, 1976-77 to 1982-83.

Selected Wheat Statistics

The following tables give 36 statistics related to wheat production, consumption, trade and prices, as well as some basic economic indicators. These statistics have been selected to provide the latest available information on world wheat production, and the data that formed the basis of the analysis in Part I of this report.

The 1981 report of *World Wheat Facts and Trends* provides some additional wheat statistics as follows:

- Percent wheat area irrigated
- Percent wheat area well watered
- Percent wheat area semi-arid
- Percent area as spring bread wheat
- Percent area as winter bread wheat
- Percent area as durum
- Percent area as high-yielding varieties
- Percent wheat used as animal feed
- Percent total wheat utilization imported

It should also be noted that some statistics in this report are substantially different from the 1981 issue due to routine updating and refining of statistics by the FAO Basic Statistics Unit. The largest such change has been a revision of data for China; wheat area in China is substantially smaller and yields are higher in the new estimates.

Developing countries included in these tables are grouped into wheat producing and wheat consuming countries. Wheat producing countries are those where wheat is cultivated on an area greater than 100,000 ha or where wheat production accounts for more than 50 percent of total wheat consumption. Consuming countries are all other developing nations where total wheat consumption is greater than 100,000 tons per year. 1/

Of the developed countries, only those with wheat consumption greater than 1 million tons have been included. All these countries cultivate over 100,000 ha of wheat and are classified as producing countries. Summary statistics presented for each geographical region include *all* countries in that region (see Annex 2 for a complete list).

1/ Production and consumption data from 1978-80 are the base for these classifications.

Notes on the Variables

Variables 1, 6 to 15: Source–FAO Tape of Production Statistics, April, 1983.

Variables 2 and 3: Source–World Development Report, 1982.

Variables 4 and 5: Source–FAO Production Yearbooks. Growth rates are calculated as $g = 100\ [\ln (x_t/x_{t_0})]/t$ where x_t is the average for the period t, 1979-81, x_{t_0} is the average for the period t_0, 1961-65 and t is the number of years between the midpoints of the two periods.

Variables 12 to 15: Calculated from FAO Tape of Production Statistics, April, 1983. Growth rates calculated as defined for Variable 5 are only calculated for countries with wheat area greater than 20,000 ha.

Variables 16, 17, 19 and 20: Source–FAO Monthly Bulletin of Statistics, June, 1982. Net imports are calculated as gross imports minus exports. Negative numbers indicate the country is an exporter.

Variable 18: Source–FAO Tape of Trade Statistics, January, 1982.

Variable 20: Calculated as gross imports of wheat as percent of total food grain imports. This variable was not analyzed for wheat exporting countries. Food grain imports are generally defined as the sum of gross imports of wheat and rice. However, in countries where maize imports exceeded the use of maize for animal feed, the surplus of maize imports over maize used as animal feed was included in food grain imports. Maize used for animal feed is based on percentages calculated from the FAO Food Balance Sheets for 1975-77.

Variables 21 and 22: Source–Barbara Huddleston, IFPRI (personal communication). For some countries (e.g., Vietnam) missing data were filled in from USDA data on P.L. 480 exports. In some cases reported food aid exceeded reported wheat imports; in these cases 100 percent of wheat imports are assumed to be provided by food aid.

Variable 23: Total wheat utilization was calculated as the sum of net imports plus production.

Variables 24 to 27: Source–FAO Food Balance Sheets, 1980. Based on changes in per capita caloric supply from 1961-65 to 1975-77. Growth rates calculated as defined for Variable 5 were only calculated where the staple accounts for 50 calories or more of daily caloric supply.

Variables 28 and 29: Source–FAO Food Balance Sheets, 1980.

Variables 30, 31 and 33: Source–ILO, Bulletin of Labor Statistics. To convert the domestic retail price into US dollars (Variable 30), the official exchange rates from IMF, International Financial Statistics, have been used.

Variable 32: Source–CIMMYT Economics Survey of market prices in major cities in 1980 and 1981. In some cases where most wheat is consumed as bread the price of wheat flour to bakers is used.

Variable 33: Calculated by deflating current bread prices by the consumer price index from IMF, International Financial Statistics. Beginning and ending years are not the same for all countries due to inconsistent or missing data. However, growth rates were only calculated if the range between beginning and ending year was greater than 5 years.

Variables 34 to 36: Source–CIMMYT Economics Survey of scientists who are in frequent contact with farmers. Data refer to the wheat crop cycle harvested in 1981 for a major wheat-producing region within the country. The wheat price is the post-harvest price received by farmers. Nitrogen price is the price paid by farmers for the most common nitrogen fertilizer–usually urea. Labor price is the price paid for unskilled labor for farm work per day. Currency conversions were made at the prevailing official exchange rate.

Eastern and Southern Africa

		Producers					Consumers			Regional Total or Average
		Ethiopia	Kenya	Sudan	Tanzania	Zimbabwe	Lesotho	Mozambique	Zambia	
General Indicators	1. Population, 1982 (millions)	32.9	17.9	19.5	19.1	7.9	1.4	11.1	6.2	163.7
	2. Per capita income, 1980 (US$ per capita)	140	420	410	280	630	420	230	560	301
	3. Growth rate per capita income, 1960 to 1980 (%/ per year)	1.4	2.7	-0.2	1.9	0.7	6.1	-0.1	0.2	0.9
	4. Per capita cereal production, 1979-81 (kg per year)	133	159	175	81	314	163	46	167	139
	5. Growth rate per capita cereal production, 1961-65 to 1979-81 (%/ per year)	-3.1	-0.6	1.9	-0.4	1.0	-2.9	-4.4	-0.1	-0.9
Wheat Production	6. Area, 1982 (1000 ha)	550	100	253	55	40	24	3	4	1039
	7. Yield, 1982 (ton/ha)	1.2	2.5	0.6	1.4	4.6	0.6	1.0	4.1	1.3
	8. Production, 1982 (1000 ton)	650	250	150	75	182	14	3	15	1347
	9. Area, 1982, as percent of 1979-81	109	96	104	108	102	86	90	133	106
	10. Yield, 1982, as percent of 1979-81	110	123	73	97	103	62	125	120	115
	11. Production, 1982, as percent of 1979-81	120	118	77	105	105	53	113	160	108
	12. Growth rate area, 1961-65 to 1980-82 (%/ per year)	-1.6	-0.2	12.9	5.0	22.2	-5.7	n.a.	n.a.	0.3
	13. Growth rate yield, 1961-65 to 1980-82 (%/ per year)	2.2	3.7	-2.9	1.7	4.3	0.3	n.a.	n.a.	2.4
	14. Growth rate production, 1961-65 to 1980-82 (%/ per year)	0.5	3.5	9.6	6.8	27.4	-5.4	n.a.	n.a.	2.8
	15. Growth rate production, 1970-72 to 1980-82 (%/ per year)	-0.9	1.4	2.6	-1.7	9.1	-8.2	n.a.	n.a.	0.6
Wheat Imports	16. Net imports, 1981 (1000 ton)	291	159	274	75	0	0	204	100	1558
	17. Net imports, 1981, as percent of 1978-80	109	300	115	127	..	..	152	83	127
	18. Net imports per capita, 1961-65 (kg per year)	0	-3	8	4	22	5	6	6	4
	19. Net imports per capita, 1979-81 (kg per year)	9	5	15	3	-1 a/	53 a/	18	22	9
	20. Imports of wheat as percent of total food grain imports, 1979-81	100	38	100	44	n.a.	..	59	40	58
	21. Wheat food aid as percent of wheat imports, 1961-65	21	0	59	0	0	..	19	0	15
	22. Wheat food aid as percent of wheat imports, 1978-80	38	47	55	64	0	7	65	30	42
Consumption	23. Per capita total wheat utilization, 1979-81 (kg per year)	23	18	26	7	24	23	18	23	16
	24. Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/ per year)	0.1	2.7	5.6	2.7	-3.5	2.8	5.0	8.9	1.9
	25. Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/ per year)	n.a.	n.a.	n.a.	1.5	n.a.	n.a.	-1.2	n.a.	0.8
	26. Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/ per year)	-1.1	-0.4	1.1	0.2	0.4	-1.2	-1.0	-0.6	-0.1
	27. Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/ per year)	0.9	-1.2	n.a.	-0.6	n.a.	n.a.	-0.9	-1.4	-0.6
	28. Wheat as percent of staple calories, 1961-65	13	5	9	3	8	24	3	4	7
	29. Wheat as percent of staple calories, 1975-77	15	7	15	4	5	34	7	11	9
Consumer Prices	30. Bread retail price, 1979, 1980 or 1981 (US cents per kg)	..	..	45	72	..	59	..	76	n.a.
	31. Ratio bread price to rice price, 1979, 1980 or 1981	0.2	0.9	0.3	0.5	..	0.5	..	1.0	n.a.
	32. Ratio wheat flour price to maize price, 1981 or 1982	..	1.4	..	..	..	1.7	..	..	n.a.
	33. Annual percent change in real price of bread, 1970 to 1981	-10.6	-4.6	-1.9	-4.4	..	4.8	..	1.0	n.a.
Producer Prices	34. Farm price of wheat, 1982 (US$ per ton)	..	198	..	..	..	..	..	..	n.a.
	35. Ratio of farm level nitrogen price to wheat price, 1982	..	4.5	..	..	..	..	..	..	n.a.
	36. Farm wage rate in kg of wheat per day, 1982	..	5.1	..	..	..	..	..	..	n.a.

a/ Data are for 1978-80.
.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

Western Africa

			Consumers						Regional Total or Average
			Angola	Cameroon	Ghana	Ivory Coast	Nigeria	Zaire	
General Indicators	1.	Population, 1982 (millions)	7.5	8.9	12.5	8.6	82.4	29.9	208.1
	2.	Per capita income, 1980 (US$ per capita)	470	670	420	1150	1010	220	642
	3.	Growth rate per capita income, 1960 to 1980 (%/o per year)	-2.3	2.6	-1.0	2.5	4.1	0.2	2.6
	4.	Per capita cereal production, 1979-81 (kg per year)	51	108	60	113	125	28	107
	5.	Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	-4.4	-0.8	0.6	1.1	-1.5	2.4	1.3
Wheat Production	6.	Area, 1982 (1000 ha)	16	2	0	0	15	5	44
	7.	Yield, 1982 (ton/ha)	0.6	0.5	n.a.	n.a.	1.7	1.0	1.2
	8.	Production, 1982 (1000 ton)	10	1	0	0	25	5	51
	9.	Area, 1982, as percent of 1979-81	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	104
	10.	Yield, 1982, as percent of 1979-81	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	97
	11.	Production, 1982, as percent of 1979-81	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	102
	12.	Growth rate area, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.1
	13.	Growth rate yield, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-0.5
	14.	Growth rate production, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.6
	15.	Growth rate production, 1970-72 to 1980-82 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.2
Wheat Imports	16.	Net imports, 1981 (1000 ton)	177	132	164	186	1508	174	2898
	17.	Net imports, 1981, as percent of 1978-80	129	118	119	111	130	110	119
	18.	Net imports per capita, 1961-65 (kg per year)	8	5	8	9	2	4	4
	19.	Net imports per capita, 1979-81 (kg per year)	24	14	12	22	16	6	13
	20.	Imports of wheat as percent of total food grain imports, 1979-81	100	81	78	43	71	42	60
	21.	Wheat food aid as percent of wheat imports, 1961-65	0	1	10	0	7	86	15
	22.	Wheat food aid as percent of wheat imports, 1978-80	3	1	38	0	..	19	8
Consumption	23.	Per capita total wheat utilization, 1979-81 (kg per year)	25	15	12	22	16	6	13
	24.	Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	4.5	7.0	3.0	4.1	12.4	n.a.	6.3
	25.	Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	n.a.	-1.2	0.6	7.8	4.9	1.9
	26.	Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	-0.1	0	1.0	-1.6	-1.6	2.1	-0.9
	27.	Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	0.8	0.7	-1.5	-1.3	0.5	-0.2	0
	28.	Wheat as percent of staple calories, 1961-65	7	2	4	4	1	2	2
	29.	Wheat as percent of staple calories, 1975-77	11	5	7	7	4	2	4
Consumer Prices	30.	Bread retail price, 1979, 1980 or 1981 (US cents per kg)	..	104	485	82	81	..	n.a.
	31.	Ratio bread price to rice price, 1979, 1980 or 1981	..	1.6	0.8	0.6	0.4	0.8	n.a.
	32.	Ratio wheat flour price to maize price, 1981 or 1982	..	..	1.0	0.9	1.1	..	n.a.
	33.	Annual percent change in real price of bread, 1970 to 1981	..	-1.3	0.2	2.0	-8.4	-9.4	n.a.
Producer Prices	34.	Farm price of wheat, 1982 (US$ per ton)	..	250	..	..	500	..	n.a.
	35.	Ratio of farm level nitrogen price to wheat price, 1982	..	3.1	..	..	0.3	..	n.a.
	36.	Farm wage rate in kg of wheat per day, 1982	..	..	..	..	14	..	n.a.

.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

North Africa

		Producers					Regional Total or Average
		Algeria	Egypt	Libya	Morocco	Tunisia	
General Indicators	1. Population, 1982 (millions)	20.3	44.1	3.2	21.7	6.7	96.1
	2. Per capita income, 1980 (US$ per capita)	1870	580	8640	900	1310	1235
	3. Growth rate per capita income, 1960 to 1980 (%/o per year)	3.2	3.4	5.2	2.5	4.8	3.9
	4. Per capita cereal production, 1979-81 (kg per year)	113	190	73	175	180	166
	5. Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	-1.9	-0.8	-0.6	-2.0	0.7	-1.2
Wheat Production	6. Area, 1982 (1000 ha)	2000	577	303	1699	800	20744
	7. Yield, 1982 (ton/ha)	0.6	3.5	0.5	1.1	1.3	1.5
	8. Production, 1982 (1000 ton)	1200	2017	160	1824	1000	30148
	9. Area, 1982, as percent of 1979-81	100	100	110	102	90	99
	10. Yield, 1982, as percent of 1979-81	90	108	119	120	132	112
	11. Production, 1982, as percent of 1979-81	90	108	131	122	119	110
	12. Growth rate area, 1961-65 to 1980-82 (%/o per year)	0.1	0.2	3.7	-0.3	0.1	0.1
	13. Growth rate yield, 1961-65 to 1980-82 (%/o per year)	0.3	1.4	3.8	0.3	1.8	0.8
	14. Growth rate production, 1961-65 to 1980-82 (%/o per year)	0.5	1.5	7.7	0	1.8	1.0
	15. Growth rate production, 1970-72 to 1980-82 (%/o per year)	-0.7	1.7	17.0	-3.0	2.8	0
Wheat Imports	16. Net imports, 1981 (1000 ton)	2194	5889	756	1849	704	11392
	17. Net imports, 1981, as percent of 1975-80	91	114	148	115	113	110
	18. Net imports per capita, 1961-65 (kg per year)	32	59	70	22	34	44
	19. Net imports per capita, 1979-81 (kg per year)	126	129	195	83	108	119
	20. Imports of wheat as percent of total food grain imports, 1979-81	100	100	92	100	100	100
	21. Wheat food aid as percent of wheat imports, 1961-65	37	89	8	83	95	78
	22. Wheat food aid as percent of wheat imports, 1978-80	1	35	0	8	24	20
Consumption	23. Per capita total wheat utilization, 1979-81 (kg per year)	194	172	239	158	238	180
	24. Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	2.2	0.5	1.6	1.7	3.4	1.5
	25. Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	0.7	6.2	n.a.	n.a.	0.5
	26. Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	-0.2	-0.7	-3.5	-0.1	-7.2	-0.8
	27. Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	1.1	n.a.	n.a.	n.a.	n.a.	n.a.
	28. Wheat as percent of staple calories, 1961-65	81	44	70	58	80	55
	29. Wheat as percent of staple calories, 1975-77	85	46	74	64	93	61
Consumer Prices	30. Bread retail price, 1979, 1980 or 1981 (US cents per kg)	..	9	34	25	23	n.a.
	31. Ratio bread price to rice price, 1979, 1980 or 1981	0.3	0.5	1.7	..	0.4	n.a.
	32. Ratio wheat flour price to maize price, 1981 or 1982	..	0.5	..	..	..	n.a.
	33. Annual percent change in real price of bread, 1970 to 1981	-5.9	..	-2.5	-2.6	-2.8	n.a.
Producer Prices	34. Farm price of wheat, 1982 (US$ per ton)	..	80	..	..	..	n.a.
	35. Ratio of farm level nitrogen price to wheat price, 1982	..	1.6	..	..	..	n.a.
	36. Farm wage rate in kg of wheat per day, 1982	..	29.9	..	..	..	n.a.

.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

Middle Eastern Countries of Asia
(continued next page)

			Producers					
			Afghanistan	Iran	Iraq	Jordan	Syria	Turkey
General Indicators	1.	Population, 1982 (millions)	16.8	40.5	14.0	3.5	9.7	47.5
	2.	Per capita income, 1980 (US$ per capita)	170[a/]	2515	3020	1420	1340	1470
	3.	Growth rate per capita income, 1960 to 1980 (%/o per year)	0.5[b/]	7.9[c/]	5.3	5.7	3.7	3.6
	4.	Per capita cereal production, 1979-81 (kg per year)	200	216	172	31	357	555
	5.	Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	-1.4	0.6	-1.6	-8.8	-0.1	0.6
Wheat Production	6.	Area, 1982 (1000 ha)	2585	6000	1200	100	1300	9250
	7.	Yield, 1982 (ton/ha)	1.2	1.1	0.8	0.2	1.2	1.9
	8.	Production, 1982 (1000 ton)	3008	6500	900	20	1544	17650
	9.	Area, 1982, as percet of 1979-81	111	107	81	90	94	101
	10.	Yield, 1982, as percent of 1979-81	96	102	86	33	88	103
	11.	Production, 1982, as percent of 1979-81	107	110	69	30	82	104
	12.	Growth rate area, 1961-65 to 1980-82 (%/o per year)	0.3	2.8	0.4	-4.4	-0.2	0.8
	13.	Growth rate yield, 1961-65 to 1980-82 (%/o per year)	1.2	1.5	1.0	-0.9	3.5	3.1
	14.	Growth rate production, 1961-65 to 1980-82 (%/o per year)	1.6	4.4	1.5	-5.3	3.3	3.9
	15.	Growth rate production, 1970-72 to 1980-82 (%/o per year)	3.1	4.3	-3.4	-7.3	6.0	3.6
Wheat Imports	16.	Net imports, 1981 (1000 ton)	130	1735	2042	400	412	-486
	17.	Net imports, 1981, as percent of 1978-80	137	131	131	136	112	n.a.
	18.	Net imports per capita, 1961-65 (kg per year)	5	10	18	69	-5	19
	19.	Net imports per capita, 1979-81 (kg per year)	7	40	141	109	40	-13
	20.	Imports of wheat as percent of total food grain imports, 1979-81	100	75	84	91	80	n.a.
	21.	Wheat food aid as percent of wheat imports, 1961-65	78	76	25	42	100	100
	22.	Wheat food aid as percent of wheat imports 1978-80	100	..	0	35	11	100
Consumption	23.	Per capita total wheat utilization, 1979-81 (kg per year)	130	194	240	134	237	363
	24.	Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	-0.5	3.3	2.4	0.1	-0.4	0.1
	25.	Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	-0.1	3.2	3.5	-0.6	1.1	n.a.
	26.	Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	-1.6	1.1	-10.3	n.a.	-4.0	-1.3
	27.	Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	n.a.	n.a	n.a.	n.a.	1.6
	28.	Wheat as percent of staple calories, 1961-65	63	74	66	88	89	80
	29.	Wheat as percent of staple calories, 1975-77	65	76	77	89	90	81
Consumer Prices	30.	Bread retail price, 1979, 1980 or 1981 (US cents per kg)	24	45	..	23	22	30
	31.	Ratio bread price ,to rice price 1979, 1980 or 1981	0.4	0.2	0.3	0.4	0.6	0.2
	32.	Ratio wheat flour price to maize price, 1981 or 1982	..	..	..	..	..	..
	33.	Annual percent change in real price of bread, 1970 to 1981	..	-6.2	-11.0	-7.1	-6.8	2.1
Producer Prices	34.	Farm price of wheat, 1982 (US$ per ton)	..	..	..	..	213	122
	35.	Ratio of farm level nitrogen price to wheat price, 1982	..	..	..	..	2.1	2.7
	36.	Farm wage rate in kg of wheat per day 1982	..	..	..	..	25.2	26.3

a/ Data are for 1979.
b/ Data are for 1960-79.
c/ Data are for 1960-78.
.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

Middle Eastern Countries of Asia (continued)

			Consumers					Regional Total or Average
			Lebanon	Kuwait	Saudi Arabia	Yemen Arab.	Yemen Dem.	
General Indicators	1.	Population, 1982 (millions)	2.7	1.5	9.7	6.1	2.0	157.3
	2.	Per capita income, 1980 (US$ per capita)	..	19380	11260	430	420	2470
	3.	Growth rate per capita income, 1960 to 1980 (%/o per year)	..	-1.1	8.1	4.5	12.1	6.2
	4.	Per capita cereal production, 1979-81 (kg per year)	14	..	34	135	59	290
	5.	Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	-6.3	..	-6.1	-3.7	0.5	-0.2
Wheat Production	6.	Area, 1982 (1000 ha)	18	0	200	66	10	20744
	7.	Yield, 1982 (ton/ha)	1.3	n.a.	2.0	1.0	1.5	1.5
	8.	Production, 1982 (1000 ton)	23	0	400	67	15	30158
	9.	Area, 1982, as percet of 1979-81	70	n.a.	251	117	75	102
	10.	Yield, 1982, as percent of 1979-81	101	n.a.	97	99	92	106
	11.	Production, 1982, as percent of 1979-81	71	n.a.	244	115	69	103
	12.	Growth rate area, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	1.5	6.1	n.a.	1.0
	13.	Growth rate yield, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	1.6	0.3	n.a.	2.4
	14.	Growth rate production, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	3.1	6.4	n.a.	3.4
	15.	Growth rate production, 1970-72 to 1980-82 (%/o per year)	n.a.	n.a.	13.4	8.5	n.a.	3.3
Wheat Imports	16.	Net imports, 1981 (1000 ton)	412	294	700	466	206	6473
	17.	Net imports, 1981, as percent of 1978-80	123	147	95	113	179	141
	18.	Net imports per capita, 1961-65 (kg per year)	106	146	18	1	46	17
	19.	Net imports per capita, 1979-81 (kg per year)	115	155	94	71	78	37
	20.	Imports of wheat as percent of total food grain imports, 1979-81	100	68	55	100	74	76
	21.	Wheat food aid as percent of wheat imports, 1961-65	2	0	0	0	0	59
	22.	Wheat food aid as percent of wheat imports 1978-80	19	0	..	3	11	1
Consumption	23.	Per capita total wheat utilization, 1979-81 (kg per year)	126	155	112	79	89	225
	24.	Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	1.5	..	2.9	17.9	0	1.1
	25.	Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	-2.9	..	-0.6	n.a.	6.6	2.2
	26.	Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	..	-6.2	-2.8	1.3	-2.5
	27.	Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	..	n.a.	n.a.	n.a.	n.a.
	28.	Wheat as percent of staple calories, 1961-65	87	..	28	2	51	69
	29.	Wheat as percent of staple calories, 1975-77	91	..	49	24	43	74
Consumer Prices	30.	Bread retail price, 1979, 1980 or 1981 (US cents per kg)	..	19	30	..	..	n.a.
	31.	Ratio bread price ,to rice price 1979, 1980 or 1981	0.4	0.5	0.4	..	..	n.a.
	32.	Ratio wheat flour price to maize price, 1981 or 1982	..	..	..	..	..	n.a.
	33.	Annual percent change in real price of bread, 1970 to 1981	..	-20.7	..	..	..	n.a.
Producer Prices	34.	Farm price of wheat, 1982 (US$ per ton)	..	..	..	..	..	n.a.
	35.	Ratio of farm level nitrogen price to wheat price, 1982	..	..	..	..	..	n.a.
	36.	Farm wage rate in kg of wheat per day 1982	..	..	..	..	..	n.a.

a/ Data are for 1979.
b/ Data are for 1960-79.
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South Asia

			Producers				Consumer	Regional Total or Average
			Bangladesh	India	Nepal	Pakistan	Sri Lanka	
General Indicators	1.	Population, 1982 (millions)	93.3	711.7	15.0	92.0	15.4	965.9
	2.	Per capita income, 1980 (US$ per capita)	130	240	140	300	270	231
	3.	Growth rate per capita income, 1960 to 1980 (%/o per year)	..	1.4	0.2	2.8	2.4	1.3
	4.	Per capita cereal production, 1979-81 (kg per year)	237	200	251	208	139	210
	5.	Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	-0.8	0.3	-1.7	2.0	2.3	0.3
Wheat Production	6.	Area, 1982 (1000 ha)	534	22308	370	6959	0	30288
	7.	Yield, 1982 (ton/ha)	1.8	1.7	1.2	1.7	n.a.	1.7
	8.	Production, 1982 (1000 ton)	967	37833	450	11570	0	50960
	9.	Area, 1982, as percent of 1979-81	124	100	100	102	n.a.	101
	10.	Yield, 1982, as percent of 1979-81	97	100	102	106	n.a.	107
	11.	Production, 1982, as percent of 1979-81	120	110	101	108	n.a.	109
	12.	Growth rate area, 1961-65 to 1980-82 (%/o per year)	12.7	2.9	7.1	1.8	n.a.	2.7
	13.	Growth rate yield, 1961-65 to 1980-82 (%/o per year)	6.4	3.6	-0.1	3.8	n.a.	3.6
	14.	Growth rate production, 1961-65 to 1979-81 (%/o per year)	19.9	6.6	7.0	5.7	n.a.	6.3
	15.	Growth rate production, 1970-72 to 1980-82 (%/o per year)	24.1	4.2	7.2	5.0	n.a.	4.5
Wheat Imports	16.	Net imports, 1981 (1000 ton)	1500	1250	0	392	828	3970
	17.	Net imports, 1981, as percent of 1978-80	96	n.a.	n.a.	30	100	122
	18.	Net imports per capita, 1961-65 (kg per year)	8	10	0	20	26	10
	19.	Net imports per capita, 1979-81 (kg per year)	15	0	0	9	52	3
	20.	Imports of wheat as percent of total food grain imports, 1979-81	84	90	..	100	81	88
	21.	Wheat food aid as percent of wheat imports, 1961-65	n.a.	89	..	n.a.	29	88
	22.	Wheat food aid as percent of wheat imports, 1978-80	79	81	70	20	29	49
Consumption	23.	Per capita total wheat utilization, 1979-81 (kg per year)	25	50	31	139	52	53
	24.	Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	6.8	2.0	5.2	2.5	5.6	2.4
	25.	Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	-0.8	-1.3	1.2	2.7	-1.5	-0.8
	26.	Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	-1.0	-3.0	-1.8	n.a.	-1.2
	27.	Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	n.a.	n.a.	n.a.	2.2	n.a.
	28.	Wheat as percent of staple calories, 1961-65	4	19	5	67	14	19
	29.	Wheat as percent of staple calories, 1975-77	11	25	10	72	28	26
Consumer Prices	30.	Bread retail price, 1979, 1980 or 1981 (US cents per kg)	58	39	73	51	31	n.a.
	31.	Ratio bread price to rice price, 1979, 1980 or 1981	1.6	1.6	1.7	0.8	1.0	n.a.
	32.	Ratio wheat flour price to maize price, 1981 or 1982	..	..	..	..	..	n.a.
	33.	Annual percent change in real price of bread, 1970 to 1981	8.4	-0.6	10.8	-1.6	9.5	n.a.
Producer Prices	34.	Farm price of wheat, 1982 (US$ per ton)	260	150	208	152	..	n.a.
	35.	Ratio of farm level nitrogen price to wheat price, 1982	1.5	3.6	2.7	2.3	..	n.a.
	36.	Farm wage rate in kg of wheat per day, 1982	..	7.1	3.6	9.7	..	n.a.

.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

South East Asia and Pacific

		Consumers							Regional Total or Average
		Hong Kong	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam	
General Indicators	1. Population, 1982 (millions)	5.4	153.0	14.8	51.9	2.5	49.2	56.2	350.3
	2. Per capita income, 1980 (US$ per capita)	4240	430	1620	690	4430	670	170[a/]	685
	3. Growth rate per capita income, 1960 to 1980 (%/o per year)	6.8	4.0	4.3	2.8	7.5	4.7	..	4.2
	4. Per capita cereal production, 1979-81 (kg per year)	..	221	157	213	..	442	233	240
	5. Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	..	2.0	1.2	1.2	..	0.3	-1.5	0.5
Wheat Production	6. Area, 1982 (1000 ha)	0	0	0	0	0	0	0	0
	7. Yield, 1982 (ton/ha)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	8. Production, 1982 (1000 ton)	0	0	0	0	0	0	0	0
	9. Area, 1982, as percent of 1979-81	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	10. Yield, 1982, as percent of 1979-81	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	11. Production, 1982, as percent of 1979-81	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	12. Growth rate area, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	13. Growth rate yield, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	14. Growth rate production, 1961-65 to 1980-82 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	15. Growth rate production, 1970-72 to 1980-82 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Wheat Imports	16. Net imports, 1981 (1000 ton)	167	1440	489	815	98	225	1253	4569
	17. Net imports, 1981, as percent of 1978-80	96	137	101	110	94	136	85	104
	18. Net imports per capita, 1961-65 (kg per year)	33	1	28	14	40	1	4	6
	19. Net imports per capita, 1979-81 (kg per year)	36	8	36	15	49	4	27	13
	20. Imports of wheat as percent of total food grain imports, 1979-81	30	46	69	100	49	100	89	63
	21. Wheat food aid as percent of wheat imports, 1961-65	6	43	0	1	0	0	..	5
	22. Wheat food aid as percent of wheat imports, 1978-80	..	25	0	9	0	0	22	15
Consumption	23. Per capita total wheat utilization, 1979-81 (kg per year)	36	8	36	15	49	4	27	13
	24. Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	1.4	n.a.	1.4	0.6	0.4	n.a.	11.6	5.3
	25. Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	1.1	2.3	0.8	0	-1.6	-0.2	-0.8	0.7
	26. Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	-8.6	-1.8	-0.9	3.2	16.5	n.a.	-1.7	-0.1
	27. Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	-2.0	n.a.	0.5	n.a.	3.1	0.8	-1.1
	28. Wheat as percent of staple calories, 1961-65	18	0	16	7	29	1	2	3
	29. Wheat as percent of staple calories, 1975-77	25	3	17	7	25	1	7	5
Consumer Prices	30. Bread retail price, 1979, 1980 or 1981 (US cents per kg)	85	141	109	116	75	..	..	n.a.
	31. Ratio bread price to rice price, 1979, 1980 or 1981	1.3	3.5	..	3.4	1.2	3.2	..	n.a.
	32. Ratio wheat flour price to maize price, 1981 or 1982	..	..	..	..	..	..	..	n.a.
	33. Annual percent change in real price of bread, 1970 to 1981	1.0	14.1	6.9	6.7	1.0	4.7	..	n.a.
Producer Prices	34. Farm price of wheat, 1982 (US$ per ton)	..	..	..	..	..	..	..	n.a.
	35. Ratio of farm level nitrogen price to wheat price, 1982	..	..	..	..	..	..	..	n.a.
	36. Farm wage rate in kg of wheat per day, 1982	..	..	..	..	..	..	..	n.a.

a/ Data are for 1978-80.
.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

East Asia

			Producers			Consumer	Regional Total or Average
			China	Korea DPR	Mongolia	Korea Rep	
General Indicators	1.	Population, 1982 (millions)	1002.4	18.7	1.8	39.8	1081.0
	2.	Per capita income, 1980 (US$ per capita)	290	1130[a/]	780[a/]	1520	354
	3.	Growth rate per capita income, 1960 to 1980 (%/o per year)	3.7[b/]	3.5[c/]	4.0[c/]	7.0	4.2
	4.	Per capita cereal production, 1979-81 (kg per year)	305	473	181	211	299
	5.	Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	1.8	1.3	-2.6	-0.6	1.7
Wheat Production	6.	Area, 1982 (1000 ha)	27600	165	410	20	28196
	7.	Yield, 1982 (ton/ha)	2.5	2.3	0.7	3.3	2.5
	8.	Production, 1982 (1000 ton)	68400	385	290	66	69144
	9.	Area, 1982, as percent of 1979-81	95	106	99	97	95
	10.	Yield, 1982, as percent of 1979-81	121	94	122	106	107
	11.	Production, 1982 as percent of 1979-81	116	100	121	103	115
	12.	Growth rate area, 1961-65 to 1980-82 (%/o per year)	2.0	2.4	1.2	-7.1	2.0
	13.	Growth rate yield, 1961-65 to 1980-82 (%/o per year)	3.4	2.1	-1.3	2.6	2.2
	14.	Growth rate production, 1961-65 to 1980-82 (%/o per year)	5.5	4.5	-0.1	-4.7	5.4
	15.	Growth rate production, 1970-72 to 1980-82 (%/o per year)	6.5	4.0	0.5	-9.2	6.4
Wheat Imports	16.	Net imports, 1981 (1000 ton)	12249	500	58	1857	14664
	17.	Net imports, 1981, as percent of 1978-80	132	113	76	106	120
	18.	Net imports per capita, 1961-65 (kg per year)	6	13	-20	20	7
	19.	Net imports per capita, 1979-81 (kg per year)	12	28	36	48	13
	20.	Imports of wheat as percent of total food grain imports, 1979-81	99	100	100	60	91
	21.	Wheat food aid as percent of wheat imports, 1961-65	7	..	..	94	14
	22.	Wheat food aid as percent of wheat imports, 1978-80	0	..	..	16	2
Consumption	23.	Per capita total wheat utilization, 1979-81 (kg per year)	74	49	173	50	71
	24.	Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	3.4	5.1	1.9	6.2	3.5
	25.	Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	1.5	2.0	n.a.	0.2	1.4
	26.	Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	-0.6	-2.7	n.a.	-0.4	-0.6
	27.	Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	-2.5	1.3	n.a.	-4.6	-2.5
	28.	Wheat as percent of staple calories, 1961-65	14	11	95	7	14
	29.	Wheat as percent of staple calories, 1975-77	20	18	94	15	20
Consumer Prices	30.	Bread retail price, 1979, 1980 or 1981 (US cents per kg)	..	..	..	118	n.a.
	31.	Ratio bread price to rice price, 1979, 1980 or 1981	..	..	..	1.0	n.a.
	32.	Ratio wheat flour price to maize price, 1981 or 1982	..	..	..	..	n.a.
	33.	Annual percent change in real price of bread, 1970 to 1981	..	..	..	2.2	n.a.
Producer Prices	34.	Farm price of wheat, 1982 (US$ per ton)	205	..	..	..	n.a.
	35.	Ratio of farm level nitrogen price to wheat price, 1982	2.5	..	..	..	n.a.
	36.	Farm wage rate in kg of wheat per day, 1982	5.0	..	..	..	n.a.

a/ Data are for 1978-80.
b/ Data are for 1960-78.
c/ Data are for 1960-79.
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Mexico, Central America and Caribbean

		Producer	Consumers							Regional Total or Average
		Mexico	Cuba	Dominican Rep.	El Salvador	Guatemala	Haiti	Jamaica	Trinidad & Tobago	
General Indicators	1. Population, 1982 (millions)	73.9	9.8	6.2	5.1	7.7	6.1	2.3	1.2	126.0
	2. Per capita income, 1980 (US$ per capita)	2090	1410 a/	1160	660	1080	270	1040	4370	1691
	3. Growth rate per capita income, 1960 to 1980 (%/ per year)	2.6	4.4 b/	3.4	1.6	2.8	0.5	0.6	3.0	2.8
	4. Per capita cereal production, 1979-81 (kg per year)	295	57	81	149	161	68	3	26	212
	5. Growth rate per capita cereal production, 1961-65 to 1979-81 (%/ per year)	0.9	1.7	2.2	1.5	0.2	-3.0	-1.7	3.6	1.0
Wheat Production	6. Area, 1982 (1000 ha)	1013	0	0	0	65	0	0	0	1079
	7. Yield, 1982 (ton/ha)	4.4	n.a.	n.a.	n.a.	0.8	n.a.	n.a.	n.a.	4.2
	8. Production, 1982 (1000 ton)	4468	0	0	0	50	0	0	0	4519
	9. Area, 1982, as percent of 1979-81	138	n.a.	n.a.	n.a.	113	n.a.	n.a.	n.a.	136
	10. Yield, 1982, as percent of 1979-81	118	n.a.	n.a.	n.a.	91	n.a.	n.a.	n.a.	110
	11. Production, 1982, as percent of 1979-81	163	n.a.	n.a.	n.a.	102	n.a.	n.a.	n.a.	161
	12. Growth rate area, 1961-65 to 19780-82 (%/ per year)	0.5	n.a.	n.a.	n.a.	2.9	n.a.	n.a.	n.a.	0.6
	13. Growth rate yield, 1961-65 to 1980-82 (%/ per year)	3.7	n.a.	n.a.	n.a.	-0.6	n.a.	n.a.	n.a.	3.5
	14. Growth rate production, 1961-65 to 1980-82 (%/ per year)	4.2	n.a.	n.a.	n.a.	2.3	n.a.	n.a.	n.a.	4.0
	15. Growth rate production, 1970-72 to 1980-22 (%/ per year)	5.2	n.a.	n.a.	n.a.	1.5	n.a.	n.a.	n.a.	5.0
Wheat Imports	16. Net imports, 1981 (1000 ton)	1013	1022	147	106	102	109	19[illegible]	106	3208
	17. Net imports, 1981 as percent of 1978-80	125	85	95	100	94	154	124	103	101
	18. Net imports per capita, 1961-65 (kg per year)	-6	70	16	15	14	11	78	93	13
	19. Net imports per capita, 1979-81 (kg per year)	14	118	25	21	15	24	77	97	27
	20. Imports of wheat as percent of total food grain imports, 1979-81	28	86	85	100	100	89	79	73	75
	21. Wheat food aid as percent of wheat imports, 1961-65	89	0	..	8	12	32	2	0	6
	22. Wheat food aid as percent of wheat imports, 1978-80	0	..	11	1	2	19	14	..	3
Consumption	23. Per capita total wheat utilization, 1979-81 (kg per year)	53	118	25	21	22	29	77	97	50
	24. Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/ per year)	2.1	2.2	3.9	1.7	1.2	3.4	0.4	0.5	1.6
	25. Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/ per year)	2.4	1.4	2.8	2.3	n.a.	4.9	2.3	0.4	1.5
	26. Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/ per year)	-0.4	n.a.	-0.7	0.9	-1 0	-1.2	4.2	n.a.	-0.2
	27. Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/ per year)	n.a.	-0.5	-2.6	n.a.	n.a.	0.1	5.2	1.2	-0.5
	28. Wheat as percent of staple calories, 1961-65	17	41	17	11	11	8	61	58	20
	29. Wheat as percent of staple calories, 1975-77	22	47	24	11	14	13	51	59	24
Consumer Prices	30. Bread retail price, 1979, 1980 or 1981 (US cents per kg)	31	..	84	107	104	..	..	..	n.a.
	31. Ratio bread price to rice price, 1979, 1980 or 1981	0.3	..	1.2	1.4	1.2	..	..	..	n.a.
	32. Ratio wheat flour price to maize price, 1981 or 1982	..	..	1.0	..	..	2.3	..	..	n.a.
	33. Annual percent change in real price of bread, 1970 to 1981	-5.9	..	..	..	-5.6	..	.	0.4	n.a.
Producer Prices	34. Farm price of wheat, 1982 (US$ per ton)	144	..	..	..	..	..	..	..	n.a.
	35. Ratio of farm level nitrogen price to wheat price, 1982	1.3	..	..	..	..	..	..	..	n.a.
	36. Farm wage rate in kg of wheat per day, 1982	43.5	..	..	..	..	..	..	..	n.a.

a/ Data are for 1978-80.
b/ Data are for 1960-79.
.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

Andean

		Producer	Consumers				Regional Total or Average
		Peru	Bolivia	Colombia	Ecuador	Venezuela	
General Indicators	1. Population, 1982 (millions)	18.6	5.9	26.9	8.5	16.7	78.1
	2. Per capita income, 1980 (US$ per capita)	930	570	1180	1270	3630	1582
	3. Growth rate per capita income, 1960 to 1980 (%/o per year)	1.1	2.1	3.0	4.5	2.6	2.7
	4. Per capita cereal production, 1979-81 (kg per year)	80	101	124	83	127	113
	5. Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	-1.7	-1.1	1.4	-1.2	3.4	0.6
Wheat Production	6. Area, 1982 (1000 ha)	100	85	43	37	2	267
	7. Yield, 1982 (ton/ha)	1.3	0.7	1.6	1.1	0.4	1.1
	8. Production, 1982 (1000 ton)	130	60	69	40	1	300
	9. Area, 1982, as percent of 1979-81	112	90	120	112	130	105
	10. Yield, 1982, as percent of 1979-81	117	106	115	104	99	110
	11. Production, 1982, as percent of 1979-81	131	96	138	116	129	122
	12. Growth rate area, 1961-65 to 19780-82 (%/o per year)	-2.9	0.3	-6.3	-4.0	n.a.	-3.0
	13. Growth rate yield, 1961-65 to 1980-82 (%/o per year)	1.1	1.4	2.7	0.6	n.a.	1.0
	14. Growth rate production, 1961-65 to 1980-82 (%/o per year)	-1.8	1.7	-3.8	-3.4	n.a.	-2.0
	15. Growth rate production, 1970-72 to 1980-22 (%/o per year)	-1.2	2.2	0	-5.6	n.a.	-1.1
Wheat Imports	16. Net imports, 1981 (1000 ton)	980	252	510	308	830	2956
	17. Net imports, 1981 as percent of 1978-80	129	93	119	140	111	118
	18. Net imports per capita, 1961-65 (kg per year)	37	41	6	10	49	17
	19. Net imports per capita, 1979-81 (kg per year)	49	49	18	32	52	37
	20. Imports of wheat as percent of total food grain imports, 1979-81	82	100	100	100	62	81
	21. Wheat food aid as percent of wheat imports, 1961-65	22	63	51	20	1	21
	22. Wheat food aid as percent of wheat imports, 1978-80	5	38	1	2	..	6
Consumption	23. Per capita total wheat utilization, 1979-81 (kg per year)	54	58	20	35	52	40
	24. Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	0.7	-0.6	0.7	3.2	0.3	0.7
	25. Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	1.7	4.5	2.9	2.5	5.5	2.7
	26. Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	-0.8	-2.7	-2.6	-1.0	0	-1.4
	27. Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	-2.2	1.2	2.0	0.6	-3.1	-0.2
	28. Wheat as percent of staple calories, 1961-65	30	35	13	22	35	25
	29. Wheat as percent of staple calories, 1975-77	34	34	14	28	35	27
Consumer Prices	30. Bread retail price, 1979, 1980 or 1981 (US cents per kg)	53	47	151	91	154	n.a.
	31. Ratio bread price to rice price, 1979, 1980 or 1981	1.4	0.7	2.4	1.4	1.5	n.a.
	32. Ratio wheat flour price to maize price, 1981 or 1982	..	0.6	..	0.4	..	n.a.
	33. Annual percent change in real price of bread, 1970 to 1981	9.5	-6.9	2.8	-1.7	3.4	n.a.
Producer Prices	34. Farm price of wheat, 1982 (US$ per ton)	..	..	..	..	..	n.a.
	35. Ratio of farm level nitrogen price to wheat price, 1982	..	..	..	..	..	n.a.
	36. Farm wage rate in kg of wheat per day, 1982	..	..	..	..	..	n.a.

.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

Southern Cone, Latin America

			Producers				Consumer	Regional Total or Average
			Argentina	Brazil	Chile	Uruguay	Paraguay	
General Indicators	1.	Population, 1982 (millions)	27.7	128.2	11.5	3.0	3.4	173.7
	2.	Per capita income, 1980 (US$ per capita)	2390	2050	2150	2810	1300	2110
	3.	Growth rate per capita income, 1960 to 1980 (%/o per year)	2.2	5.1	1.6	1.4	3.2	3.8
	4.	Per capita cereal production, 1979-81 (kg per year)	911	244	157	351	232	345
	5.	Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	1.3	0.6	-1.0	1.0	5.2	0.5
Wheat Production	6.	Area, 1982 (1000 ha)	7200	2825	374	211	70	10680
	7.	Yield, 1982 (ton/ha)	2.0	0.6	1.7	1.3	1.1	1.6
	8.	Production, 1982 (1000 ton)	14500	1820	650	275	80	17335
	9.	Area, 1982, as percent of 1979-81	138	96	73	76	124	119
	10.	Yield, 1982, as percent of 1979-81	132	73	101	97	107	105
	11.	Production, 1982, as percent of 1979-81	183	70	74	73	132	146
	12.	Growth rate area, 1961-65 to 1980-82 (%/o per year)	1.1	6.7	-2.8	-3.4	11.3	1.7
	13.	Growth rate yield, 1961-65 to 1980-82 (%/o per year)	0.5	1.1	0.9	1.4	1.6	0.2
	14.	Growth rate production, 1961-65 to 1980-82 (%/o per year)	1.6	7.9	-1.9	-2.0	13.1	1.8
	15.	Growth rate production, 1970-72 to 1980-82 (%/o per year)	5.0	3.4	-5.1	1.0	6.8	3.6
Wheat Imports	16.	Net imports, 1981 (1000 ton)	-3788	4363	1054	0	55	1684
	17.	Net imports, 1981, as percent of 1978-80	n.a.	103	116	0	87	97
	18.	Net imports per capita, 1961-65 (kg per year)	-148	28	31	-3	43	-7
	19.	Net imports per capita, 1979-81 (kg per year)	-156	34	86	30	21	7
	20.	Imports of wheat as percent of total food grain imports, 1979-81	n.a.	92	98	100	100	93
	21.	Wheat food aid as percent of wheat imports, 1961-65	..	52	53	4	48	51
	22.	Wheat food aid as percent of wheat imports, 1978-80	..	0	2	3	17	1
Consumption	23.	Per capita total wheat utilization, 1979-81 (kg per year)	138	53	166	178	40	76
	24.	Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	-0.6	2.0	0.7	-0.2	-5.1	0.2
	25.	Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	-0.4	0.8	3.5	6.2	0
	26.	Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	-0.6	4.2	6.2	3.8	0.2
	27.	Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	-1.7	-1.4	-2.1	-0.2	-0.2	-1.3
	28.	Wheat as percent of staple calories, 1961-65	80	20	82	79	28	38
	29.	Wheat as percent of staple calories, 1975-77	80	26	82	73	13	40
Consumer Prices	30.	Bread retail price, 1979, 1980 or 1981 (US cents per kg)	..	39	78	66	59	n.a.
	31.	Ratio bread price to rice price, 1979, 1980 or 1981	..	0.6	0.7	0.8	0.8	n.a.
	32.	Ratio wheat flour price to maize price, 1981 or 1982	..	..	..	..	..	n.a.
	33.	Annual percent change in real price of bread, 1970 to 1981	5.4	-4.6	13.3	1.5	-6.0	n.a.
Producer Prices	34.	Farm price of wheat, 1982 (US$ per ton)	102	235	..	..	..	n.a.
	35.	Ratio of farm level nitrogen price to wheat price, 1982	7.8	3.1	..	..	..	n.a.
	36.	Farm wage rate in kg of wheat per day, 1982	60.6	10.5	..	..	..	n.a.

.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

Eastern Europe and USSR

		Producers							Regional Total or Average
		Bulgaria	Czechoslovakia	German Dem. Rep.	Hungary	Poland	Romania	USSR	
General Indicators	1. Population, 1982 (millions)	8.9	15.4	16.7	10.7	36.2	22.5	269.9	383.2
	2. Per capita income, 1980 (US$ per capita)	4150	5820	7180	4180	3900	2340	4450	4480
	3. Growth rate per capita income, 1960 to 1980 (%/o per year)	5.6	4.0	4.7	4.5	5.3	8.6	4.0	4.3
	4. Per capita cereal production, 1979-81 (kg per year)	913	641	550	1201	519	888	658	672
	5. Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	2.5	2.8	2.4	3.4	0.3	2.5	1.1	1.4
Wheat Production	6. Area, 1982 (1000 ha)	1059	1068	591	1325	1456	2175	57278	65168
	7. Yield, 1982 (ton/ha)	4.6	4.3	5.0	4.5	3.1	3.0	1.5	1.8
	8. Production, 1982 (1000 ton)	4901	4606	2947	6000	4476	6460	87000	116920
	9. Area, 1982, as percent of 1979-81	107	95	85	112	95	101	96	97
	10. Yield, 1982, as percent of 1979-81	118	108	114	112	112	117	101	111
	11. Production, 1982, as percent of 1979-81	126	103	97	125	107	118	97	101
	12. Growth rate area, 1961-65 to 1980-82 (%/o per year)	-1.0	2.3	2.4	0.8	-0.1	-1.7	-0.6	-0.6
	13. Growth rate yield, 1961-65 to 1980-82 (%/o per year)	4.9	3.2	2.1	5.0	2.1	3.7	2.4	2.8
	14. Growth rate production, 1961-65 to 1980-82 (%/o per year)	3.9	5.6	4.5	5.5	2.0	1.9	1.8	2.2
	15. Growth rate production, 1970-72 to 1980-82 (%/o per year)	3.1	2.6	2.0	4.5	-1.7	2.0	-0.7	-0.1
Wheat Imports	16. Net imports, 1981 (1000 ton)	-289	135	725	-1307	3348	434	12296	15442
	17. Net imports, 1981, as percent of 1978-80	n.a.	22	120	n.a.	119	n.a.	133	124
	18. Net imports per capita, 1961-65 (kg per year)	20	86	75	26	55	n.a.	0	14
	19. Net imports per capita, 1979-81 (kg per year)	-30	37	38	-83	92	6	41	38
	20. Imports of wheat as percent of total food grain imports, 1979-81	n.a.	88	77	n.a.	97	93	95	94
	21. Wheat food aid as percent of wheat imports, 1961-65	..	..	..	..	34	..	..	7
	22. Wheat food aid as percent of wheat imports, 1979-81	..	..	..	..	..	..	..	..
Consumption	23. Per capita total wheat utilization, 1979-81 (kg per year)	370	337	224	377	210	254	390	353
	24. Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	-0.5	-0.8	1.0	-0.5	0.2	0.2	-1.2	-0.9
	25. Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	8.5	6.4
	26. Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	-11.1	-4.4	-2.0	n.a.	-3.0	0.1	-1.1	-1.6
	27. Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	-0.5	-0.8	-2.5	-1.8	0.3	-1.3	-1.2
	28. Wheat as percent of staple calories, 1961-65	84	60	37	80	39	58	67	63
	29. Wheat as percent of staple calories, 1975-77	91	65	45	86	47	58	66	64
Consumer Prices	30. Bread retail price, 1979, 1980 or 1981 (US cents per kg)	..	..	..	..	..	..	..	n.a.
	31. Ratio bread price to rice price, 1979, 1980 or 1981	..	..	..	..	..	..	..	n.a.
	32. Ratio wheat flour price to maize price, 1981 or 1982	..	..	..	..	..	..	..	n.a.
	33. Annual percent change in real price of bread, 1970 to 1981	..	..	..	..	..	..	..	n.a.
Producer Prices	34. Farm price of wheat, 1982 (US$ per ton)	..	..	..	..	..	..	..	n.a.
	35. Ratio of farm level nitrogen price to wheat price, 1982	..	..	..	..	..	..	..	n.a.
	36. Farm wage rate in kg of wheat per day, 1982	..	..	..	..	..	..	..	n.a.

.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

Western Europe and Japan

		Producers										Regional Total or Average
		Belgium–Luxembourg	France	Germany Fed. Rep.	Greece	Italy	Netherlands	Spain	United Kingdom	Yugoslavia	Japan	
General Indicators	1. Population, 1982 (millions)	10.2	54.2	61.6	9.8	57.4	14.3	37.9	56.3	22.7	18.4	500.4
	2. Per capita income, 1980 (US$ per capita)	11180	11730	13590	4380	6480	11470	5400	7920	2620	9890	9214
	3. Growth rate per capita income, 1960 to 1980 (%/o per year)	3.8	3.9	3.3	5.8	3.6	3.2	4.5	2.2	5.4	7.1	4.0
	4. Per capita cereal production, 1979-81 (kg per year)	202	851	373	501	317	91	389	333	695	123	371
	5. Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	-0.1	2.8	2.3	3.1	0.8	-3.2	2.0	2.4	1.4	-3.0	1.3
Wheat Production	6. Area, 1982 (1000 ha)	182	4844	1578	1030	3327	131	2602	1664	1559	228	18719
	7. Yield, 1982 (ton/ha)	5.9	5.2	5.5	2.9	2.7	7.4	1.7	6.2	3.3	3.3	4.0
	8. Production, 1982 (1000 ton)	1072	25342	8632	2992	8998	967	4368	10258	5217	742	74555
	9. Area, 1982, as percent of 1979-81	96	108	96	103	99	95	99	116	106	121	104
	10. Yield, 1982, as percent of 1979-81	117	106	110	107	101	118	98	109	107	107	111
	11. Production, 1982, as percent of 1979-81	113	115	106	110	100	112	97	126	113	130	113
	12. Growth rate area, 1961-65 to 1980-82 (%/o per year)	-1.3	0.6	0.9	-0.8	-1.5	-0.1	-2.5	3.2	-1.6	-5.3	-0.8
	13. Growth rate yield, 1961-65 to 1980-82 (%/o per year)	1.9	3.1	2.5	3.6	1.6	2.4	2.9	2.2	3.4	1.4	3.1
	14. Growth rate production, 1961-65 to 1980-82 (%/o per year)	0.6	3.7	3.4	2.8	0.1	2.3	0.3	5.4	1.7	-4.0	2.4
	15. Growth rate production, 1970-72 to 1980-82 (%/o per year)	0.7	4.6	2.6	4.5	-0.8	3.1	-0.2	7.1	0.2	4.8	2.6
Wheat Imports	16. Net imports, 1981 (1000 ton)	480	-12808	15	-894	1538	675	271	1156	357	5493	-1877
	17. Net imports, 1981, as percent of 1978-80	152	n.a.	n.a.	n.a.	71	125	695	55	64	98	n.a.
	18. Net imports per capita, 1961-65 (kg per year)	34	-49	23	6	15	61	14	83	52	32	26
	19. Net imports per capita, 1979-81 (kg per year)	30	-202	-3	-90	31	43	3	28	31	48	1
	20. Imports of wheat as percent of total food grain imports, 1979-81	54	n.a.	n.a.	n.a.	95	71	100	63	100	69	74
	21. Wheat food aid as percent of wheat imports, 1961-65	..	..	2	100	18	..	27	..	89	..	8
	22. Wheat food aid as percent of wheat imports, 1978-80	..	..	..	..	..	..	..	..	..	..	n.a.
Consumption	23. Per capita total wheat utilization, 1979-81 (kg per year)	119	204	129	194	188	103	122	168	239	53	133
	24. Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	-1.4	-1.8	-1.0	-0.8	0.1	n.a.	-1.7	-0.8	-0.5	1.3	-0.6
	25. Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	n.a.	n.a.	-0.9	n.a.	n.a.	-0.7	n.a.	n.a.	-1.9	-1.3
	26. Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	n.a.	-1.5	n.a.	-1.5	n.a.	n.a.	n.a.	-2.5	3.5	-0.8
	27. Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	-1.7	-1.8	-3.1	4.7	-1.6	n.a.	-0.1	-1.0	-0.2	-5.8	-2.1
	28. Wheat as percent of staple calories, 1961-65	73	79	53	89	86	n.a.	73	74	77	16	56
	29. Wheat as percent of staple calories, 1975-77	73	77	57	85	87	n.a.	71	73	80	23	58
Consumer Prices	30. Bread retail price, 1979, 1980 or 1981 (US cents per kg)	94	124	167	51	130	98	260	93	52	169	n.a.
	31. Ratio bread price to rice price, 1979, 1980 or 1981	0.6	1.1	1.0	0.5	1.1	0.8	3.2	0.7	0.3	1.1	n.a.
	32. Ratio wheat flour proce to maize price, 1981 or 1982	..	..	..	..	..	..	..	..	..	..	n.a.
	33. Annual percent change in real price of bread, 1970 to 1981	1.7	1.6	2.1	0.5	1.9	1.0	10.5	0.2	..	0.9	n.a.
Producer Prices	34. Farm price of wheat, 1982 (US$ per ton)	..	157	204	..	..	..	..	..	..	..	n.a.
	35. Ratio of farm level nitrogen price to wheat price, 1982	..	3.0	3.0	..	..	..	..	..	..	..	n.a.
	36. Farm wage rate in kg of wheat per day, 1982	..	231.8	125.5	..	..	..	..	..	..	..	n.a.

.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

USA, Canada, Australia and South Africa

			Producers				Regional Total or Average
			Australia	Canada	South Africa	United States	
General Indicators	1.	Population, 1982 (millions)	14.8	24.6	31.0	232.0	302.4
	2.	Per capita income, 1980 (US$ per capita)	9820	10130	2300	11360	10267
	3.	Growth rate per capita income, 1960 to 1980 (%/o per year)	2.7	3.3	2.3	2.3	2.2
	4.	Per capita cereal production, 1979-81 (kg per year)	1450	1766	473	1359	1308
	5.	Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	2.2	1.0	1.2	2.5	2.1
Wheat Production	6.	Area, 1982 (1000 ha)	11500	12591	1800	31905	57796
	7.	Yield, 1982 (ton/ha)	0.7	2.2	1.3	2.4	2.0
	8.	Production, 1982 (1000 ton)	8600	27620	2300	76443	114960
	9.	Area, 1982, as percent of 1979-81	101	111	102	110	108
	10.	Yield, 1982, as percent of 1979-81	59	122	115	105	102
	11.	Production, 1982, as percent of 1979-81	59	135	117	115	111
	12.	Growth rate area, 1961-65 to 1980-82 (%/o per year)	3.0	0.4	2.1	2.7	2.1
	13.	Growth rate yield, 1961-65 to 1980-82 (%/o per year)	-0.9	2.0	2.9	1.8	1.5
	14.	Growth rate production, 1961-65 to 1980-82 (%/o per year)	2.1	2.5	5.1	4.5	3.6
	15.	Growth rate production, 1970-72 to 1980-82 (%/o per year)	4.5	6.6	2.4	5.9	5.6
Wheat Imports	16.	Net imports, 1981 (1000 ton)	-9133	-16212	-179	-42859	-68383
	17.	Net imports, 1981, as percent of 1978-80	n.a.	n.a.	n.a.	n.a.	n.a.
	18.	Net imports per capita, 1961-65 (kg per year)	-555	-624	7	-105	-159
	19.	Net imports per capita, 1979-81 (kg per year)	-855	-640	-5	-171	-228
	20.	Imports of wheat as percent of total food grain imports, 1979-81	n.a.	n.a.	n.a.	n.a.	n.a.
	21.	Wheat food aid as percent of wheat imports, 1961-65	..	..	..	..	n.a.
	22.	Wheat food aid as percent of wheat imports, 1978-80	..	..	..	..	n.a.
Consumption	23.	Per capita total wheat utilization, 1979-81 (kg per year)	119	203	59	124	124
	24.	Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	-0.2	0.3	2.1	-0.4	-0.1
	25.	Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	n.a.	n.a.	n.a.	n.a.
	26.	Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	n.a.	0.7	-1.0	0.1	0.4
	27.	Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	1.1	-0.2	n.a.	0.6	0.5
	28.	Wheat as percent of staple calories, 1961-65	85	72	24	68	63
	29.	Wheat as percent of staple calories, 1975-77	82	72	32	66	61
Consumer Prices	30.	Bread retail price, 1979, 1980 or 1981 (US cents per kg)	98	120	54	115	n.a.
	31.	Ratio bread price to rice price, 1979, 1980 or 1981	1.1	..	0.4	0.9	n.a.
	32.	Ratio wheat flour price to maize price, 1981 or 1982	..	..	..	..	n.a.
	33.	Annual percent change in real price of bread, 1970 to 1981	1.6	2.5	2.7	-1.7	n.a.
Producer Prices	34.	Farm price of wheat, 1982 (US$ per ton)	115	131	..	125	n.a.
	35.	Ratio of farm level nitrogen price to wheat price, 1982	5.4	..	..	2.6	n.a.
	36.	Farm wage rate in kg of wheat per day, 1982	..	255.0	..	..	n.a.

.. Indicates missing data.
n.a. Indicates not analyzed because of special case.

Regional Aggregates

			Developing Countries	Developed Market Economies	Eastern Europe and USSR	World
General Indicators	1.	Population, 1982 (millions)	3400	803	383	4586
	2.	Per capita income, 1980 (US$ per capita)	660	9603	4480	2627
	3.	Growth rate per capita income, 1960 to 1980 (%/o per year)	3.9	3.3	4.3	2.8
	4.	Per capita cereal production, 1979-81 (kg per year)	240	489	672	305
	5.	Growth rate per capita cereal production, 1961-65 to 1979-81 (%/o per year)	0.7	2.1	1.4	0.8
Wheat Production	6.	Area, 1982 (1000 ha)	97727	76516	65168	239412
	7.	Yield, 1982 (ton/ha)	1.8	2.5	1.8	2.0
	8.	Production, 1982 (1000 ton)	174611	189518	116921	481050
	9.	Area, 1982, as percent of 1979-81	101	107	97	102
	10.	Yield, 1982, as percent of 1979-81	113	104	106	105
	11.	Production, 1982, as percent of 1979-81	111	112	101	108
	12.	Growth rate area, 1961-65 to 1980-82 (%/o per year)	1.4	1.3	-0.6	0.7
	13.	Growth rate yield, 1961-65 to 1980-82 (%/o per year)	3.1	1.8	2.8	2.6
	14.	Growth rate production, 1961-65 to 1980-82 (%/o per year)	4.5	3.1	2.2	3.3
	15.	Growth rate production, 1970-72 to 1980-82 (%/o per year)	4.4	4.3	-0.1	3.0
Wheat Imports	16.	Net imports, 1981 (1000 ton)	53372	-70260	15442	n.a.
	17.	Net imports, 1981, as percent of 1978-80	116	120	124	n.a.
	18.	Net imports per capita, 1961-65 (kg per year)	9	-39	14	n.a.
	19.	Net imports per capita, 1979-81 (kg per year)	15	-83	38	n.a.
	20.	Imports of wheat as percent of total food grain imports, 1979-81	91	n.a.	99	88
	21.	Wheat food aid as percent of wheat imports, 1961-65	63	0	0	63
	22.	Wheat food aid as percent of wheat imports, 1978-80	15	14	0	15
Consumption	23.	Per capita total wheat utilization, 1979-81 (kg per year)	63	130	353	100
	24.	Growth rate per capita wheat food supply, 1961-65 to 1975-77 (%/o per year)	2.3	-0.5	-0.9	0.5
	25.	Growth rate per capita rice food supply, 1961-65 to 1975-77 (%/o per year)	0.4	-1.3	6.4	0.7
	26.	Growth rate per capita coarse grains food supply, 1961-65 to 1975-77 (%/o per year)	-0.7	-0.1	-1.6	-0.6
	27.	Growth rate per capita roots and tubers food supply, 1961-65 to 1975-77 (%/o per year)	-1.2	-1.4	-1.2	-1.2
	28.	Wheat as percent of staple calories, 1961-65	18	58	63	30
	29.	Wheat as percent of staple calories, 1975-77	23	59	64	32
Consumer Prices	30.	Bread retail price, 1979, 1980 or 1981 (US cents per kg)	n.a.	n.a.	n.a.	n.a.
	31.	Ratio bread price to rice price, 1979, 1980 or 1981	n.a.	n.a.	n.a.	n.a.
	32.	Ratio wheat flour price to maize price, 1981 or 1982	n.a.	n.a.	n.a.	n.a.
	33.	Annual percent change in real price of bread, 1970 to 1981	n.a.	n.a.	n.a.	n.a.
Producer Prices	34.	Farm price of wheat, 1982 (US$ per ton)	n.a.	n.a.	n.a.	n.a.
	35.	Ratio of farm level nitrogen price to wheat price, 1982	n.a.	n.a.	n.a.	n.a.
	36.	Farm wage rate in kg of wheat per day, 1982	n.a.	n.a.	n.a.	n.a.

n.a. Indicates not analyzed because of special case.

Annex 1: Sources

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Annex 2: Regions Delineated for this Study

Developing countries:

Eastern and Southern Africa:
Botswana
Burundi
Comoros
Djibouti
Ethiopia
Kenya
Lesotho
Madagascar
Malawi
Mauritius
Mozambique
Rwanda
Seychelles
Somalia
Sudan
Swaziland
Tanzania
Uganda
Zambia
Zimbabwe

Western Africa:
Angola
Benin
Cameroon
Cape Verde
Central African Rep.
Chad
Congo
Equatorial Guinea
Gabon
Gambia
Ghana
Guinea
Guinea-Bissau
Ivory Coast
Liberia
Mali
Mauritania
Namibia
Niger
Nigeria
Reunion
Sao Tome
Senegal
Sierra Leone
St. Helena
Togo
Upper Volta
Zaire

North Africa:
Algeria
Egypt
Libya
Morocco
Tunisia
Western Sahara

Middle Eastern Countries of Asia:
Afghanistan
Bahrain
Cyprus
Iran
Iraq
Jordan
Kuwait
Lebanon
Oman
Quatar
Saudi Arabia
Syria
Turkey
United Arab Emirat.
Yemen Arab Rep.
Yemen Dem.

South Asia:
Bangladesh
Bhutan
Burma
India
Maldives
Nepal
Pakistan
Sri Lanka

Southeast Asia and Pacific:
Brunei
Fiji
French Polynesia
Hong Kong
Indonesia
Kampuchea Dem.
Lao
Macau
Malaysia
New Caledonia
Papua New Guinea
Philippines
Samoa
Singapore
Solomon Is.
Thailand
Tonga
Vanuatu
Vietnam

East Asia:
China
Korea D.P.R.
Korea Rep.
Mongolia
Taiwan

Mexico, Central America and Caribbean:
Bahamas
Barbados
Belize
Costa Rica
Cuba
Dominican Rep.
El Salvador
Grenada
Guadalupe
Guatemala
Haiti
Honduras
Jamaica
Martinique
Mexico
Montserrat
Netherlands Antilles
Nicaragua
Panama
Trinidad and Tobago

Andean Region:
Bolivia
Colombia
Ecuador
French Guiana
Guyana
Peru
Surinam
Venezuela

Southern Cone, Latin America:
Argentina
Brazil
Chile
Paraguay
Uruguay

Developed countries:

Eastern Europe and USSR:
Albania
Bulgaria
Czechoslovakia
German Dem. Rep.
Hungary
Poland
Romania
USSR

Western Europe and Japan:
Austria
Belgium-Luxemburg
Denmark
Finland
France
Germany Fed. Rep.
Greece
Greenland
Iceland
Ireland
Israel
Italy
Japan
Malta
Netherlands
New Zealand
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom
Yugoslavia

USA, Canada, Australia and South Africa:
Australia
Canada
South Africa
USA