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APPENDIX 1

Countries and commodities

Developing countries

Africa, sub-Saharan	Latin America and the Caribbean	Near East/North Africa	South Asia
Angola	Argentina	Afghanistan	Bangladesh
Benin	Bolivia	Algeria	India
Botswana	Brazil	Egypt	Maldives
Burkina Faso	Chile	Iran, Islamic Rep.	Nepal
Burundi	Colombia	Iraq	Pakistan
Cameroon	Costa Rica	Jordan	Sri Lanka
Central African Republic	Cuba	Lebanon	
Chad	Dominican Republic	Libyan Arab Yamahiriya	
Congo	Ecuador	Morocco	
Congo, Dem. Rep.	El Salvador	Saudi Arabia	
Côte d'Ivoire	Guatemala	Syrian Arab Republic	
Eritrea	Guyana	Tunisia	
Ethiopia	Haiti	Turkey	
Gabon	Honduras	Yemen	
Gambia	Jamaica	Near East, other ³	
Ghana	Mexico		
Guinea	Nicaragua		East Asia
Kenya	Panama		Cambodia
Lesotho	Paraguay		China
Liberia	Peru		Indonesia
Madagascar	Suriname		Korea, Dem. Rep.
Malawi	Trinidad and Tobago		Korea, Rep.
Mali	Uruguay		Lao PDR
Mauritania	Venezuela		Malaysia
Mauritius	Latin America, other ²		Mongolia
Mozambique			Myanmar
Namibia			Philippines
Niger			Thailand
Nigeria			Viet Nam
Rwanda			East Asia, other ⁴
Senegal			
Sierra Leone			
Somalia			
Sudan			
Swaziland			
Tanzania, United Rep.			
Togo			
Uganda			
Zambia			
Zimbabwe			
Sub-Saharan Africa, other ¹			

Note: Data on land with rainfed production potential as well as estimates of land in use by agro-ecological class are available for all countries except Namibia, Maldives, Mongolia and the groups "other" in sub-Saharan Africa, Latin America, Near East/North Africa and East Asia.

¹ Cape Verde, the Comoros, Djibouti, Guinea-Bissau, Sao Tome and Principe, Seychelles.

² Antigua, Bahamas, Barbados, Belize, Dominica, Grenada, Netherland Antilles, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Bermuda.

³ Cyprus, Kuwait, United Arab Emirates.

⁴ Brunei, Macau, Solomon Islands, Fiji, French Polynesia, New Caledonia, Vanuatu, Papua New Guinea, Kiribati.

Industrial countries

European Union*	Other western Europe	North America	Oceania	Other developed countries
Austria	Iceland	Canada	Australia	Israel
Belgium	Malta	United States	New Zealand	Japan
Denmark	Norway			South Africa
Finland	Switzerland			
France				
Germany				
Greece				
Ireland				
Italy				
Luxembourg				
Netherlands				
Portugal				
Spain				
Sweden				
United Kingdom				

* In the analysis the European Union was treated as one country group (EU-15).

Transition countries

Eastern Europe and the former Yugoslavia SFR	Commonwealth of Independent States	Baltic states
Albania	Armenia	Estonia
Bosnia and Herzegovina	Azerbaijan	Latvia
Bulgaria	Belarus	Lithuania
Croatia	Georgia	
Czech Republic	Kazakhstan	
Hungary	Kyrgyzstan	
Poland	Moldova, Republic	
Romania	Russian Federation	
Slovakia	Tajikistan	
Slovenia	Turkmenistan	
The Former Yugoslav Republic of Macedonia	Ukraine	
Yugoslavia	Uzbekistan	

Commodities covered

Crops	Livestock
Wheat	Beef, veal and buffalo meat
Rice, paddy	Mutton, lamb and goat meat
Maize	Pig meat
Barley	Poultry meat
Millet	Milk and dairy products (in whole milk equivalent)
Sorghum	Eggs
Other cereals	
Potatoes	
Sweet potatoes and yams	
Cassava	
Other roots	
Plantains	
Sugar, raw ¹	
Pulses	
Vegetables	
Bananas	
Citrus fruit	
Other fruit	
Vegetable oil and oilseeds (in vegetable oil equivalent) ²	
Cocoa beans	
Coffee	
Tea	
Tobacco	
Cotton lint	
Jute and hard fibres	
Rubber	

¹ Sugar production in the developing countries analysed separately for sugar cane and sugar beet.

² Vegetable oil production in the developing countries analysed separately for soybeans, groundnuts, sesame seed, coconuts, sunflower seed, palm oil/palm-kernel oil, rapeseed and all other oilseeds.

Note on commodities

All commodity data and projections in this report are expressed in terms of primary product equivalent unless stated otherwise. Historical commodity balances (supply utilization accounts – SUAs) are available for about 160 primary and 170 processed crop and livestock commodities. To reduce this amount of information to manageable proportions, all the SUA data were converted to the commodity specification given above in the list of commodities, applying appropriate conversion factors (and ignoring joint products to avoid double counting, e.g. wheat flour is converted back into wheat while wheat bran is ignored). In this way, one supply utilization account in homogeneous units is derived for each of the commodities of the study. Meat production refers to indigenous meat production, i.e. production from slaughtered animals plus the meat equivalent of live animal exports minus the meat equivalent of all live animal imports. Cereal demand and trade data include the grain equivalent of beer consumption and trade.

The commodities for which SUAs were constructed are the 26 crops and six livestock products given in the list above. The production analysis for the developing countries was, however, carried out for 34 crops because sugar and vegetable oils are analysed separately (for production analysis only) for the ten crops shown in the footnote to the list.

Summary methodology of the quantitative analysis and projections

This appendix gives a very brief account of the approach followed in this study. For a more extensive treatment, the reader is referred to Appendix 2 in Alexandratos (1995). The final part of this appendix discusses briefly some of the problems with the data and the assumptions, and explains why only one scenario was designed for this study.

Summary methodology

In projecting the likely evolution of the key food and agricultural variables, a "positive" approach has been followed, aiming at describing the future as it is likely to be (to the best of our knowledge at the time of carrying out this study), and not as it ought to be from a normative point of view. The study therefore does not attempt to spell out actions that need to be taken to reach a certain target (for example the World Food Summit target of halving the number of chronically undernourished persons by no later than 2015) or some other desirable outcome sometime in the future. The second overriding principle of the approach followed in this study was to draw to the maximum extent possible on FAO's in-house knowledge available in the various disciplines present in FAO, so as to make the study results represent FAO's "collective wisdom" concerning the future of food, nutrition and agriculture.

The quantitative analysis and projections were carried out in considerable detail in order to provide a basis for making statements about the future concerning individual commodities and groups of commodities as well as agriculture as a whole, and for any desired group of countries. For this reason the analysis was carried out for as large a number of individual commodities and countries as practicable (see Appendix 1). Another reason for the high degree of detail has to do with the interdisciplinary nature of the study and its heavy dependence on contributions provided by FAO

specialists in the different disciplines. Such contributions can find expression only if the relevant questions are formulated at a meaningful level of detail. For example, a useful contribution can only be obtained from crop production experts, if questions of yield growth potential are addressed separately for maize, barley, millet and sorghum, not for coarse grains as a group, and preferably disaggregated in terms of agro-ecological conditions because, say, irrigated barley and rainfed semi-arid barley are practically different commodities for assessing yield growth prospects. Moreover, statements on, and projections of, land and water use cannot be made unless all the major crops are accounted for. For example, cereals account for about 55 percent of the total harvested area of the developing countries. An analysis limited to cereals would not provide a sufficient basis for exploring issues of land scarcities and possibilities of expansion in the future.

The variables projected in the study are (i) the demand (different final and intermediate uses), production and net trade balances for each commodity and country; and (ii) key agro-economic variables, i.e. for crops: area, yield and production by country and, for the developing countries only, by agro-ecological zone (irrigated and rainfed with the latter subdivided into dry semi-arid, moist semi-arid, subhumid, humid land and fluvisols/gleysols); and for livestock products: animal numbers (total stock and offtake rates) and yields per animal.

A significant part of the total effort is devoted to the work needed to create a consistent set of historical and base year data. For the demand-supply analysis, the overall quantitative framework for the projections is based on supply utilization accounts (SUAs). The SUA is an accounting identity, showing for any year the sources and uses of agricultural commodities in homogeneous physical units, as follows:

$$\text{Food (direct consumption) + Industrial non-food uses + Feed + Seed + Waste = Total domestic use = Production + (Imports - Exports) + (Opening stocks - Closing stocks)}$$

The database has one such SUA for each commodity, country and year (1961 to 1999). The data preparation work for the demand-supply analysis consists of the conversion of the approximately 330 commodities for which the primary production, utilization and trade data are available into the 32 commodities covered in this study, while respecting SUA identities (see the Note on commodities in Appendix 1). The different commodities are aggregated into commodity groups and into “total agriculture” using as weights world average producer prices of 1989/91 expressed in “international dollars” derived from the Geary-Khamis formula as explained in Rao (1993). The growth rates for heterogeneous commodity groups or total agriculture shown in this study are computed from the value aggregates thus obtained.

A major part of the data preparation work, undertaken only for the developing countries, is the unfolding of the SUA element “production” (for the base year only, in this case the three-year average 1997/99) into its constituent components of area, yield and production that are required for projecting production. For crops, the standard data in the SUAs contain, for most crops, also the areas (harvested) and average yields for each crop and country. These national averages are not considered by agronomists to provide a good enough basis for projections because of the widely differing agro-ecological conditions in which any single crop is grown, even within the same country. An attempt was therefore made to break down the base year production data from total area under a crop and an average yield into areas and yields for rainfed and irrigated categories. The problem is that such detailed data are not generally available in any standard database. It became necessary to piece them together from fragmentary information, from both published and unpublished documents giving, for example, areas and yields by

irrigated and rainfed land at the national level or by administrative districts, supplemented by a good deal of guesstimates.

No data exist on total harvested land, but this can be obtained by summing up the harvested areas reported for the different crops. Data are available for total arable land in agricultural use (physical area, called in the statistics “arable land and land in permanent crops”). It is not known whether these two sets of data are compatible with each other, but this can be evaluated indirectly by computing the cropping intensity, i.e. the ratio of harvested area to arable land. This is an important parameter that can signal defects in the land use data. Indeed, for several countries the implicit values of the cropping intensities did not seem to make sense. In such cases the harvested area data resulting from the crop statistics were accepted as being the more robust (or the less questionable) ones and those for arable area were adjusted in consultation with the country and land use specialists (see Alexandratos [1995] for a discussion of these problems).

The bulk of the projection work concerns the drawing up of SUAs (by commodity and country) for the years 2015 and 2030, and the unfolding of the projected SUA item “production” into area and yield combinations for rainfed and irrigated land and, likewise, for livestock commodities into the underlying parameters (number of animals, offtake rates and yields).

The overall approach is to start with projections of demand, using Engel demand functions and exogenous assumptions on population and GDP growth.¹ Subsequently, the entry point for the projections of production is to start with provisional projections for production for each commodity and country derived from simple assumptions about future self-sufficiency and trade levels. There follow several rounds of iterations and adjustments in consultation with specialists on

¹ Population data and projections are from the United Nations (UN, 2001a; medium variant) and GDP projections are largely based on the World Bank (2001c), extended to 2030.

the different countries and disciplines, with particular reference to what are considered to be “acceptable” or “feasible” levels of calorie intakes, diet composition, land use, (crop and livestock) yields and trade. Accounting consistency controls at the commodity, land resources (developing countries only), country and world levels have to be respected throughout. In addition, but only for the cereal, livestock and oilseeds sectors, a formal flex-price model was used (FAO World Food Model; FAO, 1993b) to provide starting levels for the iterations and to keep track of the implications for all variables of the changes in any one variable introduced in the successive rounds of inspection and adjustment. The model is a partial equilibrium model, composed of single commodity modules and world market feedbacks leading to national and world market clearing through price adjustments. It is emphasized that the results of the model projections (whether the single Engel demand functions or the flex-price model) were subjected to many rounds of iterative adjustments by specialists on countries and of many disciplines, particularly during the phase of analysing the scope for production growth and trade. The end product may be described as a set of projections that meet conditions of accounting consistency and to a large extent respect constraints and views expressed by the specialists in the different disciplines and countries.

It should be emphasized here that the projections presented in this study are definitely not “trend extrapolations”, whether the term is used to denote the derivation of a future value of any variable by simple application of its historical growth rate to the base year value (exponential trend) or the less crude notion of using time as the single explanatory variable in functional forms other than exponential, e.g. linear, semi-log, sigmoid, etc. For one thing, projecting all interlinked variables on the basis of estimated functions of time is a practical impossibility; for another, projecting any single variable at its historical growth rate (which could be negative, zero or very high) often leads to absurd results. Therefore, the term “trend” or “trend extrapolation” is not appropriate for describing these projections.

Summary statements of the methodologies of supporting and complementing analyses are given in the main body of this report: for example, the

approaches followed for estimating the number of chronically undernourished people (Box 2.1), for deriving estimates of land with potential for rainfed agriculture (Box 4.1), for estimating water requirements in irrigated agriculture (Box 4.3), and for deriving projections of fertilizer consumption (Section 4.6).

Data problems

The significant commodity and country detail underlying the analysis requires the handling of huge quantities of data. Inevitably, data problems that would remain hidden and go unnoticed in work conducted at the level of large country and commodity aggregates come to the fore all the time. Examples of typical data problems are given below.

Data reliability. When revised numbers become available in the successive rounds of updating and revision of the historical data, it is not uncommon to discover that some of the data were off the mark, sometimes by a very large margin. It may happen therefore that changes projected to occur in the future have already occurred in the past. A typical case is presented in Chapter 2, Box 2.2. There the point is made that the revisions of the population (downwards) and food production data (upwards) in Nigeria implied that in the previous (1995) edition of this study, the projections were based on a food security situation in Nigeria that was worse than the one actually prevailing, assuming the new revised data are nearer reality. Another example: at the time of writing of this report (mid-2002), the latest available revised trade data for Namibia show significant rice imports that were not present in the previous data. They lead to an increase by 50 kg of the per capita food consumption of cereals for the base year 1997/99 of this study. The revised total food consumption is 2 600 kcal/person/day, up from the 2 090 kcal/person/day before the revisions. As a result, the revised estimate of undernourishment for 1997/99 is 9.5 percent of the population, down from the 33 percent before the data revisions.

Obviously, there is not much that can be done about this problem as errors in historical data become apparent after completing the projections. Such changes in the historical data also bedevil

attempts to compare in any degree of detail the projections of earlier editions of this study with the actual outcomes for the latest year for which data are available. The comparisons occasionally shown in Chapters 3 and 4 are for the developing countries as a whole: net cereal imports (Figure 3.7) and production and yields of wheat, rice, maize and other coarse grains (Figure 3.12 and Box 4.4). As such, they are not greatly influenced by significant revisions in the historical data of individual countries.

Unbalanced world trade. A second data problem relates to the large discrepancies often encountered in the trade statistics, i.e. world imports are not equal to world exports. Small discrepancies are inevitable and can be ignored but large ones pose serious problems since in the projections exporting countries must produce export surpluses equal to the net imports of other countries. For example, the sugar exporters had net exports of 32.3 million tonnes in 1997/99 while importers had net imports of only 28.5 million tonnes, leaving a world imbalance of 3.7 million tonnes. In the projections, the importers are estimated to need net imports of 35.2 million tonnes in 2015, an increase of 23 percent. If the discrepancy in the base year were to be ignored, the export surplus of the exporters should also be 35.2 million tonnes, i.e. only 9 percent above the 32.5 million they exported in 1997/99, thus greatly distorting the analysis of their export prospects. By necessity, the unsatisfactory solution of assuming that a discrepancy of roughly equal magnitude to that of the base year will also prevail in the future had to be adopted (see Table 3.23, Chapter 3).

There are good reasons why discrepancies arise in the trade statistics, e.g. differences in the timing of recording of movement of goods in the exporting and importing country, although this can hardly explain some very large discrepancies, e.g. world exports of refined sugar are 20 percent higher than world imports, while for concentrated orange juice world exports (85 percent of them from Brazil) are double world imports. At the same time, world imports of single strength orange juice exceed world exports by an almost equal amount.

Some problems with the exogenous assumptions. As an example, the impossibility of foreseeing which

countries may face extraordinary events leading to their being worse off in the future than at present is mentioned. In Chapter 2 it was noted that several countries suffered declining levels of food consumption, some of them in the form of collapses within the span of a few years, e.g. the Democratic People's Republic of Korea, Iraq, Cuba, Afghanistan, the Democratic Republic of the Congo and many transition economies. In most cases such collapses result from the occurrence of difficult to predict systemic changes or crises, or from outright unpredictable events, such as war or civil strife. It is impossible to predict which countries may be in that class in the future. Therefore, in the projections each and every country is shown with a higher food consumption per person than at present, some significantly better, others less so and several remaining with critically low levels. This is the result, in the first place, of the exogenous income growth assumptions that allow only rarely for the eventuality that per capita income of individual countries might in 30 years be lower than at present.

The prospect that only few countries may suffer income declines is, of course, at variance with the empirical evidence that shows quite a few countries having lower incomes today than three decades ago. The World Bank has data for 80 of the developing countries covered individually in this study (World Bank, 2001b; Table 1.4). No fewer than 28 of them have had negative growth rates in per capita GDP in the period 1965-99 (the number is larger if the transition economies are included). They include many of the countries devastated by war or civil strife at some period from 1965 to 1999. As noted, it would be foolhardy to predict or assume which countries may have similar experiences in the future. For example, in the 1988 edition of this study (Alexandratos, 1988) with projections to 2000, the collapse of food and agriculture in the formerly centrally planned economies of Europe and their virtual disappearance as large net importers of cereals had not been predicted.

Why only one scenario. In this study, only one possible outcome for the future based on a positive, rather than normative, assessment is presented. Alternative scenarios have not been explored for a number of reasons, some conceptual, some practical,

and usually a mix of both. Producing an alternative scenario is essentially a remake of the projections with a different set of assumptions. On the practical side, the major constraint is the time-consuming nature of estimating alternative scenarios with the methodology of expert-based inspection, evaluation and iterative adjustments of the projections. On the conceptual side, defining an alternative set of exogenous assumptions that are internally consistent represents a challenge of no easy resolution. For example, among the major exogenous variables are the projections of population and income (GDP). As discussed, for population the medium variant demographic projections of the United Nations were used. There are also high and low variants. In estimating an alternative scenario with, say, the high variant, it would not be known how the exogenous GDP projections should be modified so as to be internally consistent with the high population variant. If the GDP growth rates were retained unchanged, projected per capita incomes would be lower, and this would mean implicitly accepting that population growth is detrimental to economic welfare. If the GDP growth rates were raised to keep projected per capita incomes unchanged, it would mean accepting that population growth made no difference. Neither of the two views can be correct for all countries. In actual life, some countries would be better off with higher population growth and some worse off (see more discussion in Box 2.3, Chapter 2). It would be impossible to define in an empirically valid manner what the relationships could be for each of the more than one hundred countries analysed individually in this study.

The one alternative scenario that it would be highly desirable to have is one that would introduce feedbacks from agriculture to the overall economy, at least for the countries in which agriculture is a substantial component of the economy. The methodology used in this study is of the partial equilibrium type, that is, interdependence is accounted for among, and balance is brought about in, the demand and supply of the individual agricultural commodities, at the country and world levels. Other aspects of interdependence and balance in the wider economy are ignored, e.g. how a more robust agricultural performance would eventually contribute to a higher GDP growth rate than originally assumed and how the latter would in turn stimulate demand for food and agriculture

itself. To introduce such general equilibrium elements in the analysis, rather sophisticated economy-wide models would have to be built and validated for the individual countries. This is a quasi impossible task, partly because of the time and resources required and partly because the data available for many of the countries for which such analyses would be most appropriate (low-income ones with high dependence on agriculture) are generally not adequate to support such an undertaking. Circumventing the problem by assuming arbitrarily the existence of linkages between agriculture and the rest of the economy (e.g. that a 1 percent increase in agricultural GDP causes the rest of the economy to grow by x percent) would not do. As noted above, in a number of countries robust agricultural growth was associated with meagre or declining growth for the rest of the economy, implying a negative link if this simplistic approach were followed. Obviously, rather sophisticated economy-wide analysis would reveal the reasons why such “perverse” relationships exist in the data, and could even lead to the conclusion that some of the data are outright wrong.

In conclusion, alternative scenarios would be certainly useful for exploring the future in the face of uncertainties about how key variables of the system may evolve. In this study, an attempt was made to contain this uncertainty by bringing to bear the expert judgement of the discipline and country specialists on the future values of the relevant variables (e.g. rates of growth of yields, land, irrigation, etc.). Running a scenario with alternative values for one or more of these variables would mean repeating this process. Much of the work for a new scenario would be devoted to the definition of plausible alternative values. It is just not a question of assuming that, for example, irrigation would expand at a higher rate than in the baseline projection in each and every country. This would be impossible for some countries because of physical water constraints. The same holds for higher yield growth rates: the potential exists in some countries and crops but not in others. If realistic alternative paths for such values cannot be defined, the results of estimating alternative scenarios with blanket assumptions about uniform changes in the values of some variables in each and every country would certainly be misleading rather than illuminating.

APPENDIX 3

Statistical tables

Table A1	Total population
Table A2	Per capita food supplies for direct human consumption
Table A3	Cereal sector data
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Table A4.2	Rice: area, yield and production
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TABLE A1 Total population

	Million				Annual growth rates (% p.a.)			
	1997/99	2015	2030	2050	1980-99	1997/99-2015	2015-30	2030-50
World	5 900.0	7 207.4	8 270.1	9 322.3	1.6	1.2	0.9	0.6
All developing countries	4 572.6	5 827.3	6 869.1	7 935.3	1.9	1.4	1.1	0.7
Sub-Saharan Africa	574.2	882.7	1 229.0	1 704.3	2.9	2.6	2.2	1.6
Angola	12.4	20.8	32.6	53.3	3.1	3.1	3.1	2.5
Benin	6.0	9.4	13.3	18.1	3.1	2.8	2.3	1.5
Botswana	1.5	1.7	1.9	2.1	2.9	0.7	0.7	0.6
Burkina Faso	11.0	18.5	29.2	46.3	2.6	3.1	3.1	2.3
Burundi	6.2	9.8	13.8	20.2	2.3	2.7	2.3	1.9
Cameroon	14.2	20.2	25.8	32.3	2.8	2.1	1.6	1.1
Central African Republic	3.6	4.9	6.4	8.2	2.4	1.8	1.8	1.2
Chad	7.4	12.4	18.7	27.7	2.9	3.1	2.8	2.0
Congo	2.8	4.7	7.2	10.7	3.0	3.0	2.8	2.0
Congo, Dem. Republic	48.4	84.0	132.6	203.5	3.4	3.3	3.1	2.2
Côte d'Ivoire	15.4	21.5	26.5	32.2	3.3	2.0	1.4	1.0
Eritrea	3.4	5.7	7.7	10.0	n.a	3.1	2.0	1.3
Ethiopia	59.9	89.8	127.0	186.5	n.a	2.4	2.3	1.9
Gabon	1.2	1.8	2.4	3.2	3.0	2.4	2.1	1.4
Gambia	1.2	1.8	2.2	2.6	3.8	2.2	1.4	0.8
Ghana	18.5	26.4	32.8	40.1	2.9	2.1	1.5	1.0
Guinea	7.9	11.3	15.6	20.7	3.0	2.2	2.2	1.4
Kenya	29.4	40.0	46.9	55.4	3.3	1.8	1.1	0.8
Lesotho	2.0	2.1	2.3	2.5	2.1	0.5	0.4	0.4
Liberia	2.5	5.6	8.9	14.4	0.8	4.8	3.2	2.4
Madagascar	15.1	24.1	34.3	47.0	2.9	2.8	2.4	1.6
Malawi	10.7	15.7	21.8	31.1	3.2	2.2	2.2	1.8
Mali	10.7	17.7	26.9	41.7	2.6	3.0	2.8	2.2
Mauritania	2.5	4.1	6.0	8.5	2.6	3.0	2.6	1.7
Mauritius	1.1	1.3	1.4	1.4	0.9	0.8	0.5	0.1
Mozambique	17.6	23.5	30.4	38.8	2.2	1.7	1.7	1.2
Namibia	1.7	2.3	3.0	3.7	3.3	1.9	1.7	1.0
Niger	10.1	18.5	30.1	51.9	3.3	3.6	3.3	2.8
Nigeria	107.9	165.3	220.4	278.8	2.9	2.5	1.9	1.2
Rwanda	6.4	10.5	14.2	18.5	0.4	2.9	2.0	1.4
Senegal	9.0	13.5	17.9	22.7	2.7	2.5	1.9	1.2
Sierra Leone	4.2	7.1	10.1	14.4	1.4	3.2	2.4	1.7
Somalia	6.8	13.0	20.8	34.6	0.4	3.9	3.2	2.6
Sudan	29.8	42.4	52.6	63.5	2.3	2.1	1.4	1.0
Swaziland	0.9	1.0	1.2	1.4	2.6	0.8	1.0	0.8
Tanzania, United Rep.	33.5	49.3	65.6	82.7	3.3	2.3	1.9	1.2
Togo	4.2	6.6	9.1	11.8	2.8	2.6	2.2	1.3
Uganda	22.0	38.7	62.7	101.5	3.2	3.4	3.3	2.4
Zambia	9.9	14.8	21.3	29.3	3.0	2.4	2.5	1.6
Zimbabwe	12.2	16.4	19.6	23.5	3.0	1.8	1.2	0.9
Sub-Saharan Africa, other	3.0	4.3	5.8	7.5	2.7	2.1	1.9	1.3
Near East/North Africa	377.5	520.0	651.3	809.3	2.6	1.9	1.5	1.1
Afghanistan	20.8	35.6	50.5	72.3	2.4	3.2	2.4	1.8
Algeria	29.2	38.0	44.9	51.2	2.4	1.6	1.1	0.7
Egypt	65.5	84.4	99.5	113.8	2.3	1.5	1.1	0.7
Iran, Islamic Rep.	68.1	87.1	104.5	121.4	3.0	1.5	1.2	0.8
Iraq	21.8	33.5	43.1	53.6	2.9	2.6	1.7	1.1
Jordan	4.7	7.2	9.3	11.7	4.3	2.6	1.8	1.1

	Million				Annual growth rates (% p.a.)			
	1997/99	2015	2030	2050	1980-99	1997/99-2015	2015-30	2030-50
Lebanon	3.4	4.2	4.7	5.0	1.5	1.3	0.8	0.3
Libyan Arab Jamahiriya	5.1	7.1	8.4	10.0	2.6	2.0	1.2	0.8
Morocco	28.8	37.7	44.1	50.4	2.2	1.6	1.1	0.7
Saudi Arabia	18.9	31.7	44.8	59.7	3.7	3.1	2.3	1.4
Syrian Arab Republic	15.4	23.2	29.3	36.3	3.2	2.4	1.6	1.1
Tunisia	9.3	11.3	12.8	14.1	2.0	1.2	0.8	0.5
Turkey	64.6	79.0	89.9	98.8	2.1	1.2	0.9	0.5
Yemen	16.9	33.1	57.5	102.4	4.2	4.0	3.7	2.9
Near East, other	5.1	6.9	7.8	8.6	2.4	1.8	0.9	0.5
Latin America and the Caribbean	498.2	624.2	716.7	798.8	1.8	1.3	0.9	0.5
Argentina	36.1	43.5	48.9	54.5	1.4	1.1	0.8	0.5
Bolivia	8.0	11.2	14.0	17.0	2.3	2.0	1.5	1.0
Brazil	166.1	201.4	226.5	247.2	1.7	1.1	0.8	0.4
Chile	14.8	17.9	20.2	22.2	1.6	1.1	0.8	0.5
Colombia	40.7	52.6	62.1	70.9	2.0	1.5	1.1	0.7
Costa Rica	3.8	5.2	6.2	7.2	2.9	1.8	1.2	0.7
Cuba	11.1	11.6	11.7	10.8	0.8	0.3	0.0	-0.4
Dominican Republic	8.1	10.1	11.2	12.0	1.9	1.3	0.7	0.3
Ecuador	12.2	15.9	18.6	21.2	2.4	1.6	1.1	0.6
El Salvador	6.0	8.0	9.4	10.9	1.6	1.7	1.1	0.7
Guatemala	10.8	16.3	21.2	26.6	2.6	2.5	1.7	1.1
Guyana	0.8	0.7	0.7	0.5	-0.1	0.0	-0.7	-1.4
Haiti	7.9	10.2	12.1	14.0	2.1	1.5	1.2	0.7
Honduras	6.1	8.7	10.7	12.8	3.0	2.1	1.4	0.9
Jamaica	2.5	3.0	3.4	3.8	0.9	0.9	0.9	0.6
Mexico	95.8	119.2	134.9	146.7	1.9	1.3	0.8	0.4
Nicaragua	4.8	7.2	9.3	11.5	2.7	2.4	1.7	1.1
Panama	2.8	3.5	3.9	4.3	2.0	1.3	0.8	0.4
Paraguay	5.2	7.8	10.1	12.6	2.9	2.4	1.8	1.1
Peru	24.8	31.9	37.2	42.1	2.0	1.5	1.0	0.6
Suriname	0.4	0.4	0.4	0.4	0.8	0.3	0.1	-0.3
Trinidad and Tobago	1.3	1.4	1.4	1.4	0.8	0.5	0.2	-0.2
Uruguay	3.3	3.7	4.0	4.2	0.7	0.6	0.5	0.3
Venezuela	23.2	30.9	36.5	42.2	2.4	1.7	1.1	0.7
Latin America, other	1.6	1.8	2.0	2.1	0.8	0.8	0.6	0.2
South Asia	1 282.9	1 672.0	1 969.5	2 258.0	2.1	1.6	1.1	0.7
Bangladesh	131.8	183.2	222.6	265.4	2.4	2.0	1.3	0.9
India	976.3	1 230.5	1 408.9	1 572.1	2.0	1.4	0.9	0.5
Maldives	0.3	0.5	0.6	0.9	3.1	3.0	2.4	1.5
Nepal	22.0	32.1	41.7	52.4	2.3	2.3	1.8	1.1
Pakistan	133.9	204.3	272.7	344.2	2.8	2.5	1.9	1.2
Sri Lanka	18.6	21.5	22.9	23.1	1.4	0.9	0.4	0.0
East Asia	1 839.8	2 128.4	2 302.8	2 365.0	1.5	0.9	0.5	0.1
Cambodia	12.4	18.6	23.8	29.9	3.6	2.4	1.7	1.1
China	1 260.4	1 418.2	1 493.6	1 471.7	1.3	0.7	0.3	-0.1
Indonesia	206.4	250.1	282.9	311.3	1.8	1.1	0.8	0.5
Korea, DPR	21.9	24.4	26.5	28.0	1.4	0.6	0.5	0.3
Korea, Republic	46.1	50.6	52.5	51.6	1.0	0.6	0.2	-0.1
Lao PDR	5.0	7.3	9.3	11.4	2.6	2.2	1.6	1.0
Malaysia	21.4	27.9	33.0	37.9	2.5	1.6	1.1	0.7
Mongolia	2.5	3.1	3.6	4.1	2.3	1.3	1.1	0.6
Myanmar	46.5	55.3	62.5	68.5	1.8	1.0	0.8	0.5

	Million				Annual growth rates (% p.a.)			
	1997/99	2015	2030	2050	1980-99	1997/99-2015	2015-30	2030-50
Philippines	72.7	95.9	112.6	128.4	2.3	1.6	1.1	0.7
Thailand	61.2	72.5	79.5	82.5	1.6	1.0	0.6	0.2
Viet Nam	76.1	94.4	110.1	123.8	2.1	1.3	1.0	0.6
East Asia, other	7.3	10.1	12.9	15.8	2.4	2.0	1.6	1.0
Industrial countries	892.4	950.7	978.5	985.7	0.7	0.4	0.2	0.0
Australia	18.7	21.9	24.2	26.5	1.4	0.9	0.7	0.4
Canada	30.2	34.4	37.7	40.4	1.2	0.8	0.6	0.3
European Union	375.5	376.8	367.5	339.5	0.3	0.0	-0.2	-0.4
Iceland	0.3	0.3	0.3	0.3	1.0	0.6	0.4	0.1
Israel	5.8	7.7	8.9	10.1	2.5	1.7	0.9	0.6
Japan	126.5	127.5	121.3	109.2	0.4	0.0	-0.3	-0.5
Malta	0.4	0.4	0.4	0.4	0.9	0.4	0.1	-0.2
New Zealand	3.7	4.1	4.4	4.4	1.0	0.6	0.4	0.1
Norway	4.4	4.7	4.9	4.9	0.5	0.3	0.3	0.0
South Africa	42.1	44.6	43.9	47.3	2.1	0.3	-0.1	0.4
Switzerland	7.2	7.0	6.6	5.6	0.8	-0.2	-0.4	-0.8
United States	277.5	321.2	358.5	397.1	1.0	0.9	0.7	0.5
Transition countries	413.2	397.9	381.4	349.0	0.4	-0.2	-0.3	-0.4
Albania	3.1	3.4	3.8	3.9	0.9	0.5	0.6	0.2
Armenia	3.8	3.8	3.7	3.2	n.a.	0.0	-0.3	-0.7
Azerbaijan	7.9	8.7	9.1	8.9	n.a.	0.6	0.3	-0.1
Belarus	10.3	9.7	9.1	8.3	n.a.	-0.4	-0.4	-0.5
Bosnia and Herzegovina	3.7	4.3	4.1	3.5	n.a.	0.9	-0.4	-0.8
Bulgaria	8.1	6.8	5.8	4.5	-0.5	-1.0	-1.1	-1.2
Croatia	4.7	4.6	4.5	4.2	n.a.	0.0	-0.2	-0.3
Czech Republic	10.3	10.0	9.5	8.4	n.a.	-0.2	-0.4	-0.6
Estonia	1.4	1.2	1.0	0.8	n.a.	-1.1	-1.2	-1.4
Georgia	5.3	4.8	4.2	3.2	n.a.	-0.6	-0.9	-1.3
Hungary	10.1	9.3	8.5	7.5	-0.4	-0.5	-0.5	-0.7
Kazakhstan	16.3	16.0	16.0	15.3	n.a.	-0.1	0.0	-0.2
Kyrgyzstan	4.8	5.8	6.7	7.5	n.a.	1.2	0.9	0.6
Latvia	2.5	2.2	2.0	1.7	n.a.	-0.6	-0.7	-0.7
Lithuania	3.7	3.5	3.3	3.0	n.a.	-0.3	-0.4	-0.6
Macedonia, The Former Yugoslav Rep.	2.0	2.1	2.0	1.9	n.a.	0.2	-0.1	-0.4
Moldova, Republic	4.3	4.2	4.0	3.6	n.a.	-0.2	-0.3	-0.5
Poland	38.6	38.0	36.6	33.4	0.4	-0.1	-0.3	-0.5
Romania	22.5	21.4	20.1	18.1	0.0	-0.3	-0.4	-0.5
Russian Federation	146.8	133.3	121.4	104.3	n.a.	-0.6	-0.6	-0.8
Slovakia	5.4	5.4	5.2	4.7	n.a.	0.0	-0.2	-0.6
Slovenia	2.0	1.9	1.8	1.5	n.a.	-0.2	-0.5	-0.8
Tajikistan	6.0	7.1	8.5	9.8	n.a.	1.0	1.2	0.7
Turkmenistan	4.5	6.1	7.2	8.4	n.a.	1.7	1.2	0.8
Ukraine	50.5	43.3	37.6	30.0	n.a.	-0.9	-0.9	-1.1
Uzbekistan	24.1	30.6	35.7	40.5	n.a.	1.4	1.0	0.6
Yugoslavia	10.6	10.3	9.9	9.0	n.a.	-0.2	-0.3	-0.4

TABLE A2 Per capita food supplies for direct human consumption

	Calories/day				All cereals, including milled rice (kg/p.a.)			
	1969/71	1979/81	1989/91	1997/99	1969/71	1979/81	1989/91	1997/99
World	2 413	2 552	2 709	2 803	149	160	171	171
All developing countries	2 113	2 312	2 525	2 681	146	162	174	173
Sub-Saharan Africa	2 108	2 089	2 109	2 195	116	115	119	123
Angola	2 105	2 109	1 726	1 879	78	88	56	76
Benin	1 996	2 044	2 338	2 498	82	96	116	115
Botswana	2 144	2 124	2 386	2 278	165	148	152	143
Burkina Faso	1 763	1 683	2 096	2 294	173	156	202	220
Burundi	2 105	2 027	1 850	1 660	46	53	50	43
Cameroon	2 308	2 326	2 170	2 260	115	110	106	107
Central African Republic	2 353	2 319	1 912	1 969	49	42	48	49
Chad	2 076	1 642	1 735	2 120	153	107	109	133
Congo	2 062	2 221	2 152	2 174	30	49	58	75
Congo, Dem. Republic	2 144	2 082	2 119	1 712	41	43	43	40
Côte d'Ivoire	2 512	2 830	2 437	2 566	95	122	102	120
Eritrea	n.a	n.a	n.a	1 709	n.a	n.a	n.a	147
Ethiopia	n.a	n.a	n.a	1 809	n.a	n.a	n.a	134
Gabon	2 198	2 422	2 447	2 517	47	85	93	101
Gambia	2 180	1 805	2 421	2 574	167	132	159	163
Ghana	2 289	1 710	2 032	2 547	76	64	78	85
Guinea	2 203	2 213	2 012	2 197	98	109	106	103
Kenya	2 218	2 179	1 915	1 933	155	149	112	121
Lesotho	1 937	2 220	2 267	2 308	197	206	206	213
Liberia	2 387	2 543	2 286	2 084	115	134	114	91
Madagascar	2 432	2 372	2 105	2 004	143	136	113	107
Malawi	2 358	2 273	1 936	2 116	196	174	157	153
Mali	2 018	1 765	2 319	2 239	169	146	203	193
Mauritania	1 938	2 123	2 584	2 690	107	122	166	171
Mauritius	2 333	2 671	2 844	2 951	144	153	158	161
Mozambique	1 912	1 907	1 767	1 924	74	77	72	98
Namibia	2 191	2 295	2 175	2 091	101	117	126	136
Niger	2 039	2 129	2 044	2 010	224	210	221	205
Nigeria	2 232	2 026	2 410	2 814	122	110	144	154
Rwanda	2 210	2 287	2 054	2 018	51	51	45	55
Senegal	2 282	2 276	2 276	2 284	179	180	185	158
Sierra Leone	2 236	2 109	1 987	2 079	124	123	119	118
Somalia	1 824	1 831	1 761	1 554	78	89	94	56
Sudan	2 055	2 192	2 159	2 366	133	128	150	158
Swaziland	2 312	2 458	2 603	2 551	171	169	168	157
Tanzania, United Rep.	1 733	2 245	2 168	1 926	74	136	126	115
Togo	2 328	2 266	2 324	2 512	114	114	139	154
Uganda	2 388	2 108	2 299	2 185	102	79	72	73
Zambia	2 261	2 271	2 031	1 937	193	199	166	161
Zimbabwe	2 270	2 272	2 115	2 084	202	192	170	163
Sub-Saharan Africa, other	1 852	2 042	2 284	2 268	104	124	136	132
Near East/North Africa	2 371	2 839	3 024	3 006	177	199	212	209
Afghanistan	2 203	2 132	1 890	1 800	211	196	156	144
Algeria	1 841	2 639	2 901	2 934	151	196	214	228
Egypt	2 348	2 915	3 158	3 317	176	212	239	251
Iran, Islamic Rep.	2 094	2 740	2 856	2 928	146	182	194	191
Iraq	2 274	2 849	3 051	2 417	157	198	227	166
Jordan	2 246	2 616	2 815	2 812	151	158	169	174
Lebanon	2 352	2 731	3 182	3 231	135	134	136	136

	Calories/day				All cereals, including milled rice (kg/p.a.)			
	1969/71	1979/81	1989/91	1997/99	1969/71	1979/81	1989/91	1997/99
Libyan Arab Jamahiriya	2 459	3 452	3 252	3 291	148	197	193	197
Morocco	2 474	2 749	3 050	3 031	225	232	253	250
Saudi Arabia	1 898	2 842	2 912	2 957	132	155	166	173
Syrian Arab Republic	2 346	2 974	3 191	3 327	161	175	223	221
Tunisia	2 361	2 833	3 156	3 342	173	204	223	222
Turkey	3 038	3 302	3 547	3 487	210	225	229	222
Yemen	1 769	1 949	2 051	2 040	151	151	166	165
Near East, other	2 901	3 112	2 906	3 201	134	128	119	124
Latin America and the Caribbean	2 475	2 702	2 699	2 824	119	130	131	132
Argentina	3 271	3 207	2 962	3 166	138	132	144	144
Bolivia	1 999	2 133	2 162	2 223	98	104	113	109
Brazil	2 427	2 677	2 783	2 972	100	117	115	114
Chile	2 659	2 665	2 541	2 856	159	156	145	141
Colombia	1 948	2 294	2 410	2 578	76	84	92	102
Costa Rica	2 373	2 587	2 717	2 767	107	112	113	119
Cuba	2 661	2 884	3 027	2 453	123	131	124	100
Dominican Republic	2 022	2 273	2 273	2 322	59	86	83	86
Ecuador	2 160	2 359	2 492	2 702	82	91	108	112
El Salvador	1 848	2 296	2 446	2 492	117	141	153	152
Guatemala	2 082	2 291	2 418	2 230	142	152	156	142
Guyana	2 283	2 504	2 374	2 558	123	146	150	144
Haiti	1 947	2 042	1 778	1 926	91	91	87	100
Honduras	2 145	2 120	2 307	2 367	135	129	133	124
Jamaica	2 524	2 647	2 594	2 740	115	113	110	108
Mexico	2 697	3 136	3 101	3 148	173	183	187	188
Nicaragua	2 334	2 272	2 226	2 235	127	119	129	128
Panama	2 333	2 273	2 305	2 464	128	102	117	124
Paraguay	2 571	2 545	2 452	2 575	96	85	86	95
Peru	2 250	2 131	2 026	2 552	90	106	102	127
Suriname	2 240	2 397	2 487	2 611	141	141	157	142
Trinidad and Tobago	2 507	2 957	2 712	2 696	136	145	139	130
Uruguay	2 964	2 866	2 576	2 844	137	144	136	134
Venezuela	2 342	2 760	2 391	2 280	131	150	134	132
Latin America, other	2 448	2 683	2 735	2 766	100	110	109	109
South Asia	2 067	2 084	2 334	2 403	151	151	165	163
Bangladesh	2 122	1 975	2 065	2 123	173	167	177	181
India	2 041	2 083	2 367	2 434	147	150	164	160
Maldives	1 624	2 165	2 366	2 365	92	152	143	125
Nepal	1 848	1 892	2 443	2 292	165	163	208	190
Pakistan	2 240	2 194	2 352	2 477	161	147	153	159
Sri Lanka	2 289	2 348	2 217	2 351	141	139	141	142
East Asia	2 016	2 321	2 628	2 921	152	181	199	199
Cambodia	2 089	1 714	1 836	1 975	182	157	165	170
China	1 995	2 327	2 684	3 040	153	189	211	208
Indonesia	1 860	2 215	2 642	2 903	123	153	185	202
Korea, DPR	2 200	2 442	2 518	2 083	171	186	181	164
Korea, Republic	2 761	2 960	3 008	3 051	228	229	218	214
Lao PDR	2 079	2 074	2 106	2 149	209	200	198	203
Malaysia	2 530	2 723	2 721	2 925	160	151	125	142
Mongolia	2 225	2 379	2 204	2 004	140	154	136	125
Myanmar	2 040	2 327	2 620	2 788	163	191	217	216
Philippines	1 808	2 229	2 329	2 332	115	133	147	138

	Calories/day				All cereals, including milled rice (kg/p.a.)			
	1969/71	1979/81	1989/91	1997/99	1969/71	1979/81	1989/91	1997/99
Thailand	2 146	2 268	2 176	2 414	156	155	122	121
Viet Nam	2 130	2 128	2 218	2 503	175	158	166	186
East Asia, other	2 132	2 337	2 368	2 375	63	78	84	98
Industrial countries	3 043	3 135	3 293	3 380	132	139	154	159
Australia	3 239	3 059	3 212	3 141	129	116	114	109
Canada	2 893	2 899	3 004	3 145	123	115	118	143
European Union	3 168	3 275	3 396	3 431	133	133	132	132
Iceland	2 952	3 286	3 115	3 260	93	91	102	107
Israel	3 141	3 147	3 377	3 561	153	158	156	152
Japan	2 697	2 709	2 821	2 779	157	142	142	139
Malta	3 158	3 276	3 264	3 475	171	165	153	170
New Zealand	2 974	3 100	3 191	3 130	101	106	106	105
Norway	3 028	3 315	3 172	3 386	101	117	130	137
South Africa	2 760	2 822	2 864	2 837	185	192	193	191
Switzerland	3 440	3 457	3 308	3 279	130	125	132	131
United States	3 034	3 193	3 475	3 711	115	145	194	207
Transition countries	3 323	3 389	3 285	2 906	201	189	179	173
Albania	2 400	2 695	2 565	2 683	203	224	199	169
Armenia	n.a	n.a	n.a	2 158	n.a	n.a	n.a	159
Azerbaijan	n.a	n.a	n.a	2 133	n.a	n.a	n.a	182
Belarus	n.a	n.a	n.a	3 206	n.a	n.a	n.a	166
Bosnia and Herzegovina	n.a	n.a	n.a	2 934	n.a	n.a	n.a	301
Bulgaria	3 501	3 616	3 462	2 795	267	253	229	173
Croatia	n.a	n.a	n.a	2 539	n.a	n.a	n.a	121
Czech Republic	n.a	n.a	n.a	3 242	n.a	n.a	n.a	164
Estonia	n.a	n.a	n.a	3 075	n.a	n.a	n.a	200
Georgia	n.a	n.a	n.a	2 399	n.a	n.a	n.a	182
Hungary	3 318	3 448	3 670	3 414	185	172	178	143
Kazakhstan	n.a	n.a	n.a	2 610	n.a	n.a	n.a	194
Kyrgyzstan	n.a	n.a	n.a	2 734	n.a	n.a	n.a	217
Latvia	n.a	n.a	n.a	2 930	n.a	n.a	n.a	170
Lithuania	n.a	n.a	n.a	3 013	n.a	n.a	n.a	196
Macedonia, The Former Yugoslav Rep.	n.a	n.a	n.a	2 858	n.a	n.a	n.a	175
Moldova, Republic	n.a	n.a	n.a	2 719	n.a	n.a	n.a	252
Poland	3 426	3 528	3 379	3 343	201	190	166	170
Romania	2 973	3 205	3 016	3 258	203	188	185	220
Russian Federation	n.a	n.a	n.a	2 862	n.a	n.a	n.a	158
Slovakia	n.a	n.a	n.a	3 079	n.a	n.a	n.a	158
Slovenia	n.a	n.a	n.a	3 019	n.a	n.a	n.a	153
Tajikistan	n.a	n.a	n.a	1 975	n.a	n.a	n.a	169
Turkmenistan	n.a	n.a	n.a	2 660	n.a	n.a	n.a	212
Ukraine	n.a	n.a	n.a	2 829	n.a	n.a	n.a	165
Uzbekistan	n.a	n.a	n.a	2 912	n.a	n.a	n.a	232
Yugoslavia	n.a	n.a	n.a	2 910	n.a	n.a	n.a	129

TABLE A3 Cereal sector data (including rice in milled form)

	Production (‘000 tonnes)			Net trade (‘000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
World	1 441 855	1 732 115	1 888 558	3 017	3 878	9 107
All developing countries	649 212	868 214	1 025 962	-66 458	-89 120	-102 543
Sub-Saharan Africa	40 698	58 255	70 855	-7 974	-8 410	-13 670
Angola	367	297	536	-363	-318	-461
Benin	362	563	876	-68	-205	-164
Botswana	35	60	21	-122	-125	-194
Burkina Faso	1 152	1 961	2 442	-98	-177	-236
Burundi	216	283	258	-28	-29	-27
Cameroon	850	885	1 261	-199	-380	-405
Central African Republic	99	100	147	-18	-39	-45
Chad	495	645	1 124	-24	-48	-51
Congo	14	11	3	-74	-103	-225
Congo, Dem. Republic	821	1 343	1 540	-446	-371	-491
Côte d'Ivoire	716	1 021	1 480	-531	-584	-848
Eritrea	n.a	n.a	288	n.a	n.a	-237
Ethiopia	n.a	n.a	8 359	n.a	n.a	-487
Gabon	10	23	32	-49	-80	-112
Gambia	57	92	113	-47	-88	-150
Ghana	697	1 121	1 648	-209	-352	-314
Guinea	532	490	714	-138	-291	-283
Kenya	2 268	2 878	2 808	-137	-175	-1 028
Lesotho	198	170	184	-168	-212	-283
Liberia	169	128	129	-108	-134	-179
Madagascar	1 494	1 748	1 879	-209	-95	-151
Malawi	1 328	1 543	1 944	-39	-190	-277
Mali	1 026	1 995	2 316	-98	-76	-126
Mauritania	44	114	147	-150	-249	-543
Mauritius	1	2	0	-169	-208	-244
Mozambique	625	602	1 618	-360	-521	-455
Namibia	73	103	100	-55	-98	-152
Niger	1 692	2 095	2 473	-68	-117	-187
Nigeria	7 085	17 098	21 009	-2 073	-616	-2 064
Rwanda	270	286	196	-20	-30	-191
Senegal	818	939	762	-500	-632	-801
Sierra Leone	374	396	264	-106	-168	-308
Somalia	299	492	241	-258	-216	-158
Sudan	2 928	2 771	4 306	3	-676	-578
Swaziland	91	126	117	-74	-108	-68
Tanzania, United Rep.	2 927	3 907	3 728	-211	-69	-437
Togo	296	495	682	-60	-89	-201
Uganda	1 166	1 580	1 758	-36	-7	-145
Zambia	990	1 463	994	-342	-107	-245
Zimbabwe	2 273	2 391	2 180	139	458	190
Sub-Saharan Africa, other	104	152	183	-166	-244	-311
Near East/North Africa	57 921	76 871	83 494	-23 922	-39 088	-48 518
Afghanistan	3 922	2 645	3 511	-91	-239	-228
Algeria	1 957	2 481	1 812	-2 979	-5 854	-5 865
Egypt	7 343	11 641	16 723	-5 949	-7 916	-9 761
Iran, Islamic Rep.	8 391	12 285	15 502	-2 702	-6 272	-7 191
Iraq	1 749	2 469	2 025	-2 687	-3 324	-3 169

	Self-sufficiency ratio (%)			Domestic use ('000 tonnes)			Food	Feed
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	% of domestic use	
							1997/99	1997/99
	100	100	101	1 437 144	1 728 298	1 864 356	54	35
	91	91	91	711 956	951 675	1 128 746	70	20
	85	87	82	47 838	67 297	86 256	82	5
	52	49	51	707	608	1 044	90	2
	81	74	87	445	757	1 013	68	3
	23	28	9	153	211	240	90	2
	94	96	91	1 221	2 048	2 680	90	0
	89	91	89	244	312	292	91	0
	80	66	77	1 066	1 332	1 645	92	0
	87	65	77	113	155	192	91	0
	87	86	96	569	749	1 174	84	2
	17	8	1	84	132	216	98	0
	68	80	75	1 213	1 690	2 041	95	0
	58	65	66	1 245	1 577	2 245	82	3
	n.a	n.a	53	n.a	n.a	541	93	0
	n.a	n.a	94	n.a	n.a	8 872	91	1
	15	22	21	68	105	154	77	18
	59	50	45	97	184	253	79	3
	81	77	84	864	1 457	1 962	80	3
	82	63	72	653	780	997	81	0
	83	99	73	2 720	2 922	3 863	92	3
	59	43	38	337	395	490	86	5
	61	49	41	277	262	313	73	15
	88	95	92	1 704	1 843	2 037	79	5
	100	90	92	1 330	1 720	2 121	78	10
	90	98	94	1 144	2 032	2 459	84	0
	22	31	21	203	371	689	62	6
	1	1	0	162	201	239	77	22
	63	54	80	985	1 106	2 020	85	9
	57	53	36	128	195	281	81	9
	107	93	91	1 576	2 248	2 724	76	4
	77	97	91	9 154	17 716	23 073	72	8
	93	87	49	289	328	397	90	0
	61	60	48	1 336	1 561	1 606	88	1
	74	71	43	505	559	610	81	0
	52	70	56	571	708	432	88	0
	104	69	83	2 816	4 008	5 195	90	3
	57	59	58	160	212	202	69	15
	96	101	85	3 050	3 883	4 405	88	3
	85	83	79	350	597	860	76	2
	94	99	88	1 245	1 597	1 994	80	9
	77	99	58	1 286	1 483	1 723	93	2
	120	116	88	1 892	2 069	2 471	80	12
	39	38	37	270	401	497	81	7
	72	69	63	80 342	111 934	132 743	59	26
	98	92	94	4 013	2 883	3 739	80	5
	40	33	21	4 865	7 638	8 655	77	14
	55	60	69	13 330	19 286	24 305	68	21
	74	65	69	11 314	18 939	22 425	58	33
	42	40	40	4 206	6 238	5 061	71	18

	Production (‘000 tonnes)			Net trade (‘000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
Jordan	88	105	72	-494	-1 114	-1 684
Lebanon	41	80	92	-580	-607	-759
Libyan Arab Jamahiriya	225	284	232	-713	-2 127	-2 029
Morocco	3 575	7 453	4 853	-2 044	-1 637	-3 692
Saudi Arabia	303	4 214	2 331	-3 219	-3 919	-6 417
Syrian Arab Republic	3 069	2 601	4 292	-675	-1 700	-390
Tunisia	1 146	1 611	1 514	-890	-1 336	-1 851
Turkey	25 127	28 198	29 726	648	-515	-517
Yemen	897	693	726	-656	-1 405	-2 370
Near East, other	88	111	83	-891	-1 124	-2 595
Latin America and the Caribbean	86 648	96 664	125 499	-8 456	-11 631	-14 254
Argentina	24 323	19 775	35 597	14 371	9 758	22 297
Bolivia	632	804	1 083	-322	-241	-202
Brazil	27 964	34 601	41 279	-6 295	-4 424	-9 292
Chile	1 700	2 949	2 753	-1 144	-212	-1 432
Colombia	2 729	3 429	2 486	-662	-794	-3 365
Costa Rica	262	199	208	-123	-378	-688
Cuba	399	388	379	-2 146	-2 256	-1 456
Dominican Republic	320	379	396	-377	-703	-1 206
Ecuador	560	1 138	1 360	-333	-458	-697
El Salvador	700	764	796	-130	-281	-347
Guatemala	1 109	1 398	1 092	-216	-330	-725
Guyana	179	146	381	31	-1	219
Haiti	380	363	407	-193	-291	-492
Honduras	481	648	627	-111	-199	-397
Jamaica	6	3	3	-394	-389	-512
Mexico	20 208	23 412	28 390	-5 893	-6 735	-10 996
Nicaragua	349	415	515	-129	-154	-215
Panama	194	266	232	-95	-158	-364
Paraguay	456	789	1 222	-74	19	206
Peru	1 234	1 664	2 383	-1 468	-1 557	-2 706
Suriname	172	153	130	56	-1	29
Trinidad and Tobago	10	12	10	-251	-259	-209
Uruguay	916	1 077	1 733	181	523	973
Venezuela	1 338	1 862	1 988	-2 536	-1 888	-2 432
Latin America, other	28	32	50	-207	-224	-248
South Asia	147 495	203 035	239 380	-1 764	-3 221	-3 412
Bangladesh	14 281	19 047	22 332	-1 375	-1 801	-2 857
India	113 354	158 418	185 762	383	416	1 642
Maldives	0	0	0	-26	-36	-34
Nepal	2 853	4 557	5 187	-5	-11	-7
Pakistan	15 574	19 419	24 332	109	-808	-913
Sri Lanka	1 433	1 594	1 767	-850	-983	-1 243
East Asia	316 452	433 393	506 738	-24 344	-26 776	-22 696
Cambodia	918	1 751	2 487	-187	-15	-69
China	238 016	328 034	386 157	-16 783	-15 471	-2 657
Indonesia	23 758	36 319	42 608	-2 810	-2 130	-6 585
Korea, DPR	5 033	7 002	3 073	-280	-830	-1 374
Korea, Republic	6 194	5 847	5 132	-5 742	-9 904	-11 482
Lao PDR	715	984	1 304	-80	-15	-34

	Self-sufficiency ratio (%)			Domestic use ('000 tonnes)			Food	Feed
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	% of domestic use	
							1997/99	1997/99
	16	9	4	548	1 155	1 788	45	49
	7	12	10	634	671	943	49	39
	23	13	10	961	2 170	2 375	42	40
	60	90	55	5 958	8 293	8 879	81	5
	11	68	23	2 793	6 173	10 044	33	64
	93	54	77	3 312	4 845	5 608	61	25
	58	56	45	1 978	2 885	3 366	61	30
	104	104	99	24 100	27 218	30 177	48	22
	64	33	24	1 412	2 130	3 035	92	5
	10	8	4	921	1 412	2 346	27	47
	93	86	88	93 645	112 365	141 977	46	42
	223	176	243	10 892	11 220	14 624	36	44
	70	76	83	908	1 057	1 312	66	22
	84	86	81	33 487	40 197	51 059	37	53
	61	90	66	2 812	3 272	4 149	50	44
	83	80	42	3 299	4 270	5 914	70	28
	66	36	23	398	556	910	50	45
	16	15	21	2 545	2 643	1 845	60	34
	47	34	26	685	1 107	1 497	47	49
	65	72	66	868	1 588	2 057	66	22
	84	75	69	834	1 016	1 155	79	16
	82	85	57	1 357	1 647	1 902	80	16
	126	98	248	142	150	154	71	23
	68	55	45	560	662	906	88	6
	82	79	61	587	826	1 037	73	18
	2	1	1	413	411	470	58	38
	81	75	72	24 839	31 064	39 416	46	40
	80	70	71	436	593	730	84	5
	71	67	39	272	398	595	57	37
	93	98	109	490	803	1 126	44	36
	45	51	47	2 721	3 255	5 028	62	32
	144	102	115	120	149	112	52	25
	4	4	5	264	277	210	79	30
	130	156	204	703	692	849	52	34
	35	44	43	3 786	4 259	4 625	66	23
	12	12	17	229	257	300	58	29
	98	100	102	150 728	203 503	233 800	89	1
	91	90	87	15 670	21 115	25 661	93	0
	98	102	106	116 147	156 091	175 526	89	1
	0	0	0	25	34	36	96	0
	102	100	101	2 798	4 557	5 159	81	5
	112	102	99	13 931	19 131	24 501	87	5
	66	62	61	2 158	2 577	2 917	90	3
	93	95	95	339 409	456 583	534 020	68	22
	78	95	100	1 174	1 848	2 482	85	2
	93	97	98	255 143	339 323	394 727	66	24
	92	95	88	25 785	38 449	48 577	86	4
	92	92	69	5 459	7 603	4 479	80	4
	53	38	30	11 693	15 402	17 136	57	44
	97	103	108	740	954	1 204	85	6

	Production (‘000 tonnes)			Net trade (‘000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
Malaysia	1 378	1 270	1 408	-1 529	-2 833	-4 325
Mongolia	320	719	202	-133	-48	-138
Myanmar	8 778	9 562	11 846	650	200	111
Philippines	8 362	11 129	11 274	-926	-2 191	-4 171
Thailand	14 666	17 165	19 974	5 193	5 870	5 564
Viet Nam	8 286	13 588	21 251	-1 328	1 162	3 240
East Asia, other	31	27	25	-390	-571	-777
Industrial countries	550 609	581 479	652 495	110 787	129 505	110 746
Australia	20 921	21 110	32 479	14 612	14 973	22 676
Canada	42 727	52 915	5 444	20 063	22 883	20 730
European Union	160 790	191 289	207 627	-8 391	29 643	23 741
Iceland	0	0	0	-50	-62	-79
Israel	239	331	166	-1 686	-2 167	-3 101
Japan	9 883	9 721	8 605	-24 465	-28 105	-28 149
Malta	8	8	11	-120	-147	-194
New Zealand	789	783	908	5	-150	-210
Norway	1 130	1 410	1 333	-780	-491	-591
South Africa	14 188	12 733	11 117	3 308	1 386	-110
Switzerland	843	1 331	1 181	-1 407	-814	-653
United States	299 095	289 850	337 625	109 702	92 559	76 688
Transition countries	242 070	282 483	210 207	-41 309	-36 501	904
Albania	912	790	583	-23	-172	-328
Armenia	n.a.	n.a.	291	n.a.	n.a.	-400
Azerbaijan	n.a.	n.a.	1 018	n.a.	n.a.	-663
Belarus	n.a.	n.a.	4 609	n.a.	n.a.	-1 202
Bosnia and Herzegovina	n.a.	n.a.	1 281	n.a.	n.a.	-579
Bulgaria	8 105	8 863	5 540	-375	-491	446
Croatia	n.a.	n.a.	3 091	n.a.	n.a.	-38
Czech Republic	n.a.	n.a.	6 869	n.a.	n.a.	212
Estonia	n.a.	n.a.	543	n.a.	n.a.	-179
Georgia	n.a.	n.a.	750	n.a.	n.a.	-380
Hungary	12 989	14 594	12 858	769	1 296	3 344
Kazakhstan	n.a.	n.a.	10 919	n.a.	n.a.	3 653
Kyrgyzstan	n.a.	n.a.	1 609	n.a.	n.a.	-127
Latvia	n.a.	n.a.	928	n.a.	n.a.	-85
Lithuania	n.a.	n.a.	2 570	n.a.	n.a.	98
Macedonia, The Former Yugoslav Rep.	n.a.	n.a.	662	n.a.	n.a.	-320
Moldova, Republic	n.a.	n.a.	2 670	n.a.	n.a.	161
Poland	18 466	27 594	26 103	-7 340	-1 473	-1 194
Romania	18 093	18 268	18 196	-910	-884	599
Russian Federation	n.a.	n.a.	62 407	n.a.	n.a.	-3 588
Slovakia	n.a.	n.a.	3 373	n.a.	n.a.	395
Slovenia	n.a.	n.a.	523	n.a.	n.a.	-551
Tajikistan	n.a.	n.a.	479	n.a.	n.a.	-443
Turkmenistan	n.a.	n.a.	1 193	n.a.	n.a.	-159
Ukraine	n.a.	n.a.	27 991	n.a.	n.a.	3 965
Uzbekistan	n.a.	n.a.	3 942	n.a.	n.a.	-2 039
Yugoslavia	n.a.	n.a.	9 212	n.a.	n.a.	306

	Self-sufficiency ratio (%)			Domestic use ('000 tonnes)			Food	Feed
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	% of domestic use	
							1997/99	1997/99
	48	32	25	2 893	3 988	5 726	53	43
	70	99	56	456	730	359	86	1
	117	94	101	7 520	10 186	11 755	85	6
	90	86	75	9 267	13 006	15 041	67	28
	155	144	142	9 475	11 891	14 054	53	37
	88	108	120	9 392	12 634	17 701	80	8
	7	5	3	414	571	780	91	2
	129	127	124	428 028	459 763	524 961	27	63
	340	287	335	6 161	7 365	9 701	21	59
	184	218	164	23 202	24 321	31 447	14	77
	95	123	115	168 642	155 831	180 333	27	62
	0	0	0	50	62	79	37	47
	12	13	6	1 935	2 470	2 854	31	57
	28	25	24	35 215	38 310	36 646	48	46
	6	5	5	133	158	205	32	58
	103	85	92	765	916	992	39	53
	59	81	70	1 920	1 747	1 903	32	64
	150	110	88	9 465	11 601	12 583	64	31
	37	62	62	2 255	2 150	1 897	50	46
	168	135	137	178 287	214 834	246 321	23	66
	81	89	100	297 258	316 972	210 729	34	50
	96	81	61	951	980	954	55	26
	n.a.	n.a.	40	n.a.	n.a.	734	82	9
	n.a.	n.a.	61	n.a.	n.a.	1 681	86	7
	n.a.	n.a.	79	n.a.	n.a.	5 802	29	55
	n.a.	n.a.	69	n.a.	n.a.	1 860	60	16
	99	96	111	8 169	9 230	4 988	28	56
	n.a.	n.a.	100	n.a.	n.a.	3 086	18	74
	n.a.	n.a.	103	n.a.	n.a.	6 655	25	63
	n.a.	n.a.	70	n.a.	n.a.	775	37	51
	n.a.	n.a.	66	n.a.	n.a.	1 130	86	7
	107	114	136	12 134	12 804	9 475	15	73
	n.a.	n.a.	167	n.a.	n.a.	6 527	49	15
	n.a.	n.a.	93	n.a.	n.a.	1 736	60	28
	n.a.	n.a.	92	n.a.	n.a.	1 013	41	44
	n.a.	n.a.	97	n.a.	n.a.	2 662	27	51
	n.a.	n.a.	67	n.a.	n.a.	993	35	26
	n.a.	n.a.	106	n.a.	n.a.	2 511	43	45
	72	98	93	25 612	28 196	28 058	23	63
	94	103	102	19 338	17 736	17 765	28	64
	n.a.	n.a.	94	n.a.	n.a.	66 515	35	44
	n.a.	n.a.	112	n.a.	n.a.	3 024	28	60
	n.a.	n.a.	49	n.a.	n.a.	1 064	29	59
	n.a.	n.a.	44	n.a.	n.a.	1 084	93	3
	n.a.	n.a.	87	n.a.	n.a.	1 369	70	24
	n.a.	n.a.	116	n.a.	n.a.	24 242	34	51
	n.a.	n.a.	64	n.a.	n.a.	6 125	91	4
	n.a.	n.a.	103	n.a.	n.a.	8 907	15	67

TABLE A4.1 Wheat: area, yield and production (countries with more than 10 000 ha in 1997/99)

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
World	234 836	227 060	226 426	1 863	2 462	2 637	437 442	558 997	596 973
All developing countries	96 032	102 379	111 027	1 633	2 284	2 524	156 803	233 798	280 235
Sub-Saharan Africa	1 030	1 278	1 557	1 304	1 591	1 619	1 343	2 033	2 521
Burundi	9	11	11	674	764	782	6	9	9
Eritrea	n.a.	n.a.	19	n.a.	n.a.	822	n.a.	n.a.	16
Ethiopia	n.a.	n.a.	903	n.a.	n.a.	1 250	n.a.	n.a.	1 129
Kenya	106	120	130	2 011	1 746	1 794	212	210	234
Lesotho	28	40	22	936	584	1 183	26	23	26
Togo	10	53	41	2 400	1 063	2 134	24	57	88
Sudan	205	295	249	998	1 515	1 888	205	447	470
Tanzania, United Rep.	57	49	70	1 605	1 738	1 526	91	85	108
Zambia	3	12	11	3 473	4 477	6 608	9	56	75
Zimbabwe	37	51	56	4 785	5 717	5 389	179	290	300
Near East/North Africa	25 353	26 786	27 217	1 346	1 703	1 830	34 122	45 628	49 795
Afghanistan	2 065	1 623	2 112	1 240	1 063	1 270	2 561	1 725	2 681
Algeria	1 943	1 463	1 592	654	859	847	1 270	1 257	1 347
Egypt	577	799	1 021	3 193	4 980	5 973	1 844	3 978	6 096
Iran, Islamic Rep.	5 858	6 364	5 739	997	1 195	1 782	5 843	7 605	10 224
Iraq	1 215	1 200	1 521	703	879	674	854	1 055	1 026
Jordan	110	54	36	606	1 224	808	67	66	29
Lebanon	26	26	28	1 260	2 117	2 102	32	56	58
Libyan Arab Jamahiriya	251	146	160	497	1 013	1 020	125	148	163
Morocco	1 673	2 663	2 757	897	1 562	1 070	1 500	4 160	2 950
Saudi Arabia	71	816	423	2 254	4 523	4 390	160	3 689	1 858
Syrian Arab Republic	1 383	1 283	1 695	1 358	1 359	1 934	1 878	1 743	3 278
Tunisia	887	830	896	944	1 337	1 349	837	1 109	1 210
Turkey	9 208	9 419	9 130	1 853	2 005	2 050	17 058	18 887	18 717
Yemen	77	93	100	1 066	1 497	1 441	82	139	145
Latin America and the Caribbean	10 080	10 115	8 885	1 495	2 076	2 529	15 073	21 001	22 469
Argentina	5 245	5 210	5 650	1 537	1 976	2 508	8 060	10 292	14 167
Bolivia	98	92	169	661	793	886	65	73	149
Brazil	2 958	2 671	1 395	883	1 443	1 720	2 613	3 855	2 399
Chile	513	530	380	1 721	3 191	3 996	882	1 691	1 519
Colombia	36	50	20	1 397	1 851	2 113	50	93	42
Ecuador	33	38	28	1 042	709	696	35	27	20
Mexico	723	1 020	727	3 813	4 040	4 571	2 755	4 122	3 321
Paraguay	59	196	172	1 368	1 633	1 240	80	320	214
Peru	98	100	123	1 012	1 113	1 194	99	112	147
Uruguay	281	190	215	1 341	2 018	2 237	377	383	480
South Asia	30 030	32 937	36 339	1 550	2 103	2 459	46 558	69 277	89 370
Bangladesh	430	584	798	1 869	1 665	2 190	803	972	1 748
India	22 364	23 926	26 660	1 545	2 217	2 582	34 550	53 031	68 825
Nepal	372	599	649	1 195	1 404	1 637	444	840	1 063
Pakistan	6 865	7 829	8 231	1 568	1 844	2 155	10 760	14 433	17 734
East Asia	29 539	31 263	37 030	2 021	3 066	3 135	59 707	95 860	116 081
China	28 930	30 515	36 569	2 046	3 113	3 162	59 196	94 998	115 632
Korea, DPR	85	87	69	1 286	1 462	2 182	109	127	151

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
Mongolia	414	531	296	617	1 144	673	255	607	199
Myanmar	90	129	93	923	974	986	83	126	92
Industrial countries	70 721	67 600	64 553	2 377	2 928	3 345	168 121	197 963	215 947
Australia	11 440	8 468	11 441	1 265	1 568	1 914	14 468	13 279	21 901
Canada	11 386	13 992	10 819	1 794	2 116	2 319	20 430	29 613	25 087
European Union	16 744	17 485	17 223	3 790	5 137	5 728	63 468	89 810	98 655
Israel	96	89	59	2 095	2 519	1 493	201	224	89
Japan	188	261	163	3 032	3 442	3 533	571	898	575
New Zealand	85	37	50	3 643	4 579	6 302	309	168	313
Norway	15	46	60	4 230	4 383	4 755	63	203	287
South Africa	1 781	1 614	949	1 107	1 210	2 086	1 972	1 954	1 981
Switzerland	88	99	96	4 655	6 113	5 938	409	604	572
United States	28 898	25 508	23 691	2 292	2 399	2 806	66 229	61 204	66 477
Transition countries	68 083	57 082	50 848	1 653	2 229	1 982	112 518	127 236	100 792
Albania	196	185	129	2 514	2 741	2 734	492	508	352
Armenia	n.a.	n.a.	113	n.a.	n.a.	1 869	n.a.	n.a.	211
Azerbaijan	n.a.	n.a.	488	n.a.	n.a.	1 755	n.a.	n.a.	857
Belarus	n.a.	n.a.	359	n.a.	n.a.	2 085	n.a.	n.a.	748
Bosnia and Herzegovina	n.a.	n.a.	95	n.a.	n.a.	3 124	n.a.	n.a.	295
Bulgaria	986	1 167	1 107	3 937	4 346	2 836	3 881	5 071	3 138
Croatia	n.a.	n.a.	207	n.a.	n.a.	3 894	n.a.	n.a.	804
Czech Republic	n.a.	n.a.	868	n.a.	n.a.	4 420	n.a.	n.a.	3 838
Estonia	n.a.	n.a.	61	n.a.	n.a.	1 728	n.a.	n.a.	106
Georgia	n.a.	n.a.	139	n.a.	n.a.	1 584	n.a.	n.a.	221
Hungary	1 187	1 207	1 055	4 043	5 177	4 044	4 800	6 249	4 265
Kazakhstan	n.a.	n.a.	9 508	n.a.	n.a.	875	n.a.	n.a.	8 314
Kyrgyzstan	n.a.	n.a.	494	n.a.	n.a.	2 420	n.a.	n.a.	1 196
Latvia	n.a.	n.a.	150	n.a.	n.a.	2 520	n.a.	n.a.	377
Lithuania	n.a.	n.a.	356	n.a.	n.a.	2 834	n.a.	n.a.	1 010
Macedonia, The Former Yugoslav Rep.	n.a.	n.a.	115	n.a.	n.a.	2 928	n.a.	n.a.	336
Moldova, Republic	n.a.	n.a.	370	n.a.	n.a.	2 759	n.a.	n.a.	1 020
Poland	1 525	2 305	2 590	2 746	3 870	3 447	4 189	8 919	8 927
Romania	2 154	2 242	2 022	2 494	3 063	2 802	5 371	6 868	5 665
Russian Federation	n.a.	n.a.	21 211	n.a.	n.a.	1 607	n.a.	n.a.	34 088
Slovakia	n.a.	n.a.	380	n.a.	n.a.	4 286	n.a.	n.a.	1 627
Slovenia	n.a.	n.a.	33	n.a.	n.a.	4 250	n.a.	n.a.	142
Tajikistan	n.a.	n.a.	340	n.a.	n.a.	1 155	n.a.	n.a.	393
Turkmenistan	n.a.	n.a.	490	n.a.	n.a.	2 351	n.a.	n.a.	1 153
Ukraine	n.a.	n.a.	6 027	n.a.	n.a.	2 595	n.a.	n.a.	15 642
Uzbekistan	n.a.	n.a.	1 404	n.a.	n.a.	2 442	n.a.	n.a.	3 428
Yugoslavia	n.a.	n.a.	739	n.a.	n.a.	3 573	n.a.	n.a.	2 641

TABLE A4.2 Rice: area, yield and production (countries with more than 10 000 ha in 1997/99)

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
World	143 662	147 403	161 398	2 742	3 513	3 640	393 930	517 894	587 408
All developing countries	138 818	143 062	157 190	2 656	3 445	3 575	368 692	492 848	561 877
Sub-Saharan Africa	4 537	5 879	7 164	1 347	1 659	1 629	6 112	9 750	11 667
Angola	12	4	22	919	833	871	11	3	19
Benin	8	7	16	1 172	1 371	2 075	10	10	34
Burkina Faso	39	21	50	1 141	2 090	1 853	44	43	92
Burundi	4	12	17	2 367	3 249	3 186	10	40	55
Cameroon	21	14	21	2 273	4 888	3 249	48	69	69
Central African Republic	14	7	13	996	1 517	1 449	14	10	19
Chad	43	41	85	895	2 349	1 425	39	97	121
Congo, Dem. Republic	293	479	481	806	805	740	236	385	356
Côte d'Ivoire	383	581	767	1 171	1 138	1 584	448	661	1 215
Gambia	22	14	16	1 676	1 501	1 523	37	21	24
Ghana	107	70	126	838	1 451	1 588	89	102	200
Guinea	486	377	494	900	1 136	1 505	438	428	743
Kenya	8	13	18	4 654	3 456	2 742	39	45	50
Liberia	203	179	151	1 252	1 069	1 277	254	191	193
Madagascar	1 182	1 150	1 202	1 738	2 070	2 119	2 055	2 381	2 547
Malawi	37	29	42	1 074	1 740	1 788	39	51	76
Mali	165	230	337	1 026	1 556	2 093	169	358	706
Mauritania	3	15	22	3 681	3 375	4 233	12	50	94
Mozambique	92	109	172	811	758	1 080	74	83	186
Niger	20	22	30	1 535	3 367	1 890	31	75	57
Nigeria	517	1 504	2 051	1 988	2 001	1 596	1 027	3 010	3 273
Senegal	74	75	72	1 300	2 312	2 486	96	173	179
Sierra Leone	403	390	271	1 250	1 305	1 212	504	508	329
Tanzania, United Rep.	262	380	469	959	1 830	1 450	251	694	679
Togo	18	22	46	800	1 437	1 826	15	31	85
Uganda	12	39	64	1 343	1 379	1 380	16	53	88
Zambia	5	12	13	497	993	893	2	12	11
Sub-Saharan Africa, other	82	72	83	817	1 868	1 797	67	134	150
Near East/North Africa	1 170	1 285	1 554	4 005	4 648	5 633	4 686	5 974	8 751
Afghanistan	190	173	167	2 179	1 907	2 540	415	329	423
Egypt	416	437	607	5 708	7 086	8 661	2 377	3 098	5 257
Iran, Islamic Rep.	434	542	588	3 211	3 809	4 231	1 394	2 064	2 490
Iraq	56	79	126	2 887	2 731	1 910	162	217	241
Turkey	67	51	58	4 722	4 976	5 314	314	253	310
Latin America and the Caribbean	7 983	6 685	5 951	1 945	2 633	3 466	15 525	17 597	20 629
Argentina	89	103	243	3 244	4 112	5 356	288	422	1 300
Bolivia	60	111	132	1 506	2 098	1 879	91	232	248
Brazil	5 932	4 441	3 320	1 438	2 097	2 796	8 533	9 313	9 284
Chile	40	35	22	3 154	4 161	3 862	125	146	84
Colombia	428	491	409	4 277	4 047	4 713	1 831	1 986	1 929
Costa Rica	73	53	67	3 058	3 591	4 068	224	192	273
Cuba	146	158	127	3 105	3 030	2 800	455	479	356
Dominican Republic	111	95	111	3 534	4 783	4 674	392	456	519

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
Ecuador	123	277	336	3 074	3 077	3 377	378	852	1 135
El Salvador	15	15	12	3 725	4 039	5 370	56	62	65
Guatemala	14	15	14	2 772	2 979	2 256	37	46	30
Guyana	91	65	139	2 924	3 303	4 077	266	215	567
Haiti	51	59	57	2 322	2 106	2 111	119	125	120
Honduras	20	19	11	1 736	2 613	2 778	35	48	30
Mexico	151	114	99	3 636	3 714	4 442	550	423	441
Nicaragua	37	42	71	3 545	2 737	3 359	130	115	239
Panama	96	94	79	1 834	2 257	2 588	175	211	203
Paraguay	26	33	28	1 836	2 606	3 744	47	87	105
Peru	132	186	273	4 462	5 161	6 061	587	957	1 655
Suriname	65	61	55	3 977	3 771	3 504	258	229	194
Uruguay	63	92	181	4 566	4 983	6 047	289	459	1 092
Venezuela	214	120	158	2 985	4 378	4 700	638	525	742
South Asia	54 477	57 195	59 314	1 910	2 602	2 917	104 021	148 833	173 044
Bangladesh	10 310	10 386	10 362	1 952	2 598	2 969	20 125	26 980	30 762
India	40 091	42 501	44 225	1 860	2 619	2 915	74 557	111 290	128 921
Nepal	1 275	1 433	1 511	1 852	2 352	2 438	2 361	3 372	3 683
Pakistan	1 981	2 106	2 419	2 465	2 309	2 928	4 884	4 862	7 081
Sri Lanka	819	770	797	2 557	3 028	3 258	2 093	2 330	2 596
East Asia	70 652	72 019	83 209	3 374	4 314	4 180	238 348	310 693	347 787
Cambodia	1 154	1 763	1 990	1 081	1 432	1 838	1 248	2 524	3 657
China	34 323	33 238	40 042	4 241	5 614	5 026	145 561	186 597	201 249
Indonesia	9 064	10 438	11 607	3 263	4 298	4 292	29 570	44 864	49 814
Korea, DPR	660	629	590	4 420	5 927	3 490	2 917	3 730	2 059
Korea, Republic	1 230	1 237	1 056	5 512	6 231	6 746	6 780	7 705	7 121
Lao PDR	722	606	645	1 419	2 276	2 810	1 025	1 379	1 812
Malaysia	722	676	686	2 844	2 739	2 964	2 053	1 852	2 034
Myanmar	4 684	4 689	5 556	2 698	2 913	3 043	12 637	13 661	16 909
Philippines	3 513	3 414	3 694	2 205	2 833	2 852	7 747	9 672	10 536
Thailand	8 986	9 241	9 964	1 888	2 099	2 331	16 967	19 398	23 226
Viet Nam	5 579	6 075	7 370	2 117	3 174	3 983	11 809	19 281	29 354
Industrial countries	4 141	3 649	3 732	5 469	6 238	6 517	22 650	22 760	24 321
Australia	111	97	141	6 210	8 649	8 794	688	839	1 243
European Union	300	359	410	5 570	5 919	6 514	1 671	2 124	2 671
Japan	2 384	2 073	1 847	5 587	6 119	6 352	13 320	12 688	11 733
United States	1 345	1 118	1 332	5 179	6 354	6 511	6 968	7 106	8 670
Transition countries	703	692	477	3 683	3 306	2 542	2 588	2 287	1 211
Kazakhstan	n.a.	n.a.	76	n.a.	n.a.	3 040	n.a.	n.a.	230
Russian Federation	n.a.	n.a.	146	n.a.	n.a.	2 702	n.a.	n.a.	395
Tajikistan	n.a.	n.a.	15	n.a.	n.a.	2 655	n.a.	n.a.	41
Turkmenistan	n.a.	n.a.	27	n.a.	n.a.	901	n.a.	n.a.	25
Ukraine	n.a.	n.a.	22	n.a.	n.a.	2 939	n.a.	n.a.	64
Uzbekistan	n.a.	n.a.	169	n.a.	n.a.	2 276	n.a.	n.a.	385

TABLE A4.3 Maize: area, yield and production (countries with more than 10 000 ha in 1997/99)

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
World	125 731	132 343	144 365	3 347	3 663	4 168	420 814	484 769	601 667
All developing countries	75 617	86 028	96 606	1 964	2 402	2 775	148 484	206 615	268 110
Sub-Saharan Africa	12 195	19 610	20 775	1 137	1 193	1 253	13 862	23 393	26 023
Angola	600	756	659	506	301	659	303	228	434
Benin	407	467	594	709	903	1 162	289	422	690
Botswana	42	43	19	278	355	306	12	15	6
Burkina Faso	123	195	254	876	1 420	1 435	108	277	365
Burundi	127	124	115	1 109	1 369	1 175	141	170	135
Cameroon	495	219	366	844	1 905	2 005	418	417	733
Central African Republic	108	69	90	373	856	984	40	59	89
Chad	32	33	122	842	982	1 025	27	32	125
Congo, Dem. Republic	745	1 225	1 463	811	814	816	604	997	1 194
Côte d'Ivoire	514	683	700	684	730	819	352	499	573
Eritrea	n.a	n.a	28	n.a	n.a	664	n.a	n.a	19
Ethiopia	n.a	n.a	1 606	n.a	n.a	1 696	n.a	n.a	2 724
Gabon	6	14	18	1 674	1 583	1 722	10	22	31
Gambia	6	13	10	1 344	1 232	1 382	9	16	14
Ghana	390	547	683	974	1 339	1 487	380	733	1 015
Guinea	87	73	86	1 000	1 010	1 028	87	74	88
Kenya	1 273	1 447	1 502	1 346	1 673	1 530	1 714	2 420	2 298
Lesotho	116	126	134	968	948	959	112	119	128
Madagascar	124	153	192	982	1 004	889	122	154	170
Malawi	1 077	1 336	1 342	1 184	1 109	1 361	1 275	1 481	1 826
Mali	52	177	231	1 173	1 280	1 684	61	226	389
Mauritania	8	4	13	573	648	782	5	2	10
Mozambique	674	1 007	1 185	569	368	960	383	370	1 137
Namibia	25	27	31	1 253	1 281	867	31	35	27
Nigeria	443	4 612	4 016	1 371	1 199	1 316	607	5 529	5 286
Rwanda	73	90	73	1 160	1 117	899	84	100	66
Senegal	75	100	61	885	1 223	931	66	122	57
Somalia	151	213	200	794	1 116	702	120	238	140
Sudan	67	80	69	585	492	632	39	39	44
Swaziland	66	90	63	1 292	1 358	1 842	85	122	116
Tanzania, United Rep.	1 350	1 820	1 786	1 305	1 448	1 323	1 762	2 635	2 362
Togo	147	273	409	1 020	982	1 056	150	268	432
Uganda	263	417	607	1 368	1 433	1 202	360	598	730
Zambia	523	808	553	1 799	1 665	1 481	941	1 345	818
Zimbabwe	1 097	1 143	1 437	1 667	1 626	1 190	1 829	1 859	1 710
Sub-Saharan Africa, other	31	49	44	721	586	559	23	28	25
Near East/North Africa	2 349	2 230	2 218	2 392	3 719	4 658	5 619	8 295	10 332
Afghanistan	447	264	187	1 649	1 713	1 554	738	453	290
Egypt	800	847	795	3 949	5 687	7 671	3 159	4 817	6 095
Iran, Islamic Rep.	35	32	158	1 500	3 905	6 345	52	126	1 004
Iraq	22	75	60	2 431	2 289	2 022	53	171	122
Morocco	396	389	327	618	1 006	725	245	391	237
Syrian Arab Republic	21	59	65	2 080	2 909	3 794	43	171	248
Turkey	583	512	582	2 168	4 087	3 885	1 263	2 093	2 260
Yemen	37	47	38	1 642	1 273	1 420	61	60	54

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
Latin America and the Caribbean	25 185	25 819	26 779	1 839	1 994	2 790	46 326	51 473	74 711
Argentina	2 895	1 715	3 067	3 224	3 496	5 260	9 333	5 995	16 132
Bolivia	295	270	283	1 430	1 629	2 023	422	439	572
Brazil	11 430	12 459	11 585	1 686	1 915	2 721	19 265	23 854	31 529
Chile	124	109	94	3 796	7 983	8 728	471	866	816
Colombia	620	806	528	1 401	1 460	1 709	868	1 177	902
Costa Rica	43	40	15	1 779	1 700	1 787	77	68	26
Cuba	77	74	92	1 239	909	1 529	95	67	141
Dominican Republic	32	28	27	1 276	1 617	1 195	41	45	32
Ecuador	230	452	456	1 075	1 082	1 198	247	490	546
El Salvador	281	288	288	1 840	1 961	1 974	517	565	569
Guatemala	627	635	611	1 511	1 971	1 659	947	1 251	1 013
Haiti	207	228	283	868	802	808	179	183	229
Honduras	339	383	409	1 201	1 424	1 270	407	545	520
Mexico	6 675	6 919	7 479	1 739	1 920	2 426	11 607	13 280	18 142
Nicaragua	179	215	245	1 022	1 230	1 163	183	265	285
Panama	62	75	53	953	1 327	1 485	59	99	78
Paraguay	216	206	365	1 553	1 921	2 506	335	396	916
Peru	341	384	440	1 665	1 999	2 136	569	767	940
Uruguay	124	62	60	1 016	1 657	3 360	126	102	203
Venezuela	372	451	373	1 471	2 180	2 863	547	983	1 069
Latin America, other	13	17	20	1 730	1 668	2 116	23	29	42
South Asia	7 101	7 532	8 012	1 144	1 504	1 685	8 124	11 330	13 499
India	5 887	5 893	6 301	1 102	1 509	1 718	6 486	8 893	10 822
Nepal	455	754	798	1 516	1 607	1 683	690	1 212	1 343
Pakistan	736	852	882	1 257	1 396	1 475	925	1 189	1 301
Sri Lanka	21	29	28	1 018	1 121	1 078	21	33	30
East Asia	28 787	30 836	38 822	2 590	36 363	3 698	74 553	112 125	143 547
Cambodia	87	48	44	981	1 403	1 094	85	67	48
China	19 986	21 188	29 869	3 038	4 337	4 086	60 720	91 891	122 044
Indonesia	2 761	3 004	3 549	1 461	2 129	2 644	4 035	6 394	9 382
Korea, DPR	690	674	576	3 865	5 932	2 324	2 667	4 000	1 338
Korea, Republic	34	24	21	4 441	4 341	4 013	150	105	82
Lao PDR	29	38	42	1 062	1 725	2 272	31	65	95
Malaysia	7	20	27	1 143	1 763	1 938	8	35	52
Myanmar	128	124	170	1 295	1 538	1 762	166	191	299
Philippines	3 267	3 699	2 594	972	1 264	1 637	3 174	4 677	4 247
Thailand	1 412	1 551	1 263	2 198	2 559	3 389	3 103	3 969	4 280
Viet Nam	383	463	667	1 071	1 570	2 508	410	727	1 672
Industrial countries	39 408	36 280	38 307	5 898	6 600	7 731	232 426	239 452	296 143
Australia	54	51	63	3 067	4 125	5 362	164	210	336
Canada	1 039	1 057	1 101	5 685	6 642	7 656	5 904	7 017	8 431
European Union	3 987	3 942	4 277	5 575	6 950	8 859	22 229	27 395	37 892
New Zealand	20	17	19	8 280	9 400	10 045	163	161	189
South Africa	4 539	4 124	3 717	2 525	2 447	2 312	11 462	10 092	8 592
Switzerland	17	28	21	7 230	8 602	9 334	121	239	196
United States	29 749	27 054	29 103	6 466	7 180	8 261	192 366	194 239	240 433

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
Transition countries	10 707	10 037	9 453	3 727	3 856	3 958	39 904	38 703	37 416
Albania	100	57	58	3 175	3 892	3 415	318	221	197
Azerbaijan	n.a	n.a	15	n.a	n.a	3 197	n.a	n.a	49
Bosnia and Herzegovina	n.a	n.a	218	n.a	n.a	3 919	n.a	n.a	855
Bulgaria	605	516	465	4 344	4 046	3 354	2 627	2 087	1 561
Croatia	n.a	n.a	378	n.a	n.a	5 560	n.a	n.a	2 100
Czech Republic	n.a	n.a	38	n.a	n.a	6 573	n.a	n.a	249
Georgia	n.a	n.a	210	n.a	n.a	2 309	n.a	n.a	486
Hungary	1 270	1 114	1 065	5 528	5 757	6 295	7 022	6 414	6 707
Kazakhstan	n.a	n.a	63	n.a	n.a	2 515	n.a	n.a	159
Kyrgyzstan	n.a	n.a	47	n.a	n.a	4 997	n.a	n.a	236
Macedonia, The Former Yugoslav Rep.	n.a	n.a	39	n.a	n.a	4 225	n.a	n.a	166
Moldova, Republic	n.a	n.a	420	n.a	n.a	3 344	n.a	n.a	1 403
Poland	26	60	89	3 886	4 849	5 674	102	291	504
Romania	3 226	2 592	3 060	3 168	3 096	3 512	10 218	8 023	10 748
Russian Federation	n.a	n.a	630	n.a	n.a	2 416	n.a	n.a	1 521
Slovakia	n.a	n.a	128	n.a	n.a	5 831	n.a	n.a	745
Slovenia	n.a	n.a	46	n.a	n.a	7 250	n.a	n.a	332
Tajikistan	n.a	n.a	10	n.a	n.a	3 361	n.a	n.a	34
Turkmenistan	n.a	n.a	14	n.a	n.a	495	n.a	n.a	7
Ukraine	n.a	n.a	1 078	n.a	n.a	2 900	n.a	n.a	3 126
Uzbekistan	n.a	n.a	48	n.a	n.a	2 726	n.a	n.a	130
Yugoslavia	n.a	n.a	1 328	n.a	n.a	4 582	n.a	n.a	6 084

TABLE A4.4 Barley: area, yield and production (countries with more than 10 000 ha in 1997/99)

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
World	81 221	74 534	58 554	1 893	2 288	2 390	153 759	170 552	139 920
All developing countries	16 684	19 476	16 911	1 289	1 316	1 420	21 504	25 633	24 014
Sub-Saharan Africa	918	901	1 019	1 214	1 149	1 062	1 114	1 035	1 082
Eritrea	n.a.	n.a.	38	n.a.	n.a.	1 046	n.a.	n.a.	39
Ethiopia	n.a.	n.a.	948	n.a.	n.a.	1 022	n.a.	n.a.	969
Kenya	49	24	22	1 302	1 405	2 581	64	33	58
Near East/North Africa	10 942	14 782	11 619	1 111	1 146	1 312	12 155	16 940	15 242
Afghanistan	296	207	193	1 057	1 071	1 217	313	221	235
Algeria	875	1 234	558	677	928	778	592	1 144	434
Egypt	41	56	58	2 689	2 393	2 224	111	134	129
Iran, Islamic Rep.	1 727	2 558	1 576	902	1 238	1 649	1 558	3 166	2 599
Iraq	858	1 382	1 202	846	793	593	726	1 095	712
Jordan	48	46	58	434	748	532	21	34	31
Lebanon	6	11	13	1 000	1 706	2 110	6	19	28
Libyan Arab Jamahiriya	284	270	125	342	495	486	97	134	61
Morocco	2 190	2 390	2 164	782	1 170	735	1 712	2 796	1 589
Saudi Arabia	7	56	49	1 178	6 616	5 173	8	371	252
Syrian Arab Republic	1 220	2 618	1 510	926	259	503	1 129	678	759
Tunisia	457	491	346	609	949	852	279	466	294
Turkey	2 846	3 365	3 673	1 926	1 942	2 178	5 480	6 533	8 000
Yemen	50	49	45	995	968	1 075	49	48	48
Near East, other	38	51	49	1 950	1 985	1 427	74	100	69
Latin America and the Caribbean	935	960	1 009	1 360	1 722	1 870	1 272	1 653	1 887
Argentina	178	182	238	1 289	2 323	2 620	229	422	623
Bolivia	80	83	88	653	660	605	53	55	53
Brazil	84	105	140	1 120	1 637	2 082	94	172	291
Chile	51	28	25	1 998	3 433	3 699	103	95	93
Ecuador	29	56	46	840	850	764	24	48	35
Mexico	280	270	242	1 722	1 860	1 860	483	502	449
Peru	127	103	140	903	1 018	1 128	115	105	158
Uruguay	48	81	82	1 474	1 944	2 046	71	158	168
South Asia	2 046	1 216	992	1 073	1 467	1 745	2 196	1 784	1 732
India	1 802	1 011	798	1 121	1 595	1 924	2 020	1 613	1 537
Nepal	26	30	34	875	928	1 051	23	27	36
Pakistan	199	157	151	709	842	1 021	141	132	154
East Asia	1 752	1 533	2 268	2 698	2 700	1 794	4 726	4 138	4 069
China	1 295	1 317	2 131	2 420	2 582	1 723	3 133	3 400	3 671
Korea, DPR	72	60	58	2 163	2 472	1 942	155	148	112
Korea, Republic	386	155	77	3 728	3 802	3 710	1 438	589	284
Industrial countries	26 940	24 365	21 542	2 990	3 449	3 661	80 556	84 030	78 863
Australia	2 540	2 470	3 092	1 291	1 711	1 888	3 279	4 227	5 837
Canada	4 631	4 491	4 347	2 418	2 735	3 024	11 199	12 281	13 144
European Union	16 022	13 576	11 371	3 471	4 137	4 487	55 615	56 167	51 023

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
Japan	120	105	55	3 261	3 180	3 300	392	333	181
New Zealand	71	86	63	3 612	4 418	5 597	255	381	352
Norway	186	178	176	3 424	3 774	3 735	636	672	657
South Africa	81	114	115	1 258	2 114	1 411	102	241	163
Switzerland	48	58	49	4 589	6 046	6 222	220	352	303
United States	3 214	3 272	2 266	2 750	2 863	3 179	8 838	9 367	7 202
Transition countries	37 598	30 693	20 101	1 375	1 984	1 843	51 699	60 889	37 042
Armenia	n.a.	n.a.	62	n.a.	n.a.	1 051	n.a.	n.a.	65
Azerbaijan	n.a.	n.a.	81	n.a.	n.a.	1 261	n.a.	n.a.	102
Belarus	n.a.	n.a.	845	n.a.	n.a.	2 037	n.a.	n.a.	1 721
Bosnia and Herzegovina	n.a.	n.a.	23	n.a.	n.a.	2 626	n.a.	n.a.	59
Bulgaria	425	368	279	3 386	4 043	2 606	1 439	1 487	726
Croatia	n.a.	n.a.	40	n.a.	n.a.	3 115	n.a.	n.a.	126
Czech Republic	n.a.	n.a.	589	n.a.	n.a.	3 800	n.a.	n.a.	2 238
Estonia	n.a.	n.a.	162	n.a.	n.a.	1 585	n.a.	n.a.	257
Georgia	n.a.	n.a.	32	n.a.	n.a.	1 205	n.a.	n.a.	39
Hungary	265	312	358	3 203	4 554	3 428	848	1 421	1 226
Kazakhstan	n.a.	n.a.	2 080	n.a.	n.a.	952	n.a.	n.a.	1 980
Kyrgyzstan	n.a.	n.a.	82	n.a.	n.a.	1 998	n.a.	n.a.	164
Latvia	n.a.	n.a.	172	n.a.	n.a.	1 774	n.a.	n.a.	305
Lithuania	n.a.	n.a.	462	n.a.	n.a.	2 191	n.a.	n.a.	1 013
Macedonia, The Former Yugoslav Rep.	n.a.	n.a.	52	n.a.	n.a.	2 494	n.a.	n.a.	129
Moldova, Republic	n.a.	n.a.	115	n.a.	n.a.	1 993	n.a.	n.a.	229
Poland	1 362	1 195	1 162	2 616	3 453	3 120	3 563	4 128	3 626
Romania	833	845	518	2 786	3 577	2 670	2 321	3 022	1 382
Russian Federation	n.a.	n.a.	8 778	n.a.	n.a.	1 564	n.a.	n.a.	13 729
Slovakia	n.a.	n.a.	247	n.a.	n.a.	3 382	n.a.	n.a.	835
Slovenia	n.a.	n.a.	11	n.a.	n.a.	3 533	n.a.	n.a.	38
Tajikistan	n.a.	n.a.	27	n.a.	n.a.	899	n.a.	n.a.	24
Turkmenistan	n.a.	n.a.	68	n.a.	n.a.	252	n.a.	n.a.	17
Ukraine	n.a.	n.a.	3 580	n.a.	n.a.	1 834	n.a.	n.a.	6 567
Uzbekistan	n.a.	n.a.	146	n.a.	n.a.	711	n.a.	n.a.	104
Yugoslavia	n.a.	n.a.	128	n.a.	n.a.	2 626	n.a.	n.a.	337

TABLE A4.5 Millet: area, yield and production (countries with more than 10 000 ha in 1997/99)

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
World	37 684	37 362	37 885	673	755	737	25 367	28 216	27 917
All developing countries	34 765	34 279	36 518	678	733	724	23 580	25 116	26 427
Sub-Saharan Africa	11 586	15 727	19 870	655	673	660	7 589	10 588	13 120
Angola	80	120	177	613	536	475	49	64	84
Benin	13	38	39	503	624	741	7	24	29
Burkina Faso	803	1 169	1 216	486	555	715	390	649	870
Cameroon	130	60	70	753	1 061	1 014	98	64	71
Central African Republic	16	10	12	681	933	1 000	11	9	12
Chad	360	527	740	505	363	429	182	191	318
Congo, Dem. Republic	36	52	73	668	641	633	24	34	46
Côte d'Ivoire	64	77	94	580	613	657	37	47	62
Eritrea	n.a.	n.a.	69	n.a.	n.a.	482	n.a.	n.a.	33
Ethiopia	n.a.	n.a.	343	n.a.	n.a.	910	n.a.	n.a.	312
Gambia	17	53	74	1 031	974	934	18	52	69
Ghana	182	192	175	641	636	904	117	122	158
Guinea	35	19	12	1 410	1 102	826	49	21	10
Kenya	80	110	90	1 048	590	622	84	65	56
Malawi	11	18	38	588	554	497	7	10	19
Mali	643	1 124	993	716	732	786	461	823	780
Mauritania	12	16	20	255	407	260	3	7	5
Mozambique	20	20	96	250	250	550	5	5	53
Namibia	140	152	267	245	359	237	34	55	63
Niger	3 011	4 187	5 082	435	393	393	1 311	1 644	1 999
Nigeria	2 366	4 468	5 562	1 043	1 046	1 068	2 467	4 672	5 939
Senegal	932	899	825	595	644	550	555	579	453
Sierra Leone	9	26	17	1 393	888	843	13	23	14
Sudan	1 098	1 113	2 657	350	166	227	384	185	604
Tanzania, United Rep.	450	245	251	800	954	992	360	233	249
Togo	121	134	91	364	510	471	44	68	43
Uganda	297	379	391	1 592	1 534	1 493	473	582	583
Zambia	34	51	90	637	557	711	22	28	64
Zimbabwe	353	271	252	432	501	289	153	136	73
Sub-Saharan Africa, other	18	20	35	698	1 020	914	12	21	32
Near East/North Africa	190	186	173	989	600	802	188	112	139
Afghanistan	39	30	27	862	865	815	33	26	22
Iran, Islamic Rep.	8	7	13	1 123	1 846	1 103	9	12	14
Yemen	81	122	103	1 140	365	640	92	45	66
Latin America and the Caribbean	203	55	37	1 211	1 408	1 215	245	78	45
Argentina	203	55	37	1 211	1 400	1 214	245	77	45
South Asia	18 561	15 832	13 190	518	647	785	9 619	10 237	10 360
Bangladesh	61	91	80	648	709	706	40	64	57
India	17 845	15 096	12 429	515	646	790	9 189	9 758	9 817
Nepal	122	197	262	989	1 161	1 101	121	228	289
Pakistan	509	438	412	500	410	469	255	180	193

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
East Asia	4 225	2 479	3 248	1 406	1 655	851	5 939	4 102	2 763
China	3 981	2 253	2 995	1 455	1 739	862	5 790	3 918	2 582
Korea, DPR	62	50	15	1 065	1 200	909	66	60	13
Myanmar	179	174	236	447	695	701	80	121	166
Industrial countries	134	172	210	1 170	1 288	1 469	156	221	309
Australia	26	31	30	998	877	1 034	26	27	31
South Africa	22	22	21	682	682	581	15	15	12
United States	81	118	159	1 314	1 501	1 665	107	177	265
Transition countries	2 786	2 912	1 156	585	989	1 022	1 631	2 879	1 182
Kazakstan	n.a.	n.a.	86	n.a.	n.a.	495	n.a.	n.a.	42
Russian Federation	n.a.	n.a.	826	n.a.	n.a.	1 048	n.a.	n.a.	866
Ukraine	n.a.	n.a.	231	n.a.	n.a.	1 091	n.a.	n.a.	252

TABLE A4.6 Sorghum: area, yield and production (countries with more than 10 000 ha in 1997/99)

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
World	44 742	43 097	43 859	1 462	1 326	1 394	65 403	57 157	61 135
All developing countries	38 400	38 110	39 590	1 141	1 050	1 107	43 819	40 001	43 831
Sub-Saharan Africa	13 037	17 859	22 267	858	729	817	11 187	13 013	18 198
Benin	90	140	163	649	762	819	59	107	134
Botswana	98	148	73	209	280	177	21	41	13
Burkina Faso	1 051	1 337	1 398	590	743	810	620	993	1 132
Burundi	53	58	53	1 000	1 117	1 230	53	65	65
Cameroon	374	465	381	806	769	1 078	301	357	411
Central African Republic	57	25	34	674	1 027	1 008	39	25	34
Chad	414	458	717	507	584	659	210	268	472
Congo, Dem. Republic	36	76	79	900	633	658	32	48	52
Côte d'Ivoire	40	45	55	606	580	348	24	26	19
Eritrea	n.a.	n.a.	185	n.a.	n.a.	908	n.a.	n.a.	168
Ethiopia	n.a.	n.a.	1 155	n.a.	n.a.	1 288	n.a.	n.a.	1 488
Gambia	6	12	15	793	881	923	5	10	14
Ghana	223	255	319	628	775	1 069	140	197	341
Kenya	168	127	137	951	908	915	160	116	125
Lesotho	58	32	32	1 020	815	888	59	26	28
Malawi	30	31	81	667	590	583	20	18	47
Mali	434	763	657	827	888	988	359	677	649
Mauritania	102	121	156	279	590	440	28	71	69
Mozambique	288	422	464	630	397	651	182	167	302
Namibia	29	34	21	214	262	248	6	9	5
Niger	822	2 011	2 074	422	193	205	347	389	424
Nigeria	2 683	4 892	6 634	1 224	980	1 122	3 284	4 794	7 444
Rwanda	159	142	118	1 123	1 162	990	178	165	117
Senegal	130	135	196	1 014	897	657	131	121	128
Sierra Leone	7	34	25	1 571	634	766	11	22	19
Somalia	478	450	310	350	540	316	167	243	98
Sudan	3 067	3 887	5 425	748	540	587	2 293	2 099	3 184
Tanzania, United Rep.	713	489	590	762	992	933	543	485	551
Togo	122	190	205	714	716	699	87	136	143
Uganda	175	239	277	1 784	1 495	1 356	312	357	376
Zambia	31	44	39	535	562	698	16	25	27
Zimbabwe	140	136	163	611	588	535	85	80	88
Sub-Saharan Africa, other	28	13	27	639	915	925	18	11	25
Near East/North Africa	1 142	776	793	1 239	1 543	1 908	1 414	1 197	1 514
Egypt	172	133	159	3 739	4 745	5 492	644	631	870
Morocco	45	27	28	436	552	628	20	15	18
Saudi Arabia	281	128	173	437	1 092	1 182	123	139	204
Yemen	622	470	423	987	854	978	614	402	414
Latin America and the Caribbean	4 379	3 466	3 740	2 806	2 673	3 006	12 285	9 262	11 242
Argentina	1 834	682	732	3 055	2 836	4 318	5 602	1 934	3 161
Bolivia	5	15	49	4 089	3 954	2 372	21	58	115
Brazil	81	158	323	2 128	1 544	1 763	172	243	569
Colombia	220	256	76	2 223	2 877	3 150	488	737	240

	Harvested area ('000 ha)			Yield (kg/ha)			Production ('000 tonnes)		
	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99	1979/81	1989/91	1997/99
El Salvador	126	124	113	1 153	1 271	1 625	145	158	184
Guatemala	39	59	41	2 033	1 406	1 171	80	83	48
Haiti	158	120	130	762	809	760	121	97	98
Honduras	61	73	80	809	976	1 080	49	71	86
Mexico	1 464	1 607	1 915	3 362	3 172	3 174	4 921	5 096	6 077
Nicaragua	51	48	45	1 560	1 545	1 568	80	74	71
Paraguay	7	11	16	1 274	1 277	1 470	9	14	23
Uruguay	56	31	32	2 016	2 468	3 420	112	77	109
Venezuela	227	248	174	1 605	2 136	2 433	365	529	424
South Asia	16 766	14 266	10 838	693	781	830	11 616	11 136	9 000
India	16 361	13 852	10 461	696	786	839	11 380	10 893	8 773
Pakistan	403	413	377	582	586	601	235	242	227
East Asia	3 078	1 742	1 952	2 377	3 095	1 986	7 316	5 393	3 877
China	2 828	1 544	1 838	2 488	3 326	2 013	7 034	5 135	3 700
Thailand	220	186	105	1 074	1 285	1 573	237	239	165
Industrial countries	6 197	4 827	4 210	3 451	3 511	4 091	21 383	16 945	17 225
Australia	549	461	546	1 976	2 126	2 684	1 084	980	1 466
European Union	129	114	104	4 576	4 949	5 900	589	563	614
South Africa	244	197	130	2 239	1 956	2 598	547	385	339
United States	5 273	4 055	3 430	3 633	3 703	4 317	19 157	15 017	14 806
Transition countries	145	161	59	1 383	1 316	1 347	201	212	79
Albania	25	21	16	1 200	1 124	934	30	24	15
Russian Federation	n.a.	n.a.	17	n.a.	n.a.	1 033	n.a.	n.a.	17