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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS - ROME

**E**

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## THE STATE OF FOOD AND AGRICULTURE 1993

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**PART I**  
**WORLD REVIEW**

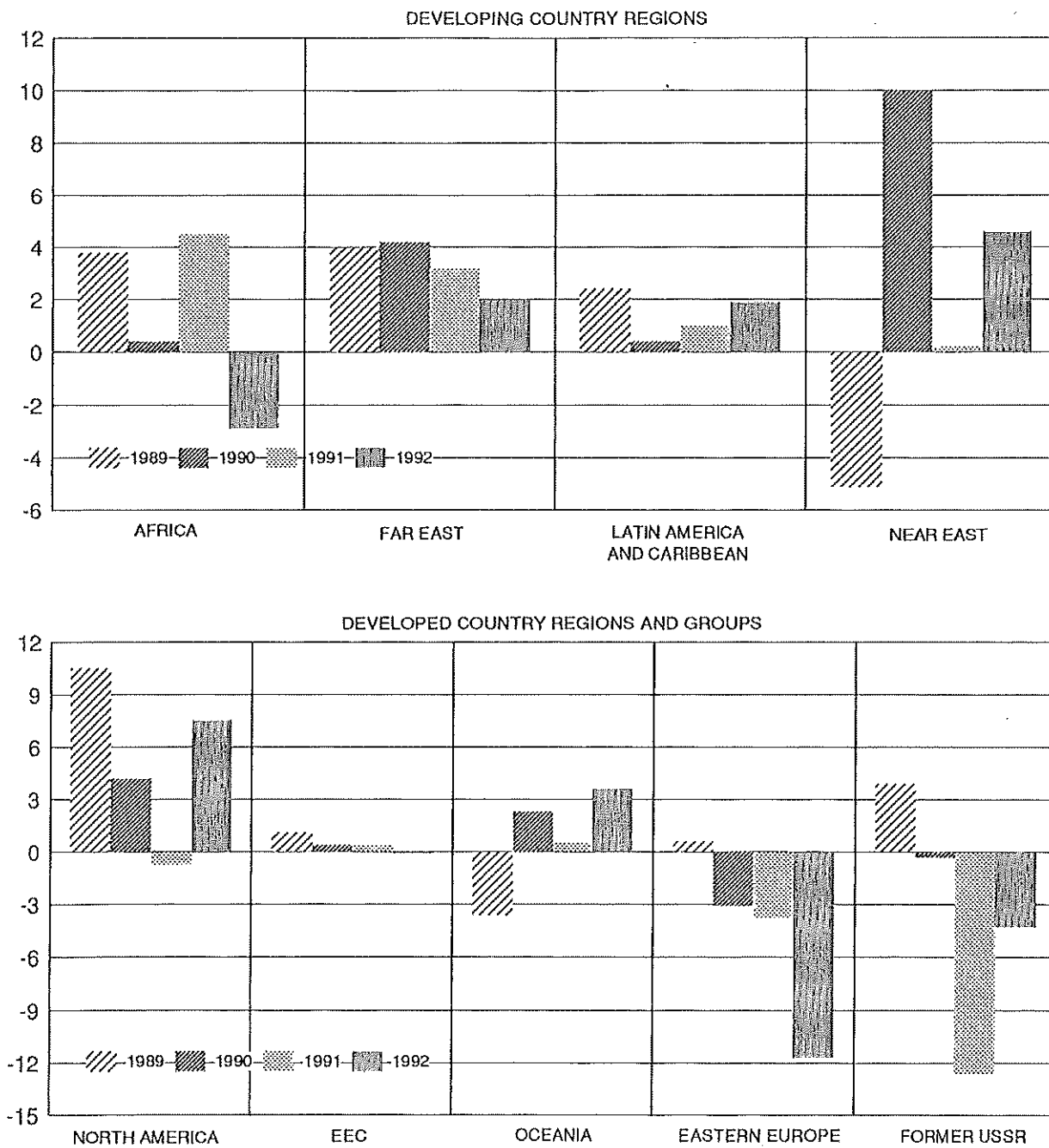
## CURRENT AGRICULTURAL SITUATION - FACTS AND FIGURES

### 1. Crop and livestock production in 1992

- Overall, 1992 was a poor agricultural year. After having stagnated in 1991, global agricultural production only rose by about 1 percent in 1992. Except for North America, Oceania and the Near East, where production recovered from shortfalls experienced the previous year, regional agricultural performances ranged from mediocre to weak.
- Developing countries' agricultural production rose by only 1.7 percent, about half the average growth rate of the previous ten years.
- Among developing country regions, only the Near East achieved some gain in per caput agricultural production (1.6 percent), which was, however, inadequate to compensate for the region's losses of the previous year. In both the Far East and Latin America and the Caribbean, gains in agricultural production were entirely eroded by population growth. Africa recorded a 6 percent fall in per caput agricultural production, largely on account of the drought that affected developing southern Africa.
- Agricultural production in North America recovered significantly (up 7.5 percent, compared with -1 percent in 1991 and a yearly average growth of 1 percent during the previous ten years), contributing more than 80 percent of the world's total production increase in 1992. Production also rebounded in Oceania (3.6 percent, three times the trend rate) but remained virtually unchanged in Western Europe.
- Eastern Europe and the former USSR recorded yet another year of production decline: the fifth in six years in the former USSR, bringing the cumulative decline since 1987 to nearly 15 percent, and the third consecutive decline in Eastern Europe, with the overall fall in this region between 1989 and 1991 being more than 18 percent. While in the former USSR the shortfall in 1992 was chiefly due to a contraction in livestock production, that in Eastern Europe mainly reflected drought-affected crops.

Exhibit 1

CHANGES IN AGRICULTURAL PRODUCTION, 1989-1992  
(Percentage change over preceding year)



Source: FAO

## 2. Per caput food production in 1992

- The overall poor agricultural production performance of developing country regions was also reflected at the country level. No less than two-thirds of all developing countries recorded stagnant or declining levels of per caput food production.
- As has so often been the case in the past, the highest concentration of poor performances was in Africa, where all but six countries suffered per caput production losses. In some cases, these were catastrophic, all the more so since they followed similarly dramatic crop shortfalls in the previous year. This was the case of Mozambique, Somalia, the United Republic of Tanzania and Zimbabwe. The few bright spots in the region included Chad, Ghana and, more significantly - given the population involved - Nigeria. These countries achieved sizeable gains in per caput food production for the second consecutive year.
- Among densely populated countries in other regions, Brazil, China, and Indonesia continued to expand food production significantly; while Egypt, India, and Turkey recorded poor to mediocre performances in per caput food production for the second consecutive year.

Exhibit 2. Rates of change in per caput food production by country, 1991 - 92

Developing countries					Developed countries
Percentage rate of change	Africa	Asia and Pacific	Latin America and Caribbean	Near East	
Above 5	Chad Nigeria	Laos Macau Vanuatu Viet Nam	Guadeloupe Ecuador El Salvador Uruguay	Cyprus Iraq Sudan Syrian Arab Rep. Yemen	Australia Ireland United States
3.01 to 5	Congo		Brazil Jamaica Paraguay	Libyan Arab Jamahiriya	France
0.1 to 3	Ghana Mauritius	Bhutan China Fiji Indonesia Korea, Rep. Malaysia Myanmar Papua New Guinea Solomon Islands Tonga	Argentina Guyana Panama Puerto Rico	Islamic Rep. of Iran Jordan	Belgium/ Luxembourg Greece Iceland Japan Malta New Zealand Spain Switzerland
0 to -3	Algeria Angola Burundi Burkina Faso Central African Rep. Ethiopia Gabon Guinea-Bissau Madagascar Namibia Niger Reunion Sierra Leone Togo Uganda Zaire	Brunei Darussalam India Korea, Dem. People's Rep. Maldives Pakistan Philippines Sri Lanka	Belize Chile Guatemala Honduras Martinique Mexico Nicaragua Venezuela	Egypt Turkey	Israel Italy United Kingdom
-3.01 to -5	Cameroon Cape Verde Comoros Liberia Rwanda	Bangladesh Samoa Thailand	Colombia Dominican Rep. Trinidad and Tobago		Austria Former USSR
-5.01 to -10	Benin Côte d'Ivoire Guinea Kenya Mali Mauritania Sao Tome and Principe Senegal Swaziland Tanzania, United Rep.	Cambodia	Barbados Bolivia Costa Rica Peru	Lebanon Kingdom of Saudi Arabia	Albania Bulgaria Canada Former Czechoslovakia Denmark Netherlands Norway Portugal
More than -10	Botswana Gambia Lesotho Malawi Morocco Mozambique Somalia Tunisia Zambia Zimbabwe	Mongolia Nepal Singapore	Cuba Haiti Suriname	Afghanistan	Finland Hungary Poland Romania South Africa, Rep. Sweden Former Yugoslavia, SFR

Source: FAO.

### 3. Agricultural production by major commodities

- Global cereal production in 1992 increased by 4.2 percent to 1 959 million tonnes following the decline recorded in 1991. Most of the expansion occurred in developed countries, where production rose by 6.6 percent to 890 million tonnes. The bulk of this increase was accounted for by a significant recovery in production in the United States and a partial recovery in the former USSR after the major contraction experienced by both in 1991. In the United States, production increased by 73 million tonnes (26 percent), while the increase in the former USSR amounted to 33 million tonnes (22 percent). Production in developing countries, on the other hand increased by 2.3 percent to 1 069 million tonnes.
- World cassava production rose significantly in 1992, especially in Asia and Africa. The outlook for 1993 is for continuing growth in global production. Some increase was reported in world production of pulses. A decline of more than 3 percent in the developing countries was offset by a sharp increase in the developed countries.
- Global production of fats and oils increased by 3 percent in 1992 to 84.9 million tonnes, a marked improvement over the sluggish growth of the previous year. Output in the developed countries rose to 39.5 million tonnes, led by an increase in the production of all oilseeds in the United States and of rapeseed in Canada. There was also a significant recovery in olive oil production in the EEC, while production of cottonseed, sunflowerseed and butter fell sharply in the former USSR. For the developing countries, output increased to 45.4 million tonnes, largely as a result of the sizeable recovery in soybean production in Brazil and the continued growth of palm oil production in Indonesia. Total output of fats and oils increased modestly in both India and China while palm oil production in Malaysia was stagnant for the second year in a row. On the other hand, declines in output occurred in soybean and sunflowerseed production in Argentina and in coconut oil production in the Philippines.
- World production of centrifugal sugar (raw value) in 1992/93 declined to its lowest level since 1989/90. A lower output was registered in all major cane sugar-producing countries, except Brazil and Australia, mainly because of poor weather. Cuba's harvest is estimated to be only 4.5 million tonnes, against 7 million tonnes in 1991/92, the lowest level since 1963.
- Meat production increased slightly in 1992, as a larger poultry and pork output outweighed the reduced output in bovine and ovine meat. The outlook for 1993 is for a continued growth in world meat production and trade. There is still considerable uncertainty about the impact of policies in major exporting countries, notably connected with the mid-1993 implementation of the Common Agricultural Policy reform in the EEC.
- World milk production decreased by 2.5 percent in 1992, following a similar decline in the previous year. Production dropped in Europe and the former USSR, while it increased in North America, Oceania and Japan. In the developing countries, drought severely curtailed production in the southern countries of Africa, but production increased in Latin America and Asia.

Exhibit 3. Agricultural production by major commodity 1991 and 1992

	Developed countries			Developing countries			World		
	1991	1992	Change	1991	1992	Change	1991	1992	Change
			1991 to 1992			1991 to 1992			1991 to 1992
	million m.t.		%	million m.t.		%	million m.t.		%
Total cereals	835.7	890.7	6.6	1 044.5	1 068.6	2.3	1 880.2	1 959.3	4.2
Wheat	305.0	320.5	5.1	241.5	245.0	1.4	546.5	565.5	3.5
Rice, paddy	24.2	26.6	9.9	495.9	501.2	1.1	520.1	527.8	1.5
Coarse grains	506.5	543.6	7.3	307.1	322.4	5.0	813.6	866.0	6.4
Root crops	179.8	187.5	4.3	386.7	398.6	3.1	566.6	586.1	3.4
Total pulses	17.2	19.3	12.2	39.5	38.2	-3.3	56.7	57.5	1.4
Fats and oils	38.2	39.5	3.4	44.1	45.4	2.9	82.3	84.9	3.2
Sugar, centrifugal (raw) <sup>1</sup>	42.5	41.4	-2.6	74.1	68.7	-7.3	115.6	110.0	-4.8
Total meat	103.2	100.9	-2.2	76.0	80.0	5.3	179.2	180.9	0.9
Total milk	366.4	349.3	-4.7	160.1	163.8	2.3	526.5	513.1	-2.5
Hen eggs	18.9	18.5	-2.1	17.0	17.6	3.5	35.8	36.1	0.8

<sup>1</sup> Crop year beginning in the year shown.

Source: FAO.



**Agricultural production by major commodities (cont.)**

- At 5.7 million tonnes in 1992/93, coffee output recorded a 5 percent decline from the previous year's level. Falling prices, which during the first nine months of 1992 fell to the lowest level in more than 20 years, caused a reduction in the use of agricultural inputs, a neglect of crop husbandry and a decrease in yields. Sharp reductions of output were recorded in Brazil, Guatemala and Mexico while a new record crop was achieved in Colombia, mainly because of subsidization from the National Coffee Fund. Smaller crops were reported in major African producer countries except Côte d'Ivoire.
- In 1992/93, cocoa output recovered more than 4 percent to 2.4 million tonnes. Increases in Africa and the Far East offset a slight decline in Latin America. In Côte d'Ivoire, the world's major producer, output remained roughly unchanged from the previous year. Ghana's production was 17 percent above the previous season's level but below the peak of 1988/89. Good weather conditions favoured a recovery in Nigeria's output.
- World tea production fell by about 4 percent to 2.5 million tonnes. Smaller harvests were reported in India, Sri Lanka, Indonesia, Kenya and other countries of East Africa. In Sri Lanka, severe drought conditions and serious damage to tea bushes in several parts of the country resulted in smaller harvests and could even affect the 1993 crop. Drought also affected eastern countries of Africa, including Kenya, Malawi, Uganda and Zimbabwe. The only major producer country where an increase was reported in 1992 was Bangladesh, mainly because of new plantings coming into production.
- World cotton output declined by 11 percent to 18.4 million tonnes, more in the developing (-12 percent) than in the developed countries (-9 percent). The decline was due to the response of producers to considerably lower prices, which were down from the high prices of 1989 and 1990. China's unusually high production levels in 1991, could not be expected to be sustained. The former USSR continues to face market disruption as well as environmental problems in cotton areas.
- World production of jute, kenaf and allied fibres fell sharply to the smallest crop since the mid-1970s: 3.1 million tonnes. This was less than half of the previous peak of 6.5 million tonnes in 1985/86. Severe droughts in Bangladesh and India were the main cause of the sharp decline.
- Global output of rubber increased by 3.7 percent to 5.6 million tonnes, with output expanding in all major producer countries except Malaysia. Thailand continued to show the fastest growth (12 percent) among the major producer countries. In Africa output also rose strongly, especially in Liberia. By contrast, output in Malaysia declined further because of unfavourable weather, depressed prices and high labour costs.

Exhibit 3. Agricultural production by major commodity 1991 and 1992 (cont.)

	Developed countries			Developing countries			World		
	1991	1992	Change	1991	1992	Change	1991	1992	Change
			1991 to 1992			1991 to 1992			1991 to 1992
	million m.t	%		million m.t	%		million m.t	%	
Cocoa beans	-	-	-	2.3	2.4	4.3	2.3	2.4	4.3
Coffee green	-	-	-	6.0	5.7	-5.0	6.0	5.7	-5.0
Tea	0.222	0.208	-6.3	2.4	2.3	-4.2	2.6	2.5	-3.8
Vegetable fibres	7.6	7.0	-7.9	19.1	16.9	-11.5	26.7	23.9	-10.5
Cotton lint	7.0	6.4	-8.6	13.7	12.0	-12.4	20.7	18.4	-11.1
Jute+jute like fibres	-	-	-	3.6	3.1	-13.9	3.6	3.1	-13.9
Tobacco	1.9	1.9	0.0	5.7	5.9	3.5	7.6	7.8	2.6
Natural rubber	-	-	-	5.4	5.6	3.7	5.4	5.6	3.7

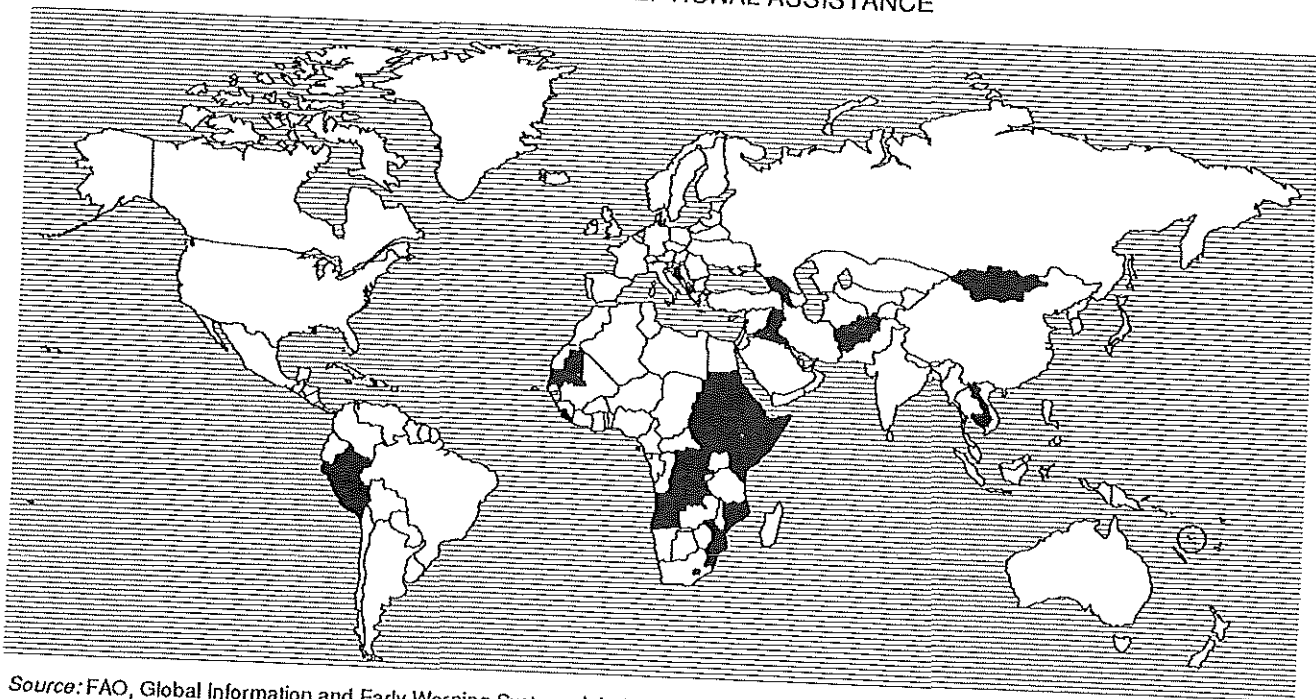
Source: FAO.

4. Food shortages and emergencies

- Africa is still the continent most seriously affected by food shortages requiring exceptional and/or emergency assistance. Fourteen countries in the region are currently facing exceptional food emergencies and, significantly, half of these countries are also being affected by civil strife.
- In Somalia, the distribution of relief supplies to parts of Mogadishu has been severely disrupted. Despite prospects of an improved main-season crop, hundreds of thousands of people continue to face acute difficulties in meeting their basic food requirements.
- In Angola, the civil war has had disastrous consequences for national food security. Fighting has disrupted and paralysed marketing. Only international support for relief food distribution will prevent widespread suffering.
- Aggregate cereal production rose in southern Africa but several countries harvested below-average crops. Despite a larger crop than last year, the food supply situation will remain serious in Mozambique as there are several million displaced persons and returnees whose consumption needs can only be met by relief food. Below-average crops in Lesotho and Swaziland point to continuing food supply difficulties in both countries.
- Serious food supply difficulties are still reported from the southern Sudan, where recent population displacements have exacerbated the situation. Elsewhere in East Africa food problems continue in Rwanda where the uncertain security situation has prevented displaced persons from returning to their homes. In Kenya, given the uncertain crop prospects, large quantities of food aid may be needed in 1993/94.
- Other African countries facing shortfalls in food supplies and requiring exceptional or emergency assistance include: Eritrea, Ethiopia, Liberia, Mauritania, Sierra Leone and Zaire.
- In Iraq, the food supply situation has substantially deteriorated. A recent FAO/WFP mission found that despite some recovery in cereal harvests, a vast majority of the Iraqi population, particularly the vulnerable groups, suffer from persistent deprivation, chronic hunger and endemic malnutrition. The low-cost food rations distributed by the Government are inadequate, while food prices on the open market are well beyond the purchasing power of most of the population.
- In Europe, Bosnia and Herzegovina continues to face serious food shortages. As commercial deliveries of essential supplies have been curtailed, there is almost total dependence on UN relief convoys, and the food situation remains extremely tight owing to distribution problems. Food shortages requiring exceptional assistance are also reported in Albania and the Former Yugoslav Republic of Macedonia.
- Numerous other countries are facing shortfalls in food supplies requiring exceptional or emergency assistance. These include: Afghanistan, Armenia, Cambodia, Georgia, Haiti, Laos, Lebanon, Mongolia, Peru and Vanuatu.

Exhibit 4

FOOD SUPPLY SHORTFALL IN CURRENT MARKETING YEAR  
REQUIRING EXCEPTIONAL ASSISTANCE



Source: FAO, Global Information and Early Warning System, July 1993, ESC

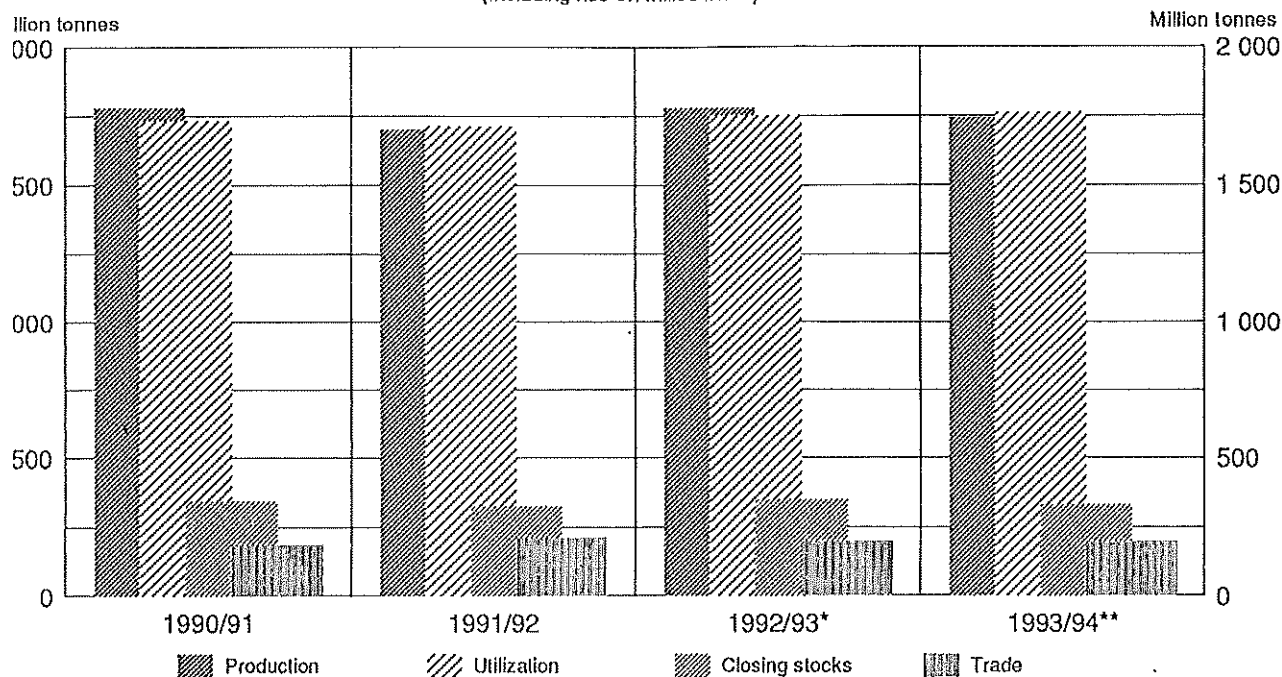
5. Current cereal supply, utilization and stocks

- World cereal production in 1992 is estimated to have increased by 4.2 percent, reaching 1 959 million tonnes. With rice converted from paddy to milled basis this corresponds to 1 779 million tonnes, as shown in Exhibit 5.
- World cereal utilization in 1992/93 increased by an estimated 2.3 percent, remaining below 1992 production. This resulted in a buildup of global cereal stocks in 1993 following the drawdown over 1991/92.
- World cereal carryover stocks at the close of crop years ending in 1993 is estimated to be 351 million tonnes, 24 million tonnes or 7 percent above the level of 1992. Most of the increase occurred in developed countries, (from 170 million tonnes in 1992 to an estimated 193 million tonnes in 1993). In the United States alone, cereal carryover stocks increased by 31 million tonnes, to 78 million tonnes, due to the major pick-up mainly in coarse grain production in 1992. Stocks in developing countries are estimated to have expanded by approximately half a percentage point.
- The estimated level of global cereal carryover stocks in 1993 corresponds to 20 percent of the forecast trend utilization in 1993/94.
- Cereal output in 1993 is forecast to be 1 929 million tonnes, about 1.5 percent below the good harvest in 1992. All of the contraction is expected in developed countries, where production is forecast to decline by 30 million tonnes to 861 million tonnes. Developing country cereal production would remain stable at a forecast 1 068 million tonnes.
- Most of the projected contraction in cereal production in 1993 is expected to be in coarse grain production, about -3 percent, while wheat production should contract by about 1.5 percent. Paddy production is tentatively set to increase by slightly less than 1 percent.
- As a consequence of the forecast contraction in cereal production in 1993, global supply and demand for cereals is projected to be more closely balanced in 1993/94 than in the previous marketing year, and world cereal carryover stocks may again have to be drawn down in order to meet expected cereal utilization in 1993/94. Thus, carryover stocks at the end of the 1993/94 marketing year may decline by a projected 19 million tonnes to 332 million tonnes. This corresponds to 18 percent of the projected trend utilization.

Exhibit 5

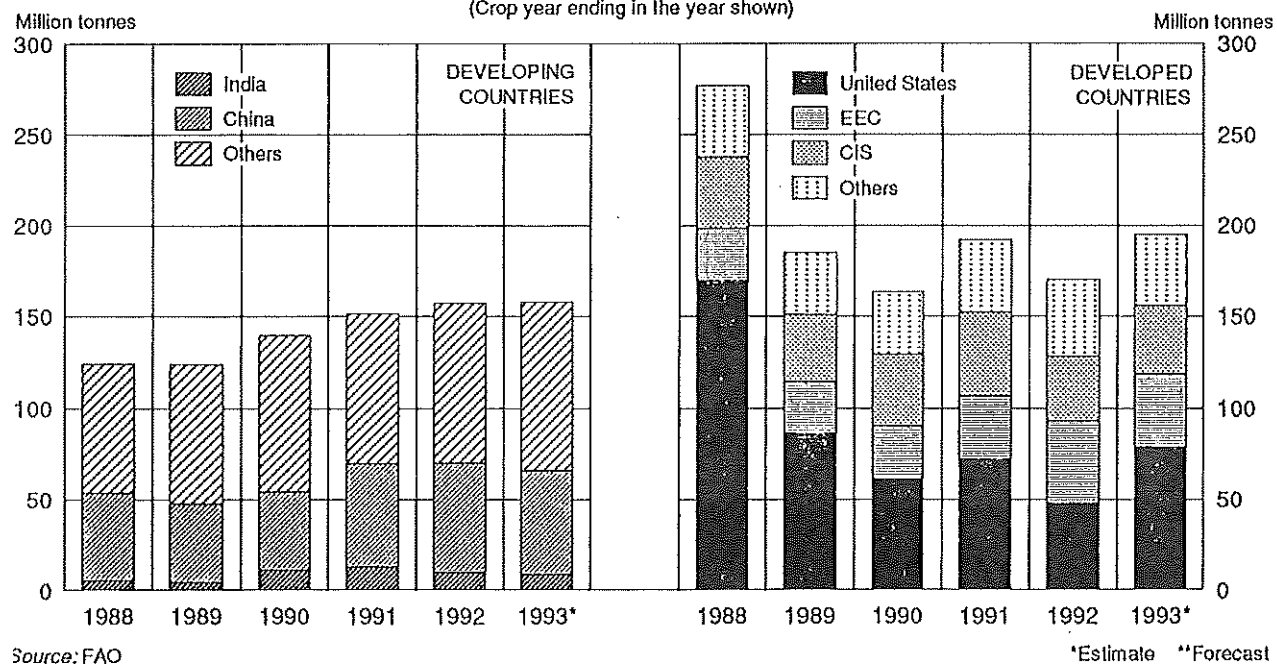
### SUPPLY/UTILIZATION TRENDS IN CEREALS

(Including rice on milled basis)



### CEREAL CARRYOVER STOCKS, 1988-1993

(Crop year ending in the year shown)



Source: FAO

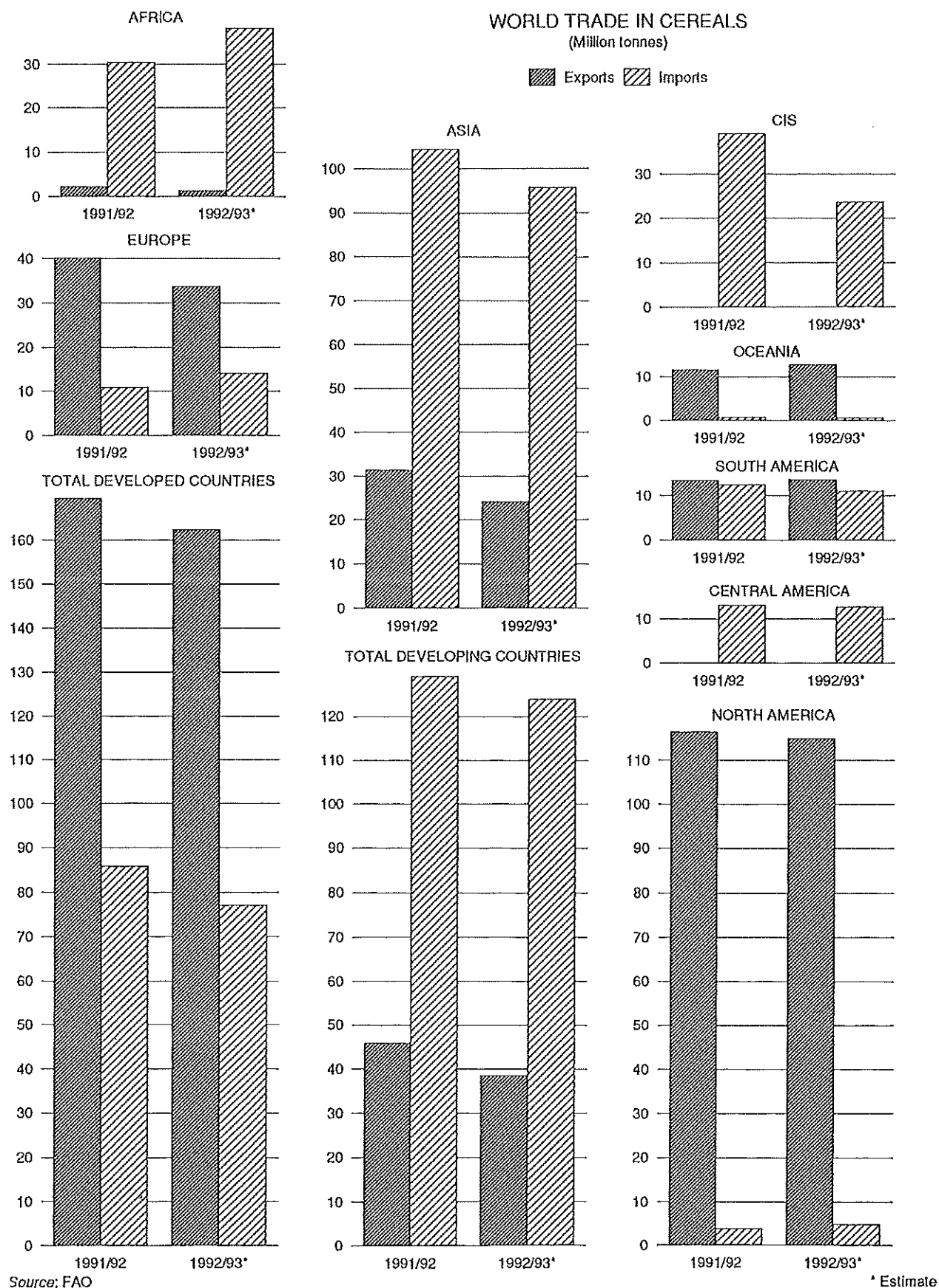
\*Estimate \*\*Forecast

6. Cereal trade prospects for 1993/94

- World trade in cereals in 1993/94 is forecast to be 201 million tonnes, almost equal to the estimated volume in 1992/93.
- Developing countries' imports are forecast to increase by 1 million tonnes to 125 million, while their exports should increase by 1.5 million tonnes, leaving their net imports almost unvaried at 85 million tonnes.
- World trade in wheat and wheat flour (in wheat equivalent) is forecast to increase by an estimated 2 million tonnes to 100 million tonnes. Imports by the developed countries are expected to rise by 1.5 million tonnes to nearly 33 million tonnes, while aggregate shipments by the developing countries are forecast to rise only marginally, to more than 67 million tonnes.
- Among the developed countries, wheat shipments to the CIS are forecast to rise from an estimated 15 million tonnes in 1992/93 to 17 million tonnes in 1993/94, while total wheat imports into Europe are forecast to decline by 1 million tonnes, to 5.8 million tonnes.
- Among developing countries, the most significant variations in wheat imports are expected in Asia, where imports are forecast to decline by 2 million tonnes to 33 million tonnes, mainly as the net result of sharply reduced import requirements in India and an expansion of exports from China. An expansion of imports by 1 million tonnes is expected in Africa, mainly reflecting larger purchases by Morocco, while total shipments to Latin America are forecast to rise only slightly.
- International trade in coarse grains is forecast to fall by 2 million tonnes to 88 million tonnes, reflecting a decline in developed country imports by 2.5 million tonnes, to 41 million tonnes, while developing country imports are forecast to rise only slightly.
- Among developed countries, an expected 2 million tonne increase in coarse grain shipments to the CIS will be more than offset by smaller imports into Europe, North America and South Africa.
- Developing country imports of coarse grains are expected to increase marginally and reach 47 million tonnes. In Africa, unfavourable weather conditions in parts of North Africa are expected to result in larger imports into Algeria and Morocco, while the return to more normal production levels in southern Africa should lead to much smaller coarse grain imports into sub-Saharan Africa. Total coarse grain imports into Asia are forecast to remain at about the level of 1992/93, while significant increases are expected in Latin America, mainly Mexico and Brazil.
- The forecast for world rice trade in 1993 (calendar year) is 12.7 million tonnes, as compared with 13.8 million tonnes in 1992. Developing country imports should contract from 11.1 million tonnes in 1992 to 10.2 million tonnes in 1993, while those of developed countries should fall slightly from 2.7 million tonnes in 1992 to 2.5 million tonnes in 1993.



Exhibit 6

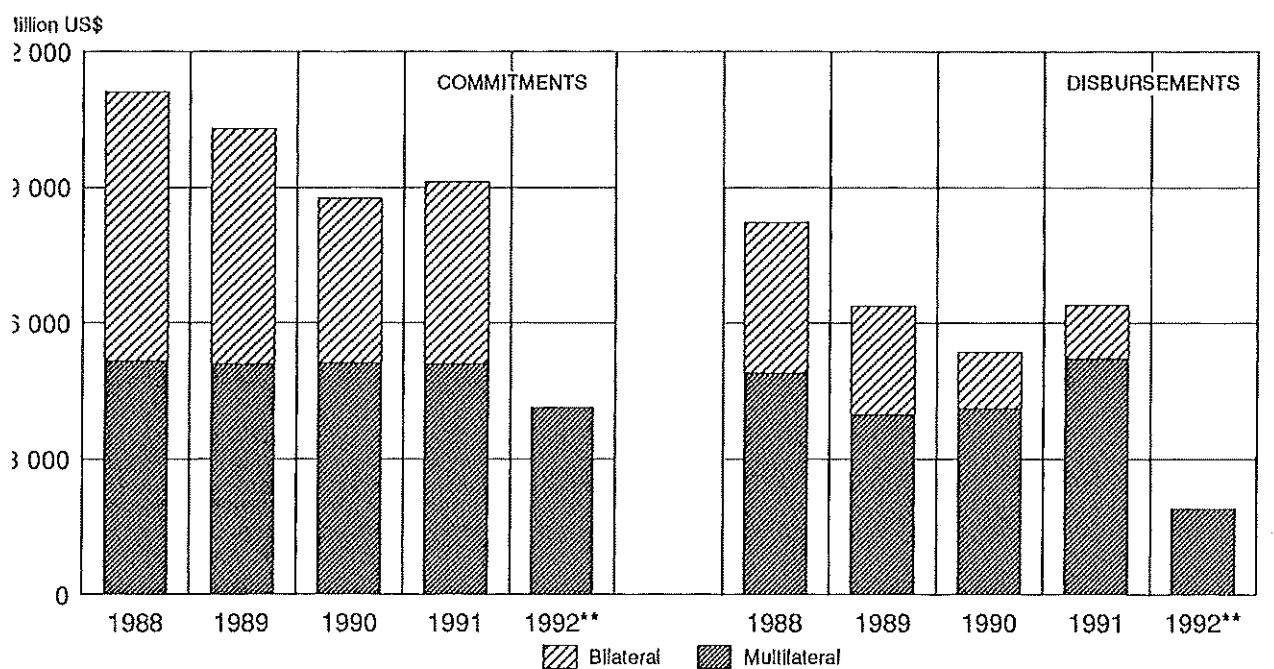


7. External assistance to agriculture

- External assistance flows to agriculture have tended to decline in real terms in recent years, despite a moderate upsurge in 1991. This applies both to commitments and the much lower figures of actual disbursements - the latter following the former with a lag of several years.
- Commitments of external assistance to agriculture in 1991 (the last year for which complete information is available) reached \$14.3 billion. At constant 1985 prices this represented \$9.1 billion, only slightly more than the low amount committed in 1990.
- The concessional component of external assistance to agriculture continued to decline, representing 70 percent of total commitments in 1991, down from 75 percent in 1990 and 76 percent in 1988.
- Bilateral commitments in 1991 totalled \$4.0 billion (at constant 1985 prices), nearly 11 percent above the level of 1990. By contrast, multilateral commitments declined slightly. All bilateral commitments, and nearly half of multilateral ones, were concessional in character.
- Preliminary information for 1992 suggests a sharp decline in multilateral commitments (19 percent at constant prices). The decline reflected reduced commitments by the World Bank and, to a lesser extent, UNDP/FAO/CGIAR. By contrast, regional development banks were estimated to have expanded their commitments with respect to 1991 levels. Information for bilateral commitments and disbursements in 1992 is not yet available.

Exhibit 7

COMMITMENTS AND DISBURSEMENTS OF EXTERNAL ASSISTANCE TO AGRICULTURE\*  
(At constant 1985 prices)



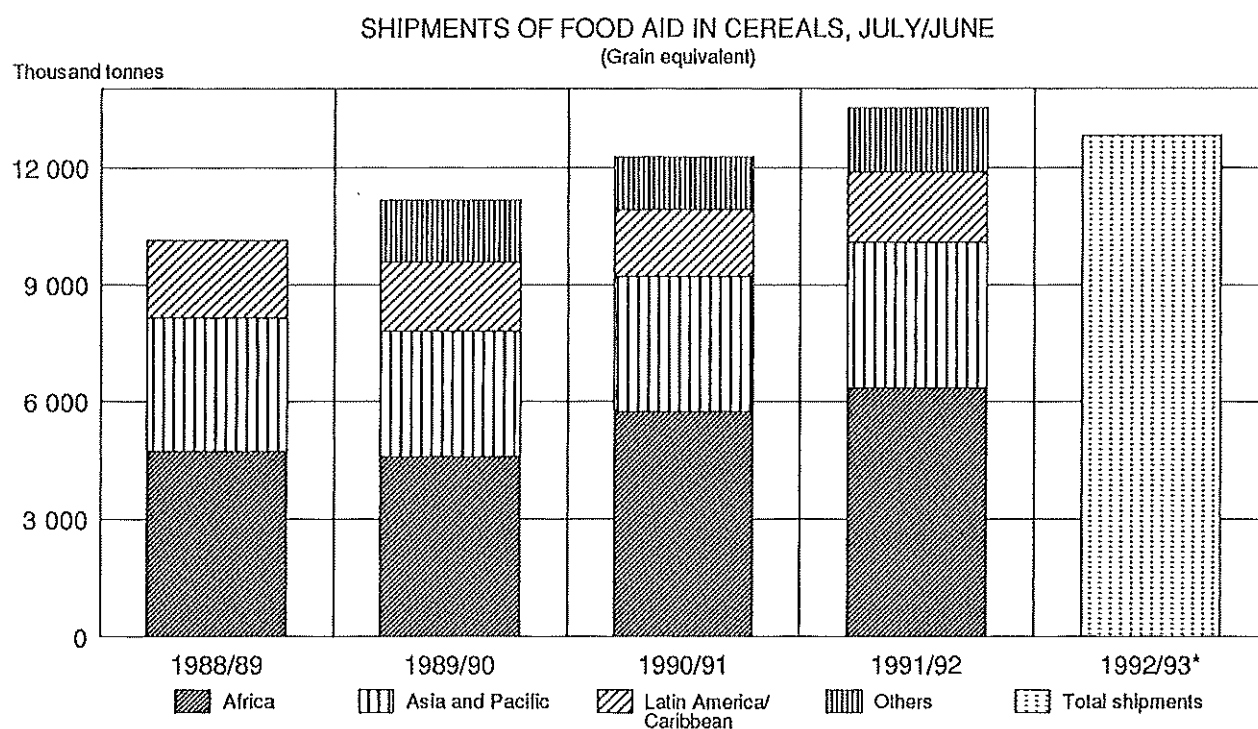
Source: FAO and OECD

\* Broad definition \*\* Preliminary

8. Food aid flows in 1992/93

- Shipments of food aid in cereals during 1992/93 (July/June) are estimated to be 12.8 million tonnes (5 percent below the previous year's level of 13.5 million tonnes), representing 0.8 percent of world cereal production and 6.4 percent of world cereal imports.
- Of the total cereal food aid in 1992/93, 11.1 million tonnes was destined for developing countries, compared with 11.9 million tonnes in 1991/92. Deliveries to developing countries still remain significantly less than the 13.5 million tonnes delivered in 1987/88.
- Food aid to developing countries in 1992/93 represented 1.2 percent of their cereal production and 8.9 percent of their cereal imports.
- Sub-Saharan Africa continues to be the major recipient of food aid. As much as 60 percent of food aid to this region is intended to meet emergency needs of refugees and displaced persons and of the drought-affected countries.
- Shipments of food aid to the CIS and Eastern European countries in 1992/93 is estimated to be about 1.7 million tonnes, about the same level as the previous year.
- As of 24 May 1993, pledges to the 1993 International Emergency Food Reserve (IEFR) amounted to 562 496 tonnes of food commodities, of which 501 641 tonnes were in the form of cereals and 60 855 tonnes in the form of other foodstuffs.
- In addition to IEFR contributions, 650 904 tonnes of cereals and 78 550 tonnes of other food commodities had been pledged under the subset of WFP regular resources for meeting the requirements of Protracted Refugee Operations.
- As of May 1993, total pledges to WFP's regular resources for the biennium 1993-94 stood at \$618 million, representing 41 percent of the pledging target of \$1.5 billion.

Exhibit 8



Source: FAO

Note: Years refer to the 12 months period July/June

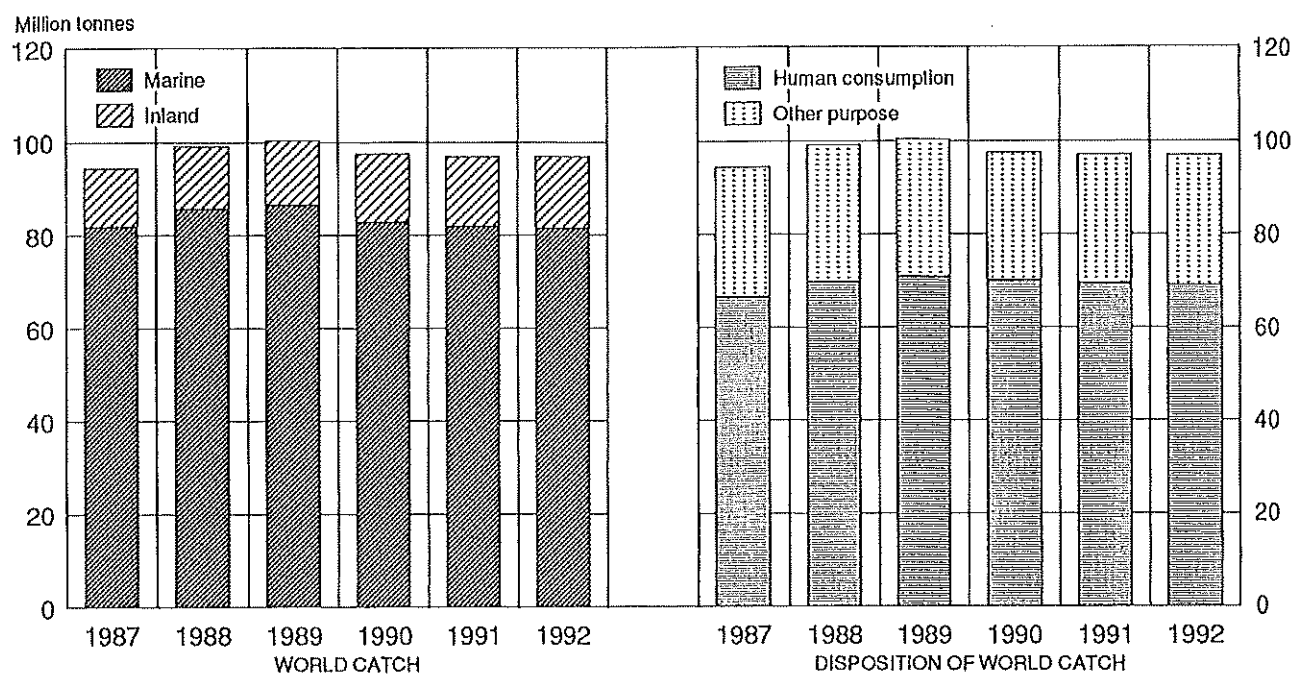
\* Projection

## 9. Fisheries catch, disposition and trade

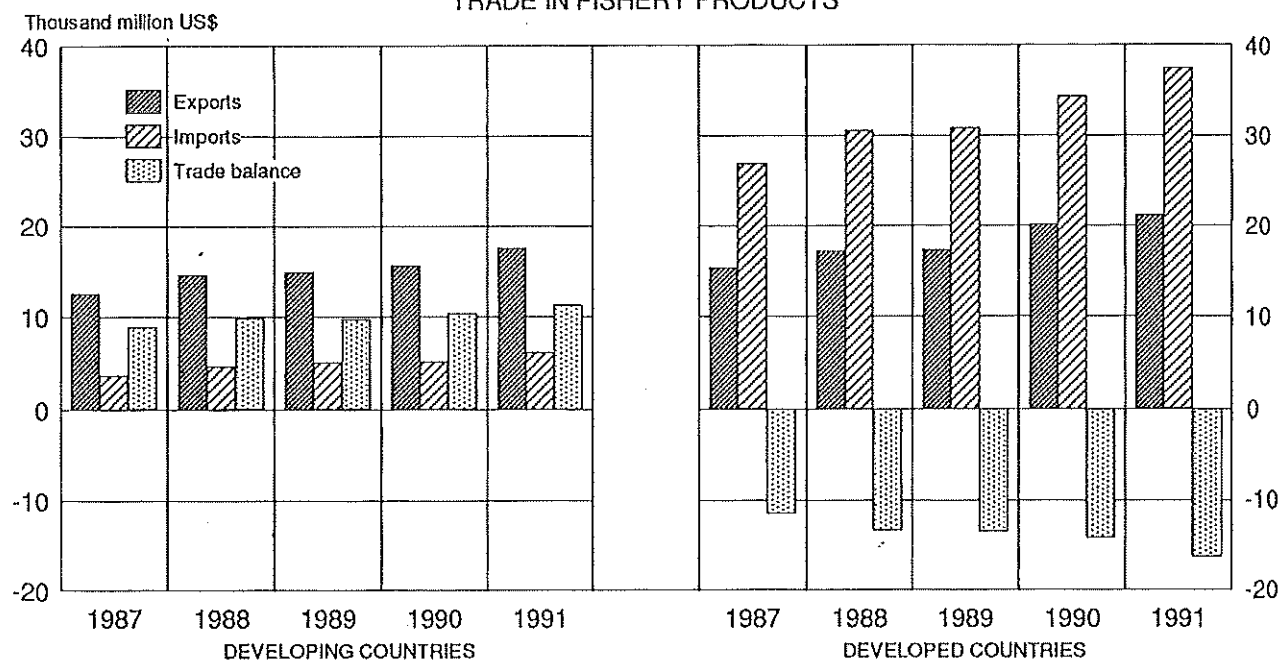
- World catch and culture of fish and shellfish in 1992 stabilized at the level of 1991, i.e. 96.9 million tonnes, following declines both in 1990 and 1991.
- World marine fish production declined for the third consecutive year to 81.5 million tonnes, although the decline was a marginal 0.4 percent.
- World inland fish production continued to grow, increasing in 1992 by an estimated 2.1 percent compared with expansion rates of 3.8 percent in 1991 and 5.7 percent in 1990.
- Among the five major producer countries, only China and Chile expanded production in 1992. China, the world's largest producer, continued its rapid production expansion, which increased by 11.2 percent to reach 14.6 million tonnes. Chile's production increased by an estimated 6.1 percent to reach 6.4 millions tonnes.
- Production in the former USSR contracted by an estimated 16.8 percent to 7.7 million tonnes. This brought the cumulative decline since 1989 to 32 percent. In Japan, production dropped significantly for the fourth consecutive year, falling to 8.4 million tonnes, 9.7 percent below 1991 and 30 percent below the peak of 1988.
- Estimates of the disposition of world catch in 1992 record a marginal decline of 0.3 percent in fish for human consumption, following declines of 0.9 percent in 1991 and 1.1 percent in 1990.
- In 1991, international trade in fishery products grew less in terms of value than volume because of lower prices for some commodities, including shrimp and salmon. Exports in 1991 reached \$38.5 billion, up from \$35.8 billion in 1990.
- Estimates for 1992 are for an increase in the value of fish traded to more than \$40 billion, a trend which is expected to continue in 1993. The share of developing countries in world exports of fishery products is estimated to remain stable at around 46 percent.
- Developing country exports in 1991 represented 34 percent of their total catch as compared with 43 percent for developed countries. In spite of this, developing countries as a group recorded an increasingly positive trade balance in fish products, which reached \$11.3 billion in 1991; while the developed countries' position as net importers of fish products continued to accentuate strongly, with their exports only accounting for about 60 percent of their imports in 1991.

Exhibit 9

# WORLD FISH CATCH AND DISPOSITION



# TRADE IN FISHERY PRODUCTS



Source: FAO

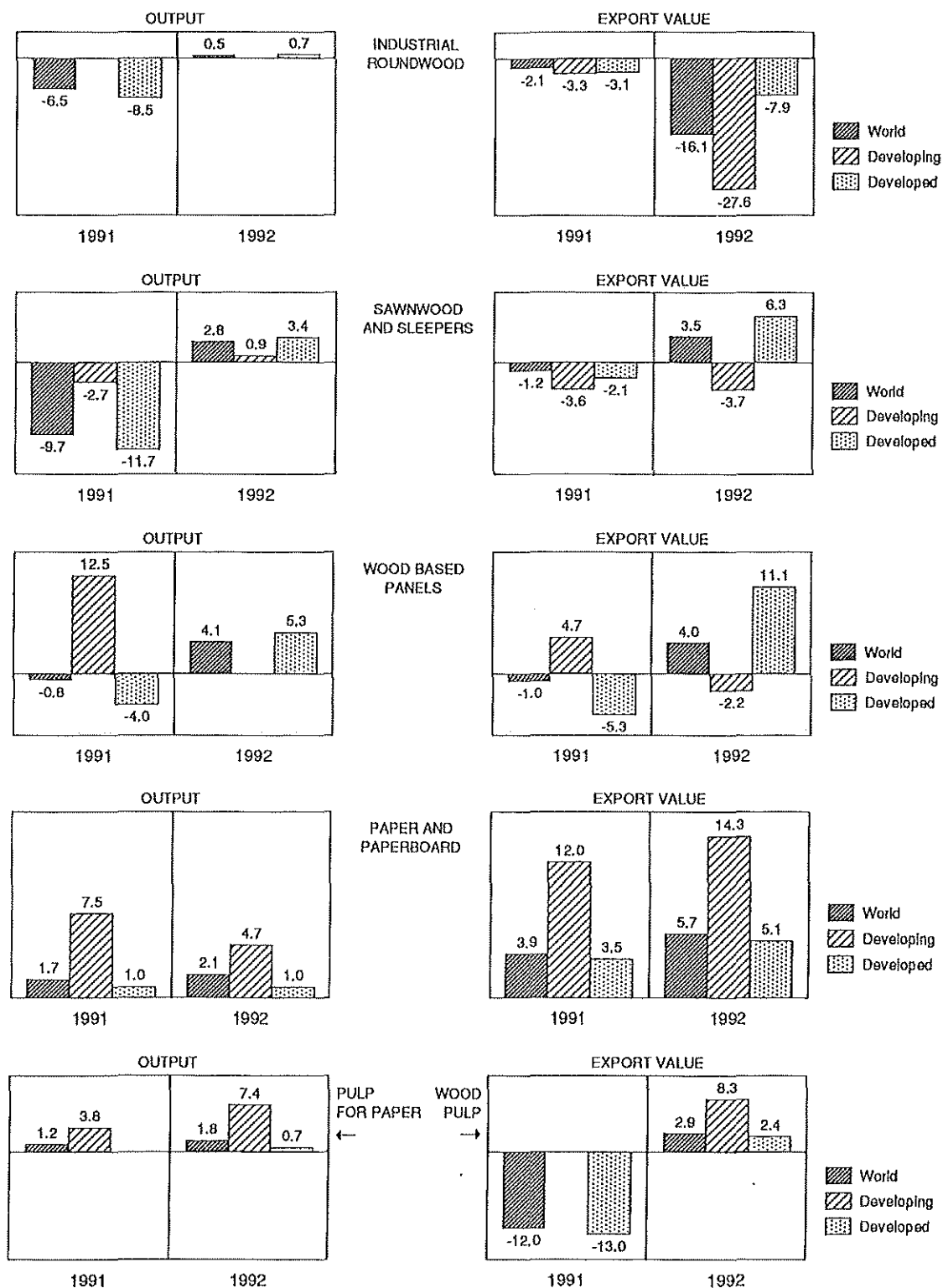


10. Forestry production and trade in 1992

- World production of roundwood increased marginally above the depressed level of 1991, mainly reflecting the continuing fuelwood production growth in the developing countries and the recovery of industrial roundwood markets in North America. Demand for industrial roundwood and mechanical wood products in Japan and Western Europe remained weak while it continued to fall sharply in the former USSR and some Eastern European countries.
- Production of sawnwood and wood-based panels increased in the developed countries, led by the North American recovery, but remained well below the level of 1990. Some major tropical timber producers are facing increasing environmental problems in the use of their natural forest resources, which is constraining their production of wood products both for the domestic and export markets. Environmental concerns are also limiting log supply from the old growth natural forests of the northwestern United States, thus favouring the use of the recently established, cultivated forests of the southeastern region.
- The pulp and paper industry continued to expand, albeit at a slower rate than in the late 1980s. Production in the developing countries continued to grow markedly, with dynamic performances in Brazil, Chile and several countries in Southeast Asia.
- Lower utilization of capacity, low prices and poor profitability characterized the pulp and paper markets. The increasing trend in the use of waste paper continued, backed by legislative and policy measures in a number of countries, and this may have contributed to the reduced utilization of wood pulp capacity.
- The value of trade in forest products recovered, after two years of stagnation. Notable gains were recorded by Canadian coniferous sawnwood exporters who increased their exports to the United States by 15 percent to reach 31 million m<sup>3</sup>. Exports of coniferous logs from the United States continued to be hampered by the reduced log supply from the Pacific northwestern region, caused by the set-aside of timber land for environmental reasons. These exports, mainly directed to Asian countries, dropped by a further 13 percent, causing a steep price increase for coniferous logs and sawnwood in international markets during the first part of 1993.
- Trade in tropical timber continued to decline in 1992, as major exporters, such as Peninsular Malaysia and Indonesia deliberately reduced their exports of logs, sawnwood and plywood through the imposition of limits, quotas or levies. This policy aims at increasing exports of processed products such as mouldings, furniture and furniture parts.
- Trade in paper products continued to expand in 1992, reflecting in particular increasing exports from Europe and the United States. Trade in wood pulp continued to stagnate, as prices for major grades remained depressed because of increased competition from recycled fibres and excessive capacity.
- In early 1993, the Malaysian State of Sabah temporarily suspended its log exports while, in the state of Sarawak logging of tropical forests has been severely curtailed since 1992. Lower timber supply from the main Asian producers contributed to a sharp increase in prices of tropical timber in the first part of 1993.

Exhibit 10

OUTPUT AND EXPORT VALUE OF MAIN FOREST PRODUCTS  
(Percentage change over preceding year)



## OVERALL ECONOMIC ENVIRONMENT AND AGRICULTURE

### Economic overview

11. The global economic downturn that started in 1990 has continued into 1993 and prospects for recovery in the near term appear particularly uncertain. After having virtually stagnated in 1991, world economic activity is estimated to have increased by only 1.7 percent in 1992 while forecasts for 1993 point at 2.2 percent growth rate.<sup>1</sup>

12. The General Agreement on Tariffs and Trade (GATT) estimates world merchandise trade in 1992 to have expanded by 5.5 percent in value and 4.5 percent in volume, the first acceleration in growth since 1988. Current forecasts for 1993 are for trade growth of more than 4.5 percent in volume, although a downside risk is recognized for trade performance.<sup>2</sup> In any event, the relatively brisk expansion in world trade is seen as a bright spot in an economic environment that is otherwise characterized by depressed growth and uncertain prospects.

13. Economic growth in the industrial countries, which account for three-quarters of world output, is currently estimated by the OECD to be a mere 1.2 percent in 1993, below the already depressed growth levels of the previous year.

14. European countries are facing a particularly difficult situation: economic recession (oddly combined with high real interest rates); high and rising levels of unemployment; widening fiscal deficits; and financial and currency instability which is seriously straining the exchange rate mechanism (ERM) of the EEC and adding to the difficulties of achieving Maastricht objectives.

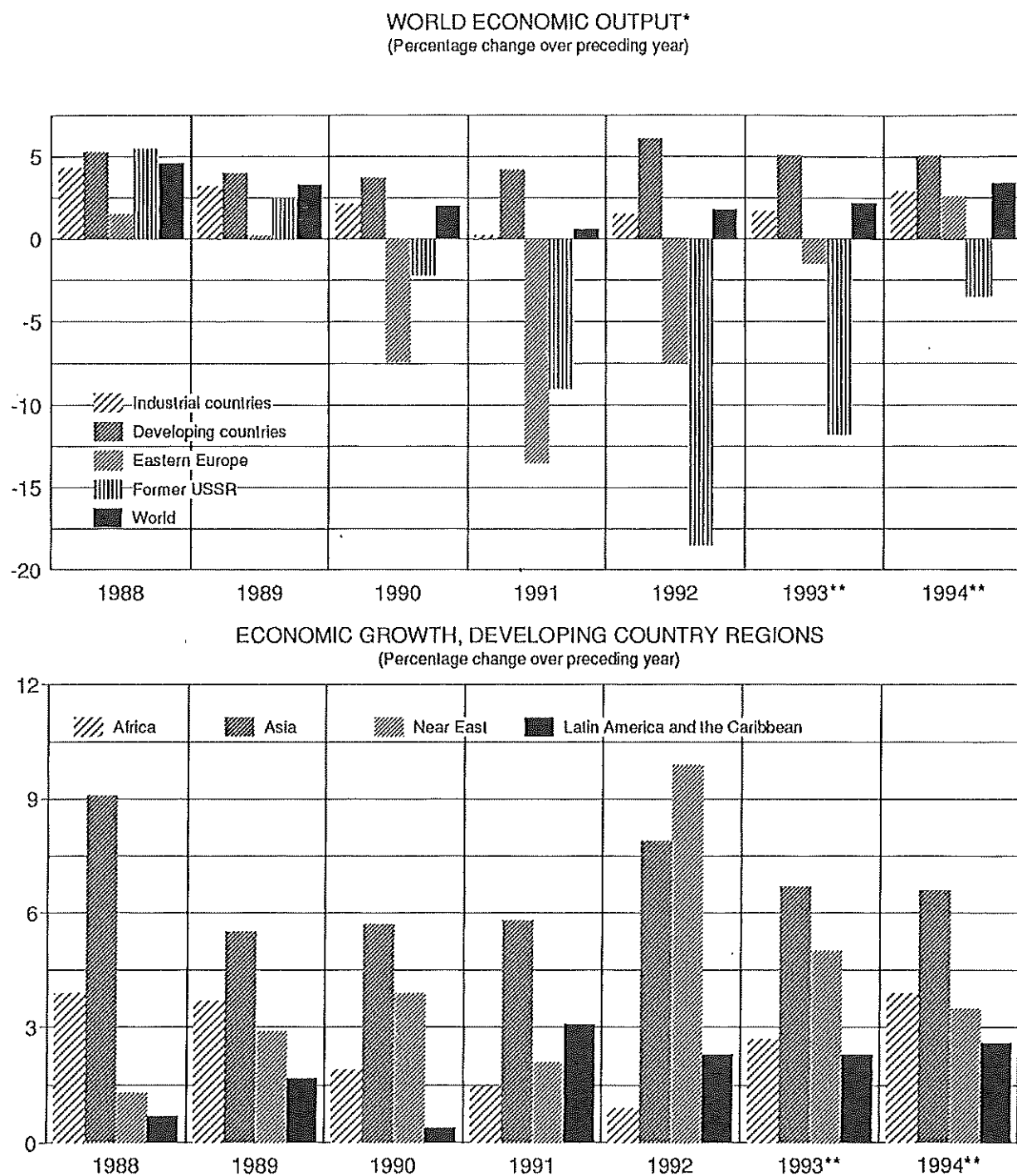
15. Japan's growth expectations for 1993 are barely of the order of 1 percent, but recent indications suggest that stimulative fiscal and monetary measures may help recovery to take hold in 1994.

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<sup>1</sup> Unless otherwise indicated, estimates and forecasts in this section are from IMF. *World Economic Outlook*, April 1993.

<sup>2</sup> GATT world trade estimates are somewhat different from those of the IMF. According to the IMF, the volume of world trade in 1992 expanded by 4.2 percent and forecasts for 1993 point to a 5.2 percent growth.

Figure 1

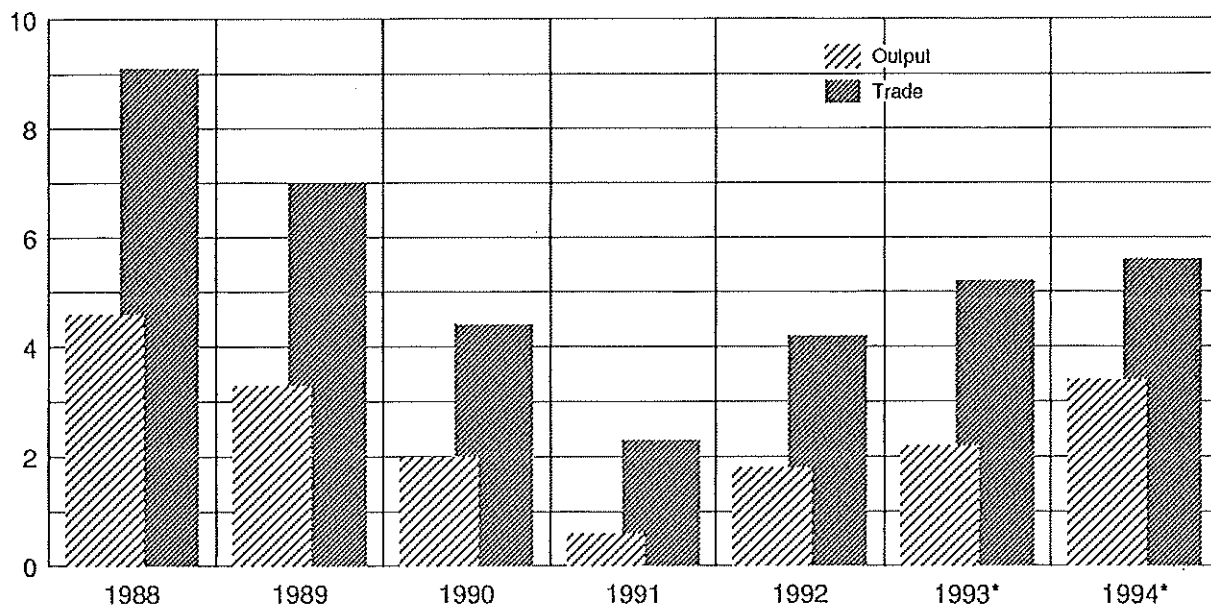


Source: IMF

\* Real GDP or real NMP - \*\* Projections

Figure 2

WORLD OUTPUT AND VOLUME OF WORLD TRADE  
(Percentage change over preceding year)



Source: IMF

\* Projections

16. With Western Europe and Japan losing momentum as global growth poles, the United States appears to offer the best prospects for stimulating the world economy in the short and medium term. United States economic growth in 1993 was forecast by the OECD to be 2.6 percent, below previous expectations but still more than twice the average growth for the OECD area. Recovery appears to be gaining momentum although major uncertainties remain, particularly with regard to the large federal budget deficit and the effectiveness of measures to reduce it.

17. Among the former centrally planned economies, the Czech Republic, Poland and Hungary are showing signs of recovery and reduced inflationary pressure, but they still face difficulties in containing fiscal deficits. The Baltic states are also showing encouraging progress in growth and stabilization.

18. On the other hand, the process of economic restructuring is encountering major obstacles in most other countries in the former USSR. After catastrophic output losses in the previous two years, real GDP in the former USSR is expected to decline sharply again in 1993. Underlying these dismal performances are extremely high rates of inflation, a collapse of trade flows within and outside the area, inability to compress the fiscal deficit and uncertainties over the process of transformation itself.

19. In marked contrast with the depressed economic performances of developed countries and economies in transition, developing countries as a whole showed robust growth in 1992 (about 6 percent) and are expected to continue growing at a relatively fast, although somewhat slower, rate in 1993. There were wide regional differences, however, and the overall strong growth of developing countries mainly reflected the performances of relatively few dynamic economies. The best performers were again Far East countries, particularly those in eastern Asia. China emerged as possibly the fastest-growing economy in the world, with its production, investment and exports shooting up in 1992 and 1993 but - with growing concern over inflationary pressure. Economic activity also remained reasonably buoyant in Latin America and the Caribbean, a major exception being the Brazilian economy which is crippled by stagflation and a budget deficit representing 40 percent of GDP. Finally, Africa was badly affected by conflicts, drought in southern countries and depressed prices for several of the region's main export products in 1992; an improvement in terms of trade and return to normal weather conditions in southern Africa are expected to strengthen growth somewhat in 1993 (see Part II, Regional review, Sub-Saharan Africa).

20. The darkest side of the global economic picture is the large number of poor countries that continue to see their situation worsen. According to the United Nations Conference on Trade and Development (UNCTAD) the 47 least-developed countries (LDCs) are expected to record a fourth straight year of economic decline in 1993. Only a handful of these countries will have avoided the negative trend, namely Malawi, Mauritania, Myanmar, Nepal and Uganda, which benefited in particular from expanded export earnings.

## Box 1

## External debt of developing countries

1. The total external debt of the 116 developing countries reporting to the World Bank's Debtor Reporting System (DRS), estimated to be \$1 418 billion at end-1991, was projected to reach \$1 510 billion in 1992.
2. For all DRS countries, the *debt-to-exports ratio* in 1992 was estimated to be 178 percent, about the same as the previous year but much higher than in 1990, when it stood at 167 percent. However, from 21 percent in 1991, the ratio of *debt service-to-exports* is projected to decline slightly to 19 percent in 1992. The *debt-to-GNP ratio*, is expected to remain almost unchanged in 1992 at 37 percent.
3. Regional debt indicators varied widely, as shown in Figure 3. The debt situation in sub-Saharan Africa and Latin America and the Caribbean are discussed in the Regional Review of this report. For the group of severely indebted low-income countries, the debt-to-GNP ratio stood at an estimated 113 percent in 1992, down from 117 percent in the previous year. The debt service-to-exports ratio was estimated to be 22 percent, the same level as in 1991.
4. Developing countries' external *debt originated from agriculture-related projects* was estimated to be \$72.2 billion in 1991, representing approximately 6 percent of these countries' total external debt. Overall, this share has remained fairly constant in past years, although variations between regions were significant. These ranged from 4 percent in Latin America and the Caribbean to 8 to 10 percent in the Near East, sub-Saharan Africa and East Asia and 15 percent in South Asia. The low share of agriculture in total debt reflects the fact that external finance to the sector, chiefly provided by official sources, is highly concessional.
5. *Net transfers* (net flows minus interest payments) related to all debts, which reached a negative \$16 billion in 1991, are projected to decrease to negative \$3.6 billion in 1992. The long-term component of such transfers, which were a negative \$23 billion in 1991, were expected to turn slightly positive in 1992, with negative net transfers to private creditors falling from \$27 billion in 1991 to \$7 billion in 1992. This was partly due to much larger disbursements by private creditors, which rose from \$70 billion in 1991 to \$84 billion in 1992.
6. *Debt reduction operations* were estimated to have reduced the debt of all developing countries by \$13 billion in 1992, against \$9 billion in 1991. Official debt forgiveness accounted for about \$6.5 billion. The reduction in private debt was done mainly through officially sponsored operations. Those under the Brady Plan reduced debt by \$4.7 billion, market buy-back by \$7.9 billion and debt-equity swaps by \$1 billion. The *Paris Club* of developed creditor countries negotiated special agreements



under the Houston terms<sup>1</sup> with severely indebted lower-middle-income countries, consolidating more than \$5 billion in 1992. Conventional restructuring agreements amounting to \$13 billion were also negotiated. Twelve severely indebted low-income countries obtained special concessions under the new "*enhanced Toronto terms*"<sup>2</sup> menu and during 1992 consolidated more than \$2.5 billion. In 1992, only seven countries benefited from debt reduction operations under the "IDA only" World Bank Debt Reduction Facility. Such reduced use of the Facility was due to debtor country difficulties in carrying out adjustment programmes.

7. An important financial development in 1992 was the *increase in private capital flows* to developing countries and the shift from debt to equity financing, particularly through foreign direct investment (FDI) and portfolio equity investment. This development affected more particularly Latin America and the Caribbean and is discussed in the Regional review of this document. Only a few low-income countries have benefited from the increased FDI flows. This group of countries received an estimated \$9 billion in 1992, of which \$5 billion were invested in China alone.

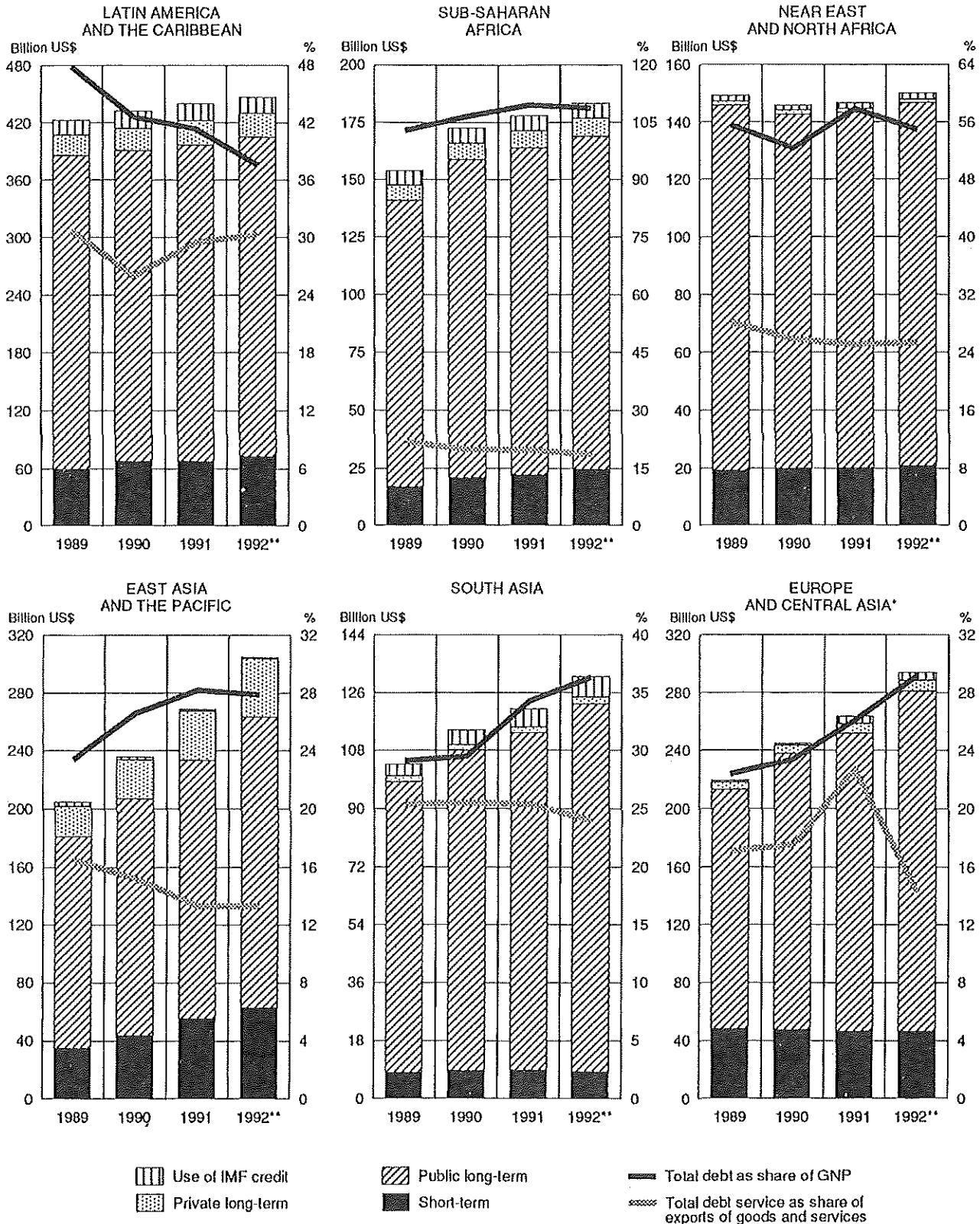
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<sup>1</sup> Houston terms are longer terms of repayment granted by the Paris Club for countries that have a strong adjustment programme and have performed well under previous Paris agreements. These were decided as a follow-up to the July 1990 Houston economic summit.

<sup>2</sup> The enhanced Toronto terms, agreed by the Paris Club in December 1991, provide for a new menu of enhanced concessions for the countries designated by the World Bank as "IDA-only" borrowers, i.e., eligible for concessional assistance from the International Development Association.

Figure 3

# COMPOSITION OF DEBT



Source: World Debt Tables 1991-92

\*Including Former USSR

\*\* Projections

## The economic outlook and prospects for agriculture

21. Forecasting economic and agricultural developments is a particularly risky exercise, given current circumstances. A number of events still unfolding introduce an unusually high degree of uncertainty. These include the transformation process in Eastern Europe and the former USSR; the outcome of the Uruguay Round; the timing and extent of the economic recovery in the industrial world; and the unresolved conflicts in Africa, the Near East, the Balkans and other parts of the world.

22. With all the caution imposed by such uncertainties, most forecasts - in particular those of the World Bank, the IMF and the LINK project - point to the following developments for 1994-95:

- Economic activity in the industrial world should recover somewhat in 1994 and further in 1995, although growth rates will probably remain below 3 percent. The United States is likely to be the main driving force in the recovery.
- Central Europe's economies in transition may resume positive growth in 1994; those in the former USSR are unlikely to do so before 1995 or even later.
- Economic growth in the developing countries as a whole would continue outpacing that in the industrial world, at rates between 5 and 6 percent. The fastest-growing economies would continue to be in East Asia (6 to 7 percent), with China gradually emerging as a "fourth pole" of world growth. Several adjusting countries in Latin America and the Caribbean would consolidate recovery, bringing the region's growth to 5 to 6 percent. At 3 to 4 percent, Africa's economic growth would show some pickup; however, this growth would remain well below the developing country mean and gains would be meagre in per caput terms. Growth in the Near East would slow from the very high rates of 1992, although growth would continue to exceed the rate of past trends.

23. One remarkable feature in these forecasts is that developing countries would continue outpacing the developed countries in growth. It may be generally observed, however, that: (i) the dynamism of developing countries' economies would be narrowly based, being chiefly accounted for by East Asian countries (mainly China) and liberalizing countries at an early and still uncertain stage of recovery, mainly in Latin America and the Caribbean; (ii) although the growth rate differentials imply some narrowing in the economic gap between industrial and developing countries, the gap remains vast. Average per caput income levels in OECD countries are currently about three times higher than those of the richest developing countries. Even the highest-income and fastest-growing developing countries still have to make up a large difference in per caput income levels<sup>3</sup> and, in order to do so, in factor productivity; (iii) the North/South growth differential must be seen as a transitory

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<sup>3</sup> The World Bank estimates that, should China's economy continue growing in the 7 to 8 percent range throughout the 1990s, the size of its GDP by 2002 would be approaching that of the United States. However, China's per caput income would remain about one-fifth that of the United States.

phenomenon rather than a sign of lesser economic interdependence. Indeed, the recent home-based recovery of many developing countries is unlikely to be sustained in the absence of more trade and investment impulses from the industrial world.

### Prospects for developing countries' agriculture

24. Short-term forecasts for developing countries' agricultural output and trade are shown in Table 1.

Table 1. Projected growth in agricultural value added, exports and imports for developing country regions, 1993 and 1994

Region	Agricultural value added		Agricultural exports		Agricultural imports	
	1993	1994	1993	1994	1993	1994
	(..... % .....)					
Sub-Saharan Africa	2.34	2.99	0.50	8.22	6.64	8.89
Latin American and Caribbean	2.58	3.54	4.50	6.81	4.44	4.65
Far East and Pacific	4.98	4.20	10.29	9.10	8.22	12.29
Near East and North Africa	3.64	4.03	5.33	7.12	6.69	7.20

Source: LINK Project.

25. The above projections suggest that:

- The increase in agricultural value added in 1993 and 1994 would be broadly in line with the average trend values of the 1980s, except in Latin America and the Caribbean where projected growth rates would significantly exceed past trends. Growth in agricultural value added would accelerate in 1994 in all regions except Asia and the Pacific, although agricultural growth in this region would remain strong.
- Agricultural exports and imports would expand well above the 1980s' and more recent trends. For sub-Saharan Africa, 1994 would be a year of strong recovery for agricultural exports. However, imports would expand at an even faster rate, causing the agricultural trade deficit recorded in this region to reach \$12 billion in 1994 - nearly twice the deficit recorded in 1991. The agricultural trade deficit record would also increase in the Near East (to \$15 billion in 1994, up from \$12 billion in 1991).
- The agricultural trade surplus in Latin America and the Caribbean would expand moderately from \$24 billion in 1991 to 26 billion in 1994, but that of Asia and the Pacific would fall from \$4.9 billion to \$2.5 billion during the same period.

26. Two factors will crucially determine developing countries' growth and trade prospects for the sector: (i), the extent of the overall economic recovery, which will affect domestic and international demand for agricultural products as well as agricultural supply through its impact on input costs and capital flows; and (ii) largely related to the above, the future behaviour of commodity prices - with agricultural commodities accounting for about 10 percent of world trade but a far greater proportion of the export earnings of many developing countries.

27. As regards the first factor, the current uncertainty over the timing and strength of the global recovery makes it hard to assess the impact it will have on agriculture. Bearing in mind the past record of oversanguine forecasts of global recovery, it may be interesting to explore what might happen if, for instance, the recovery does not materialize in the near future. For a specific region, what would be the impact on agricultural exports, imports and total GDP of zero growth in the rest of the world? A simulation exercise can at least attempt to appraise the magnitude of such impacts, given these hypothetical scenarios. In this type of simulation exercise, of which the results for sub-Saharan Africa are summarized in Table 2, such impacts are estimated as percentage deviations from "baseline" projections.<sup>4</sup>

Table 2. Sub-Saharan Africa:<sup>1</sup> simulated effects of zero growth in GDP in the rest of the world, 1993 and 1994

	Agricultural exports	Non- agricultural exports	Agricultural imports	Non- agricultural imports	GDP
	(..... % changes over baseline projections .....)				
1993	-0.50	-0.64	-0.01	-0.04	-0.05
1994	-1.51	-2.06	-0.06	-0.13	-0.17

<sup>1</sup> Excluding Nigeria

Source: FAO.

28. The figures indicate that regional agricultural exports in 1993 would expand by 0.5 percentage points less than the 'baseline' growth estimate for that year; and by 1.5 percentage points less in 1994, assuming a second year of zero growth in the rest of the world. In other words, using the baseline projections shown in Table 1, sub-Saharan Africa's agricultural exports would stagnate instead of growing by 0.5 percent in 1993 and would increase by 6.6 percent instead of 8.2 percent in 1994 the difference between the latter two being about \$1.41 billion in actual value terms. This amount is considerable in the

<sup>4</sup> This simulation is based on an econometric model elaborated for FAO by Prof. George P. Zanias, Agricultural University of Athens.

African context. Converted at 1992 prices it would represent over 10 percent of sub-Saharan Africa's repayments on all debts, or roughly the total value of estimated FDI into the region that year.

29. Global economic stagnation would also affect the region's economic activity, which would grow by about 2.9 percent in 1994 instead of the 3.1 percent currently forecast by LINK. While such loss does not appear dramatic, it makes the difference between catching up with population growth - currently 3.1 percent annually - and recording yet another decline in per caput output for the region.

30. As regards commodity prices, most forecasts point to a firming of international quotations from their current deeply depressed levels, reflecting some increase in demand, as global recovery proceeds, as well as reductions in supply caused by shifts away from primary production. Thus, the World Bank baseline forecasts predict some increase in food and beverage prices and there would be a continuing long-term decline in the production of perennial crops, especially coffee and cocoa, where production costs often exceed world prices and new plantings have fallen.<sup>5</sup> Project LINK projections for 1994-95 indicate a strong upsurge in coffee and, to a lesser extent, cocoa prices, although this would be insufficient to offset the declines of the previous two years. On the other hand, prices of other commodities, including sugar, banana, beef, cotton and hard fibres, are expected to increase only slightly or, in some cases, even decline. Grain prices are likely to be depressed through and beyond 1993 while, according to FAO projections, a tightening of the global market is not likely until the mid- to late 1990s. Note must be taken, however, of the high risks involved in commodity forecasting - as well known to market analysts as they are to speculators. Furthermore, while there appears to be a degree of consensus on the general price trends for several commodities, there is disagreement among analysts on the magnitude, and even direction, of forecast changes for several others.

### **Prospects for economies heavily dependent on agricultural trade**

31. Pursuing the approach introduced in *The State of Food and Agriculture 1992*, this section reviews the economic and agricultural prospects for two groups of selected developing countries: (i) low-income food-deficit countries (LIFDCs) with the lowest capacity to finance food imports; and (ii) economies highly dependent on agricultural exports (EDAEs). The countries classed in these groups are shown in Table 3.

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<sup>5</sup> World Bank 1993. *Global Economic Prospects and the Developing Countries*.

Table 3. LIFDCs with the lowest capacity to finance food imports

Sub-Saharan Africa	Latin America and Caribbean	Far East and Pacific
Cape Verde	Haiti	Samoa
Gambia	Nicaragua	Bangladesh
Lesotho	Dominican Rep.	Cambodia
Djibouti		Afghanistan
Mozambique		Nepal
Guinea-Bissau		Laos
Somalia		Sri Lanka
Comoros		Maldives
Sierra Leone		
Ethiopia		Near East and North Africa
Burkina Faso		
Togo		
Senegal		Egypt
Benin		Yemen
Rwanda		Sudan
Mali		
Mauritania		

Economies highly dependent on agricultural exports

Latin America and Caribbean	Far East and Pacific	Sub-Saharan Africa
Argentina	Sri Lanka	Kenya
Paraguay	Thailand	Ethiopia
Honduras	Afghanistan	Rwanda
Cuba	Viet Nam	Swaziland
Uruguay	Malaysia	Mauritius
Brazil		Central African Rep.
Guatemala	Sub-Saharan Africa	Tanzania,
Costa Rica		United Rep.
Colombia		Chad
Saint Vincent and the Grenadines	Côte d'Ivoire	Burkina Faso
Ecuador	Malawi	Somalia
Guyana	Zimbabwe	Benin
Belize	Mali	Guinea-Bissau
Dominica	Sudan	Gambia
Nicaragua	Madagascar	
El Salvador	Burundi	
Dominican Rep.	Cameroon	
Sao Tome and Principe	Ghana	
	Liberia	
	Uganda	

Note: The criteria for the definition of these groups are explained in *The State of Food and Agriculture 1992*, pp. 11-12.

32. The analysis is based on macro-economic estimates and short-term forecasts for the two groups of countries, prepared by the IMF for FAO, and on forecasts by the LINK project, prepared in association with FAO, for variables related to agriculture. The time horizon explored is 1993-94.

33. The broad trends emerging from the analysis confirm the general observations presented in *The State of Food and Agriculture 1992*, i.e. both groups of countries are forecast to share in the overall improvement of developing countries in both general economic and agricultural performances. However, the improvement for these two groups would be highly uneven and their average GDP growth would continue below that of developing countries as a whole. Beyond those general tendencies, the following salient features emerge from the 1993-94 forecasts:

**LIFDCs with the lowest capacity to finance food imports**

- GDP growth would accelerate to about 4 percent in both years, with agricultural value added increasing at a somewhat slower pace.
- Merchandise imports would expand strongly from the deeply depressed levels of 1991/92. Agricultural imports would also expand significantly, outpacing other merchandise imports in the African countries of this group.
- Agricultural export growth would lag behind that of food imports, so the agricultural trade deficit would more than double from the level of 1991-92.<sup>6</sup>
- Despite a strong expansion in export earnings (8 to 9 percent, about twice the rate of the previous two years), the value of imports would still be more than twice that of exports. Nevertheless, unrequited transfers (largely official project and technical assistance, benefiting African countries in particular) would help to bring the current account deficit to less than half the level of 1989-90.
- The terms of trade and, more significantly, the purchasing power of exports would show some improvement, thus reversing a negative trend. Gains in purchasing power would arise from a significant expansion in export volumes since export unit values would rise only moderately.

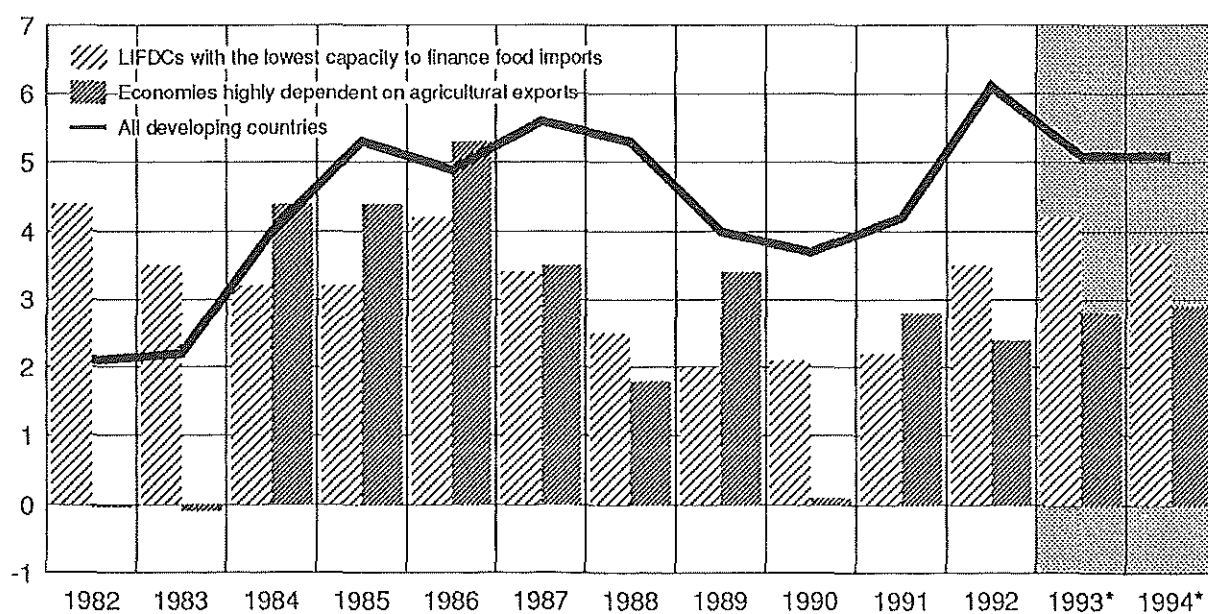
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<sup>6</sup> Despite their high dependence on food imports, these countries also rely heavily on agricultural exports, which account for about 28 percent of their total export earnings.



Figure 4

REAL GDP GROWTH OF SELECTED COUNTRIES AND ALL DEVELOPING COUNTRIES  
(Percentage change over preceding year)



Source: IMF and FAO

\* Projections

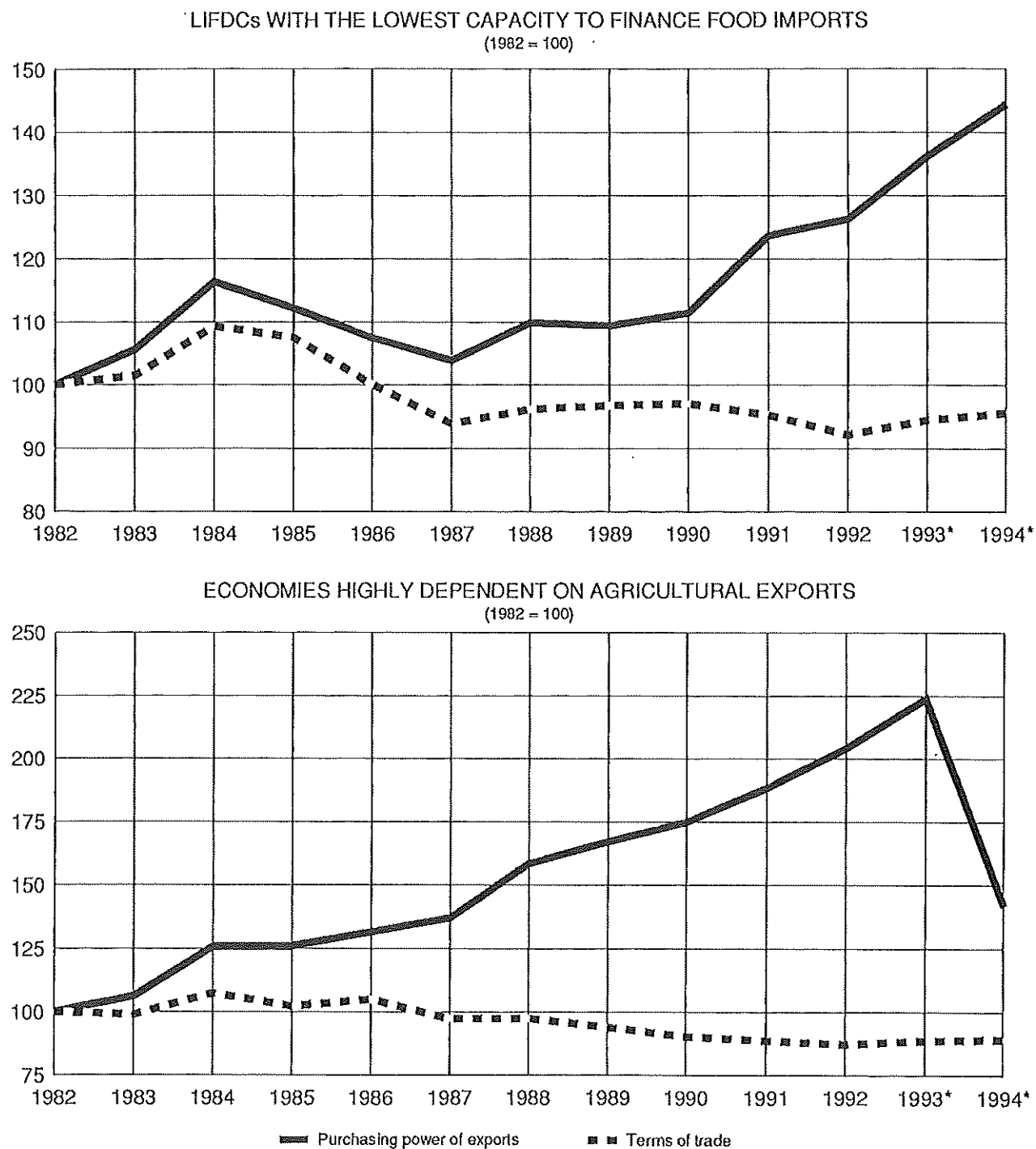
### **Economies heavily dependent on agricultural exports**

- GDP growth is expected to accelerate slightly, reaching almost 3 percent in both 1993 and 1994, with agriculture expanding faster than other sectors.
- Economic activity would be boosted by a significant expansion in total and agricultural exports. For the latter, this would mark a recovery from depressed performances in 1992.
- Along with the strong growth in exports would be a slight improvement in barter terms of trade in both 1993 and 1994, thereby interrupting a long declining trend. From 1981 to 1992, terms of trade have deteriorated virtually every year. The expected firming of commodity prices in the coming years would largely explain the terms of trade improvement forecast for these countries.
- Contrasting with the adverse movements in terms of trade, the purchasing power of exports generally showed positive growth during the past decade as a result of volume increases and they were expected to increase significantly again in 1993-94. Sub-Saharan countries in this group did not share in the favourable trend, however, and only minor gains in their export purchasing power are expected in 1993-94.
- Merchandise imports would expand even faster than exports, widening the trade deficit that began to emerge in 1991 and contributing to a further deterioration in the current account balance; however, the agricultural trade surplus would increase significantly and consequently, contribute to the alleviation of the financial constraint.

34. One of the salient features emerging from the above review is the capacity of both groups of countries to counter adverse terms of trade movements through expanded volumes of exports. In the case of EDAEs, terms of trade deteriorated by a cumulative 27 percent between 1981 and 1992, but the purchasing power of their exports (of which agricultural products typically account for two-thirds) rose by a cumulative 53 percent. This is explained by the fact that, while the unit value of their exports fell by about 5 percent, export volumes increased by nearly 80 percent during the same 12-year period.

35. General factors behind such vigorous expansion in export volume - itself a price-depressing influence - included: export-promotion measures, often linked to stabilization and adjustment programmes; improvements in factor productivity, leading to competitive gains in world markets, and a general share in the global expansion of trade. The relative weight of these and other contributing factors is a research area of considerable interest from a policy perspective. This issue will be further explored in *The State of Food and Agriculture 1994*, focusing on the past experience of agricultural export-dependent countries.

Figure 5



Source: FAO

\* Projections

## Box 2

### Specialization and competitiveness

1. Economies highly dependent on agricultural exports (EDAEs) specialize in the production and export of agricultural raw materials. To that extent, they could be expected to be in a better position to strengthen their competitiveness in world agricultural markets than those countries for which agricultural exports matter less.

2. Historical evidence refutes this simplistic assumption. Not only have EDAEs lost agricultural market share globally but, in the cases of African and Latin American countries in this group, they have lost in relation to other developing countries with a more diversified export base.

	1969-71 (..... % .....)	1979-81	1989-91
Share of EDAEs in:			
Agricultural exports of all developing countries	49	56	51
World agricultural exports	18	17	14
Share of EDAEs, by region, in agricultural exports of all developing countries			
Africa	14	12	9
Asia and Pacific	10	13	15
Latin America and Caribbean	31	36	28

3. While identifying the determinants behind these trends is a matter for further research at the specific country and commodity market levels, one general observation can be made: specializing in agricultural exports, for many countries a fate-determined rather than a chosen course, does not guarantee *per se* competitiveness. The issue is more related to the overall economic situation of the countries concerned. EDAEs are, with few exceptions, relatively poor countries with a limited capacity for introducing technological improvement, investing and providing financial and technical support. This is likely to reduce their international competitive position even in those trading activities for which they are better suited all the more so, considering the spurious competitive losses they suffer from farm protectionism practised in many richer countries.

## SELECTED ISSUES

36. This section reviews selected issues of current or emerging importance for agriculture. The themes discussed this year concern challenges and achievements in food access and nutrition, as a follow-up to the International Conference on Nutrition (ICN); the decline in commodity prices and the current status of the Uruguay Round; forest and forest industries, their status in economies in transition and issues related to forestry trade; high sea fishing and coastal zone fisheries; and opportunities and concerns arising from the development and application of biotechnology in agriculture.

### Meeting the goals of the International Conference on Nutrition

37. The World Declaration on Nutrition and the Plan of Action for Nutrition was unanimously adopted at the December 1992 ICN in Rome. Its adoption was the culmination of more than two years of preparation and collaboration at national, regional and international levels. It also marked the beginning of renewed and vigorous efforts at all levels to reduce global hunger and malnutrition and to improve the nutritional well-being of all populations.

38. With the adoption of the World Declaration on Nutrition, governments and other concerned parties pledged to make all possible efforts to eliminate before the end of the 1990s: famine and famine-related deaths; starvation and nutritional deficiency diseases in communities affected by natural and human-caused disasters; and major health problems related to iodine and vitamin A deficiencies. They also pledged to reduce substantially starvation and widespread chronic hunger; undernutrition, especially among children, women and the aged; other important micronutrient deficiencies, including iron; diet-related communicable and non-communicable diseases; social and other impediments to optimal breastfeeding; and inadequate sanitation and poor hygiene, including unsafe drinking-water.

39. The ICN recognized that poverty, social inequality and lack of education are the primary causes of hunger and malnutrition and stressed that improvements in human welfare, including nutritional well-being, must be at the centre of social and economic development efforts. It called for concerted action to direct resources to those most in need in order to raise their productive capacities and social opportunities. It also emphasized the need to protect the nutritional well-being of vulnerable groups through specific short-term actions, when needed, while working for longer-term solutions.

### Past achievements and current challenges

40. An estimated 20 percent of the people in the developing world are chronically undernourished, consuming too little food to meet even minimal energy needs.<sup>7</sup> Approximately 192 million children under five years of age suffer from acute or chronic protein-energy malnutrition; during seasonal food shortages and in times of famine and social unrest, this average number increases. According to some estimates, every year nearly

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<sup>7</sup> Defined as those people whose estimated daily energy intake over a year falls below that required to maintain body weight and support light activity.

13 million children under the age of five die from infections or as a direct or indirect result of hunger and malnutrition. Moreover, more than 2 000 million people, mostly women and children, are deficient in one or more micronutrients: babies continue to be born mentally retarded as a result of iodine deficiency; children go blind and die from vitamin A deficiency and enormous numbers of women and children are adversely affected by iron deficiency. Hundreds of millions of people also suffer from diseases caused by contaminated food and water.

41. At the same time, a number of impressive achievements have been made in food availability, health and social services throughout the world over the last few decades. The estimated number of people in developing regions suffering from chronic malnutrition has declined consistently (from 941 million people to 786 million between 1969-71 and 1988-90), as has the proportion of malnourished people (from 36 percent to 20 percent), even though the world population has increased. In addition, life expectancy in most developing countries is improving steadily, mainly as a result of reduced early deaths from infectious diseases, while mortality rates among children are also declining.

42. Average per caput food supplies in developing countries increased in the 1970s and 1980s, although the rate is slowing. By the late 1980s, roughly 60 percent of the world's population lived in countries that had more than 2 600 kcal available per person per day. Global food supplies (if distributed according to individual requirements) were sufficient to provide well over what would have been required to meet energy needs.

43. Progress in a number of countries indicates that the goals of the ICN, although ambitious, are attainable. In *Thailand*, for instance, during the past decade the prevalence of protein-energy malnutrition (PEM) among preschoolers was reduced dramatically from 50.8 percent to 17.1 percent, with almost total elimination of moderate and severe forms. In *Indonesia* food availability increased from 2 072 to 2 605 kcal per person between 1971-73 and 1988-90 and the prevalence of malnutrition is decreasing steadily.

44. *Chile* has made remarkable achievements in improving the health and nutritional status of infants and pre-schoolers over the last three decades. Both infant and child mortality rates have declined from one of the highest to one of the lowest in the region; the prevalence of child malnutrition has declined from 37 to 8.5 percent.

45. *India* has completely eliminated famines over the last two decades. In *Brazil*, national averages of the prevalence of underweight children fell from 18.4 to 7.1 percent between 1975 and 1989. Substantial improvements have been made in the nutritional status of preschoolers in *Zimbabwe* and infant mortality rates have declined sharply. *Botswana*, despite current and persistent drought, has eliminated deaths from famine and starvation.

46. These country examples illustrate that nutritional status can be markedly improved by the commitment of political will and the formulation of well-conceived policies and concerted action at national and international levels. The immediate challenge to the international community is to build on the progress made and accelerate the pace of improvement in the nutritional well-being of all people.

### **Placing nutrition at the centre of development**

47. Malnutrition primarily affects the poor and disadvantaged who cannot produce or procure adequate food, who generally live in marginal or unsanitary environments without access to clean water and basic services and who lack access to education and information for improving their nutritional status. Moreover, poor health related to malnutrition reduces the resources and earning capacities of households that are already poor, thus increasing their social and economic problems. This, in turn, contributes to further declines in future human, economic and social development.

48. In the poorest countries, nutrition problems cannot be solved through nutrition programmes alone; efforts are needed to improve the overall social and economic conditions in those countries. In all countries, it is imperative to ensure that the benefits of social and economic development are directed to the poor and malnourished. In many instances, the most effective government strategies to reduce malnutrition on a national scale have been those focusing on national income growth with equity.

49. However, many national planners and policy-makers have often failed to give adequate attention to the nutritional implications of development policies. Consequently, such policies have not achieved the maximum nutritional benefits possible and, in some cases, they have had a negative impact on nutritional well-being. For example, the pursuit of industrialization policies that are biased against the agricultural sector has contributed to nutrition problems in some instances.

50. Macro-economic policies that attempt to correct imbalances between aggregate supply and demand but fail to pay adequate attention to the social and nutritional implications can lead to serious nutrition problems, particularly for poor and vulnerable households. While improvements in nutrition may not be among the prime objectives of sector or subsector development policies, the identification of their potential impacts on nutrition should be given particular attention.

51. One key strategy emerging from the ICN is to promote better nutrition explicitly through a range of agricultural and development policies and programmes by incorporating nutrition objectives into the planning process. Significant improvements in nutrition can result from the incorporation of nutrition considerations into the broader policies of economic growth and development, structural adjustment, food and agricultural production, processing, storage and marketing of food, health care, education and social development.

52. Properly implemented development policies can improve nutritional status by providing an economic environment conducive to growth (employment and income creation) or by influencing the prices of and access to goods and services, especially food. Sectoral policies can also maintain or enhance the productivity of resources directly through agricultural and environmental policies or indirectly through health policies that enhance labour productivity. Moreover, public sector policies that develop and expand services such as agricultural extension, health clinics, crèches, schools, farm input centres, roads, bridges, wells and potable water supplies can all have beneficial impacts on nutrition.



53. The agricultural sector presents the greatest opportunity for socio-economic development and consequently offers the greatest potential for achieving sustained improvements in the nutritional status of the rural poor. In many rural areas, the overriding nutrition problems are more closely associated with a shortage of jobs than with a shortage of food. Often, the most pressing need is for employment creation, both on the farm and off, through activities related to agriculture. Agricultural policies can positively affect nutrition through improved food production, availability, processing and marketing as well as through increased employment opportunities.

54. Agricultural policies also affect time, labour and energy utilization, environmental and living conditions and the nutrient content of food. By taking a more comprehensive approach to development, planners may be able to encourage a more equitable distribution and consumption of food, while increasing the purchasing power of the nutritionally deprived, poor and disadvantaged groups of the population.

55. To safeguard the nutritional well-being of the poor, it is essential that macro-economic policies do not discriminate against the food and agricultural sector and rural areas, where the poor often live. Public investment in health care services and public sanitation, including both piped water and sewerage can significantly improve health and nutrition. Investment in infrastructure to promote effective market functioning, especially roads and transportation, and the communication of market information are also likely to promote equitable access to economic incentives.

56. A growth-promoting external economic environment also has an essential role to play in improving the nutritional status of the poor. Policies in this domain encompass improving the international trade environment, alleviating the external debt problem and increasing the flow of external resources. At the national level, rapid population growth is a serious barrier to achieving a sustainable improvement in living standards. Consequently, the implications of population policies on nutrition are significant, particularly in food-deficit countries where rapid population growth continues and where urbanization is increasing.

57. Education provides better opportunities and better living conditions which can result in improved health and nutrition. Maternal education and literacy, in particular, have a significant impact on children's survival, health and nutritional well-being. Education and literacy affect development and income which, in turn, contribute to improved nutrition. Education and the training of people to address food and nutrition concerns at the community and regional level may have a great impact in areas where such skills are lacking.

58. Environmental policies also have a major role in influencing the nutritional status of the poor. Policies should aim at creating an economic environment in which it is more profitable to manage and conserve natural resources rather than destroy them.

59. Intersectoral dialogue, based on a strong government commitment and political will, is indispensable for encouraging realistic and complementary actions to improve nutrition. At local and regional levels, some structure is needed to identify actions that the various



sectors should take to improve nutrition and formulate better operational objectives for such actions. For example, targeting the benefits of development preferentially to those most in need.

### **Taking action to improve nutrition**

60. Most countries have already made good progress in identifying priority problems, reviewing or preparing plans and establishing intersectoral mechanisms for action. Many countries, including some of the poorest, have taken measures to strengthen food, nutrition, agriculture, education and health and family welfare programmes that have dramatically reduced hunger and malnutrition. Many have also been successful in improving the nutritional status of their populations through intersectoral committees on food and nutrition and through integrated food, nutrition and health policies. The following country examples are representative of these successes.

61. *Thailand's* success is largely attributed to its five-year social, health and food and nutrition plans and, especially, to its Poverty Alleviation Plan (PAP). The PAP, initiated in 1982, is a rural investment programme aimed at improving the quality of life of 7.5 million poor people in the northern, northeastern and southern regions of the country. The plan concentrated on raising the population's living standards from the subsistence level and providing minimum basic services in rural areas with a high concentration of poverty.

62. The PAP emphasized maximum community participation and low-cost technology that would enable people to do more to take care of themselves. Four key programmes were employed: rural employment creation; village development projects or activities; provision of basic services; and an agricultural production programme. The very strong political support received by the PAP throughout its implementation as well as the emphasis on community participation are considered to have been essential to its success.

63. *Indonesia's* long-term development plans focus on food and nutrition policy and programmes as a priority in human development and poverty alleviation. At the national level, policy and planning of food and nutrition programmes are coordinated and approved by the National Development Planning Agency. Rapid and equitable economic growth and increased food availability are responsible for the improvements achieved in nutrition. Indonesia has been self-sufficient in rice since the mid-1980s, for instance.

64. *Chile's* remarkable achievements in improving nutritional status have been accomplished through the development of an integrated national food, nutrition and health policy that directly involves specific ministries in different sectors as well as through well-targeted policies and programmes in health, sanitation, education and food production.

65. Some of the activities implemented include: targeted food interventions for families in extreme poverty; treatment centres for severely malnourished children; nutrition education through the schools and health services; emphasis on elementary education, especially for girls; and a nationwide sanitation programme for the urban population.

66. Agricultural policies initiated in the mid-1970s have resulted in a complete turnaround in this sector, and food production has increased rapidly. The success of the agricultural sector has led not only to a sharp decline in food imports but also to a substantial increase in rural employment and income and, consequently, to a marked improvement in health and nutrition.

67. *Botswana* has had clear government commitment to improving national and household food security and nutrition and has made impressive achievements in improving the economic, social and nutritional status of its population. The country has established an intersectoral framework for improving food security and nutrition as well as for the overall development programmes.

68. Botswana copes with the ever-present problem of drought through an effective early warning system and comprehensive relief measures to alleviate the effect of drought conditions on the nutritional status of the population. Relief measures combine direct food supplements with income-earning opportunities for vulnerable households. The goals of the Early Warning Technical Committee are to improve drought monitoring activities, maintain the country in a state of readiness to confront drought and facilitate the response to drought situations.

69. The complete elimination of famine in *India* is a major achievement made possible by government policies on food security over the last two decades. The overall growth in food availability resulting from the green revolution technologies and a substantial reduction in poverty have eliminated the threat of famine for India's entire population. India's food security interventions, in particular the Public Distribution System and the National Rural Employment Programme, also provide good examples of both the benefit of government interventions to improve nutrition and the need to target such programmes better.

70. Many other countries have made important achievements that provide useful examples of effective ways to alleviate hunger and malnutrition. However, the resources, needs and problems vary between and within countries and regions of the world. The situation in each country and region needs to be assessed in order to set priorities for formulating specific national and regional plans of action, giving tangible expression to policy-level commitments to improve the nutritional well-being of the population. This should entail considering the nutritional impacts of overall development plans and relevant sectoral development policies.

71. National plans of action for nutrition need to be initiated or reformulated in accordance with the goals and objectives of the World Declaration on Nutrition and the Plan of Action for Nutrition. These national plans of action should establish appropriate goals, targets and time-frames; identify priority areas of actions and programmes; indicate the technical and financial resources available, as well as those still needed, for programme development and implementation; and foster continued intersectoral cooperation.

### Decline in agricultural commodity real prices and exporters' earnings

72. For at least a decade, the prices of agricultural commodities have tended to fall on international markets while those of manufactures have tended to rise. These contrary movements have resulted in a decline in the net barter terms of trade between agricultural commodity exports and the imports of manufactures and crude petroleum. In 1992 the decline was 2 percent. A comparison of the three years 1990-1992 with the years 1979-1981 shows a decline of 30 percent, that is an average annual rate of 3 percent. The decline was close to 40 percent for the agricultural commodity exports of the developing countries and 20 percent for those of the developed countries.<sup>8</sup> Some countries have achieved gains in productivity sufficient to outweigh the decline in real prices (the barter terms of trade) but, for many, the decline has reduced earnings per hectare of land cultivated (the single factor terms of trade). Furthermore, the global decline in prices has been so large that it has generally offset the expansion of production, thus actually reducing overall earnings (the income terms of trade).

73. Examples of the degree to which increases in crop yields and production have been outweighed by declines in the barter terms of trade are provided in Table 4. Coffee exporters have generally been big losers, as the small increases in yields and production have been far outweighed by a 66 percent decline in the barter terms of trade on the international market. Other commodities showing large losses have been cocoa, natural rubber, sugar, rice and maize.

74. The rise in production despite major declines in these terms of trade may be partly explained by the survival of plantings and other investments made in earlier and more favourable years. In fact, just prior to the start of the 1980s - by 1977-78 - the barter terms of trade for coffee and cocoa had been more than twice as high as in 1979-81.<sup>9</sup> The real price of rubber had peaked in the early 1950s but the plantings spurred by this and the succeeding years of favourable prices caused its production to continue. The level of production incentives in earlier years would also explain growth in the production of oil-palm, where output also rose substantially in the 1980s.

75. For some commodities there has also been an expansion of production in areas that have the advantage of low-cost production, often achieved by above-average increases in productivity. Explanations of the persistence and expansion of the area under some crops would also include changes in the relationship between international trade prices and producer prices. In many developing countries, for instance, before the mid-1980s growers' receipts from exported crops were often diminished by the overvaluation of their national currencies, taxation and costly marketing arrangements. These restraints on incentives, and thus on

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<sup>8</sup> These data are derived from UN world export price indices of primary commodities.

<sup>9</sup> FAO. 1987. *Instability in the terms of trade of primary commodities 1900-1982*. FAO Economic and Social Development Paper No. 64. p. 172. Rome, FAO.

Table 4. Changes in yield, production and terms of trade for selected commodities;  
1979-81 to 1990-92

Commodity	Change in		Change in terms of trade		
	Yield	Production	Barter	Single factor	Income
	(.....%.....)				
All countries					
Coffee	3	14	-66	-65	-61
Cocoa	18	42	-66	-60	-52
Tea	27	36	-28	-8	-2
Cotton lint	36	34	-33	-9	-10
Natural rubber	12	34	-44	-37	-25
Sugar	10	27	-55	-50	-43
Soybeans	16	26	-36	-26	-19
Rice	29	32	-48	-33	
Wheat	36	29	-35	-12	
Maize	15	18	-35	-25	
Developing countries					
Cotton lint	53	52	-33	2	2
Sugar	9	43	-55	-51	-36
Soybean	21	66	-36	-23	7
Rice	30	34	-48	-32	-30
Wheat	44	53	-35	-6	-1
Maize	28	41	-35	-17	-8

Source: FAO.

Note: Barter terms of trade = export prices (of agricultural products) deflated by import prices (of manufactured goods and crude petroleum); Income terms of trade = export earnings deflated by import prices; Single factor terms of trade = net barter terms of trade adjusted by changes in productivity (yields per hectare).

output, applied to a sizeable part of the production of coffee and cocoa and to some production of other crops exported by the developing countries. In the 1980s, these restraints on production incentives were greatly reduced in some major exporting countries, thereby raising prices paid to growers relative to those on international markets.

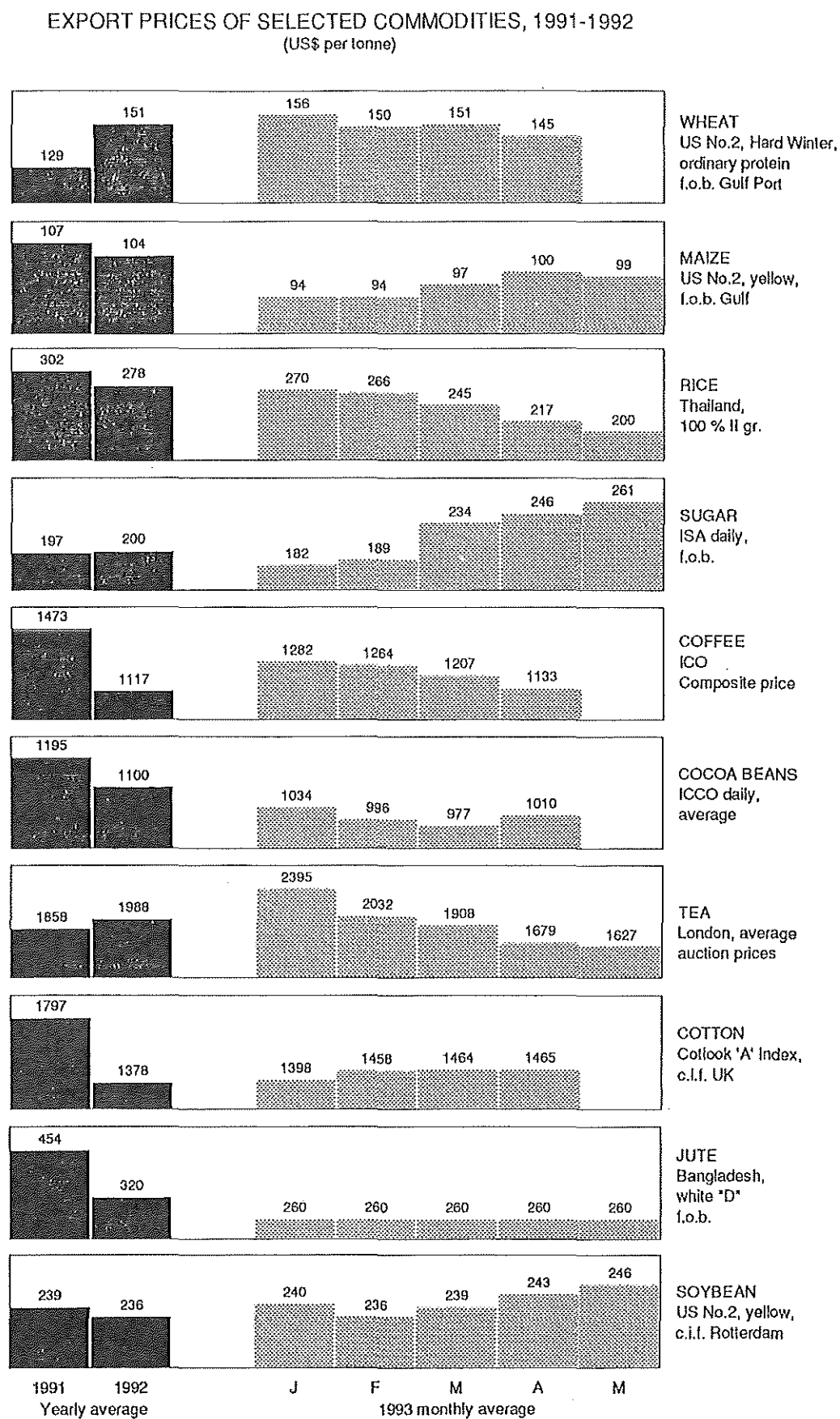
76. By contrast, as a result of governmental support and protection of the sector, incentives for agricultural production in the developed countries in many instances exceeded those available from the international market. This protection increased in most developed countries during the 1980s. The producer subsidy equivalent (PSE) measure of this protection increased from an overall average of 30 percent in 1979-81 to 44 percent in 1990-92 for 22 member countries of the OECD. The resulting increase in output was added to supplies on the world market, often with the use of public funds to facilitate exports. The implicit or explicit subsidization of these exports also meant that international market prices of the commodities concerned would often be below domestic producer prices of the exporter country and would also be below domestic costs of production of some importers.

77. A further explanation of the decline in the real export prices of some commodities in the 1980s was the weakening and removal of economic provisions in international commodity agreements. The suspension of these clauses in the International Coffee Agreement in July 1989 was followed by a steep decline in coffee prices. Earlier, the economic provisions of the cocoa and sugar agreements had been made inoperative.

78. Slow growth in demand and consumption in the developed countries exacerbated the situation. The population growth in these countries was only 0.7 percent a year. Further, per caput consumption, already generally high, gained little from an income growth of less than 3 percent a year. Coffee was especially affected by slow growth in its markets, as the developed countries accounted for 70 percent of the global market. Similarly, the developed countries accounted for over 60 percent of the global market for cocoa and natural rubber. Changes in technology in the processing industries also reduced demand for a number of commodities, especially natural rubber and sugar. There was, however, considerable growth in the market for animal feeds, which was of importance to oilcakes and oilmeals, non-cereal feeds and, in some cases, grains. This growth has been reduced of late by a squeeze on animal production in both Eastern and Western Europe, and in the former USSR.

79. Increases in per caput consumption through price reductions also tend to be relatively small in the developed countries. Thus, for many commodities the volume consumed was persistently below that produced, despite decreases in international commodity prices of up to 66 percent from the beginning of the 1980s. Smaller price decreases in the face of high rates of production increase were recorded for commodities where consumption was more responsive to international prices, for example animal feeds in the developed countries and commodities with major markets in the developing countries, such as tea.

Figure 6



Source: FAO

## Uruguay Round of Multilateral Trade Negotiations

80. Since early 1992, negotiations have proceeded on four tracks.<sup>10</sup> Under track one, negotiations on market access have taken place bilaterally, plurilaterally, and multilaterally. Similarly on track two, negotiations have been conducted on initial commitments in services. Under the third track, work took place on the legal conformity and internal consistency of the draft agreement in the Draft Final Act. Finally, the Trade Negotiations Committee has held a number of meetings - the fourth track.

81. Of particular importance to the negotiations were the bilateral discussions between the Commission of the European Communities and the United States concluded in the so-called Blair House Accord of November 1992,<sup>11</sup> in which the parties reported achieving progress necessary to assure agreement on the major elements blocking progress in Geneva, notably in agriculture, services and market access. Regarding agriculture, the parties resolved their differences over the main elements of domestic support, export subsidies and market access. They also agreed how to resolve their dispute on oilseeds.

82. The main differences between the Draft Final Act and the Blair House Accord concern the possibility that subsidized export volumes may be reduced by 21 percent instead of 24 percent and that the 20 percent reduction in the aggregate measure of support would apply not to individual commodities, as envisaged under the Draft Final Act, but to agriculture as a sector. Furthermore, all subsidies decoupled from production would be exempt from reduction. That is, they would be included in the "Green Box" category.

83. Subsequently, there have been several calls at international meetings, including the FAO Council, for a successful and comprehensive outcome of the Uruguay Round. Further impetus was given by the agreement at the July 1993 meeting of the G-7 leaders of industrialized countries to reduce or eliminate tariffs on a wide range of manufactured goods.

## Current issues in fisheries management

### Coastal zone fisheries and local involvement in management

84. For many years FAO has been promoting local-level involvement in fisheries management. Although Chapter 17 of the UNCED's Agenda 21 takes a broader outlook on the issue, particularly those relating to environmental and habitat protection, the basic principles of community involvement still apply and the following observations and guidelines for fisheries management are quite valid in this broader context.

85. The devolvement of management responsibility to the local level is often a gradual process, linked to the capacity of the community to manage its own affairs effectively. In this connection, careful attention needs to be given to traditional or customary management

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<sup>10</sup> Developments up to early 1992 were covered in SOFA 1992.

<sup>11</sup> GATT document MTN.TNC/W/103 of 20 November 1992.

systems which may already exist with respect to the management of different resources. The recognition and possible legalization of such systems may provide a solid basis for local-level management.

86. Clearly defined local property rights and ownership over the resource can facilitate the monitoring and enforcement of regulations, including self-policing, and therefore make management more effective. It can also improve the planning and implementation of specific management measures because of the traditional and indigenous knowledge of the resources, their seasonalities and other characteristics that are available to the resource users.

87. Many of the most vulnerable resources of coastal areas are characterized by the open access condition. Open access implies that the use of the resources is unpriced, as anybody who wishes can exploit the resources without paying a price for them. This did not create problems in the past when resources were abundant relative to the available exploitation technologies and the demand for the resources. However, population growth and technological progress have changed this situation dramatically, with the result that there is widespread misuse and degradation of open access resources in coastal areas. The open access condition is often particularly badly felt by local communities whose livelihood may depend on such resources. In the absence of local control, people from outside the communities take advantage of the open access condition and, with superior financial and technical means, are often able to appropriate large parts of the resources to the detriment of local users. This has frequently led to conflict, for example, between local artisanal fisheries and national and international industrial fleets. Some countries have taken steps to establish local rights to local resources. An example is in the Philippines, where municipalities have been given exclusive rights over coastal waters up to 15 km from the shore.

#### High seas fishing

88. Increasing international concern about the sustainable use of the world's fishery resources has focused attention on the manner in which high sea fishing operations are conducted. This matter has been considered in a number of international fora, including the International Conference on Responsible Fishing, UNCED, and the FAO Technical Consultation on High Seas Fishing, all of which were held in 1992.

89. One of the recommendations of UNCED, and in particular of Chapter 17 in Agenda 21 was to convene an intergovernmental conference under the auspices of the UN to consider measures and mechanisms that could be adopted internationally to manage straddling fish stocks and highly migratory fish stocks better. The first session of this conference was held in 1993.

90. The 1982 United Nations Convention on the Law of the Sea (the 1982 Convention) lacks detailed provisions with respect to high sea fishing. As a consequence, the management of high sea living resources has often been ineffective. Unlike the management of resources falling under coastal state jurisdictions, there is no comprehensive internationally agreed regime for the management of the high seas.



91. When extended jurisdiction was introduced by most countries in the 1970s, it was anticipated that there would be a significant retrenchment of fleet capacity. This retrenchment did not occur and the capacity of fleets continued to expand. Vessels that could not gain access to the exclusive economic zones (EEZs) of coastal states that had surplus fish stocks were forced to shift their operations to the high seas. Consequently, FAO estimated that, in the 1970s, five percent of world fish catches came from areas beyond the 200-mile zones while, in 1990, this share was estimated to have increased to 8 to 10 percent.

92. As a result of government subsidization policies, many fishing nation fleets targeting high sea resources have expanded since the introduction of extended jurisdiction. These subsidies, estimated to be \$54 000 million per year, have enabled fleets to continue operating when, under normal circumstances, such operations would not have been financially viable. Indeed, it is estimated that, to return to the 1970 catch rate per vessel, the removal of at least 30 percent of the existing tonnage in the world's fishing fleet would be required.

93. The need to secure internationally agreed management mechanisms for the rational exploitation of high sea resources is recognized both by coastal states and distant-water fishing nations. FAO is contributing to the formulation of the Code of Conduct for Responsible Fishing and the Draft Agreement on the Flagging of Vessels Fishing on the High Seas. Such management agreements must necessarily involve consensus on the overall exploitation limits of stocks and resource allocations. For management mechanisms to be effective in securing sustainable resource use, adherence to measures agreed by contracting parties will be critical. There is a risk, furthermore, that the effectiveness of management mechanisms will be eroded by non-contracting parties to conventions.

## **Current issues in forestry**

### **Recycling in forest industries**

94. The recovery and recycling of residues has played a major role in the development of forest industries in the last 50 years. Forms of recycling include the utilization of the residue of logs processed in the sawmill to produce chips for pulp and paper and particleboard; the use of small wood previously left in the forest; use of bark and other residues for energy production; and the recovery of waste paper for use in paper manufacturing.

95. More than 95 percent of the industrial wood harvested in developed countries is used in primary or secondary production. About 70 percent enters into the actual fibre composition of the final product and 20 percent is recovered or recycled from final residue into energy generation within the industry. The recovery of wood residues is at a much less advanced stage in developing countries, where only 65 percent of industrial wood harvested is effectively used and 58 percent of wood harvested enters into the actual composition of the product. Thus, there remains a potential equivalent of some 30 percent of industrial wood residues which could be recovered.

96. As environmental concerns have gained importance, the issue of recycled fibres has increasingly attracted the attention of environmentalist groups and mass media. The paper industry, which has expanded strongly in the last decade, has considerably increased the amount of recycled fibre products utilized. It has also substantially improved the control of effluents and emissions as well as energy efficiency.

97. Between 1980 and 1991, world consumption of paper and paperboard rose from 170 million to 245 million tonnes, while per caput world consumption rose from 38 kg to 45 kg per year.

98. To meet the increasing demand for paper, the industry has relied on three major fibre sources: wood pulp, other fibre pulp and waste paper. In the period 1980-1991, wood pulp consumption rose from 126 million tonnes to 155 million tonnes, at a rate close to 2 percent per annum. The consumption of waste paper rose much faster, from 50 million to 88 million tonnes, i.e. at a rate of 5.3 percent per annum. World consumption of other fibre pulp, 16 million tonnes, is mainly concentrated in developing countries, predominantly in China.

99. Recovered waste paper is today an important raw material for paper manufacturing. Accounting for 40 percent of the fibre input both in developed and developing countries, it totalled 88 million tonnes in 1992. Twelve million tonnes enter international trade, with the United States providing some 50 percent of total exports, mainly directed to developing countries in Asia.

100. However, the world disposes of a further 150 million tonnes of used paper, which is a major component of the total 500 million tonnes of solid waste generated each year. Disposal of this massive amount of waste has become a major physical problem for local municipal authorities. Various policy instruments have been considered for reducing the volumes of waste paper to be disposed of, including increase in recycling and the use of incineration for energy production.

101. The recovery of waste paper for reuse is, under certain conditions, an economically feasible option. When free from contaminants, waste paper may be reused as pulp, thus saving the raw material inputs and the cost of manufacturing paper pulp. Contaminated waste paper requires cleaning, however. In particular, inks, glues, coatings, fillers and additives have to be removed. This process is costly, as it requires special equipment and often produces noxious residues and effluents. This recycling process also results in some deterioration and loss of fibre.

102. Recycling waste paper is all the more economically viable when the transport distance is limited or the recovered paper is reused in mills in the locality where it is collected. This tends to be the case in densely populated countries with a high per caput paper consumption, such as Germany, Japan, the Netherlands and some other European countries where recovery rates of more than 50 percent have been achieved.

103. Local and national authorities in some countries are introducing measures to encourage or improve increased recycling. However, policy measures that require paper to have recycled content may lead to the transportation of waste paper to distant producing mills, making recycling less economical. In addition, mandatory measures may lead to the market being swamped by an oversupply of recovered paper. There is also a risk of forcing the use of excessively costly recycling processes in order to recover low-grade or badly contaminated waste paper. In circumstances of high recycling costs, the incineration of waste paper together with other urban waste for energy production may be more economical and beneficial to the environment.

104. In general, recycling is a component of a more efficient utilization of basic raw materials and it contributes to the reduction of urban waste. Its future growth will lead to a change in the demand for wood raw materials from forests and induce adjustments in forest management. In fact, a lower demand for small logs, mainly used by the pulp industry, poses a particular problem because it reduces the market for products of intermediate cutting (thinning), which is necessary to improve the quality of the final harvest.

#### **Forests and forest industries in countries in economic transition**

105. Market-oriented reforms in Eastern Europe and the former USSR have initially led to considerable reductions in their production, trade and consumption of forest products. The output of forest products fell from the peak years of the mid-1980s to 1991 by percentages of about 30 to 40 percent for mechanical wood products and more than 45 percent in the case of paper production.

106. The collapse of the former marketing and distribution system and the replacement of its predetermined production and price levels with market-determined prices resulted in a very sharp increase in real prices of wood products and lower levels of domestic demand. In Poland, real prices of wood products rose by 50 percent between 1987 and 1991, while the per caput consumption of sawnwood already well below Western European levels, fell by 60 percent. Similar declines in per caput consumption of forest products took place in Bulgaria and Romania.

107. Trade in forest products among these countries were also hampered by the collapse of the Council for Mutual Economic Assistance (CMEA) trading arrangements and the introduction of pricing in convertible currencies. Exports to other areas suffered as well, reflecting the problems of quality and competitiveness faced on Western markets as well as uncertainties resulting from changes in long-established trading arrangements. Thus, total exports of sawnwood from countries in Eastern Europe and the former USSR dropped from 10.5 million m<sup>3</sup> in 1987 to 6.4 million m<sup>3</sup> in 1991.

108. The paper industry, which relies heavily on energy and chemicals, suffered severely from the dismantling of intraregional trade in inputs and products as well as from the inadequacy and obsolescence of equipment. In Estonia difficulties with energy imports from the Russian Federation and the need to pay for raw materials in hard currency have practically brought the paper industry to a standstill. The obsolescence of equipment and

inadequate pollution controls have forced the virtual closure of the wood pulp industry in the former German Democratic Republic.

109. By 1993, conditions for the wood industries appeared more favourable in the Czech Republic, Hungary, Poland, and Slovakia. In these countries, the first signs of economic recovery have begun to stimulate investments in residential activities using wood. The other countries, less advanced in the process of economic transformation, are seeing a continuation of falling output, trade and consumption of forest products. Production of coniferous sawnwood in the Russian Federation in 1993 is expected to continue to decline because of financial problems experienced by producers and trading organizations and because of uncertainty about forest legislation.

110. The privatization of property and enterprises is regarded as an important step to speed up the transition process. Given the complexity of the political, legal and administrative problems concerning landownership, the privatization of forest land has tended to be slow and uneven among countries. In Hungary it is expected that 60 percent of forest land will remain in state ownership while some 30 percent will be transformed into private ownership or into joint forest property associations. In the Czech Republic joint stock companies are expected to be founded to assume ownership of state forests, while in Slovakia publicly owned forest enterprises, financed from the state budget, will be the norm. In Poland the state forests will still provide the basic potential both in economic and ecological terms, but previous owners, whose forest land was nationalized, will be compensated financially. Under the Romanian Land Law of 1992, the state is expected to return to previous owners 300 000 ha of forest land out of a total forest area of 6 million ha. In Estonia only 55 000 ha of forest land have so far been privatized since 1991, but up to half of the total forest land of 1.8 million ha may be privatized in the future.

111. Some notable progress has been achieved in the important area of forest industry privatization. In Hungary, where the process is most advanced, some 55 percent of the total capital of the pulp and paper industry had been privatized by the end of 1991, with 23 percent of participation being foreign capital. The decentralization of the forest industry in the Czech Republic and Slovakia is expected to be followed by the privatization of the most efficient wood enterprises and the formation of small private companies. In Poland some of the smaller sawmills have been privatized, but this process is complicated by claims from previous owners; the Polish wood-based panel industry, the largest in Eastern Europe, has seen the privatization of eight mills out of a total of 30 while, in the pulp and paper sector, private joint ventures with foreign capital included seven large enterprises. Important developments have also taken place in some of the Baltic states. In 1993, Estonia launched a massive privatization programme of state property, open to foreign capital, which included the offer for sale of 11 forest industry complexes comprising three pulp and paper mills. In some countries, such as Romania, the privatization of the sector is still proceeding very slowly; in 1992, for example, only 100 000 m<sup>3</sup> of wood, out of a total of 2 million m<sup>3</sup> harvested, were purchased by private operators. In the future, however, harvesting operations in Romania may be taken over by contractors and wood enterprises may be transformed into commercial societies with state, mixed and private capital.

### Trade and sustainable forest management

112. It generally agreed that every effort should be made to ensure that forests are sustainably managed so as to permit their survival, but there is less agreement on how to achieve this objective.

113. It is clear, however, that trade is not a major cause of deforestation and, as such, trade policies alone cannot ensure sustainable management of the forests. Only a minor proportion of the wood harvested actually enters world trade and the linkages between trade policies and forest management are very indirect. In the case of tropical forests, only about 6 percent of the wood harvested enters international trade in any product form and only one-third of the tropical timber produced (logs, sawnwood and solid wood panels) produced is sold on international markets.

114. Consequently, trade actions can only play a secondary role in addressing the problem of deforestation. At best, they can reinforce more direct actions; at worst, they may speed up rather than slow down deforestation. Improvements in forest policies and actual forest management practices within the developing countries are the most direct and effective means of ensuring sustainable forests, and it is here that the developing producer countries are placing considerable emphasis, with assistance from many bodies, including FAO.

115. Nevertheless, a number of actions involving trade have been proposed by the developed countries, which represent important markets for the developing countries. Despite wide disagreement on the most appropriate actions to be taken and especially on what impact trade measures can actually have on encouraging sustainable forest management, interest in trade issues is growing. The main emphasis has focused on tropical forests and trade in tropical timber but, recently, attention has widened to include temperate timber as well.

116. Many of the trade proposals attempt to link trade in timber to the sustainable management of the forest resource. This may be achieved by encouraging users to purchase only products that are made from timber harvested in sustainably managed forests, or by trying to force producers to manage their forests sustainably under the threat of losing markets.

117. Groups supporting such trade schemes consider an essential element to be a clear means by which buyers can accurately distinguish sustainably produced timber from other timber. Proposals for achieving this include the certification of producer countries or individual forest concessions that practise sustainable management and the use of product labels to indicate this fact to buyers and users.

118. Consumer groups, non-governmental conservation groups, governments, timber trade groups and a limited number of producers all have activities in this area, but even those supporting the general idea disagree on what shape and form the schemes should take. Following are examples of current action: German timber trade groups are working on regulations which would identify tropical timber coming from sources that carry out forest management in accordance with the International Tropical Timber Organization (ITTO)

sustainable management guidelines; the Dutch Government proposes encouraging importers and traders to deal only in sustainably managed tropical timber from 1995 and is testing the feasibility of timber labels; a United Kingdom environmental NGO's labelling proposal, which relates to all timber, includes the establishment of a body that would accredit labelling agencies; Ghana is providing certificates which indicate that the timber comes from a country which is following sound forest practices; and the African Timber Organization has proposed an African timber label indicating that the timber comes from "controlled origins".

119. The only formal government action taken to date was introduced by the Government of Austria, which passed legislation requiring all tropical timber and products sold on the Austrian market to be labelled as tropical. In the future, legislation is also to include the identification of products from sustainably managed resources. This unilateral action, which was considered by many to be discriminatory against tropical timber, was subsequently modified by removing all references to tropical timber.

120. Despite all this activity, many questions concerning such policies, many of them interrelated, remain to be resolved. For example:

- whether such actions, which are being predominantly promoted by developed importing countries, work against the interests of the producer countries and their right to determine their own trade actions within open market systems;
- whether labelling or certification schemes can, in fact, effectively promote sustainable forest management, since any moves that close markets may in fact reduce the value of the forests and hasten their conversion to other land uses;
- whether such schemes are discriminatory and actually work against current international trading rules, such as those of GATT, which are based on the concept of free trade as an effective instrument for promoting economic and social well being;
- whether they can only be effective if all, or most, major markets follow similar policies, and whether they will in fact be taken up in many markets; and
- whether a reliable and believable labelling or certification scheme, accepted by all, is possible, given the practical difficulties involved, particularly those concerning how and by whom the level of management should be assessed.

121. These issues need serious consideration before trade policies such as those indicated are implemented.

### **Biotechnology: challenges and opportunities for the 1990s**

122. During the past 40 years, the global output of agriculture, forestry and fisheries has overtaken population growth; however, this result has been achieved in many situations at the detriment of the natural resource base.

123. The productivity gains resulting from increases in crop and livestock yields have been obtained by means of technologies that rely heavily on high-input use and that have stretched the land absorption capacity to the limit. Biotechnology, a set of powerful tools based on biological knowledge, could play a significant role in reversing this trend. At the same time, it offers novel approaches to conquer diseases, improve food security and reduce environmental pollution.

124. Broadly defined, biotechnology includes any technique that uses living organisms to make or modify products, to improve plants or animals, or to develop micro-organisms for specific uses. Traditional biotechnologies have been practised in agriculture since the beginning of civilization through plant and animal breeding and food processing. Modern biotechnology has thus far had its greatest impact in the area of human health through the development of new pharmaceuticals, diagnostics and other medical products and it has further potential in the development of drugs, diagnostics and vaccines as well as vaccine therapy.

125. The application of biotechnology will benefit agriculture with new and improved agricultural products, resulting in higher-quality food and fibre; improved crop yields; animals with a greater tolerance of stress; and new uses for agricultural commodities. Moreover, biotechnology should make it possible to manage agrosystems better, including the maintenance of soil productivity and water management; to improve diagnostics to help ensure food safety; and to control microbial pest agents.

126. Many industrialized countries consider that modern biotechnology holds the key to competitiveness and comparative advantages in many fields, including food and agriculture. In these countries, primarily because of economic considerations, the bulk of the research is funded, carried out and controlled by the private sector.

127. Research institutions in the public sector are now generally required to raise a substantial part of their budget from non-governmental sources, for example, via contractual research, licensing agreements and royalties. This is tending to increase secrecy over research findings and to hinder free scientific communication. University professors, researchers and government institution scientists are becoming increasingly entrepreneurial and are entering private industry.

128. Another important trend is that large multinational corporations are purchasing smaller seed and biotechnology companies and diversifying their holdings. This allows them to develop a package sale of chemicals, seeds and equipment.

129. The heavy involvement of the private sector as well as market considerations greatly influence the topics and commodities chosen for research. Major crops, commodities and farming systems of great socio-economic importance to the developing world, but of little international market importance, do not figure in the biotechnology research agenda of industrialized countries. Further, these countries are keen to reduce their production costs and increase the productivity, quality and value of their products, thus, improving their overall competitiveness in the world market.

130. On the other hand, despite the fact that biotechnology facilities are being established in most developing countries, the level of research, development and use of biotechnology for agriculture, forestry and fisheries is generally far below the level in the developed countries. Among developing countries, the status of biotechnology varies considerably. A few, such as Brazil, China, India, Mexico and the Republic of Korea have sought to gain full scientific and technology capacity, especially in agricultural biotechnology. Many developing countries face problems of poorly focused research; a shortage of highly qualified personnel; limited access to information; a lack of appropriate policies and priorities; insufficient funding for operational activities; and inadequate linkages between research, development and extension activities. Further, there is a negligible involvement of the private sector, which accentuates the problem of insufficient attention to biotechnology.

#### Application and potential

131. Among agricultural and allied fields, *animal production and health* has benefited the most from biotechnology, although practical use of transgenic livestock remains a possibility of the future (transgenics refers to those organisms - both plant and animal - whose hereditary DNA has been augmented by the addition of DNA from a source other than parental germplasm). The wide use of monoclonal antibodies for efficient diagnostics, leading to safe and specific treatments of animal diseases, is a major breakthrough. Through genetic engineering, vaccines for the prevention of viral, bacterial and parasitic animal diseases are rendered safer and more effective. Tailored vaccines exist for pig scours, chicken bursal disease and cattle tick-borne diseases. Pathogen-specific vaccines are attractive goals. Other interesting possibilities are endocrine-directed vaccines to stimulate twinning in beef cattle, immunocastration, livestock growth rate stimulants and vaccines that compensate for various stress-induced production losses.

132. Advances in genetic engineering will also facilitate the production of male-only populations of screwworms, tsetse flies, ticks and various other ectoparasites for use in the sterile release technique of control and eradication. Further, mammalian tissue culture may replace whole animals in the 1990s for toxicity testing of certain chemicals. The culture technique can also be exploited for studying and analysing pesticide metabolism and for herbicide prescreening. *In vitro* fertilization and embryo sexing techniques have considerably increased the use of embryo transfer techniques for cattle breeding and trade. The value of the approach will be further enhanced if embryo cloning techniques can be reliably employed. Microbial and enzymatic treatment of roughage and genetic engineering of rumen bacteria both have great potential to improve animal nutrition. To accelerate and increase milk and lean meat production, growth hormones can be produced by genetically engineered



micro-organisms both in quantities and at the low cost necessary for widespread use. Biotechnological tools (embryo culture, gene cloning, etc.) may also be used for conservation of genetic resources.

133. *Crops* are the other group of agricultural commodities that are benefiting highly and would further benefit from the application of modern biotechnologies, which render greater precision and speed to crop improvement processes. Transgenics have already been reported in 40 crop plants, including maize, rice, soybean, cotton, rapeseed, potato, sugar beet, tomato, potato and alfalfa but the new varieties are yet to be used commercially. Opportunities for commercial exploitation in the near future include vegetables and fruits (potato, tomato, cucumber, cantaloupe and squash), followed by legumes (alfalfa) and oilseed crops (oilseed rape). A good number of the transgenics are herbicide-resistant plants whose widespread use is somewhat controversial.

134. Wide use is currently made of tissue culture techniques for the micropropagation of elite clones and for freeing planting materials of pathogens. Monoclonal antibodies are also in use as diagnostic aids in the detection and identification of viruses and viroids. Anther culture and microspore culture, giving rise to haploids, are being used in variety improvement to facilitate and accelerate breeding (haploids are organisms or cell lines which have only half of the full chromosome complement of a normally occurring organism). Molecular maps and markers are being widely used to identify genes of interest to accelerate conventional breeding programmes. Efficient biological nitrogen fixation systems and strains for the efficient utilization of soil nutrients are being genetically engineered. Other long-term objectives are the genetic manipulation of photosynthesis patterns and the production of hybrid seed through apomixis (apomixis is asexual reproduction through seed). A very distant possibility is providing nitrogen fixation capacity to cereals.

135. The application of biotechniques in the *forestry* subsector is also of enormous interest. It offers useful solutions for forest tree improvement, even if the benefits are to be felt in the longer term. Cryopreservation, the technique which preserves biologicals at extremely low temperatures, is an important adjunct to germplasm conservation approaches for long-life cycle, woody and recalcitrant seed species. It allows for successful slow-growth storage for many years of tissues and organs cultured at cool and warm temperatures. There are three areas in which the application of culture storage will have particular value: storage of germplasm, maintenance of juvenility and germplasm transport.

136. Another technology that shows huge potential is micropropagation. One of the success stories of the use of tissue culture is that of oil-palm micropropagation for large-scale commercial plantations in Malaysia and Indonesia. Although some of the plantations based on vitroplants in those countries had shown varying degrees of sterility ranging up to 30 percent, concerted research efforts are likely to alleviate this snag. These two countries account for about three-fourths of the world's palm oil production, and oil-palm is one of their major economic resources. Therefore, any improvement in the productivity and production of oil-palm in these countries is of great significance for the overall world economy of edible oils. Other countries such as India and Thailand, are also embarking on oil-palm micropropagation technology. Rapid growth with vegetative propagation has also been achieved with eucalyptus species in Brazil, the Congo and Zimbabwe.

137. As regards the application of genetic engineering, plants, including poplars, transformed with genes for insect and virus resistance and tolerance of various types of herbicides are either at or near the stage of commercial application. Another biotechnology application of practical value to forestry, but not yet widely supported by experimental success, is somaclonal variation, which allows variation during cell or callus cultures for many species. For some crops, variants have been produced that show economically useful characteristics, such as resistance to disease and increased levels of salt. Molecular marker technology permits the screening of species where patterns of genetical variation are not well defined, as in the case of lesser-known tropical hardwoods and non-industrial species. *In vitro* control of the maturation state and *in vitro* embryo rescue technologies are areas where potential for further research exist.

138. In the *fisheries* sector, the major applications of biotechnology are in the fields of marine species and aquaculture. Marine biotechnology broadly refers to the research and developmental activities in the biological, chemical and environmental sciences that occur in or are related to the sea.

139. Capitalizing on the biotechnological potential of marine organisms requires the ability to manipulate these organisms genetically. This calls for the study of regulation at the genetic, biochemical and physiological levels, research which should yield not only powerful tools for diagnostic techniques to study marine organisms in their natural environments, and, thus helping to interpret the complex interactions among physical, chemical, and biological ocean processes. Marine organisms are the source of a wide range of proteins and other polymeric materials that are useful or potentially useful as commercial products.

140. Marine organisms have evolved elaborate sensory organelles and some of these seem to be useful for biosensor development. For example, the antennules of the blue crab have been used as a source of chemoreceptive nerve fibres which have been incorporated into biosensors for measuring amino acids. Studies have been conducted on the primary and secondary metabolism of plants, animals and micro-organisms in order to provide the basis for new pharmaceutical compounds, medical research materials, enzymes and other chemical products.

141. Marine biotechnology also provides rational approaches that have wide industrial applications in the control and prevention of destructive processes.

142. The marine environment is a potential source of novel biological pathways for processing and degrading a wide variety of natural and human-made substances. Research into bioprocessing and bioremediation is providing new methods for treating hazardous wastes, e.g. estuarine bacteria have been adapted for use in bioreactors to detoxify brines from industrial processing.

143. As regards aquaculture, raising aquatic organisms in a controlled environment enables the production of environmentally important items such as pharmaceutical agents, food and feed additives, isotopically enriched chemicals, polymers, lipids with potential for substituting petroleum and foodstuffs. Genetically engineered microbes can be used to produce fish

growth hormones, which may then be used to improve feed conversion and growth rates. Synthetic reproductive hormones are produced commercially and used to regulate fecundity, breeding cycles, growth rates and sex determination in certain cultured species. In attempts to increase desirable culture qualities such as growth rate, disease resistance, temperature tolerance and marketability, transgenic fish containing genes introduced from other species have been produced on an experimental scale.

#### Challenges and issues

144. Modern biotechnology holds considerable promise for increasing the yield, quality, efficient processing and utilization of products; decreasing reliance on agrochemicals and other external inputs; and improving the conservation and use of genetic and other natural resources.

145. However, the development and application of modern biotechnologies has raised the question of whether it is a potential source of imbalance in the global socio-economic, institutional and environmental domains.

146. The issues at stake are mainly the intellectual property protection systems, biological safety and other environmental concerns, substitution of developing countries' exports, social equity and the widening gap between developed and developing countries in exploitation of the new technologies.

147. The adjustment of intellectual property rights (IPR) legislation to international standards is progressively considered to be a prerequisite for participation in the global economy, not the least because, in this way, developed countries force the developing countries to re-examine their intellectual property rights systems. Most developed countries have extended IPR legislation to cover biotechnology processes and products in order to stimulate and protect research.

148. However, this trend will make it increasingly difficult for the less-developed countries to absorb and diffuse the new technologies for their development. Moreover, they may face high costs and barriers to development brought about by strictly enforced IPR systems.

149. In addition to the legislative framework, concern has been stressed about the possible environmental and health hazards resulting from biotechnology, especially from field testing and the release of genetically engineered organisms and plants. While data for evaluating such risks are insufficient and valid risk assessment procedures are still under study, countries with inadequate regulatory policies become attractive as test sites for organisms and plants genetically modified in ways forbidden in other countries.

150. Biotechnologies may support the agricultural sector; the direct use of biotechniques for plant breeding could dramatically raise crop productivity and overall food production in developing countries.

151. The reverse side is, however, that these technologies may also widen the gap between resource-poor and large-scale farmers as well as between developing and industrialized countries.

152. Biotechnology may jeopardize developing countries' exports. For a country that depends on agricultural products for most of its exports, the development of biotechnologically manufactured substitutes in its main export markets is a threat. Laboratory-produced vanilla may soon threaten the livelihood of 700 000 vanilla bean farmers in Madagascar, while it is conceivable that consumers will soon have a choice between Kenya AA and biocoffee beans made in the United States. Biotechnology could block export markets for many African countries. Exports of sugar, coffee, vanilla, cocoa and cotton are already threatened by the development of fermented maize starch, coffee produced by clonal propagation, test-tube vanillin, cocoa butter produced from artificial emulsions and quality traits introduced via biotechnology into cotton fibre.

153. Côte d'Ivoire relies on agricultural products for about 80 percent of its exports. Large-scale substitution of coffee and cocoa production - the major sources of foreign exchange of the country - and also of palm oil and rubber would have severe consequences for the Ivorian economy. Therefore, it is imperative for a country to anticipate the possible adverse impacts of biotechnology on the national economy. If substitution hampers exportation to the developed countries, it is necessary for countries depending on raw material exports to encourage national processing activities, the local use of finished products, and the diversification of its export markets. Regional markets may be important in this respect but the issue has not yet been explored enough.

154. One of the greatest challenges of plant biotechnology for developing countries is that it may reduce their dependence on a limited number of export crops and permit agricultural diversification. For example, Côte d'Ivoire is one of the few countries in Africa to export ornamental plants. *In vitro* micropropagation techniques and the diversification of germplasm through somatic hybridization and somaclonal variation will help expand the production and commercialization of these plants. This approach is becoming increasingly popular in Thailand and other South and Southeast Asian countries.

155. FAO has played an active role in helping to translate developmental concerns relating to biotechnology into policy action. Many FAO activities have provided quantitative and policy analyses at global, regional and country levels with a view to identifying issues and constraints to development in biotechnology, exploring prospects for the years to come and defining appropriate policy action.

156. Since 1983, the FAO Commission on Plant Genetic Resources has been the primary intergovernmental forum for discussions on plant genetic resources and related biotechnologies. Agreements achieved under its guidance include the Agreed Interpretation of the International Undertaking on Plant Genetic Resources, the Resolution on Farmers' Rights and the International Code of Conduct for Plant Germplasm Collection and Transfer. A Code of Conduct for Biotechnology as it relates to Plant Genetic Resources is under discussion with the Commission. Recently, in collaboration with UNIDO, WHO and UNEP,

FAO developed a voluntary code of conduct for the release of genetically engineered organisms into the environment.

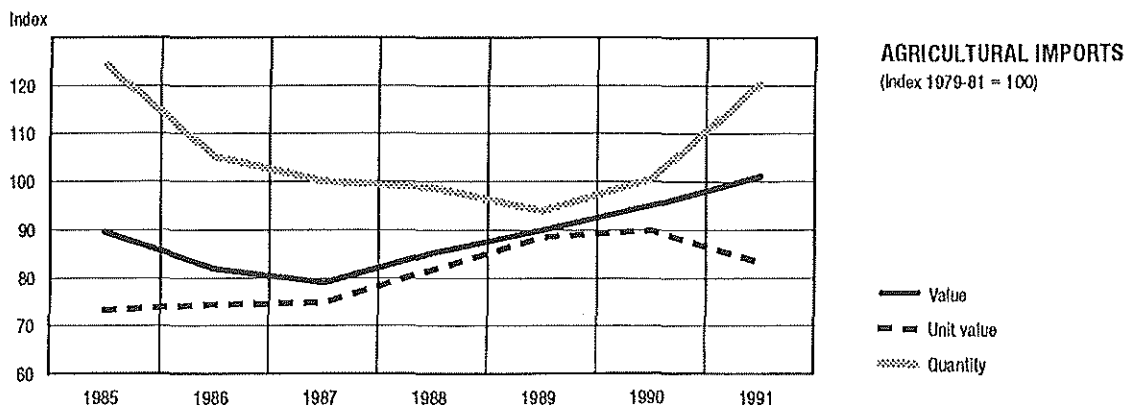
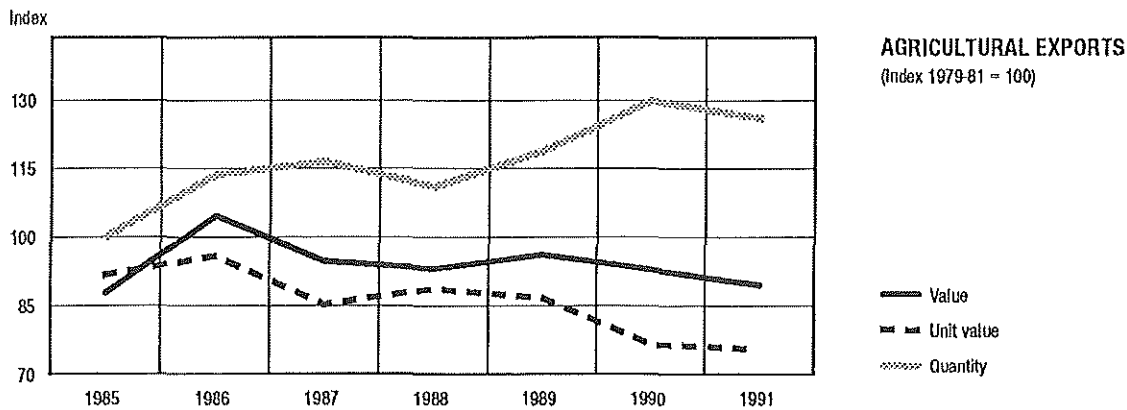
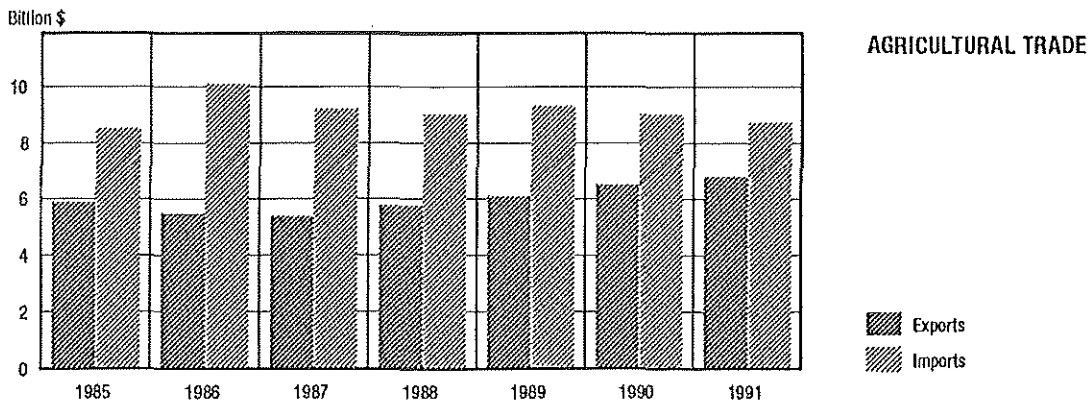
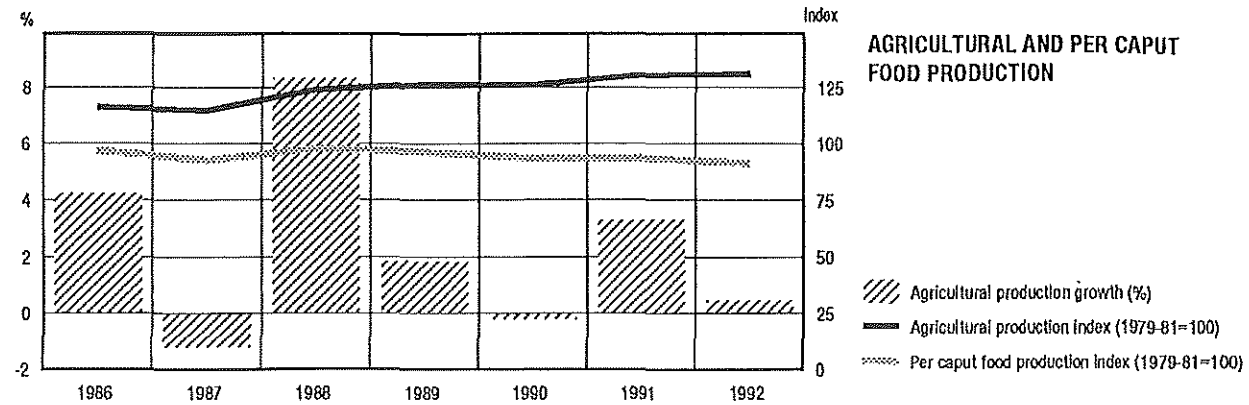
157. FAO initiatives in this area cover both basic and applied research. The Organization has assigned high priority to biotechnology in its programme of work and it perceives that modern biotechnologies should be used as adjuncts and not substitutes for conventional technologies, and that their application should be driven by need rather than by technology. In collaboration with other concerned UN agencies and CGIAR institutes, FAO is committed to enhancing the capabilities of the developing countries to enable them to harness biotechnologies in a balanced and equitable fashion, including support to those commodities used by the poor whose research and development needs are generally not catered to by national or international programmes (orphan commodities). The challenge for FAO and all humankind lies in maximizing the positive effects while minimizing the negative effects of biotechnology.

**PART II**  
**REGIONAL REVIEW**

- I. Developing country regions
- II. Developed country regions

Figure 7

# SUB-SAHARAN AFRICA



## I. DEVELOPING COUNTRY REGIONS

158. The following review examines recent economic and agricultural performances in the four developing country regions and highlights the main policy developments affecting their agricultural sectors during 1992 and 1993. Following the customary approach, the review then focuses more specifically on the experience of selected countries in each region: Ethiopia in Africa; Bangladesh and Sri Lanka in Asia; Mexico in Latin America and the Caribbean; and Egypt and the Syrian Arab Republic in the Near East.

### SUB-SAHARAN AFRICA

#### Regional overview

159. The *economic performance* of sub-Saharan Africa was dismal yet again in 1992. The average growth rate of the region (excluding Nigeria) was 0.9 percent, a slight recovery from the meagre 0.2 percent achieved in 1991.<sup>12</sup> However, these averages mask a great diversity among individual countries. According to the African Development Bank (AfDB),<sup>13</sup> more countries (16) experienced negative growth rates in 1992 than in the previous year (13). And fewer countries (19) experienced growth rates of more than 2.5 percent than in 1991 (23). Moreover, economic growth fell far short of population growth. Consequently, in per caput terms, output shrank by 1.1 percent in 1992, meaning the sixth successive year of decline. Overall, the picture is that of worsening economic and social conditions.

160. The UN Economic Commission for Africa (ECA) estimates output growth to be about 3 percent in 1993 (for Africa as a whole).<sup>14</sup> That growth rate, if achieved, would merely keep abreast with the projected population growth rates.

161. The causes of the gloomy performance of sub-Saharan African countries include: (i) the negative effects of the depressed global environment on trade and capital flows; (ii) the continuing decline in terms of trade for primary exports which represent the bulk of foreign exchange earnings for most countries in the region; (iii) the undiminishing debt burden that continued to frustrate the process of recovery and structural adjustment in many countries (see Box 3), (iv) the declining inflow of external resources from both official and private sources; (v) civil strife in parts of the region; and (vi) low agricultural production as a result of drought.

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<sup>12</sup> UN. 1993. *Economic Recovery*, 6(4).

<sup>13</sup> AfDB. *African Development Report 1993*.

<sup>14</sup> UN ECA. *Economic Report for Africa 1993*.



162. The slow growth (1.7 percent) in the combined output of industrial countries constrained demand for developing country imports and capital flows to the developing world. Moreover, the demand for primary commodities remained weak and their prices declined in spite of a small recovery in world trade during the year.

163. *Terms of trade* for sub-Saharan exports deteriorated further in 1992. Despite lower inflation in the industrialized countries, the main trading partners of sub-Saharan Africa, import prices rose by 3.2 percent during 1992. Meanwhile, prices of exports fell, albeit less pronouncedly than in 1991. Among the main agricultural commodities exported by the region, only logs, tea and sugar registered higher export prices in 1992 than in 1991. Cocoa and coffee recorded their eighth and sixth consecutive years, respectively, of falling prices. Prices of almost all metal and mineral exports from sub-Saharan Africa fell during the year. Moreover, in 1993, improvements are expected only in aluminium and diamond prices.

164. With continuing poor prospects for export earnings relative to the value of imports, sub-Saharan Africa requires an increasingly large volume of external *resource flows*. However, foreign direct private investment in the region has traditionally been small (\$1.7 billion in 1991) and can be expected to remain so, particularly as private resource flows to countries labelled as bad debtors are rare. The hope that structural adjustment programmes would accelerate the flow of foreign private finance seems to have been misplaced.

165. Unfortunately for sub-Saharan Africa, which has traditionally depended on official resource flows, the flows of Official Development Assistance (ODA) to the region have actually declined of late. ODA net disbursements at \$11.5 billion in 1990 were down by about \$1 billion (in real terms) in 1991. Meanwhile, at \$6 billion, total multilateral net disbursements remained the same in 1991 as in the previous year.

166. The growing disparity between resource inflows and debt service payments resulted in reduced net transfers to the region in 1991 relative to 1990. For example, for the agricultural sector alone, the net transfers of \$377 million in 1991 (the latest year for which data are available) represented less than one-half of net transfers in 1990.

167. Wars and civil strife, notably in Angola, Liberia, Mozambique, Somalia and the Sudan, contributed significantly to the overall economic decline in 1992, as did the sometimes chaotic political situations in such countries as Togo and Zaire where looting and rioting destroyed the infrastructure required for economic development.

168. The level of agricultural production in 1992 remained virtually unchanged over that of 1991, the major cause being the drought that affected East and southern Africa. As a whole, the latter experienced a decline of 7.7 percent over the previous year and accounted for 16 million of the 40 million people estimated by FAO to be facing food shortages in sub-Saharan Africa. Elsewhere in Africa, growth was slow; in central Africa, agricultural output grew by 1.4 percent and in West Africa, the growth rate was 2.9 percent. Civil strife exacerbated the already disastrous food supply and access problems in Mozambique and Somalia.

169. Cereal production fell by more than 5 percent for the region as a whole. In southern Africa, where cereals are the main staple, output fell to less than one-half of the 1991 level. Thanks to less dramatic changes in cereal and non-cereal food items elsewhere in the region, notably in Ethiopia, the Sudan and in West and central African countries, the aggregate food production sector increased slightly by nearly 1 percent over the previous year. The output of non-food agricultural commodities, on the other hand, fell by about 5.7 percent.

170. Over a longer time scale, sub-Saharan Africa has, contrary to popular belief, maintained trend growth rates in agricultural production comparable to other regions of the world.<sup>15</sup> In fact, from 1981 to 1992, aggregate production increased at a rate of 3 percent per year, with slight declines in 1982, 1986 and 1990. The problem in the region has always been the population growth rate which has outstripped growth in production, thus resulting in declining per caput output. For instance, although agricultural output increased marginally (0.3 percent) in 1992, per-caput production declined by nearly 2.8 percent. The prospects of a reversal of this trend depend on both the region's ability to slow population growth as well as the capacity, assuming more benevolent weather conditions and fewer wars and civil disruption, to increase production through sustainable and intensive agriculture.

171. With the return of favourable weather conditions for the 1992/93 growing season, a rebound of agricultural output in countries affected by drought in 1992 is expected in 1993.

172. With respect to policy developments, structural adjustment programmes with emphasis on short-term objectives continued to guide policy reforms in most countries in the region. The pursuit of adjustment with transformation, and the harmonization of short-term policy goals with medium- and long-term development objectives were hardly in evidence. The latter were the objectives of the African Alternative Framework to Structural Adjustment Programmes for Socio-Economic Transformation (AAF-SAP) adopted recently by the Organization of African Unity (OAU).

173. *Fiscal reform* played a central role in efforts to strengthen domestic economic management. The success rate in reducing budget imbalances varied considerably, however. Benin and the Gambia, for instance, were able to reduce their budget deficits as a proportion of GDP, but many other countries failed to do so.

174. *Monetary policy* emphasized a tight control of money supply as well as adjustments of interest rates. Going against the grain, however, Zaire embarked on a course of monetary expansion, and the inflation rate reached huge proportions. Interest rate adjustments were an important plank of monetary policy, with several countries, including Cape Verde, Comoros, Côte d'Ivoire, Djibouti, the Gambia, Guinea-Bissau, Kenya, Malawi, Mali, Mauritania, Tunisia, the United Republic of Tanzania, Zambia and Zimbabwe, raising their real interest rates. Ghana's and Mauritius' nominal bank rates were adjusted downwards but remained positive in real terms.

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<sup>15</sup> UN. 1992. *Economic Recovery*, 6(3).

175. The move towards market-determined exchange rates continued in many sub-Saharan countries in 1992 either through outright devaluation of national currencies (Ethiopia, Malawi, Mauritania and Rwanda, for example) or by flotation (Nigeria) and foreign exchange liberalization (for example, Algeria, Uganda, the United Republic of Tanzania, and Zambia).

176. *Public sector reforms*, which have included trimming the size of the civil service and curtailing government consumption, were a continuing feature of the reform programme. Privatization also played a major role in public sector reforms of such countries as Chad, Côte d'Ivoire, Ghana, Mozambique, Nigeria, the Sudan, Uganda, and Zambia.

177. Policy reforms in agriculture continued in most countries, often within the overall framework of structural adjustment programmes negotiated with the World Bank and the IMF. Market liberalization remained an important component of agricultural policy reforms, with agricultural parastatals being dismantled, privatized or restructured in countries such as Burundi, Côte d'Ivoire and Mozambique. In some other countries (e.g. Ethiopia, Kenya, Malawi, Mali, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe), some or total decontrol of agricultural marketing has been effected. Agricultural market liberalization has also been planned for implementation in other countries, including Lesotho and the Central African Republic.

178. Some countries have embarked on a policy of diversifying the agricultural export base, moving away from a reliance on one or few export crops, as international prices for traditional exports continue to crumble. For example, Benin is promoting the production of palm oil, coconut and groundnuts as well as pineapple and exotic fruits and vegetables, along with the traditional export, cotton. Uganda is planning to diversify into sesame, tobacco, hides and skins, spices and fish after regaining market share in its traditional exports: cotton, tea and coffee. Typically, fisheries has featured prominently in the drive towards diversification. Mozambique, Namibia, Nigeria and Sierra Leone are just four of the countries that have embarked on aggressive fish farming campaigns.

179. The drought in southern Africa has led to the region's agricultural development policies being focused mainly on drought relief, increased food production and diversification within the food sector. In Malawi, in addition to supporting maize production (the main staple for most of the population), the Government is promoting the production of cassava - a drought-resistant crop - as a security crop, as well as promoting local production of vegetable seeds. Zambia is encouraging the production of sorghum, millet and cassava in its food crop diversification strategy to reduce dependence on maize. In Zimbabwe, price and non-price incentives have been provided to farmers to ensure an increase in grain production. Other countries in the region have followed similar trends.

180. Food security has also been a major preoccupation elsewhere in the region. Nigeria's five-year ban on wheat imports (lifted temporarily at the end of 1992) was designed to promote domestic production and was a partial success. Senegal has launched a programme intended to achieve an 80 percent self-sufficiency in food. In Burkina Faso, a project to prevent seasonal hunger and malnutrition has been launched; and in Djibouti, efforts are

under way within the broad arena of food security to encourage greater consumption of local products, including food.

181. The drought in the southern part of the region has been a catalyst in the reorientation of agricultural policies towards a more efficient exploitation of irrigation potential in the region; Malawi is one of the countries that are actively addressing this issue.

182. Environmental protection has also received some attention within the context of agricultural policies. The Global Coalition for Africa, in its first annual report, contends that four-fifths of the crop and pasture land in sub-Saharan Africa is at least partly degraded; and that deforestation might have been a cause of the significant decline in rainfall in the Sahel, in coastal areas along the Gulf of Guinea, in Cameroon, northern Nigeria and East Africa.<sup>16</sup> Environmental concerns have led, for example, to a government ban on the felling of some tree species in Zaire and to a ban on the exportation of 18 log species in Ghana. Several other countries have outlined strategies to develop forests and rationalize exploitation of fisheries resources.

183. In addition to desertification, which was Africa's primary concern at the United Nations Conference on Environment and Development (UNCED) in 1992, the countries in the region have given priority to the issues of increased finance and technology transfers during the UNCED follow-up discussion. In doing so, they are echoing the thoughts of part of the donor community. The World Bank, for example, has made it clear that environmental issues are at the top of the priority list of the Bank's concessional lending arm - the International Development Association (IDA).

184. Although policy emphasis was heavily weighted towards national concerns in 1992, intra-African trade, in particular, but also economic and political integration, generally, received a boost through a number of important decisions: the Preferential Trade Area for Eastern and Southern African States (PTA) amended the PTA Rules of Origin. All goods originating from Member States, regardless of the nationality of the producers, are now subject to preferential tariffs.

185. In August 1992, the Southern African Development Coordination Conference (SADCC) was renamed the Southern African Development Community (SADC) in anticipation of the potential accession of post-apartheid South Africa.<sup>17</sup>

186. The year also witnessed ratification by a few more countries of the 1991 Abuja Treaty establishing the Pan-African Economic Community (PAEC).

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<sup>16</sup> The Global Coalition for Africa. 1992. *African Social and Development Trends*. Annual Report, p.11.

<sup>17</sup> The prospects of a settlement of the political quagmire in South Africa have been enhanced by the announcement of a tentative date (April 1994) when the country will hold multiracial elections.

**Box 3**

**The debt problem in sub-Saharan Africa**

1. Total debt for sub-Saharan Africa was more than \$183 billion in 1992, up from about \$178 billion in the previous year. At that level, the debt stock exceeded the 1992 annual regional GDP by 6 percent. Interest arrears on long-term external debt alone were a staggering \$14 billion. Nearly one-fifth of hard-earned export revenue was used to service debt in 1992. Although that figure signifies a third consecutive year of decline, the debt-service ratio remains stubbornly high.
2. A significant share (some 10 percent on average between 1985 and 1991) of total debt originates from loans for projects in the agriculture sector. In 1991, the latest year for which data are available, the outstanding agricultural long-term external debt was just over \$13 billion, up from about \$12.5 billion in the previous year. For 1991 alone, net long-term flows on debt (or net lending) to agriculture, at \$727 million, were the lowest since 1985; nevertheless, they represented 23 percent of total net flows on debt.
3. Despite years of efforts to reduce the sub-Saharan African debt burden through rescheduling and debt forgiveness, only a small amount of debt has so far been affected. In 1991, only \$3.8 billion of Africa's debt (mostly in sub-Saharan Africa) was cancelled. During 1992, only nine countries secured the "enhanced Toronto terms", which allow for a cancellation of or reduction in the interest charges offered by some creditor countries. The amount of debt involved is significantly less than what would have been with the cancellation of two-thirds of the entire stock of eligible debt as envisaged under the "Trinidad terms". Furthermore, only two countries had recourse in 1992 to the IDA debt-reduction facility, which is oriented towards reducing commercial debt, because of the creditors' reluctance and debtor countries' domestic constraints as well as debtors' failure at times to comply with structural adjustment conditionality.
4. Multilateral debt, rather than commercial or official bilateral debt, is fast becoming the major problem in sub-Saharan Africa. During the 1980s, most countries were lured away from contracting commercial market debt by the prestructural adjustment experience, commercial banks' reluctance to lend to debt-burdened countries, as well as donor persuasion, and resorted to heavier borrowing from multilateral financial institutions. Almost 40 percent of total sub-Saharan Africa's official long-term debt in 1992 was owed to multilateral institutions from which the debtors can not expect debt rescheduling or cancellation.

187. The apparently renewed commitment to economic integration results from the recognition that the region's future may lie in collective self-reliance as the international economic environment becomes increasingly hostile, thereby threatening accelerated growth in the small, often fragmented, individual economies of sub-Saharan Africa. Self-reliance was one of the themes of the international conference held in Dakar from 16 to 18 November 1992. This was entitled "Trampling the Grass: Is Africa's growing marginalization in the newly emerging international order reversible?" The conference was hosted by the African Centre for Development and Strategic Studies (ACDESS), a major new African think-tank.

## Ethiopia

### The country: general characteristics

188. Situated in northeast Africa, Ethiopia constitutes the largest part of the Horn of Africa.<sup>18</sup> It spans an area of 1 223 600 km<sup>2</sup> (one of the largest countries in Africa) and has an altitude ranging from 100 m below sea level to over 4 000 m above sea level. The second most populous African country after Nigeria, Ethiopia has a population of 55.11 million.<sup>19</sup>

189. The main characteristic of the climate is its erratic rainfall patterns. The southwest highlands receive the highest average rainfall, while precipitation decreases towards the northeast and the east. Even in areas with a high mean annual rainfall, the variations can be extreme. Chronically drought-prone areas cover almost 50 percent of the country's total area and affect about 20 million people.<sup>20</sup>

190. Drought was at the root of at least ten famine episodes in the last 40 years which have affected large areas and significant portions of the population. In the last 20 years, the most serious droughts in terms of human suffering were those of 1972-73 and 1984-85.<sup>21</sup>

### Economy

191. Ethiopia is one of the poorest countries in the world, with a per caput GDP of \$120 and 60 percent of its population living below the poverty line.

192. Agriculture accounts for 50 percent of the country's GDP and 90 percent of exports. In terms of area under cultivation, cereals (teff, maize, barley, wheat) are the major crop category followed by pulses (horse beans, chickpeas, haricot beans) and oilseeds (mainly

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<sup>18</sup> Eritrea, officially independent since May 1993, is included in most of the reported data because of insufficient information to permit systematic reporting on Ethiopia only.

<sup>19</sup> 1992 estimates.

<sup>20</sup> T. Desta. *Disaster Management in Ethiopia: Past Efforts and Future Directions*. Presented to the United Nations Sudano-Sahelian Office (UNSO) Workshop on Drought Preparedness and Mitigation, Early Warning and Planning Services Relief and Rehabilitation Commission, Addis Ababa, May 1993.

<sup>21</sup> For more information see T. Desta op. cit., footnote 9.

neug and linseed). Coffee is the main export (accounting for 57.3 percent of total agricultural exports), followed by hides and skins (28 percent), live animals (3.3 percent) and vegetables.<sup>22</sup> About 78 percent of the total value of production from manufacturing industries is based on the processing of agricultural products (food processing, beverages and textiles).

193. The smallholder sector accounts for 90 percent of the country's agricultural output. The average farm size is estimated to be between 1 and 1.5 ha.

194. The overall growth of GDP during the 1970s and 1980s (1.9 and 1.6, respectively) closely follows the trends in the growth of agricultural production (0.7 and 0.3, respectively) and both magnitudes are well below the population growth rate (estimated to be 3 percent).

**- Economic policies affecting agriculture**

195. The search for proximate causes of both agricultural and general economic stagnation in Ethiopia since the mid-1970s leads to a set of interrelated structural constraints and policy factors. In addition to the harsh agroclimatic conditions, inadequate and poorly maintained infrastructure, environmental degradation and inadequate technology have contributed to the decline of agriculture.

196. At the policy level, macro-economic and sector-specific policies have contributed to the creation of a negative environment for agricultural growth. The rise to power of the revolutionary government in 1974 marked the beginning of an era of tight direct government controls on the production and distribution systems. A brief description of the policies implemented as well as their effects help explain the nature and magnitude of the problems facing Ethiopia today.

**- Macro-economic policy: a deceptive internal balance**

197. In Ethiopia, macro-economic policies have traditionally been characterized by prudent fiscal management. The fiscal deficit was kept at an average of 7 percent of GDP for most years between 1975 and 1989, with the exception of drought years.

198. Relatively low deficits were achieved despite increasing public expenditure (from about 17 percent of GDP in fiscal 1974/75 to 47 percent in 1988/89). An aggressive policy of fiscal receipts prevented the deficits from ballooning. The budgetary effects of external shocks were mitigated by foreign disaster-relief flows. In general, foreign flows of grants and loans left about half the deficit to be financed internally. As the Government avoided recourse to inflationary financing, average inflation was kept close to 9 percent during the 17 years ending in 1991.<sup>23</sup>

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<sup>22</sup> AGROSTAT data for 1990.

<sup>23</sup> For details, see World Bank 1990. *Ethiopia's Economy in the 1980s and Framework for Accelerated Growth*. Washington, DC.



199. While a macro-economic balance and price stability are necessary for growth, Ethiopia is an example of why these two factors may not be sufficient. Public fixed investment expenditure grew by almost 16 percent annually after 1975, while recurrent expenditure grew by 5 percent. It was chiefly channelled towards directly productive activities (mainly in manufacturing and public utilities), which often had questionable efficiency performances. During the 1980s, 30 percent of real capital outlays were devoted to agriculture (including state farms and land settlement) and only 15 percent to infrastructure (transport and communications).<sup>24</sup> Of the recurrent expenditures, approximately 2.2 percent were devoted to agriculture and settlements while close to 55 percent were spent on security and defence.

200. An aggressive revenue policy brought total fiscal revenues from 20 to 29 percent of GDP in the 1980s. Tax collection was divided evenly among domestic indirect taxes, business profit taxes and taxes on foreign trade. Taxes on coffee exports amounted to 30 to 40 percent of the f.o.b. coffee export values. Profits made by the lucrative state enterprises (mainly airways, mining and shipping) constituted an increasing share of total revenues. Occasionally, emergency levies and surcharges were imposed.

201. Institutional constraints on private business activity, for example a ceiling of 0.5 million birr (Br) of fixed assets per manufacturing enterprise and a lack of investment opportunities and consumer items, increased the amount of deposits (demand and savings) made by households and private business. High levels of deposits could be attracted at low interest rates (forced savings) and they were, in turn, mobilized for financing the domestic deficit. As a result, 85 to 90 percent of domestic financing was derived from the banking system.<sup>25</sup>

202. On the expenditure side, the relative neglect of infrastructure and less than optimum public investment allocation in agriculture weakened the overall productivity of the economy. Likewise, the emphasis on security in the recurrent budget and the maintenance of uneconomical projects further aggravated the situation. Furthermore, non-inflationary financing of the budget deficit was achieved at the expense of private investment opportunities. Thus, overall domestic balance was achieved but basic sources of productivity and growth were neglected or suppressed.

#### **- Agricultural sector policies**

203. Between 1974 and 1993, the agricultural policy environment as well as that of the economy as a whole can be divided in three periods:

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<sup>24</sup> For detailed Ministry of Finance data see A. Teferra. 1993. *Ethiopia: The Agricultural Sector - an overview*, Vol. II - Statistical annex. Paper prepared for the Policy Analysis Division, FAO.

<sup>25</sup> See footnote 12.



- 1974 to 1988, when "command economy" measures were implemented and consolidated;
- 1988 to 1991, when a number of previous measures were abandoned and reforms were made towards a more liberal economy;
- the post-1991 period (1991 being the year when the revolutionary regime collapsed), during which several of the 1988-1990 reforms were consolidated and additional measures were taken to liberalize the economy.

204. Given the country's variable agroclimatic conditions, three sets of interdependent factors shaped the environment for agricultural growth: the institutional framework; pricing and marketing policies; and the distribution of budgetary allocations.

**- The pre-1988 situation**

205. In March 1975, the Government announced sweeping changes in the structure of land tenure and labour relations in rural areas. The major elements of the law (Proclamation 31 of 1975) were: (i) the nationalization of land and the abolition of private landownership; (ii) a ban on tenancy contracts; (iii) the prohibition of hired rural labour in private farming; (iv) guaranteed access to cultivable land for all households.

206. Individual farm units were organized in peasant associations (PAs) which allocated and reallocated land among households, collected taxes and production quotas and organized voluntary labour for public works. The PAs, in turn, formed service cooperatives (SCs) which carried out supply, marketing and extension functions. Producers' cooperatives (PCs) were composed of individual households which *commonly* managed their consolidated farms. A number of large state farms were also established. By 1989, there were 17 000 PAs and 3 700 SCs, while the socialized sector (PCs and state farms) comprised 3 300 PCs with a total of 290 000 members.

207. Despite efforts directed towards the "socialization" of agriculture, the structure of production basically remained private, as peasants strongly resisted integration in PCs. By 1988, the share of individual peasant holdings in total cultivated land was around 94 percent, with the remainder divided between PCs (2.5 percent) and state farms (3.5 percent). The allocation of public resources between the socialized and the non-socialized sectors was not proportionate to their importance, with the bulk of financial resources, modern inputs and extension personnel allocated to the socialized sector whose productivity performance often did not justify this disproportionate allocation.

208. "Villagization" (the grouping of the population in designated villages) became national policy in 1985. By 1989, one-third of the rural population had been transferred to villages. In 1985, in the wake of the drought, the campaign to resettle peasants from drought-stricken areas to uncultivated lands was intensified. Poor organization and settler selection transformed the scheme into an extremely costly project, that required continuous subsidies in order to survive.

209. Pricing and marketing policies also reflected the tendency towards heavy state control. The Agricultural Marketing Corporation (AMC) was responsible for wholesale domestic procurement of grains, oilseeds and pulses and for cereals imports. The AMC was responsible for collecting all the marketable produce from PCs and state farms and required individual farms to deliver a quota based on their assessed capacity to produce a marketable surplus. From 1980, a pan-territorial pricing system was in effect for the quotas, with procurement prices remaining fixed until 1988 when they were increased by 7.7 percent. Even after their increase in 1988, procurement prices for teff, wheat and barley were, respectively, 37, 61 and 45 percent of free market prices. There were intermittent bans on private trading in major producing regions until 1988. In addition, private traders were obliged to sell the AMC a share of their purchases (ranging between 50 to 100 percent) at Br 4 to 5 more than the price paid to farmers. AMC procurement was not particularly successful and its share of grain purchases reached a peak of 11 percent of the total grain crop in 1986/87, as both individual farmers and traders had strong reason to evade controls.

210. The functioning of the public procurement system created a market "dualism". On one side there was the public distribution system which delivered to mills, hospitals, urban associations (*kebeles*), educational institutions and the army. On the other, there were (poorly integrated) free markets where grains and pulses were sold at substantially higher prices.

211. Exports of pulses and oilseeds, coffee and livestock were also handled by parastatals. Livestock products for export were procured at market prices while domestic trade was free. Coffee farmgate prices have been kept low (35 - 45 percent of their f.o.b. value) even under the overvalued official exchange rate.

#### - The reforms of 1988

212. Faced with economic stagnation and mounting social problems, in 1988 the Government initiated a programme of economic reforms aimed at liberalizing the economic system. The Government pointed to the following causes for the economic stagnation:<sup>26</sup> (i) the negative effects of suppressing private economic activity; (ii) the unbalanced allocations of investment in peasant agriculture in favour of the low-performance socialized sector; and (iii) neglect of market forces and the private sector in favour of central planning that led to resource underutilization and inefficient investment.

213. In response to the diagnosis above, the Government endorsed and started implementing a series of measures, including increases in price incentives as well as institutional reforms. Official procurement prices were increased and crop quotas for delivery to the AMC were reduced. Price incentives for coffee were improved substantially. The number of licensed traders was increased; interregional restrictions on the movement of agricultural produce were abolished. Participation in PCs became voluntary and, by the end

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<sup>26</sup> Presidential Address to the Ninth Plenary Session of the Central Committee of the Workers' Party of Ethiopia, November 1988.

of 1989, 95 percent of these cooperatives had disintegrated. Several PAs and CAs also disappeared.

214. Another set of reforms was introduced in 1990, liberalizing the foreign investment code, while plans existed to allow the hiring of rural labour. As the country plunged increasingly into civil strife, political instability and institutional disintegration, those policies were not put into effect.

**- The post-1991 economic environment**

215. In May 1991, the Transitional Government of Ethiopia (TGE) assumed power. It faced an economy that was devastated by the long period of civil strife, with low living standards and deteriorating infrastructure and social conditions. In addition to the deep-rooted problems of poverty in the country, there was the challenge of providing a livelihood for 350 000 demobilized soldiers and their families as well as for a large number of war refugees and displaced civilians.

216. Along with measures to establish peace and security in the country, a wide-ranging programme of economic and social reforms was introduced by the government with support from the donor community.

217. On the macro-economic side, the Government devalued the birr from Br 2.07 to 5 Br per US dollar and in May 1993 a limited exchange rate auction system was established for essential items.

218. In agriculture, the Government guaranteed use, lease and inheritance rights to land. In the transition period, land redistribution has stopped and the hiring of rural labour is now allowed. The TGE has announced that an elected government should handle the land tenure issue by referendum. The AMC lost its monopoly power so most grain is now marketed by private traders and the quota system has been abolished. Since January 1993, all export taxes have been abolished, with the exception of the coffee export tax. A 15 percent subsidy on fertilizer has been instituted as partial compensation for the effects of the devaluation. In the transport sector, trucking has been liberalized and there are plans to parcel and sell the government trucking company.

**The impact of policies on agriculture**

219. The effects of the policies (both macro-economic and sector-specific) followed from 1974 to 1991, especially those applied before 1988, created an overall negative environment for agricultural growth, thereby contributing to the virtual stagnation of agricultural output.

220. Institutional changes with respect to land caused drastic reduction in the size of farms which often were not sufficient to support a household. Tenure uncertainty had serious environmental implications while the small size of the holdings and the lack of timely

distribution of fertilizers and seeds (exclusively distributed by the public sector) have contributed to the stagnation of yields.<sup>27</sup>

221. There has been a lack of research on appropriate technologies and inputs (seeds and fertilizers) adapted to the agroclimatic conditions of the country. The Ethiopian Seed Corporation distributed about half of the 400 000 tonnes of seeds that were estimated to be needed by the traditional farm sector. The erratic distribution of seeds and the lack of extension services caused many farmers to rely on traditional seeds and refuse new varieties.

222. Although the land actually under the control of PCs and state farms was only a small percentage of the total land area cultivated, according to the Ten-Year Perspective Plan 1982/83-1993/94, most individual farmers were to be organized into PCs. The final objective was for 44 percent of the cultivated land to be allocated to individual farms, 49 percent to PCs and 7 percent to state farms. Although the plan was never implemented, its provisions - along with the uncertain land tenure system and the frequent land reallocations within PAs - created great uncertainty among individual farm households and acted as a disincentive to long-term investments by farmers as well as to sustainable farm practices.

223. Furthermore, the marketing system was not conducive to the production of a marketing surplus, as low prices were paid for quota deliveries. Restrictions on interregional movements prevented the integration of deficit and surplus areas, a situation that was exacerbated by the poor condition of rural roads, tight controls on the transport and hauling system and the long distance of the majority of small peasant holdings from all-weather roads. The relative neglect of rural infrastructure greatly reduced overall investment efficiency.

224. It is difficult to single out the impact of the liberalization measures taken between 1988 and 1990, as their effects are clouded by the severe disruption of markets caused by the war. There is evidence of a reduction of spatial price dispersion and increased market integration for cereals following liberalization, despite the worsening security situation.

225. Thus far, the response of the economy and agriculture to the post-1991 reforms is encouraging, although it is difficult to establish with precision a correspondence between policies and performance. Exogenous factors (favourable weather) and non-economic factors (increased peace and security) have played a positive role in expanding economic activity.

226. On the macro-economic side, after a reduction of 5.2 percent in 1991/92, real GDP is expected to grow by 7.5 percent in 1992/93, one percentage point above the government target. Inflation fell from 45 percent in the period June 1990-June 1991 to 14 percent in the corresponding period 1991/92. It is believed that the country had already absorbed the

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<sup>27</sup> Average cereal yields are about 1.2 tonnes/ha for the smallholder sector, two-thirds as high as those in Kenya for comparable soil fertility and climatic conditions. For pulses and oilseeds (at 0.65 tonnes/ha and 0.5 tonnes/ha, respectively), yields are among the lowest in the world.

effects of the devaluation, as a large number of foreign exchange transactions were taking place on the parallel market at Br 7 per US dollar.

227. The projected strong performance of real GDP is linked to the agricultural sector's continuous strong performance during the last three years. Cereal production showed a strong recovery, with a total production of 7.3 million tonnes in 1990/91 (a record crop), followed by a near-record crop in 1991/92 of 7.1 million tonnes and a projected 6.9 million in 1992/93.<sup>28</sup> The variations reflect changes in weather patterns and localized droughts. The peasant sector accounted for most of the increase in output, while state farm production was static. Fertilizer consumption was 30 percent higher in 1992 and cropped land area expanded in response to strong cereal prices. Increased deliveries of coffee have been observed in the Addis Ababa market during the first months of 1993.

### **Current issues in agricultural development**

228. Recent policy reforms constitute the beginning of deep structural changes needed to set the Ethiopian economy on a sustainable development path. Ethiopia is, and will stay for some time, an economy in transition between two different economic development models. Among the numerous issues currently facing Ethiopian policy-makers, two are analysed more extensively in this report: (i) food security and poverty alleviation; and (ii) natural resource degradation.

### **Poverty and food insecurity**

229. *The extent of the problem and its root causes.* Food insecurity (defined in its most basic form as a situation where the food needed for a healthy life is not accessible to all people at all times) is both a chronic and a transitory phenomenon in Ethiopia. It is estimated that 50 percent of the country's total population (between 23 million and 26 million people) are subject to food insecurity. More than 20 million of these people live in the rural areas. In cases of consecutive periods of natural and human-caused calamities, poor households sell their assets, deplete their food stocks and become highly vulnerable or destitute and in need of continuous flows of food assistance to survive. Over the last two decades, transitory food insecurity has manifested itself in the famines following the droughts of 1972/73 and 1984/85.<sup>29</sup> In Ethiopia, refugees and people displaced by the civil war constitute highly vulnerable groups requiring assistance.

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<sup>28</sup> Sources: For 1990/91, Central Statistical Authority data; for 1991/92, Ethiopia Ministry of Agriculture estimates; for 1992/93, FAO. 1993. *Food supply situation and crop prospects in sub-Saharan Africa*. Rome. Note: Data include non-food uses.

<sup>29</sup> Similar consequences were averted in the 1987 drought because of adequate preparation and early warning.

230. With respect to chronic food insecurity, data show that even in normal periods (i.e. not characterized by abnormal climatic or socio-economic conditions)<sup>30</sup> the average national level of food intake was 8 percent below the minimum daily requirement of 500 g of cereal equivalent per caput. "Average" data may be misleading as they mask differences in the ability of people to gain access to available food supplies. Data from the Ministry of Agriculture show that, in 1982-83, average incomes per household in the low-income areas were less than one-third of those in higher-income regions. Poor regions were also food-deficit areas and, given the lack of market integration, grain prices were much higher in those areas, thus further exacerbating the access problem.<sup>31</sup> It is estimated that, although food aid has prevented the average food availability from falling dramatically, acute malnutrition during periods of drought and civil disturbances has affected 8 percent of the population.<sup>32</sup> FAO has estimated that the current level of food production (including grains, pulses, vegetables, fruits and livestock products) could provide a total of 1 600 to 1 700 calories per caput per day. Food aid and imports increase total caloric intake to 1 800 to 1 900 calories per caput per day which is below the minimum recommended 2 100 per caput per day.

231. Poverty is at the root of the problem of access to food supplies.<sup>33</sup> In the rural sector, the poor have limited productive assets, mostly of low quality (small farm size, poor soil quality, variable rainfall, a small number of livestock); limited opportunities for alternative employment; poor access to social services; and they use traditional production techniques. The poor also spend a large part of their incomes on food and energy, while a minimal amount is saved.<sup>34</sup> Thus, they are highly vulnerable when emergencies occur.

232. Urban poverty is the result of high unemployment and wages fixed at low levels. The problem has been aggravated in recent years by the influx of demobilized soldiers and displaced people and by the increases in food prices on the free market.

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<sup>30</sup> For instance, the 1979-1984 period.

<sup>31</sup> For more information, see IFAD, 1989. IFAD: Special Programming Mission to Ethiopia, Working Papers Nos. 1 (*Macro-economic performance and trends*) and 7 (*The dynamics of rural poverty*). Rome.

<sup>32</sup> Ethiopian National Institute data. See I. Loerbros (FAOR). *Statement on occasion of World Food Day 1992*, 16 October, Addis Ababa, Ethiopia.

<sup>33</sup> In addition to the level of per caput income, access to social services is another dimension of poverty. Such access, if it exists, can compensate for some of the consequences of low income. In this report, only the elements of poverty *directly* affecting access to food are examined. For a detailed analysis of the different dimensions of poverty in Ethiopia, see *The social dimensions of adjustment in Ethiopia: a study on poverty alleviation*. Ministry of Planning and Economic Development. May 1992.

<sup>34</sup> Using 1982/83 survey data, IFAD estimated that only 5 percent of rural income was saved.

### Policy measures for alleviating poverty and food insecurity

233. Broad-based economic development is essential for long-term sustainable improvement in the lives of the poor. For Ethiopia, the role of agriculture is critical in this respect. Agricultural growth will address the supply side of the food security issue (i.e. increasing food production and foreign exchange for food imports) as well as the access side, through employment-creation and income opportunities. On the other hand, policies that promote growth are often slow to work and it may take several years of growth to absorb productively the unemployed and underemployed labour force and raise the living standards of the most needy groups.<sup>35</sup> As a major restructuring of the economic system is taking place, some of the short-term adjustments (especially food price increases) will negatively affect the most vulnerable parts of the population.

234. Thus, in addition to policy reforms aimed at growth urgent targeted measures must be taken to deal with poverty in the short and medium term. Issues related to emergency (drought) preparedness and relief and to the most appropriate use of the (substantial) food aid flowing into the country needs to be examined in light of the changing economic conditions. Following are some of the issues and of actions being taken by the Government.

### Safety net measures

235. Past policies for poverty alleviation emphasized untargeted commodity subsidies administered mainly through the public distribution system. Beneficiaries of the subsidies were members of the *kebeles*, PCs and cooperatives who were issued rations of subsidized food and other commodities (soap, salt and kerosene). Families had access to the same rations irrespective of income, the intention being (especially in the urban areas) the creation of a self-targeted system where the more privileged households would not be willing to queue in the *kebele* shops to obtain lower quality items. The problems with the system of generalized commodity programmes were: (i) it had a strong urban bias, i.e. urban consumers, representing 15 percent of the population, were receiving about 60 percent of the subsidies; (ii) although it provided significant relief to poor households, it benefited disproportionately the middle- and higher-income ones, as very poor households could not afford to buy their ratio at subsidized prices; and (iii) the economic costs of those programmes (i.e. using border prices at equilibrium exchange rates) were extremely high. As prices were liberalized and the exchange rate was devalued, the programmes became unworkable.<sup>36</sup>

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<sup>35</sup> According to the World Bank, assuming 5 percent real GDP growth and 3 percent population growth, it will take 35 years for the per caput GDP of Ethiopia (of \$120) to double.

<sup>36</sup> World Bank calculations show that, at the shadow exchange rate of Br 5 per US dollar (which, after 1991, became the actual exchange rate), the benefits to the poorest 30 percent of the urban population amounted to about 16 percent of the *total cost of the urban commodity subsidies*. For the rural sector the share was 5 percent (after adding the cost of the fertilizer subsidy). The total weighted share (urban plus rural) was about 12 percent.

236. In the wake of the complete liberalization of commodity markets in 1991, the TGE instituted a programme to mitigate the effects of food price increases on the poor. The programme contained a number of safety net features, including a limited public sector wage adjustment to cover food price increases; severance pay and retraining for employees of abolished public enterprises; and a food/kerosene voucher scheme to assist the poorest groups in the urban areas. The scheme uses the *kebele* administrative infrastructure to target the poorest households which, depending on their income, receive a voucher either free or in exchange for community service or public works. This targeted income transfer scheme is more efficient than the previous system of untargeted commodity subsidies. In the rural areas, a programme to provide fertilizer and other input vouchers for poor farmers is under consideration, as is a rural public works programme to help generate income for unemployed rural workers.

### Food aid for development

237. Food aid increased from about 3.5 percent of total food availability in the first half of the 1980s (up to 1984) to 17.2 percent during the second half, reflecting the effects of the 1984/85 drought.<sup>37</sup> The TGE has taken a clear position against free food distribution in its programming of food aid resources. This position is based on the belief that free food distribution is ineffective in arresting or reversing the trend towards impoverishment and that it could destroy the survival mechanisms of the poor. Thus, a number of proposals exist for the use of food aid as a development tool through employment-generating public works programmes. The basic elements of these proposals are: (i) selection of labour-intensive projects, mainly in the rural areas, based on food-for-work or cash-for-work compensation - the latter being funded with proceeds from monetized food aid; (ii) a self-targeting mechanism by which the cash or food-equivalent wage is set below the market wage, thus attracting only the truly poor and vulnerable.

238. The extent to which such a programme can be implemented will depend on the capacities of the line ministries, the Early Warning and Planning Services Relief and Rehabilitation Commission, NGOs and the regional governments to resolve a number of issues included the following:

- a system for setting the appropriate wage level has to be established;
- the main orientation of the projects must be decided, i.e. whether projects will be selected strictly in terms of economic cost-benefit criteria or whether such economic efficiency will be compromised in favour of projects that make a significant difference in the level of employment (putting more emphasis on the project's social safety net features).

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<sup>37</sup> See footnote 21.



### Natural resource degradation<sup>38</sup>

239. Degradation of natural resources constitutes one of the major constraints to increasing agricultural production in Ethiopia. According to FAO, about half of the highlands (270 000 km<sup>2</sup>) are already significantly eroded; of this, 140 000 km<sup>2</sup> are seriously eroded and have been left with relatively shallow soils. Close to 20 000 km<sup>2</sup> of agricultural lands are so badly eroded that they are unlikely to sustain cropping in the future. About 1 900 million tonnes of soil are being eroded annually, of which about 10 percent is carried away by rivers and cannot be retrieved, while the rest is redeposited as sediment within the highlands but mostly in places that cannot be of much agricultural use. If the trend continues, land covered by soil with a depth of less than 10 cm will constitute 18 percent of the highland area by the year 2010. This implies a dramatic fall in yields, frequent crop failures and a high probability of famines, especially in the low-potential cropping areas (LPCs) of the highlands. In addition to on site agricultural production losses, erosion reduces the effective lives of dams and reservoirs through siltation as well as increasing the extent and intensity of droughts and flooding.

240. Soil erosion is not a necessary consequence of cropping but rather a result of inappropriate cropping practices. Factors contributing to high erosion rates are the removal of natural vegetation for cropping, fuel, grazing and building; short, intense storms in the rainy season; high erodibility resulting from deforestation; and highly sloped topography. In the Ethiopian highlands, population pressures forced the cultivation of increasingly steeper slopes and progressively shortened the fallow between periods of annual cropping. It is estimated that four-fifths of the erosion in the highlands occurs from the overexploitation of croplands, while most of the remainder is caused by the overgrazing of grasslands and deforested areas.

241. Deforestation constitutes another serious environmental problem. In less than a century, the country's forest and woodland cover has been reduced from 40 percent of the total area to 16 percent in the 1950s and an estimated 4 percent currently.

242. Past policies concerning the agricultural sector amplified the adverse resource degradation and depletion effects of agroclimatic parameters. Villagization schemes placed an excessive demand on forest resources for building material. No effort was made to explore and introduce new energy sources in the rural sector, so wood and dung remained the only sources of energy. As the demand for such resources grew with population, deforestation and the deprivation of land from valuable nutrients increased. Uncertainty about land tenure acted as a disincentive to investments in soil conservation. Inadequate funding for agriculture and its disproportionate distribution in favour of state farms and cooperatives resulted in a shortage of funds for research on appropriate peasant technologies. In general, the policy environment discouraged the integration of conservation activities into the farming practices of peasants. The situation was exacerbated by a lack of appropriate

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<sup>38</sup> This section is derived for the most part from FAO. 1985. *Ethiopian Highlands Reclamation Study*, report. Rome.

land-use and forest policies. While the resettlement of rural populations may be, in principle, an efficient method of addressing imbalances between patterns of human settlement and available resources, the way it was implemented in the past in Ethiopia made it ineffective.

243. In its 1985 Highlands Reclamation Study, FAO recognized that isolated conservation measures are bound to be both highly costly and ineffective. The study suggested a broad-based development strategy (conservation-based development strategy or CDS) so that conservation measures are integrated into mainstream agricultural development activities at all levels (farm, agricultural, national).<sup>39</sup>

244. Within the agricultural sector, the strategy identified proper farming and livestock management systems and practices to be promoted in each agro-ecological zone in the highlands. Emphasis was given to the provision of proper incentives for conservation and to proper relocation practices. The strategy recognized that agriculture cannot by itself solve all factors associated with degradation (such as low growth and poverty). It suggested that the links of agriculture with other sectors and complementary activities (small-scale industry, agroforestry, energy generation) be exploited to generate alternative income sources, especially in low-potential areas. At the national level, increased overall spending for agriculture was recommended in favour of the peasant sector; the need for an increased capacity of the ministries to carry out conservation programmes; and the full utilization of the capacities and skills of the private sector.

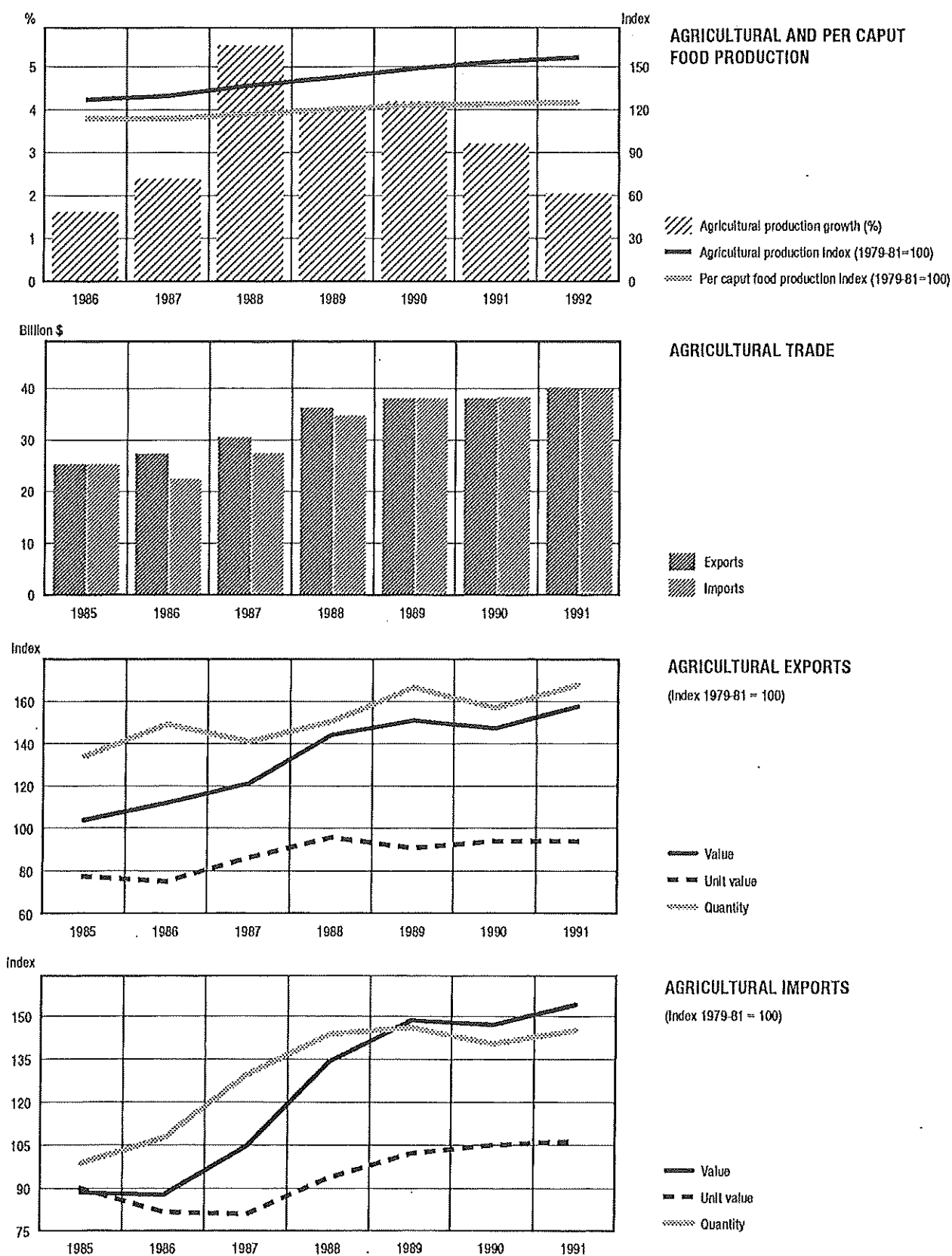
245. A number of policies included in the recommendations of the Ethiopian Highlands Reclamation Study have already been implemented (more secure tenure, more freedom for the private sector, voluntary resettlement and better incentives to farmers) but much more needs to be done. Land-use and forest resource policies are necessary prerequisites for a successful environmental resource conservation strategy. The Government is planning to complete a national conservation strategy by April 1994. A forestry action plan is an important component of this strategy. Within a well-established set of rules for forest management and conservation, a greater role will be allowed for private sector participation in wood harvesting and processing. Incentives will be given to farmers and rural communities for reforestation and tree planting.

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<sup>39</sup> "The term Conservation-based Development implies not only the allocation of more resources for conservation but, even more importantly, ... the integration into agricultural and rural development objectives and criteria of improved land-using systems. This could result in a significant reduction, if not the removal, of absolute poverty." Executive Summary, p. 12, in FAO. 1985. *Ethiopian Highlands Reclamation Study*. Rome

Figure 8

# ASIA AND THE PACIFIC



Source: FAO

## ASIA AND THE PACIFIC

### Regional overview

246. Asian and Pacific countries continued to show strong and steady economic growth in 1992. The Asian Development Bank (AsDB) estimates the average annual GDP growth rate for the region to be 7 percent in 1992, up from 6.3 percent in 1991. Despite the prolonged global recession, the AsDB expects regional GDP to increase by 7.2 percent in 1993. Three significant factors contributing to the region's ability to maintain this solid growth performance are: (i) a continuing increase in disposable incomes, which is sustaining domestic demand; (ii) the continuing expansion of intraregional trade; and (iii) positive results from earlier policy reforms in many Asian economies.

247. Following are some individual country experiences in 1992:

- The output of China's industrial output increased by 20 percent in 1992, contributing to the country's impressive 12.8 percent increase in GDP. Even though drought affected many parts of the country, total grain production increased by 1.7 percent to an estimated 443 million tonnes. Tea, sugar, tobacco, fruit and vegetable production also increased compared with 1991 levels.
- All of India's economic sectors improved in 1992 - the country's GDP increased by 4.2 percent. Agriculture, which was aided by a good monsoon, grew by 3.5 percent. Foodgrain production increased to a record 177 million tonnes compared with 167 million tonnes in 1991. However, heavy monsoon rains and floods in July 1993 are likely to have serious implications for this year's grain production.
- In Pakistan, a 30 percent increase in cotton production spurred agricultural GDP to a 6.4 percent increase in 1992. The large cotton crop is attributed to higher farmgate prices, a wider use of improved seeds and favourable weather. In contrast, Nepal experienced unfavourable weather in 1992. Its agricultural GDP increased by only 0.5 percent and foodgrain production declined by 6.5 percent.
- Southeast Asia reported mixed agricultural performances. Agricultural GDP increased by 3.5 percent in Thailand and 1.2 percent in Malaysia, but fell by 1 percent in the Philippines. In Malaysia, the production of palm oil, sawlogs, livestock and fish increased, while rubber and cocoa declined. In the Philippines, a severe drought reduced corn and rice production while the logging ban and related conservation measures curtailed forestry production in 1992.
- Viet Nam produced a record rice crop of 21.1 million tonnes, 1.2 million tonnes more than 1991. Total food production increased by 9 percent and agricultural GDP increased by 6.3 percent in 1992. Wide access to inputs and agricultural

policy reforms are credited with improving yields and expanding area under cultivation. Laos' agricultural sector also recorded an outstanding year in 1992. Its agricultural GDP increased by 8.3 percent, with rice production growing by more than 20 percent.

### **Current policy issues in Asia and Pacific countries**

#### **- Growing intraregional trade and investment flows**

248. Despite a slow-down in the world economy in 1992, the international trade performance of the developing countries of the Asia and Pacific Region continued to be buoyant. Exports rose by 13 percent as a result of improvement in production efficiency, low inflation rates and favourable impacts of the policy reforms initiated in recent years.

249. One key factor sheltering the Asian economies from the global recession was the significant growth in intraregional trade and investment. In 1991, intraregional trade expanded by 23 percent compared with a 15 percent increase in exports to the rest of the world. This development is strongly supported by the ongoing regional division of labour, specialization and the relocation of production within the region in response to the opportunities offered by the various countries' relative factor endowments, macro-economic policy environments and resulting comparative advantages.

250. In addition to large inflows of direct foreign investment, substantial flows of investment capital from Japan and newly industrialized Asian economies to the developing countries within the region continued. In particular, vast investment opportunities and the spectacular rate of growth in China attracted millions of dollars of investment by overseas Chinese.

251. The outcome of the ongoing Uruguay Round of Multilateral Trade Negotiations (MTNs) is keenly awaited in view of its influence in shaping the application of the principles of non-discrimination and market access for exports from the region. Emergence of the North American Free Trade Association (NAFTA) is, however, viewed with some wariness because of the likely diversion of direct foreign investments from Asian countries.

252. Against the backdrop of these changes in the external environment, Asian countries have moved ahead with the creation and promotion of subregional trade arrangements. The member states of the Association of Southeast Asian Nations have launched the ASEAN Free Trade Area (AFTA) with a goal to remove tariffs on most commodities traded within the region in the course of next 15 years. Likewise, the South Asian Association for Regional Cooperation (SAARC) summit in Dhaka earlier this year, adopted a resolution to create a South Asian Free Trade Area (SAFTA). However, because of differences in size and the state of economic development between member nations, many difficult issues need to be resolved before these regional arrangements can emerge as an effective means for coordinated action.

- The challenges of economic transition

253. During the past two years, the number of Asian countries undergoing transition from a centrally planned to a market-oriented economic system more than doubled when six former Soviet Asian republics (Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) joined China, Viet Nam, Laos and Mongolia in this process. There is considerable variation among these countries in terms of the problems of transition, approaches followed and the degree of success achieved. Most of them require structural transformation which can only be achieved over a number of years through persistent and consistent efforts. There are also problems of short-term stabilization and macro-economic management as well as the need to create and strengthen institutions necessary for a market economy. Both problems seem to be more acute in the case of former Soviet Asian republics than others.

254. While, initially, all countries undergoing transition faced high inflation, unemployment and underemployment, China, Viet Nam and to some extent Laos have been able to reduce these by stimulating agricultural production, private investment and direct foreign investment. Mongolia and the former Soviet Asian republics, on the other hand, are facing severe shocks of transition.

255. For example, in 1992, in contrast to the economic growth of 12.8 percent and an inflation rate of 6.4 percent in China, Mongolia's real GDP fell by 7.6 percent and the inflation rate spiralled to 320 percent. In China and Viet Nam, the rural communities, whose production systems are based on the household unit and are equipped with labour-intensive technologies, responded well to market signals. In contrast, farming communities in Mongolia and the former Soviet Asian republics, which have a longer tradition of communal farming using heavy equipment and depending on input supplies from state enterprises, face more difficulties in adapting to the new situation. It also appears that, in the latter group of countries, price liberalization did not bring about the expected supply response because of a monopolistic control over inputs and the tendency of the monopolistic enterprises to curtail production and raise prices.

256. Judging by the experience of some countries in transition (China and Viet Nam), which suffered initially from short-term macro-economic instability and inflation, it appears that an appropriate institutional structure is equally as crucial as macro-economic stability for a successful transition. The transition process requires the public sector and foreign donors to have an active supporting role in creating and consolidating a favourable policy framework and institutional environment that will enable the efficient functioning of a market economy. In addition, improvements are essential in the Government's capacity to deliver public goods (research, extension, transport and communications infrastructure, health, education and other social services), which remain in the domain of the public sector even in a highly developed market system.

- The environment and sustainable agriculture

257. Rapidly increasing population pressure, urbanization, the excessive use of chemicals in production processes and the unsustainable use of natural resources are contributing to serious water and air pollution, deforestation, soil erosion, desertification and flooding throughout the region.

258. While the improved seed and fertilizer technology, complemented by a vast expansion in irrigation facilities, removed the spectre of hunger from many populous Asian countries, in some cases, it also added to environmental degradation. Moreover, maintaining or raising the present yield levels demands a more intensive use of natural resources with adverse consequences on the environment. For the Pacific countries, global warming and the resulting rise in sea level are most serious, although uncertain, environmental threats. The externalities involved with these types of environmental issues require concerted group actions by the international community.

259. Developing Asian countries have realized the close connection between rural poverty and environmental degradation. Increasing population pressure on agriculture, the result of inadequate growth in off-farm employment opportunities and a lack of access to yield-improving technologies, is forcing many Asian farmers to cultivate marginal lands and overuse other natural resources for their immediate survival. In many Asian countries that are striving for equitable and sustainable development, poverty alleviation is a core element of the national development plan.

260. Many countries are grappling with the complex task of achieving poverty alleviation and environmental protection goals within a somewhat conflicting framework, containing socio-political commitments to equity as well as market liberalization policies aimed at resolving macro-economic imbalances. It is argued that market-based policy instruments emphasizing the removal of input subsidies, output support prices and protective tariffs may act as a two-edged sword. While tending to discourage uneconomical and unsustainable input use, with positive effects on the environment and the evolution of sustainable farming practices, these policies tend to increase food prices, consequently having negative income effects on the poor, who often are net buyers of food, and thus mitigating the achievement of poverty alleviation goals in the short term. Policy formulation in such situations may call for a compromise between economic efficiency and a pragmatic understanding of the short-term socio-economic political situation.

261. Finally, the cost of reversing environmental degradation is very high. For most developing Asian countries, investing in such activities would entail drawing resources away from other important development projects. It has also been realized that preventing environmental damage costs less than restoring the loss. Thus, there is an increasing emphasis on the incorporation of environmental considerations in policy formulation as well as in development project selection and the evolution of appropriate production systems.

**- Sector policies following macro-economic and structural reforms**

262. Having established a growth-oriented macro-economic policy framework in the course of implementing stabilization and structural adjustment programmes, a number of market-oriented Asian countries, such as Bangladesh, Indonesia and the Philippines, have moved onto sectoral reforms. It is realized that the macro-economic policy reforms cannot be fully effective in improving efficiency and unleashing the farmers' production potential unless sectoral constraints on growth are tackled.

263. A comprehensive package of agricultural sectoral policy reforms generally consists of the withdrawal of input subsidies, the dismantling of expensive public food distribution systems and the removal of subsidized credit and protective tariffs as well as other barriers. It also entails freeing import restrictions, encouraging private sector participation and investing in infrastructure to promote the efficient operation of market mechanisms.

264. The task of designing efficiency-oriented equitable agriculture sector policies is not easy, however. Among other things, policy-makers have to take into account the differential impacts of sector policy changes on various sections of society as well as dealing with diverse coalitions and interest groups who react differently to policy changes. These reforms are therefore being carried out selectively and in sequence, with due consideration given to the socio-political realities of the countries concerned. For example, in some cases fertilizer subsidies have been gradually reduced (India and Indonesia) while an active public sector role in foodgrain procurement, distribution and buffer stock management has been maintained.

265. In some Asian countries, the reluctance to carry out agricultural sectoral policy reforms seems to have been reinforced by the delayed finalization of the Uruguay Round of GATT negotiations and protective trade policies and trade blocks outside the region.

**Bangladesh**

266. With an estimated per caput GNP of \$225 in 1992, Bangladesh is among the poorest countries in the world. Moreover, with approximately 115 million inhabitants and 149 thousand km<sup>2</sup>, the country is three times more densely populated than India and seven times more than China. This intense population pressure on a relatively narrow resource base, together with the frequent natural disasters suffered, present formidable challenges to poverty alleviation efforts in Bangladesh.

267. Over the years, floods, droughts and cyclones have undermined progress and hampered the country's efforts to stimulate growth and reduce poverty. Cyclones and resulting storm surges are particularly destructive. The Bay of Bengal is the most cyclone-prone area in the world, having been hit by 15 cyclones during the past 25 years. These natural disasters cause immeasurable human suffering, devastate large crop areas and destroy property and infrastructure. The government estimates that the cyclone of April 1991 killed approximately 140 000 people. Such disasters impede economic and social progress by diverting attention and resources from development programmes towards crisis management.



268. Despite all these obstacles, Bangladesh has made significant economic progress over the past decade. The country has reduced external and internal deficits, stabilized the inflation rate, promoted non-traditional exports and achieved a modest growth rate. Stabilization policies have helped lower the budget deficit from about 8 percent in 1990 to 5 percent in 1992. The inflation rate fell to around 5 percent in 1992, the lowest rate in more than ten years. Real GDP growth during the period 1990-92 has been in the range of 3.5 to 6.5 percent and is forecasted to be 5 percent in 1993.

269. Bangladesh has also initiated a number of structural reforms in the industrial and financial sectors, public enterprises and trade and exchange rate policy. Financial sector reforms include abolishing credit ceilings and increasing reliance on cash and liquid asset reserve requirements to regulate liquidity. Public enterprises are being given more administrative and managerial autonomy. Trade policy is shifting from import substitution to export promotion; a tariff system is replacing prohibitions and quantitative restrictions on imports.

270. Perhaps even more important to the overall economy are the agricultural policies, programmes and projects that have expanded the use of High Yielding Varieties (HYV) rice seeds, fertilizers and shallow tube wells for irrigation. As a result, rice production has increased by more than 40 percent in the past ten years. Today, Bangladesh is close to self-sufficiency in rice and, for the first time in the country's history, the Government is discussing the possibility of exporting rice.

271. In addition to the stabilization programme and economic policy reforms, human resource development and poverty alleviation remain top priorities. Public spending on health care, primary education and family planning increased in real terms in 1992. Food distribution programmes aimed at vulnerable groups and the poor are being overhauled to reduce costs, increase efficiency and improve coverage.

272. Many human development programmes have proven successful in Bangladesh. For example, family planning efforts have resulted in a lower population growth rate which is currently down to 2.1 percent. At the same time, the country still experiences a low literacy rate (around 35 percent), a low primary school enrolment rate (72 percent) and low life expectancy (56 years). Moreover, half of total mortality is due to child death below the age of 5, of which more than half is due directly or indirectly to malnutrition. Household food security is another persistent problem; half the households in Bangladesh cannot afford an adequate diet and an estimated 22 to 30 percent of the population live in hard core poverty (less than 1805 kcal/caput/day).

### **The agricultural sector**

273. The agricultural sector is Bangladesh's largest source of income, employment, savings and investment. Agriculture accounts for about 40 percent of GDP and more than 60 percent of employment. Rice not only dominates all other agricultural products, it also dominates all other economic activities. Production, trade, processing and transportation of rice amount to more than 25 percent of the country's GDP. Rice represents 75 percent of the cropped

the consumer price index (CPI) is about 60 percent. For these reasons, policies that affect rice production, trade and consumption have a profound impact on Bangladesh's entire population.

274. Over the past two decades, rice production and distribution policies have adjusted with changing economic circumstances and pressures. The growth in rice production is attributed primarily to policies that encouraged wider use of new irrigation technology, HYV seeds and mineral fertilizers. The introduction of tube well irrigation, particularly low-cost shallow tube wells, is the main reason for the rapid expansion of total irrigated area and the shift away from traditional irrigation methods.

### **Rice production policies**

275. During the 1980s, the area under shallow tube well irrigation expanded annually by nearly 30 percent, increasing from 227 000 ha in 1981 to 1.8 million ha in 1991. Today, tube wells account for 55 percent of the 3.3 million ha under irrigation, compared with 14 percent in 1980. Moreover, tube well irrigation has encouraged more rice production in the dry-season and less in the early monsoon season. In 1992, irrigated dry season rice accounted for 37 percent of the record harvest (18.25 million tonnes) compared with 20 percent in the early 1980s. In contrast, the total area planted to rice during the early monsoon season declined from 3.2 million ha in 1982 to 1.9 million ha in 1992.

276. Initially, government policies encouraged rice production through the direct provision of irrigation equipment. During the 1970s and 1980s, the Bangladesh Agricultural Development Corporation (BADC) monopolized imports and domestic distribution (sales and rentals) of all irrigation equipment. An increasing number of procedural difficulties, however, led to a series of policy changes in 1989. These changes included: restructuring BADC's tube well sales practices; allowing the private sector to import and market tube wells; and eliminating licensing requirements for shallow tube wells (many restrictions still apply to deep tube wells).

277. The resulting increase in access to and availability of irrigation equipment, combined with lower prices, contributed to a rapid expansion in tube well irrigation. Half of the 40 000 units sold in 1989 came from the private sector. In the three-year period from 1989 to 1991, the irrigated area expanded by almost 700 000 ha, which is more than the total irrigated area added during the previous eight years.

278. Other production policies provided a guaranteed floor price as well as subsidized inputs, including HYV seeds, credit, pesticides and fertilizers. In recent years, the Government has removed subsidies on fertilizers and allowed private sector imports and sales of mineral fertilizers, even though it remains the sole domestic producer of most types of fertilizers.

### Rice and foodgrain distribution policies

279. To ensure an affordable food supply for poor consumers, the Government manages a variety of food distribution programmes and open market sales operations to help stabilize foodgrain prices. Public food distribution programmes provide approximately 13 percent of all foodgrains consumed in the country.

280. Past policy measures aimed at foodgrain distribution and prices include: a ban on exports; a monopoly on imports; restrictions on the movement and storage of rice; prohibitions against extending bank credit for rice storage; open market sales of wheat and rice at predetermined ceilings during times of price peaks; and public sector procurement at predetermined floor prices in the post harvest season. The objectives of price stabilization policies are to protect poor consumers from sharp price increases, protect poor farmers from a post harvest price collapse and achieve foodgrain self-sufficiency.

281. The public food distribution programmes include disaster and famine relief, seasonal food-for-work development projects and year-round rationing. Many food distribution programmes and food policies have recently been restructured, reformed or eliminated. For example, in August 1992, the Government allowed private sector imports of foodgrains for the first time. Private traders responded by importing more than 300 000 tonnes of wheat by the end of the year.

282. The Government also abolished the rural rationing programme in May 1992 because of the high costs of maintaining it (an estimated \$60 million per year) and large leakages (between 70 and 100 percent).<sup>40</sup> The rural rationing programme had provided an outlet for half of all government rice stocks. Its elimination resulted in a large buildup of government stocks and prompted several additional reforms in procurement policies. In November 1992, the Government cancelled "millgate contracting" (millgate contracting involves government contracts with the rice mills to support farm prices), introduced tendering operations, lowered procurement prices and raised procurement grades.

283. Procurement by tender was substituted for millgate procurement because of the high costs of millgate contracting, which involved above-market purchase prices. The higher-quality standards were established to increase storage life and obtain export-quality rice.

284. These various policy changes and reforms are under way for a number of reasons. First, the structure of rice markets has evolved substantially over the past two decades. Twenty years ago, farmers marketed only 15 percent of their production; today, they market more than 50 percent. Second, the proportion of privately-held rice stocks has been increasing over the years, now accounting for 75 percent of total stocks. Moreover, the share of privately-held stocks located on farms has increased while the share held by traders and millers has fallen.

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<sup>40</sup> For a series of well-documented reports analysing food distribution issues in Bangladesh, see IFPRI's series, *Food Policy in Bangladesh*, Working Paper Nos 1-6.

285. The increasing importance of an irrigated winter rice crop is an additional factor influencing foodgrain policies. By decreasing both the frequency and severity of seasonal price changes, this third annual rice crop reduces the need for price stabilization measures. Finally, today's rice markets are much less fragmented and much more competitive than in the past: more than 20 000 rice mills and 30 000 husking mills now provide services throughout the country.

#### **Rice policies and agriculture: short-term issues**

286. As rice production and productivity continue to increase and as the market structure evolves further, additional policy adjustments and reforms are likely in the future. Achieving rice self-sufficiency has already raised a number of important policy questions. For example, can Bangladesh compete with its Asian neighbours, especially Thailand and Viet Nam, in world rice markets? What kind of trade and exchange rate policy reforms are necessary to enhance the country's ability to export rice? What is the role of the private sector relative to that of the public sector in this new era of rice self-sufficiency and exports?

287. The heavy concentration on rice production and distribution over the past 20 years has often been at the expense of other agricultural products and economic sectors, both financially and environmentally - see Box 4, The fisheries sector in Bangladesh. Policy-makers must now face the challenge of deciding how to reduce rice and foodgrain subsidies while also maintaining secure stocks, stable prices and well-targeted relief programmes.

288. At the same time, even with the most optimistic benefits from further liberalization, agriculture is unlikely to absorb Bangladesh's fast expanding population seeking employment. Faster growth in manufacturing, services and commerce, which account for some 60 percent of GDP, is essential to reduce poverty and absorb the one million new entrants into the labour force each year.

#### **Sri Lanka**

289. One of Sri Lanka's most striking features is its enduring commitment to progressive social welfare policies. Even before independence in 1948, Sri Lanka promoted three major social policies: a food subsidy, an entirely free education system and free universal health care. By the 1970s, Sri Lanka had become a unique example of a developing country capable of attaining a high level of social welfare despite a very low average per caput income. Today, the country ranks high among both developed and developing countries in terms of a wide range of human development indicators. Sri Lanka's citizens enjoy a long life expectancy, advanced health standards and one of the highest literacy rates in the world.

290. These impressive achievements in social and human development were not matched, however, by a similar performance in economic growth. An expanding population and a persistently sluggish economy kept per caput incomes low. In addition, the country's inability to generate budget and trade surpluses limited public and private savings, resulting

Box 4

The fisheries sector in Bangladesh

1. Although Bangladesh's fisheries sector is relatively small (around 3 percent of GDP), it contributes to the national economy in a number of significant ways. First, marine and inland fisheries provide full-time jobs for some 1.7 million people and part-time work for more than 11 million. Second, fish consumption represents 80 percent of animal protein intake and 7 percent of total protein supplies. Finally, frozen shrimp and other fish products are among the country's fastest growing exports. Exports of frozen shrimp have increased annually by around 15 percent during the past decade and it has become the fourth most important export after ready-made garments, jute products and leather.
2. Already significant, the sector's current contribution to growth, income, employment and foreign exchange earnings nevertheless remains below its potential. Much of Bangladesh is a vast delta dissected by three major rivers and more than 700 other rivers and streams. The flood plain is rich in fish food and about one-third of the country is under water for six months each year.
3. These freshwater resources explain why inland fisheries account for nearly three-fourths of the country's total fish production. Yet, despite its importance, this resource base is being displaced or disrupted by flood control, drainage, road embankments, irrigation systems, pesticides and fertilizers. Ironically, the same agricultural policies and projects that allowed rice farmers to increase their productivity and helped some landless to find more work have done so often at the expense of open access capture fisheries. Water control projects, intended to create favourable conditions for rice production, frequently decrease flood duration and area. The resulting decline in inland capture is especially threatening for those Bangladeshis who depend on this open access resource as their only source of animal protein.
4. Few water-related projects or policies take the needs of fisheries into account or include the physical structures needed to achieve fisheries objectives. These projects can disrupt fisheries in a number of ways. Embankments and regulators prevent fish from successfully carrying out breeding migrations. Structures to stop bank overtopping and lateral flooding lead to sedimentation further downstream, adversely affecting fish production in river channels. The large-scale clearing of flood plain forests to create agricultural land for rice production is degrading the flood plain and wetland habitats. Inundation-tolerant treespecies are gradually being reduced, as are their benefits for fisheries and other flood plain and wetland activities.
5. Fisheries are also harmed by pollution from agricultural activities as well as industrial effluent and raw sewage which are frequently discharged into rivers or enter the aquatic environment during monsoon flooding. At the same time, some fishing practices themselves contaminate water and cause environmental degradation, including improper disposal of feed, faeces or shrimp shells from intensive aquaculture and the excessive clearing of mangrove forests.
6. Bangladesh is attempting to address many of these environmental problems by improving public awareness, enforcing pollution regulations, strengthening environmental impact assessments and implementing measures to mitigate environmental damage to fisheries.
7. These and many other planned improvements can expand Bangladesh's opportunities for both domestic and export production. To meet this potential, however, more public and private sector investment is needed in harvesting, processing, marketing, extension, research, training and community development. In addition, the sector requires improved inputs, technology, credit, public agency coordination and policy analysis. While there is much to be done, the sector could contribute much more to the country's social and economic development.

Source: FAO, 1993. *Fishery Sector Programming Mission to Bangladesh*, TSS-1. Rome.

in a low rate of investment. While enlightened social policies were contributing to human capital development, there was no corresponding growth in capital formation necessary to increase productivity and expand the economy.

291. Over time, high unemployment, high inflation, balance of payments deficits and economic stagnation made it more and more difficult for successive governments to pay for the country's food, health and education programmes. In an attempt to compensate for deteriorating economic conditions, policy-makers gradually turned the economy inwards, pursuing an industrialization-led development strategy based on import-substitution policies. By the mid-1970s, the Government had nationalized the tea estates, established strict controls on foreign exchange and foreign investment and placed tight restrictions on both domestic and international trade.

292. However, the import-substitution policies failed to generate enough growth in income and employment and, in 1977, a new government introduced fundamental changes to the country's economic policy. Sri Lanka essentially reversed its economic development strategy, shifting from an inward-looking, state-controlled economy to an export- and market-oriented one. Policy-makers eased controls on foreign exchange transactions and foreign investment; unified the multiple exchange rate into a single, floating rate; replaced trade monopolies and quotas with tariffs; and liberalized producer and consumer prices and interest rates.

293. The economy responded impressively to this new policy environment for nearly a decade. GDP growth, which averaged less than 3 percent per year between 1970 and 1977, grew to more than 6 percent on average between 1978 and 1986. This growth was also well balanced - agriculture, industry, services and international trade all performed well. Nonetheless, the economy was unable to build on or sustain this momentum, with the result that slow economic growth, high unemployment and poor agricultural sector performance recurred during the late 1980s.

294. The economy faltered for a number of reasons. First, the country's ongoing civil conflict, which escalated after 1983, diverted public resources and discouraged foreign investment. Second, bad weather, including periodic droughts, hampered agricultural production and exports. Third, the stabilization policies, aimed at containing the fiscal deficit and controlling inflation, suppressed demand and slowed economic growth. Finally, because many policy-makers remained focused on key macro-economic aggregates, important sectoral reforms were neglected.

295. Since 1989, the Government has focused much more attention on sectoral reforms. A number of high-level commissions, comprised of public and private sector representatives, have analysed and recommended policy actions to address specific economic issues. At present, reforms are either planned or already under way for taxation, tariffs, public administration, public sector enterprises, the banking system, private sector management of the tea estates and agricultural diversification. The agricultural sector in particular is undergoing noteworthy changes.

296. In the last several years, the economy has grown at a relatively strong pace. GDP increased by 4.8 percent in 1991 and 4.6 percent in 1992. The industry and services sectors were the main sources of this growth. Industrial output increased by 6.1 percent in 1992, mostly a result of growth in the manufacturing of textiles and garments for export. Demand for tourism, trade, transport, banking and financial services has stimulated growth in the services sector. The services sector increased by 6.1 percent in both 1991 and 1992 and now accounts for half of the GDP.

297. In contrast to the strong growth in the industry and services sectors, agricultural growth was completely flat in 1992, rising by only 0.1 percent. Agricultural performance continues to be affected by bad weather and civil unrest. A severe drought in the first half of the year reduced tea production by approximately 25 percent. Rubber and coconut production were less affected by the drought and output remained close to the 1991 levels.

298. The rice crop was not seriously affected by the drought, which began in March, because it occurred towards the end of the harvesting season. In Sri Lanka, rice is cultivated in two seasons, corresponding to the two monsoons. The major rice crop is produced during the northeast monsoon from October to February, known as the Maha season. The minor crop is produced during the Yala season - the southwest monsoon from May to September. The drought only slightly delayed the planting of the 1992 Yala crop.

#### **The agricultural sector**

299. In many areas, Sri Lanka's agricultural economy and rural life have changed little over the past three decades. For example, agriculture's contribution to GDP has remained relatively stable - it generated 28 percent of GDP in 1965 and 25 percent in 1992. Agriculture continues to be the main source of income and employment for rural Sri Lankans; today, the sector employs approximately 50 percent of the workforce - the same proportion as in the late 1960s.

300. Sri Lanka's economy still relies on four crops - tea, rubber, coconut and rice - just as it did 30 years ago. Tea remains the dominant agricultural export; it accounted for 67 percent of agricultural exports in the period 1969-71 and 62 percent in 1989-91. Likewise, agriculture still consists of two distinct sectors: the estate sector, which produces the bulk of tea and rubber; and the small farm sector, which produces rice and most of the coconuts and spices for export.

301. In other areas, the agricultural sector has undergone major structural changes. The 1977 macro-economic reforms and subsequent sectoral policy reforms affected the small farm and estate sectors in a number of different ways.

#### **The small farm sector**

302. Sri Lanka's small farm sector produces rice on approximately 40 percent of the agricultural land, while growing fruits, legumes, non-traditional export crops and a few other grains on about 10 percent. Most rice farms are very small and are becoming increasingly



fragmented. More than 50 percent of today's rice production comes from parcels of less than 0.5 ha, compared with about 12 percent in the mid-1960s. Crops such as cinnamon, cocoa, coffee, cardamom, chilies, peppers, cloves and citronella are grown on a relatively small scale, but are increasingly important and now account for 4 percent of total exports.

303. For decades, rice policies have shared the same four objectives: to ensure national food security; to create employment; to enhance farm income and social welfare and to reduce imports. On the other hand, the policy measures used to meet these objectives have varied greatly. Before the 1977 reforms, rice production and distribution were strictly regulated by the government. The Paddy Marketing Board had sole responsibility for domestic procurement and the Food Commissioner's Department controlled distribution at officially fixed prices. Not only were producer and consumer prices controlled, rice could not be freely marketed or transported from one of the island's 25 districts to another.

304. The 1977 reforms served to: liberalize agricultural prices; replace the rice ration with a discriminatory food stamp programme; transform the guaranteed price scheme for rice producers into a minimum producer price scheme to shelter farmers from large seasonal price fluctuations; and allow private traders to operate throughout the country. The improved markets and increased real producer prices had an impressive impact on rice production, which grew at a rate of well over 10 percent per year between 1977 and 1980.

305. From 1978 to 1986, rice output rose from 1.7 million to 2.7 million tonnes and yields from 2 500 to 3 500 kg per ha. This was an important accomplishment for Sri Lanka's economy because the country imported from 40 to 50 percent of its total rice consumption during the 1960s and most of the 1970s. From 1970 to 1977 period, the country's rice imports averaged 400 000 tonnes per year, then fell to 150 000 tonnes between 1978 and 1985. By the mid-1980s, the country had reached 90 percent self-sufficiency in rice.

306. Rice producers responded to the 1977 policy changes by expanding area and increasing yields; about one-third of the increased production is attributed to expanded area and the remaining two-thirds to yield improvements. Successes in rice research and extension, HYV seeds, improved irrigation facilities and better management practices have all contributed to higher yields. Today, more than 80 percent of the rice area is irrigated and most farmers use HYV seeds and fertilizers.

307. In contrast to the rapid output increase of the early 1980s, production slowed and became highly variable towards the end of the decade. The highest level of paddy production was achieved in 1985 with 2.7 million tonnes while yields peaked in the mid-1980s at 3 500 kg per ha. By 1989, output had declined to a low of 2.1 million tonnes, as civil conflict and adverse weather conditions led to a reduction in cultivated area. In recent years, reduced fertilizer use has also affected yields. Fertilizer subsidies were removed in 1990, doubling prices paid by farmers and causing fertilizer use to drop by approximately 20 percent.



308. Present small farm sector policies provide incentives for crops with high export potential. Numerous regulatory systems, such as quarantine procedures on imported seed materials, are being re-examined, streamlined, simplified or eliminated. The agrarian regulations that have restricted certain lands to the cultivation of paddy have been relaxed and wider crop choices permitted. The public sector has divested itself of several commercial enterprises in the agricultural sector and reduced its level of intervention.

#### The estate sector

309. The estate sector has also undergone significant structural changes over the past two decades. For instance, tea no longer accounts for 80 percent of total exports as it did in the early 1970s. Textiles have overtaken tea as the island's principal export, accounting for some 40 percent of total export earnings. The primary export crops (tea, rubber and coconut) have dropped to below 30 percent of total export earnings.

310. Two decades of import-substitution policies indicated a relatively strong bias against agriculture, especially export-oriented agriculture. During this time, the Government increased tax rates on export crops, controlled producer prices, managed input and product distribution and nationalized the estates.

311. The 1977 reforms attempted to encourage traditional exports by reducing export taxes on tea, rubber and coconuts. Tax rates declined from 40 to 50 percent in 1977 to 10 to 20 percent by 1987. Nonetheless, the tree crop sector did not benefit as much from the reforms as did the small farm sector. The highest average levels of output in tree crop production today are still below the maximum average levels of the 1950s and 1960s. In 1990 and 1991, tea production improved only marginally on the highest output level since the mid-1960s. There has been a substantial and continuing decline in rubber production, with 1990 output 40 percent below 1960's level and 20 percent of the 1984 level.

312. Despite these declines in production, the estate sector remains important to Sri Lanka's economy in terms of income, employment, land use and exports - especially processed export products of tea, rubber and coconut. Today, about 20 percent of the rural population is employed in the estate sector where permanent crops occupy about half the agricultural land (40 percent of the area is in tea and rubber and 10 percent is in other perennial crops).

313. A persistent problem for tea and rubber producers has been declining international prices, which discourage replanting and, in turn, lead to falling productivity and a lower economic capacity to adjust to international price cycles. In coconut production, the absentee ownership structure of medium-sized and large estates has limited replanting and intercropping.

314. Until 1992, two state corporations owned and operated the tea estates, which occupied more than 200 000 ha and employed 425 000 workers. But the declining yields, large state subsidies and lagging investment in replanting and maintenance forced the Government to begin the privatization-of-management programme. In January 1992, 449 state-owned estates

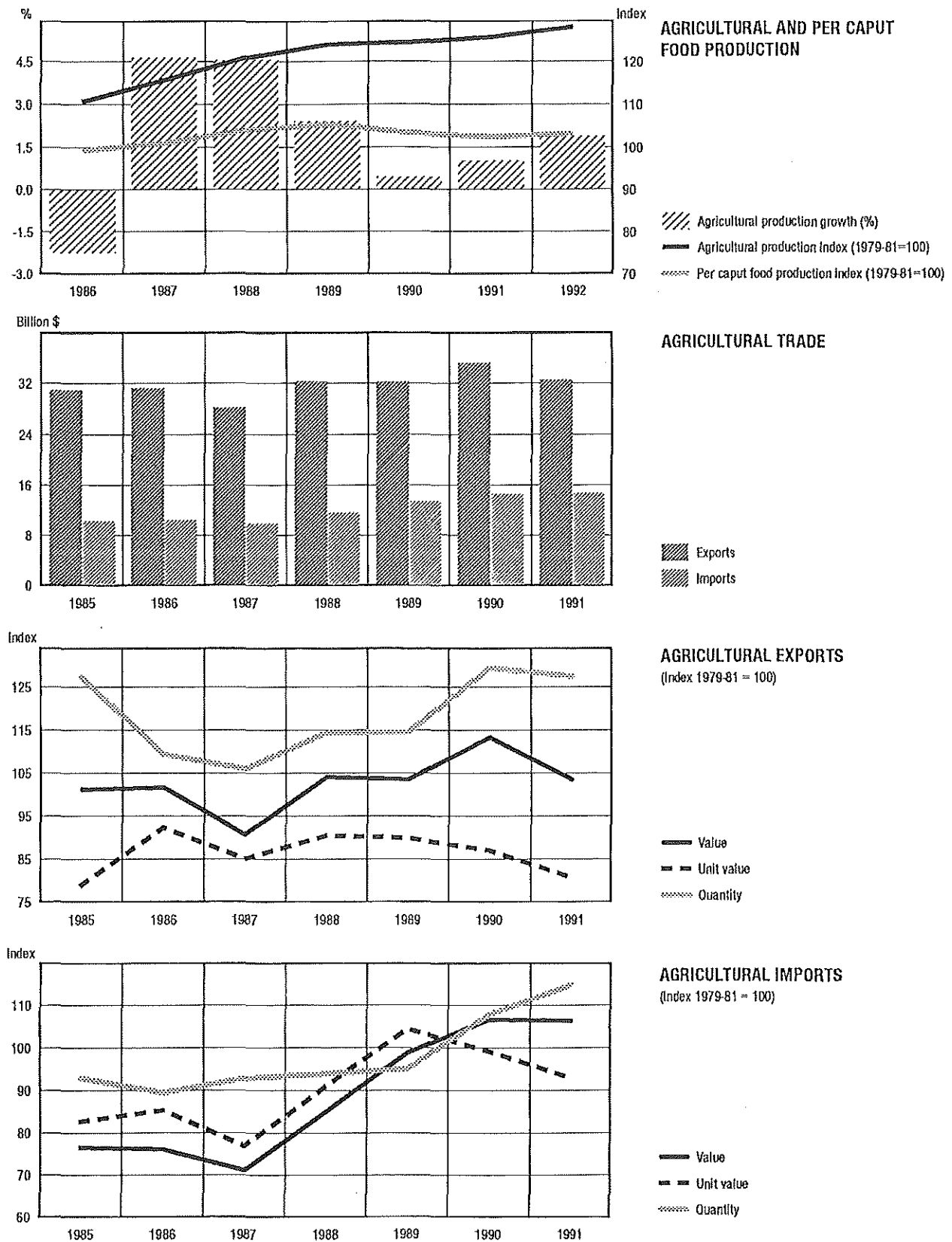
were regrouped into 22 independent regional enterprises, each comprising between 15 to 25 estates. The Government then put out to tender and selected 22 private sector companies to manage these estates on a profit-sharing basis. Approximately 95 000 ha of tea, 59 000 ha of rubber and 11 000 ha of coconut are now under this private management contract arrangement.

315. The privatization of plantation management, combined with substantial investment in rehabilitating estates and new planting in recent years, should improve short-term agricultural prospects. Agricultural output is projected to grow by about 3 percent in 1993 and 1994. Nonetheless, Sri Lanka's relatively slow transformation to a more industrialized economy is placing enormous pressure on its agricultural sector and, especially, on its natural resources.

316. The agricultural sector has a limited capacity to absorb labour and all of the good agricultural land has already been developed. In the long run, Sri Lankan policy-makers face the daunting task of expanding the industrial base and diversifying both export products and markets. Without access to more jobs in agro-industrial and agro-processing enterprises, Sri Lanka's rural population may be forced on to economically marginal and environmentally fragile lands.

Figure 9

LATIN AMERICA AND THE CARIBBEAN



Source: FAO

## LATIN AMERICA AND THE CARIBBEAN

### Regional overview

317. Overall economic activity in the Latin America and Caribbean region rose by an estimated 2.3 percent in 1992, down from 3.1 percent in the previous year. The slow-down in growth mainly reflected the depressed economic situation in Brazil, where GDP declined by 1.5 percent in an economic environment dominated by hyperinflation and pronounced fiscal and external account imbalances. Excluding Brazil, the regional GDP growth in 1992 was 4.3 percent (5 percent in 1991), a still robust performance in the context of earlier trends and especially in view of the depressed state of the OECD economies. Several countries consolidated the stabilization process and some appeared to have entered a long-awaited recovery phase. Stabilization efforts in some cases achieved spectacular reductions in inflation rates: from 1 400 percent in 1991 to 20 percent in 1992 in Nicaragua; and from 173 to 23 percent in Argentina.

318. In the external sector, an outstanding feature was the reversal in the trade balance, which turned negative in 1992 for the first time since the outbreak of the debt crisis in the early 1980s. Indeed, imports rose to \$132 billion (19 percent higher than in 1991) while exports reached \$126.1 billion (only 4 percent higher than in 1991). Although the negative trade balance to a large extent reflected the huge trade deficit of Mexico, other countries such as Argentina, Bolivia, Paraguay and a number of Central American countries also recorded significant trade deficits. While much of the increase in imports was in consumption goods - a typical phenomenon in the early phases of economic opening - capital goods imports appear to have also expanded significantly in recent years. The negative net trade balance contributed to a widening in the current account deficit, which represented nearly 19 percent of the region's exports of goods and services compared with about 11 percent in 1991.

319. A parallel and related process was a sharp increase in capital inflows which more than covered the increase in the current account deficit, allowing an expansion in reserve holdings. This reflected to a large extent the climate of renewed confidence in the region's economic outlook.

320. However welcome, the large and sudden increase in capital inflows also introduced a number of new issues. The extent to which they are really contributing to capital formation, rather than being speculative, is a debated question. Furthermore, as seen in the case of Mexico, but also in several other countries, large capital inflows are associated with a complex set of problems. First, they have contributed to an overvaluation of currencies, running counter to one of the key objectives of current development strategies, i.e. export expansion. Also, capital inflows have introduced risks of inflation and greater stringency in monetary policies. Higher interest rates are in turn dampening growth prospects and accentuating the public debt burden beyond what would be expected from the size of fiscal imbalances. Finally, capital inflows have created greater interdependence with international capital markets and increased vulnerability to changes in external macro-economic conditions.

321. Foremost among those problems in the short term is probably currency overvaluation. Indeed, a major challenge for countries that have so far made significant progress in stabilization will be to overcome the exchange rate dilemma in a way that does not lead to renewed instability and inflation. The other major, longer-term challenge remains that of extending the benefits of stabilization and adjustment to the widest possible segments of population, particularly the poorest.

### **Agricultural sector**

322. As is by now a well-known characteristic of the region, agricultural performances have been largely determined by factors exogenous to the sector; i.e. domestic macro-economic policies and international market conditions, with the specific sectoral policy playing a relatively subordinate role. Currency overvaluation has been a major influence behind the weakness of the agricultural export sector. To this must be added the dramatic fall of commodity prices, affecting several of the main export products of the region.<sup>41</sup> Contrasting these generally depressing influences in the external sector, agriculture benefited from the overall favourable turn of events in the domestic economic situation, to the extent that domestic demand and investment in the sector were stimulated.

323. Overall, the year 1992 witnessed a relatively lacklustre growth in agricultural value added, estimated to be less than 2 percent. However, there were wide variations among countries. A combination of favourable climatic, price and credit conditions resulted in increases in agricultural value added exceeding 6 percent in Brazil, Ecuador, El Salvador and Uruguay. Chile, Costa Rica, Guatemala and Honduras achieved increases of around 3 percent while Bolivia, Colombia, Mexico, Paraguay and Peru experienced stagnating or falling agricultural output. In some cases, such as that of Paraguay, the most important single factor behind poor agricultural performances was the fall in prices of export commodities (soybean and cotton). In Brazil, the strong increase in agricultural output was mainly associated with agricultural support policies, while Uruguay benefited from improved terms of trade and better trading opportunities within the framework of the Southern Common Market (MERCOSUR) agreement.

324. In the external sector, several countries succeeded in expanding agricultural export earnings despite the collapse in the prices of some of their main export products. This was the case in Brazil, Chile, Guatemala, Honduras and Uruguay. Other countries experienced declining export earnings from agriculture despite varying degrees of success in expanding their volume of exports. These included the Dominican Republic, Nicaragua and Paraguay. Still others, for example Bolivia, experienced both volume and price declines.

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<sup>41</sup> In 1992 price declines for the main export products of the region were: banana -10.1 percent; cocoa -7 percent; coffee -25 percent; beef meat -8.8 percent; maize -3.2 percent; soybean -0.4 percent; and cotton -15.8 percent.

### Agricultural policies

325. The general market-oriented policies now followed throughout the region emphasize a more neutral role of the state as an economic agent. Nevertheless, general tendencies in recent years have been for a broader and more active government involvement in sectoral policies. There are major differences between the current schools of thought and those that determined previous policies, however. The state has abandoned its pervasive presence in agriculture and its top-down approach in transferring subsidized resources. Rather, current policies increasingly emphasize the objectives of helping farmers to help themselves and promoting the agrarian and institutional reforms required for this purpose. Another leitmotif of recent policy statements is integration at two general levels: within agriculture, in the context of maximizing interregional and intercrop complementarity while reducing gaps between modern and traditional agriculture; and between agriculture and upstream and downstream activities. These are not new ideas but, in many instances, they have recently been translated into more decisive action than in the past.

326. Within this general framework, specific country examples include Mexico's deep process of reform involving a revision of its agrarian law, supportive and compensatory measures to facilitate the transition to a fully liberal market regime and commitment to the North American Free Trade Agreement (NAFTA). This remarkable experience is reviewed in more detail in the section on Mexico.

327. In Argentina the implementation of the Convertibility Law,<sup>42</sup> introduced in March 1991, helped deepen the process of adjustment and economic opening but also introduced a dollar-peso parity regime that resulted in strong overvaluation of the peso. In order to compensate the tradables sector for the losses involved, the Government introduced a number of measures in late 1992. These included reduced taxes on agricultural exports; a softening of agricultural credit conditions; the application of a 10 percent "statistical" tax (previously 3 percent) on imports; and an increase in import duties of up to 20 percent for some products. Furthermore, an important package of farm support measures was introduced in May 1993, particularly directed at non-pampean producers. This included financial support to cooperatives; preferential interest rates for producers facing emergency situations or working in disaster-prone areas; financing facilities for small producers; regional development support; and early payment of the value of shipments to agricultural exporters on the principle of "credit on trust".

328. The case of Brazil is illustrative of a more active recourse to the traditional instruments of support while maintaining a commitment to the basic principles of market liberalization. In the context of major macro-economic instability, which rendered producers' decisions particularly difficult, the Government announced guarantee prices for the main food products in 1991-92 as well as special rural credit facilities. These measures contributed to a significant recovery of the sector, whose performance rose by 5 percent in 1992. Such a

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<sup>42</sup> The Convertibility Law established free convertibility of the national currency at a fixed exchange rate.

positive performance of agriculture helped, once again, to offset the negative impact of the industrial recession following the failure of the Collor Plan.

329. Several countries introduced or strengthened measures to reform agricultural institutions with the general objectives of redefining the state's role in agro-economic activities and promoting decentralization. This was done, for instance, in Peru through a new organic law of the Ministry of Agriculture and Food; in Jamaica through the reorganization of the Rural Agricultural Development Authority; and in Bolivia, where the Ministry of Peasant Affairs initiated an important process of institutional decentralization.

330. A number of countries in Central America also initiated important measures of institutional and legal reform affecting agrarian structures. In Honduras, the Congress approved in March 1992 the Law for Modernization and Development of the Agricultural Sector. This law forms the normative framework for institutional reorganization and creates a Council of Agricultural Development, a Direction of Agricultural Science and Technology and a Land Bank. The new law also introduces major changes to the previous Agrarian Reform Law of 1975. Land allocated to farmers became their full property, enabling the renting of such land for productive purposes or its use as collateral for credit. Also, the occupation period required before granting full ownership rights was reduced to three years; and women were recognized as beneficiaries of land allocation under agrarian reform. These measures are generally aimed at achieving greater stability in agrarian structures so as to promote investment and capital formation in the sector.

331. In El Salvador, the peace agreements concluded in 1992 created a favourable environment for the strengthening of sectoral policy formulation and implementation. Actions included reform of the public sector institutions and the introduction of a new agrarian code.

332. In both Honduras and El Salvador, new institutional frameworks seek to develop markets and improve efficiency in the existing market channels from the farmgate to industrial processing and external trade. To this end, parastatals have been privatized, basic foodstuff marketing boards abolished and external trade deregulated. At the same time, the state is promoting producer organizations, credit through private and cooperative banks and basic extension.

333. Subregional integration schemes have gained further momentum and depth, aiming not only at strengthening commercial complementarity but also at productive or financial integration. NAFTA, the first such scheme involving developed and developing countries, is discussed below in Box 6 in the context of its likely impact for Mexico. Preliminary discussions are under way for the purpose of building on NAFTA and achieving a hemisphere-wide free trade area. The MERCOSUR members (Argentina, Brazil, Paraguay and Uruguay) agreed to establish a common external tariff of 20 percent for most products as of June 1993. The Central American Integration System (SICA) entered into function in February 1993, replacing the former Organization of Central American States. The Panama Agricultural Agreement, signed within the SICA framework, aims at eliminating the existing systems of permits, licences and quotas affecting agricultural trade within the subregion. At



**Box 5**

**Debt and external financing in Latin America and the Caribbean**

1. In 1992 the region's stock of external debt amounted to \$447 billion, about 2 percent above the previous year's level. Only four countries, Argentina, the Dominican Republic, Honduras and Paraguay experienced a decline in their debt stock.
2. The total debt service-to-exports ratio was estimated at 30.5 percent in 1992, a slight increase from the previous year. Total debt service on all debt paid by the region was \$54.5 billion in 1992 against \$50.2 billion in 1991.
3. Recent institutional developments affecting debt include the Paris Club agreement to restructure Argentina's and Brazil's debt for a consolidated \$13 billion. These agreements provide for a graduated amortization schedule for restructuring debt so as to reduce the need for further rescheduling. The Paris Club also agreed to consolidate the debts of the Dominican Republic and Ecuador under the Houston terms.
4. Commercial bank debt and debt-service reduction under the Brady Plan continued. In December 1992, Argentina signed an important agreement which will reduce the country's \$23 billion commercial debt and \$9 billion of interest arrears by an equivalent of \$11 billion, i.e. more than one-third of its public debt. Another important agreement, concluded by Brazil, involves \$44 billion of eligible bank debt and provides for a parallel agreement to convert 1991 and 1992 interest arrears into bonds.
5. A development of major significance for the region was the strong increase of net capital inflows, primarily from private sources, reflect the generally improved economic outlook, interest rate differentials and the catalytic effects of commercial debt-reduction agreements for many countries of the region. Private portfolio flows reached \$15.3 billion in 1992, four times the level of 1990. Net foreign direct investment amounted to \$13.8 billion, the major recipients being Mexico (\$6.2 billion), Argentina (\$2.5 billion) and Brazil (\$2 billion).



the same time, it was agreed to harmonize tariffs on maize and sorghum applied within the system of common price bands for imports in El Salvador, Guatemala, Honduras and Nicaragua.

334. Despite the continuing emphasis on regional integration, there is a wide awareness of the importance of improving trade relationships with countries outside the region. It is felt that, while the existing regional free trade schemes are compatible with GATT principles - to the extent that they lower trade barriers and work towards reducing trade diversion - trade policies should ultimately aim at global integration. Countries in the region have strongly pressed for a successful conclusion to the Uruguay Round of GATT negotiations.

## Mexico

### Overview

335. The Mexican experience is an important reference in the recent history of development. It was the Mexican moratorium in 1982 that marked the beginning of the debt crisis of the 1980s. Ten years later, Mexico was again attracting worldwide interest, this time as a case-study of bold market-oriented reform and remarkable initial stabilization achievements. It still has a long way to go to full recovery and many uncertainties cloud the mid- and long-term horizon. Nevertheless, the economic improvements achieved over the past three to four years augur well for a consolidation of the stabilization process. The recent decision by the world's major industrial countries to allow Mexico to join the OECD is a manifestation of international confidence in the country's prospects.<sup>43</sup>

336. At the basis of the recent improvements was a package of policy measures, initiated in the late 1980s, which introduced pervasive and, indeed, revolutionary change. These measures included: a reduction of the public sector's size and a redefinition of its economic role; fiscal reform, involving tight discipline in public expenditure; a shift towards free trade principles, including unilateral trade liberalization and commitment to the North American Free Trade Agreement (NAFTA).

337. Agricultural liberalization, possibly the most radical and far-reaching element of the reform package, included the reduction of subsidies on agricultural product and factor prices; privatization of support services; reform of the juridical status of the *ejidos*;<sup>44</sup> and exposure to external competition.

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<sup>43</sup> The June 1993 OECD Ministerial Council requested that the dialogue with Dynamic Non-Member Economies be deepened and consideration be given to an extension of membership to include Argentina, Brazil, Chile and Mexico. Mexico has been long involved in OECD activities, and terms of conditions for an early membership are presently under examination.

<sup>44</sup> The *ejido* is a form of rural communal association which gained importance after the agrarian reform of 1917 but has pre-Columbian roots.

338. Agricultural performance is expected to improve from the experience to the extent that the opportunities and risks associated with market liberalization will enhance competitive efficiency. However, as in any revolution, there will be winners and losers. The more competitive sectors, particularly those producing fruit and vegetables, will benefit from enhanced market opportunities, provided competitiveness is not dampened by currency overvaluation. On the other hand, the full enforcement of trade liberalization measures and the country's likely adherence to NAFTA will entail major risks for peasant and mid-size farmers which are responsible for the bulk of staple food production. Exposure to external competition, combined with reduced access to subsidized inputs, will force many in the sector to undergo a difficult process of adjustment.

339. The Government is making a major effort to meet the challenges of transition by offering rural support and social welfare schemes as well as financial and agricultural development services.

### **Economic setting**

340. The major policy reforms carried out since the late 1980s must be considered in the light of the critical economic situation preceding their introduction. After the crisis of 1982-83, when economic activity fell by a cumulative 5 percent, a therapy of orthodox stabilization measures permitted a period of mild recovery. However, this improvement came to an abrupt halt in the mid-1980s when a period of new shocks began: disastrous earthquake in late 1985 (with damages estimated to be 2 percent of GDP) and a collapse in oil prices caused the GDP to fall by 4 percent in 1986. With growth remaining weak the following year, the economic and financial situation sharply deteriorated. By 1987 the fiscal deficit had increased to an equivalent of 13 percent of GDP, inflation had soared to 132 percent and debt-service obligations were absorbing 36 percent of total export earnings. Altogether, the period 1983-88 saw virtually no growth; during that period public consumption rose 1.6 percent annually, private consumption stagnated and public investment fell by an annual average of more than 11 percent. Exports did expand faster than imports, thereby allowing a trade surplus which rose as a share of GDP from 4.7 percent in 1982 to 8.7 percent in 1988. However, since much of the surplus was absorbed by debt servicing, current accounts failed to improve commensurately - indeed, the balance fell into the red for several years during the 1980s and has worsened dramatically in recent years.

### **The new policy framework and economic performance**

341. Confronted with such a difficult situation, the new administration that took office in late 1988 initiated a bold programme of stabilization and structural reform. The new strategy introduced orthodox fiscal, monetary and exchange measures; unorthodox wage and income measures, combining fiscal restraint and price and wage control; and structural reform through privatization, deregulation, a redefinition of the state's role and liberalization of the investment regime. The external sector was also extensively liberalized, accelerating the

process that had been under way since the mid-1980s.<sup>45</sup> Maximum import duty rates were reduced from 45 percent to 20 percent, their weighted average falling to about 11 percent; and the volume of imports subject to import licensing was reduced to less than 4 percent of the total. Thus, from being heavily restrictive in the early 1980s, Mexico's trade regime became one of the most open in the world. Furthermore, the Government actively engaged in NAFTA negotiations which, if ratified, will further enhance liberalization and regional integration (see Box 6).

342. The normative framework for the new set of economic measures was the National Development Plan 1989-1994, which aimed at a GDP growth rate of 6 percent by the end of the period and inflation rates similar to those of Mexico's main trading partners. As an instrument to check inflation, the Pact for Economic Stabilization and Growth (PECE), a government agreement with the business and labour sectors, was introduced in December 1988 and has been periodically renewed since then. The PECE provided for the adjustment of minimum wages as well as public sector prices and tariffs and for a preannounced depreciation rate of the Mexican peso against the US dollar.

343. The stabilization/reform package can be credited with several remarkable achievements so far. Economic growth during the first part of the plan period (1989-1991) exceeded the 2.9 to 3.5 target although it fell to an estimated 2.7 percent in 1992. The inflation rate fell to an estimated 12 percent in 1992 and may fall further in 1993. From a staggering 13 percent of GDP in 1987, the public sector deficit turned into a surplus equivalent to 1 percent of GDP in 1992.

344. These achievements were largely due to the stabilization and reform measures introduced by the Government, but other factors also played a positive role. In particular, debt-relief operations under the Brady Plan and IMF-World Bank resource transfers helped alleviate financial constraints. Financial inflows were also attracted by interest rate differentials, the regaining of investors' confidence - particularly as a result of bank and parastatal privatization - and hopeful expectations from NAFTA.

345. One area where Mexico did not succeed, however, was in reducing the current account deficit which reached around \$20 billion, or more than 6 percent of GDP, in 1992. The difficulty of checking import demand and inflationary concerns prompted a tightening of monetary policies, which had an inhibiting effect on economic growth. Indeed, it now appears unlikely that the 5.3 to 6 percent annual growth rate set for 1992-1994 will be met. Moreover, the steady overvaluation of the peso has contributed to accentuate the trade deficit, affecting in particular the agricultural sector already penalized by the removal of most subsidies.

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<sup>45</sup> A significant step in this process was Mexico's entry into GATT in 1986.

### **The economic role of agriculture**

346. Agriculture has played an uneven and declining role in Mexico's economy. While the sector contributes 7 percent of GDP, the rural population still accounts for 27.5 percent of the total population while agriculture's economically active population (EAP) represents about 23 percent of the total EAP. Agricultural performances have shown a gradual deterioration since the mid-1960s, except for temporary upsurges (e.g. from the late 1970s to the early 1980s, when a self-sufficiency drive under the Mexican Food System [SAM] helped boost maize production). Overall, agricultural production rose by about 4 percent annually during the 1970s, allowing moderate gains in per caput food production, but by only 2.3 percent annually during the "lost development decade" of the 1980s when per caput food production stagnated altogether. During the latter period, only the most export-oriented crops maintained a strong expansion, helped in particular by the currency devaluation - a process that has reversed in recent years. The 1990s have so far seen a continuation of lacklustre performances. After having shown virtually no growth in 1991, agricultural output expanded only moderately in 1992.

347. The poor performances of the food sector caused growing food import requirements and a marked deterioration in the agricultural trade balance. From being a net earner of foreign exchange until 1987, agriculture has emerged as a major deficit sector: the agricultural export/import ratio has moved from an average of 130 during the 1970s to barely more than 60 in recent years, while agricultural imports currently absorb about 17 percent of the country's total export earnings.

348. What determined the long-term stagnation of agriculture? Multiple natural, infrastructural, political, socio-economic and market factors played a role that cannot be covered in this review. One influence of major importance given the large segments of agricultural population involved was the low productivity of the large smallholder sector, which was marginalized to a large extent from state support as well as access to markets, credit and public services. Associated factors were the rigidities of the ejido legal framework and distortive state interventions. The removal of these constraints is at the core of the current agricultural reform strategy.

### **Agricultural reform**

349. While the new policy orientation is having a profound impact on all economic sectors, agriculture will be one of the most affected. The liberalization of agricultural markets has meant breaking with deep structural rigidities and legislative norms dating from the early decades of the century.

350. The broad orientations of the new policies were defined in the National Programme for Rural Modernization 1990-1994, issued in 1990. The programme's general principles are that commercial agriculture (smallholder) must assert itself as the sector showing the most dynamic growth, while the "social" sector (ejidos and farm communities) must modernize through cooperative arrangements allowing economies of scale, a redefinition of

the state role in productive and marketing activities and association contracts with commercial agriculture and agro-industry.

351. The most far-reaching area of policy reform was in land tenure legislation. The importance of changes in this area must be appraised in a historical context. Under the previous agrarian regime, regulated by Article 27 of the Mexican Constitution of 1917, the Government was expected to provide land to any group of citizens requesting it. The objectives were to reduce the gross inequities that characterized landownership at the time and to alleviate rural poverty. Those granted land entitlements entered the ejido system, whose membership expanded to include a large majority of Mexico's rural population. By 1988 the "social" sector (made up of ejidos and communities) was estimated to include about 28 000 units comprising more than three million *ejidatario* (ejido member) and *comunero* (community member) heads of household. The sector accounted for 70 percent of the total number of farmers. About 15 million people (19 percent of the country's population) depended totally or partially on production and employment generated by the social sector.

352. Designed mainly as a political instrument to meet popular demands rather than to create economically viable productive units, the ejido systems became rigid and inefficient. The progressive decline in land area available for redistribution led to the extreme fragmentation of land, with 61 percent of ejido land units falling to an average size of less than 4 ha. Furthermore, under the former provisions of Article 27, ejido land could not be sold, rented or used as collateral for loans.<sup>46</sup> This hampered farm investment and modernization of the sector and ultimately defeated the ejido's poverty-reduction objective (according to ECLAC, 24 percent of Mexico's rural population lives in extreme poverty, compared with 8 percent of the urban population). Ejidos were also subject to distortive and cumbersome state intervention and tutelage mechanisms which regulated the economic life of the ejido while also exerting political control over it.

353. These problems prompted a radical reform of the ejido regime. The new agrarian law, which entered into force in February 1992, modified Article 27 in the following main areas:

- Ejido members possessing proper land titles may, with the approval of 75 percent of the ejido assembly, gain full rights for selling, renting or otherwise disposing of their land. Communal ejido land, usually forest and pasture land, may not be sold or used as collateral, however.
- Inheritance and succession rights need no longer benefit the family of ejido members on a priority basis. In other words, ejido landowners may freely choose their successors, which is a break with the previous family-based concept of rural society.

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<sup>46</sup> Despite being forbidden by law, the selling and renting of land was a widespread underground practice. For instance, 25 to 30 percent of all productive land was estimated to be rented prior to the amendments to Article 27.

- Ejido land can be sold or leased to private enterprises or corporate entities which may exploit the land directly. Nevertheless, the size of the holding controlled by such enterprises may not exceed 25 times the size of a smallholding ("small" meaning up to 100 ha of irrigated land or its equivalent in a non-irrigated area). Ejido participants holders of special shares (type T) are given preferential rights to recover the land should the enterprise close down. The objective of this regulation is to encourage farmers' association with agricultural entrepreneurs and foster technological and production modernization.
- In line with the general principle of granting the sector autonomy, the legal foundation for government involvement in ejidos was dismantled, thus bringing an end to the much criticized bureaucratic paternalism of the state.

354. The other major area of agricultural policy reform was the *liberalization of agricultural markets*. The following measures were introduced in this field:

- *Trade liberalization*, including a reduction in the proportion of agricultural imports subject to import licensing from 57 percent in 1988 to 35 percent in 1991. Products still subject to licensing include maize, beans and wheat. At the same time, average import tariffs for agricultural products fell to a mere 4 percent in 1991.
- *Price liberalization*, particularly the elimination of price guarantees for all basic foodstuffs excluding maize and beans (about \$1.3 billion were earmarked for supporting maize and bean prices in 1993). NAFTA envisages the gradual elimination of price support for maize and beans within a 15-year transition period. For other cereals and soybeans, government procurement at guaranteed prices was replaced by "agreement prices" whereby private dealers must purchase the whole crop at an agreed price before imports are allowed. For animal products, consumer prices and marketing margins continue to be fixed, with beef and pork prices generally below, and those of poultry above, international market prices.
- *The reduction or elimination of input subsidies*. Agricultural input subsidies, which accounted for more than one-third of the value of agricultural production in the early 1980s, represented only 17 percent of production value in 1989. One consequence was the alignment of fertilizer prices with international market levels. Subsidies on water and electricity supply were also greatly reduced while the parastatal that sold concentrated animal feed was privatized. Imports of agricultural inputs and machinery were liberalized, which partially offset the effects of higher input prices and production costs. Credit subsidies were also reduced and interest rate controls eliminated, the result being a sharp increase in real interest rates from -37 percent in 1987 to 19 percent in 1989.

- *The reduction of state intervention* with the elimination or drastic downscaling of parastatal market control on sugar, cocoa, maize, tobacco, henequen and cocoa. Specialized institutions previously in charge of credit, insurance, technical assistance and marketing were privatized or foreclosed or had their functions redefined. The number of parastatals depending on the Secretariat of State for Agriculture and Water Resources (SAHR) were reduced from 94 in 1982 to only 20 in 1992, and another 11 were to be eliminated in 1993.

### State support to agriculture

355. In order to compensate farmers for the double blow represented by agricultural reform and the opening of borders, important agricultural and rural support programmes of both a welfare and developmental nature were introduced or strengthened. The basic criteria for providing support were defined as follows: support should (i) benefit all producers regardless of their size and geographical location; (ii) provide compensatory assistance against the effects of subsidized agriculture in other countries; (iii) promote associations among producers as well as between farmers and entrepreneurs, so as to achieve competitive efficiency.

356. An important new instrument for rural welfare and modernization is the National Solidarity Programme (PRONASOL). Introduced in December 1988, this programme devotes about 60 percent of its budget to social welfare activities and the rest to regional development and financing of production projects. Its main feature is the high degree of decentralization and grassroots participation in its project and activity formulation and implementation. Through its regional branches, and interacting with indigenous coordinating centres, PRONASOL supports programmes originated by the local communities themselves. Represented at the programme's consultative council, the main peasant communities participate at the highest managerial and executive levels.

357. Since its creation, PRONASOL has expanded and diversified its activities considerably. From an initial \$621 million in 1989, federal allocations for the programme increased in real terms by 54 percent in 1990, 36 percent in 1991 and 19 percent in 1992. PRONASOL presently supports more than 150 000 activities and projects, implemented by 82 000 solidarity committees. About one million peasants, working on 3 million ha, are benefiting from PRONASOL funds, while more than 1 100 peasant organizations are supported by regional funds for the development of indigenous populations. A large number of farmers also rely on PRONASOL for loans under the *crédito a la palabra* (credit on trust) scheme. In 1992, 2.5 million ha of maize were financed under this scheme, i.e. about 500 000 more than in the previous year. Solidarity Enterprises, a body formed more recently under the programme, also provides credit and risk capital for enterprises managed by producers organizations.

358. The main sources of *agricultural financing*, however, remain development and commercial banks. Official credit is provided through three main channels: Fideicomiso Instituído en Relación con la Agricultura (FIRA), Banco Nacional de Crédito Rural (BANRURAL) and Nacional Financiera (NAFINSA). FIRA, now the most important of the

three, combines loan operations with programmes of technical assistance, research and technology development. It currently benefits about 50 000 farm units, primarily medium-sized and large farms but also ejido and community farms. Oriented towards more specifically rural development, BANRURAL was the major source of agricultural and rural financing until the late 1980s. However, large-scale defaulting led to a drastic reduction of its credit disbursements, the transfer to PRONASOL of bad outstanding loans and a revision of lending and management policies. An effort is being made at present to replenish BANRURAL lending resources (planned to increase by 15 percent in 1993 over the previous year) and to restore viability to rural support operations. The other main source of official credit, NAFINSA, works primarily with agro-processing and marketing enterprises.

359. Despite current efforts to strengthen the volume and efficiency of official lending, the basic issue remains access to credit, mainly by the small farm sector, following the decline of subsidies, the sharp increase in interest rates and the reduction of BANRURAL's rural support operations.

360. Another major constraint to agricultural development is the heavy underinvestment that resulted from former landownership regulations hindering access to credit and private financing. This problem was further accentuated during the years of stabilization from 1982 to 1988, when sharp cuts in public expenditure were operated. While rural reform is expected to create a more favourable environment for private financing, the Government is also making a major effort to expand public investment. Between 1988 and 1991, SAHR investment rose by 59 percent in real terms and investment in agricultural development by 61 percent. By comparison, total public investment increased only by 20 percent during the same period. Priority areas for public investment are irrigation, agro-industry and small and medium-sized infrastructure. Another initiative to promote rural investment was the creation of the Fund for Rural Investment and Capitalization (FOCIR). Together with resources from PRONASOL funds, this new investment fund was allocated a total of 400 million pesos for 1993, with an additional 30 million pesos allocated for programmes to strengthen project formulation and implementation capacity.<sup>47</sup>

### **Outstanding issues and prospects for agriculture**

361. The success of future agricultural reform is crucially linked to the sustainability of overall economic recovery. After a period of euphoria over the initial results of the reform, the slow-down in economic activity and the widening current account deficit have generally led to more sober assessments of Mexico's economic prospects. While the current account deficit is largely the counterpart of capital inflows, there is some uncertainty regarding the extent to which such inflows are speculative in nature or stable, long-term investments (for instance, foreign participation in parastatal privatization). In any case, capital inflows contributed to real exchange rate appreciation, thereby raising another set of problems. The overvalued currency is likely to reduce the competitiveness of domestic industry, including

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<sup>47</sup> \$1 was equivalent to approximately 3 pesos during the first half of 1993.



export- and import-substitution-agriculture. On the other hand, devaluation is a difficult policy option at a time when the country needs investors' confidence in its financial stability.

362. The long-term environment for investment and, more generally, the overall economic outlook also depend to a large extent on NAFTA. While the agreement is expected to result in major gains from trade expansion for Mexico, the main benefits would be in terms of greater economic and political stability and a more favourable climate for foreign investment. More foreign investment would in turn allow a reduction in interest rates and, possibly, an increase in public expenditure, with both factors combining to boost economic activity. The perceived importance of NAFTA for Mexico is shown by the sensitivity of financial markets to opposition voices in the United States, the close scrutiny of its implications by Congress and, more recently, challenges to its compatibility with the constitution.

363. In the more specific area of agricultural reform, the outlook for the current transition period is also uncertain. In general, the possibility of selling ejido land, and the consequent concentration of landholdings, are likely to create better opportunities for economies of scale, investment and market dynamism. The process also involves risks, however. Although the new legislation contains precautionary clauses against the emergence of neo-latifundia, there are fears that market forces and capital concentration may overturn such regulations in the long term<sup>48</sup>. Moreover, even limited land concentration is likely to accentuate inequalities. Along with enhanced income and employment opportunities for many farmers, distress selling, migration and proletarianization are potential threats for many others. This risk is also latent in the closer association that is sought between ejido members and private entrepreneurs. Will the former be able to maintain a fair share of influence and control in such a partnership?

364. Some analysts believe those fears are largely unfounded, pointing out the "organic" nature of the links between farmers and their land. Given their reluctance to lose ownership or control, farmers would be more likely to rent than sell their land.<sup>49</sup> The strong sense of identity and solidarity among farmers would also resist disintegrating influences. It is also pointed out that, whatever the direction of the process, it is likely to be a lengthy and gradual one. Land transactions will only be possible after ownership titles are regularized, a process that may require another three to five years.

365. In any case, it will be the Government's task to counter undesirable developments by monitoring the process and effectively enforcing legislation and, even more important, by helping farmers adjust to the changing situation. A cornerstone of current strategies to this end is the promotion of better organized and trained farmers' associations, giving them better participatory and negotiating power and enabling lower transaction costs in their access to

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<sup>48</sup> Legislation forbids concentrations of more than 2 500 ha of irrigated land and sets a limit of 5 percent on ejido landownership by any one member.

<sup>49</sup> Although forbidden by law, land renting was quite common before reform. However, because of their clandestine character, rents were very low, accounting for an estimated 10 to 15 percent of production costs. The legalization of renting is likely to increase these rates significantly.

credit, technology and market information. Thus, along with the primary efficiency objectives underlying liberalization and elimination of state paternalism, equity objectives are being pursued.

366. The other major area of concern for many farmers regards NAFTA. While a minority of competitive farmers would benefit immediately from NAFTA, the large majority, mainly maize producers, would be bound to suffer to varying degrees.

367. The immediate effects for subsistence farmers, who are largely isolated from market forces, would be relatively minor although they may lose temporary off-farm employment opportunities. In any case, their marginalization may tend to worsen, although they could still be assisted in modernizing their productive systems and lowering costs of self-consumption.

368. At the other end are the reasonably competitive commercial farmers who account for about 10 percent of maize-producing units and for whom subsidies currently account for only 18 percent of their crop. This subsector would probably survive external competition and also has the greatest potential for diversification at little cost to income.

369. The real problem is posed by the large majority of maize producers who depend on the part of their output that is sold to the market but who cannot possibly remain competitive in an open market regime. How many will abandon maize production is an open question. Much will depend on the impact of compensatory and safeguard measures contemplated under the Agreement. For those pushed out of agriculture the tasks will be to mobilize welfare programmes such as PRONASOL, create off-farm employment as well as the conditions for an orderly process of migration. These are daunting tasks to be tackled in the 10- to 15-year period before liberalization is fully enacted.

370. These problems raise fundamental issues for the long term. What will be the sector's future role as a contributor to income, employment and food security? Can the major transformations under way be achieved without creating massive problems of proletarianization and rural migration? Will the resources available for developmental, compensatory and welfare action be sufficient to ensure an orderly process of diversification and modernization while preventing major political and social disruptions? To what extent can reliance on the determinism of the market be made compatible with the consolidation of a popular democracy?

371. Beyond the specificity of the Mexican situation, the answer to these questions has a broad relevance. For many countries around the world, similarly committed to the free market paradigm, Mexico's ability to meet the challenges of reform will be a point of reference and, hopefully, an encouragement for their own efforts.

**Box 6**

**North American Free Trade Agreement**

1. In June 1990 the Presidents of Mexico and the United States announced their decision to start negotiations for a free trade agreement between the two countries. Soon afterwards, Canada expressed its wish to join the negotiations, which took place from May 1991 to August 1992.

2. At the outset, an agreement text was issued for an expanded NAFTA, and this was signed by the presidents of the three countries on December 17, 1992. The text was then submitted for parliamentary approval by the three countries. Should it be ratified - the main question mark being the decision of the United States Congress - the NAFTA would enter into force on 1 January 1994.

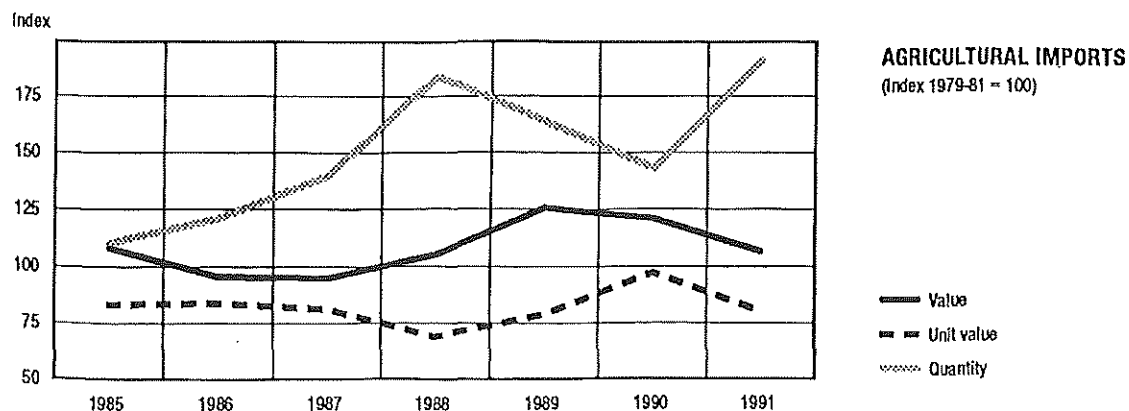
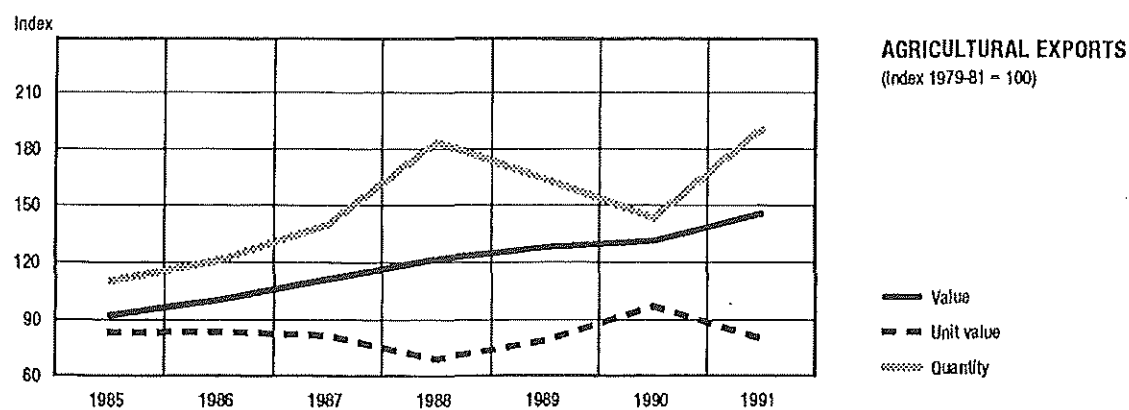
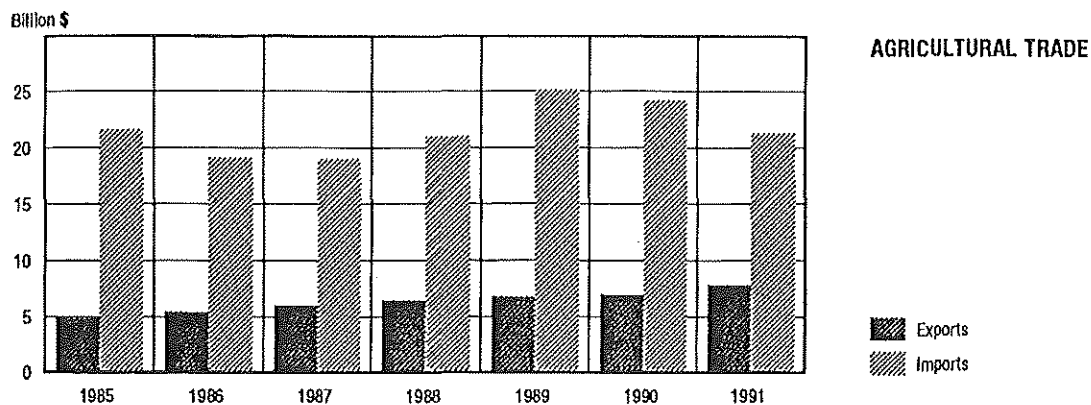
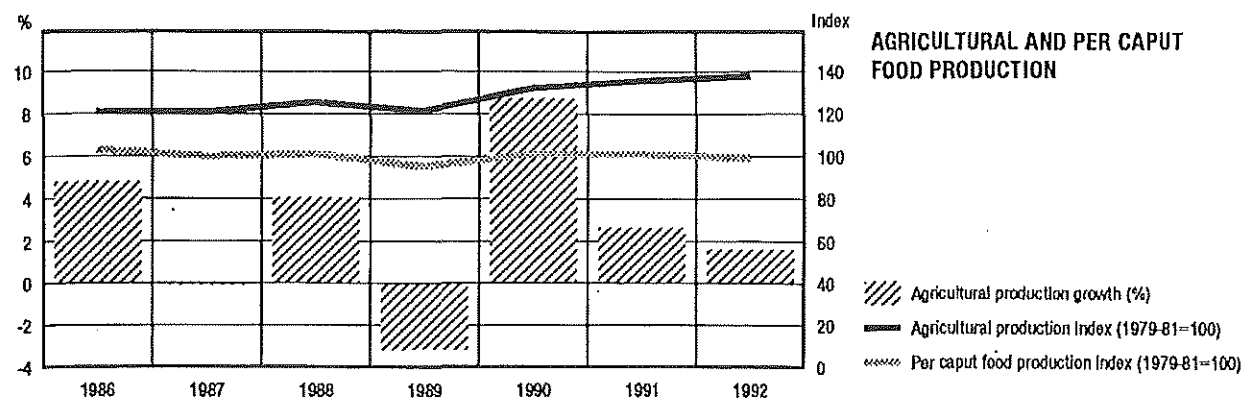
3. The expanded NAFTA agreement contains separate bilateral undertakings between Mexico and its United States and Canadian trading partners. It also incorporates the Canada-United States Free Trade Agreement, leaving intact those rules on agricultural tariff and non-tariff barriers and transitional safeguards that went into effect in 1989. Certain trilateral provisions deal with domestic support and export subsidies. Mexico and the United States agreed to negotiate "side agreements" dealing with environmental and labour issues in an attempt to allay concerns of the incoming United States Administration and congressional critics.

4. Under the agreement, both countries would convert all their agricultural non-tariff barriers either to tariff-rate quotas (TRQs) or to ordinary tariffs. During a 10- or 15-year transition period, depending on the commodity, no tariff would be charged for commodities within the TRQs. The longer transition periods apply to certain highly sensitive products, such as maize and dry beans for Mexico, and orange juice and sugar for the United States. Duties imposed on commodities exceeding the TRQs - initially set to replace the protection provided by the former non-tariff barriers - would decline progressively to zero by the end of the transition period. Existing tariffs on a broad range of agricultural products would be eliminated immediately. Among the United States' major agricultural exports - which include feedgrains, oilseeds, meat and dairy products - grains and oilseeds were expected to benefit most. For Mexico, whose leading exports to the United States are tropical products, horticultural exports such as fruit and vegetables would probably be most favoured.

5. The agreement also contains special import safeguards for specified products whose trigger levels would be increased progressively over the first ten years of the agreement. The NAFTA countries made only a very general commitment to move towards less trade-distorting domestic agricultural policies, with new policies expected to be in compliance with GATT obligations. As a general principle, the use of agricultural export subsidies within the NAFTA area was considered inappropriate, except as a means to counter subsidized exports from non-NAFTA countries.

Figure 10

# NEAR EAST AND NORTH AFRICA



Source: FAO

## NEAR EAST AND NORTH AFRICA

### Regional overview

372. In 1992, the Near East's recovery from the Persian Gulf war was well established. Petroleum export volume increased, although prices declined during 1992 to pre-war levels, benefiting oil-importing countries in the region. Reconstruction activity helped energize the region's economy, creating renewed opportunities for migrant employment and raising remittance income. Trade and tourism revenues also rebounded while declining import demand, debt forgiveness and foreign transfers - including support provided by the Gulf Crisis Financial Coordination Group to Egypt, the Syrian Arab Republic and Turkey - helped to improve current account balances.

373. These positive developments have been clouded by the continued political tensions in the region, however, which have created disincentives for private investment and slowed market reforms in some countries, consequently harming long-term growth prospects.

374. Agricultural output increased in most countries in 1992. Good weather was the major determinant of increased farm output in countries that have primarily rain-fed agriculture, including Algeria, Cyprus, the Sudan, the Syrian Arab Republic, Tunisia and Turkey. Drought in Morocco caused a sharp decline in its farm output in 1992, with continued drought expected to reduce the 1993 harvest. In Egypt, changing price signals and a lifting of planting controls has resulted in a substantial shift in crop mix since 1986. Wheat area has increased and, combined with the widespread adoption of HYVs, contributed to Egypt's sixth consecutive record crop of wheat in 1992.

375. Regional agricultural production rose by 40 percent between 1979-81 and 1992. Growth in output has generally enabled regional food production to keep pace with population growth, except in cases of weather-induced shortfalls. Country performances vary: most of the major agricultural producers have achieved substantial gains in per caput food production since 1979-81, including Algeria, Egypt, the Islamic Republic of Iran, Morocco and the Kingdom of Saudi Arabia.

376. The regional agricultural import volume rose by 40 percent between 1979-81 and 1991, but declining import prices kept the value of imports constant. Regional agricultural exports rose in value between 1979-81 and 1991, as a near doubling in export volume offset declining export prices during that period. Overall, the region's agricultural trade balance remained in heavy deficit. In 1991, regional agricultural imports fell by 8 percent to \$21.3 billion. Agricultural exports rose by 11 percent to \$7.8 billion.

### Policy developments

377. Regional economic and agricultural performance in 1992 has occurred in the context of nearly a decade of profound policy change. Many countries in the region, including Algeria, Egypt, Iran, Jordan, the Libyan Arab Jamahiriya, Morocco, Tunisia, Turkey, the Sudan and Yemen, initiated major policy reform programmes during the 1980s to transform

themselves from inward-oriented economies, with extensive government intervention, into more market-oriented economies based on outward-oriented growth. Generally, policy reforms were initiated to deal with the economic crises which unfolded during the 1980s and were reflected in large current and fiscal account deficits, unsustainable foreign debt obligations, inflation and high unemployment. The two prongs of their reform programmes were the short-term stabilization of deficits through austerity policies, and long-term economic restructuring. Long-term strategies included reduced or eliminated price distortions, the liberalization of trade and foreign exchange markets and institutional reforms.

378. Policy reforms have helped stimulate economic activity in these countries, as trade and domestic markets have become more open, thus leading to greater competitiveness and economic growth. Turkey, for example, was the first in the region to implement a comprehensive structural adjustment programme, which it initiated in 1980. The programme contributed to accelerated growth in GDP, averaging 5.1 percent annually during the period 1980-1990. More recently, Iran has recorded impressive economic growth, averaging 9 percent during 1990-91. Since the end of the Iran-Iraq war, Iran has moved to revitalize and liberalize its economy, removing most of the wartime controls on its economy.

379. *Agricultural and food policies* in the region differ widely. Most of the countries that have implemented major policy reform programmes are at the same time the region's leading agricultural producers and their farm policies have also undergone a transformation. Until the 1980s, they intervened extensively in agriculture with interrelated producer and consumer policies. Generally, the objectives of consumer food policies were to assure an adequate and affordable food supply, improve diets and maintain political stability in urban areas. Consumer policies included fixed retail prices, food subsidies and, in some countries, rationing systems. Producer policies were intended to stimulate domestic agricultural production in a setting of low market prices. Producer policies included subsidized inputs, controls or quotas on planting and procurement, fixed producer prices and government monopolies in marketing and trade. Generally, these consumer and producer policies were set in a macro-economic context of overvalued exchange rates and low government investment in agriculture, which created disincentives for domestic farm production.

380. In agriculture, factors that stimulated policy reform were weak agricultural performances, the unsustainable costs of government intervention and the general shift of the policy paradigm in the region towards market-based economies. Common features of agricultural policy reform in Algeria, Egypt, Jordan, Morocco, Tunisia, Turkey and Yemen have been the elimination of guaranteed prices for all or most crops, the reduction or removal of producer and consumer subsidies, the privatization of input supply and the liberalization of agricultural trade.

381. Agricultural policy reform has been implemented gradually. In 1992, important developments in agricultural trade liberalization included the privatization of wheat imports in Morocco and Turkey, and of wheat flour imports in Egypt. Morocco's drought in 1992 accelerated its import liberalization plans because of the country's tremendous demand for wheat imports. In Egypt, flour import privatization was linked with the liberalization of consumer prices for flour and high-quality breads. Tunisia lowered its staple food subsidies

further in 1992, in combination with an increase in its subsidies for low-income households. Algeria removed its food subsidies in 1992, except for those on milk, bread, flour and semolina.

382. In contrast, agriculture has been excluded from market liberalization efforts in some countries. Saudi Arabia's Fifth Development Plan (1990-1994) stresses economic diversification and an increased role for the private sector in industry but a continued role for the Government in its agricultural sector (see *The State of Food and Agriculture 1992*). Iran has adopted some market liberalization policy reforms but has maintained a food self-sufficiency policy, with controlled and subsidized inputs, and producer prices that exceed world prices.

### Implications of agricultural policy reforms

383. Agricultural policy reforms will have important implications for agricultural development and performance in the region. They will also have important environmental implications: in particular, the need to conserve the region's scarce water and land resources has emerged as one of the most critical issues now facing the region. Water problems are most serious in the Libyan Arab Jamahiriya and the Persian Gulf countries, including Bahrain, Jordan, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates, which face potential water shortages in this decade. In Egypt, increased efficiency in the use of its limited water and land resources forms the core of the country's agricultural strategy for the 1990s.

384. An excessive consumption of water and the degradation of water quality has partly been a response to agricultural policies in the region. Free irrigation water has led to the overexploitation of groundwater and created salinity and waterlogging problems that have lowered crop yields in Bahrain, Egypt and the Syrian Arab Republic. Subsidized fertilizer and pesticide inputs have contributed to the pollution of available water supplies. Rapid population growth and developing industrial needs have also raised the regional water demand, while the inadequate handling of human and industrial waste has accounted for a significant portion of the region's water pollution.

385. Many countries in the region are adopting policies that rely on market signals to improve the efficiency of water use and encourage its conservation. These policies include the pricing of irrigation water, the elimination of fertilizer and pesticide subsidies and the provision of incentives for farmers to adopt more efficient irrigation technologies. Egypt, for example, is eliminating pesticide and fertilizer subsidies, except for cotton, and is studying possibilities for the introduction of fees for irrigation water. Jordan has made major technological advances in its use of drip irrigation and sewage treatment. Tunisia has developed a long-term strategy for soil and water conservation, including the construction of more than 1 000 small dams. Saudi Arabia has increased government control over well drilling and instituted stricter regulations on water use.



386. Many countries of the region are dependent on the same water supply. Assuring adequate water supplies will raise difficult allocation issues while the conservation of such supplies will require regional cooperation. Among the countries that rely on shared water sources are Israel, Jordan and the Syrian Arab Republic, which share the Yarmuk River. Jordan, Saudi Arabia and the Syrian Arab Republic draw jointly from underground aquifers while Egypt and the Sudan are both dependent on the Nile.

387. Only 4 percent of the land in the Near East and North Africa is arable. Desertification, deforestation and urban encroachment are the region's major challenges in managing and conserving its limited land base. Two elements of agricultural policy reforms have implications for improved land management practices. The first is price policy reform. Artificially low agricultural prices in many countries of the region had depressed land prices. In turn, this had removed incentives to invest in sustainable land management practices and made non-agricultural land uses relatively profitable. Higher farm prices, which raise farm land values, should provide farmers with a structure of incentives to manage and conserve land better. Second, measures affecting landownership legislation can contribute to improved land management by clarifying proprietary rights to the long-term returns from conservation investments and by providing access to credit to finance the adoption of conservation technologies.

388. Efforts in the area of landownership have been part of agricultural policy reforms in Algeria, Egypt, the Sudan and Tunisia. In Algeria and Tunisia, state farms have been dismantled and privatized. Egypt has implemented land rental reform. Land rents, formerly fixed at seven times the land tax, will be market-determined by 1997. Egypt's low land rents created disincentives for the efficient use of land and water. The Sudan has moved to delineate grazing rights in an effort to prevent overgrazing on common land.

389. Policy reform in the region has had major institutional implications. It is transforming the role of government from participation and regulation to one of creating a stable environment in which the private sector can function efficiently and be unhindered. This institutional change is perhaps the most difficult aspect of policy reform to implement. On one hand, the privatization of many government functions is expected to achieve efficiency gains and generate fiscal savings for governments. Yet, privatization also entails a degree of dislocation as public sector employment falls and the profitability of economic activity that was based on government intervention is changed. In agriculture in particular, policy interventions had created a pervasive role for governments in input supply, the procurement and distribution of crops, trade and food manufacturing and retail.

390. The privatization of agricultural input supply, marketing and trade has been at least partially implemented in many Near East and North African countries, including Algeria, Egypt, Morocco, the Sudan, Tunisia, Turkey and Yemen. Privatization plans are probably most extensive in Egypt. All public enterprises have been consolidated into diversified holding companies as a prelude to selling most of these public assets. However, this component of Egypt's policy reform has moved more slowly than any other.



391. Agricultural policy reform in the region has increasingly taken on a long-term perspective. For example, Egypt's farm policy reform has been formulated in the context of a strategy for the 1990s. Tunisia's resource conservation plan extends to the year 2000, the Sudan has adopted a ten-year agricultural sector strategy, while the development of a long-term agricultural development strategy for Yemen is in progress. A longer-term perspective in agricultural planning reflects the increased awareness of intersectoral linkages within economies as well as the sectoral implications of macro-economic policy. Most of the countries that have made major reforms in farm policy have implemented these sectoral policy changes in conjunction with economy-wide policy reforms under structural adjustment programmes. Longer-term planning has also been influenced by the increased urgency of the environmental issues facing the region. These are issues that call for immediate changes in the utilization of natural resources as well as investment in their conservation, for which there are long-term intergenerational benefits.

## **Egypt**

### **Agriculture's role in the Egyptian economy**

392. Egypt has targeted agriculture, along with tourism and industry, as a sector with strong potential for supporting economy-wide growth under the economic reform and structural adjustment programme (ERSAP) adopted in March of 1990. This is a comprehensive policy reform effort designed to correct structural weaknesses of the economy and achieve macro-economic stability. Under the ERSAP, Egypt's objective is to restructure economic activity to achieve a decentralized, market-based and outward-oriented economy. This marks a complete break with the centrally planned, inward-oriented economic policies pursued by Egypt for over four decades.

393. Several factors account for the expectation that agriculture can help support economy-wide reform and stabilization. First, the share of agriculture in the Egyptian economy, while declining, continues to be important. In 1990, agriculture accounted for 17 percent of Egypt's GDP, 41 percent of employment and 20 percent of its export earnings.

394. Second, the farm sector has potential for additional gains in productivity. Egyptian farmers are already among the most productive in the world, aided by good soils and a mild climate that permits three crops per year. Further productivity gains are expected to come from increased yields in some crops, efficiency gains from crop substitution as remaining price distortions are removed and better management of limited water resources.

395. Third, the agricultural sector has already achieved considerable progress in implementing market liberalization. Major policy initiatives undertaken since 1986 have removed most sectoral price distortions in agriculture, exposed Egyptian farmers to decision-making in a competitive market and achieved a role for the private sector.

### **Economic policy reform**

396. The economic difficulties confronting Egypt in the late 1980s necessitated major economic policy reforms. In the 1970s and early 1980s, the country had achieved impressive GDP growth rates, based on high petroleum prices, worker remittances and foreign assistance and borrowing. Economic growth slowed in the second half of the 1980s when oil prices and export earnings fell but Egyptian policies did not adjust to the decline in resources. Continued large government expenditures on food and energy subsidies as well as on support of public sector enterprises helped generate massive fiscal deficits which exceeded 20 percent of GNP annually. Egypt financed its fiscal and current account deficits partly through foreign borrowing, but capital inflows slowed as Egypt's creditworthiness deteriorated and foreign arrears began to accumulate. By 1990, Egypt's total foreign debt had reached \$51 billion, equivalent to 144 percent of GDP, with repayment obligations equal to one-half of its export earnings. An expansionary monetary policy was also used to help fund the fiscal deficits and, consequently contributed to high inflation.

397. In response to the deterioration in the Egyptian economy, the Government initiated the ERSAP in March of 1990. The three broad principles of ERSAP are:

- rapid achievement of a sustainable macro-economic environment;
- economic restructuring to lay the foundation for medium- and long-term growth;
- improvements in social policies to minimize the negative effects of economic reforms on the poor.

398. The measures implemented during the first stage of the ERSAP included: a reduction in the current account and fiscal deficits; liberalization of foreign exchange markets and interest rates; privatization and restructuring of public enterprises; and a reduction in trade barriers. In addition, a social fund was created to cushion the effects of market reforms on vulnerable populations.

399. The ERSAP is being implemented with support from the international community. The IMF is supporting the macro-economic stabilization component of the programme. The World Bank is supporting structural adjustment to improve efficiency as the country shifts towards an export-led growth strategy based on the private sector. The IDA and other donors are supporting a review of social policies to minimize the effects of economic reforms on the poor.

400. In addition, Egypt received substantial foreign assistance following the Persian Gulf war. The Gulf Crisis Financial Coordination Group and United States and Arab donors cancelled nearly \$13 billion of Egyptian debt. The Paris Club of lenders also granted debt relief. Combined, these measures reduced Egypt's foreign debt to \$38.3 billion at the end of FY 1992. Additional debt relief by the Paris Club in 1994 is contingent on Egypt's performance under its structural adjustment programme.

401. Egypt made significant progress during the first three years of the ERSAP and, in some areas, moved ahead of schedule in implementing policy reform. It reduced its fiscal deficit to 7 percent of GDP by 1992 while growth in money supply slowed, causing inflation to decline from 27 percent in 1989 to 14 percent in 1992. Exchange rate restrictions were removed and the exchange rate system unified ahead of schedule in November 1991. Egypt's balance of payments improved and a current account surplus was achieved in 1991 and 1992. The surplus partly reflected the effects of foreign debt reduction. It was also due to a recovery in earnings from tourism, worker remittances and Suez Canal revenues, combined with declining imports. Prices were liberalized in the energy, industrial and agricultural sectors.

402. Only the restructuring and privatization of public sector enterprises have moved behind schedule. Public enterprises were consolidated into a small number of diversified holding companies in preparation for the sale of their assets to the public. The slow pace of privatization illustrates some of the challenges Egypt faces in its economic reform efforts. Privatization has been slowed by both bureaucratic inertia and Egypt's need to maintain economic stability. Slow implementation of privatization places a potential drag on long-term economic growth in Egypt by discouraging foreign investment flows. A revival of foreign investment is particularly important given the external economic conditions facing Egypt, including weak oil prices and stagnating growth in the industrial economies.

#### **Agricultural strategy in the 1990s**

403. Until the mid-1980s, Egyptian agricultural policy was characterized by extensive government intervention and an inward orientation. Egypt's objectives were to attain self-sufficiency in basic food products; provide food to consumers at low prices; generate sufficient rural employment to absorb a rapidly growing labour force; and tax agriculture to support industrial growth and generate government revenue. Its policy tools were: controlled producer prices, area and marketing quotas; controlled agricultural trade; and government monopolies in trade and marketing.

404. Under this policy regime, agricultural GDP growth slowed, increasing by an average 2.5 percent annually in the 1980s. The main reasons for slow growth in agriculture were the disincentives that price distortions created for farmers and declining government investment in the sector.

405. As agricultural production failed to keep pace with population growth, dependence on food imports increased. Cereal self-sufficiency declined from an average of 65 percent in the period 1978-80, to 52 percent in 1986, when agricultural policy reforms were initiated. Food imports increased by more than 10 percent annually during that period, reaching \$2.6 billion in 1986. Slow growth in agriculture also helped induce urban migration. During the period 1980-1990, Egypt's urban population grew by an average of 3.1 percent annually, compared with a 2.4 percent average annual growth in the national population. By 1990, 47 percent of a population of 52 million lived in Egypt's cities, where population densities are among the highest in the world.

406. In response to these trends, Egypt introduced agricultural policy reforms in 1986 which have been pursued gradually through 1992. These included:

- removal of crop area allotments with delivery quotas at fixed procurement prices, except cotton and sugar cane;
- the liberalization of producer prices for all crops except cotton and sugar, with the cotton price raised to 66 percent of the border price equivalent in 1992;
- a reduction of subsidies on fertilizers and pesticides;
- encouragement of the privatization of processing and marketing of agricultural products and inputs;
- the implementation of a programme for divesting land held by public enterprises; and
- lower trade barriers and a shift of agricultural trade to a free foreign exchange market.

407. Egypt's agricultural strategy for the 1990s builds on the policy reforms initiated in 1986. Its objectives are to complete those reforms and to increase agricultural productivity and incomes. The strategy targets increased agricultural productivity per unit of land and water - the key constraints in Egyptian agriculture - with a reliance on free market price signals to achieve more efficient resource allocations. The strategy for the 1990s differs from the 1986 plan in that its drive for better agricultural performance incorporates programmes designed to alleviate hardships on the poor, particularly women and the landless, during the policy transition period.

408. Targeted growth for agriculture under the plan is 3 to 4 percent annually, which would achieve a per caput increase in agricultural output.

409. Land availability is a key constraint in Egyptian agriculture. Only 3 percent of Egypt's total land mass is cultivable. Farms are small and mostly privately owned and 50 percent of them are less than 1 feddan (0.416 ha). Egypt's water resources are also limited: Egyptian agriculture is almost entirely irrigated, with the Nile being the single source of the country's water supply. Increasingly, agriculture must compete with urban and industrial demand for water.

410. Land productivity can be increased in several ways. One is to achieve higher yields on "old" lands in the Nile valley. Although yields are already high, additional gains could be achieved for wheat, rice and corn with improved seed quality, greater mechanization, strengthened extension support and better land and soil management. The privatization of input distribution is expected to improve the quality and timeliness of input supplies.

411. Some of the increase in land productivity is expected to come from increasing productivity on the reclaimed "new" lands. These lands, reclaimed from desert land and from marginal areas near agricultural and some coastal areas, account for about 25 percent of Egypt's total farmland area. Performance on new lands has been below expectation, leaving room for increased productivity through better extension support and selection criteria for settlers.

412. Measures for improving water efficiency in agriculture include the application of water-saving technologies that are technically and economically feasible. The introduction of water fees is also under consideration. These would provide some cost recovery from farmers to finance the maintenance costs of an increasingly capital-intensive irrigation system. Water fees would also create price incentives to encourage more efficient water use and prevent the degradation of natural resources. In the delta region, for example, yields have been reduced by increased salinization resulting from the overuse of free irrigation water. In the long term, the sustainability of agriculture's reliance on water resources will require more emphasis on reducing pollution, which is partly caused by pesticide use.

413. Despite the substantial price liberalization that has occurred in Egyptian agriculture since 1986, important price distortions remained in 1992. The most important of these were free irrigation water and regulated land rents. These increase the profitability of irrigated crops such as sugar and rice, while the low producer price for cotton provides insufficient incentives for increased plantings or the adoption of improved inputs.

414. Additional changes in price signals in input and product markets are expected to provide the right incentives for replacing existing crops with those that are characterized by a high contribution to agricultural value added, compared with their utilization of scarce land and water resources. Wheat, cotton and vegetables make a high contribution to agricultural value added relative to their resource consumption. In contrast, the contribution of sugar, rice and berseem clover is relatively low. Wheat, for example, accounts for 17 percent of land area and 9 percent of water resources and contributes 17 percent of total value added in Egyptian agriculture. Sugar cane, on the other hand, accounts for 4 percent of land area, uses 9 percent of water resources and contributes 4 percent of total value added in agriculture.

415. Crop and livestock production in Egypt is integrated, and 85 percent of livestock are raised on small farms. Since natural pastures are limited, most animals are confined and fed berseem clover as well as a variety of other crops and by-products. The 1990s' agricultural strategy seeks to increase productivity in the livestock sector through better genetic selection and disease control. Furthermore, the use of fodder crops and crop residues as feed is to be encouraged, since the cultivation of feed crops competes directly with food crop production.

416. Agricultural production policies are influenced by consumption policies. Until the late 1980s, one objective of Egyptian farm policy was to ensure cheap food for the urban population. Ninety percent of Egypt's population participated in a ration system, which provided those eligible with sugar, vegetable oils, rice, tea and other basic items. Egypt also provided subsidized bread, flour, fish, meat, eggs, cheese and other items through

government outlets. During 1991 and 1992, the Government moved to reduce and target its food subsidies. Some items were eliminated from the ration programme. Prices for bread and other basic foods were increased in 1991. In December 1992, the Government increased the prices of sugar and edible oils and freed the market price of higher-quality wheat flour. The Government continues to subsidize baladi bread, a coarse wheat bread which is a dietary staple.

### Implications for agricultural performance

417. Egypt's main crops are wheat, maize, rice, berseem clover and cotton which, combined, account for over 80 percent of cultivated land area. Other important crops are broad beans, sugar cane, fruits and vegetables. Since 1986, Egyptian agriculture has undergone a substantial modification in crop mix in response to changing price signals and the removal of planting and procurement requirements.

418. Wheat area expanded by over 75 percent between 1985 and 1992 while output increased by 150 percent as a result of both increased area and rising yields. In 1992, Egypt harvested its sixth consecutive record wheat crop, causing wheat imports to decline by 14 percent to 6 million tonnes during the period 1985-1992. Wheat flour imports were liberalized in 1992 to allow importation by the private sector, and flour prices were to be determined by the market.

419. The area planted to coarse grains and rice rose by 11 and 16 percent, respectively, while the area planted to cotton and beans declined by 17 and 13 percent, respectively.

420. Poultry and livestock became less profitable under market liberalization. The Government reduced corn imports in 1986 and removed feed subsidies in 1988. Poultry production in particular began to decline as input prices rose. Output had grown at an average annual rate of 16 percent between 1980 and 1988, mainly because of government subsidies on feedgrains and equipment. Between 1988 and 1992, poultry meat production fell by 21 percent as nearly one-half of the producers were forced out of the industry. Currently, chicken imports are banned to protect the remaining producers, with plans to replace the bans with tariffs in 1993. Beef imports were banned in 1989 but liberalized again in 1992. In the long term, livestock and poultry output is expected to recover as efficiency gains in production restore profitability.

421. Agricultural policy reforms to be implemented in the short term include the removal of fertilizer and pesticide subsidies, except for cotton, by November 1993. Price and area controls on cotton are planned to be removed in 1994. A floor price for cotton will be set, with the market price to be determined in a planned cotton exchange. Wheat imports are to be liberalized in mid-1993 and land rental rates are to be market-determined by 1997.

## Syrian Arab Republic

### Economic overview

422. After struggling throughout much of the 1980s, the Syrian economy has performed well in recent years. Real GDP grew by more than 5 percent every year between 1990 and 1992. (Nonetheless, with one of the fastest growing populations in the world - estimated at 3.5 percent - per caput GDP increased by much less.) Preliminary estimates for 1993 suggest further strong growth in GDP - about 6 percent. This welcome period of solid economic performance follows a decade of stagnating and even declining incomes. Per caput GDP fell from around \$1 800 in the mid-1980s to \$880 in 1989.

423. A number of external events and internal policy changes contributed to this performance reversal. One significant external event was the 1990 Persian Gulf war, which ended a period of relative isolation and resulted in renewed access to development assistance funds and foreign investment. In 1991 and 1992, Syrian public sector agencies issued a record number of tenders, mostly directed at rehabilitating infrastructure and expanding public sector activities.

424. Another important external event was the end of a two-year drought, which allowed agriculture and agro-industries to recover in 1991 and 1992. During the drought, the Government was forced to import large quantities of wheat and barley, draining foreign exchange reserves. Low water levels meant a reduction in hydropower generation, hampering both manufacturers and agricultural producers using electric pumps for irrigation. Reduced hydropower generation also increased the need for thermal power, thus lowering crude oil exports.

425. These external forces coincided with a number of economic policy changes designed to take better advantage of private sector activity and improve public sector performance. In 1991, the Syrian Arab Republic established a new investment law, Law No. 10, to promote both foreign and domestic investment in private and domestic sector companies.

426. This new law, combined with a more favourable official exchange rate set in 1991, led to expanded trade and investment. Private sector exports now account for around 50 percent of total export trade compared with about 10 percent in the mid-1980s. Since 1990, the country has recorded trade surpluses. Law No. 10 is also credited with increased investment: the Syrian Investment Bureau reports that between May 1991 and December 1992 more than \$2 billion of new investment (foreign and domestic) was approved.

427. Over the last few years, the Government has also eased trade restrictions, allowed free internal trade of various commodities and encouraged more mixed and privately owned factories and businesses. These policy changes reflect a gradual transition towards more market-oriented economic activity. In the past, the public sector dominated the economy; even today, the Government still owns and manages the mining, large manufacturing, energy, banking and insurance sectors. Moreover, the Government controls most prices, credit and international trade. The public sector employs approximately half the labour force.

428. The Government also provides the country's 13 million inhabitants with health care services and education. Nutritional levels are comparable with high-income economies and infant mortality has declined by two-thirds over the past 20 years.

### The role of agriculture

429. Even though rapidly expanding petroleum-based industries generate over one-half of export earnings and account for one-fifth of GDP, agriculture remains the most important sector in the economy. Agriculture employs approximately 30 percent of the labour force, accounts for nearly 30 percent of GDP and contributes over 60 percent of non-oil exports. In addition, fast-growing agro-industries, such as textiles, leather, tobacco and food processing, contribute 25 percent of the country's output and account for an estimated 50 percent of jobs in the manufacturing sector.

430. The cropped area in the Syrian Arab Republic averages 4.8 million ha and has increased only marginally in the past decade. The principal staple, wheat, and the primary feedgrain, barley, occupy 70 to 75 percent of the cropped area. Cotton is the country's most important export crop, accounting for 20 to 25 percent of agricultural exports. Farmers also raise livestock and produce a wide variety of fruits, vegetables, tree crops and legumes. Livestock production accounts for one-third of agricultural output value and sheep exports have surpassed cotton as the most important agricultural export. Extensive sheep grazing is carried out on marginal rain-fed pasture land and steppe.

431. Two of the country's major national development objectives are: to achieve food self-sufficiency so as to reduce dependency on imports; and to expand agricultural exports to earn more foreign exchange. Food imports are a significant drain on the country's foreign exchange, accounting for 20 to 30 percent of total imports during the 1980s. To support these objectives, the Government has directed a large portion of its spending into agriculture and irrigation. In 1993, public spending on agriculture accounted for approximately 25 percent of total spending.

432. The Government also promotes food self-sufficiency and exports through its trade, production and pricing policies. For example, to influence cropping decisions (and to enhance rural incomes), the Government establishes procurement prices for wheat, barley and the major industrial crops - cotton, tobacco and sugar beet. Because interest rates, seeds, fertilizers, pesticides, transport and energy prices are also controlled, the Government strongly influences cropping patterns, level of production and input use.

433. Input and procurement prices are designed to increase total production, to encourage the planting of one crop over another (or, in the case of wheat, to encourage soft wheat over hard wheat varieties) and to increase the amount sold to official purchasing agencies. At times, additional *ad hoc* measures may be used. For instance, public purchasing agencies offered both a delivery bonus and a bulk delivery bonus to capture additional wheat supplies in 1992.



434. The Government also controls the prices of bread, rice (all rice is imported), sugar and tea. Many other commodity prices are being gradually liberalized. Fruits and vegetables are now market dependent for both producers and consumers. Likewise, vegetable oils are no longer part of the Government's ration card system and private traders are now allowed to import maize and rice. Approximately 200 000 tonnes of maize were imported in 1992, all by private poultry producers and businesses.

435. Other recent reforms influencing production of agricultural exports include new trade policies which allow private exporters to retain 100 percent of foreign exchange earnings from agricultural exports (75 percent for industrial products). The export earnings are restricted to purchasing agricultural inputs and basic commodities such as tea, sugar and rice. The Government maintains its monopoly on wheat and flour imports. As of 1992, agricultural exporters may use up to 75 percent of export earnings to import agricultural trucks.

### **Irrigation development**

436. Within agriculture, irrigation development is the major area for public investment and spending. Over the past ten years, some 60 to 75 percent of the entire agricultural budget has been invested in irrigation. Several factors explain this focus. First, while the irrigated area comprises only 15 percent of the cultivated land, it produces over 50 percent of the total value of agricultural production. All cotton, sugar beet, tobacco and sesame crops are produced exclusively under irrigation. Cotton and textile products account for 25 percent of total exports and more than 50 percent of all non-oil exports. In recent years, fruits, vegetables and wheat have been brought increasingly under irrigation.

437. The second reason for focusing on irrigation development is that production on rain-fed area, which represents 85 percent of the total area, varies greatly from year to year. Since 1988, annual production has fluctuated by 35 percent on average. While good rainfall years mean lower agricultural imports, a drought year entails substantial food and animal feed imports.

438. Syrian public investment in irrigation focuses primarily on relatively large projects, particularly those in the Euphrates River basin. Public sector projects provide water to private farms, state farms and tenant farmers on state lands. The private irrigation sector includes farmers who drill wells to extract groundwater and pump water from lakes, rivers and springs.

439. Available data suggest that around 1.25 million ha are potentially irrigable from surface water. In 1992, the total irrigated area from surface water and groundwater was approximately 900 000 ha. Farmers irrigated 415 000 ha from wells in 1991.

440. The Euphrates River, whose waters are shared by Turkey, the Syrian Arab Republic and Iraq, is the country's principal source of irrigation water and, while its water development projects have been designed to irrigate about 650 000 ha in the Euphrates River basin, the area currently irrigated is much less because of salinity, waterlogging and reduced river flows.

441. At present, efforts are under way to reclaim land damaged from waterlogging and salinity during the 1960s. At the same time, water resource development projects in Turkey during the last decade have reduced the Euphrates' mean flow by about one-third.

442. While surface irrigation has been expanding slowly over the past five years, pumping groundwater to irrigate has been increasing rapidly. Wells account for 80 percent of the newly irrigated land since 1987. More than 60 percent of the increase in total irrigated area from groundwater has occurred in the northeast of the country.

443. This rapid expansion in the use of groundwater is a serious concern for the Syrian Government. While the increased irrigated area is making important short-term contributions to economic growth, the current rate of uncontrolled groundwater exploitation is likely to have long-term social, economic and environmental consequences. Significant drops in groundwater levels have already been documented in the Damascus, Aassi and Aleppo basins, among others. This diminishing supply, coupled with growing competition from industrial and domestic water users, is adding urgency to government concern.

444. Irrigation efficiency is another concern: most studies and observers agree that farm-level irrigation efficiency ranges from 35 to 50 percent. The Ministry of Irrigation, Public Works and Water Resources and the Ministry of Agriculture and Agrarian Reform are searching for appropriate methods to improve and enhance irrigation system efficiency and farm-level water management on farms receiving public sector irrigation.

445. At present, agriculture accounts for around 85 percent of the country's water consumption, but competition from other users is increasing. During the 1980s, industrial water demand rose by nearly 900 percent. Current projections suggest that domestic water requirements will be two to three times greater by 2010. And, as the population and industrial capacity continue to grow, agriculture is likely to face greater water quality problems from waste water and industrial pollution. Agricultural producers in Damascus, Homs and Aleppo have already experienced pollution-related problems.

446. With irrigation, farmers obtain higher yields, more staple production and greater profit. Since 1989, farmers have been required to pay set fees per irrigated hectare each year. This flat rate only partially covers operation, maintenance and delivery costs. However, it does not encourage efficient water use since the fee is the same irrespective of the amount of water used by the farmer. Recent estimates suggest that one irrigation per hectare on government projects costs approximately four times the annual fee; some crops require from five to ten irrigations per season.

447. The only expenses required for irrigating with groundwater are the digging of the well and the pumping gear - a one-time fixed investment cost. Before operating a well, farmers must obtain two licences from the Ministry of Irrigation, Public Works and Water Resources: one to dig the well and the other to withdraw the water. The licences specify the extent of water use and must be renewed every ten years. In practice, a large share of wells, both old and new, are not licensed.

448. These economic incentives are not the only factor contributing to the increase in wells. A second reason is the large number of farmers with smallholdings. Approximately 80 percent of Syrian farmers have holdings of less than 10 ha; the average farm size ranges from 3 ha in high rainfall areas to 45 ha in low rainfall areas. Moreover, these farms are characterized by fragmentation. An average farm consists of four plots, with even 1 ha holdings averaging three separate parcels. Because most farmers want timely, secure access to water, they drill separate wells on each parcel whenever it is practical. Over time, as holdings are divided among heirs, even more wells may be drilled.

449. In addition, the Syrian Arab Republic's agrarian reform law establishes maximum sizes for irrigated holdings: 16 ha for holdings under government irrigation and a range of 15 to 45 ha for privately irrigated farms, depending on the location and type of irrigation method. The law provides a strong incentive for larger farms to subdivide below the maximum limit and then drill wells on each new individual property. Over the past several years, the favourable pricing structure for many agricultural crops has also encouraged large landowners to subdivide among family members.

450. Other economic pressures are also influencing farmers' decisions to dig wells and expand irrigation. For example, as incomes in urban areas increase, consumers are demanding more fruits and vegetables. At the same time, recent changes in trade and exchange rate policies are making Syrian agricultural products more competitive in regional markets. Farmers who initially planned only supplementary irrigation for winter wheat are finding summer vegetables and irrigated fruit production increasingly profitable.

451. Identifying and implementing policies, programmes, projects, and techniques to improve farm-level efficiency and control surface and groundwater exploitation better are two important challenges facing Syrian policy-makers. The growing water scarcity is likely to have important short- and long-term implications for the country's overall social and economic development. Some of the important water-related issues that the Government is currently addressing include: better public sector management of irrigation systems; the introduction of water conservation techniques at the system and at farm levels; the implementation of water reuse techniques and water harvesting systems; and the reduction of losses in water supply networks in towns.

## II. DEVELOPED COUNTRY REGIONS

### ECONOMIES IN TRANSITION IN CENTRAL AND EASTERN EUROPE

452. This section reviews the status of economic and agricultural reform in Central and Eastern Europe and focuses more specifically on the experiences of Bulgaria, Romania and the Russian Federation.

#### Overview

453. The year 1992 saw further contractions in overall output in the transition economies of Central and Eastern Europe. However, there were significant variations in economic performance between countries, largely reflecting differences in the pace and stage of their economic reform process.

454. According to the IMF,<sup>50</sup> real GDP in the Central European countries<sup>51</sup> in 1992 declined by 7.5 percent, following a 13.5 percent fall in 1991. Forecasts point to a further 1.5 percent decline in GDP in 1993 and a resumption of positive growth from 1994, initially at a rate of 2.6 percent. Within this average, individual country positions differ markedly, however. On the one hand, former Czechoslovakia, Hungary and Poland are already showing signs of economic recovery, although the breakup of highly economically integrated Czechoslovakia into two independent states, the Czech and the Slovak Republics, has created additional uncertainty. On the other hand, economic activity in Bulgaria and Romania continued to decline significantly in 1992, although at a slower rate than the previous year. The civil strife in former Yugoslavia, SFR, a source of immeasurable human suffering, is at the same time seriously disrupting the local economy and negatively affecting the economies of neighbouring countries, especially Albania, Bulgaria and Romania. The first of these is particularly vulnerable to destabilizing influences since it initiated only recently economic reforms.

455. The recent economic performance and short- to medium-term prospects in the newly independent states of the former USSR appear generally bleaker than those of the Central European countries. According to the IMF, real GDP in the area (including the three newly independent Baltic republics) contracted by no less than 18.5 percent in 1992, compared with a decline of 9 percent in 1991 and 2.2 percent in 1990. GDP is expected to continue declining, although at a decelerating rate: 11.8 percent in 1993 and 3.5 percent in 1994.

456. In most Central and Eastern European countries, the agricultural sector continues to be affected by the negative short-term impacts of reform and the uncertainty surrounding privatization and future property rights. However, a severe drought is probably the most

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<sup>50</sup> IMF, *World Economic Outlook*, April 1993.

<sup>51</sup> Albania, Bulgaria, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic, former Yugoslavia, SFR.

important single factor behind the 12 percent drop in Central Europe's agricultural production in 1992, which followed a decline of 4 percent in 1991 and of 3 percent in 1990. In the former USSR, on the other hand, the decline in agricultural production in 1992 was limited to 4 percent, compared with 13 percent in 1991. A partial recovery in cereal production, following the 28 percent drop recorded in 1991, almost offset further declines in other crops and in livestock products.

**Table 5. Indices of agricultural production in Central Europe and the former USSR**

	1985-89 Average	1989	1990	1991	1992
<u>Central Europe</u>					
Crops	110.3	112.5	106.1	103.8	83.9
Livestock	103.7	102.5	104.0	95.6	90.0
Agriculture	108.9	110.0	106.5	102.6	90.6
<u>Former USSR</u>					
Crops	111.1	114.5	116.7	94.2	104.8
Livestock	118.6	125.6	125.8	116.9	101.7
Agriculture	116.4	120.6	120.2	105.1	100.6

Note: 1979-81=100

Source: FAO.

457. As reported in *The State of Food and Agriculture 1992*, the major policy areas affecting agriculture in Central Europe and the former USSR include price and market liberalization, land reform, privatization and demonopolization and trade liberalization.

458. The liberalization of prices is still the policy area in which most progress has been made. Virtually all countries have taken significant steps. Following measures already undertaken in this area by the Central European countries, a price liberalization programme was carried out in 1992 in Belarus, the Russian Federation and Ukraine, soon followed by Kazakhstan and then the other newly independent states of the former USSR. In spite of these efforts, complete liberalization has not been achieved and, in many cases, price controls are still in place on a number of products, including some agricultural and food products. In most countries, the effect of price liberalization, together with elimination or reduction of

subsidies on farm inputs and products, has resulted in a deterioration in agricultural terms of trade, as input prices have risen at a quicker pace than farmgate prices. This tendency reportedly continued in 1992. The significant shifts in relative prices following price liberalization as well as the increased cost of and reduced access to credit following credit market reform puts pressure on the farm sector to increase productivity through better resource use.

459. Progress has been slower in land reform because of the complex legal and administrative procedures involved. Most Central European countries already have the necessary legislation in place for reforming landownership patterns and are in different stages of implementing it. The same applies to the three Baltic republics. In most cases, the implementation phase has proved longer than generally anticipated and the process of restructuring and consolidation of landholdings is likely to be spread out over a number of years. In the other newly independent states of the former USSR, progress is less advanced and policy directions less clear but, in the Russian Federation, a reorganization of state and collective farms was begun in 1992, involving both changes in their legal status and redistribution of land to private farming. By 1 January 1993, there were reportedly about 400 000 private farms in the newly independent states, of which about 180 000 were in the Russian Federation.

460. Likewise in the field of privatization and demonopolization, which has a bearing on the upstream and downstream sectors of agriculture, progress has been uneven. Significant steps have been taken, particularly in former Czechoslovakia, Hungary and Poland, while other countries are progressing at varying speeds and by different methods. Thus, in the Russian Federation a voucher privatization scheme similar to the one applied in former Czechoslovakia was introduced in 1992 and the distribution of vouchers to citizens was begun, although subsequent progress has been slow. No less important than the privatization of existing state enterprises, however, is the creation of new private enterprises at all levels, a spontaneous process that has gained ground in all the transitional economies. Available statistics point to steady increases in the contribution of the private sector to GDP.

461. One serious problem emerging from the disruption of traditional trading patterns is the risk of creating new barriers to intraregional trade. The experience that followed the break down of the Council for Mutual Economic Assistance (CMEA) risks repeating itself with the breakup of former Czechoslovakia into two independent republics and with the disintegration of economic relations between republics of the former USSR. Indeed, the future role of the Commonwealth of Independent States (CIS) appears uncertain and, in addition, the three Baltic republics and Georgia have opted not to join the CIS. There are signs, however, that at least some of the transition countries are attempting to counter these negative developments and strengthen regional trade relations. Thus, in 1992 the Czech Republic, Hungary, Poland and the Slovak Republic decided to constitute the Central European Free Trade Area, with effect from March 1993. This constitutes a politically significant development, although the agreement is not as far-reaching as originally hoped. Furthermore, trade restrictions for agricultural products are set to be removed much more slowly than for industrial goods.

## Bulgaria

### Overview of Bulgarian agriculture

462. Agriculture is a moderately important sector of the Bulgarian economy. It accounts for about 12 percent of GDP and employs 17 percent of the labour force. Agricultural and food products account for about 20 percent of exports and 7 percent of imports. Major crop products are grains (mainly wheat and corn), sunflowerseed, tobacco, fruit (apples, grapes, peaches, plums, cherries and others) and vegetables (tomatoes, peppers, onions, potatoes, cucumbers). Major livestock products are pork, dairy products - mainly cheese and yoghurt - and wool.

463. Throughout its history, Bulgaria has been a net exporter of agricultural products. In a typical year, it exports wheat, tobacco, sunflower oil, fresh and processed fruits and vegetables, wine and livestock products. It imports oilseed meal, cotton, and, in some years, maize. However, during the communist period, about 80 percent of Bulgaria's exports went to the former CMEA countries, with some 70 percent going to the former USSR. These export markets have all but collapsed with the dissolution of CMEA trading arrangements and the breakup of the USSR.

464. Under communism almost 99 percent of Bulgaria's agricultural land was organized into state and cooperative farms. In theory state farms were state-owned enterprises and the workers had the status of employees working for fixed wages, while workers on cooperative farms were members and shared in the profits of the farm. However, the distinction became blurred as the farm structure was reorganized several times over the 40 years of communist rule. During the 1970s the state and cooperative farms were consolidated into huge agro-industrial complexes averaging 24 000 ha in size. Beginning in 1986, these were broken up into smaller units and, during the final years of the communist regime, the agro-industrial complexes were dissolved and the original cooperative farms were reconstituted. The other type of farm organization is the state-owned hog and poultry complexes.

465. The private sector consisted of plots, usually 0.5 ha in size, which were allotted to cooperative farm members for personal cultivation. Such plots accounted for about 16 percent of arable land. However, the private sector accounted for about 25 percent of total gross output and as much as 40 percent of total meat, fruit and vegetable production.

466. Both suppliers of inputs and purchasers of output were state-owned monopolies, a typical feature of all communist regimes.

### Policy reform in Bulgaria

467. *Retail prices.* The Government removed most retail price controls in February 1991 but began a system of "monitoring" the prices of 14 basic food items. These included flour, bread, four types of meat, certain sausages and other processed meats, vegetable oil and sugar.

468. In August 1991, the system of price monitoring was transformed into retail price controls. Projected prices for the 14 food items were set to cover costs and a "normative" profit margin was established at 12 percent for processors and 3 percent for retailers. In April 1992, the list of monitored foods was reduced to six: bread, flour, milk, yoghurt, white cheese and fresh meat. The projected prices were raised at the same time.

469. *Producer prices.* Most producer prices were also liberalized in February 1991. However, prices of wheat, pork, poultry meat, calves and milk have continued to be under some form of control. In 1991, with a view to monitoring prices, projected prices for these commodities were established, covering costs plus a 20 percent normative profit. In April 1992, this was replaced with a system of minimum prices for the same products. In theory, both state-owned and private purchasing companies were required to pay these minimum prices to producers. However, these prices were not so rigorously enforced in the case of private firms.

470. Even the minimum prices established in 1992 are well below world levels and the fact that average 1992 procurement prices were very close to the minimum prices suggests that these are in fact being treated as price ceilings. Furthermore, average 1992 prices of uncontrolled commodities such as maize and barley are also well below world prices. Some of the reasons for these low prices are:

- The monopsonistic structure of the state-owned purchasing and processing enterprises. These are technologically inefficient with high costs but, in the absence of competition, they have no incentive to cut costs. Rather, they maintain their profit margins by squeezing producers.
- The system of export quotas and bans which are periodically in effect tend to hold down producer prices.
- Because of the need to repay credit and the lack of farmer-owned storage, producers are under pressure to sell their crop immediately after harvest when prices are at their seasonal low.

471. *Trade policy.* Trade liberalization began in 1990, when the Government removed the monopoly status of foreign trade organizations, allowing private companies to engage in trade. Major reform took place in 1991. In February a unified, floating exchange rate mechanism was established, based on interbank bids for hard currency. Under this new system, firms can retain all hard currency earnings which may be used for future imports. In early 1991 all quantitative restrictions on imports were removed and import licensing restrictions eased. The large number of export bans introduced in 1990 was reduced to 21 items in March 1991 (mostly affecting basic food items to prevent domestic shortages).

472. Despite the overall movement away from non-tariff barriers, the Government has introduced a series of temporary licensing and quantitative restrictions on certain commodities, motivated by concerns about possible food shortages. For most of 1992 exports of grain, sunflowerseed oil and other strategic commodities were subject to quotas.



In August, these quotas were abolished and replaced with a system of export taxes set to capture the difference between domestic and international prices. Initially, these taxes were 8 percent for barley, 12 percent for wheat and corn and 15 percent for wheat flour. In January 1993, these were raised to 15, 20 and 25 percent, respectively.

473. The result of the lifting of the export quotas was a dramatic surge in exports. At least 600 000 tonnes of grain, including 313 000 tonnes of wheat and flour, were exported in the last quarter of 1992, as traders took advantage of the gap between domestic and world prices. These exports led to fears of possible shortages. While there appear to be adequate supplies of bread grains, there are signs of very tight supplies of feedgrains. In response to such fears, the Government imposed a ban on grain exports in March 1993, which was to remain in effect until the end of September 1993.

474. *Land restitution.* The Law for Agricultural Land Ownership and Use was passed in February 1991 and a series of amendments were enacted in April 1992. The main provision of the law is to return land to the pre-1946 owners or their heirs. According to the amended law, reinstatement will take place within the boundaries of the original piece of land wherever possible; in other cases, former owners will receive plots equivalent in size and quality. The amended law allows land sales (the original law prohibited land sales for three years following restitution) but imposes a maximum of 30 ha on land acquired either through restitution or purchase. There are no restrictions on leasing, however.

475. The process of land restitution is proceeding rather slowly, as the municipal land commissions who are in charge of the restitution are facing shortages of technically qualified personnel. As of April 1993, 22 percent of applicants had received temporary certificates of ownership, covering about 15 percent of agricultural land. In spite of the difficulties, the Government hopes to be able to reconstitute 50 percent of the land within 1993 and to finish the process by the end of 1994.

476. The amended land law also calls for the liquidation of cooperatives. Municipal authorities have appointed a liquidation council for each cooperative, responsible for valuation and physical distribution of non-land assets to former owners and members and for the management of the cooperative until its liquidation. For the valuation it must rely on the services of individuals or companies authorized by the Privatization Agency or the Ministry of Agriculture. Once members receive their share of cooperative assets, they are free to pool those assets to form new cooperatives.

477. *Privatization and demonopolization.* The process of demonopolization began in 1990 and accelerated in May 1991, when the Law for the Protection of Competition was passed. In November 1990, most of the state trusts responsible for purchasing and processing agricultural products were split up into a number of independent enterprises which could compete with one another. The actual effect of this action, at least for agriculture, was to set up regional, rather than central, monopolies. Although all legal restrictions on the formation of new private firms have been removed, few private firms have in fact emerged to compete with the state enterprises to date. Thus, the market power they hold in the upstream and downstream agricultural sectors remains at this point.

478. The May 1991 law extended the monopoly breakup across most sectors and provided definitions for monopolies. It provides for price controls on monopolies and bans acquisitions or mergers resulting in a monopoly. The price controls are effected through regulations defining "normative profit margins" for enterprises identified as monopolies.

479. The state-owned enterprises are to be transformed into commercial companies, after which shares are to be sold through auctions or tenders. The privatization process as such is, however, only in its initial phase. Under the Ministry of Agriculture, 461 agro-industrial state enterprises are destined for privatization. By June 1993, only a handful of auctions or tenders for these companies had taken place.

480. *Credit markets.* A major constraint facing both private and cooperative producers is the difficulty of obtaining credit and the high real cost of credit to farmers in view of the unfavourable relative price movements they have been faced with. While below the inflation rate, the current nominal interest rate is still prohibitive for most producers, whose net returns are increasing at a much slower rate than inflation. Banks are also reluctant to lend in the current climate of uncertainty about future landownership.

481. The Government has attempted to alleviate the situation through several programmes, but without much success. In the autumn of 1992, it offered to guarantee credit to finance planting costs, but no interest subsidy was offered and producers were required to repay the loans immediately after harvest, which forced them to market their crop at a time when prices were at their seasonal low. In May 1993, another bill was passed authorizing low-interest credit to help finance the costs of spring planting. Banks that are still under more than 50 percent state ownership are obliged to offer this low-interest credit; the programme is voluntary for private banks. Even though the interest subsidy is financed by the Government, banks - including the state-owned banks - are reluctant to participate because the credit is not guaranteed.

### **Impact of agricultural reform**

482. The immediate effect of reform has been to plunge Bulgaria into a deep recession. GDP fell 17 percent in 1991 and another 10 percent in 1992. Further, a big external debt, estimated to be \$13.5 billion, has been left over from the pre-reform regime. In addition, Bulgaria was hit particularly hard by the collapse of its important trade with the former USSR as well as by the trade embargoes imposed on Iraq and later Serbia and Montenegro. Consumer prices rose by 334 percent in 1991, mainly reflecting the February price liberalization and administrative increases in energy prices. Inflation abated in 1992 but remained extremely high at 110 percent. Unemployment in 1992 was estimated to be 15 percent as compared with 11.7 percent in 1991 and 1.6 percent in 1990.

483. *Impact on agriculture.* Since 1990, there have been significant supply-side adjustments in the crop and livestock sector. Bulgarian agriculture has suffered the same deterioration in terms of trade as the other Central European countries: input prices rose by between four and eight times in 1991, while output prices merely doubled. This has been compounded by the uncertainty surrounding land restitution and the liquidation of the

cooperatives. The other main factor affecting agriculture is the collapse of the former Soviet market.

484. The most dramatic adjustments have been in the livestock sector. Between 1989 and 1992, cattle inventories declined by 38 percent, hogs also by 38 percent and poultry by 51 percent. Livestock production has become extremely unprofitable, as feed costs have risen while government policies have combined with reduced consumer demand to hold down producer prices. The problems have been greatest in the state-owned hog and poultry complexes, which continue to depend on very expensive compound feed. Private livestock producers have been quicker to adjust their feeding practices to the new economic reality, feeding from their own grain production.

485. The livestock situation has also been deeply affected by the liquidation of the cooperatives. Cattle have been affected by this process more than other animals because the majority of cattle were on cooperatives rather than state livestock complexes. The first cooperative assets to be disposed of tend to be the animals. As a result, a large number of private individuals have found themselves the owners of two or three cows. Many of the new owners have not been able to provide proper housing or adequate feed. At the same time, large-scale livestock facilities on the cooperatives lie abandoned. The result has been a severe liquidation of herds.

486. There has been less of a visible adjustment in the crop sector. Grain yields have fallen as a result of a decline in input use, the use of low-quality seeds, drought and delays in planting. Wheat area, after falling in 1992/93, should be back to previous levels in 1993/94, despite continued low prices.

487. Maize area, after an increase in 1992/93 is expected to decline significantly this spring, mainly as a result of the fact that sunflowerseed has proved to be more profitable. Sunflowerseed prices are higher and sunflowers are also easier to cultivate. Bulgaria is subject to frequent droughts, causing a substantial variation in maize yields. Much of the maize traditionally grown in Bulgaria is in irrigated areas. As water and irrigation services have grown significantly more expensive, producers have become reluctant to plant maize.

488. Fruit and vegetable production has suffered greater shocks from the transition. Over half of Bulgaria's fruit and vegetable output went to the processing industry, and 80 percent of Bulgaria's processed production was exported, mostly to the former USSR. With the loss of the Soviet market, processing plants are working at one-tenth of their former capacity, leading to a virtual collapse of fruit and vegetable marketing. The most evident result of this situation is a 36 percent drop in vegetable production between 1989 and 1992, including a 53 percent drop in tomato output.

489. The negative impact on fruit production has so far been less evident but a very negative trend is expected to emerge in 1993 and 1994. Much of the land occupied by the orchards is in the southern part of Bulgaria where restitution has proceeded quickest. As this land is restituted, the new owners do not have the funds to apply optimal levels of pesticides or irrigation.

### Prospects and policy issues

490. It will probably be a long time before the shape of Bulgaria's future farm structure becomes clear. A whole set of institutions is needed to support the new private farmers. In the meantime, the Government is under pressure from the short-term negative effects of reform to slow down the pace of reform and implement more interventionist policies. Bulgarian agriculture has the potential to become a significant source of hard currency export earnings but major obstacles remain.

491. Particularly pressing are the interrelated issues of land restitution and liquidation of the cooperatives. There is fear that the thrust of the current law will take Bulgaria back to its pre-Second World War farm structure, dominated by tiny and fragmented farms. The average size of new plots at the national level is about 0.5 to 0.7 ha. In the immediate future, it is expected that the majority of landowners will want to form new and smaller voluntary production cooperatives which will allow the pooling of fragmented plots. In the long term, the problem of fragmentation should disappear with the development of land markets. However, efficient land markets are hindered by the lack of institutions needed to provide financing, brokerage services, surveying and recording of transactions and the lack of an information system. Land sales are also slow because of the current low profitability of agriculture.

492. The liquidation of cooperatives is also creating great uncertainty. There have been technical difficulties connected with the valuation of assets and legal disputes about the allocation of assets to former owners and cooperative members. Liquidation councils have been accused of incompetence and negligence, resulting in poor preparations for sowing and planting delays.

493. In the past, the cooperatives were responsible for many essential services to agriculture, such as maintaining the irrigation systems and ensuring phytosanitary controls on marketed produce. In addition, they were the primary marketing channel for private sector production. As the cooperatives are liquidated, no alternative channels are being developed to provide these services. There is also an insufficient system of extension services to help private producers make their production decisions, seek alternative marketing options or form new cooperatives which might manage the irrigation system or provide veterinary or other services.

494. Bulgaria has the potential to become a surplus producer of wheat and livestock products. However, world market conditions could make it difficult for Bulgaria to expand its exports. Even in 1992, the former USSR was still the largest purchaser of Bulgarian grain (purchased under barter arrangements for oil and natural gas). Bulgaria may have to continue to rely on this market as the main customer for its wheat and livestock products, and these exports will depend crucially on developments in the republics. If incomes begin to rise, this market could expand. On the other hand, with successful economic reform, the Russian Federation, Ukraine and Kazakhstan could emerge as serious competitors to Bulgaria in the world wheat market.

495. Fruit and vegetables, the other major source of export earnings, has been battered by the collapse of the Soviet market. Exports of field tomatoes, unpeeled canned tomatoes and apples have fallen to a fraction of their previous level. At the same time, exports of early tomatoes, greenhouse tomatoes and green peppers have remained strong, with exports going mainly to Germany and Austria as well as Poland, former Czechoslovakia and former Yugoslavia, SFR. Markets could be developed for other greenhouse vegetables. However, this potential is gravely threatened by the current difficulties of the sector. The greenhouses are slated for privatization and are suffering the same financial difficulties faced by state-owned firms. It is entirely conceivable that some of the greenhouses could end up abandoned or destroyed.

496. The processing industry is in a particularly depressed state. Plants are technologically outdated, they are often working at a fraction of their capacity and they need a large infusion of capital to finance the renovation needed to meet the quality standards of western markets.

## Romania

### Overview of the agricultural sector

497. Agriculture accounted for 19 percent of Romania's GDP in 1991 and employed 29 percent of the workforce. By far the most important crops grown in Romania are cereals, with wheat and maize covering about one-third of the country's arable land. During the period 1986-90 wheat production averaged 7.3 million tonnes, while maize production averaged 9.8 million tonnes. Other important crops are oilseeds: sunflowerseed production averaged 700 000 tonnes during 1986-90 while soybean production was typically around 300 000 tonnes per year. The country's most important livestock product is pork.

498. Romania was for some time a significant net agricultural exporter, exporting significant amounts of wheat and, in some years, maize. Other major exports have been livestock products, sunflower oil, fruits and vegetables. Throughout most of the communist period, Romania imported large amounts of soybeans and, in some years, maize. However, during the final years of communist rule, the Romanian Government's drive to eliminate the country's foreign debt led to greatly reduced imports of feedstuffs and the vigorous promotion of agricultural exports. The result was severe domestic shortages of most basic foods.

499. During the communist period, Romania's farm structure was dominated by state and cooperative farms. State farms, averaging 5 000 ha, covered 20 percent of agricultural land and 16 percent of arable land. These were state-owned enterprises in which the workers had the status of employees. Cooperative farms averaged 2 000 ha. Workers on cooperatives had the status of "members" rather than employees and their income was theoretically linked to the cooperative's performance. In practice, there was little difference in the operation and management of these two types of farm. However, privatization of the two types of organization is proceeding in different ways.

500. There was a significant private sector during the communist period, however. About 9 percent of the agricultural land continued to be privately owned, although this land was mainly in mountainous regions that were unsuitable for large-scale collectivized agriculture. Another 8 percent of the land was in 0.5 ha plots allotted to cooperative farm members for their personal use. The private sector contributed close to 40 percent of the meat, fruit and vegetable output.

### Policy reform

501. Compared with other transition countries in Central Europe, the Romanian reform process has been characterized by a high degree of gradualism and caution in an attempt to protect the population and limit the recessionary impact of the structural reforms.

502. *Retail prices.* A first round of liberalization took place in November 1990, when price controls were removed for all but a list of 22 essential items, whose prices were fixed by the Government and were subject to subsidies. Thus, staple foods, together with energy and communications, remained under a price control system. In a series of steps during 1991 and 1992, administrative price ceilings were raised, food subsidies paid to processors to cover losses incurred through retail price ceilings were cut and the number of products subject to price ceilings was reduced. From September 1992, formal price ceilings persisted only for bread, butter, milk and milk powder.

503. On 1 May 1993, the remaining formal retail price ceilings were lifted, leading to a more than fourfold increase in bread prices. Yet food subsidies remain in place for beef, pork, poultry and milk. These subsidies are paid to state-owned processors who respect the government-established minimum farmgate prices.

504. *Producer prices.* Prices in peasant markets were freed soon after the 1989 revolution, but the Government has set minimum prices for basic commodities to be paid by all state-owned purchasing enterprises. These prices have been raised a number of times but, in general, have not risen as fast as the rate of inflation. From 1 May 1993, minimum prices remained in force for wheat, maize, pork, beef, poultry and milk. The continued *de facto* monopoly power of the state purchasing enterprises tends to keep prices close to the minimum levels. Privatization has been slow in the downstream sector and producers still have very few alternatives to selling to state purchasing agencies. The low profit margins of the state-owned companies and their preferential access to state subsidies allows them to advance inputs and financing to farmers in exchange for forward purchasing contracts; however, this has resulted in *de facto* barriers to the entry of new private agents in agricultural supply and marketing.

505. *Trade policies.* The Government's first act following the revolution was to ban all agricultural and food exports, reversing previous policies of maximizing exports regardless of the effects on domestic food supplies. At the same time, imports of crucial inputs were authorized. These imports were initially possible because of the hard currency reserves that had been built up during the previous year.

506. In 1991 most imports and exports were liberalized, although export bans and quotas continued to be applied for many agricultural products. The Leu was devalued and made partially convertible, hard currency auctions were authorized and the state monopoly on foreign trade was abolished. Beginning in January 1992, exporters were allowed to retain their hard currency earnings.

507. From 31 May 1993, export bans on agricultural products were lifted, except for wheat and butter. Agricultural imports are subject to rather high tariffs, although these are frequently waived for "emergency imports" in response to perceived shortages.

508. *Non-agricultural privatization.* Small-scale privatization began in February 1990 when a decree was passed that allowed the formation of private businesses employing up to 20 people. The Commercial Societies Law, passed in November 1990, removed most restrictions on the establishment of new businesses. Also from this date, the leasing of state-owned assets has been pursued. By the end of 1992, outside the farming sector, there were over 200 000 private businesses in Romania (including both new private firms and privately managed state-owned units) employing some 1.4 million people.

509. Large-scale privatization began with an August 1990 law which called for the reorganization of all state enterprises into either commercial companies, in which the Government continued to hold all the shares but which are destined for privatization, or so-called *regies autonomes*, which were to remain state property. Theoretically, the *regies autonomes* were to be located in perceived strategic industries (defence, energy, mining, public utilities). A law passed in August 1991 established the target of privatizing the state-owned commercial companies within seven years. For this purpose, the law created five private ownership funds, holding some 30 percent of the shares of the commercial companies, and one state ownership fund, holding the remaining 70 percent. The state ownership fund will develop and implement annual privatization programmes leading to complete privatization over seven years. The five private ownership funds are joint stock companies in which Romanian citizens hold share certificates. The funds are supposed to develop methods whereby shareholders can exchange their certificates for actual shares in the companies themselves.

510. The process of privatization itself is only in its initial phase. In agriculture, the large-scale privatization programme will apply to both state farms and companies in the upstream and downstream sectors, affecting a total of 2 200 commercial companies. For 1993, 500 of these have been proposed for privatization.

511. *Land restitution.* The redistribution of land began spontaneously soon after the revolution, as cooperatives disbanded and members divided their assets among themselves. Formal land legislation was passed in February 1991, according to which cooperative members who contributed land, as well as members who did not, are entitled to claim up to 10 ha, a quota constrained by the availability of land. In areas with excess land, up to 10 ha may be given to landless families from other localities who would then be obligated to take

up residence and cultivate the land. Most citizens are free to buy and sell land, but no one may own more than 100 ha. There is a ten-year ban on land sales by new owners who did not own land in the past. Foreign citizens may inherit land but must sell it within one year.

512. Former owners whose land is now in state farms may not reobtain that land. Instead, the 176 000 owners whose land was expropriated by state farms have become shareholders in the state farms.

513. Romania's land restitution has proceeded more quickly than in any other Central or Eastern European country. By June 1993, 90 percent of claimants had received land. Privately owned land increased from 1.4 million ha in 1989 to 10.3 million ha in 1991 and now accounts for over 70 percent of Romania's agricultural land (80 percent of arable land). However, the process has caused a return to the pre-Second World War farm structure which was dominated by small, fragmented holdings. The average size of new private holdings is about 2 ha, often consisting of two or more non-contiguous plots, also a reflection of the pre-war farm structure. The return to this fragmented farm structure has had a very negative short-term impact on Romania's agricultural performance.

514. In the longer term, the consolidation of these holdings could be accomplished through a land market. The sale or transfer of land requires the seller to have the final title to his land, and the process of titling has been very slow. Of the approximately five million new landowners, by mid-1993 only 300 000 had received final titles. The Government expects that about 700 000 more will receive titles within 1993 and that, by 1995, 80 percent of new owners will have final titles to their land. Would-be purchasers of land also find it very difficult to obtain financing. Mortgages are offered at high interest rates with a five-year repayment period.

515. Another serious problem faced by new landowners is the lack of suitable machinery. Most of the country's tractors are still owned by the state machinery stations known as "Agromecs". The 611 Agromecs own 70 000 tractors and 27 000 combines, while there are only 36 000 tractors in the private sector. The Government has introduced a soft loan programme, offering low-interest credit to producers who want to buy tractors from the Agromecs. However, the fact remains that many of the current tractors are too large to be used on small private farms.

516. *The formation of new cooperatives.* To counter the negative effects of land fragmentation, the Government has actively encouraged new private farmers to join associations. There are two types of association: loosely organized groups, ranging from small "family associations" (typically with three, four, or five families) to somewhat larger but still informal groupings and more formally structured, legally registered associations. The associations allow the pooling of adjacent pieces of land for joint cultivation. In several cases, a farmer with several non-contiguous plots may belong to two or more such associations.



517. *Agricultural credit.* The Government has undertaken several initiatives to help farmers obtain credit, which continues to present difficulties for most farmers. Market interest rates of 70 percent or more are prohibitive for most producers, given the low rate of increase in agricultural prices. Most agricultural credit is provided by Agrobank. Before the revolution, Agrobank had just 10 000 clients; now it has 150 000. It has also become increasingly independent of the National Bank of Romania, on which it now depends for only 27 percent of its resources. But 80 percent of Agrobank's loans are short term and 60 percent are to Romcereal, the state grain company. Agrobank also administers a soft loan programme on behalf of the National Bank of Romania. These loans carry an interest rate of 15 percent and can be used by producers to buy inputs. However, demand for these loans greatly exceeds the supply: 23 billion Lei were made available for this programme while applications have been submitted for 250 billion Lei.

### Impact of economic reform

518. Romania has seen a decline in most economic indicators no less severe than that of most other Central European countries. GDP declined by 14 percent in 1991 and a further 15 percent in 1992. The inflation rate accelerated from 161 percent in 1991 to 210 percent in 1992. Unemployment rose from 2.7 percent in 1991 to 6 percent in 1992 and continues to be on the rise.

519. *Impact on agriculture.* Agricultural output declined by 14 percent in 1992 as a result of confusion regarding land distribution, lower input use and the severe drought in the summer of 1992. Declines were registered in most crops and livestock products. The cumulative decline in agricultural production from 1989 to 1992 amounts to 25 percent.

520. Total grain production in 1992 was down by 38 percent. With wheat area declining from 2.1 million to 1.5 million ha, production declined by 42 percent. Wheat was less affected by the summer drought - yields were down only slightly from 1991 - than by disruptions caused by land redistribution. Maize output, severely affected by the drought, declined by 35 percent. Planted area increased by almost one-third, as the new private producers sought to produce the feed necessary for their animals, but yields declined by 50 percent.

521. Oilseed production has undergone major structural shifts. Sunflower area increased by 56 percent between 1990 and 1992, while soybean area declined by 13 percent in the same period. As in Bulgaria, private producers have found sunflowers easy to cultivate and they are relatively drought-resistant. The Communist Government had strived for increased soybean output in order to come closer to self-sufficiency in feed production, but yields remained low. Once freed from government directives, producers have clearly lost interest in soybean.

522. The initial negative effects of land redistribution may now have passed. Wheat area for 1993/94 is estimated to be 2.3 million ha, which is back to historical levels. Maize area is expected to be very close to last year's and sunflower area slightly higher than last year.

523. Romania has suffered dislocations in its livestock sector similar to those of Bulgaria. Cattle herds, being more difficult to keep on small private farms, have declined the most - 31 percent between 1990 and 1992. Hog numbers declined 16 percent in the same period because of the country's inability to import sufficient maize or soybean meal. Milk production declined by 14 percent from 1990 to 1992.

### **Prospects and policy issues**

524. Romania may be suffering some of the worst disruptions compared with any country in Central Europe, with the exception of Albania. The fact that Romania, once a major exporter, had to import more than 1 million tonnes of cereals in 1990, 1991 and 1992 is an indicator of the magnitude of the problems it is facing. At the same time, inflation continues to be high, large-scale privatization is proceeding slowly and the Government seems to be more hesitant than others in the region to implement reform fully. Still, such a cautious approach has not spared Romania the disruptions and severe, immediate recessionary impact also experienced by the region's other reforming countries.

525. Romania has the potential to become a significant exporter of several agricultural products but the realization of that potential will depend on the Government carrying its reform programme through completely.

526. Romania clearly illustrates the problems involved in rapid privatization without the simultaneous creation of the institutional infrastructure needed to support the new private sector. One of the most pressing needs appears to be the speeding up of the process of granting final titles to restituted land. Without permanent title, landowners are unable to sell their land and contribute to the consolidation of landholding.

527. Another important need would be the development of a greater diversity of marketing and input supply alternatives. Most purchasing and input supply is still in the hands of costly and inefficient state-owned monopolies which maintain their profit margins by holding down prices paid to producers. In this context, an important contribution could be the development of a more extensive network of cooperatives. The associations currently being encouraged are production cooperatives which pool adjacent pieces of land to achieve more efficient cultivation. But these associations are still at a serious disadvantage when dealing with input suppliers or procurement organizations. There appears to be a need for marketing and input cooperatives in addition to the current production cooperatives.

528. The development of better extension and information systems would also play a positive role in improving the prospects of Romanian agriculture. Present efforts are aimed at improving the structure of information transmission as regards channels of distribution, market information and agricultural production forecasts.

529. The development of Romanian agriculture could also be greatly enhanced by the removal of remaining export restrictions, which hold down producer prices and ultimately inhibit supply. If Romania wishes to reduce or turn around its negative trade balance, it will

eventually have to encourage exports. Agriculture is one of the sectors with the greatest potential to generate export earnings in the short term.

## **The Russian Federation**

### **The food supply situation**

530. During the 1980s the growth in agricultural production was double that of population, with the livestock sector showing particular dynamism. Average incomes, however, increased even faster than agricultural production with the result that, although average per caput consumption grew, food demand - especially for animal products - continued to exceed supply. This prompted leaders of the former USSR to put food production growth high on their economic policy agenda. However, the inefficiencies of the productive and marketing systems necessitated high and increasing subsidization and rendered evident the need for reform.

531. The urgency of reform became imperative by 1990 when agricultural production began to shrink, accentuating the supply/demand imbalance and rendering even more manifest the shortcomings of the country's marketing and distribution systems. The excess demand situation persisted through 1991 but was reversed in 1992 when consumer prices rapidly increased following partial liberalization, causing a contraction in the demand for foods. In the case of animal products, the reaction of the processing industry was to reduce meat and milk purchases from farms instead of lowering their sales prices. Underlying the increasingly precarious overall food demand/supply balance was a significant reduction in consumption, particularly of livestock products.

532. A parallel phenomenon that may have mitigated the imbalance of the food economy to a certain extent was the slowing in population growth which, from 0.7 percent annually up to the late 1980s, was expected to turn negative by 1992. This reversal was linked to the deterioration of living conditions and fears and uncertainties arising from the recent economic and political transformations.

533. As regards food consumption patterns, official estimates for the first quarter of 1993 indicate declines in per caput consumption below the level of the period January-March 1989 ("the most favourable among recent years") of 21 percent for meat products, 34 percent for milk products, 7 percent for eggs, 5 percent for fish products, 13 percent for sugar and confectionary and 32 percent for fruit. On the other hand, consumption increased by 22 percent for grain products, 4 percent for potatoes and 8 percent for other vegetables during the same period.

534. Consumption of animal proteins, which had already fallen slightly in 1990 from the levels of 1989, seems to have declined further by about 20 percent during 1991-92. These were proteins partially substituted by starchy foods. Overall, per caput calorie intake fell to about the level of the 1970s, although other estimates point to even lower figures.

535. Although average food intakes still appear relatively high, considerable pockets of malnutrition emerged among less-favoured regions and population groups. Food access problems were accentuated by the reduced control on farm marketing operations and barter deals as well as by the regionally and locally different systems of fixing and/or subsidizing consumer prices for some foods (the latter measure having been legalized by a presidential decree of 27 March 1993). Price differentials among cities remained wide, despite some reduction over time which was probably caused by the response of economic agents to the opportunities for arbitrage that such a situation offered. By the end of March 1993 the discrepancies between the highest and lowest levels of consumer prices among cities were 1:70 for bread, 1:34 for milk, 1:16 for beef and 1:10 for vegetable oil, potatoes and other vegetables. Even those groups of the population that were less affected by the unequal distribution of food supply still experienced a deeply felt qualitative deterioration in their diets.

536. The overall situation may nevertheless be less gloomy than suggested by the official statistics, to the extent that these do not comprise the unknown quantities of food that is privately produced and sold outside the official sphere in more or less legal ways.

#### **Agricultural production in 1992/93**

537. Agricultural production was estimated to have fallen by about 6 percent in 1992, with meat, milk and egg output decreasing by as much as 12 to 15 percent.

538. Among individual crops, only cereals, pulses and potatoes recovered substantially from the setback of the previous year. The area under grain expanded slightly in 1992 to 62.4 million ha and still further in 1993. Of significant bearing on animal feed supplies was the decline in pasture, from 28.8 million ha in 1986 to 23.3 million ha in 1992.

539. One of the factors limiting the growth of crop yields is the degradation of soils. This process has been going on for more than 100 years but Russian soil scientists point out that it has greatly accelerated during the past ten to 20 years. The explanatory factors include widespread neglect of anti-erosion techniques, insufficient crop rotation, soil compaction through overuse of heavy machinery, an unbalanced use of mineral fertilizer and salinization through excess irrigation and insufficient drainage. The detrimental effects are difficult to quantify but are commonly recognized to weigh heavily on potential yield growth.

540. In 1992 total livestock numbers declined by 5 percent for cows, 6 percent for other cattle, 11 percent for pigs and 9 percent for sheep and goats. The decline on collective and state farms was only partially offset by increases in private farms. Up to 1991 the rate of decrease in the overall herd was smaller than that of meat and milk output, thereby implying slowly rising animal productivity. For 1992, however, the official statistics report diminished productivity.

541. Herd numbers and animal production further declined during the period January-March 1993 and will most likely continue falling for the rest of the year, although perhaps at a slower pace than during 1992 thanks to higher government procurement prices. Shortages and/or high prices of feed remain the major reason for this decline.

542. The 1992/93 agricultural year started with autumn ploughing and sowing being reduced by one-fifth compared with normal rates, but with moderate frost-lifting of grain. Depending on summer and autumn weather, crop production in 1993 could improve slightly over the results of 1992 yet will not compensate for the decline in livestock production. Overall, agricultural production is likely to decrease by 5 percent or more.

### **Agricultural policies**

543. Agrarian reform is generally perceived to be a prerequisite for enhancing growth of agricultural production, balancing demand and supply, raising nutritional standards and improving the performance of downstream activities linked to agriculture.

544. The conceptual and operational implications of reform are loosely defined by such slogans as restructuring, marketization and plurality of socio-economic formations. There are strong divergencies of opinion as to the nature, speed and depth of the process.

545. The institutional instability surrounding agrarian affairs is illustrated by the fact that the Centre of Land and Agro-industrial Reform was created in June 1992 and subsequently abolished in May 1993. Various government agencies and regional authorities are influential in implementing reform laws and decrees in their own ways. Another actor, represented in most provinces and counties, is the Association of Peasant Farms and Cooperatives of Russia (AKKOR).

### **Reorganized and new farms**

546. There is general agreement that, in the foreseeable future, the bulk of primary food products will have to be generated by the collective and state farms, whether in their traditional form or after reorganization. In 1992, their share in gross output was some 60 percent and that in marketed output even larger. However, a new sector of family and private "peasant farms" is coming into existence, although it still accounts for a minor part of the country's agricultural output.

547. Yet, how fast should private farming expand and what should be its relationship with collective and state farms? Should the latter remain as huge as in the past or be broken into smaller but still large (by Western standards) units? The farmers remaining on the reorganized state or collective farms shall be ascribed shares in assets and land, but should such shares be assigned in physical or in value terms? Although a number of laws, decrees and ordinances have been issued on these and other questions, they are still disputed and implemented locally in different ways.

548. In principle, private full ownership is already granted by law, but the selling or buying of privately owned farmland for non-agricultural purposes remains prohibited by law and constitution. In late 1992, full private ownership was finally granted by law only for garden and household plots, and two corresponding constitutional amendments were also approved.

549. Reforming and privatizing the huge public farms while minimizing losses and disruptions is no less important than setting up new individual farms. Disagreements exist as to the speed, depth and form that these parallel processes should take.

550. Up to the end of 1992, out of a total 25 609 collective and state farms, 19 719 were "reregistered". Thirty-five percent of these kept their previous status while 65 percent reorganized in "other forms of ownership". The majority of the latter (8 551) became "societies" with limited liability or "mixed societies", another 2 410 formed "agricultural (production) cooperatives" and "associations of peasant farms". Some split into smaller cooperative units, among which a number evolved into what can be considered wholly independent peasant farms. Overall, the extent to which the reorganized farms can be considered private is a question of definition.

551. During 1992, 134 700 new family and private, small group farms came into existence, bringing the total to 183 700 by the end of the year. As most of them were set up after spring 1992, their contribution to that year's agricultural output was only 2 to 2.5 percent. Up to mid-1993, their number grew to more than 250 000 and they farmed about 10.4 million ha or 5 percent of the Russian Federation's agricultural land. The average area per farm was 43 ha. Family and private farms have begun to organize cooperatives for buying, leasing and servicing machinery as well as for processing, marketing and banking. Forming such cooperatives is often made difficult by the absence of relevant legislation, which leaves them in a semi-legal status. Moreover, the small number of private farms that usually exists in a given locality is not sufficient to support viable cooperation.

552. The sector of household plots and gardens has greatly expanded in recent years in terms of quantity and value of output. Including the rural "personal" plots, this private sector as a whole accounted for 80 percent of the total output of potatoes (produced on 73 percent of their plantations) and 55 percent of the other vegetable output. Some reformers hope that the rural household plot farming will expand, as it is a less costly and more realistic way of establishing genuine family farms.

### **Price parity**

553. Another major economic as well as political bone of contention in 1992/93 was price policy. Advocates of intersectoral equality want agricultural producer prices to rise at a similar pace to those of the industrial inputs. Nevertheless, the prices for such inputs are estimated to represent only 25 to 40 percent of agriculture's production costs. Labour, intrafarm or interfarm inputs, land, management (or organization of farming) account for the

greater part of these costs.<sup>52</sup> In any event, it is unlikely that an alignment of price increases between agricultural output and industrial input would by itself greatly help agriculture or reduce the need for greater efficiency within the sector.

554. During 1991, the state roughly doubled the industrial input prices for agriculture and the practice of applying contractual prices expanded; at the same time, prices received by farmers rose by one-half and more.

555. On the whole, domestic terms of trade developments in 1991 and the first nine months of 1992 did not appear to penalize agriculture unduly. Indeed, industrially produced inputs had previously been supplied at extremely low costs.

556. The issue became worrisome only in late 1992 when prices of industrially produced inputs and services were largely liberalized. During the last three months of that year input prices rose 3.3 times faster than agricultural output. The wholesale prices for industrially produced inputs rose 1.9 times during the first quarter of 1993, with an increase in trucks and tractors of 2.1 times and in mineral fertilizer and feeds of 2.4 times.

557. No less detrimental to farmers than the increases in input prices as such were the delays, frequently extended over several months, in payments for agricultural products as well as in credits and inflation compensations. More recently, these delays were somewhat shortened by all payments being made through the country's central bank. Still, under the above price increases, a one-month delay alone means roughly a 25 percent value decline of the money available for input purchases. However, in most cases industry and services demanded immediate or even advance payment.

558. In early 1993, the Russian Federation Government made an effort to re-establish "price parity" and to compensate at least partly for the effect of payment delays. A decree of 23 January 1993 provided for several forms of financial support for the food economy, including compensations of 30 percent on input cost rises. Following the decree, the Government sharply raised the 1993 procurement prices for all categories of farmers producing grain, oilseeds and sugar beet.

559. Procurement prices for grain which, in August 1992 were fortyfold more than the average prices for 1990, were again more than doubled in February 1993 and raised slightly further in March. The new prices are to be revised every three months in the light of changes in input prices and production costs on the basis of negotiations between the Ministry of Agriculture, the state purchasing organization and the "Agricultural Union". Moreover, half of the price will be paid in advance on conclusion of a sales contract. By April 1993, milk was paid roughly twice, and meat about ten times the price of grain.

560. State purchases now only account for the smaller part of the marketed farm output and their importance varies greatly by region. Even so, they may help maintain minimum price

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<sup>52</sup> Land, long denied as a cost factor, was at last indirectly assigned a price, although a low one, with the introduction of land taxes, rents and limited selling and buying of land in 1991.

levels in the case of excessive declines in market prices. Whether budgetary constraints will allow the state to honour its purchasing commitments fully is a different question.

561. From the late 1980s, the state began reducing its role in food marketing and distribution. Even though 1992 was a relatively good harvest year, state procurement of the main crops was much smaller than during the period 1986-1990. Nevertheless, procurements exceeded planned targets for most major products except grain and potatoes. A decree of 17 December 1992 requires that each region should aim at creating its own grain fund and subsidizing the consumer price of bread.

562. For 1993 planned purchases through the central fund are only 12.6 million tonnes of grain, 2.6 million tonnes of potatoes, slightly more than 1 million tonnes of meat and 6 million tonnes of milk.

563. Since 1991, collective and state farms have been permitted to sell part of their livestock products through their own marketing organizations. Such sales were small in 1991 but, by 1992, amounted to roughly 20 percent of total meat output. Another 30 percent is produced privately with only a small part sold to state agencies, mainly through the collective and state farms. Thus, about half of the meat output is self-consumed or marketed outside the official trade system. The corresponding percentages are smaller for eggs and milk and larger for potatoes and vegetables.

564. By a decree of 12 February 1993, the state president requested that central and regional public food funds should guarantee adequate food supplies to some zones which, because of adverse climatic conditions or population size, are not self-sufficient. Beneficiaries are Moscow and St Petersburg, a number of northern and industrial zones, the army and some other state organizations. Purchases to this end are to be effected on the basis of voluntary contracts, partly through privatized trade organizations on behalf of the state. Purchases abroad and from states of the former USSR are also to contribute to the central fund.

### **Barter operations and foreign trade**

565. The reduced role of central purchases has not yet given way to a functioning market, but a primitive form of market is operating under galloping inflation and with some remnants of the former command economy. In 1992 food processing was still largely a monopoly of state-owned firms. Sugar is a special case: part of the refined sugar output is returned to the beet producers on the basis of contracts while another smaller part is retained by the refineries, thus being consumed and marketed outside the state system. Similar practices are observed for mixed feed.

566. The volume of free grain trade in 1992 is estimated to be around 15 percent of production, with 2 percent going through the commodity exchanges (*birzhy*). Barter trade among farms, non-industrial enterprises and territorial administrations has expanded. An example is the "barter fund" of Vologda province, which exchanges metal, timber and machines for animal feeds and other foods from Kazakhstan and some Russian provinces.



Throughout Russia, many farms barter meat and other farm products in exchange for needed inputs. About 30 percent of industrial farm inputs are estimated to be acquired outside the parastatal AGROSNAB system, and this share is expected to reach 45 to 50 percent in 1993 and subsequent years. Such transactions, even where legal, are only officially recorded in part.

567. Up to autumn 1991, food trade among the republics of the former USSR was only recorded for individual republics and was not published systematically. The first statistical yearbook published by the Russian Federation contained data on main food commodity imports and exports from former Soviet republics without a breakdown by trading partners. Most likely, these data only cover exchanges through state-owned firms and the procurement system using public funds. Apart from grain, the former Russia's agricultural imports from other republics in 1989 consisted mainly of meat and meat products (876 000 tonnes), milk and milk products (4.5 million tonnes), 847 million eggs, 3 million tonnes of vegetables, fruit, grapes and melons and 2.6 million tonnes of sugar. On the other hand, Russia's deliveries of these products to other republics were negligible, except for eggs and potatoes. Since then, the quantities (including those from Georgia and Baltic states) have greatly declined. Even the reduced agreements concluded for 1991 were not fulfilled.

568. The main suppliers of meat and milk were Ukraine, the Baltic states and Belarus. Ukraine also supplied most of the eggs and Belarus most of potatoes. Central Asia, the Ukraine and Moldavia were the main suppliers of vegetables, fruit and melons. The main supplier of grain from within the former USSR to Russia was and is still Kazakhstan.

569. The above refers to the so-called "near abroad" as distinct from "far abroad" trade, the latter referring to trade *vis à vis* countries outside the former USSR, which now include the three Baltic states. For grain, the Russian Federation heavily depends on imports from far abroad, the other most important import items being sugar, meat, vegetable oil and oilseed meal. According to official data, far abroad wheat imports in 1992 increased from 12.4 million tonnes in 1991 to 20.6 million tonnes, but maize imports were more than halved from 11.8 million tonnes to 5 million tonnes. Far abroad imports of meat in 1992 decreased to 380 000 (in 1991 they were 693 000 tonnes) while those of vegetable oil increased fourfold, from 108 000 to 452 000 tonnes, and those of sugar from 3.6 to 4 million tonnes.

570. Barter trade operations are also reported between territorial administrations and partners far abroad, e.g. between St Petersburg and Poland or Hungary; or the Ufa oil and Vorkuta coal *vis à vis* Lithuanian meat.

### Prospects for agriculture

571. It will not be before two or three years, perhaps even more, that the 1986-1990 farm production levels can be expected to be reached again. This applies more to the livestock sector where rebuilding the animal herds will take time. One may even question whether such regaining of earlier output levels should be a primary goal. Rather, the emphasis may be shifted to: (i) better integration of the downstream activities linked to the food sector; and

(ii) adjusting to the changes in consumer demand that may be expected when real incomes recover - although regaining their previous level may be an even lengthier process.

572. Renewed growth in agricultural output will probably be sought by increasing productivity without raising capital and labour costs per unit of output. Cost reduction, even more than physical growth objectives, could become the main contribution of the new individual farms. The collective and state farms and their reorganized successors still have to prove their ability to render this service to the food economy, all the more so since direct and indirect subsidization of agriculture is growing again. To this must be added the cost of higher state purchase prices and the subsidies on livestock products in 1993 as well as central and local consumer subsidies. If agriculture does not reduce its production costs, it will remain a major factor of inflation and thereby, itself, become increasingly a factor of economic distortions.

573. The solution of these problems in the long term will require overcoming the existing conflict of views among policy-makers, from top to local levels. Political and economic uncertainty are the greatest obstacles to the reform and recovery of the Russian Federation's agriculture.

## OECD COUNTRIES

574. The OECD countries' policy actions in agricultural trade and the macro-economy affect the welfare of the developing countries often as much as or more than these countries' own policies. Macro-economic policies of the developed countries combine to influence heavily the global economic growth and inflation rates, interest rates, exchange rate structure and, therefore, the levels of trade and capital flows among countries. Domestic agricultural and agriculture trade policies of the developed countries also strongly influence the well-being of developing countries' agricultural sectors and rural communities. For these reasons, *The State of Food and Agriculture* reports each year on changes in the world economic environment in its World Review, and on changes in the agricultural and trade policies of OECD countries in its Regional Review.

575. This year, *The State of Food and Agriculture 1993* highlights some of the likely impacts of the reform of the Common Agricultural Policy (CAP) of the European Economic Community (EEC), having reported on the CAP reform measures last year. With a new administration and agricultural legislation, which expires in 1995 in the United States, this section raises some of the major issues and likely options that will be considered in adjusting United States agricultural policy to changing realities. Finally, as the world's largest net importer of agricultural products, Japan has announced a sweeping agricultural policy reform package. The section on Japan highlights the changes taking place in the country's agriculture, both as part of and apart from the announced reforms.

## United States

### Budget deficit and impacts on agricultural policy

576. A new administration, committed to increased economic growth and a phasing out of the budget deficit has taken over in Washington, DC. The major preoccupation has been how the new austerity programmes to reduce the budget deficit will affect different societal groups, including agriculture. The changes and shifts in direction of agricultural policy that are likely to occur over the next several years are important to United States agriculture but they are no less important to the global community, since that country's agriculture plays a predominant role in the global agricultural arena. Following is a brief analysis of the general consequences of possible changes in United States agricultural policy in the coming months and years.

577. A desire to reduce the Government's budgetary deficit has led the United States administration to propose a package of measures to Congress, aimed primarily at cutting government expenditures and increasing revenues. Some of the measures would modify existing agricultural programmes, while other more general actions, such as those proposed in the area of tax policy, would affect agriculture as part of the overall economy. The administration proposed phasing the agricultural reforms in during FY 1994 to 1997 and requested legislation to make some of the changes immediately, while leaving others until the 1995 farm bill.

578. The administration's agricultural proposals represent an adjustment of programme mechanisms rather than a fundamental change in the form of farm programmes. Even the measures proposed for inclusion in the 1995 farm bill do not imply a radical change in structure, although they conceivably could prompt consideration of more fundamental reforms. Under the current proposals, the target price/deficiency payment mechanism for supporting farm income remains in place, as do the loan rate and production control mechanisms for supporting prices. The administration explicitly ruled out an early reduction in export subsidies on the grounds that it would not be appropriate to "disarm" unilaterally before the issue was resolved in the stalled GATT multilateral trade negotiations (MTNs).

579. The two changes that would have the greatest budgetary and programme impact, and which would become effective for 1996 crops, are: to increase the mandatory area from which production is *not* eligible for support payments under the so-called "triple base" programme<sup>53</sup> from 15 to 25 percent of base acreage; and to eliminate the so-called 0/92 and 50/92 programmes. Under the 0/92 programme for wheat and feedgrains, producers may plant 0 to 100 percent of their acreage eligible for production support (payment acreage), but still receive deficiency payments on 92 percent of that payment acreage without suffering a reduction in the farm's future programme acreage base. The benefits are calculated in the same way for rice and upland cotton, except that farmers must plant at least 50 percent of their payment acreage (50/92).

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<sup>53</sup> See *The State of Food and Agriculture 1992*, p. 119.

580. Eliminating the 0/92 and 50/92 programmes would require farmers to return the acreage currently under these programmes to production in order to receive programme benefits. This would reduce the partial decoupling accomplished by the 0/92 and 50/92 programmes and the resulting increase in production may need to be offset with increases in Acreage Reduction Program (ARP) levels.

581. Eliminating these programmes may also affect farmers' decisions concerning the Conservation Reserve Program (CRP). Many CRP contracts will begin to expire in 1996. What will owners do with this land then? Until now, the likely choices have included a renewal of the CRP contracts; the continued idling of some or all of that land, but under the 0/92 and 50/92 programmes; or the return of the idled land (for which farmers retain a base) to production. Elimination of the 0/92 and 50/92 programmes would remove one option, and there is uncertainty about the CRP renewal option.

582. It is unclear whether or not Congress will honour the new administration's request for funding in 1994 and 1995 to enrol the additional 1 million ha in the CRP to meet the target set by the 1990 Food, Agriculture, Conservation and Trade Act (FACT). How it may deal with reauthorization of the CRP when its authority expires at the end of 1995 is also a question to be considered. Some critics of the CRP have suggested that the \$1.8 billion now spent annually on CRP rental payments could be put to better use in other approaches to conservation. The increased output which could result from the elimination of these options might be offset by increases in the ARPs for programme crops.

583. Other policy changes proposed by the administration with the aim of achieving budget savings include: directing subsidies to farmers with an off-farm income below \$100 000; increasing loan origination fees and assessments for certain programme crops; reforming crop insurance and disaster assistance programmes; and phasing out subsidized sales of timber from public lands.

584. The long-term implications of these proposals to cut the United States federal budget may make the farm programmes less attractive to potential participants. As programme benefits for farmers are further reduced by the increase in mandatory flexible acres and the possible required increase in ARPs (if the CRP and 0/92 and 50/92 programmes are eliminated) some farmers may find it is to their advantage not to participate in the programmes. They would still be able to take advantage of higher domestic prices for commodities as a result of the programmes but, at the same time, they would be able to produce whatever amount of any commodity they chose. The Government would be less effective in controlling the supply of a commodity, which is the mechanism used in the commodity programmes to maintain price levels.

585. The CRP and other conservation measures in the farm programmes have also provided a means for the United States Government to help control soil erosion and pesticide runoff on farms. Participating farmers must meet certain conservation requirements to be eligible for programme payments. With reduced programme participation, the farm programme would be less effective in this role. Without these measures to control the adverse environmental effects of agriculture, the Government would need to find new ways of

responding to the general public's growing pressure to respond to these concerns. One likely result of such a situation would be new laws enacted by individual states as a means of control. Such laws would vary by state and would therefore affect farmers differently depending on the location of their farms.

586. Farmers still participating in the programmes may also be adversely affected if increasing numbers of farmers choose not to participate in the farm programmes. If supplies increase, programme pressure may be placed on participating farmers to reduce their production further as a means of controlling supply. Such control would be effected by increasing the level of the ARP, which would further reduce the programme payments that a farmer could receive and thus also reduce the incentives for participating in the programme.

587. The cuts may also have the opposite budget effect to that intended, since they may actually increase government spending on farm programmes. Increased supply resulting from programme changes would lower the market price for a commodity and deficiency payments would rise as the difference between the market price and the target price widened. The higher payments to participating farmers would increase government expenditures, depending on how many farmers remain in the programme and on the amount of increase in the payments.

588. The United States Government is committed to its export programmes as long as similar programmes exist in other major agricultural producer countries. Levels of assistance, provided under schemes such as Public Law (PL) 480 and the credit guarantee programmes are mandated by Congress and will remain in effect through 1995.

589. If further increases in acreage ineligible for support under the triple base were to reduce the number of farms participating in farm programmes, a major challenge for the United States Government would be to maintain levels of commodity stock in the Commodity Credit Corporation (CCC), which is used to provide food assistance.

590. The long-term outlook for export programmes will depend on budgetary issues facing the United States Government when the present farm act expires in 1995. The amount of money appropriated to different export programmes and food aid will depend on what pressures exist at this time with regard to government spending. Programmes such as PL 480 are likely to continue at similar levels. However, export programmes such as the Market Promotion Program may be reduced. The future of the Export Enhancement Program (EEP) is more likely to be determined by what happens at the GATT negotiations and by perceived competition from other developed countries rather than by the budget.

591. The effect of the contemplated programme changes on decoupling and market liberalization is unclear. Elimination of the 0/92 and 50/92 programmes would be a retrenchment from decoupling while the increase from 15 percent to 25 percent mandatory flexible acres ineligible for support payments would be a decoupling enhancement. Increased supply, including for export, from lower programme participation would lower prices in

world markets. To the extent that this would precipitate further government intervention to control supplies, the earlier movement toward market liberalization would be reversed.

### **Recent situation and policy developments**

592. *Situation.* Relatively strong prices at planting time, a relaxation of government planting restrictions and generally favourable weather conditions led to larger harvests of nearly all major United States programme crops, especially maize, in 1992. Despite stronger exports, privately held stocks of nearly all cereals, especially maize - including the Farmer-Owned Reserve (FOR) - grew during the 1992/93 marketing year. Government-held stocks remained near the minimum needed to maintain the 4 million tonne Food Security Wheat Reserve (FSWR) and to operate food relief programmes.

593. *Export assistance.* It was proposed that the level of export credit guarantees be maintained at the same level in FY 1994 as in 1993 - \$5 billion for short-term guarantees, \$500 million for medium-term guarantees and \$200 million for guarantees of sales to emerging democracies. The administration's budget proposal assumes as much as \$1 billion in EEP bonuses in 1994 compared with an estimated \$1.2 billion in 1993 and \$968 million in 1992.

594. *Food aid.* PL 480 food assistance was estimated to be \$1 698.9 million in FY 1993 compared with \$1 604.5 million in 1992. A reduction to \$1 618.1 million was proposed for 1994 as part of the administration's deficit-reduction programme. The proposal for 1994 would finance an estimated 6.3 million tonnes of commodities, about the same amount as in 1992 but approximately 200 000 tonnes less than was estimated for 1993. East European countries are increasingly becoming recipients of United States food aid under PL 480 Title I credit sales, accounting for 37 percent of the 2.5 million tonnes of commodities that had been allocated as of mid-May 1993. In addition, the United States in April 1993 pledged \$700 million (including \$200 million for transport costs) to the Russian Federation: this was to finance \$433.5 million in credit sales of agricultural commodities and \$66.5 million in donations under the Food For Progress (FFP) programme. An additional \$194 million is to be used for direct food aid donations provided under the Section 416(b) surplus disposal programme and FFP programmes.

### **The European Community**

#### **Impact of the Common Agricultural Policy reform**

##### **- Reasons for reform**

595. *The State of Food and Agriculture 1992* presented an overview of the main elements of the reform of the Common Agricultural Policy (CAP), approved in June 1992. This section views the reform package in the context of the problems it intends to address and its expected effects in the coming years.

596. The reform of the CAP constitutes a response to a series of problems that had been building up within the European Economic Community (EEC) over a number of years. The price-driven support system was leading to increasing overproduction, as a continuously expanding farm output was outstripping demand. The budgetary costs associated with the disposal of increasing surpluses through stockpiling and export subsidies had continued to grow steadily in spite of virtually static producer prices since 1985. Attempts to cut costs and curb surpluses throughout the 1980s had proven insufficient. Furthermore, in spite of the high budgetary costs of maintaining the price support system in addition to the costs borne by consumers through higher prices, it was felt that the CAP no longer provided the desired support to farmers, particularly small farmers and those in less-favoured regions, who were unable to take full advantage of more intensive production methods and, therefore, to benefit from the price support mechanisms in the same way as larger farming units. Indeed, prior to reform, more than 80 percent of EEC spending on agricultural support went to less than 20 percent of the Community's farmers. An additional problem in many areas of the EEC was the overexploitation of land with intensive fertilizers use.

597. The specific elements of the reform package agreed in 1992 were presented in greater detail in *The State of Food and Agriculture 1992*. The agreed reforms will be phased in gradually over the marketing years 1993/94, 1994/95 and 1995/96. When fully implemented, the reforms should have a major impact on EEC agriculture, at once affecting production, farm incomes, farm structures and the environment.

- Farm production

598. Farm production will be affected by the various changes in the market regimes as well as by some of the accompanying measures such as the afforestation programme and the environmental programme. For *arable crops* (cereals, oilseeds and protein plants) various elements in the reform package will have a limiting effect on production. This should be the case for the significant price cuts for cereals, which will bring the intervention price down to 100 ECU per tonne by 1995/96, and the abolition of guaranteed prices for protein crops from 1993/94 (guaranteed prices for oilseeds were already abolished from the marketing year 1992/93). In addition, the set-aside requirements for producers to qualify for the direct payments designed to compensate for the price cuts will have a limiting effect on the production of arable crops. The initial set-aside requirement has been fixed at 15 percent of arable crop land on a rotational basis, but this can be modified yearly in the light of the market situation. Small farmers who produce less than 92 tonnes of cereals will, however, be exempt from the set-aside obligation and will still qualify for compensatory direct payments. Land devoted to arable crops may also be reduced through absorption of land by forestry as a result of the afforestation programme. The production of arable crops may be further reduced by some of the elements in the new environmental programme; namely, measures to promote the extensification of crop production, long-term set-aside for environmental reasons and the conversion of arable land into extensive pasture.

599. Although the total effect of all the above measures on arable crops is very difficult to quantify, the European Commission has attempted to estimate production expected in 1999. For *cereals* production estimates for 1999 were based on the hypothesis of a set-aside rate

of 15 percent and the absorption of 1 million ha of arable land by the long-term set-aside and afforestation schemes. These assumptions signify a drop in total EEC cereals area in 1999/2000 to 33.3 million from 36 million ha in 1991/92 and 35.7 million ha in 1992/93. On the further assumption of yields stabilizing at the levels of 1991/92, total EEC cereal production in 1999/2000 is projected to be 167 million tonnes compared with 181 million tonnes in 1991/92 and 166 million tonnes in the drought-affected crop year 1992/93. If yields are assumed to continue increasing at 1 percent per year (somewhat lower than the 1.8 percent annual increase recorded over the last five years), production in 1999/2000 should reach 177 million tonnes.

600. *Meat production* will be affected mainly by the changes in the beef regime and the decrease in feed prices following the cereal price cuts. *Beef* producers will be directly affected by the 15 percent cut in intervention prices but this will be counterbalanced by the decrease in feed prices following from the price cuts for arable crops. Farmers raising beef cattle on grazing land will be compensated through direct payments in the form of increases in the various premiums paid for livestock units. However, to encourage extensive production, premiums will only be awarded for livestock units not exceeding established maximum density limits (livestock units per hectare of forage area). Smallholdings with less than 15 livestock units will, however, be exempted from these limits. The impact on production from the density requirements may be somewhat limited, since exceeding the maximum density does not imply forfeiting premiums on the entire herd, but only on the livestock units in excess of the maximum density limit. As for *other animal products*, no changes have been introduced to the marketing regimes for pork, poultry and eggs, the producers of which, on the other hand, will benefit from the lower feed prices. This should tend to stimulate production of these products and make EEC producers more competitive.

601. Overall, European Commission projections of *meat* production in 1999 reflect the expected impact of the reform on various products. Indeed, a reduction is forecast for beef production, which should drop to 8.1 million tonnes in 1999 from 8.7 million tonnes in 1991 and 8.4 million tonnes in 1992. Pork production, on the other hand, is projected to reach 15.3 million tonnes in 1999 compared with 14.3 million and 14.2 million tonnes in 1991 and 1992, respectively, while poultry production is projected to increase from 6.7 million tonnes in 1991 and 6.9 million tonnes in 1992 to 7.8 million tonnes in 1999.

602. *Milk* production in the EEC is largely determined by milk quotas, which are to be reduced by 2 percent if required by market conditions. At the same time, the butter price will be cut by 5 percent. Consequently, a shift is to be expected from butter production towards cheese and fresh dairy products in line with present trends in the consumption of dairy products.

#### **- Farm incomes and farm structures**

603. As for *farm incomes*, the impact of the price cuts in the reform package will be offset by direct payments to farmers in the form of compensatory amounts or premiums not related to current production. For arable crops, the price cuts are designed to be offset by direct payments, provided farmers comply with the annual set-aside requirements for land devoted



to arable crops. The compensatory payment, granted on a per hectare basis, will be calculated regionally on the basis of the average of certain past yields (tonnes per hectare) which will be multiplied by the compensatory amount (ECU per tonne). Thus, per hectare compensation payments will vary between regions.

604. The compensatory payment is designed to deliver, on average, full compensation for the price cuts (or for the abolition of guaranteed prices). But compensation within each region will be biased in favour of producers with yields below the regional average and who will be more than compensated for the loss in their income caused by the price cuts. More efficient producers with higher yields will suffer a loss. As for animal production, the cuts in beef prices will be compensated by the reduction in feed prices and by premium increases. The maximum density limits for premiums will favour producers with less-intensive cattle production, while limits on the total number of animals per herd eligible for premiums will limit payments made to large producers. With no changes introduced in the market regimes for pork, poultry and eggs, the lower feed prices may have a positive impact on producers' incomes for these products, although increased production may lead to lower margins.

605. Based on representative samples of holdings from the European Community's Farm Accountancy Data Network,<sup>54</sup> the Commission has simulated the effect of the reform on arable crop producers as well as beef and dairy farmers.

606. The simulations are static: they assess the impact of all adopted measures at the end of the transition period when all measures are fully operational and they assume that farmers do not adapt resource use and production plans to the new incentives provided by the policy reforms. The simulations indicate that, for all the considered types of dairy and cattle farms, farm incomes expressed as farm net value added will increase as a result of the reform. For arable holdings the impact will differ according to the farm size. The small- and medium-sized producers will actually see farm incomes increase. This should be true to a larger extent for small producers, with a cereal production below 92 tonnes, than for the medium-sized producers. On the other hand, the largest farms, producing more than 230 tonnes of cereals, will experience a drop in farm net value added.

607. In general terms, the reform of the CAP implies a closer direction of farm support towards the smaller and less efficient producers, although this effect is significantly less pronounced than it would have been with the original reform proposals submitted by the European Commission in 1991.

608. The effect of the reform on *farm structures* is not clear-cut. Generally, one of the aims of the reform is to maintain the viability of small family-based farms and to slow down the rural exodus. The somewhat improved targeting of support towards this type of farm and more extensive forms of agriculture will work to such an effect. However, the reform of the market regimes is accompanied, *inter alia*, by an early retirement scheme which aims at

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<sup>54</sup> *Agra Europe*, 5 March 1993.

releasing land either for the enlargement of holdings to improve their economic viability or for non-farm purposes.

- CAP reform and the environment

609. The reform of the CAP is designed (and is expected) to have a positive impact on the environment. Positive effects should be derived from both the reform of the market regimes and the afforestation and the agro-environmental action programme accompanying the market reforms. As far as the reform of the market regimes is concerned, the price cuts will provide reduced incentives to increase production through intensification. In addition, there are specific incentives to adopt less intensive production practices.

610. The *afforestation programme* in its turn will provide financial aid to farmers who wish to use agricultural land for the development of forestry. The financial support can cover: aid for afforestation costs; a per hectare allowance to cover maintenance costs of afforested areas during the first five years; an annual allowance to cover income losses resulting from afforestation of agricultural land; and investment aid for the improvement of woodlands. The precise impact of the programme is difficult to foresee and will depend in part on implementation at the national level.

611. The *agro-environmental programme* has a broader scope and will provide financial assistance for a series of measures aimed at improving the rural environment. These include:

- the adoption of farming practices that reduce agricultural pollution;
- the extensification of both crop and livestock farming;
- land use that is compatible with the protection of the environment, soil and landscapes;
- the preservation of local breeds;
- the upkeep of abandoned farmland and woodlands where necessary for ecological and safety reasons;
- long-term set-aside of land for environmental reasons;
- the training of farmers in environmentally friendly farming and in the upkeep of the countryside.

612. As in the case of the afforestation programme, the precise impact of the agro-environmental programme is also difficult to assess and will depend on national implementation.

- What the CAP reform does not do

613. Although the reform approved in 1992 will introduce far-reaching changes to the CAP, it will not change some of its basic principles and mechanisms such as common prices decided by the European Council of Ministers, common protection against agricultural imports by the use of variable levies, the use of export subsidies to render EEC products competitive on world markets and public intervention in agricultural markets. Thus, the reform may act to reduce production and internal surpluses for some products as well as levels of export refunds. However, because of reduced feed prices, the production of pork, poultry and eggs will probably be stimulated. Generally, however, the reform will not change the rules of access for agricultural imports to the EEC market or for EEC agricultural exports to the world market. For most products the preferential treatment of EEC producers *vis-à-vis* importers on the internal market remains. Insofar as the double pricing system stays in place, i.e. internal guaranteed agricultural prices are set independently of world market prices, EEC farm producers and consumers will continue to be largely isolated from price changes on the world market as long as world market prices do not rise above the internal guaranteed price levels.

**Japan - An agriculture in transition**

**Introduction**

614. For the past couple of decades Japanese agriculture has been undergoing a quiet revolution and the forces of change, both internal and external, have been intensifying. In recognition of this mounting pressure, in May 1991 the Ministry of Agriculture, Forestry and Fisheries set up a task force to develop new basic policy directions to meet the changing situation and challenges in food, agriculture and rural areas. In June 1992, the Ministry issued the task force's report, *The Basic Direction of New Policies for Food, Agriculture and Rural Areas*, which it then adopted as its future policy guidelines, submitting several bills and budgetary proposals to the 1993 session of the Diet. This section of *The State of Food and Agriculture 1993* reports on the current situation of Japanese agriculture, the forces being exerted both for and against change and the problems that must be faced and overcome as Japanese agriculture is further integrated into the international trade and economic system leading up to the twenty-first century.

**Setting**

615. With a total land area of 378 000 km<sup>2</sup>, Japan is larger than Italy but smaller than Sweden and Thailand. It is largely mountainous and abundantly forested, more rugged and precipitous than most of western Europe and has rivers that flow more rapidly. Situated in the southern part of the temperate zone, the climate ranges from subtropical in the south to much colder conditions on the northern Hokkaido Island where severe winters are common. Approximately 70 percent of Japan is mountainous with only 14 percent of the total land area devoted to agriculture, of which slightly more than half is paddy field for rice production. With 124 million people, Japan ranks fourth for population in Asia and the Pacific.

616. The Japanese political system is a bicameral parliamentary democracy. The Government is highly centralized with executive power vested in the Cabinet headed by the prime minister, the leader of the parliamentary majority. The Liberal-Democratic Party, which until July 1993 had been the majority in the Diet since the postwar period, came under serious political pressure from Japanese voters, including business and labour union leaders, who wanted a drastic political reform and from farm groups who opposed liberalization of the domestic agricultural market.

617. After decades of being the miracle economy of the industrialized world, Japan is in the midst of a serious economic slow-down. According to the *World Bank Atlas 1992* GNP real growth for the period 1980-1991 averaged a strong 4.3 percent annually. Per caput income growth averaged 3.7 percent annually during the same period. The weakening of the economy, which began in the last quarter of 1991, led to a decline in GDP growth to 1.8 percent in 1992 from 4.4 percent in 1991 and 5.2 percent in 1990. However, estimated unemployment and inflation remained low at 1.9 percent and 2.2 percent, respectively.

618. Agriculture accounted for 2 percent of GDP in 1991, while 5.9 percent of the total population was counted as agricultural. Since 1988, Japan has been the largest net importer of agricultural products, importing a value of \$29 billion in 1991.

#### Agriculture structure

619. Total agricultural land in Japan in 1991 was 5 204 000 ha, of which 2 825 000 ha, or 54 percent, was paddy field. Since 1975, agricultural land has been declining in favour of non-farm uses at an average annual rate of about 22 000 ha, almost all of which has been taken out of paddy production. The number of farm households dropped from six million in 1960 to 3.7 million in 1992 (9 percent of total Japanese households) and is expected to decline further to less than three million by the year 2000.

620. Another distinguishing characteristic of Japanese agriculture is the small size of landholdings per farm household. Of all commercial farms in 1991, fully 58 percent were less than 1 ha while only 13 percent were more than 2 ha in size. But the size of holdings tells only part of the story. Landholdings are also very fragmented, with a single household's landholdings scattered around a farm village in a complicated system of cross-holding to reduce the risk of total crop failure. For example, of the country's 2.7 million ha of paddy land, while 50 percent are consolidated in plots of 0.3 hectares or more, only 3 percent are in plots of 0.5 ha or more. The target is to enlarge their size to an average of 1 ha or more during the next ten years. In effecting land consolidation and restructuring, the removal of berms and the reconstruction and levelling of paddy fields into larger sizes is a labour- and investment-intensive operation.

621. Of the 3.7 million farm households in Japan, 23 percent are classified as non-commercial, with the remaining 77 percent classified as commercial. Of the 2.9 million commercial farm households, only 16 percent are full-time farm households, while the remaining 84 percent are classified as part-time. Part-time farm households fall into two categories: Type I households, which receive over 50 percent of their income from farming,

and Type II households, which receive less than 50 percent of their income from farming. Type I farm households account for 19 percent and Type II for 81 percent of part-time farms. Thus, of the 3.7 million farm households in 1992, only 897 000 were commercial, engaged either full time or part time in farming and with over 50 percent of their income (Type I) derived from farming. Moreover, only about 7 percent of the income of Type II farm households comes from farming, with the rest coming from non-farm sources. This means that the actual amount of labour devoted to farming has declined much more dramatically than the decline in number of farm households would suggest.

622. Some basic trends related to the agricultural sector include the decline of agriculture as a portion of total GNP; continued rural-urban migration; an ageing population of farmers with few new entrants; and a relatively slow increase in average farm size. In fact, the labour shortage in agriculture has become acute. Today, 4 to 5 percent of the land classified as agricultural is idle, mainly because of a lack of labour. New graduate entrants to agriculture have declined rapidly and at present number only about 2 000 per year. The reasons are lower per caput income in agriculture; harder work and more onerous working conditions, including longer hours than those of urban counterparts; and the uncertain outlook for agriculture exacerbated by the GATT negotiations and by external pressures to liberalize. In addition, in the more remote areas young women tend to migrate to the city, making it difficult for the young men who remain to find wives. While farm household disposable income is 133 percent of non-farm household disposable income, per caput disposable income is only 92 percent, since farm households comprise more members than non-farm households.

#### **Agricultural marketing policy**

623. One of the main instruments of Japanese agricultural policy is the Staple Food Control System, administered by the Food Agency of the Ministry of Agriculture, Forestry and Fisheries. The objective of the Staple Food Control System is to control the supply, based on estimated demand, and the price of rice, wheat and barley. While the bulk of the staple grains are sold through collectors and the agricultural cooperatives directly to wholesalers rather than to the Government, the whole system is controlled by the Food Agency.

624. The mechanisms for controlling rice differ from those for wheat and barley. Japan is self-sufficient in rice, its major staple food, whereas it is far from self-sufficient in wheat and barley. Direct quantitative control of supply is applied to rice. Under the Food Control Law, an annual basic plan is drawn up to project the next year's rice demand, and supply is then adjusted to meet that demand through the use of production controls, including crop diversion. Each producer must then sell a specified quantity of rice to the Government for the purpose of stabilizing volume and price. Standard-priced rice is government rice sold through registered wholesalers and retailers, with the Government setting the maximum price that can be charged to the consumer. Standard-priced rice is a standard-quality rice sold at a lower price than voluntary marketed rice (VMR) to meet market demand.

625. VMR, which was instituted in 1969, still comes under government control. While the Government sets the price for its rice purchases, the price for VMR is negotiated between

national collectors' organizations and wholesale organizations. In order to overcome the lack of transparency and the rigidity of the pricing mechanism, VMR exchanges were established in August 1990 in two locations (Tokyo and Osaka), and the rice sold through those exchanges is by tender.

626. Annual rice consumption in Japan is approximately 10 million tonnes. As 3.5 million tonnes are consumed by producers, 6.5 million tonnes are sold into the market and 2 million of these are purchased by the Government as standard rice and for market control. The remaining 4.5 million tonnes are sold as VMR, of which 1 million tonnes are sold through auction on the exchanges in Tokyo and Osaka. The auction price is allowed to fluctuate by approximately 7 percent between established maximum and minimum prices. This is the VMR price discovery mechanism. Rice distributors estimate that 2 to 3 million tonnes of rice flow through the "open under the table market", or open black market, with most of the remainder flowing through the agricultural cooperatives directly to rice wholesalers and on to the retail market.

627. A growing market economy in rice distribution has been exerting its power in many ways, even though the Food Control Law is still in force. In the face of a declining demand for rice, growers are increasingly producing high-quality rice for regional brand names and high-quality products. Organic rice, i.e. rice produced without chemicals, whether they be pesticides or mineral fertilizers, can be sold directly by farmers to consumer groups under contract. In addition, private mail order systems have been developed to deliver rice directly from farmers to consumers in remote cities.

628. Since rice carryover stocks have declined in recent years, the Government has relaxed the production adjustment control scheme in order to obtain sufficient stocks for market control and provide enough standard-quality rice to the retail shops.

629. The mechanism for controlling the wheat and barley markets is indirect with a guaranteed minimum producer price. While it is not a requirement, domestic producers sell virtually all their wheat and barley to the Government. The Government sets the purchase and sale prices and agricultural cooperatives are encouraged to negotiate quantity distribution contracts with end-users. The Food Agency purchases domestically produced wheat at a subsidized producer price that is substantially higher than the price it charges to processors. Based on projections of requirements, each week the Government issues licences through the Food Agency for imports of wheat and barley, thus maintaining market stability. The Food Agency is the sole purchaser of imported wheat and barley.

### **Agricultural cooperatives**

630. Agricultural cooperatives are pervasive in the lives of Japanese farmers. There are two types of agricultural cooperative: the multipurpose type which engages in marketing farm products, input supply, credit, mutual insurance, processing, advisory and other services; and the single-purpose type which concentrates on marketing the products of certain specialized sectors such as fruit, vegetables and livestock products.

631. There are three tiers to the organization of these cooperatives: the local-level cooperatives; the prefectural cooperative federations, which specialize in various kinds of services such as credit, savings, marketing, purchasing and insurance; and the national cooperative federations.

632. The national-level tier includes: the Norinchukin Bank which, with 50 percent of farmer savings, ranks number one in deposits and credits; the Zenkyoren National Mutual Insurance Federation of Agricultural Cooperatives; a medium-size insurance company; an import/export trading firm; a national medical and welfare federation; a national press and information federation; a publishing house; and a tourist corporation which ranks sixth in the country; the National Federation of Agricultural Cooperative Associations (ZEN-NOH), a conglomerate, ranked eighth among Japanese trading companies and involving about 140 companies and affiliates with annual sales of around \$60 billion, as well as the federation's policy-making body and political lobbying arm, the Central Union of Agricultural Cooperatives (ZENCHU). The agricultural cooperative structure has been described as giving cradle-to-grave service to its members as well as having a powerful political influence via the ruling party over government policies affecting agriculture.

633. Farmers constitute the regular members of the cooperatives who have voting rights. There is also a non-voting associate member class for non-farmers who want to take advantage of cooperative services. While almost all farmers are members of the cooperatives, associate members number about one-third of total membership. Farmer members have declined (from 5.9 million in 1970 to 5.5 million in 1990) while associate members have increased (from 1.3 million in 1970 to 2.9 million in 1990). Employees of the multipurpose cooperatives number about 300 000; that is, one employee for every 18 farmer members.

634. The government implements much of its agricultural policy through the cooperative system. When agricultural products are covered by government price support subsidies, the subsidies are paid to the producers through the cooperatives. In addition, the rice land diversion programme (through which a third of paddy land has been diverted to other crops, since the per caput consumption of rice fell from a high of 118 kg in 1962 to 70 kg in 1989) is implemented at the local level by the cooperative system together with the administrative authorities. In 1989, about 95 percent of rice, 96 percent of wheat, more than 90 percent of barley and more than 50 percent of fruits, vegetables, beef cattle and milk was marketed through the agricultural cooperative system. In addition, on the input supply side, more than 90 percent of fertilizer, 70 percent of farm chemicals, 64 percent of petroleum used on farms, 50 percent of farm machinery and 40 percent of feed was purchased from the cooperative system.

635. The cooperatives do not compete with each other at the local level and the system operates according to egalitarian principles. Farmers often have little alternative but to sell to the agricultural cooperative and are likewise pressed to buy inputs from the cooperative. Given the egalitarianism, large farmers cannot receive significant favourable returns from their cooperatives, such as volume discounts for inputs or volume premiums for sale of their

products, which they usually expect from rural commercial firms. Thus, they cannot benefit from economies of size in their marketing or input purchasing activities.

636. The agricultural cooperative system is having to adjust rapidly to a new set of realities. In addition to financial problems related to the slowing of the general economy and financial deregulation, the volume of agricultural products flowing through the cooperatives is declining. There is a tendency for larger producer members to shift from their traditional marketing channels through cooperatives to others, including direct marketing to consumers. Local cooperatives are being merged and consolidated with the aim of reducing the number of general purpose cooperatives to about 1 000, less than one-third of the present number, by the year 2000. In addition, integration of the prefectural federations with the national federations is being considered as local-level cooperatives are consolidated.

### **Agriculture and the environment**

637. Throughout Japan's history there has been a close relationship between water management and agriculture. Japan has rapidly flowing rivers because of its very steep mountains and there is consequently little pollution buildup in the rivers. However, at the outlets of the rivers, pollution is beginning to appear in the sea. Agricultural pollution comes mainly from agricultural chemicals and fertilizers and animal husbandry wastes. Paddy comprises just over half of the total cultivated area and acts as a reservoir, filtering water to the groundwater level. On upland, nitrogen fertilizer becomes nitric acid. On paddy, there is no oxygen so nitrogen fertilizer is transformed into ammonium which is fixed in the soil while some nitrogen is released as gas. Thus, there is noticeably more chemical- and fertilizer-induced pollution of groundwater in upland areas than in paddy areas.

638. Japanese Government policy first addressed sustainable agriculture in FY 1992. Sustainable agriculture is defined by the country's Ministry of Agriculture, Forestry and Fisheries as agriculture using lower than normal inputs of chemicals and fertilizer. It must meet two criteria: sustainable yields and quality; and the reduced use of chemicals and mineral fertilizer.

639. Two major technologies introduced to encourage sustainable agriculture are time-release fertilizers and biological and integrated pest management. Another means of insect control that has been used in Japan is to lure male insects into a concentrated area by using the scent or sound of the female insect and then disposing of them in that limited area.

640. Another programme being promoted by the Ministry of Agriculture, Forestry and Fisheries is the recycling of animal waste. Animal waste is processed into fertilizer under contracts between livestock and crop farmers. The ministry helps by establishing facilities to process the manure, by establishing demonstration farms and by providing extension services.

641. The incentive for farmers to engage in sustainable agriculture at present is not so much an economic factor but rather more an altruistic caring for future generations. There is technology evolving that should reduce input use and costs. For example, there is now



a rice transplanter with a chemical applicator that puts the chemicals and fertilizer in close proximity to the seedling, thereby reducing overall use.

642. The ministry is now targeting fruit and vegetable farms where chemical use is the largest. In general, however, it instructs prefecture governments to review and revise their fertilizer application and pest control standards for the purpose of maintaining environmental quality.

### **Beef market liberalization**

643. After protracted negotiations, Japan decided to end the quota system on beef imports in 1988. The quota system was replaced by tariffs which began in 1991 at 70 percent *ad valorem*, dropping to 60 percent on 1 April 1992 and to 50 percent on 1 April 1993. Beef stocks increased because supplies, including imports, exceeded demand in 1989 and 1990 before returning to 1988 levels by early 1992. During this period, the price of high-grade beef, including Wagyu beef, remained relatively stable while the low-grade price, that is for dairy beef, dropped by about 25 to 35 percent, depending on the grade. In addition, there was a dramatic shift in demand from frozen to fresh and chilled beef. The high-grade beef price has dropped recently, mainly because of the tightening of the economy.

644. Since the major impact of liberalization was on the relatively low-grade beef coming from the dairy herds, dairy farmers were the most severely hurt. While milk prices were unaffected, the price of dairy beef calves sold to feeders dropped significantly.

645. To help compensate for the dairy producers' losses, the Government provides deficiency payments to cattle feeders. Feeders are expected to pass these payments back to dairy producers by paying higher prices for their feeder calves. Still, since the liberalization of the beef market, the number of dairy farms has decreased 20 percent. Interestingly, however, the size of the national dairy herd has not been reduced, so a considerable consolidation of dairy herds has been achieved in the process.

646. The liberalization of the beef market has lowered domestic prices and introduced a market competitiveness to which Japanese farmers have responded by aiming for quality. Dairy beef feeders welcome the lower calf prices, while the Government subsidizes the calf prices paid to dairy farmers by the feeders with deficiency payments.

647. Per caput beef consumption in Japan now stands at 6.2 kg per year, with the rate of increase having slowed from 10.9 percent in 1989 and 1990 to 1.6 percent in 1991.

### **New policy directions**

648. Several factors and trends are converging at present and leading to major structural changes in Japanese agriculture as well as to a rethinking of agricultural policy. The more important of these factors are the following:

- The strengthening of the Japanese yen, which means that agricultural imports are less expensive and will continue to increase.
- The depopulation of rural areas, the deterioration of rural infrastructure and the loss of amenities as the number of farm successors and new entrants decline and the ageing of the farm population accelerates because of lower incomes, hard work and long working hours as well as more favourable job opportunities outside farming.
- The declining demand for rice, resulting in the conversion and abandonment of paddy fields which, in turn, has a deleterious impact on water quality and the environment.
- The small and fragmented structure of agricultural holdings, which reduces or prevents farmers from introducing cost-saving technology such as direct rice planting.
- The need to liberalize the agricultural import markets further as the internationalization of agriculture continues.
- The declining food self-sufficiency ratio in terms of national calories supplied, which stood at 46 percent in 1991.

649. It is widely recognized that many current trends are unfavourable to agriculture and rural areas. In view of the urgency of the situation facing Japanese agriculture, the Ministry of Agriculture, Forestry and Fisheries has begun a process of sectoral reform with a task force which, after exchanging views with people and organizations nationwide, submitted its report, *The Basic Direction of New Policies for Food, Agriculture and Rural Areas*, in June 1992. The report spells out structural targets and, as previously stated, provides broad guidelines for the reform of the agricultural sector and the transformation of rural areas. New laws and budgets are being proposed to achieve a comprehensive reform over a ten-year period.

650. Under the new policy, the structural targets - which constitute the heart of the plan to make Japanese agriculture more efficient and competitive - relate to the size of holdings and the form of management. At the end of ten years the target is to have 300 000 to 400 000 individual farm management bodies (single farm households), 150 000 of which will be engaged in rice cultivation, including 50 000 in single-crop rice farming with 10 to 20 ha and 100 000 in multiple-crop farming, (including rice), with 5 to 10 ha. In addition, there would be 40 000 to 50 000 organized farm management bodies (management associations of several types, including agricultural producer cooperatives, small-scale corporations and agricultural production associations) managing single-crop rice holdings of 30 to 50 ha.

651. As part of the implementation of the new policy, new laws that were passed in 1993 provide for each community to set its goals for agricultural reform under the policy and to determine how it wants to organize itself into an individual cooperative or a limited

partnership, etc., to increase the size of farm management holdings. In the end, more than 3 000 municipalities will govern the reform along the lines of their own objectives, with the national government supporting their decisions with price and structure policies. The necessary budget has been appropriated in FY 1993 for carrying out this policy at national, prefectural and municipal levels.

652. The future envisioned for Japanese agriculture and rural communities will require enormous investments, and many difficult problems will have to be solved. The price of farmland in the area covered by the Urban Planning Law is extremely high. The law concerning reserved farmland in the urbanization promotion area was revised in 1991 and aims at promoting the conversion of farmland for urbanization and at easing the pressure on land prices and on the housing market. Formerly, farmland was protected from urbanization and was valued for tax purposes as agricultural land, giving farmers a major tax break. Under the new law, farmers in the urban fringe can declare their land either agricultural or ready for urban development. If they declare their land agricultural, they must do so for 30 years, in which case they are eligible for the lower agricultural tax rates. If they declare the land ready for urban development, they will be taxed based on the higher urban market price. This should ease farmland prices and rental values, at least for the 1 percent of total farmland affected by the law.

653. The tradition of ownership and cross-holding is also a constraint to increasing the size of farms. Prefectural corporations for land aggregation and farmland development, purchase land and rent or sell that land to other farmers in an effort to accelerate land consolidation and the increase in farm sizes. These corporations are likely to be used by the Ministry of Agriculture, Forestry and Fisheries to help implement the new policy. This would mean that the ministry would infuse the corporations with rather large amounts of funding in order to accelerate their ability to purchase and resell or rent agricultural properties.

654. Some analysts suggest that the government plan to incorporate a number of farms into a single legal entity, such as a limited partnership, may meet with limited success, even though there are already 3 800 agricultural production corporations in existence. If all of the shareholders were family members, it may work - at least for the first generation - but non-family members may not be willing to subject themselves to others managing their property. However, there is an agricultural committee system responsible for the administration of farmlands under ministerial direction. There are committees in each of the prefectures which, in turn, have a network of committees at the municipal level. These agricultural committees appear to have a major function in observing the terms of sale and rental of farmland in each of the various municipalities and communities in Japan. The agricultural committees, the technical advisors in the agricultural cooperatives and the agricultural extension officers are likely to be consolidated into a comprehensive system in each jurisdiction. This system would then become the focal point for the promotion of family and non-family corporations or limited partnership farms and to promote the full use of agricultural land. The latter will obviously be an attempt to incorporate the land that is now held by Type II part-time farmers into more serious production units.

655. Progress made in achieving the objectives of the new policy would help Japanese agriculture operate in a global economy. The enlargement and consolidation of paddy fields would lower labour inputs and improve rice production efficiency. The direct seeding of rice rather than transplanting would allow a huge decrease in labour input, from 50 hours to produce 0.1 ha of rice down to five hours. This, along with other economies of size that could be realized under the new policy directions, could reduce production costs by more than 50 percent.

656. However, some large and powerful political forces are resistant to change. Past attempts to decentralize government activities and to reduce the role of government, including in the agricultural sector, have been opposed by state employee labour unions. The cooperative system's employee labour union also views the status quo as the best protection of their own interests. The strong resistance to change in Japanese agriculture amounts, in part, to a labour issue involving both government and agricultural cooperative employees as well as farmers. This issue will need to be resolved in order for the full reforms visualized in *The Basic Direction of New Policies for Food Agriculture and Rural Areas* to be achieved.

657. Having begun the reform of its agriculture during a period of weakened general economic activity, the necessary steps for reform will be more difficult to implement than they would have been when the economy was booming. The recent slowing of the general economy will at least make the allocation of the necessary investment funds for agricultural reform more difficult. The reforms suggested in the new policy report represent a massive undertaking for the planned ten-year period but the Japanese Government has taken the initial legal and budgetary steps to effect the indicated reforms and appears committed to see them through.