

A.2. FAOSTAT AND FAODOC APPENDIX

A.2.1. FAOSTAT AGRICULTURE DATA

A.2.2. FAOSTAT DATABASE: PRODUCTION AND EXPLANATORY NOTES

A.2.3. FAOSTAT DATABASE: FAO INDICES OF AGRICULTURAL PRODUCTION NOTES

A.2.4. FAOSTAT DATABASE: COMMODITY BALANCES NOTES

A.2.5. FAOSTAT: FOOD SUPPLY NOTES

A.2.6. FAOSTAT: LAND USE NOTES

A.2.7. FAOSTAT DATABASE EXAMPLES RESULTS. ETHIOPIA FOOD CONSUMPTION 1990

A.2.8. FAOSTAT DATABASE EXAMPLES RESULTS. TOWARDS KENYA BaUo.

A.2.9. FAODOC. TABLES FROM REFERENCES [B.2.2.], [B.2.7.] AND [B.2.9.]

A.2. FAOSTAT AND FAODOC APPENDIX

A.2.1. FAOSTAT AGRICULTURE DATA

For information on the source of FAO statistical data please click here - [Data Source](#)

Select a data collection on which to query the FAOSTAT database:-

Please Note: The FAOSTAT Database is unavailable from 22:30 Sunday to 05:30 Monday Central European Time

Domain	Data Collections					Last Updated
Agricultural Production	Crops Primary	Crops Processed	Live Animals	Livestock Primary	Livestock Processed	22 April 99
Agricultural Production Indices	Agricultural Production Indices					22 April 99
Agriculture & Food Trade	Crops & Livestock Primary & Processed		Live Animals			29 March 99
Trade Indices	Crops & Livestock Primary & Processed					12 April 99
Commodity Balances	Crops Primary Equivalent			Livestock and Fish Primary Equivalent		21 June 99
Food Supply	Crops Primary Equivalent			Livestock and Fish Primary Equivalent		21 June 99
Food Balance Sheets	Food Balance Sheets					21 June 99
Producer Prices	Crops Primary		Livestock Primary			18 April 97
Land	Land Use			Irrigation		17 May 99
Means of Production	Agricultural Machinery		Fertilizers	Pesticides Trade		17 May 99
Exports of Cereals by Source and Destination	Exports of Cereals by Source and Destination					28 January 99
Population	Annual Time Series	Long-term Series (quinquennial) Total/Rural/Urban population		Long-term Series (decennial) Agricultural population & Economically active population		24 August 98

A.2.2. FAOSTAT DATABASE: PRODUCTION AND EXPLANATORY NOTES

PRODUCTION NOTES

The compilation of this database has been made possible by the cooperation of governments, which have supplied most of the information in the form of replies to annual FAO questionnaires. FAO has continued to collaborate with various agencies in order to achieve conformity in the presentation of international figures. The assistance of governments and agencies is gratefully acknowledged.

SYMBOLS USED IN THE TABLES

*	Unofficial figure
F	FAO estimate
0M	Data not available
AV	Average
HA	Hectare
KG	Kilogram
KG/AN	Kilogram per animal
KG/HA	Kilogram per hectare
HG	Hectograms (100 grams)
HG/AN	Hectogram per animal
HG/HA	Hectogram per hectare
LB	Pound (avoirdupois)
MT	Metric ton
NES	Not elsewhere specified or included
ECU	European currency unit
GR	Gram

A blank space has the same meaning as the symbol (0M) defined above.

For crop yields, livestock carcass weights and all continental totals, no F or * symbol is used as these are derived data.

To divide decimals from whole numbers, a full stop (.) is used.

EXPLANATORY NOTES

Time reference

The time reference for statistics on area and production of crops is based on the calendar year. That is to say, the data for any particular crop are reported under the calendar year in which the entire harvest or the bulk of it took place. This does not necessarily mean that for a given commodity the production data are aggregated month by month from January to December, although this is true for certain crops such as tea, sisal, palm kernels, palm oil, rubber, coconuts and, in certain countries, sugar cane and bananas, which are harvested almost uniformly throughout the year. The harvest of other crops, however, is generally limited to a few months and even, in certain cases, to a few weeks. Production of these crops is reported by the various countries in different ways: by calendar year, agricultural year, marketing year, etc. Whatever the statistical period used by the countries for presentation of area and production data, these data are allocated commodity by commodity to the calendar year in which the entire harvest or the bulk of it took place. Obviously, a crop that is harvested at the end of the calendar year will be utilized mostly during the year following the calendar year under which the production figures are reported.

It should be noted that the adoption of a calendar-year time reference period inevitably means that, in a number of cases, crops assigned by countries to a particular split year may appear under two different calendar years.

Crop areas

Figures for crop areas generally refer to harvested areas, although for permanent crops data may refer to total planted area.

Yields per hectare

All yields per hectare, for single countries as well as for continental and world totals, are given in hectogrammes. In all cases, they are computed from detailed area and production data expressed in hectares and metric tons. Data on yields of permanent crops are not as reliable as those for temporary crops either because most of the area information may correspond to planted area, as for grapes, or because of the scarcity and unreliability of the area figures reported by the countries, as for example for cocoa and coffee.

Notes on the tables and Country notes

As a general rule, data relate to the country specified with its present de facto boundaries. Country names and continental groupings follow, in general, the nomenclature used by the Statistical Division of the United Nations.

Crops

Cereals

Area and production data on cereals relate to crops harvested for dry grain only. Cereal crops harvested for hay or harvested green for food, feed or silage or used for grazing are therefore excluded. Area data relate to harvested area. Some countries report sown or cultivated area only; however, in these countries the sown or cultivated area does not differ significantly in normal years from the area actually harvested, either because practically the whole area sown is harvested or because the area surveys are conducted around the harvest period.

CEREALS, TOTAL

This category also includes other cereals such as mixed grains and buckwheat.

WHEAT

Available data for spelt are included with those for wheat, except for the 15 republics of the former USSR.

MILLET AND SORGHUM

Millet and sorghum are grown chiefly as feed for livestock and poultry in Europe and North America, but are used to a large extent as food in Asia, Africa and the countries of the former USSR. Wherever possible, statistics are given separately for millet and sorghum, but some countries, especially in Africa, make no distinction between the two grains in their reports; in such cases, combined figures are given in the table on millet.

Etc.

A.2.3. FAOSTAT DATABASE: FAO INDICES OF AGRICULTURAL PRODUCTION

FAO indices of agricultural production

The FAO indices of agricultural production show the relative level of the aggregate volume of agricultural production for each year in comparison with the base period 1989-91. They are based on the sum of price-weighted quantities of different agricultural commodities produced after deductions of quantities used as seed and feed weighted in a similar manner. The resulting aggregate represents, therefore, disposable production for any use except as seed and feed.

All the indices at the country, regional and world levels are calculated by the Laspeyres formula. Production quantities of each commodity are weighted by 1989-91 average international commodity prices and summed for each year. To obtain the index, the aggregate for a given year is divided by the average aggregate for the base period 1989-91.

Since the FAO indices are based on the concept of agriculture as a single enterprise, amounts of seed and feed are subtracted from the production data to avoid double counting them, once in the production data and once with the crops or livestock produced from them. Deductions for seed (in the case of eggs, for hatching) and for livestock and poultry feed apply to both domestically produced and imported commodities. They cover primary agricultural products used as such (e.g. maize, potatoes, etc.).

It should be noted that when calculating indices of agricultural, food and nonfood production, all intermediate primary inputs of agricultural origin are deducted. However, for indices of any other commodity group, only inputs originating from within the same group are deducted; thus, only seed is removed from the group "crops" and from all crop subgroups, such as cereals, oil crops, etc.; and both feed and seed originating from within the livestock sector (e.g. milk feed, hatching eggs) are removed from the group "livestock products". For the main two livestock subgroups, namely, meat and milk, only feed originating from the respective subgroup is removed.

The "international commodity prices" are used in order to avoid the use of exchange rates for obtaining continental and world aggregates, and also to improve and facilitate international comparative analysis of productivity at the national level. These "international prices", expressed in so-called "international dollars", are derived using a Geary-Khamis formula for the agricultural sector. This method assigns a single "price" to each commodity. For example, one metric ton of wheat has the same price regardless of the country where it was produced. The currency unit in which the prices are expressed has no influence on the indices published.

The commodities covered in the computation of indices of agricultural production are all crops and livestock products originating in each country. Practically all products are covered, with the main exception of fodder crops. The category of food production includes commodities that are considered edible and that contain nutrients. Accordingly, coffee and tea are excluded along with inedible commodities because, although edible, they have practically no nutritive value. Indices for meat production are computed based on data for production from indigenous animals, which takes account of the meat equivalent of exported live animals but excludes the meat equivalent of imported live animals. For index purposes, annual changes in livestock and poultry numbers or in their average live weight are not taken into account.

The indices are calculated from production data presented on a calendaryear basis. Starting with the 1995 issue of the yearbook, the indices now presented are based on a new methodology compared with the approach adopted in the past. The principal differences are: the base period has been shifted from 1979-81 to 1989-91; the producer prices consequently also now refer to 1989-91; a single set of commodity prices based on the Geary-Khamis formula is now used for all countries and country groups; the Geary-Khamis formula is modified in line with the net concept used for the production indices; and processed and semi-processed feed items such as bran, oilcakes, meals and molasses have been completely excluded from the calculations at all stages.

The FAO indices may differ from those produced by the countries themselves because of differences in concepts of production, coverage, weights, time reference of data and methods of calculation.

A.2.4. FAOSTAT DATABASE: COMMODITY BALANCES NOTES

Commodity Balances Notes

Commodity balances show balances of food and agricultural commodities in a standardized form (**see the note on food balance sheet which explains *standardization***). The scope of standardization is to present these data in a less detailed form for a selected number of commodities without causing any significant loss of the basic variables monitoring the agricultural sector. The selected commodities include the equivalents of their derived products falling in the same commodity group, but exclude the equivalents of by-products and derived commodities, which through processing, change their nature and become part of different commodity groups.

A number of commodity/item aggregates have been included to offer synthetic information. Some of these are included with the aim of simplifying the extraction of all component commodities.

Data shown in the item aggregates represent the sum of the component commodities as presented in this domain (standardized form).

Commodity coverage

The commodity list in this domain has been generally confined to primary commodities - except for sugar, oils and fats and beverages. Whenever possible trade in processed commodities is expressed in the originating primary commodity equivalent. Rice is expressed in milled equivalent.

Elements

Production. Figures relate to the total domestic production whether inside or outside the agricultural sector, i.e. it includes non-commercial production and production from kitchen gardens. Unless otherwise indicated, production is reported at the farm level for crop and livestock products (i.e. in the case of crops, excluding harvesting losses) and in terms of live weight for fish items (i.e. the actual ex-water weight at the time of the catch). As a general rule, all data on meat are expressed in terms of carcass weight.

Imports. Cover all movements into the country of the commodity in question. It includes commercial trade, food aid granted on specific terms, donated quantities and estimates of unrecorded trade. As a general rule, figures are reported in terms of net weight, i.e. excluding the weight of the container.

Stock changes. Comprise changes in stocks occurring during the reference period at all levels between the production and the retail levels, i.e. it comprises changes in government stocks, in stocks with manufacturers, importers, exporters, other wholesale and retail merchants, transport and storage enterprises and in stocks on farms. In actual fact, however, the information available often relates only to stocks held by governments and even these are not available for a number of countries and important commodities. For this reason food balance sheets are usually prepared as an average of several years since this is believed to reduce the degree of inaccuracy contributed by the absence of information on stocks. In the absence of information on opening and closing stocks changes in stocks are also used for shifting production from the calendar year in which it is harvested to the year in which it is consumed. A negative sign (-) against stocks denotes decrease in supply while no sign denotes increase in supply.

Exports. Cover all movements out of the country of the commodity in question during the reference period. Remarks made above under Imports apply by analogy.

Domestic supply. There are various ways of defining supply and, in fact, various concepts are in use. The elements involved are production, imports, exports and changes in stocks (increases or decreases). There is no doubt that production, imports and decreases in stocks are genuine supply elements. Exports and increases in stocks might, however, be considered as utilization elements. Accordingly, the following are possible ways of defining supply:

Production + imports + decrease in stocks = total supply

Production + imports + changes in stocks = supply available for export and
(decrease or increase) domestic utilization

Production + imports - exports + changes in = supply for domestic utilization. This
stocks (decrease or increase) concept is being used

Feed comprises the amounts of the commodity in question and of edible commodities derived therefrom not shown separately in the balances fed to livestock during the reference period, whether domestically produced or imported.

Seed comprises all amounts of the commodity in question used during the reference period for reproductive purposes, such as seed, sugar cane planted, eggs for hatching and fish for bait, whether domestically produced or imported. Whenever official data were not available, seed figures have been estimated either as a percentage of supply (e.g. eggs for hatching) or by multiplying a seed rate with the area under the crop in the subsequent year. In those cases where part of the crop is harvested green (e.g. cereals for direct feed or silage, green peas, green beans), account has been taken of the area under the crop harvested green.

Processing. The amounts of the commodity in question used during the reference period for manufacture of processed commodities which could not be converted back to their originating primary commodities or which are part of a separate food groups (e.g., sugar, fats and oils, alcoholic beverages) are shown here. The processed products do not always appear in the same food group. While oilseeds are shown under Oilcrops, the respective oil is shown under the group Vegetable oils; similarly, butter is under Animal fats and not under Milk.

Waste comprises the amounts of the commodity in question and of commodities derived therefrom not further pursued in the balances, lost through waste at all stages between the level at which production is recorded and the household, i.e. waste in processing, storage and transportation. Losses occurring before and during harvest are excluded. Waste from both edible and inedible parts of the commodity occurring in the household is also excluded. Technical losses occurring during the transformation of primary commodities into processed products are taken into account in the assessment of respective extraction/conversion rates.

Other uses comprise quantities of commodities used for manufacture for non-food purposes, e.g. oil for soap, and statistical discrepancies. In order not to distort the picture of the national food pattern, quantities of the commodities in question, consumed mainly by tourists, are included here (see also Per caput supply).

Food. This comprises the amounts of the commodity in question and of any commodity derived therefrom not further pursued in the food balance sheet, available for human consumption during the reference period. Food from maize, for example, comprises the amount of maize, maize meal and any other products derived therefrom available for human consumption. Food from milk relates to the amounts of milk as such, as well as the fresh milk equivalent of dairy products, except butter.

See Also *Food Supply Notes*

A.2.5. FAOSTAT: FOOD SUPPLY NOTES

Commodity coverage

The commodity list in this domain has been generally confined to primary commodities - except for sugar, oils and fats and beverages. Whenever possible trade in processed commodities is expressed in the originating primary commodity equivalent. Rice is expressed in milled equivalent.

Supply and utilization elements

Production. Figures relate to the total domestic production whether inside or outside the agricultural sector, i.e. it includes non-commercial production and production from kitchen gardens. Unless otherwise indicated, production is reported at the farm level for crop and livestock products (i.e. in the case of crops, excluding harvesting losses) and in terms of live weight for fish items (i.e. the actual ex-water weight at the time of the catch). As a general rule, all data on meat are expressed in terms of carcass weight.

Waste comprises the amounts of the commodity in question and of commodities derived therefrom not further pursued in the balances, lost through waste at all stages between the level at which production is recorded and the household, i.e. waste in processing, storage and transportation. Losses occurring before and during harvest are excluded. Waste from both edible and inedible parts of the commodity occurring in the household is also excluded. Technical losses occurring during the transformation of primary commodities into processed products are taken into account in the assessment of respective extraction/conversion rates.

Other uses comprise quantities of commodities used for manufacture for non-food purposes, e.g. oil for soap, and statistical discrepancies. In order not to distort the picture of the national food pattern, quantities of the commodities in question, consumed mainly by tourists, are included here (see also Per caput supply).

Food. This comprises the amounts of the commodity in question and of any commodity derived therefrom not further pursued in the food balance sheet, available for human consumption during the reference period. Food from maize, for example, comprises the amount of maize, maize meal and any other products derived therefrom available for human consumption. Food from milk relates to

the amounts of milk as such, as well as the fresh milk equivalent of dairy products, except butter.

Per caput supply

The columns under this heading give estimates of per caput food supplies available for human consumption during the reference period in terms of quantity and, by applying appropriate food composition factors for all primary and processed products, also in terms of caloric value and protein and fat content. Calorie supplies are reported in kilocalories. The traditional unit of calories is being retained for the time being until the proposed kilojoule gains wider acceptance and understanding (1 calorie = 4.19 kilojoules). Per caput supplies in terms of product weight are derived from the total supplies available for human consumption (i.e. Food) by dividing the quantities of Food by the total population actually partaking of the food supplies during the reference period, i.e. the present in-area (de facto) population within the present geographical boundaries of the country. In other words, nationals living abroad during the reference period are excluded, but foreigners living in the country are included. Adjustments are made wherever possible for part-time presence or absence, such as temporary migrants, tourists and refugees supported by special schemes (if it has not been possible to allow for the amounts provided by such schemes under imports). In almost all cases, the population figures used are the mid-year estimates published by the United Nations Population Division.

Per caput supply figures shown in the commodity balances therefore represent only the average supply available for the population as a whole and do not necessarily indicate what is actually consumed by individuals. Even if they are taken as approximation to per caput consumption, it is important to bear in mind that there could be considerable variation in consumption between individuals. In many cases commodities are not consumed in the primary form in which they are presented in the commodity balance, e.g. cereals enter the household mainly in processed form like flour, meal, husked or milled rice. To take this fact into account, the caloric value and the protein and fat content shown against primary commodities in the commodity balances have been derived by applying the appropriate food composition factors to the quantities of the processed commodities and not by multiplying the quantities shown in the commodity balance with the food composition factors relating to primary commodities.

A.2.6. FAOSTAT: LAND USE NOTES

LAND USE	Land Use Country Notes
IRRIGATION	Specific Country Notes
	General Country Notes

Land use (land cover)

It should be borne in mind that definitions used by reporting countries vary considerably and items classified under the same category often relate to greatly differing kinds of land.

Definitions of land use (land cover) categories are as follows:

11 Total Area 1000ha:

the total area of the country, including area under inland water bodies. Data in this category are obtained mainly from the United Nations Statistical Division, New York. Possible variations in the data may be due to updating and revisions of the country data and not necessarily to any change of area.

31 Land Area 1000ha:

total area excluding area under inland water bodies. The definition of inland water bodies generally includes major rivers and lakes. Data in this category are obtained mainly from the United Nations Statistical Division, New York. Possible variations in the data may be due to updating and revisions of the country data and not necessarily to any change of area.

51 Agricultural Area 1000ha:

up to 1994, this element shows total of data under Elements 061 (Arable land and Permanent crops) and 131 (Permanent pastures).

61 Arable and Permanent Crops 1000ha:

Arable land and land under permanent crops shows the total of data in Elements 071 (Arable land) and 121 (Permanent crops).

71 Arable Land 1000ha:

land under temporary crops (double-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than five years). The abandoned land resulting from shifting cultivation is not included in this category. Data for "Arable land" are not meant to indicate the amount of land that is potentially cultivable.

121 Permanent Crops 1000ha:

land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest, such as cocoa, coffee and rubber; this category includes land under flowering shrubs, fruit trees, nut trees and vines, but excludes land under trees grown for wood or timber.

131 Permanent Pasture 1000ha:

land used permanently (five years or more) for herbaceous forage crops, either cultivated or growing wild (wild prairie or grazing land). The dividing line between this category and the category "Forests and woodland"; is rather indefinite, especially in the case of shrubs, savannah, etc., which may have been reported under either of these two categories. In the year 1995 and onward there will be no data for this element.

141 Forests and Woodland 1000ha:

land under natural or planted stands of trees, whether productive or not. This category includes land from which forests have been cleared but that will be reforested in the foreseeable future, but it excludes woodland or forest used only for recreation purposes. The question of shrub land, savannah, etc. raises the same problem as in the category "Permanent meadows and pastures". In the year 1995 and onward there will be no data for this element.

181 All Other Land 1000ha:

up to 1994, this category includes any other land not specifically listed under elements 051 (Agricultural land) and 141 (Forests and Woodland). This element includes: built-on areas, roads, barren land, etc. for which no specific data are available.

191 Non arable and permanent crops 1000ha:

from 1995 this element includes any other land not specifically listed under elements 061 (Arable land and Permanent crops) i.e.: permanent pastures, forests and woodland, built on areas, roads, barren lands, etc.

Irrigation

051 Irrigated Area 1000ha:

Data on irrigation relate to areas equipped to provide water to the crops. These include areas equipped for full and partial control irrigation, spate irrigation areas, and equipped wetland or inland valley bottoms.

A.2.7. FAOSTAT DATABASE RESULTS. ETHIOPIA FOOD CONSUMPTION 1990

60 Records © Copyright FAO 1990-1998

<i>Ethiopia PDR Cereals - Excluding Beer</i>	Year					
	1987	1988	1989	1990	1991	1992
Production (Mt)	5,707,736	6,136,960	5,733,573	6,137,530	5,810,665	5,034,885
Imports (Mt)	491,077	1,092,674	455,163	677,814	794,010	1,030,425
Stock Change (Mt)	230,000	-300,000	550,000	-150,000	350,000	900,000
Exports (Mt)	60	4	202	32	204	24
Domestic Supply (Mt)	6,428,753	6,929,630	6,738,534	6,665,313	6,954,471	6,965,286
Feed (Mt)	90,000	100,000	90,000	100,000	100,000	100,000
Seed (Mt)	207,024	197,886	194,638	171,405	171,838	144,880
Waste (Mt)	318,713	361,972	332,428	341,949	352,645	339,493
Food Manufacture (Mt)	108,050	116,595	110,138	111,791	106,565	112,128
Food (Mt)	5,704,794	6,153,060	6,011,128	5,940,167	6,223,179	6,268,786

Food consumption 1990

Taken into account one optimistic 75% of the Production (in agreement with our carrying capacity approach) as a final Food consumption, multiplying by the 2800 (Kcal/Kg) for the cereals, dividing by the Ethiopia population in 1990 (50982000) and by 365 (day/year), and multiplying by 1,68 (the percentage of the cereal daily consumption in the total daily consumption in Ethiopia is around the 68%) we have

1164 Kcal/(day capita)

as a daily consumption in Ethiopia 1990 !

Food consumption 1990 from Carrying Capacity Second Level Model

1285 Kcal/(day capita).

A.2.8. FAOSTAT DATABASE RESULTS. TOWARDS KENYA BaUo.

10 Records [© Copyright FAO 1990-1998](#)

<i>Kenya Land Use</i>	Year									
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Arable & Permanent Crops (1000Ha)	3,900	3,905	3,910	3,915	3,920	3,925	3,930	3,935	3,940	3,945

10 Records [© Copyright FAO 1990-1998](#)

<i>Kenya Land Use</i>	Year									
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Arable & Permanent Crops (1000Ha)	3,950	3,955	3,960	3,965	4,272	4,278	4,280	4,280	4,280	4,280

10 Records [© Copyright FAO 1990-1998](#)

<i>Kenya Land Use</i>	Year									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Arable & Permanent Crops (1000Ha)	4,280	4,280	4,280	4,285	4,490	4,490	4,490	4,495	4,498	4,500

7 Records [© Copyright FAO 1990-1998](#)

<i>Kenya Land Use</i>	Year						
	1991	1992	1993	1994	1995	1996	1997
Arable & Permanent Crops (1000Ha)	4,510	4,520	4,520	4,520	4,520	4,520	4,520

10 Records [© Copyright FAO 1990-1998](#)

<i>Kenya Agriculture (PIN)</i>	Year									
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Net PIN base 89-91	36.9	38.6	38.6	39.9	41.4	41.8	43.2	46.4	48.1	49.0

10 Records [© Copyright FAO 1990-1998](#)

<i>Kenya Agriculture (PIN)</i>	Year									
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Net PIN base 89-91	49.8	53.0	54.9	55.0	56.5	61.8	68.9	69.1	68.9	65.7

10 Records [© Copyright FAO 1990-1998](#)

<i>Kenya Agriculture (PIN)</i>	Year									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Net PIN base 89-91	65.4	74.2	78.0	70.4	80.8	89.3	89.6	97.6	99.9	100.0

8 Records [© Copyright FAO 1990-1998](#)

<i>Kenya Agriculture (PIN)</i>	Year							
	1991	1992	1993	1994	1995	1996	1997	1998
Net PIN base 89-91	100.1	97.9	94.0	100.6	105.1	107.7	105.5	111.4

A.2.9. FAODOC. TABLES FROM REFERENCED [B.2.2.], [B.2.7.] AND [B.2.9.]

Table 6 LAND WITH RAIN-FED CROP PRODUCTION POTENTIAL IN DEVELOPING COUNTRIES (excluding China)							
Class	Moisture regime (LGP in days)	Land quality	Potential	In use		Balance	
				1988-90	2010	1988-90	2010
<i>(million ha)</i>							
Dry semi-arid	75-119	VS, S, MS	154	86	92	68	62
Moist semi-arid	120-179	VS, S	350	148	161	202	189
Subhumid	180-269	VS, S	594	222	249	372	344
Humid	270+	VS, S	598	201	232	915	883
Marginally suitable land in the moist semi-arid, subhumid, humid classes	120+	MS	518				
Fluvisols/Gleysols	Naturally flooded	VS, S	258	64	77	259	246
Marginally suitable Fluvisols/Gleysols	Naturally flooded	MS	65				
Total with rain-fed potential (of which irrigated)			2 537	721 (87)	812 (108)	1 816	1 725
Additional irrigation on non-suitable (arid and hyperarid) land			36	36	38		
TOTAL			2 573	757	850	1 816	1 725

LGP = length of growing period; VS = very suitable; S = suitable; MS = marginally suitable.

Table 8
ARABLE LAND IN USE, CROPPING INTENSITIES AND HARVESTED LAND IN DEVELOPING COUNTRIES (excluding China)

	Total land in use			Rain-fed use			Irrigated use						
	Arable (million ha)	Cropping intensity (%)	Harvested (million ha)	Arable (million ha)	Cropping intensity (%)	Harvested (million ha)	On land with rain-fed crop production potential (million ha)	On arid and hyperarid land (million ha)	Total arable (million ha)	As percentage of total arable land in use	Cropping intensity (%)	Harvested (million ha)	As percentage of total harvested land in use
Sub-Saharan Africa													
(1969-71)	(124)		(98)						(3.6)				
(1988-90)	(140)		(114)						(5.3)				
1988-90	212.5	55	117.7	207.2	55	113.7	4.6	0.7	5.3	2	75	4.0	3
2010	254.7	62	158.1	247.7	61	152.2	6.2	0.8	7.0	3	84	5.9	4
Near East & North Africa													
(1969-71)	(89)		(53)						(16.3)				
(1988-90)	(93)		(62)						(20.1)				
1988-90	76.5	83	63.4	56.4	77	43.7	5.3	14.8	20.1	26	98	19.7	31
2010	80.5	93	74.8	57.9	85	49.0	6.5	16.2	22.7	28	114	25.8	34
East Asia													
(1969-71)	(68)		(64)						(11.0)				
(1988-90)	(82)		(85)						(20.0)				
1988-90	87.5	101	88.8	68.2	96	65.6	19.3	0.0	19.3	22	120	23.2	26
2010	102.8	105	108.4	81.2	100	81.3	21.5	0.0	21.5	21	126	27.1	25
South Asia													
(1969-71)	(197)		(187)						(44.8)				
(1988-90)	(204)		(205)						(65.2)				
1988-90	190.5	112	213.0	127.1	109	138.4	48.1	15.3	63.4	33	118	74.6	35
2010	194.9	122	237.0	118.6	113	133.6	60.5	15.8	76.3	39	136	103.4	44
Latin America & the Caribbean													
(1969-71)	(117)		(88)						(10.0)				
(1988-90)	(150)		(113)						(15.4)				
1988-90	189.6	61	115.6	174.6	58	101.5	9.9	5.1	15.0	8	94	14.1	12
2010	216.8	67	145.0	198.4	64	127.0	13.2	5.1	18.3	8	98	18.0	12
Developing countries													
(1969-71)	(595)		(488)						(85.7)				
(1988-90)	(669)		(579)						(126.1)				
1988-90	756.7	79	598.5	633.6	73	462.9	87.1	35.9	123.0	16	110	135.6	23
2010	849.7	85	723.3	703.8	77	543.1	108.0	37.9	145.9	17	124	180.2	25

Note: Data in parentheses are the historical data before adjustment to correct inconsistencies in the data of some countries. Adjustments were made only for 1988-1990.

Table 9
AREA AND YIELDS FOR MAJOR CROPS IN DEVELOPING COUNTRIES (excluding China)

	Production (P) (million tonnes)				Harvested area (A) (million ha)			Yield (Y) (tonnes/ha)			Growth rates (% per annum)					
											1970-90			1988-90 to 2010		
	1969-71	1988-90	1991-92*	2010	1969-71	1988-90	2010	1969-71	1988-90	2010	P	A	Y	P	A	Y
Wheat	67	132	144	205	58	70	77	1.2	1.9	2.7	3.8	0.9	2.8	2.1	0.5	1.6
Rice (paddy)	177	303	309	459	95	109	120	1.9	2.8	3.8	3.0	0.8	2.3	2.0	0.5	1.5
Maize	70	112	117	196	54	63	80	1.3	1.8	2.5	2.7	0.9	1.8	2.7	1.2	1.5
Barley	16	22	24	35	15	17	19	1.1	1.3	1.8	1.8	0.8	1.0	2.3	0.6	1.8
Millet	19	22	21	32	35	32	38	0.6	0.7	0.8	0.4	-0.6	1.0	1.8	0.9	1.0
Sorghum	28	37	37	62	38	37	50	0.7	1.0	1.2	1.7	0.3	1.5	2.5	1.4	1.1
TOTAL CEREALS	381	631	657	995	299	331	389	1.3	1.9	2.6	2.8	0.6	2.2	2.2	0.8	1.4
Cassava	95	153	149	223	11	15	18	8.3	10.1	12.2	2.4	1.3	1.1	1.8	0.9	0.9
Sugar cane	486	882	939	1 365	9	15	18	52.0	59.6	75.4	3.4	2.5	0.8	2.1	1.0	1.1
Pulses	24	30	32	48	46	52	61	0.5	0.6	0.8	1.3	0.7	0.6	2.2	0.7	1.5
Soybeans	3	38	37	79	3	22	33	1.0	1.7	2.4	11.8	9.4	2.1	3.6	1.9	1.7
Groundnuts	14	16	15	30	17	17	21	0.8	1.0	1.4	0.4	-0.4	0.9	3.0	1.2	1.7
Coffee	4	6	6	8	9	11	12	0.5	0.5	0.7	2.2	1.5	0.7	1.5	0.1	1.4
Seed cotton	16	21	22	42	22	19	22	0.7	1.1	1.9	1.3	-0.9	2.2	3.2	0.7	2.5

Note: Sometimes the changes in the annual growth rates between the historical and the projection periods appear to be large. Often this is a continuation of a change already begun in the historical period or an expected change in one country that has a large weight in the total. For example, annual growth in sugar-cane production in the developing countries excluding Brazil is projected to remain the same as in the historical period, namely 2.2 percent. Likewise, the area allocated to soybean in Brazil (currently more than 50 percent of total soybean area in developing countries) grew at 21.2 percent annually in the 1970s, but fell to 3.5 percent in the 1980s.

* Revised data for 1991-1992 as known in May 1994, but not used in this study.

Table 10
PRODUCTION OF MAJOR CEREALS BY LAND CLASS IN DEVELOPING COUNTRIES (excluding China)¹

	All land classes ²			Dry semi-arid			Moist semi-arid			Subhumid			Humid			Fluvisols and Gleysols			Irrigated			
	A	Y	P	A	Y	P	A	Y	P	A	Y	P	A	Y	P	A	Y	P	A	Y	P	
Wheat																						
1988-90	69.7	1.9	132.4	3.1	0.7	2.2	10.0	1.2	12.3	16.0	1.7	27.3	6.2	1.6	10.3	0.5	0.7	0.4	33.8	2.4	80.0	
2010	77.1	2.7	205.0	3.2	1.0	3.3	11.0	1.8	20.3	17.4	2.1	37.1	5.2	2.3	12.1	0.5	1.0	0.5	39.7	3.3	131.7	
Rice (paddy)																						
1988-90	109.2	2.8	302.7							10.5	2.1	22.4	21.4	1.6	33.3	29.7	2.4	71.7	47.5	3.7	175.3	
2010	120.5	3.8	458.7							5.7	2.4	13.4	24.5	1.9	45.4	32.6	3.1	101.9	57.7	5.2	297.9	
Maize																						
1988-90	62.6	1.8	112.2	0.8	0.6	0.5	7.6	1.2	9.0	30.1	1.8	54.9	15.3	1.3	19.5	1.6	1.0	1.7	7.2	3.7	26.7	
2010	79.6	2.5	196.6	1.0	0.9	0.9	8.8	1.5	13.6	38.1	2.6	97.7	19.3	1.7	33.5	1.6	1.2	1.9	10.8	4.5	49.0	
Barley																						
1988-90	17.2	1.3	21.9	4.7	0.7	3.3	3.9	1.2	4.8	2.8	1.7	4.8	2.3	1.4	3.2	0.6	0.7	0.4	2.9	1.8	5.3	
2010	19.4	1.8	35.5	5.2	1.1	5.7	4.2	1.9	7.9	3.3	2.4	7.7	2.9	1.9	5.4	0.8	1.0	0.8	3.1	2.6	8.0	
Millet																						
1988-90	31.9	0.7	21.7	10.2	0.4	3.9	9.8	0.6	6.4	6.3	0.9	5.8	2.9	0.5	1.5	0.9	0.8	0.8	1.7	1.9	3.3	
2010	38.2	0.8	31.7	12.1	0.5	6.1	12.1	0.8	9.9	7.2	1.1	8.1	3.7	0.6	2.4	1.3	1.2	1.6	1.8	2.0	3.5	
Sorghum																						
1988-90	37.1	1.0	36.9	8.8	0.5	4.1	11.3	0.8	8.9	9.4	1.3	11.9	2.5	0.7	1.9	2.0	0.8	1.7	3.0	2.8	8.4	
2010	49.7	1.2	61.8	11.7	0.6	6.9	14.5	1.0	14.2	12.7	1.7	21.5	4.3	0.9	3.9	2.8	1.1	3.1	3.8	3.3	12.3	

A = area in million hectares; Y = yield in tonnes per hectare; P = production in million tonnes.

¹ Data on land and yields by land class at the country level do not exist in any systematic form. They have been assembled for this study based on whatever information was available (country/project reports, expert judgement, etc.). They should therefore be interpreted with care.

² Land classes as defined in Table 5.

Table 11
CEREAL YIELDS IN MAJOR AGRO-ECOLOGICAL LAND CLASSES AND INTERCOUNTRY DIFFERENCES IN DEVELOPING COUNTRIES (excluding China)

Product/land class	Percentage of production coming from the given land class, 1988-90	Yields ¹ (tonnes/ha)				
		Average (weighted)		Country range ²		
		1988-90	2010	1969-71	1988-90	2010
Rice (paddy)/all land classes	100	2.8	3.8	0.9 - 4.6	0.9 - 6.6	1.5 - 7.2
Irrigated	58	3.7	5.2		1.7 - 7.2	3.4 - 8.0
Fluvisols and Gleysols	24	2.4	3.1		1.0 - 3.6	1.4 - 4.0
Wheat/all land classes	100	1.9	2.7	0.5 - 2.7	0.8 - 5.1	1.2 - 6.4
Irrigated	60	2.4	3.3		1.1 - 5.4	1.9 - 6.7
Rain-fed, subhumid	21	1.7	2.1		0.9 - 2.9	1.2 - 4.1
Maize/all land classes	100	1.8	2.5	0.6 - 3.1	0.6 - 4.9	1.1 - 6.0
Irrigated	24	3.8	4.6		1.6 - 7.9	2.2 - 8.4
Rain-fed, subhumid	49	1.8	2.6		0.6 - 3.7	1.2 - 4.1
Rain-fed, humid	17	1.3	1.7		0.4 - 2.8	0.8 - 3.6
Millet/all land classes	100	0.7	0.8	0.4 - 1.3	0.3 - 1.4	0.6 - 1.7
Rain-fed, dry semi-arid	18	0.4	0.5		0.1 - 0.6	0.3 - 0.8
Rain-fed, subhumid	27	0.9	1.1		0.6 - 1.8	0.7 - 2.2
Sorghum/all land classes	100	1.0	1.2	0.3 - 2.8	0.4 - 3.4	0.6 - 3.7
Rain-fed, dry semi-arid	11	0.5	0.6		0.3 - 1.0	0.4 - 1.2
Rain-fed, subhumid	32	1.3	1.7		0.6 - 3.5	0.9 - 3.9

¹ Yields of countries with at least 50 000 ha in the land class, crop and year shown.

² Simple averages of the yields of the bottom 10 percent and top 10 percent of the countries ranked by yield level (not always the same countries in the top or bottom deciles in each year).

Table 12
INTERCOUNTRY GAPS IN AVERAGE YIELDS FOR WHEAT AND RICE IN DEVELOPING COUNTRIES
(excluding China)¹

	Wheat						Rice		
	1969-71		1988-90		2010	1969-71		1988-90	2010
	(32) ²		(33)		(34)	(44)		(47)	(50)
(tonnes/ha)									
Top decile	Mexico	2.92	Zimbabwe	5.73		Egypt	5.27	Egypt	6.65
	Egypt	2.74	Egypt	5.00		Korea (Rep.)	4.63	Korea (Rep.)	6.41
	Korea (Rep.)	2.31	Saudi Arabia	4.65		Korea (DPR)	4.25	Korea (DPR)	8.11
						Peru	4.14	Peru	5.16
	Average	2.65	Average	5.12	6.37	Average	4.57	Average	6.58
									7.25
Bottom decile	Algeria	0.61	Algeria	0.68		Ghana	1.00	Liberia	1.14
	Myanmar	0.55	Bolivia	0.70		Tanzania	1.00	Mozambique	0.87
	Libya	0.26	Libya	0.90		Guinea	0.89	Guinea	0.83
						Zaire	0.76	Zaire	0.91
	Average	0.47	Average	0.76	1.16	Average	0.91	Average	0.94
									1.55
Decile of largest producers (by area)	Turkey	1.32	Turkey	2.02		Indonesia	2.35	Indonesia	4.22
	India	1.23	India	2.12		Thailand	1.93	Thailand	2.00
	Pakistan	1.11	Pakistan	1.81		Bangladesh	1.68	Bangladesh	2.57
						India	1.67	India	2.63
	Average	1.22	Average	1.98	2.04	Average	1.91	Average	2.86
									4.20
Yield of top decile = 100		100		100	100		100		100
Bottom decile		10		15	18		20		21
Largest producers		46		39	45		42		58
Simple average, all countries		43		53	57		47		53

¹ Data and projections for countries with over 50 000 ha under wheat or rice in the year shown. Average yields are simple country averages (not weighted by area).

² Number of countries.