the state of food and agriculture 1979

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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THE STATE OF FOOD AND AGRICULTURE 1979

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WORLD REVIEW
FORESTRY AND RURAL DEVELOPMENT

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME 1980

The statistical material in this publication has been prepared from the information available to FAO up to December 1979.

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Foreword

The United Nations Second Development Decade is drawing to a close with a record of some achievements but many disappointments. In food and agriculture, the rate of growth of production in the developing world has averaged about 3 percent a year in the 1970s — a quarter less than the target rate of 4 percent set for the Decade. While a score of developing countries have been able to accelerate their rate of growth to 4 percent or more, the increase in food production has failed to keep pace with the growth of population in more than half of the developing countries, particularly the poorer ones. The undernourished in the developing market economies are at least 420 million and continue to increase in number.

Undoubtedly the past decade has seen a considerable effort in the developing countries to raise levels of production. There has been a substantial increase in the use of modern inputs in agriculture, especially irrigation, fertilizer and improved seeds. Nevertheless they have fallen far short of the requirements of a modern, progressive agriculture. The rate of investment is far from commensurate with the needs of a growing population, or what is necessary to provide employment and rising income to an expanding rural labour force. Domestic constraints to growth and development have been compounded by unfavourable, external circumstances in respect of trade, balance of payments and availability of external resources.

The long-term decline in the share of the developing countries in world agricultural trade has continued and in a few cases protectionist tendencies are heightened. The impact of multilateral trade negotiations, concluded in 1979, on the liberalization of trade in agricultural commodities in general and in commodities of special interest to the developing countries in particular has been limited. Improvement in the terms of trade of the agricultural exports of the developing countries in 1976 and 1977 has proved only temporary and since then has been reversed.

The flow of external resources to the food and agriculture sector increased in 1978 over the level of the previous year, but it was no more than about 60 percent of the estimated total requirements of US$8.3 thousand million in 1975 prices. Within the context of expanding requirements of financial and technical assistance, FAO's Special Action Programmes, designed to assist the developing countries, have an important role to play. However, such programmes as Seed Improvement and Development, Prevention of Food Losses, and the International Fertilizer Supply Scheme suffer from a critical lack of resources.

Since the World Food Conference in 1974, there has been a growing consensus on the measures and policies, both national and international, which are needed to expand food production, improve distribution and launch an assault on poverty and hunger. But the implementation of the international measures and policies has been less than expected and has often been held up by protracted negotiations in many fora. The progress toward the realization of the objectives of the New International Economic Order in the field of food and agriculture has been slow.

The immediate situation and outlook in 1979 have become more precarious than for some years, as FAO's Twentieth Conference emphasized. The increase in food and agriculture production in 1979 was not only marginal but also the smallest since 1972. World cereal production in 1979 fell by about 4 percent below what was achieved in 1978. The cereal gap of the developing countries, which is expected to rise to 85 million tons of cereals a year, continues to mount. Prices and freight rates rose substantially in the second half of 1979. The cereal import bill reached an estimated 17 thousand million US dollars in 1979 and continues to rise at 20 percent annually. The rising costs of the imported agricultural inputs severely thwart the efforts of many developing countries in increasing their food and agricultural production. Especially noticeable is the rapid acceleration of fertilizer prices — one of the most critical inputs.

The world food security system remains precarious and fragile. World carry-over stocks of cereal at the end of the current season will represent only about 18 percent of consumption, which is the minimum proportion required for world food security. Compared with 1979, there will be a greater concentration of stocks in a few developed, exporting countries. This increases the risk that stocks will not be accessible when and where they are urgently needed to meet food shortages which are now on the increase in the developing world. The logistic difficulties in handling, distribution and transportation add to the gravity of the problems.

The international community is no better prepared today than it was in the early 1970s to meet a world food crisis such as that of 1973-74. Following the breakdown of negotiations for the conclusion of an international wheat agreement in early 1979, I proposed a Five-Point Plan of Action for World Food Security which was approved by the FAO Council and Conference and which was endorsed by the World Food Council (WFC) and by the United Nations General Assembly. The Plan of Action proposes not only the adoption of national stock policies and criteria for their release and management, but also special measures to provide for current import requirements and emergency needs of low-income food-deficit countries, to assist them in their national or collective food security projects and programmes.

Attempts to examine alternative proposals for international grains arrangements are under way. I wish that these efforts succeed and hope that they will pave the way for a measure of stability in markets and prices. A welcome development has been the conclusion of a new Food Aid Convention early this year, guaranteeing a floor to the amount of annual food aid at 7.6 million tons of cereals, which, however, falls short of the minimum target of 10 million tons. There is an urgent need for new donors to supplement this joint effort of the international community, especially in view of a higher level of anticipated needs in the coming decade, estimated at 17 to 18.5 million tons by 1985.

The incidence of food shortages and scarcities due to natural or man-made causes shows an ominous increase in both scale and frequency, and this trend is likely to continue. The International Emergency Food Reserve, which was established in 1975 by the Seventh Special Session of the UN General Assembly with a target of 500 000 tons of cereals, has never reached this level. In 1979 its resources were less than in the previous year and remained much below the target. At present, there is no guarantee that assistance from the International Emergency Food Reserve would be readily available when and where it is most urgently needed. Experience suggests the need for a guaranteed commitment of emergency food aid under a legally binding convention and the Committee on Food Aid Policies and Programmes has decided to consider, at its session in October 1980, my proposal that the Reserve be developed into a Convention.

In periods of domestic shortages or of rising import prices, low-income food-deficit countries would, in addition to food aid, require additional external assistance to purchase food. FAO and WFC have jointly approached the International Monetary Fund to consider the feasibility of providing additional balance-of-payments support for this purpose, within the context of its financing facilities.

Many developing countries are attaching increasingly higher priority to national food security projects within the framework of their overall development programmes. However, shortages of resources hamper efforts to develop national food security projects. FAO's Food Security Assistance Scheme last year mobilized no more than 20 million dollars, while the requirements for additional finance amount to about 130 million dollars.

These and other developments in both the immediate situation and in the longer term are dealt with in Chapter 1 of this report. The statistical coverage has been further improved by the inclusion for the first time of estimates of carry-over stocks of cereals for China and the USSR. The data on food consumption and nutrition have also been brought further forward. The second chapter, on Forestry and Rural Development, discusses

inter-relationships of forestry and the rest of the agricultural sector, provides some new insights and raises significant issues. It analyses a few promising initiatives in integrating forestry with the rural development approach and provides a framework for future action.

For FAO, 1979 was in many ways an eventful year. Of particular importance was the World Conference on Agrarian Reform and Rural Development (WCARRD), which was a significant landmark in the search of the international community for ways of removing rural poverty. The Conference adopted a Declaration of Principles and a Programme of Action addressed to the Member Nations, both developed and developing, and to the international organizations. It recognized FAO as the leading agency within the UN system to promote agrarian reform and rural development.

Measures for the redress of rural poverty need to embrace not only changes within the structure of rural societies in terms of equitable access to the ownership, use and management of land and other resources, to services and inputs as well as peoples' participation in the decision-making process. They also include changes in national policies and institutions as well as in international measures for liberalized trade and expanded external assistance to reinforce national efforts. These are not all novel ideas but they are put in a comprehensive and consistent framework with a focus on equitable growth and on the elimination of poverty. What is remarkable is the call by the World Conference and an acceptance by the Member Governments of the need to formulate indicators of progress in agrarian reform and rural development, to set up bench-marks, and to monitor and evaluate their progress over time.

The year 1979 also saw the publication by FAO of a provisional report of its major study about the future perspectives of world food and agriculture, entitled Agriculture: toward 2000 *(AT 2000). Its findings are intended as FAO's major contribution to the formulation of the new International Development Strategy. The study analyses the challenges confronting world agriculture, especially in the developing countries, up to the end of the century. It discusses the nature and magnitude of the response required from the developing countries within the framework of their accelerated overall growth and the attainment of national as well as collective self-reliance.*

The developing countries could double their food production by the end of the century, increasing production at an annual rate of 4 percent during the 1980s and 3.7 percent during the 1990s. They have potential to more than double the production of cereals, by raising production at an even higher rate of 4.7 percent per year. It is also feasible to increase the agricultural trade balance of the developing countries — in fact, to quadruple it — if their comparative advantages in export expansion and import substitution could be fully realized. It will, however, require the combined efforts of the developed countries, in liberalizing trade barriers, and the developing countries, in improving efficiency, in the production and marketing of exports.

Admittedly, this is an optimistic scenario in the light of past performance. The future possibilities of agriculture in the developing world would not be realized as a matter of course; a substantial modification in policy, structure, and institutions would be necessary. The food and agriculture sector has to be assigned a much higher priority than in the past, which should be reflected in the larger allocation of resources to the agricultural sector, both in absolute amount and as a proportion of total investment. Preliminary estimates indicate that the requirements of annual gross investments in agriculture including transport, storage, marketing and processing would be about $107 thousand million by the end of the century. Required resources for current inputs, including seeds and fertilizer, would be even greater.

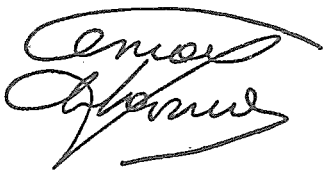
Socio-economic policies, including pricing and fiscal policies, must be oriented not only to eliminate discrimination against the agricultural sector. It may also be necessary to discriminate positively in its favour in order to overcome the effects of past neglect and initial obstacles. Training, education and research,

including rural institutions and peoples' organizations, must all be geared to enhance the returns from investment and increase the productivity of the agricultural sector.

Our analysis confirms that the doubling of food production in the face of a 60 percent increase in the population of the developing countries by the end of the century should contribute toward the reduction of undernutrition. But it alone cannot eliminate undernutrition or necessarily remove poverty unless income, employment opportunities and purchasing power of the rural poor are substantially raised. Redistributive measures, including pricing and distribution policies, benefiting the hard core of the poverty groups or disadvantaged regions will be necessary.

Food and agriculture, I hope, will figure prominently in the global negotiations to be launched by the Special Session of the General Assembly in 1980. It is too crucial to the welfare of millions of human beings not to play a pivotal role. Its interlinkages with overall growth, especially with industrialization, are vital. In March 1979, the Committee-of-the-Whole of the UN General Assembly devoted almost the whole of one session to the problems of food and agriculture. The Independent Commission on International Development Issues, known as the Brandt Commission, drew renewed attention in its report to the outstanding problems in this sector requiring urgent action.

In conclusion, I must add that the Twentieth FAO Conference in 1979 unanimously approved the policies, strategies, programmes, priorities and actions proposed for 1980-81, which it considered to be fully in accordance with the needs of the world situation. It recognized that FAO was gearing its activities and orienting its focus to meet the demands and challenges, elaborated not only by its own analysis and work such as AT 2000 and WCARRD, but also in the light of ongoing negotiations in the other relevant fora. The Conference adopted a Resolution confirming the responsibility placed upon FAO by the WCARRD Programme of Action in the areas of its own competence as well as being the leading agency of the ACC Task Force on Rural Development; it supported my efforts to mobilize resources for its implementation. The adoption of Exclusive Economic Zones has added new dimensions to FAO's work programme in fisheries, and we have developed a special programme of assistance. New orientation and increased emphasis are given to integration of forestry within the context of rural development. In Africa, rural development efforts are to be supported by an expanded programme for the control of African animal trypanosomiasis. Through its various programmes and activities, FAO strives not only to analyse, highlight and recommend measures relating to the principal issues in world food and agriculture, both short and long-run, but also to persist ever more actively in its endeavour to assist member countries in their struggle against hunger and poverty.



EDOUARD SAOUMA
DIRECTOR-GENERAL

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The following symbols are used in statistical tables:

– none, or negligible

... not available

"1977/78" signifies a crop, marketing or fiscal year running from one calendar year to the next; "1977-78" signifies the average for two calendar years.

Figures in statistical tables may not add up because of rounding. Annual changes and rates of change and, where applicable, exponential trends have been calculated from unrounded figures. Unless otherwise indicated, the metric system is used throughout.

Production index numbers [1]

In 1978, the FAO index numbers were substantially revised. Since then, with very few exceptions, the production data refer to primary commodities (for example, sugar cane and sugar beet instead of sugar). The base period was updated from 1961-65 to 1969-71 and national average producer prices (1969-71) were used as weights instead of regional wheat-based price relatives (1961-65). The indices for food products exclude tobacco, coffee, tea, inedible oilseeds, animal and vegetable fibres, and rubber. They are based on production data presented on a calendar-year basis.

For fishery production, quantities are weighted by the average unit values of fishermen's landings in 1969-71. For forest production, roundwood production is weighted by 1969-71 prices.

Trade index numbers [2]

In 1978, the indices of trade in agricultural products were updated to a new base period (1969-71). They include all the commodities and countries shown in the 1978 issue of the *FAO trade yearbook*. Indices of total food products include those edible products generally classified as "food".

All indices are calculated independently for the value, volume and unit value of exports and of imports.

Value indices represent the changes in the current values of exports (f.o.b.) and imports (c.i.f.), all expressed in US dollars. If some countries report imports valued at f.o.b., these are adjusted to approximate c.i.f. values. This method of estimation shows a discrepancy whenever the trend of insurance and freight diverges from that of the commodity unit values.

Volume and unit value indices represent the changes in the price-weighted sum of quantities and of the quantity-weighted unit values of products traded between countries. The weights are respectively the price and quantity averages of 1969-71, which is the new base reference period used for all the index number series currently computed by FAO. The Laspeyres formula is used in the construction of the index numbers.

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[1] For full details, see *FAO production yearbook 1978*, Rome, 1979. – [2] For full details, see *FAO trade yearbook 1978*, Rome, 1979.

Regional coverage

The regional grouping used in this publication follows the "FAO country classification for statistical purposes". The coverage of the groupings is in most cases self-explanatory. The term "developed countries" is used to cover both the developed market economies and the centrally planned economies of eastern Europe and the USSR, and "developing countries" to cover both the developing market economies and the Asian centrally planned economies. Israel, Japan and South Africa are included in the totals for "developed market economies". Western Europe includes Yugoslavia, and the Near East is defined as extending from Cyprus and Turkey in the northwest to Afghanistan in the east, and including from the African continent Egypt, Libya and the Sudan. Totals for developed and developing market economies include countries not elsewhere specified by region.

The trade index numbers of a country group are based on the total trade of each country included in the group irrespective of destination, and in consequence generally do not represent the net trade of the group.

1. WORLD REVIEW

INTRODUCTION

The world food and agricultural situation at the close of the United Nations Second Development Decade (DD2) presents several disquieting features. While the long-standing problems continue to cause concern, a number of unsatisfactory features of the immediate situation to which the Twentieth FAO Conference drew attention, "have become more precarious than for some years".

World food and agricultural production increased by an estimated 0.3% in 1979, the smallest annual rise since 1972. Food production declined by about 0.6% in the developed countries and registered a limited rise of 1.3% in the developing countries. The major disturbing feature is the decline of about 4% in world cereal production in 1979.

Reflecting increased import demands, world trade in cereals is expected to rise by 9% in 1979/80 to a record level of 174 million tons. Cereal prices and freight rates have risen substantially in recent months. Cereal import requirements of developing countries are estimated to rise by about 5 million tons, and of MSA countries by about 1.7 million tons, thus adding to the severe foreign exchange problems faced by them. Yet food aid in cereals in 1979/80 will not only be below the World Food Conference's minimum target of 10 million tons, but is expected to be lower than in 1978/79.

The FAO Conference at its Twentieth Session (November 1979) urged that the food aid target should be met without further delay and that contributions by donors to it, and to the International Emergency Food Reserve, be raised to meet the target level. One positive feature is the prospect of a new and enlarged Food Aid Convention by July 1980.

Cereal stocks at the end of the 1979/80 crop seasons are expected to decline by 5% below the previous year's level, with a large reduction in wheat and rice stocks more than offsetting an increase in coarse grains inventories. Most of the reduction is expected in developed countries, and developing countries' stocks will remain low. At 18% of consumption, world cereal stocks would be at the minimum required for world food security, and increasing concentration of cereal stocks in a few exporting countries may result in serious logistic problems in the case of extraordinary import needs.

Progress in setting up an internationally coordinated system of national reserve stocks of cereals was held up by the breakdown of the international negotiations on a new grains arrangement in February 1979. In view of the inadequacy of the action taken since 1974 to implement the International Undertaking on World Food Security, the Twentieth FAO Conference endorsed the 5-Point Plan of Action on World Food Security. The present position with regard to the implementation of the Plan presents some encouraging elements, but action is still limited.

Meanwhile, the incidence of emergencies has been increasing fast. As of mid-February 1980, abnormal food shortages were reported for 26 developing countries, twice as many as at the same time last year. The number of FAO/WFP emergency operations in 1979 were 66, as compared to 57 in 1978 and 37 in 1977.

A particularly disturbing development is the large rise in the current prices of fertilizers, which if not checked, may adversely affect the growth of fertilizer consumption in the developing countries. The resources of FAO's International Fertilizer Supply Scheme have steadily declined.

The few positive developments in the current situation include the effective control of the threat of Desert Locust and of the spread of African Swine Fever, with FAO playing in both cases a major role in mobilizing assistance.

The longer-term trends show that food and agricultural production in the developing countries rose during the Seventies at an average rate of about 3% a year, a quarter below the 4% target set by the International Development Strategy for the decade. While about 20 countries have achieved above average increases of 4% a year or more, in more than half of the developing countries production increase failed to match population growth. The low rate of growth of production was particularly noticeable in Africa and in the Most Seriously Affected (MSA) and the Least Developed (LDC) Countries.

As a result of insufficient production, food imports of the developing countries have increased by about 7% a year during the 1970s so far, which is considerably more than twice as fast as in the previous decade. Cereal imports, which represent half of their food imports, are estimated to rise from 52 million tons in 1971-73 to 85 million tons in 1979/80.

There is little evidence of reduction of the number of severely undernourished people estimated at 420 million in developing market economies in 1974/76. Total dietary energy supplies in developing market economies, as a group, approached nutritional requirements in 1977. However, available supplies in developing countries fluctuate from year to year and the distribution of these supplies seems highly uneven among regions and groups of people. There is an increasing recognition of the need to incorporate nutritional considerations in development planning and in the formulation, appraisal and monitoring of programmes and projects. The Twentieth FAO Conference, in order to emphasize the necessity to mobilize and sustain interest and support for the continued effort necessary to overcome widespread malnutrition, resolved that "a World Food Day be observed annually on 16 October".

The World Conference on Agrarian Reform and Rural Development (July 1979) took an important step forward in the struggle against rural poverty by adopting the Declaration of Principles and Programme of Action covering a wide range of measures at national and international levels.

The world catch of fish, crustaceans and molluscs is likely to show little change in 1979 confirming the slow growth during the Seventies which in average has been less than 1% a year, as compared to 5-6% achieved during the Sixties. World catches of food fish, however, fell in 1978: and even the steady past growth in the developing countries was reduced to less than the rate of population growth. To assist developing countries in tackling the new challenges posed by the "exclusive economic zones", FAO has established a special action programme to promote the rational management of the fishery resources in these zones.

Demand and production of forest products has been much affected by the slow economic growth in the developed countries that has characterized most of this decade. The sharp increase in the prices of alternative fuels has intensified the pressure on fuelwood supplies, which constitute the main source of fuel for domestic heating and cooking in the rural areas of the developing countries.

There has been an appreciable growth in fertilizer consumption in the developing countries, particularly MSAs and the increase in their share of world fertilizer production has also been very noticeable. However, their import dependence continues and the recent price rises have added to their foreign exchange burden for these essential imports.

The agricultural export earnings of the developing countries remain inadequate, highly unstable, and are further depressed due to protectionist measures of some developed countries. During the 1970s, they grew less rapidly than those of the developed countries and the share of the developing countries in world agricultural export earnings fell back

again to 30% on 1978. The commodity terms of trade of food and agricultural exports for manufactured goods have shown considerable instability, and the improvement noticed in 1976 and 1977 particularly for the developing market economies was already reversed in 1979. The terms of trade of food exports of developing countries continued to deteriorate during 1979. Concern was expressed at these developments at the FAO Conference which adopted a resolution on commodity trade, protectionism and agricultural adjustment. It was noted that the terms of trade on non-food exports had improved.

With the termination of the Tokyo Round of MTN, all but two of the agreements reached entered into effect. The articles of agreement for the Common Fund to finance an UNCTAD Integrated Programme for Commodities are in the process of final negotiations, but there are several major issues still unresolved at the time of writing. In October 1979, an international agreement on natural rubber was successfully concluded and is expected to enter into force in October 1980; but negotiations on a new cocoa agreement were inconclusive.

Official commitments of external assistance to agriculture in the "broad" definition increased further in 1978 to $ 8.9 billion, a rise of 28% in current and 12% in constant prices. Commitments in the "narrow" definition are estimated to have amounted to US$ 6.2 billion in 1978, a rise equivalent to 16% in 1975 prices. The concessional (ODA) commitments rose to US$ 4.1 billion, an increase of 15% in constant prices. Present levels of aid to agriculture remain, however, far below the estimated requirements of US$ 8.3 billion external assistance for the food sector, of which US$ 6.5 billion would be concessional (at 1975 prices). An encouraging feature of the recent trend is the rising proportion of concessional assistance to agriculture channelled to the poorest countries. A major constraint faced by many of these countries is that they often lack the resources to meet the recurrent costs involved in maintaining and operating certain projects. An important development in this connection is the approval by DAC in 1979 of new guidelines which DAC members will consider for the financing of recurrent costs, where such is necessary to assure successful maintenance and operation of projects and programmes.

Reliable data on the flow of domestic investment in agriculture is available only for a few developing countries. These indicate an appreciable increase in such investment in most of these countries during the period 1973-77.

FOOD AND AGRICULTURAL PRODUCTION

Preliminary estimates indicate that after the notable rise in world agriculture, fishery and forestry production in 1978, there was only a negligible increase in 1979.

Agricultural (crop and livestock) production, which is the dominant component in the index of total world production, rose by about 4% in 1978, the largest increase since 1972, but by less than 0.5% in 1979. As a result per caput production lost the improvement made in 1978, though it did not return to the lower levels of the period before 1977 (Table 1-1).

Table 1-1. Indices of world production of agricultural, fishery and forest products

	1975	1976	1977	1978	1979 1/	Change 1977 to 1978	Change 1978 to 1979
	1969-71 average = 100					%	
TOTAL PRODUCTION	112	114	119	123	...	4	...
Agriculture	113	115	118	123	123	4	-
Fisheries	116	121	122	125	...	2	...
Forestry	102	108	122	123	...	1	...
POPULATION	110	112	114	116	118	2	2
PER CAPUT PRODUCTION	102	102	104	106	...	2	...
Agriculture	103	103	104	106	104	2	-2
Fisheries	106	108	108	108	...	-	...
Forestry	93	97	107	107	...	-1	...

1/ Preliminary.

Note: For details of methodology and coverage of these indices, and those in subsequent tables, see the explanatory note preceding this chapter.

Fish production in 1978 increased by about 2%, barely sufficient to keep pace with population growth. Forest production increased by only 1% but though per caput production decreased, far better use is being made of residues left in processing. Estimates of fishery and forest production in 1979 are not yet complete but later sections of this chapter describe in greater detail the trends and problems in these two sectors.

The rest of this section is devoted to agricultural production in the narrower sense restricted to crops and livestock unless otherwise stated.

PRODUCTION IN1978

The revised estimates indicate that in 1978 world food production rose by 4.3% and agricultural production by 4.1% to be 24% and 23% respectively above the levels of 1969-71 (Table 1-2).

The developing regions as a whole did marginally better than the developed regions. The best results were obtained in the Asian centrally planned economies where both food and agricultural production rose by 6%, almost entirely because of substantial increases in China. In both the Near East and in Africa there were increases of around 4% in food production, and increases of 4% and 3% respectively in total agricultural output, much of which represented a recovery from the fall caused by widespread drought in the previous year. The increase in Africa was particulalry welcome as the rate of production increase had been seriously lagging behind population growth in this decade. On the other hand, the 1978 increases of 3.6% in both food and agricultural production in the Far East were much less than in the year before because of some damage to crops from heavy rains and flooding. The increase in food production in Latin America at about 3.5% was similar to that of the previous year but the increase in total agricultural production was less owing to a sharp reduction in the cotton area.

Agricultural production increased in all developed regions in 1978, except North America, with particularly good cereals crops, especially in Australia and the U.S.S.R. In North America there was a slight reduction largely in production because of a fall in cotton production of about 25%

PRODUCTION IN 1979

Preliminary estimates for 1979 indicate that world food and agricultural production did not change significantly, increasing only marginally by 0.3%. This resulted from a modest increase of about 1.3% in developing countries and a fall of about 0.5% in developed countries.

The performance in the various developing regions was highly uneven. There were rises in the Asian centrally planned economies, Latin America and Africa but there was virtually unchanged production in the Near East and a fall in the Far East.

The highest increase was again in the Asian centrally planned economies where it was estimated to have been about 4%. It was, however, concentrated in China where weather and other factors were favourable. Both Kampuchea and Vietnam had very poor crops.

In Latin America, production rose overall by 2.5% with increases throughout the region especially in pulses, oil crops and tobacco. Cereal production, mostly of coarse grains, increased chiefly because of a partial recovery in Brazil from the small crop of 1978. Argentina, on the other hand, had a poor year with considerable falls in its production of coarse grains, sunflowerseed and cotton.

In Africa the large recovery in 1978 was followed by a smaller increase of just over 2% in 1979. Cereal production, chiefly coarse grains, was somewhat lower because of dry conditions in the Sahel and southern Africa but there were increases in the production of oil crops, sugar and cocoa.

Following the sharp rise in the previous year, production in the Near East remained virtually unchanged in 1979. Cereal harvests were mostly poor, except in Turkey, and there was a significant fall in cotton production.

More disturbing is the drop in production of nearly 2% in the developing market economies of the Far East. This is the fourth time in the 1970s that a decline has occurred in this most populous region in the world. While the production of wheat increased, that

Table 1-2. FAO index numbers of world and regional food and agricultural (crops and livestock) production

	1975	1976	1977	1978	1979 1/	Change 1978 to 1979	Annual rate of change 1961-70	Annual rate of change 1970-79
	..... 1969-71 average = 100					..... %		
Food production								
Developing market economies	115	118	121	126	126	-	3.0	2.9
Africa	107	111	109	113	115	2.1	2.6	1.6
Far East	115	115	122	127	124	- 1.9	2.7	2.9
Latin America	116	122	127	131	134	2.4	3.5	3.5
Near East	121	128	125	131	131	0.1	3.2	3.5
Asian centrally planned economies	118	122	121	129	134	4.1	2.9	3.2
TOTAL DEVELOPING COUNTRIES	116	119	121	127	128	1.3	2.9	3.0
Developed market economies	111	112	116	119	121	1.6	2.4	2.2
North America	114	118	122	122	126	3.5	3.4	2.9
Oceania	119	127	124	140	133	- 5.2	2.3	3.8
Western Europe	109	108	111	116	117	1.0	2.3	1.7
Eastern Europe and the U.S.S.R.	112	115	118	126	121	- 4.6	3.1	2.2
TOTAL DEVELOPED COUNTRIES	112	113	116	121	121	- 0.6	2.6	2.2
WORLD	113	116	118	124	124	0.3	2.8	2.5
Agricultural production								
Developing market economies	114	116	120	125	125	-	2.8	2.7
Africa	107	110	108	112	114	2.2	2.7	1.4
Far East	114	114	121	126	123	-1.9	2.7	2.8
Latin America	115	118	124	129	132	2.5	2.9	3.2
Near East	119	125	123	129	128	- 0.2	3.3	3.2
Asian centrally planned economies	118	122	121	128	133	3.9	3.0	3.1
TOTAL DEVELOPING COUNTRIES	115	118	120	126	127	1.2	3.0	2.9
Developed market economies	111	112	115	118	120	1.6	2.1	2.1
North America	113	117	122	121	125	3.5	1.7	2.7
Oceania	112	118	115	128	123	-3.9	3.1	2.6
Western Europe	110	109	111	116	117	0.6	2.2	1.7
Eastern Europe and the U.S.S.R.	112	115	117	126	120	- 4.1	3.1	2.2
TOTAL DEVELOPED COUNTRIES	111	113	116	120	120	- 0.4	2.4	2.2
WORLD	113	115	118	123	123	0.3	2.6	2.5

1/ Preliminary.

Note: Because the percentage changes are calculated from unrounded figures the direction and magnitude of these changes may not always be exactly the same as the changes in index numbers.

of rice and coarse grains fell by more than 10%. Although monsoon rains were abundant in some countries, they were late, erratic or seriously below normal in others, especially in India, Pakistan, the Philippines and Sri Lanka. There were increases in the production of cotton, because of a very good crop in Pakistan, and of oil crops, tobacco and rubber but production of sugar, coffee, tea and especially jute declined.

In the developed regions, production in north America increased by 3.5% in 1979 following the small decrease in 1978. Production fell sharply in Canada because of adverse weather but in the United States there were large harvests of wheat, maize, soybeans, sunflowerseed and cotton.

In western Europe there were good harvests of grapes and sunflowerseed, and the production of meat, milk and eggs increased only slightly less than in 1978. However, wheat production declined by some 6% from the 1978 record and there were also small decreases in the production of coarse grains, potatoes, sugarbeet and rapeseed.

In eastern Europe and the U.S.S.R. agricultural production fell by about 4% and food production by slightly more, following an increase of 7% in the previous year. Mainly because of adverse weather in the winter of 1978-79 cereal production is estimated to have fallen by about 25% from the 1978 record in U.S.S.R. and also declined heavily in Czechoslovakia and Poland. In the region as a whole there were small declines in the production of sugar, pulses and milk but cotton and tobacco increased and, to a lesser extent, oil crops, meat and eggs.

Agricultural production also decreased in Oceania by 4% and food production by over 5% in 1979, following the very sharp increases in the previous year. Both cereal and meat production were lower but the production of oil crops and cotton and, to a lesser extent, milk increased.

MAIN COMMODITIES

Cereals

World cereal production in 1979 is estimated at about 1,530 million tons, about 4% below the record of the previous year. The fall in production was largely due to smaller crops in eastern Europe and the U.S.S.R., and in Oceania as well as in the Far East. In developing regions output was 10% lower than in 1978.

Wheat production is estimated to have fallen by about 6% from the 1978 record of 449 million tons to about 422 million tons in 1979. The decrease is primarily due to a sharp fall of about 25% in production from 121 million tons to 90 million tons in the U.S.S.R., with lesser falls in Canada, Australia, eastern Europe and western Europe. The largest increase came from the United States where the crop is estimated to have been about 58 million tons, some 19% above the output in the previous year. The developing regions as a whole also increased their production by about 10 million tons to 153 million tons with the major producers - China and India - showing increases of about 10%.

The production of coarse grains decreased by 3%, from 760 million tons in 1978 to 735 million tons in 1979. Production fell sharply in the U.S.S.R. by nearly 25% to 80 million tons. However, it increased in the U.S.A. by 17 million tons to 235 million tons, about 7.5% above the record in the previous year, despite the reduction by the United States farmers of their coarse grain acreage. A good crop, slightly larger than in 1978, was obtained in China but in India, as in a number of other Far East countries, production declined as a result of the poor monsoon. There were also smaller crops in Argentina, Canada, eastern Europe, the Sahel and southern African countries because of unfavourable weather conditions.

World production of rice (paddy) declined slightly from 383 million tons in 1978 to 374 million tons in 1979. Production increased slightly in Bangladesh, Indonesia and Vietnam but decreased in most other Far Eastern countries, and especially in India. The 1979 crop is about 6% down on the previous year in the rice importing countries but is slightly up in the exporting countries with very good crops in Australia and the United States. Although production in Japan fell in 1979 due to a further diversification of land from rice to other crops, it still remained in excess of domestic requirements.

Cassava

The production of cassava in 1979 is estimated to have increased slightly to 120 million tons of roots, corresponding to about 40 million tons in grain equivalent. Output increased in parts of the Far East and in Africa, especially Zaire, Nigeria and Mozambique, as a result of larger cultivated area and better yield. The increases were almost completely offset by a 30% reduction in the harvest in Thailand due to extensive damage from floods in late 1978, followed by severe drought, limited replanting in early 1979 and government measures aimed at slowing down the spread of cassava monoculture in newly cleared forest areas. Production in Brazil, where one fifth of the world's cassava is produced, remained virtually unchanged. In the rest of Latin America, it increased only slightly as a result of declining per caput consumption of cassava as food and a shift to more intensive forms of animal feeding.

Pulses

Production of pulses was almost the same as in the previous year with moderate increases in China and Latin America being offset by decreases in U.S.S.R., western Europe and the U.S.A.

Oilcrops

World production of oil bearing crops in oil equivalent increased by about 3% to a record of almost 36 million tons in 1979. This was mostly due to increases in output in the developed countries which went up by 13%. Production of all oil crops, except copra, was higher than in the previous year with soybean and sunflowerseed reaching the highest levels ever. World soybean production rose to a new record of 94 million tons, helped by the impressive increase of 21% in the United States to a level of 62 million tons. Argentina expanded its area sharply, and its output grew by nearly 50%. Brazil's crop was for the second year running affected by drought but was slightly higher than in 1978. In spite of a reduced crop of sunflowerseed in Argentina world production went up by about 18%. Better crops were harvested in practically all other producing countries, particularly in the United States. Cotton seed output increased by 7% mainly reflecting good increases in the United States, U.S.S.R. and Pakistan. The rate of growth of world palm oil production accelerated again after a slowdown in 1978. Output in Malaysia is estimated at a record of more than 2 million tons owing to better yields and a continuing increase in the number of bearing trees. Lower output of rapeseed in Europe was compensated by some increases in Canada, India and China. Groundnut production recovered slightly from the reduced level of the preceding season with increases in West Africa, Argentina and Sudan. World olive oil production was also slightly larger with gains in Italy, but with reduced output in Turkey and Tunisia. Coconut production, however, declined following inadequate rain in the Philippines.

Sugar

The steep upward trend in sugar production since 1975/76 was halted in 1978/79 as total output decreased by about 1.5 million tons to 88.8 million tons raw value. Production in 1979/80 decreased further to 87.5 million tons. Cane sugar output in 1979/80 fell by about 1.5 million tons largely as the result of low prices and restricted export outlets. Brazilian output declined by 0.8 million tons as increased quantities of cane were diverted to the production of fuel alcohol. Production also dropped in Cuba by 0.7 million tons from 8 million tons in the previous season. Low prices and drought reduced India output

further to 5.3 million tons from the unusually large 1977/78 production of 7 million tons. Overall beet sugar production also decreased by about 1.5 million tons largely reflecting a fall of 1 million tons in the U.S.S.R. output.

Milk

Milk production rose by about 2% in 1978, and a further 1% in 1979 to reach approximately 460 million tons. Output in developing countries increased by close to 2% to 104 million tons, between a fourth and fifth of the world output. It grew at a much slower pace in Europe, notably the EEC, but decreased in the U.S.S.R.

Meat

World meat production increased by less than 2% in 1979 to about 133 million tons. Pigmeat production, however, expanded virtually worldwide and exceeded beef output by 10%. In China, the world's largest pigmeat producer, the rate of expansion remained considerable. There were also particularly large increases in U.S.A., Canada and Japan. In Latin America and especially in Brazil, pigmeat production was affected by outbreaks of African Swine Fever.

Beef production declined by 4% reflecting lower production in North America, Oceania, and Latin America. However, it increased in Europe and the U.S.S.R. where production is less affected by cyclical fluctuations. Following a decline in cattle numbers in North America since 1976 some rebuilding of herds appears to have taken place in the second half of 1979.

Production of sheep and goat meat in 1979 remained virtually stationary with expansion in developing countries offsetting lower levels in developed countries. There was a further marked increase in poultry meat production with rapid expansion continuing in Brazil, the major developing exporting country, and also in China. Among developed countries it is estimated to have increased by about 10% in both the U.S.A. and the U.S.S.R., by about 7% in Japan but more slowly in the EEC.

Fish

Present information suggests little change in the world catch for fish, crustaceans and molluscs in 1979. Details for the 30-odd countries so far available suggest falls and increases in about equal measures. The catch by the U.S.S.R., the second largest producing country in the world, fell for the third successive year and preliminary estimates suggest also a fall in production by the U.S.A. Against this, some Southern Hemisphere countries notably Chile, increased their catches. There is no detailed information yet available on the catch by Japan or China, the world's first and third largest fish producers respectively, although there is likely to have been little change in either country. Japanese distant water catches have been maintained rather better than expected and yields from local waters have continued high. Among other major fishing nations the catch by Mexico increased very sharply but there was a fall in production by Thailand. Landings by the Philippines and Argentina remain little changed.

More detailed discussion of the problems of fish production and trade will be found below in the section on Fisheries, together with qualitative information in Tables 1-14 and 1-15 concerning changes by regions.

One point of interest concerns the composition of the world catch. In past years fluctuations have largely affected fish used for reduction to meal and oil and there has been steady growth in fish or direct human consumption. It is now clear, however, that production of fish used directly for human food fell in 1978 for the first time for several decades and 1979 does not on present evidence offer much hope of a significant recovery. The catch by developing countries, however, increased but at a rate lower than the trend.

Cocoa and other beverages

World production of cocoa in 1979 is estimated at 1.5 million tons, almost 7% above the previous year. There was an increase in west African production with a substantial recovery in Cameroon, Ghana and Nigeria. In Latin America also production is estimated to have increased by some 3%.

World coffee production rose by about 3% in 1979 to 4.8% million tons. After recovering from the effects of the 1975 frost, the Brazilian crop was handicapped by further but lighter frosts in 1978 and 1979. In the Ivory Coast the crop continued to recover from the drought in 1978 and output in Colombia also expanded.

World tea production at nearly 1.8 million tons has changed very little over the three years 1977-79. In 1979 production in India was affected by drought and decreased to 547 thousand tons, while very little was produced in Uganda. Output in Sri Lanka recovered to 206 thousand tons, and with continued strong expansion, the outputs of Kenya and Turkey were each close to 100 thousand tons.

Non-food products

The area under cotton expanded in 1979, as producers responded to the favourable prevailing prices. World production of lint recovered from the fall in 1978 to exceed 14 million tons. There was a particularly strong recovery in U.S.A. and good increases in Brazil, Egypt, Pakistan and the U.S.S.R. Plantings of extra-long staple cotton have increased in Egypt and to a less extent in Sudan where there is greater competition with other cash crops.

Production of jute, kenaf and allied fibres in 1979 is estimated to have fallen back to about 4.0 million tons because of widespread drought in the main growing areas, especially in Bangladesh and India. In Thailand there was also some shift by growers to other crops.

Natural rubber production increased to a record level of 3.7 million tons in 1979 with sustained production in Malaysia and further increases especially in Indonesia and Thailand.

INCIDENCE OF FOOD SHORTAGES, PESTS AND DISEASES

Abnormal food shortages: At the end of 1979 the FAO Early Warning System listed 26 developing countries as being affected or threatened by abnormal food shortages as a result of poor crops, the effects of war or difficult economic situations. Of the 26 countries 17 were in Africa, 5 in the Far East, 2 in the Near East and 2 in Latin America. In the course of 1979 the food situation in Kampuchea reached crisis proportions and was also particularly difficult in Angola, Cape Verde, Somalia and Uganda. The number of countries listed by the FAO Early Warning System in the "food shortages" list is now twice as many as at the same time last year, reflecting the effects of drought in southern Africa, poor crops in several Sahelian countries, and irregular monsoons in the Far East The incidence of man-made disasters such as those caused by wars and liberation struggles also increased in 1979.

The World Food Programme's normal emergency allocation of $ 45 million proved insufficient to meet the challenge posed by the increased emergency needs. During 1979 these resources had to be raised by two ad hoc allocations to $ 65 million.

Locusts and grasshoppers: Due to intensive aerial and ground control campaigns the threat of a major Desert Locust plague which developed during 1978 was finally terminated in early 1979. FAO played a major role in coordinating control action, in arranging for funds ($ 6.2 million in 1978) to finance the operations, and in the delivery of control equipment and pesticides. Subsequently there have been no gregarious populations and no further control measures have been required. However, groups of adult locusts were present in

Sudan and possibly also in the northern coastal areas of Ethiopia. It was noted that if there are good winter-spring rains in coastal areas surrounding the Red Sea and Gulf of Aden further control measures would be required in 1980.

An outbreak of the African Migratory Locust and numerous Red Locusts were reported in Angola during May 1979. There were also upsurges of the African Migratory Locust and Red Locust in the Lake Chad basin in the late part of 1979, which necessitated aerial and ground spraying. In 1979 in the Ivory Coast there was a significant increase in the area infested by the variegated grasshopper and immediate steps were taken to develop a control strategy and to strengthen the plant protection service. There were also widespread and extensive populations of several species of grasshopper in the Sahelian zone extending from Senegal and Mauritania to Sudan.

African swine fever: There was no increase in the number of countries affected by African swine fever (ASF) between March 1979 and the end of the year. Five affected countries - Malta, Brazil, the Dominican Republic, Haiti and Saõ Tomé - have received assistance from FAO under the Technical Cooperation Programme (TCP). Malta, having slaughtered its entire pig popultion in order to eradicate the disease, has proceeded with a restocking programme with the financial support of the European Economic Community and technical advice and assistance from FAO. Sporadic outbreaks continued in the remaining recently infected countries. FAO's assistance under TCP was also provided to 11 uninfected Latin American and Caribbean countries at high risk in an effort to prevent the further spread of ASF. Diagnostic and quarantine capabilities have been strengthened or established for the first time in these countries. During 1979 FAO provided more than $ 1.3 million to assist in the campaign against ASF.

In October 1979 FAO convened an Expert Consultation in Panama to review the situation and to plan medium and long-term strategies to prevent further spread of ASF in Latin America and the Caribbean. As a follow-up to the Consultation it is hoped to start in 1980 a Regional Project on ASF control with special emphasis on training, if the necessary funds are forthcoming. In December 1979 an ad hoc scientific panel was convened in FAO Headquarters in Rome to define research programmes which might lead to the early development of a safe and effective vaccine against ASF. To this end a research network has been proposed and funds are being sought to support expanded research.

African Animal Trypanosomiasis: Important developments have taken place in the Programme for the Control of African Animal Trypanosomiasis and Related Development which was launched by FAO in 1975 in the form of a preparatory five-year phase devoted to expanded training of personnel at all levels, applied research, pilot field trials aimed at improving both control techniques and assessments of the socio-economic implications of the disease, as well as the promotion of the rearing of trypanotolerant livestock. By 1979 the programme had reached the final stage of this phase and the Twentieth Session of the FAO Conference held in 1979 called upon FAO to establish a Commission on African Animal Trypanosomiasis to advise the Director-General on the implementation of the Programme. The first meeting of the Commission will take place in April 1980 to consider plans for control and development activities on an expanding scale. Emphasis is being given to support for the planning and implementation of rural development projects in the areas concerned, particularly in West Africa.

LONGER-TERM TRENDS IN DEVELOPING COUNTRIES

Food production in the developing countries as a group increased at an average annual rate of 3% during 1970-79 which was marginally higher than the 2.9% during 1961-70 (Table 1-2 above). The agricultural production trend was the opposite and shows a slowing down of the growth rate to 2.9% a year in 1970-79. The UN Second Development Decade (DD2)is thus closing with a shortfall of nearly a quarter in the achievement of the agricultural growth target of 4% set in the International Development Strategy and reaffirmed by the World Food Conference.

One of the worst features of the trends during the 1970s is that food production increased slowest in the poorest countries. In all regions the rate of production increase during the 1970s in the most seriously affected (MSA) countries was not only less than in the other developing countries in the same region, but was also less than during the 1960s (Table 1-3).

The position in the different regions is little changed from that described in detail in Chapter 2 of SOFA 1978. Only in the Near East in the non-MSA countries was the DD2 target achieved as the result of a considerable increase in the rate of production over the previous decade. In the MSA countries the rate, already low in the 1960s, fell still further in the 1970s. The levels of production in many of the countries in the region are characterized by sharp fluctuations from year to year, which largely reflect arid conditions and the dominance of production from rainfed areas. Other factors contributing to the instability includes change in cropping patterns and cultivation practices, including expansion into marginal areas.

In Latin America, the average annual rate of production has remained unchanged between the two decades at 3.5%. With 8% of the world's population, the region produces 10% of the world's food supply. Nevertheless, though the region as a whole is a net food exporter, the majority of Latin American countries are net importers of one or more basic foodstuffs. The growth and dynamism of modern enterprises in agriculture has resulted in large production increases but this has been accompanied by deep social and economic imbalances that have accentuated inequalities between different groups of producers.

Table 1-3. Annual changes in food production in MSA and other developing countries by region

	MSA countries	Other developing countries	All developing countries
	..... %		
Africa			
1961 to 1970	2.7	2.5	2.6
1970 to 1979	1.6	1.5	1.6
Far East			
1961 to 1970	2.5	3.5	2.7
1970 to 1979	2.3	3.5	2.9
Latin America			
1961 to 1970	3.6	3.5	3.5
1970 to 1979	2.9	3.5	3.5
Near East			
1961 to 1970	2.3	3.3	3.2
1970 to 1979	1.9	4.1	3.5
Total			
1961 to 1970	2.5	3.3	2.9
1970 to 1979	2.2	3.4	3.0

In the Far East, the overall growth rates was slightly higher in the 1970s than in the 1960s. In fact the rate was maintained only in the non-MSA countries; in the MSA countries it has fallen. This is a serious matter since total population in the developing market economies of this region increased by some 250 million between 1968 and 1978 (the last year for which figures are available). At the same time it is estimated that the amount of arable land and land under permanent crops per person declined from about 0.28 ha in 1968 to 0.23 ha in 1978, a decline of 18%. The proportion of severely undernourished people was estimated to be more than a quarter of the population in the period 1974-76 and was the highest of all regions in terms of numbers.

The performance in Africa has been the most disappointing with the rate of growth of food production in the 1970s being only three fifths of what it was in the previous decade. Worse still, there was little difference in the 1970s between the rate of growth in the MSA countries and that in the other developing countries. It has been estimated that if these trends continued there would be a reduction in food self-sufficiency from about 90% in the early 1970s to about 80% by 1985. To meet this serious situation, a Regional Food Plan for Africa was prepared by FAO, in cooperation with the United Nations Economic Commission for Africa and the Member States of the Organization for African Unity. FAO is cooperating with these two organizations in determining means of assisting in the implementation of the Plan which will be further discussed at the 11th FAO Regional Conference for Africa.

The long-term trends are even more disquieting when viewed in relation to the growth of population. Table 1-4 indicates that in the developing market economies per caput food production increased by only 0.3% in 1970-79 or at even less than the rate in the 1960s. Small improvements were obtained in all regions except Africa where per caput food production actually declined by 1.3% a year in 1970-79 after remaining unchanged in the

Table 1-4. FAO index numbers of food (crops and livestock) production per caput, developing regions and MSAs

	1975	1976	1977	1978	1979 1/	Change 1978 to 1979	Annual rate of change 1961-70	Annual rate of change 1970-79
	....1969-71 average = 100					..... %		
Developing market economies	101	101	102	103	100	-2.6	0.4	0.3
Africa	94	94	89	90	89	- 0.9	-	-1.3
Far East	102	99	103	104	100	-4.3	0.2	0.4
Latin America	102	104	105	106	105	- 0.3	0.7	0.8
Near East	106	109	104	106	103	- 2.7	0.5	0.7
Asian centrally-planned economies	108	111	108	113	116	2.7	1.1	1.6
TOTAL DEVELOPING COUNTRIES	103	104	104	106	105	- 0.9	0.6	0.7
MSA in Africa	94	93	91	91	90	- 1.1	0.4	- 1.2
MSA in Far East	100	96	101	101	95	-6.0	-0.1	- 0.1
MSA in Latin America	95	98	98	101	103	2.0	1.0	-
MSA in Near East	103	102	95	95	92	-3.0	0.2	- 0.5
TOTAL MSA COUNTRIES	99	96	99	99	94	- 4.8	0.1	- 0.3

1/ Preliminary.

1960s. The Asian centrally planned economies did particularly well in raising their per caput food production from an average of 1.1% a year in the 1960s to 1.6% a year in 1970-79. In all the MSA countries, grouped by region, the situation worsened considerably in the 1970s when per caput food production actually fell by 0.3% a year after a negligible increase in the 1960s.

The seriousness and complexity of the situation becomes far clearer when the position of individual countries is examined. Table 1-5 shows the average annual rate of change of food production between 1970 and 1979 compared with population growth in 106 developing countries. It is encouraging that 29 countries achieved food production growth rates above 3.5% per year during the Seventies. Nevertheless in 58 or more than half these countries food production was not keeping pace with the rate of growth of the population. In some of the countries the causes were clearly effects of war, liberation struggles or internal conflicts and it could reasonably be hoped that when these crises were over food production would increase sharply. In others, there were valid economic reasons on the grounds of comparative advantage to export non-agricultural or even non-food products and to import the balance of food required. However, the situation could not be regarded so optimistically in all cases. In certain countries high rates of population growth in the range of 3%-4% a year far outweighed the growth of food production and there is no clear indication as to how and when the problem will be resolved.

In some of the others there is no obvious explanation of the falling levels and a further examination needs to be made of the policies followed by the respective governments and of the local difficulties that have been encountered.

In the course of analysis for FAO's study, Agriculture: Toward 2000, it has been found that the position in the least developed countries (LDCs) is even worse than that in the MSA countries. The current trends in the LDCs, which are predominantly dependent on agriculture, show declining food output per caput, stagnant or deteriorating nutritional levels, declining agricultural exports and rapidly rising imports of food and agricultural commodities. Food production in these countries increased during the 1970s by an annual average of only 1.9% and total agricultural production by only 1.7%. Though these rates are somewhat better than those in the previous decade they are still well below the population growth rate of 2.5% a year. As a result, the output of food per caput has been declining by an average of about 0.6% a year and of agricultural products by a little more. Furthermore output has been very unstable with large annual fluctuations giving rise to periodic food shortages which drive prices above levels that the poorer sections of the population can afford.

Disturbing as the trends of food production increase in developing countries are, their continuation in the future would be even more so. The major problem areas in food production are in the Africa Region, including both MSA and non-MSA countries, the MSA countries in other regions, and the Least Developed and the poorest countries. The 20th FAO Conference noted with concern that the "lag in food and agricultural production remained greatest in Africa and in the poorest countries in general and the dependence of these countries on external supplies of food had been steadily growing". The Conference requested FAO to continue to pay special attention to the needs of the LDC and MSA countries, besides stressing the importance of following up the Regional Food Plan for Africa to which reference has been made above.

Cereal production

The provisional results of FAO's study, Agriculture: Toward 2000, indicate that the cereal deficit countries would, if the trends remain unchanged, face in 1990 a net combined cereal deficit more than twice as large as in 1975. Cereals constitute about half the gross value of food imports of the developing countries, and during the 1970s

Table 1-5. Annual rate of change of food (crops and livestock) production in relation to population growth for selected developing countries, 1970-79

Population % / Food production %	1.5 and below	1.6 to 2.0	2.1 to 2.5	2.6 to 3.0	3.1 to 3.5	3.6 and above
- 3.0 and below			Kampuchea Dem.			
- 2.9 to - 2.0	Barbados					
- 1.9 to - 0.1	Trinidad and Tobago		Mozambique, Congo	Morocco, Gambia Namibia, Mauritania, Ghana	Algeria	
0.0 to 0.9	Uruguay, Gabon Jamaica, Suriname, Cyprus	Samoa	Ethiopia, Lebanon, Angola, Guinea, Egypt	Togo, Peru, Somalia	Honduras, Iraq	Jordan
1.0 to 1.5		Chile Yemen Ar. Rep.	Haiti, Nepal, Chad Sierra Leone			
1.6 to 2.0		Cuba, Fiji Mauritius	Lesotho, Madagascar, Bangladesh, Lao,	Tanzania, Zaire, Uganda, Burma, Benin, Mongolia	Dominican Rep. Nigeria	Kenya
2.1 to 2.5		Guinea Bissau	Buthan, Guyana Vietnam, Central Afr. Rep., India Indonesia		Rhodesia, Malawi, Liberia	
2.6 to 3.0			Upper Volta, Burundi, Papua New Guinea	Afghanistan, Niger Botswana, Mali		
3.1 to 3.5	China	Reunion	Cameroon, Yemen, Dem,	Swaziland, Rwanda, Paraguay	Mexico, Pakistan Venezuela	
3.6 and above	Argentina	Sri Lanka, Korea Rep.,	Tunisia, Costa Rica, Colombia	Bolivia, Ecuador, Panama, Sudan, Turkey, Malaysia, Iran, Senegal, El Salvador, Brazil, Philippines, New Hebrides, Bahamas, Korea Dem., Thailand	Nicaragua, Zambia, Guatemala, Saudi Arabia, Syria	Ivory Coast, Brunei, Libya

Note: Countries in each group are listed in ascending order of the annual rate of change in their food production; MSA countries are underlined.

total cereal production in these countries increased much more slowly than in the previous decade (Table 1-16).

Table 1-6. Average annual increase in area, yield and production of cereals in world, developing and developed countries, and contribution of yield to production increases

	Area		Yield		Production		Share of yield	
	1961-65 to 1970	1970-1979	1961-65 to 1970	1970-1979	1961-65 to 1970	1970-1979	1961-65 to 1970	1970-1979
	% per year						%	
Developing market economies	1.5	0.9	2.3	1.8	4.1	2.7	56	67
Africa	1.7	0.9	0.8	0.2	2.6	1.1	31	18
Far East	1.4	0.8	3.3	2.1	5.0	2.9	66	72
Latin America	2.4	1.2	1.6	1.4	4.3	2.6	37	54
Near East	1.1	1.2	0.7	2.2	1.9	3.4	37	65
Asian centrally-planned economies	0.6	1.7	1.6	1.3	2.2	3.1	73	42
TOTAL DEVELOPING COUNTRIES	1.2	1.2	1.9	1.7	3.4	2.9	56	59
Developed market economies	-0.2	1.2	2.6	1.8	2.3	3.1	113	58
North America	-1.0	1.8	3.3	1.9	2.0	3.8	165	50
Oceania	3.9	4.0	-0.3	2.1	3.4	6.1	-	34
Western Europe	-	-0.4	3.1	2.2	3.1	1.8	100	122
Eastern Europe and the U.S.S.R.	-0.6	1.0	5.3	0.7	4.4	1.7	120	41
TOTAL DEVELOPED COUNTRIES	-0.4	1.1	3.6	1.5	3.0	2.6	120	58
WORLD	0.5	1.1	2.6	1.6	3.1	2.7	84	59

In Africa, Far East and Latin America, there was a general slowing down in the rates of increase of area and yields and, consequently, of production. The rate of increase of production in the Near East increased largely due to a marked rise in the rate of increase of yield and in the Asian centrally planned economies because of a higher rate of extension of area.

In the developing countries as a whole the contribution of yield to production increases rose slightly between the 1960s and 1970s. This was largely due to the sharp increases in this contribution in both the Near East and Latin America. In the Far East it also increased still further in the 1970s from the already high proportion in the previous decade, primarily because of the land shortage which prevents any greatly significant expansion of area in the region. It is, however, surprising that in the other two regions - Africa and the Asian centrally planned economies - the contribution of yield to production fell sharply.

In the developed regions in the 1960s, North America and Eastern Europe and the U.S.S.R. were able to raise their production but reduce the area under cereal because of the large increases in yields. In the 1970s, with smaller increases in yields, the two regions again expanded the area. In Western Europe continuing increases in yields in both decades have enabled production to increase with an unchanged or declining area. In Oceania with no shortage of suitable land the emphasis has throughout been on extensive rather than intensive production.

FOOD SUPPLIES AND NUTRITION

In line with the recommendation of the Nineteenth Session of the FAO Conference that the assessment of the world food and nutritional situation made in the Fourth World Food Survey should be periodically reviewed and updated, it is now possible to extend this assessment up to 1977.

Table 1-7 indicates that in 1977 dietary energy supplies in the developing countries as a group equalled their total energy requirements for the first time since such data have been recorded. However, average dietary supplies for developing market economies were still 2% short of nutritional requirements in 1977. Available supplies in developing countries fluctuate widely from year to year. They are determined by the levels of domestic production and food imports and their distribution is highly uneven among the different developing regions, countries and groups of people within countries. Therefore the marginal improvement recorded for developing countries as a group is clearly far from sufficient for the elimination of hunger and malnutrition.

In 1977 both Latin America and the Near East had almost 10% more than their requirements, and the Asian centrally planned economies almost 5% more but both Africa and the heavily populated Far East still had about 5% less than their requirements. Even in the regions with an excess of supplies over nutritional requirements, there are many individual countries where this is not the case, and within each country there are large poverty groups that are unable to obtain their nutritional requirements.

Dietary energy supplies in relation to requirements increased in the second half of the 1960s in each of the developing regions except Latin America, where they were already 6% above requirements. The increases were particularly substantial in the Far East and the Asian centrally planned economies. During the 1970s, further progress has been extremely slow except in the Near East and the Asian centrally planned economies. In the Far East, supplies in relation to requirements dropped by as much as 5% in 1975, so that they averaged slightly less in 1975-77 than in 1969-71.

Once again, the weak position of the poorest countries is apparent. The increase between 1966-68 and 1969-71 in the dietary energy supplies of the MSA countries in relation to their requirements was in fact slightly more than that in the other developing countries. Subsequently, however, the supplies of the MSA countries declined somewhat from 93% in 1969-71 to 90% in both 1972-74 and 1975-77, in contrast to the continued progress in the other developing countries. By 1977 the MSA countries had 8% less than their requirements, while the others had 5% more.

Table 1-7. Dietary energy supplies as percentage of nutritional requirements

	Average							
	1966-68	1969-71	1972-74	1975-77	1974	1975	1976	1977 1/
	% of requirements							
Developing market economies	93	96	96	97	97	95	98	98
Africa	92	94	93	95	93	94	95	95
Far East	88	94	93	93	94	89	94	94
Latin America	106	106	106	107	107	107	107	108
Near East	98	99	102	108	104	107	109	109
Asian centrally planned economies	89	95	99	103	101	102	102	104
TOTAL DEVELOPING COUNTRIES	91	96	97	99	98	97	99	100
MSA countries	88	93	90	90	91	87	92	92
Other developing countries	94	98	101	105	103	104	104	105
Developed market economies	125	128	130	130	130	129	131	131
North America	128	131	132	133	132	130	135	135
Oceania	124	127	127	129	125	130	128	129
Western Europe	127	130	132	132	133	132	132	132
Eastern Europe and the U.S.S.R.	128	132	133	135	134	135	134	136
TOTAL DEVELOPED COUNTRIES	126	129	131	132	132	131	132	133
WORLD	103	107	107	109	108	107	109	110

1/ Preliminary.

Source: FAO Food Balance Sheets for 164 countries.

FAO's Fourth World Food Survey contained estimates of the number of people who were severely undernourished, based on a critical minimum dietary energy intake (1.2 times the basal metabolic rate) and an attempt to take account of income distribution within countries. In the updating of the Survey, account has been taken of the more recent production data used in the food balance sheets for the period 1974-76. This has necessitated a revision of the previous series of per caput food supply figures, particularly in Africa. The revised figures based on the more reliable data now available show that the number of critically undernourished people in the developing market economies has continued to rise from about 360 million in 1969-71 to 410 million in 1972-74 and 420 million in 1974-76. In the latter period they represented about 22% of the total population of these countries. Some 70% of the undernourished in 1974-76 were in the MSA countries, where they were 28% of the total population.

In MSA countries from one quarter to one half of young children up to the age of 5 years have been found to be suffering from some degree of protein energy malnutrition. A rapid decline in the prevalence of breast feeding is observed in relation to rapid urbanization and the decline in this practice therefore gives cause for concern. FAO is already supporting programmes to promote infants' nutrition as a part of its food and nutrition policy and to encourage breast-feeding through nutritional education and training programmes. The FAO/WHO Codex Alimantarius Commission has developed a number of international standards for foods for infants and children, and others are in the course of being developed. All of these international standards contain provisions on nutrient content for these foods.

In order to draw attention to the incidence of widespread malnutrition and ensure sustained support on overcoming it, the Twentieth FAO Conference decided to establish a World Food Day to be observed by FAO and Member Countries on 16 October 1981, the anniversary of the founding of FAO and annually thereafter. The objectives include: heightening public awareness of the nature and dimensions of the long-term world food problem and developing further the sense of national and international solidarity in the struggle against hunger, malnutrition and poverty; encouraging greater attention to agricultural production in all countries and stimulating greater national, bilateral, multilateral and non-governmental effort to this end; promoting the transfer of science nd technology to developing countries, particularly for the benefit of the small farmer and landless labourer; promoting participation by the rural masses in decisions and measures affecting their development; and encouraging economic and technical cooperation among developing countries in all sectors of agriculture.

CONSUMER FOOD PRICES AND SUBSIDIES

The 1970s have been characterized by a very rapid rise in consumer food prices. In most countries the increase was particularly fast between 1972 and 1975, when there was a generally tight world food situation as well as high rates of inflation. From 1976 to 1978 the increases, although still rapid, tended to slow down. In 1978 the number of countries where they increased more than 10% was considerably smaller and the most frequently found increases in both developed and developing were between 5% and 10% (Table 1-8). In earlier years, food prices had been a foremost component of general inflation but in 1978 they increased less than other prices in about three out of five countries reviewed. Preliminary information for 1979 indicates, however, a renewed acceleration in the increase of consumer prices including food, particularly in developed market economies.

Table 1-8. Changes in consumer food prices in 83 countries

Price increase (%)	1975 to 1976	1976 to 1977	1977 to 1978
	..... number of countries		
DEVELOPING COUNTRIES (59)			
below 0	9	1	4
0 - 5	8	5	4
5.1 - 10	16	15	23
10.1 - 15	8	17	12
15.1 - 30	11	12	9
30.1 and above	7	9	7
DEVELOPED COUNTRIES (24)			
less than 5	3	2	6
5.1 - 10	4	6	9
10.1 - 15	8	6	2
15.1 - 30	8	7	5
30.1 and above	1	3	2

Source: International Labour Organization, Yearbook of Labour Statistics, 1978 and Bulletin of Labour Statistics, third quarter 1979.

According to IMF estimates, consumer prices in the major industrial countries were rising in 1979 at an annual rate of nearly 13%, almost double the rate for 1978. Inflation rates in other areas of the world were even higher, with projections for 1979 pointing to a rise of 14% in the major oil exporting countries, 19% in the more developed primary producing countries and 30% in the non-oil less developed countries. The food component in these increases was particularly important in developed countries during the first three months of 1979 when, as a consequence of the severe winter, food prices rose by nearly

4%. Price increases tended to decelerate during the summer, particularly in North America, but the improvement appeared to be short-lived in view of the continuing increases in cereal and meat prices. Food prices were subject to strong pressure in several EEC countries including the United Kingdom, Italy and France. However, a restraining influence is expected from the very small increases adopted for the EEC farm support prices.

The northern European countries continued to achieve remarkable results in restraining food price increases. In six of them - Austria, Belgium, Finland, the Federal Republic of Germany, the Netherlands and Switzerland - the increase remained below 5% during 1978 and the first three quarters of 1979. The rates were markedly higher in the Mediterranean countries though lower than in 1977. In Spain, Portugal, Yugoslavia and Greece they rose in 1978 between 16% and 19% as compared with 20-30% in the previous year. A further decrease is expected in 1979, at least in Greece and Spain. In the United Kingdom and Ireland food price increases in 1978 were at their lowest annual rate since the early 1970s but tended to accelerate again in 1979. In the United States consumer prices, including food, rose by rather more than 7% during 1978 and increased steadily to a yearly rate of nearly 14% by July 1979.

Although food prices varied greatly in developing countries the general trend was similar to that of developed countries. There was a temporary slowdown in the rise in 1978 particularly in Africa and the Near East where the average rates of increase were nearly half those of 1977; but in 14 out of 20 countries, for which some information is available, food price increases accelerated again in 1979.

The highest increases in consumer food prices in 1978 were in the inflation-plagued Latin American countries. Despite restrictive fiscal and monetary policies, direct price controls and tariff reductions, Argentina continued to struggle with hyperinflation. At 163% the food price increases in 1978 were the highest in the world and tended to accelerate still more during the first half of 1979. Prices also rose at excessively high rates in Brazil in spite of austerity measures and close control on wages and on prices, in particular of food. Much of the inflation in 1978 and again in 1979 was caused by severe drought conditions in parts of the country, but it is expected that the substantial liberalization of imports will alleviate the pressure on food prices. Until 1978 inflation rates in Paraguay remained low by regional standards. Nevertheless, food prices were expected to rise by 20-30% in 1979, a record high level for the country and due mainly to shortages resulting from floods and spillover of inflation from neighbouring Argentina and Brazil. In Peru, the food price index increased by about 60% in 1978 and a further 75% in the year ending August 1979 largely as the result of the removal of food subsidies.

On the positive side, Chile achieved a remarkable reduction in the rise in food prices from 175% in 1977 to 35% in 1978 and an estimated 27% in the year ending August 1979. In Mexico there was also an improvement in 1978, after the very high increase in 1977 but the increase was still well above the average of the previous year. In Colombia adequate rainfall during 1978 brought abundant crops and contributed to reversing the steep upward trend in prices following the 1976/77 drought.

Though the inflation rates vary widely in African countries there was a general slowdown in consumer food price increases during 1978. Favourable crop conditions and relatively larger food supplies resulted in lower food price increases in many west African countries. On the other hand, there were strong pressures on food prices in Chad, Tanzania and Zaire reflecting a variety of supply and distribution problems as well as rising import costs and the inability to implement effective statutory price control policies.

In north Africa prices in Tunisia and, to a less extent, Morocco were relatively stable but those in Algeria continued to rise during most of 1978. In all countries in the Near East except Sudan and Turkey (no information is available for Lebanon) price increases in 1978 and the first months of 1979 were moderate. However, in some countries in the region strong inflationary pressures began to develop in the later part of 1979 resulting from severe unrest and supply disruption.

In the Far East, India continued to benefit from favourable food grain supplies with prices remaining virtually unchanged throughout 1978. Thereafter an increase of 7% in the index of consumer prices took place by May 1979 with only a few items (sugar and gur, dairy products and vegetables and fruit) accounting for about 17% of the total increase. Despite a production set-back in wheat in 1977/78 and relatively tight supply, prices in Pakistan rose only moderately during 1978 and the first half of 1979 partly as a result of subsidies on imported food and partly because of controlled prices. In Bangladesh, food and agricultural production in 1978 recovered sharply from the drop in the previous year thus contributing to some improvement in food prices during 1979. Korea continued to struggle with high food prices in 1979 as consumer prices rose more rapidly, in part due to currency devaluation. Malaysia succeeded in maintaining low food prices through strictly enforced price controls which largely offset the effects of poor rice crops in 1978 and rising imports. Preliminary information on Nepal indicates that food prices will rise only marginally during 1979 because of improved supply after the poor agricultural production in the two previous years.

Consumer subsidies

In order to mitigate the hardship caused by food price inflation, particularly to low-income consumers, different forms of state intervention are used in many developing countries at various levels in the marketing chain. Action aimed at reconciling the conflicting interests of producers and consumers are commonly taken through public procurement of local production at fixed or pre-determined prices and of imported food and through subsidized distribution. Other indirect forms of consumer-oriented intervention, though less common, are the subsidizing of marketing and distribution costs.

The socio-economic case for consumer subsidies addressed to the rural and urban poor is indeed strong not only on the ground of equity but also of nutritional needs. But the overall opportunity cost is difficult to assess. In many countries the subsidies have resulted in a heavy fiscal burden, and sometimes resulted in serious marketing distortions and disincentives to production. General subsidies often involve high economic and financial costs since they provide income supplements to both low and high income people. This may result in costly misuse of food, such as the utilization of expensive grains as animal feed, and outright waste. In very few countries do the subsidy programmes directly address the low income group. Furthermore, they generally tend to favour urban consumers to the detriment of the rural poor.

Examples of consumer subsidies can be found in all developing regions. The Indian food grain distribution system plays a crucial role in controlling the prices of essentials. Under this system, publicly procured food grain is channelled to consumers through 375,000 retail price shops. The grain is sold under a rationing system at prices below those prevailing in the open market. The budget subsidy represented by the difference between the price paid by the Government to farmers for grain and the return from sales through the distribution system was Rs. 570 million in 1978/79 against Rs. 479 million in 1979/80. A similar system operates in Bangladesh where the prices of food grain rations are also maintained considerably below market prices. The price of rice, for example, during the 1970s fluctuated between one-quarter and two-thirds of the market price. Food subsidies in 1975/76 appear to have represented about 20% of Bangladesh net tax revenue and 15% of public current expenditure.

Food subsidies have been an important element in the economy of Sri Lanka since the late 1940s. Under the rice ration system prevailing until 1977, nearly all the population received a weekly ration of one pound of rice free and three additional pounds at a subsidized rate. Sugar, wheat flour and infant milk foods were also subsidized. The total cost of these subsidies accounted for about one-fifth of the Government's current expenditure. The present policy seeks to reduce the burden of subsidies by addressing them selectively to the lower income groups. In mid-1979 the traditional rationing scheme was replaced by a food-coupon programme.

Under the Pakistan rationing system sugar, wheat, wheat flour and, on occasions, other commodities are made available to the urban poor below market prices and imported wheat is released to provinces at a fixed subsidized price. In the Republic of Korea the government ceiling prices for rice in 1975 represented only about 85% of purchase prices, the difference having widened considerably since 1971. The third Malaysian Development Plan for 1976-80 provides for measures to check inflation and assist lower income groups through subsidies and bonuses with special relief allowances. The Indonesia state rice trade monopoly has responsibility both for supporting farm prices and for controlling excessive increases at the retail level.

Direct budgetary assistance to consumers is also commonly found in Latin American countries, despite some recent attempts at market and price liberalization. In countries such as Bolivia, Brazil, Ecuador, Mexico and Peru, state marketing organizations operate with the objectives of increasing the income of the rural poor and distributing essential foods at low cost to the urban poor. The following are some specific examples. Wheat consumption in Brazil is subsidized through the sale of both domestic and imported wheat to millers at prices below cost. Until 1972 the price of wheat to mills had been above the cost of imports with the excess used to finance the domestic producer price. Since 1973 wheat has been made available to mills at prices considerably below the acquisition cost. Though the cost to mills was increased in 1977 and 1978, it still remained below the cost of imports. The present policy in Mexico is to establish official guarantee prices and ceilings for controlled products. The social effects of inflation are also being counteracted through consumer subsidies for basic foodstuffs. In Bolivia, government agencies have responsibility for public distribution of rice at prices below those in the open market but this policy has been identified as a limiting factor to increased production. Countries aiming at increased reliance on free market mechanisms include Venezuela, where the tendency is to promote production and reduce spending rather than control or subsidize prices. Similarly, the Peruvian authorities have repeatedly relaxed price control since 1977 while, in order to reduce the budget deficit and check excessive demand, subsidies on consumption goods have been almost eliminated. Argentina and Chile also continue their free market policy orientation.

In Africa, frequent food shortages and uneven supply conditions make it necessary for many governments to intervene directly particularly in favour of the urban poor. In Uganda and Tanzania the prices of certain basic foodstuffs are controlled at each stage of the marketing chain and in the latter country substantial subsidies are occasionally paid for imported grain. Zambian authorities pay subsidies to the national marketing board to cover price differentials between the purchase price of maize and the selling price to millers. In many western African countries, a major factor behind lagging production performances has probably been the cheap pricing policies. The subsidy element in the food pricing policies of the group of countries has often been channelled through large cereal import houses rather than through local procurement. In Tunisia compensatory indemnities are paid to millers in order to maintain low prices of bread and flour. In Egypt, wheat and wheat flour are heavily subsidized in order to maintain low bread prices. In the 1979 budget about US$ 870 million were allocated to subsidize both imported and domestic wheat and wheat flour. Bread made from locally produced wheat is sold to consumers at less than one-third the actual cost.

Price policies in many developing countries have also involved producer subsidies. By raising food production, these measures can reduce prices and benefit consumers indirectly. However, they are less effective in reaching low-income groups than are direct and selective food distribution programmes.

As regards changes in the relative prices to farmers, fragmentary evidence suggests that out of 80 producer prices for various cereal products in developing countries, a significant increase in real terms since the year 1974 has been evident in 61 cases. It also appears that, at least in the case of cereals, additional price incentives involving producer price increases greater than the cost of living have been granted in over three-quarters of the 40 countries for which information is available. Though the data are not adequate for an evaluation of the impact of these price increases, in a number of cases they represented a considerable improvement in the price to farmers.

It is sometimes believed that price spreads between the producer and the consumers often operate to the advantage of the middlemen in the chain. In spite of its importance, information on marketing costs and margins is surprisingly scarce. The preliminary results of recent FAO surveys show that in 18 developing countries the farmer's share in the final consumer price varied enormously: for example, from 40% to 89% for rice; 67% to 75% for maize; 60% to 70% for potatoes; and 56% to 76% for beef. In India rice producers received slightly more than half the consumer price, in Nigeria about 62% and in the Republic of Korea 80% to 90%.

These preliminary results cannot be treated as anything but illustrative and by themselves provide no evidence of efficiency or otherwise in the different marketing systems. While more studies in depth are needed, available evidence suggests that producer and consumer prices tend to evolve independently. Consumer food prices appear to be much more closely related to general consumer prices than to changes at the farm gate.

CEREAL STOCKS AND WORLD FOOD SECURITY

FAO estimates of movements in carryover stocks of cereals in 1979 include for the first time figures for China and the U.S.S.R. In several years prior to 1979 the biggest changes in stocks appear to have been in the U.S.S.R. so that the world totals fluctuated much more than was apparent from the partial totals previously reported. This appears likely to occur again in 1978/79 and 1979/80.

At the end of the 1978/79 season world carryover stocks of cereals are estimated to have risen by 16% to the record level of 266 million tons (including rice in milled equivalent) (Table 1-9).

U.S.S.R. stocks appear to have recovered from the very low level in 1977/78 and there were also substantial increases in the other major stock-holding countries. World stocks of wheat are estimated to have increased from 93 to 114 million tons, of coarse grains from 97 to 107 million, and of rice (of which a large part is in China) from 39 to 44 million tons (milled equivalent).

Estimates for 1979/80 indicate that world cereal consumption would exceed production so that total carryover stocks would fall by about 11 million tons to 254 million tons by the close of the season. Stocks of wheat are forecast to fall by 12 million tons to 102 million tons and of rice by 3 million tons to 41 million tons but those of coarse grains to increase by 4 million tons to 111 million tons. The total cereal stocks which at the beginning of the 1978/79 season were equivalent to 19% of apparent consumption were expected to represent barely 18% at the end of the season.

By the end of the 1979/80 season cereal stocks are forecast to increase by 6 million tons in the main exporting countries but to decrease by 16 million tons in the main importing countries. Consequently, there is likely to be even further concentration of stocks in a few exporting countries: by the end of the 1979/80 crop, the main exporting countries are expected to hold about 60% of world cereal stocks, North America alone holding 40%. By contrast stocks in the main importing countries are expected to account for only 28% of the total compared with 32% in the previous year. This decline is disturbing since rail and port facilities of some major exporting countries are already operating at close to full capacity, causing problems of accessibility to their stocks in the event of extraordinary production shortfalls in other regions of the world.

In such an event, supplies could become tight and prices could rise still more than in the second half of 1979, thus further increasing the difficulties of the low-income developing countries in obtaining their import requirements.

In 1979, as in 1972, stocks were large and concentrated in a few exporting countries, and there was no international coordination of national stock policies and targets. It will be recalled that stocks held in 1972 were reduced by 22% in 1973 and by a further 8% in 1974, before they began to rise again. As long ago as 1974 it was agreed in the International Undertaking on World Food Security, currently subscribed to by some 80 individual

governments and the EEC, that there was a need for an internationally coordinated system of national reserve stocks. However, the negotiations on a new international grains arrangement which would have contained legally binding provisions on stocks and prices were adjourned in February 1979 without reaching agreement.

Table 1- 9. Estimated total carryover stocks of cereals

	Crop year ending in					
	1975	1976	1977	1978	1979 1/	1980 2/
	million metric tons					
WHEAT	72	73	110	93	114	102
Main exporters	32	38	55	53	55	55
Main importers	33	29	47	34	51	40
Others	7	6	8	7	8	6
RICE (milled)	29	37	37	39	44	41
Selected exporters	20	23	23	24	27	28
Selected importers	7	10	11	13	14	12
Others	2	3	3	2	3	
COARSE GRAINS	72	70	89	97	107	111
Main exporters	24	25	37	51	57	64
Main importers	23	19	21	17	21	18
Others	25	27	30	28	29	
TOTAL CEREALS	174	180	231	229	265	254
Developing countries	65	80	92	85	90	91
Developed countries	109	99	144	144	175	164
	%					
Share of total consumption	14	14	17	16	19	18

1/ Preliminary. - 2/ Forecast.

Note: Stock data are based on an aggregate of national carryover levels at the end of national crop years and should not be construed as representing world stock levels at a fixed point of time. Totals obtained from unrounded data.

The Director-General of FAO therefore proposed a Plan of Action on World Food Security for the immediate implementation on a voluntary basis of the measures agreed in the International Undertaking, which was adopted by the FAO Council in June 1979 and endorsed by the Council in November 1979. This Plan of Action has five points, the position on which at the beginning of 1980 was as follows:

i. Adoption of food grain stocks policies. Out of the 81 countries which had subscribed to the International Undertaking on World Food Security, 45 had adopted explicit grain stock policies. Another 30 countries, while not yet formally subscribing to the Undertaking, had adopted policies and practices in accordance with its spirit.

ii. Criteria for management and release of stocks. At the end of 1979 and the beginning of 1980 several countries released national stocks in accordance with the criteria of the Undertaking. With the increase in world cereal prices, the United States released grain stocks from the farmer-owned reserve. In India it was decided that the production shortfalls would be met by drawing on government-controlled stocks.

iii. Special measures to assist low-income food deficit countries to meet current import requirements and emergency needs. Several donor countries, including Australia, Canada, Sweden and the United States, raised their commitments under the existing Food Aid Convention and two new donor countries (Austria and Norway) became members. It was arranged that the Food Aid Committee established under the Food Aid Convention 1971 should meet in March 1980 to complete the negotiations on a new Food Aid Convention to come into effect on 1 July 1980.

iv. Special arrangements for food security assistance. Since the inception of the FAO Food Security Assistance Scheme (FSAS), about US$ 40 million have been committed by donors to projects for establishing food reserves. The World Food Council at its Fifth Session (September 1979) urged donor countries to provide more resources to this scheme. Moreover, the FAO Conference recommended that FAO, the World Bank and the regional development banks consider undertaking systematic assessment of the needs and possibilities for improving food security infrastructure as a basis for a major investment effort in the countries requesting such assistance.

The Committee on Food Aid Policies and Programmes at its Eighth Session agreed that food aid, in particular through the World Food Programme, should be used to strengthen food security, especially through the establishment of food reserves.

v. Collective self-reliance of developing countries. Developing countries are becoming increasingly aware of the need for collective action on food security. In 1979 ASEAN countries agreed to establish an ASEAN Food Security Reserve. In June 1979, the Inter-State Committee for Drought Control in the Sahel examined a FAO pre-feasibility study for the building of food security stocks in the Sahel and decided to establish a regional security reserve as a supplement to coordinated national security stocks. FAO is currently carrying out a detailed feasibility study of this scheme.

FOOD AID

Food aid in cereals recovered slightly further in 1978/79, but still fell short of the World Food Conference minimum target of 10 million tons (Table 1-10). The 1979/80 allocations, amounting to 9.2 million tons, were some 300 thousand tons lower than actual shipments in 1978/79, reflecting downward revisions in the United States allocations following the marked rise in cereal prices, and a further contraction in Canadian aid. This total excludes additional U.S. allocations of 450 thousand tons of maize and soybeans still under consideration in the U.S. Congress. Together with food aid allocations under Title II (grants and donations), at present estimated at 1.6 million tons (including grain products and grain equivalent of blended foods), total United States food aid for the fiscal year 1979/80 is expected to be 5.9 million tons.

Table 1-10. Shipments of food aid in cereals

	million metric tons
1970/71	12.8
1971/72	12.6
1972/73	10.1
1973/74	5.7
1974/75	8.4
1975/76	6.9
1976/77	9.1
1977/78	9.3
1978/79	9.5
1979/80	9.2 1/

1/ Preliminary allocations.

Source: FAO, Food Outlook, No. 2, 1980.

The negotiations on a new international grains arrangement, adjourned in February 1979, came close to agreement on a new and enlarged Food Aid Convention. In March 1980, the Food Aid Committee established under the Food Aid Convention 1971 agreed on the text of a new food aid convention under which total minimum annual food aid contributions will be raised to 7.6 million tons from 4.7 million tons under the present convention. The new convention is to come into force from 1 July 1980 following ratification by signatories.

Contributions to the International Emergency Food Reserve in 1979 totalled 314 thousand tons, as compared with the annual target of 500 thousand tons of cereals recommended by the Seventh Special Session of the United Nations General Assembly. The bulk of the 1979 contribution were used during that year; as a result the reserve had fallen to less than 28 thousand tons by February 1980, giving rise to serious concern.

Food aid shipments of skim milk powder and butter oil have continued their steady recovery and are estimated to have reached 236 thousand tons and 49 thousand tons respectively in 1979. Food aid in vegetable oils fell from 281 thousand tons in 1978 to 226 thousand tons in 1979.

At its Seventh Session in May 1979, the United Nations/FAO Committee on Food Aid Policies and Programmes (CFA) adopted a set of guidelines and criteria for food aid. These concern such aspects as forward planning in physical terms, the expansion of multilateral

channelling, the objectives of food aid (including its use for the building of food reserves), the conditions under which it should be provided and priorities in the allocation of food aid among recipient countries.

The target of 10 million tons of food aid in cereals remains modest in relation to the levels reached at the end of the 1960s, both in absolute terms and as a proportion of the total cereal imports of vulnerable countries. With the high level of import demand expected in 1979/80, this proportion could fall still further. There is also the danger that, as occurred in 1973/74, the higher cereal prices now prevailing will result in a reduced volume of food aid.

At its Eighth Session in October 1979, when discussing food aid requirements and food aid targets, the CFA was unable to reach agreement on revising the minimum target of 10 million tons of cereals, but considered the quantity of 17-18.5 million tons to provide a useful indicator of food aid requirements in the early eighties in view of the rising trend in import requirements of developing countries and their limited capacity to import on a commercial basis.

Pledges to the United Nations/FAO World Food Programme (WFP) for the 1979-80 biennium amount to $ 800 million, or 84% of the target of $ 950 million. The pledging target for the 1981-82 biennium has been provisionally set at $ 1,000 million.

The present situation therefore emphasizes the need for the early implementation of the guidelines agreed by the CFA, in particular that concerning the forward planning of food aid in physical terms, so as to avoid the danger that price rises will lead to a lower volume of shipments. Equally, there is urgency about raising the target level of food aid in physical terms. It is also imperative to meet the target for the International Emergency Food Reserve without further delay and to ensure its replenishment on a regular basis.

Prevention of food losses

The reduction of the enourmous avoidable food losses is closely related to the establishment of food reserves in developing countries and with world food security in general. Pre-harvest losses due to pests are estimated to average 20% to 40% of total production. Post-harvest losses of cereals from mechanical causes range from 5% to 10%, and those from biological causes are of the order of 10%. The reduction of such losses could obviously make a considerable contribution to world food security. The Seventh Special Session of the United Nations General Assembly called for the reduction of post-harvest losses in developing countries by at least half by 1985. The Nineteenth Session of the FAO Conference in 1977 established an Action Programme for the Prevention of Food Losses, to be financed by a Special Account based on voluntary contributions, with a target of $ 20 million.

By the end of December 1979 subscriptions to the account totalled US$ 21 million and another US$ 3.5 million had been pledged under Trust Fund arrangements. In the meantime, however, a total of 103 project requests have been received from governments of developing countries which would require a total FAO contributions of $ 22.7 million. At the end of 1979, a total of 52 project requests had been approved for financing from the Special Account, involving a total amount of $ 11.4 million. In 38 of these projects an important element is improving storage facilities at individual farm, cooperative and village level. To the 52 projects should be added another twelve projects at a total cost of $ 3.3 million, financed under trust fund arrangements. Of these 64 approved projects, 25 are in Africa, 16 in Asia and the Pacific, 13 in Latin America and 8 in the Near East.

Currently the programme for the Prevention of Food Losses concentrates particularly on the farm and village level and through its activities seeks to encourage foreign donors to provide assistance. Initially, particular attention is being given to cereals and other staple food crops, such as roots and tubers, but later perishable foods such as fruits and vegetables may be covered. Priority is being given to those countries where food problems are particularly difficult, and within these countries to the least privileged groups. If the programme is to maintain its current momentum, an assured level of funding of at least $ 10 million per year will be needed.

PRODUCTION REQUISITES

Fertilizers

Between 1969/70 and 1978/79, world production of fertilizers increased at an average annual rate of 5.5% to nearly 113 million tons of the three primary nutrients (Table 1-11).

Table 1-11. Fertilizer production [1/]

	1969/70	1976/77	1977/78	1978/79	Annual rate of change 1977/78 to 1978/79	Annual rate of change 1969/70 to 1978/79	Share in world production 1969/70	Share in world production 1978/79
	million metric tons				%			
Developing market economies	3.9	9.0	10.1	11.1	9.9	11.9	5.8	9.8
Africa	0.5	0.8	0.8	0.8	-	3.6	0.7	0.7
Far East	1.8	3.9	4.6	5.5	19.6	12.5	2.7	4.9
Latin America	1.2	2.6	2.9	2.9	-	11.0	1.8	2.6
Near East	0.4	1.5	1.7	1.8	5.9	17.2	0.6	1.6
Asian centrally planned economies	2.3	6.0	7.0	8.6	22.9	14.6	3.4	7.6
TOTAL DEVELOPING COUNTRIES	6.2	15.0	17.0	19.7	15.9	13.0	9.2	17.5
TOTAL MSA COUNTRIES	1.3	3.2	3.6	4.0	11.1	12.8	1.9	3.5
Developed market economies	43.2	51.2	53.4	57.5	7.7	2.6	64.2	51.0
North America	19.5	26.7	27.4	29.7	8.4	4.5	29.0	26.3
Oceania	1.3	1.3	1.4	1.6	14.3	0.8	1.9	1.4
Western Europe	18.5	19.9	20.9	22.4	7.2	1.2	27.5	19.9
Eastern Europe and the U.S.S.R.	18.0	33.4	34.7	35.6	2.6	7.9	26.7	31.6
TOTAL DEVELOPED COUNTRIES	61.1	84.6	88.1	93.1	5.7	4.4	90.8	82.5
WORLD	67.3	99.6	105.1	112.8	7.3	5.5	100.0	100.0
Available world supply [2/]	...	94.4	99.7	106.4	6.7	...	...	94.3

1/ N, P_2O_5, K_2O (including ground rock phosphate for direct application). - 2/ Available world supply obtained by deducting from production the estimated amount for technical uses, material for further processing, transport storage and handling losses.

Source: FAO Fertilizer Yearbook, 1978.

The centrally planned economies more than doubled their production during this period so that their share of world production rose from 30% to nearly 40%. The share of the developed market economies declined from 64% to 51% as their production rose by 33%.

At the same time production of the developing market economies increased nearly three times but from a small base. In 1978/79 they had increased their proportion to about 10% of world production and this trend is expected to continue. By 1983/84 the developing market economies should be accounting for 15% of world production of the three nutrients combined, but about 20% of world production of nitrogen and phosphate fertilizers because present known reserves of potash in developing countries are limited. Nevertheless, developing market economies will still be dependent at that time on imports for about 25% of their fertilizer supplies, two-thirds of the imports being potash.

World consumption of fertilizers increased from 63 million tons in 1969/70 to nearly 107 million tons in 1978/79 at an annual average rate of 5.6% (Table 1-12). As with production, the centrally planned economies had the largest volume of increase in consumption to account for 37% of the world total in 1978/79. Consumption in the developing market economies more than doubled to reach 17% of world consumption.

Table 1-12. Fertilizer consumption 1/

	1969/70	1976/77	1977/78	1978/79	Annual rate of change 1977/78 to 1978/79	Annual rate of change 1969/70 to 1978/79	Share in world consumption 1969/70	Share in world consumption 1978/79
	million metric tons				%			
Developing market economies	7.4	15.2	17.3	18.6	7.5	10.3	11.7	17.4
Africa	0.6	1.1	1.1	1.1	-	7.6	0.9	1.0
Far East	3.2	6.4	7.5	8.6	14.7	10.2	5.1	8.1
Latin America	2.6	5.3	6.1	6.2	1.6	10.3	4.1	5.8
Near East	1.1	2.4	2.6	2.7	3.8	11.5	1.7	2.5
Asian centrally planned economies	4.1	7.2	8.9	10.6	19.1	9.9	6.5	9.9
TOTAL DEVELOPING COUNTRIES	11.4	22.4	26.2	29.1	11.1	10.2	18.0	27.3
TOTAL MSA COUNTRIES	2.7	5.5	6.5	7.3	12.3	10.3	4.3	6.8
Developed market economies	35.9	45.0	44.5	48.2	8.3	2.8	56.7	45.2
North America	15.3	21.4	20.2	22.1	9.4	4.0	24.2	20.7
Oceania	1.6	1.6	1.7	1.9	11.8	1.3	2.5	1.8
Western Europe	16.2	19.0	19.6	21.0	7.1	1.9	25.6	19.7
Eastern Europe and the U.S.S.R.	16.0	28.1	28.4	29.4	3.5	7.2	25.3	27.6
TOTAL DEVELOPED COUNTRIES	51.8	73.1	72.9	77.5	6.3	4.3	81.8	72.6
WORLD	63.3	95.4	99.1	106.7	7.7	5.6	100.0	100.0

1/ N, P_2O_5, K_2O (including ground rock phosphate for direct application).

Source: FAO Fertilizer Yearbook, 1978.

In the developed market economies, where consumption was already high, the rate of increase was low and their share of the total declined from 56% to 45%. The MSA countries increased their fertilizer consumption by 12.3% in 1978/79 compared to the previous year, higher than that of the developing market economies as a whole (7.5% increase) although there is no difference in these respective growth rates over the longer period.

Although the MSA countries have substantially increased their consumption since the declines of 1974/75, they still have financial difficulties in obtaining adequate supplies. Contributions to the International Fertilizer Supply Scheme (IFS) have been declining and only 13 thousand tons of fertilizer were distributed by the IFS to a few MSA countries in 1979. The fertilizer import requirements of MSA countries (including India) in 1980/81 are estimated to be 2.5 million tons of nitrogen, 1 million tons of phosphate (P_2O_5) and 900 thousand tons of potash (K_2O) at a cost of about US$ 2.8 billion. Considering the continuing deterioration of the balance of payments position of these countries, it is estimated that they may be able to obtain through commercial channels around 80% of this requirement leaving 20% worth US$ 550 million to be covered by bilateral and multilateral aid. Assuming that 20% of the total aid requirements would be provided through multilateral channels, a total of 440 thousand tons of fertilizer material worth some US$ 110 million would have to be channelled through IFS.

Information on bilateral fertilizer assistance to developing countries is incomplete but it is known that 13 major donors provided nearly 2.0 million tons of fertilizer materials in 1978/79, compared to just over 1.4 million tons in 1977/78.

The Option System was approved in 1979 by the FAO Commission on Fertilizers and endorsed by the Twentieth Session of the FAO Conference to enable MSA countries to obtain at least a part of their fertilizer requirements at prices equivalent to those in the domestic market of the producers participating in the System. By January 1980 a total of 469 thousand tons of fertilizer material had been firmly committed to the System for a period of five years from 1979. The System is to become operational if and when export prices reach levels equivalent to those in the domestic market of participating producers.

In recent years, export spot prices have been lower than domestic prices in exporting countries. Both sets of prices rose because of increasing production costs and strong demand and the difference between them narrowed in 1979. In current dollars phosphatic fertilizers registered the largest increases in export prices of over 70% in 1979. Those of muriate of potash, the major potassic fertilizer rose by over 45% and of urea and ammonium sulphate, the major nitrogenous fertilizers, by about 28%.

Pesticides

In a number of cases on 1978 and 1979, large scale outbreaks of pests and diseases called for the delivery of substantial additional quantities of pesticides. These outbreaks included the desert locust plague in parts of Africa and Asia and planthoppers and blast in the rice crops of Asia. Apart from these emergencies, when certain supply difficulties were experienced, sufficient pesticides were generally available to meet commercial demand. Prices increased only slightly during 1979, but increases of the order of 10% are likely this year. There is an increasing need for the development and use of integrated pe st control techniques. In this way the expenditures incurred by farmers on pesticides may be reduced, while a number of undesirable effects of indiscriminate use of chemicals may be limited.

Improved seeds

For the developing countries to take full advantage of the HYVs and other improved seeds would require a considerable expansion in the facilities for their production, processing, quality control, storage and distribution. Hence the importance of FAO's Seed Improvement and Development Programme, for which the Nineteenth Session of the FAO Conference

called for resources of $ 20 million. This programme at present covers 115 countries, while an additional 25 countries are cooperating in seed exchange activities. Since the programme was begun in 1973, 21 national seed programmes have been formulated with an identified aid requirement of $ 40 million, and 161 individual seed projects implemented with a total allocation of $ 65 million. Seed production and training centres have been established in 15 developing countries. From 1974 to 1979 more than 350 thousand seed samples were dispatched to 140 countries for trials. In 1979 alone, 18 thousand seed samples were provided to 99 countries and 1,400 tons of seed sent to 34 countries in Africa, Asia and Latin America.

Farm machinery

Mechanical power is used on nearly all cultivated land in developed countries and on about one quarter of the cultivated land in developing countries. Data on tractor numbers provide some indication of the changes that have taken place in recent years (Table 1-13).

Table 1-13. Number of agricultural tractors in use

	1970	1975	1976	1977	1978	Change 1977 to 1978	Annual rate of change 1961-70	Annual rate of change 1970-78
	thousand					%		
Developing market economies	1,132	1,708	1,822	1,950	2,076	6.5	9.9	7.9
Africa	150	187	194	198	203	2.5	11.0	3.9
Far East	172	352	379	405	436	7.7	31.7	11.4
Latin America	618	791	817	863	899	4.2	6.4	4.8
Near East	188	374	428	481	533	10.8	14.8	14.7
Asian centrally planned economies	210	445	500	555	620	11.7	22.1	15.0
TOTAL DEVELOPING COUNTRIES	1,342	2,154	2,322	2,505	2,695	7.6	11.1	9.2
Developed market economies	11,399	12,683	12,937	13,236	13,534	2.3	2.5	2.3
North America	5,180	5,060	5,036	5,016	5,027	0.2	- 0.5	- 0.4
Oceania	423	427	427	427	426	- 0.2	2.1	-
Western Europe	5,345	6,270	6,433	6,629	6,815	2.8	5.6	3.1
Eastern Europe and the U.S.S.R.	2,721	3,272	3,376	3,480	3,580	2.9	6.2	3.4
TOTAL DEVELOPED COUNTRIES	14,120	15,955	16,314	16,716	17,114	2.4	3.1	2.5
WORLD	15,462	18,109	18,636	19,221	19,809	3.1	3.6	3.2

About seven eighths of the agricultural tractors are in developed countries but the numbers in developing countries have been increasing nearly four times more rapidly than those in developed countries. From 1970 to 1978 the numbers used in developing countries rose by just over 9% per year, slightly less than the 11% rate achieved in the 1960s. The increase was most rapid in the Near East region and in the Asian centrally planned economies where during 1970 to 1978 the rate of increase was approximately 15%. It was also rapid in the Far East but the rate of growth there slowed down from over 30% per annum in the 1960s to about 11% in the 1970s.

The effects of agricultural mechanization on production, employment and income distribution were discussed at the Fifth Session of the FAO Committee on Agriculture. The Committee called for emphasis to the placed on the determination of the optimum contribution of human, animal and mechanical power to meet the specific needs of individual countries. Greater attention should be paid to the small farmer and to policy and planning to ensure that the promotion of mechanization was in harmony with overall national development objectives. The Committee stressed the importance of infrastructural and institutional support for research and development and recommended that FAO increase its efforts concerning agricultural mechanization particularly in respect of planning and training.

FISHERIES

PRODUCTION AND TRADE

The world catch of fish, crustaceans and molluscs rose by 1.3 million tons in 1978 to a level of 73.7 million tons (Table 1-14). Although this is nearly a million tons larger than the previous highest catch in 1976, the growth rate for the seventies was an average of 1.7% per annum. Application of the new Law of the Sea continued to influence both the pattern and the total of landings; catches by the U.S.S.R. and Poland which previously relied heavily on foreign fisheries, fell for the second year in succession; in South America the catch by Argentina rose sharply for the third successive year under the impetus of a strong demand from some European countries deprived of supplies from their own distant

Table 1-14. Estimated world catch of fish, crustaceans and molluscs 1/

	1974	1975	1976	1977	1978	Change 1977 to 1978	Annual rate of change 1961-70	Annual rate of change 1970-78
	million metric tons					%		
Developing market economies	22.8	22.0	24.0	23.9	25.6	7.4	7.7	-0.5
Africa	3.2	3.0	3.0	3.0	3.1	4.0	7.3	0.9
Far East	10.8	11.1	11.5	12.6	12.8	1.0	7.6	5.6
Latin America	7.6	6.8	8.4	7.1	8.5	21.4	7.9	-6.4
Near East	0.9	0.8	0.8	0.8	0.8	-3.7	4.7	1.6
Other	0.3	0.3	0.2	0.4	0.4	10.5	5.9	4.7
Asian centrally planned economies	8.2	8.6	8.8	9.4	9.6	+ 1.5	3.3	4.5
TOTAL DEVELOPING COUNTRIES	31.0	30.6	32.8	33.3	35.2	5.7	6.4	1.8
Developed market economies	27.9	27.2	28.5	28.5	28.5	-0.1	3.5	1.1
North America	4.0	4.0	4.3	4.3	4.9	12.8	4.1	1.2
Oceania	0.2	0.2	0.2	0.2	0.2	-	4.8	2.5
Western Europe	11.4	11.1	12.1	12.2	11.6	- 5.0	-	1.0
Other	12.3	11.9	11.9	11.8	11.8	0.3	4.5	1.1
Eastern Europe and the U.S.S.R.	10.6	11.5	11.5	10.6	10.0	- 5.4	9.3	3.6
TOTAL DEVELOPED COUNTRIES	38.5	38.7	40.0	39.1	38.5	- 1.5	4.6	1.6
WORLD	69.5	69.3	72.8	72.4	73.7	1.8	5.5	1.7

1/ Including all aquatic organisms, except whales.

Source: Fishery Data Base, FAO.

water fleets which are becoming increasingly redundant. For the first year for several decades the catch of fish used for direct human consumption failed to rise in 1978, although there was a marginal increase in developing countries as a whole (Table 1-15).

Table 1-15. Catches of food and non-food fish, world and developing and developed countries

	1974	1975	1976	1977	1978	Change 1977 to 1978	Annual rate of change 1961-70	Annual rate of change 1970-78
	..... million metric tons					..... %		
FOOD	48.9	49.0	50.7	52.7	52.7	-	3.5	2.6
Developing countries	23.8	24.3	25.1	27.3	27.8	1.8	5.5	4.7
Developed countries	25.1	24.7	25.6	25.4	24.9	-2.0	1.9	0.7
NON-FOOD	20.6	20.3	22.1	19.7	21.0	6.6	10.2	-1.7
Developing countries	7.2	6.3	7.7	6.0	7.4	23.3	8.7	-8.1
Developed countries	13.4	14.0	14.4	13.7	13.6	-0.7	12.2	3.8
TOTAL	69.5	69.3	72.8	72.4	73.7	1.8	5.6	1.7
Developing countries	31.0	30.6	32.8	33.3	35.2	5.7	6.6	1.8
Developed countries	38.5	38.7	40.0	39.1	38.5	-1.5	4.6	1.6

Source: Fishery Data Base, FAO.

The fisheries of developing countries fared well in 1978 and overall the catch increased by 5.5%. Sharp increases in landings were recorded in Asia by the Philippines, India, Indonesia and Malaysia and in Africa by Tanzania where, as a result of improved marketing, rises in the relative price of meat and diversification of the sources of fish production, catches were nearly 50% higher than those in 1975. The most spectacular increases were recorded in Latin America where, in addition to Argentina mentioned above, landings by Peru and Chile combined increased by 1.25 million tons. A high proportion of this increased catch - including significant quantities of sardine and mackerel - was reduced to meal and oil, thus moving further away from dependence on the input of anchoveta as a raw material to fish meal plants. Anchoveta now accounts for only 30% of this input compared with 98% in 1970. Although total production of meal is much lower the fishmeal industry now is probably on a sounder footing.

In the developed countries total landings of fish fell largely as a result of a decline of over 800 thousand tons in the Norwegian capelin catch which more than offset significant increases by Iceland, Canada and the U.S.A. In spite of reduced production from the distant water fisheries, the catch by Japan was close to a record due to unusually abundant stocks of pelagic fish in local waters. Elsewhere, small falls were generally recorded with the exception of the United Kingdom where a record catch of mackerel raised the total catch 5% above the level of 1977.

World trade in 1978 expanded rather more rapidly than production with all commodity groups of fish showing some increase. As a result of the new legal regime of the oceans, the fishery resources of coastal states have been brought under their direct national jurisdiction in the form of Exclusive Economic Zones (EEZs). Coastal states now have an

opportunity to use the fish resources in ways that will benefit their peoples and economies as well as enable them to conserve a renewable resource. Imports of fish into Japan, for example, were some 20% higher in 1978 due mainly to a sharp increase in salmon imports necessitated partly by the exclusion of Japanese vessels from the waters of both the U.S.S.R. and the U.S.A. Imports into Spain and the United Kingdom whose supplies from distant waters continued to be restricted, were also sharply higher while there was a corresponding increase in exports from countries such as Canada, Iceland and Argentina, which had substantial surplus resources within their EEZs. Markets were generally buoyant and trade in fishery products not specially affected by limit extensions also increased, e.g. crustaceans and molluscs and fishmeal. However, the latter now represents a much smaller proportion of world trade in fishery products than it did ten years ago.

While the greater part of world trade in fishery products (around 60%) continues to be between developed countries, many developing countries continue to increase their foreign exchange earnings from fisheries (Table 1-16). Among the major exporters Thailand's export revenues from fishery products rose some 35% to reach nearly $ 250 million and among products prominent in this increase were canned fish and fishmeal exports of which are now over 100 thousand tons compared with 25 thousand tons in 1975. Exports from Malaysia also increased. Several Latin American countries also showed a sharp rise in exports including Argentina, 15% more in value over 1977 due to exports of fresh and frozen fish, and Chile due to exports of fishmeal. Exports from Uruguay which doubled in 1977 doubled again in 1978 although the total still remains relatively small.

Table 1-16. Index numbers of value and volume of exports of fishery products, world and developing and developed countries

	1974	1975	1976	1977	1978	Change 1977 to 1978	Annual rate of change 1961-70	Annual rate of change 1970-78
	..... 1969-71 average = 100					..... %		
VALUE	202	215	268	321	382	19	8	17
Developing countries	195	239	301	378	432	14	12	21
Developed countries	206	204	253	296	359	21	7	16
VOLUME	111	117	128	133	146	10	5	4
Developing countries	118	129	137	157	166	6	8	6
Developed countries	109	113	128	129	144	12	4	4
UNIT VALUE	194	184	218	253	269	6	3	13
Developing countries	187	181	236	267	274	3	4	14
Developed countries	195	185	215	246	267	9	3	13

POLICIES AND ISSUES

Issues concerned with adjustment to a regime of extended coastal state jurisdiction have continued to occupy administrators and others involved with national and international fishery problems. In 1978 a further twenty countries either established an EEZ or in some way extended jurisdiction over fishery resources. The implications in some cases are only now coming to be fully appreciated. Many countries extending their fisheries jurisdiction are finding that their claims are in conflict with their neighbours' and there are few boundaries which do not have a grey area in which jurisdiction is disputed. While

some of the disputes are currently of little practical significance others have led to the loss of traditional fisheries - such as a Canadian tuna fishery off the U.S.A. or have allowed the depletion of resources to take place - such as around Jan Mayen in the North Atlantic.

The problems of managing stocks which extend into more than one EEZ have been discussed in previous issues of SOFA. A further problem which is now beginning to emerge concerns the control of domestic fishing effort within national EEZs. In some parts of North America the expectations of greater catches raised by exclusive jurisdiction and the exclusion of foreign vessels are now beginning to generate internal pressures for an expansion of fishing effort which are not always justified by the status of the stocks. In the context of national EEZ policy this is a particular case of the more general problem of limiting fishing effort to the productive capacity of the stocks, a problem which is now of concern to a very wide range of fishermen in both developed and developing countries. In the management of their EEZsall countries can eventually expect to have to face this issue which raises problems not yet satisfactorily resolved even in countries with long experience of fisheries management.

One of the initial difficulties is that of convincing fishermen of the necessity for the restriction of fishing before either profits or catches have fallen drastically and excessive inputs have been drawn into the fishery. Many problems of fisheries management encountered in the past have stemmed from the need to reduce the amount of fishing from an excessive level, problems which could have been avoided if the means of control were available from the inception of the fishery. If the opportunities for better management presently offered to countries by the new ocean regime are not to be lost, it is important that now, while the resources remain underexploited, thought should be given to the administrative and legal action necessary for the eventual regulation of fishing effort.

In the choice of possible measures past experience has some lessons. Most schemes in operation so far have attempted to operate directly by restricting the numbers of fishermen or the inputs such as vessels and gear. These attempts have generally been frustrated by the fairly wide possibilities of long run changes in the proportions of labour and capital employed. As benefits have accrued from the regulation of one input strong incentives have arisen to increase the use of other unregulated inputs. In the most common case where the number of vessels has been restricted, the resulting increase in profits has led to increased inputs in the form of larger, more powerful vessels, extra crew or more effective gear. This leads to no increase in the total catch but to a reduction in the average returns to labour and capital employed in the fishery and hence to further restrictions in the number of vessels.

An alternative approach to the regulation of fisheries lies in issuing licences which instead of regulating the numbers of fishermen, vessels or gear give the right to take specific quantities of fish. Quotas have a number of advantages not the least of which is that they allow each fisherman to seek the most efficient scale of operation and to design his operations to harvest his authorized catch at least cost. Like all regulatory schemes there is a need for surveillance. This is not likely to present serious difficulties where fish is landed at a few central points but where landing places are scattered and fish landed at irregular intervals as in some developing countries, enforcement may present serious problems.

A further difficulty is that most stocks fluctuate in abundance and the catch has to be adjusted from year to year in order to maintain the rate of exploitation at the desired level. If the fluctuations are large the cost of the research needed to determine the allowable catch may not always be justified in terms of the benefits to be derived from management in this way. The choice of appropriate management therefore must depend on the circumstances of the fishery. The amount of scientific data as well as the practical problems of implementing and monitoring a satisfactory scheme, underline the need for urgent attention to this problem of fishery regulation wherever there are commercially exploited stocks not yet subject to effective regulatory measures.

Assistance in tackling these and other problems concerned with the management and development of fisheries is being given to developing coastal states under FAO's recently launched EEZ Programme by the FAO Conference endorsed in resolution 4/79. Many countries lack the administrative infrastructure and the expertise to handle the responsibilities of management and to derive full benefits from the resources coming within their national jurisdiction. The efficient planning and prompt delivery of the EEZ Programme will require very substantial additional extra-budgetary support from UNDP and other donors. FAO assesses that approximately US$ 40 million will be needed over the next three years alone to implement the programme of assistance. This means that extra-budgetary funding of the order of US$ 18-20 million per annum will be required for the further delivery of the Programme. Under this Programme FAO is stepping up its on-going assistance activities particularly in the legal field and in matters concerned with joint ventures and surveillance where it has the advantage of offering impartial advice. Much emphasis is being given to the role of regional bodies, in many cases supported by FAO, to handle problems posed by shared stocks and their joint exploitation. The issues concerned with the establishment of EEZs and the role of FAO will be discussed at much greater length in a special chapter in SOFA 1980.

Not all the issues of interest have centred on exclusive economic zones and environmental problems have continued to attract attention. The main issues have arisen from the conflict in the use of coastal zone resources, a problem which is becoming more acute as the growth of modern industry and the development of communications intensifies competition for the use of resources. While policy-makers in developed countries have long been familiar with these problems, in many developing countries these issues are now being raised through, for example, the growth of tourism in tropical areas involving the development of coastal zones.

Among recent events drawing attention to environmental issues affecting fisheries have been the wrecking of the tanker Amoco Cadiz off the coast of Brittany and the oil spillage in the Gulf of Mexico. While it is yet too early to assess the damage of the latter to the living marine resources of the area, the Amoco Cadiz incident has caused undoubted losses to the local fishing communities particularly those concerned with the culture of oysters and other molluscs as well as the harvesting of aquatic plants which is an important economic activity in the area.

Oil is not the only pollutant and coastal aquaculture in many parts of the world continues to be affected by all forms of pollution. This stems partly from the sessile nature of many of the organisms cultured but it should also be noted that for economic reasons, aquaculture enterprises are generally located in areas in close proximity to potential sources of pollution which expose them to greater concentrations of pollutants than wild stocks.

In the long run perhaps the most serious threat to fisheries as a result of interference with the coastal environment is land reclamation and the creation of shore line structures which interfere with water circulation. Many coastal areas, particularly wetland and mangrove swamps, are nursery areas for fish and crustaceans and their destruction is likely to lead to losses in fish catches at sea. For example, there is growing evidence that land reclamation has been an important contributory cause of the decline in shrimp production in the Arabian Gulf which is now causing economic distress in these fisheries, and in southeast Asia there are indications that the reclamation of mangrove swamps - in some cases for the development of aquaculture - is reducing the yield from fisheries offshore.

The evidence for causal relationships of this nature generally remains fragmentary and the difficulty of quantifying the effect of environmental changes - both because the relationships are complex - as well as the inherent difficulty in quantifying some of the variables - is one of the main factors retarding action in this field. For this reason the methodology of assessing environmental impact is receiving increasing attention by the international community. Nevertheless, many governments - and not all in developed countries - now require detailed studies of the environmental effects of major development projects before permitting their implementation.

Finally, mention might be made of environmental issues of a somewhat different nature. The debate continues between those who regard whales and other cetaceans as economic resources to be harvested in a rational manner and those who wish to bring to a complete stop the commercial exploitation of these animals. At recent meetings of the International Whaling Commission (IWC) an increasing number of stocks have been given complete protection and quotas of the "open" stocks reduced and there is now evidence that at least many of the less threatened whales are probably increasing in numbers. The process of protection was continued at the mid-1979 meeting of the IWC when sperm whale quotas were reduced and agreement was reached on a moratorium on all factory ship whaling except for minke whales.

An environmental issue concerning marine mammals but with social implications has been that surrounding the continuing exploitation of bowhead whales. Although protected they have continued to be exploited legitimately by Eskimos for whom they have traditional significance. Recently, however, increasingly effective methods have been used in their exploitation necessitating a limit on the number of whales killed or struck. Economic and environmental interests have clashed also concerning some small cetaceans which remain generally unprotected and which are - such as with dolphins - in some areas exploited commercially. Interest has again centred on the question of the incidental catch of porpoise in the eastern Pacific tuna fisheries which has been reasonably successfully regulated. Recent assessments, although showing porpoises to be less abundant than previously thought, suggest that at present levels of capture the population is not decreasing.

OUTLOOK

Preoccupation with the problems of allocation of world fishery resources through exclusive economic zones has to some extent deflected attention from the fact that the world catch has showed little growth for nearly a decade. The cause of this is well understood: namely, the increasing shortage of conventional species of fish offering the possibilities of sustained increases in catch. The outlook, at least for the medium term, is for little change with catches continuing to grow at annual average rates of about 1 %.

Estimates of the potential increase in catches of conventional types of marine fish vary but are probably of the order of 30 million tons, some of which will accrue as a result of management, that is, recovery of overexploited stocks and some through increased fishing effort. Full realization of the potential of all stocks on a global basis however, seems improbable in view of species interaction. For example, it is impossible to adjust fishing to take account of the fact that one species may prey on predators of another; and almost all fisheries directed to one species take unintended catches of other species. More recently economic considerations, especially rising costs, have been reducing the incentive to exploit to the full physical potential an increasing range of stocks particularly those in tropical areas which are generally less dense than stocks in temperate latitudes. In some areas, such as west Africa, the problem is being aggravated by government policies which are aimed at keeping food prices low in the interest of urban consumers.

Given the increasingly critical supply situation, hopes of maintaining the role of fish in animal protein supplies presently rest in three courses of action: more efficient utilization of fish already under exploitation, the expansion of aquaculture and the harvesting of unconventional species.

Making better use of fish presently being exploited embraces a range of possibilities including the use for direct human consumption of fish now being reduced to meal and oil as well as the utilization of fish now discarded at sea by shrimp trawlers. The problem is essentially economic and the solution lies in part at least in the provision of the necessary incentives to land fish which offer much lower returns than shrimp. The difficulties of landing and marketing this fish, some of which is of good quality, are in many developing countries part of a wider marketing problem due to poor communications and the lack of an adequate distribution infrastructure. In some cases the problems stem from the unfamiliar nature of the fish or some characteristics, such as size or flesh/bone ratio

which makes it a poor commercial proposition. Here the solution partly lies in product development and effort is being concentrated on the production of acceptable minced and dried fish products. These efforts generally have been technically successful and a number of the products have found consumer acceptance although the quantities sold on a commercial basis remain small.

The future role of aquaculture in the supply of animal protein is still a matter for considerable debate. Technically, there is no doubt that production could be very rapidly increased but under a variety of economic constraints output has been growing only slowly in recent years. Some of the species which can be easily cultured, such as mussels, are not universely acceptable and face a limited market and for others the cost of inputs may be a limiting factor. This latter varies considerably with the type of fish cultured and the technology used. In the developed world costs per ton for salmon and trout are frequently over $ 1,500 but in the more extensive culture generally adopted in developing countries, they are very much less although the input/output relationship still remains a critical factor. It is of some interest that a number of countries, including China, have been taking land out of fish culture in order to increase cereal production.

The third possibility for increased fish production - the use of unconventional resources - is still the most speculative. Landings of krill have been for the past two years of the order of 120 thousand tons mostly landed by the U.S.S.R. and Japan. In the latter it is sold frozen for $ 700 to $ 1,000 per tonbut operations receive a considerable subsidy and seem a long way from commercial viability. Not the least of the problems is the short Antarctic season and the necessity to find alternative activities for the vessels for some eight months of the year. The other major possibility is the so-called mesopelagic fish, small bony animals distributed in varying densities throughout the world's oceans. These have already been harvested in the Southeast Atlantic on a sufficient scale to indicate that there remain serious problems of processing and harvesting before they can be utilized commercially but research is continuing.

Improved utilization and sources such as mesopelagic fish are likely to yield increased production only in the long run and, with many conventional species under increasingly heavy pressure, the immediate outlook is for continued slow growth in the world catch, probably on average at rates below increases in world population. Some recent sources of growth in the world catch can be expected to yield further increases in 1979, particularly shoaling pelagic fish off western South America and hake off Argentina. The indications are that catches by Canada will also be higher. Other sources of growth in 1978, such as the menhaden fishery off the U.S.A., seem unlikely to yield a much higher catch in 1979, while there also remains considerable uncertainty concerning production by those countries still having distant water fleets, principally the U.S.S.R. and Japan which may not yet have adjusted fully to the new regime of exclusive zones.

Apart from direct efforts to increase the supply of fish it seems that management issues will become more prominent in the near future. Reports from many parts of the world indicate a build up of fishing capacity not everywhere justified by the state of the stocks. The problems discussed in the paragraphs above concerning the control of domestic fishing effort in some cases have become considerably more acute during 1979 and it is also becoming clear that even when quotas have been established they have not always been respected. In some areas action in this field, particularly surveillance and enforcement is already urgent if full benefits are to be derived from the new regime of the seas and especially by developing countries.

FORESTRY

PRODUCTION

Changes in world output of main forest products have varied very greatly by product, between developing and developed countries and over time, as can be seen in Table 1-17. Given the complexity of these trends further analysis is best undertaken of each component product.

Production of roundwood. World output of total roundwood increased by 1.3% closely in line with the trend since 1970 which in turn has been lower than that of the 1960s. This is because wood raw material has been utilized with increasing efficiency and greater use has been made of residues. Just under half of roundwood production is used for fuel and by far the greater part of this in developing countries. Although the rates of increase in this end use in these countries have declined during the past two decades, they offset the continuing decline in the rates of utilization of roundwood as fuel in developed countries. The balance of roundwood production, for industrial purposes, has been growing at 1% per year since 1970, a sharp downturn from the previous decade especially in developed countries where consumption has been more affected by the slowing down of world economic activity which characterized the middle and later parts of the decade.

Processed wood production. The rapid growth in the production and consumption of forest products during the 1960s had accompanied the high rates of economic activity which lasted until towards the mid-1970s. Thereafter the recession in developed countries caused a reduction in output which was only partially recovered in 1977 and 1978, although this reduction was much more marked in developed than in developing countries. For the latter, in spite of this slowing down in world economic activity, the 1970s have been a period of sustained growth in production and in their processing capacity for wood products. A number of developing countries have increased their degree of self-sufficiency in manufactured wood products and have increased the value of their exports of them. Against this relatively optimistic picture the performance of individual countries has been most uneven for there are many developing countries where wood production has hardly changed or in some cases has actually decreased. In fact, about two-thirds of the expansion in wood processing in the 1970s was concentrated in about a dozen developing countries and mostly in China, the Republic of Korea, Malaysia and India in Asia, and Brazil in Latin America, countries which are either amongst the most populous in the world or have income levels above the average of the developing world. By contrast, the increases in production of forest products in Africa during 1970-78 were small and mostly confined to sawmilling in Ivory Coast and Nigeria.

Turning now to an appraisal of the performance during the 1970s of the various subsectors of the forest product industries in developing countries (Table 1-18) in the sawmilling industry most of them consists of a large number of small units run by individual entrepreneurs which are suitable for private investment. The multiplicity of these enterprises makes it difficult to obtain an accurate assessment of national production but it is estimated that sawmill production in developing countries increased by some 17 million m^3 between 1970 and 1978 or about 30% to reach 72.5 million m^3. Developing countries' production of wood-based panels has increased by nearly 8 million m^3 since 1970 but from a smaller base to reach approximately 18 million m^3. The greater part of this expansion has taken place in Asia and particularly in the Republic of Korea where the industry is virtually entirely dependent on the import of tropical logs for its raw material; and the major expansion in Indonesia has been part of a policy to replace exports of tropical logs with domestic production of panels whether for domestic use or for exports.

Table 1-17. Production of main forest products, world and developing and developed countries

	1970	1977	1978[1/]	Change 1977 to 1978	Annual rate of change 1961-70	Annual rate of change 1970-78
	..million cubic metres..			..... %		
TOTAL ROUNDWOOD	2,365	2,568	2,602	1.3	1.8	1.2
Developing countries	1,118	1,330	1,367	2.8	2.7	2.6
Developed countries	1,247	1,238	1,235	-0.2	1.0	-0.5
Fuelwood	1,091	1,197	1,218	1.8	1.0	1.4
Developing countries	914	1,051	1,075	2.3	2.3	1.8
Developed countries	177	146	143	- 2.1	- 4.2	- 2.5
Industrial roundwood	1,274	1,371	1,384	0.9	2.6	1.0
Developing countries	204	279	292	4.7	5.0	4.6
Developed countries	1,070	1,092	1,092	-	2.1	0.3
PROCESSED WOOD PRODUCTS						
Sawnwood	413	439	443	0.9	2.0	0.9
Developing countries	52	70	72	2.9	4.2	4.2
Developed countries	361	369	371	0.5	1.8	0.3
Wood-based panels	70	100	102	2.0	9.2	4.8
Developing countries	6	11	12	9.1	16.2	9.1
Developed countries	64	89	90	1.1	8.8	4.3
	... million metric tons...					
Woodpulp	102	113	118	4.4	6.0	1.6
Developing countries	3	6	7	16.7	8.9	11.2
Developed countries	99	107	111	3.7	5.9	1.5
Paper and paperboard	128	154	160	3.9	5.9	2.9
Developing countries	10	17	18	5.9	7.1	7.7
Developed countries	118	137	142	3.6	5.9	2.4

1/ Preliminary.

Table 1-18. Increases in production of forest products in selected developing countries, 1970-78

	Sawmilling	Panels	Pulp	Paper
	million cubic metres		million metric tons	
Africa	1.0	0.2	0.1	0.1
Ivory Coast	0.5	-	-	-
Nigeria	0.4	-	-	-
Latin America	7.6	1.7	2.1	2.4
Brazil	5.3	1.3	1.2	1.3
Chile	0.2	-	0.3	-
Mexico	-	-	0.2	0.6
Peru	0.1	-	-	-
Asia	8.8	5.9	3.5	9.1
China	4.6	-	2.5	3.5
India	1.3	-	0.4	0.1
Indonesia	-	0.5	-	-
Rep. of Korea	-	1.7	-	1.0
Malaysia	2.0	0.3	-	-
Philippines	-	-	0.2	0.2
Turkey	0.9	0.3	0.2	0.3

The pulp and paper industry of developing countries has also expanded significantly in the 1970s but production of pulp for the manufacture of paper increased from 7 million tons to about 12.7 million tons an increase of over 81%; and paper production itself increased by 11.6 million tons from 8 million tons in 1970 to reach nearly 20 million tons, an increase of 145%. Much of the paper and pulp production in developing countries is based on fibre other than wood, to an estimated extent of fully 85%, but this differs widely from country to country. For example, in China only 60% of the production is based on pulp derived from non-wood fibre and the recent expansion in Brazil is based on forest plantation of Eucalyptus, Gmelina and Pinus species.

INTERNATIONAL TRADE

The value of world exports of forest products in 1978 was $ 36 thousand million and of those of developing countries $ 5 thousand million. The share of developing countries in world exports increased only slightly between 1970 and 1978 from 13% to 15%.

The volume of exports of industrial roundwood increased by an average of 2.4% a year during the 1970s in spite of a fall of nearly 4% in 1978. On the other hand there were sharp increases in 1978 in the export processed wood products, well above the average annual increases from 1970 to 1978 and, in the cases of sawnwood and pulp, above the increases in the 1960s as well (Table 1-19).

In general, the rates of growth in exports of wood products during the 1970s have suffered from the lower levels of world economic activity and been only about half or one third of the rates in the previous decade. Though the rates of growth of exports during 1970-78 fell in both developed and developing countries, the latter succeeded in maintaining far higher rates than those in the developed countries and also higher rates of growth of trade in manufactures than in unprocessed round timber.

Table 1-19. Volume of exports of main forest products, world and developing and developed countries

	1970	1977	1978 1/	Change 1977 to 1978	Annual rate of change 1961-70	Annual rate of change 1970-78
	.. million cubic metres..			..... %		
INDUSTRIAL ROUNDWOOD						
Developing countries	38.0	46.8	48.2	3.0	12.4	2.3
Developed countries	55.7	65.9	60.2	-8.6	0.9	2.5
World	93.7	112.7	108.4	-3.8	10.8	2.4
PROCESSED WOOD PRODUCTS						
Sawnwood						
Developing countries	5.9	9.4	9.5	1.1	7.6	6.0
Developed countries	51.5	64.4	69.3	7.6	2.8	2.4
World	57.4	73.8	78.8	6.8	3.2	2.8
Wood-based panels						
Developing countries	2.7	4.8	5.3	10.4	23.0	6.3
Developed countries	6.8	9.8	10.6	8.2	8.8	4.8
World	9.5	14.6	15.9	8.9	11.4	5.3
	.. million metric tons..					
Pulp						
Developing countries	0.3	0.7	1.0	42.9	21.1	12.1
Developed countries	16.6	16.4	18.1	10.4	6.0	0.9
World	16.9	17.1	19.0	11.1	6.2	1.2
Paper and board						
Developing countries	0.3	0.6	0.6	-	10.9	10.6
Developed countries	23.0	27.6	29.1	5.4	7.4	2.3
World	23.3	28.2	29.7	5.3	7.4	2.5

1/ Preliminary.

Forest products constitute more than 5% of total merchandise exports of some 15 developing countries and contribute 10%-30% of the total merchandise exports of six of the least developed countries. The total trade is somewhat concentrated. Three countries - Malaysia, Indonesia and the Republic of Korea - account for 50% of the total and a further eight countries - the Philippines, Ivory Coast, Singapore, Brazil, Chile, Gabon, Ghana and Cameroon - account for another 35%. Smaller amounts of timber are exported from the Central African Republic, Honduras and Burma, but they constitute a major share of the export trade of these countries.

Major features of the trade of developing countries during the 1970s have been the rapid growth in the export of non-coniferous sawnwood and of plywood. The growth in trade in sawnwood was predominantly in the exports of the Far East region from Malaysia, Singapore and Indonesia. Other countries which also made notable increases in these exports included Ivory Coast, Brazil, Paraguay, Korea and Liberia.

Of the 1.5 million m^3 increase in plywood exports from developing countries, practically all originated in the Far East region where there was a major growth in exports of the Korean Republic, Malaysia and Singapore. Indonesia entered this trade for the first time in 1978 and is expected to increase its exports of plywood substantially over the next several years.

Though the contribution of developing countries to world trade in pulp is only 5%, it doubled during the Seventies while the level of the world total was at about the same level in 1978 as in 1970. The main contributors to this growth were Brazil and Chile. The developing countries' share of paper exports at 2% is even smaller than that of pulp. Growth in the 1970s has been from Korea and Brazil, otherwise the increased production has been consumed domestically.

Whereas during the 1960s the volume of developing country exports of roundwood tripled, during the 1970s so far the increase amounts to only 20%. A major factor in this slow growth of trade has been the constrained economic growth of the importing countries. Other contributing factors have been the sharp increase in the real price in this commodity in the mid-Seventies over the levels which prevailed in the Sixties and the restrictions on the export of unprocessed roundwood introduced by a number of countries. These restrictions have been initiated to conserve the supply of raw material for the future, to retain a greater part of potential value added for the internal economy and to secure supplies to meet requirements of the domestic market.

WORLD PRICES

A phenomenon of the 1970s has been the sharp increase in prices. The current prices of wood products have, on average, doubled between 1970 and 1975 and increased by a further 38% between 1975 and 1978. In constant prices the picture is much less simple: they were substantially higher in 1978 than in 1970 for only about half the principal wood products. For about a third of the products they actually declined, those of particle board and fibre board, for example, being 11% to 12% lower. Particularly noticeable are the variations in the prices of pulp which reached peak prices in 1975 but fell back in 1978 to levels which were similar to or below those in 1970 (Table 1-20).

The terms of trade for forest product exports have moved in a way generally favourable to developing countries during the seventies. Prices, deflated to 1970 levels, rose to a peak in 1973-74 but since then have tended to fall back somewhat. Thus, the 1978 price of African logs was 40% above that in 1970. That of Asian logs was about the same as in 1970 but prices have increased dramatically in the first half of 1979 to levels which, if maintained, would be practically double the levels of 1970. Tropical sawnwood prices are 40%-50% above the 1970 level. The exception among tropical timber product exports has been plywood which has barely maintained 1970 levels but the sharp upturn in log prices in 1979 has been reflected in an increase in the plywood price also. This may come at an unpropitious time for Asian exports coinciding as it does with credit restrictions and hence a downturn in the housing sector in major importing countries.

Table 1-20. Indices of prices of wood products

	Current prices		Constant 1970 prices 1/	
	1975	1978	1975	1978
	.....1970=100.....			
Fuelwood	196	277	108	123
Charcoal	170	301	93	134
Pulpwood	214	216	118	96
Coniferous logs	204	264	112	117
Non-coniferous logs	181	276	99	123
Tropical logs	217	327	119	145
Coniferous sawnwood	201	279	110	124
Non-coniferous sawnwood temperate	176	239	97	106
Tropical sawnwood	187	297	103	132
Plywood	177	252	97	112
Particleboard	175	200	96	89
Fibreboard	181	198	99	88
Mechanical & semi-mechanical pulp	305	233	168	104
Chemical pulp	240	192	132	85
Newsprint	216	242	119	108
Other printing and writing paper	175	185	96	82
Other paper and paperboard	184	189	101	84
Weighted average index of all wood products	200	275	110	122

1/ Deflated by the UN price index of exports of manufactured goods.

Source: FAO Forestry Paper No. 18, Forest Product Prices, 1960-78.

WOOD AND ENERGY

Earlier issues of SOFA have discussed the major dependence on wood as fuel in developing countries and chapter 2 of this issue deals with the problems of securing supplies for their rural communities.

The growth of fuelwood and charcoal consumption is difficult to monitor as supplies do not generally move through any formal market. Much of the fuelwood is collected by families from their own or communally owned woodland for their household use. The dependence of the rural communities on wood as a main source of energy is well known but increasing pressure on the forest resources, or on agricultural residues or animal dung in places where wood is in insufficient supply, are now being widely observed.

The market prices of fuelwood and charcoal during the 1970s increased at rates somewhat similar to the prices of other wood products so that they were slightly higher in real terms than in 1970 (Table 1-20). These prices varied very widely from country to country in 1970 from $ 4-20 per m^3 but mostly in the range of $ 6-12 per m^3. These prices compare with a price of approximately $ 3 for the quantity of oil with an equivalent energy content in 1970. The increased prices of fuelwood in 1978 varied from $ 10-50 per m^3 but mostly in the range of $ 13-30 per m^3, the price of oil equivalent being $ 21. Thus, there has been a change from a position where the market price of fuelwood was generally substantially higher than that of an equivalent amount of oil, to one where it tends now to be broadly similar.

OUTLOOK

Growth in world consumption of forest products in the 1970s has been somewhat slower than was projected at the beginning of the decade. This lower growth is largely explained by the lower rate of economic growth particularly in developed countries, and the higher level of the real price of forest products than implied in the projections. Growth in consumption in developing regions with the exception of sawnwood and panel products in Africa, has been greater than projected.

To meet future growth in domestic consumption of wood products in developing countries, industrial roundwood production for these purposes will have to increase at a rate exceeding 2.5% per annum. At the same time the constraints on temperate forests in meeting future consumption requirements of the developed world indicate enhanced prospects for expanding trade in the forest products of developing countries. In the medium term the movement to domestic processing, for both internal and export markets, has major implications for manufacturing countries currently heavily dependent on imports for their raw material. A period of adjustment in price and utilization of existing capacity must be expected and it is to be hoped that unnecessary disruption with consequent waste of capital resources can be avoided. Achievement of increases in harvesting, manufacturing and forest renewal, implied by the growth of the forestry sector in developing countries, involves investments amounting to several billion dollars annually.

A major issue remains the supply of energy for rural communities, particularly in countries and areas within countries, which are poor in forest resources. In these places existing forest resources cannot sustain a supply of fuelwood to meet current levels of need, let alone the demand of growing populations. Decisions on investment in the renewal and expansion of wood supplies or the provision of alternative energy sources are extremely urgent if disastrous fuel scarcities and serious devastation of the protection provided to soil and water catchments by the remaining forest cover are to be averted.

FOREST POLICIES

Log exports. The export of hardwood logs from wood surplus countries for processing by wood deficient countries for their own uses and especially for re-export has been a major policy issue for some time. This export trade has often been considered economically logical because of importing countries' surpluses of skilled labour and their ability to make much fuller use of industrial wood residues from the processing of sawnwood and plywood for pulping and panel manufacture. However, the consequent loss to the wood producing countries of employment opportunities and of development impact has been of growing concern, particularly as large quality logs of species well accepted by the market are becoming increasingly scarce.

Earlier attempts at furthering local processing through bans or quotas on log exports have suffered from lack of parallel action by major exporters. In recent years the situation has changed. Log exporting countries continue to move towards a higher level of local processing and a lower proportion of export of wood in unprocessed log form. For example, the Philippines continues its programmed phasing out of log sales to overseas buyers. The export quota imposed by Malaysia (Sabah) in 1977 continues in effect, and in Indonesia the Government announced that concession holders who have been operating for seven years or more are permitted to export only 40% of their log production. Export taxes and royalties were increased in all three countries. Nigeria and Ghana have put an

embargo on the export of logs of the major valuable species and Brazil continues its policy of what is essentially a complete ban on log exports.

In the United States the continued export of coniferous logs from its Pacific northwest area to Japan remains an issue of considerable debate.

Forest depletion, conservation and planting: Public concern over forest depletion and conservation of forest resources has become increasingly apparent. Indeed, some of the restrictions on log exports have gained impetus from this concern. There are instances where rates of logging might constitute overcutting or result in forest deterioration. However, it is more frequently agricultural expansion, often unplanned, which has led to serious forest destruction. Logging may often open up areas to shifting cultivation which with increasing population pressures and inadequate fallow periods often leads to permanent forest reduction.

Many countries are taking firm measures to improve the situation. Brazil, Ivory Coast, Senegal, Malaysia, Thailand and Venezuela, for example, are bringing forest use under tight controls. On the other hand, some countries such as Burma, Bangladesh, Colombia, Bolivia and Liberia, are bringing remaining forest resources more fully into use, often by extension of transportation systems.

Several countries are commencing or intensifying forest plantation programmes, for example, Sabah (Malaysia), Nigeria, Argentina, and the Philippines. It is reported that in China, where forestry has become the responsibility of a new Ministry, a huge increase in planting is planned. Earlier planting programmes have resulted in major increases in the proportion of the wood harvest coming from this source in Argentina, Brazil, Chile, Kenya, New Zealand and the United Kingdom.

Programmes to increase planting at the farm and village level, to provide for local as distinct from industrial needs, also continue to expand. In India two such large projects were launched, partially funded by the World Bank, in the States of Uttar Pradesh and Gujarat. These will involve planting fuelwood, fodder and fruit and nut yielding trees on village lands, roadsides, and canal banks. In Africa, Ethiopia, Kenya, Lesotho, Malawi, Tanzania and Zambia have such activities underway or planned. In order to plan these more effectively, several countries are carrying out sample surveys to learn more about rural energy needs and the place of trees in rural land use. In the arid zone of the Sahel, such as in Upper Volta, plantation efforts are underway with a primary objective of supplying fuelwood.

INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS[1/]

AGRICULTURAL EXPORT EARNINGS

The value (in current prices) of world exports of agricultural, fishery and forestry products rose from $194 thousand million in 1977 to $214 thousand million in 1978 (Table 1-21). Only about a tenth of this increase went to developing countries and their share in the total value, which had risen from 28% in 1975 to 32% in 1977, fell back to 30% in 1978. In the early 1960s, the share had been as much as 35% and it seems likely that the recent improvement was only a temporary reversal of a long-term downward trend. The fall is partly explained by lagging production and by increased domestic demand. Another major factor is the agricultural protectionism in developed countries which hampers the potential for exports in many low-cost producing countries.

World export earnings from fishery products ($9,200 million) accounted for only about 4% of the above total. After a continued and rapid expansion up to 1977, total earnings from fisheries suffered a slight setback in 1978, resulting from a small reduction in those of developed countries whilst those of developing countries remained unchanged from the previous year.

Earnings from exports of forest products increased from $33 billion in 1977 to $36 billion in 1978, the greater part of the increase being in the developed countries. The increases in volume of exports were largely of pulp and paper and, in the case of developing countries, of wood-based panels. The volume of exports of industrial roundwood from developed countries declined.

Export earnings from agricultural (crop and livestock) products, which account for nearly 80% of the total, increased to $169 billion in 1978. Since 1970, and more particularly since 1972, there has been a strong upward trend in the current value of world agricultural exports. The value more than doubled between 1971 and 1974 and, after a temporary slowdown in 1975, the sharp increase has been resumed in the following years.

A large part of the two and a quarter fold increase in world agricultural export earnings during the Seventies has been due to an increase in prices (unit values) which in 1978 was about two and a half times those in 1969-71 (Table 1-22). During the first five years of the decade the combined effects of a number of factors resulted in an unprecedented rise in export prices. Production shortfalls occurred and in particular the reduced cereals production in 1972 which led to sharp increases in world import demand and substantial reductions in stocks. World inflation, instability in exchange rates, rises in fertilizer prices and increased production costs were other major factors. The level of prices stabilized somewhat in 1975, but fell in 1976 except for some commodities temporarily in short supply, in particular tropical beverages, foodstuffs and raw materials. Since 1977 the trend has again been upward, particularly for foodstuffs, the prices of which have risen steeply.

The volume of world agricultural exports rose by about 3.5% a year during 1970-78. Following a rapid increase during the first years of the decade, the volume of agricultural exports actually declined for two years in succession (1974 and 1975). After a year and a half of continuing recession, world economic conditions began to recover in the second half of 1975 and this was reflected in increased demand for agricultural products. Since then the biggest increases in the volume of exports took place in 1978 and concerned

1/ For a more detailed analysis, see FAO, Commodity Review and Outlook 1979-80, Rome, 1980.

Table 1-21. Value of world exports of agricultural (crops and livestock), fishery and forestry products, at current prices

	Average 1961-65	1975	1976	1977	1978 1/
	thousand million $				
AGRICULTURAL PRODUCTS	36.5	121.9	131.4	151.0	169.2
Developing market economies	13.8	35.4	41.5	50.9	52.1
Asian centrally planned economies	0.8	2.9	2.6	2.7	3.1
TOTAL DEVELOPING COUNTRIES	14.6	38.3	44.1	53.6	55.2
Developed market economies	19.2	76.6	80.3	89.1	105.8
Eastern Europe and U.S.S.R.	2.7	7.1	7.0	8.3	8.2
TOTAL DEVELOPED COUNTRIES	21.9	83.7	87.3	97.4	114.0
FISHERY PRODUCTS	1.6	6.3	8.0	9.5	9.2
Developing market economies	0.4	2.0	2.4	3.1	3.1
Asian centrally planned economies	-	0.2	0.4	0.4	0.4
TOTAL DEVELOPING COUNTRIES	0.4	2.2	2.8	3.5	3.5
Developed market economies	1.1	3.8	4.8	5.6	5.5
Eastern Europe and U.S.S.R.	0.1	0.3	0.3	0.3	0.2
TOTAL DEVELOPED COUNTRIES	1.2	4.1	5.1	5.9	5.7
FORESTRY PRODUCTS	6.9	25.9	31.3	33.3	35.7
Developing market economies	0.7	2.9	4.2	4.5	4.7
Asian centrally planned economies	-	0.2	0.3	0.3	0.3
TOTAL DEVELOPING COUNTRIES	0.7	3.1	4.5	4.8	5.0
Developed market economies	5.5	20.1	23.9	25.3	27.5
Eastern Europe and U.S.S.R.	0.7	2.6	2.8	3.1	3.2
TOTAL DEVELOPED COUNTRIES	6.2	22.7	26.8	28.5	30.7
TOTAL	45.0	154.1	170.7	193.8	214.1
Developing market economies	14.9	40.3	48.2	58.5	59.9
Asian centrally planned economies	0.8	3.3	3.3	3.4	3.8
TOTAL DEVELOPING COUNTRIES	15.7	43.6	51.5	61.9	63.7
Developed market economies	25.9	100.5	109.0	120.1	138.8
Eastern Europe and U.S.S.R.	3.4	10.0	10.1	11.8	11.6
TOTAL DEVELOPED COUNTRIES	29.3	110.5	119.1	131.9	150.4
	%				
SHARE OF DEVELOPING COUNTRIES	35	28	30	32	30

1/ Preliminary.

mainly cereals and feedstuffs. There were, however, only small increases for raw materials and the volume of trade in beverages fluctuated widely.

Table 1-22. FAO index of numbers of volume, value and unit value of world exports of agricultural products (crops and livestock), by major commodity groups

	1975	1976	1977	1978 1/	Change 1977 to 1978	Annual rate of change 1970-78
	.....1969-71 = 100.....				.....%	
VOLUME	116	126	129	137	6.3	3.5
Food	121	131	138	147	6.3	4.3
Cereals	137	146	149	166	11.9	5.6
Feed	129	169	173	198	14.5	8.3
Raw materials	97	103	103	108	4.5	0.3
Beverages 2/	114	118	105	111	5.4	1.1
VALUE	245	257	292	325	11.1	16.8
Food	276	268	289	336	16.5	17.2
Cereals	339	321	291	352	21.3	18.6
Feed	221	319	402	421	4.6	20.1
Raw materials	167	195	227	237	4.4	12.2
Beverages 2/	175	270	386	364	-5.6	19.0
UNIT VALUE	212	207	236	244	3.3	13.3
Food	232	207	213	236	10.6	12.6
Cereals	249	222	197	216	9.5	12.6
Feed	171	187	231	211	-8.6	10.8
Raw materials	175	191	221	221	-0.3	12.0
Beverages 2/	152	233	396	335	-15.5	18.4

1/ Preliminary. - 2/ Excluding cocoa, which is included under food.

Note: For details of methodology and coverage of these indices, see the explanatory note preceding this chapter.

Agricultural export earnings by region

Earnings from crop and livestock exports in 1978 increased by about $1,700 million over 1977 in the developing countries but by about $16,600 million (nearly ten times as much) in the developed countries (Table 1-23). The increases between 1977 and 1978 were about 3% and 17% in the developing and developed countries respectively. There was a sharp reduction in the increase of export earnings by developing countries between 1976 to 1977 and 1977 to 1978 with the result that the average growth since 1970 fell to rather more than 16% as against the 17% in developed countries.

Among the developing market economies, the Far East and Latin America regions had the highest rates of increase over the period 1970-78 with average annual rates of 18% and over. In Africa they were moderate over the whole period though the value of exports fell between 1977 to 1978. In the Near East growth has been slowest but steady. In the Asian centrally planned economies growth has also been moderate but the absolute values have been low and somewhat erratic.

In the developed countries North America and western Europe have shown the biggest increases with average annual rates of over 18% between 1970 and 1978. The average rates were much lower in Oceania, and in eastern Europe and the U.S.S.R. and in 1978 the values actually fell by comparison with the previous year.

Table 1-23. Value of exports of agricultural products (crops and livestock), at current prices

	1975	1976	1977	1978 1/	Change 1977 to 1978	Annual rate of change 1970-78
	.... thousand million $				.....%	
Developing market economies	35.4	41.5	50.9	52.1	2.4	16.6
Africa	6.3	7.6	9.7	9.5	- 2.1	13.9
Far East	8.8	10.7	13.1	13.4	2.3	18.4
Latin America	16.7	19.0	23.6	24.4	3.4	18.0
Near East	3.2	3.9	4.0	4.2	5.0	11.1
Asian centrally planned economies	2.9	2.6	2.7	3.1	14.8	14.1
TOTAL DEVELOPING COUNTRIES	38.2	44.2	53.5	55.2	3.2	16.4
Developed market economies	76.6	80.3	89.2	105.9	18.7	17.8
North America	26.7	28.0	29.1	35.4	21.6	18.8
Oceania	6.9	7.1	8.1	8.0	- 1.2	13.1
Western Europe	40.7	42.9	49.4	59.8	21.1	18.4
Eastern Europe and the U.S.S.R.	7.1	7.0	8.3	8.2	- 1.2	11.7
TOTAL DEVELOPED COUNTRIES	83.7	87.3	97.5	114.1	17.0	17.3
WORLD	121.9	131.4	151.0	169.3	12.1	17.0

1/ Preliminary.

Agricultural export earnings of MSA countries

MSA countries in all regions except the Far East suffered significant falls in the value of their agricultural exports in 1978 in both current and constant prices. In the Far East there was a marginal increase in current prices but no change in constant prices.

The share of MSA countries in the agricultural export earnings of the developing countries has been recovering from a decline in the first half of the 1970s but fell back in 1978 to the same level as in 1973. Throughout the 1960s and 1970s the rate of growth of MSA agricultural exports has remained below that of the developing countries as a whole, in both current and constant prices (Table 1-24).

The rates of growth of agricultural export earnings of MSAs in the 1970s show considerable increases in current prices over those in the 1960s in all regions. But the trends in constant prices are just the opposite. While in the developing countries as a

whole there was a marginal increase in the rate of export growth in constant prices, in the MSA countries it declined by a half. In the Far East the 1970s showed an annual rate of decline, and in the Near East a very sharp rate of decline, in exports compared with positive growth rates in the 1960s. Only in Latin America did exports in real terms show an increase in the growth rate between the two decades.

Table 1-24. Agricultural (crops and livestock) export earnings of MSA and all developing countries

	1975	1976	1977	1978	Annual rate of change 1961-65 to 1970	Annual rate of change 1970 to 1978
	.. thousand million $ ..				..... %	
MSA countries in:						
Africa current prices	3.8	4.7	6.6	6.1	6.9	16.7
constant prices	1.8	2.3	2.8	2.5	5.5	2.9
Far East current prices	2.9	3.0	3.2	3.3	1.6	12.0
constant prices	1.4	1.5	1.4	1.4	2.4	-1.2
Latin America current prices	1.2	1.5	2.2	1.8	4.5	19.4
constant prices	0.6	0.7	0.9	0.7	3.4	5.4
Near East current prices	1.4	1.5	1.7	1.4	5.5	7.9
constant prices	0.6	0.7	0.7	0.6	4.1	-4.8
TOTAL MSAs current prices	9.3	10.8	13.7	12.7	2.9	14.4
constant prices	4.4	5.2	5.8	5.2	1.7	0.9
All developing countries current prices	38.2	44.2	53.5	55.2	3.7	16.4
constant prices	18.1	21.4	22.7	22.6	2.5	2.7
MSA exports in current prices as % of all developing countries	24.3	24.4	25.6	23.0		

Note: The constant price series was calculated by using the FAO index (1969-71 = 100) of world export unit value of total agricultural products as deflator. The figures in this Table are not strictly comparable with those published previously as major revisions have been made in the original data.

FOOD IMPORTS OF DEVELOPING COUNTRIES

The inadequate food production increase in developing countries has been accompanied by a growing dependence on food imports, mainly from developed countries. In the 1960s the rate of growth of the value of food imports (excluding fish) both in terms of current and constant prices of developing countries was slightly lower than that of developed countries, but in the 1970s the situation has been completely reversed (Table 1-25).

The value (at constant prices) of food imports of developing countries increased at an average annual rate which nearly doubled from 3.6% between 1961-65 and 1969-71 to 6.8% between 1969-71 and 1976-78. For developed countries, on the other hand, the comparable

rates fell from 4.3% to 3.8% between the two periods although the intra-trade in food among the developed countries is more than half the world trade in these products. In current prices the rises have been very much higher and, unless accompanied by corresponding rises in export prices, greater burdens have been imposed on developing countries.

The cereal imports of the developing countries which represent slightly less than half of the gross value of their food imports, increased from an average of 40 million tons in 1969-71 to about 79 million tons in 1978/79 and are expected to rise to 85 million tons in 1979/80. Imports of other food commodities, particularly vegetable oils, dairy products and meat, continue to grow rapidly and increasing dependence on external food supplies is a critical issue for many developing countries.

Table 1-25. Values of imports of total agricultural and food (crops and livestock) products and cereals

		Averages			Rate of change	
		1961-65	1969-71	1976-78	1961-65 to 1969-71	1969-71 to 1976-78
		..... million $			..... %	
TOTAL AGRICULTURAL PRODUCTS						
Total developing countries	current	7,745	10,631	37,427	4.6	19.7
	constant	8,221	10,631	16,483	3.7	6.5
Total developed countries	current	31,831	45,348	128,713	5.1	16.1
	constant	34,922	45,348	55,225	3.8	2.9
FOOD						
Total developing countries	current	5,843	7,877	28,467	4.4	20.0
	constant	6,129	7,877	12,447	3.6	6.8
Total developed countries	current	17,639	27,314	79,199	6.4	16.4
	constant	20,380	27,314	35,530	4.3	3.8
CEREALS						
Total developing countries	current	2,924	3,653	12,556	3.2	19.3
	constant	3,039	3,653	5,684	2.7	6.5
Total developed countries	current	4,052	5,397	17,096	4.2	17.9
	constant	4,378	5,397	8,184	3.0	6.1

Note: The constant values have been obtained by deflating the current values in each case by the corresponding index of import unit values with 1969-71 base.

Cereal import requirements of the MSA countries in 1979/80 are estimated to be about 19 million tons, 10% more than actual imports in 1978/79. For nearly three-fourths of all the 46 MSA countries, import requirements are estimated to be higher this year, the largest increases being in Bangladesh, Afghanistan and Egypt. By contrast, improved domestic supplies resulted in substantial decreases in import needs in Pakistan.

TERMS OF TRADE

The terms of trade of agricultural exports for manufactured goods have varied greatly during the 1970s, particularly in developing countries (Table 1-26). They improved considerably for both developed and developing market economies during the first years of the decade when rises in agricultural prices were running ahead of those for manufactured goods. This overall improvement continued until agricultural commodity prices began to fall towards the end of 1974. Developing countries then suffered a sharp deterioration in the agricultural terms of trade in 1975 which largely cancelled the gains of the previous years.

In 1976 and 1977 widespread increases in agricultural commodity prices again brought a substantial improvement in the terms of trade of the agricultural exports of the developing market economies. These gains, however, were short-lived and were largely lost in 1978. Both the improvement and subsequent deterioration were greatest for food products. Preliminary figures for 1979 show that the deterioration has continued for food products reflecting an increase in prices smaller than that in unit values of exports of manufactured goods. For the non-food agricultural exports of the developing market economies the 1979 terms of trade improved to their best level since 1974. However, the prices of many agricultural commodities have fallen sharply in recent years.

In the developed market economies, the decline in export prices of cereals was a major factor in the continuous deterioration from 1974 to 1978 in the terms of trade of their food exports. There was a reversal of this trend in 1979 with marginal improvement following higher prices for wheat, maize, beef and mutton. For non-food exports the agricultural terms of trade of the developed market economies declined in 1978 from the level of 1976-77, but rose again in 1979 with particularly large increases in the prices of oilseeds and forest products.

Table 1-26. Terms of trade of food and agricultural non-food export products [1] for manufactured goods

	1974	1975	1976	1977	1978	1979 [2]
	..... 1975 = 100					
FOOD						
Developed market economies	120	100	98	92	91	92
Developing market economies	134	100	116	151	112	103
AGRICULTURE NON-FOOD						
Developed market economies	127	100	107	109	98	104
Developing market economies	146	100	117	121	117	122

1/ Including fishery and forestry products. - 2/ Preliminary.

Source: Derived from data in United Nations Monthly Bulletin of Statistics, March 1980.

COMMODITY MARKET SITUATION AND PROSPECTS

Persistent inflation, restrictive economic policy measures to contain it and its impact on the balance of payments of many industrialized and developing countries are among the factors likely to cause a further slowdown in the growth of the world economy in 1980. By the end of 1979 the overall demand for agricultural products had not however been noticeably reduced by the marked deceleration in the growth of the world economy that had taken place in the course of the year.

Although the market situation was generally one of ample supplies of several commodities, tight supplies and sporadic shortages persisted into the 1979/80 season for others, especially agricultural raw materials the competitive position of which was improved by the increased cost of synthetic substitutes.

The short-term outlook for prices of most agricultural products and therefore export earnings, was unusually uncertain at the end of 1979 especially where international trade was small in relation to total world production and consumption, as in the case of sugar and rice. Further factors were the prospects for smaller stocks of cereals and sugar and the relatively tight stock situation for other major commodities.

In the world free sugar market, it was expected that there would be a shortfall in production and world stocks would decline by about 4 million tons by the end of the season in August 1980. Though stocks would still represent 29% of world consumption, compared with a more "normal" level of 25%, the free-market price was expected to be more favourable to exporters than in several preceding years.

Among other major traded commodities of export interest to developing countries, import demand in the short run remained strong for coffee, tea and cotton, as well as for jute, hard fibres and rubber. Tight supplies of hides and skins in international trade were also expected in 1980, reflecting the continuing cyclical decline in cattle slaughterings. However, the generally unfavourable economic growth prospects in industrialized countries was expected to reduce the demand for agricultural raw materials, despite the improvement in competitive position they had recently regained against synthetic substitutes.

Reflecting the fall in world cereals production and the increase in import requirements, international prices of wheat, coarse grains and rice remained above year-earlier levels in late 1979; there were also indications that prices could rise further in the short run. Crop shortfalls in major rice consuming countries in 1979 resulted in large import requirements for 1980, but the volume of world trade was forecast to remain below the record reached in 1979. By contrast, world import requirements of wheat and coarse grains in 1979/80 were expected to rise because of larger purchases by developed countries, particularly the U.S.S.R. and Poland. World trade in these grains was forecast to reach a new record at 174 million tons unless transport problems in major exporting countries imposed a constraint on the actual volume of shipments.

World output and export availabilities of edible oils and protein meals in 1980 were expected to increase sharply and though some of the increased production would go into stocks, prices in real terms seemed likely to decline.

World production of beef and veal was expected to continue a cyclical downward trend probably until 1982-83. Given the expected lower rates of growth in the output of other meats because of declining feeding margins, the prospects pointed to tighter world meat supplies and hence higher international pigmeat and poultry meat prices which had been depressed in 1979.

Apart from some oilseeds and oilseed products and hides and skins, international prices of most agricultural commodities continued to advance or remained strong in the last quarter of 1979. These price levels were expected to be reflected in export unit values in 1980 and an upward trend in the value of world agricultural trade in the short term seemed likely.

TRADE PROBLEMS AND POLICIES

The intergovernmental discussions and commodity studies that took place in 1979 have again shown that the agricultural development of many countries depends significantly on the solution of the problems of international trade. To these countries the regular flow of foreign exchange from exports of agricultural products is of prime importance because of the overwhelming agricultural character of their economies. Agricultural prices are unfortunately highly volatile, in comparison with the prices of most industrial and other non-agricultural goods. A major factor is the lower price elasticity of demand for agricultural products which leads to very large price variations in response to small shifts in supply and demand. There are also differences in market organization and structure which make it difficult for agricultural producers to exercise control over prices and achieve some stability in them in the short term by adjusting output to demand.

A number of important intergovernmental meetings were held in 1979 to try to reduce the instability in export prices of commodities. Early in the year agreement was reached on the fundamental elements of the Common Fund to finance the UNCTAD Integrated Programme for Commodities. The Fund will have an initial capital of $750 million, of which $400 million will be available under the "first window" for the financing of international buffer stocks and internationally coordinated stocks within the framework of international commodity agreements. Through the "second window", with a target of $350 million, the Fund would finance activities such as research and development and measures to improve productivity but excluding stocking.

The United Nations Conference on Trade and Development at its 5th Session (UNCTAD V) in May 1979 in Manila agreed on a programme of action for structural adjustment related to trade and policies and measures to deal with protectionism. This programme is intended to encourage rational trade policies on the part of UNCTAD members by reviewing these policies in the context of global patterns of production and trade.

One of the most important achievements of UNCTAD V was the adoption of a Comprehensive New Programme of Action for the Least Developed Countries. Under the Programme, special priority will be given to the basic structural and economic problems facing these countries as an essential contribution to the establishment of a New International Economic Order. UNCTAD V also recommended the adoption of appropriate differential and remedial measures within the Integrated Programme for Commodities to promote adequate markets for the expanded production by least developed countries which the Comprehensive New Programme of Action would bring about. Intratrade among developing countries is to be stimulated and expanded, and technical assistance and other measures extended to strengthen their collective self-reliance.

There were two disappointing aspects of the results of UNCTAD V. First, although a general consensus was reached on protectionism, it did not prove possible to agree on specific actions by the developed countries to remove the existing restrictions on the exports of developing countries. Second, there were wide divergencies on the global policy issue of how to facilitate structural changes in the international economy, taking into account the inter-relationships between trade, development, money and finance, with a view to the establishment of a New International Economic Order. These questions remain to be discussed at a later date.

Further preparatory meetings and negotiations were held by UNCTAD on individual commodities under the Integrated Programme. Preparatory work on jute and jute goods was concluded and participating parties agreed to enter into the negotiating phase for an international agreement. A pre-negotiating meeting was expected to be held before mid-1980 to clarify certain outstanding issues. The fifth preparatory meeting on tropical timber was held in October 1979 and was expected to be convened also in the first half of 1980 to continue consideration of the elements for an international arrangement.

Negotiations for conclusion of international commodity agreements have recently been completed or are in progress for a number of agricultural commodities. Major producing and consuming countries concluded negotiations in early October 1979 on an International Price Stabilization Agreement on Natural Rubber. This is the first international commodity agreement to be concluded within the framework of the UNCTAD Integrated Programme for Commodities and also to provide for association with the Common Fund. Notably, the agreement is also the first to provide for equal sharing of the funding, for the operation of the normal stock of 400,000 tons, between producing and consuming countries by means of direct government contributions.

A new International Olive Oil Agreement was approved in March 1979 to come into force in January 1980 and last for five years. The situation appears less encouraging for cocoa and coffee. The International Cocoa Agreement was extended to March 1980 but has since lapsed largely because of the failure to agree on the essential issue of the level of prices. The economic provisions of the 1976 International Coffee Agreement continued to be inoperative in 1979, as prices remained well above the level which would trigger export quotas. In September 1979 the International Coffee Council failed to agree on an upward revision of the trigger price but provided for further discussions on possible measures under specific market conditions.

The Third Session of the United Nations Negotiating Conference on a new international grain arrangement adjourned without concluding its work in February 1979. It could not agree on a Wheat Trade Convention because of differences on a number of major issues regarding the size and distribution of reserves, prices and special assistance to developing countries. Hence, the 1971 International Wheat Agreement, which comprises a Wheat Trade Convention and a Food Aid Convention, was extended for two more years up to June 1981. In November 1979 the International Wheat Council agreed that there was little prospect of negotiating a new Wheat Trade Convention in the foreseeable future, but that it was necessary to search for alternative solutions which would meet the objectives of market stability and world food security. Accordingly, alternative proposals for a new Wheat Trade Convention were to be considered in April 1980 by the Special Committee of the International Wheat Council. The food aid aspects of this problem have been discussed in the earlier section on Food Aid.

The Informal Price Arrangements operated under the Intergovernmental Group on Hard Fibres were reviewed in April 1979 when the indicative price of East Africa sisal was raised, while the export quotas were left suspended pending review. It was also decided that the indicative price mechanism for abaca agreed to in 1978 should be temporarily suspended in view of the rising abaca prices. An Emergency Consultation for an upward revision of prices agreed on a substitution by price bands until December 1979 when the single floor and ceiling prices for abaca were to be reintroduced. The Group also reached broad agreement on objectives of a new organization - Coir International - to initiate and coordinate research, development and promotion programmes for coir. Options for a legal status for Coir International and related matters were to be discussed at the Group's meeting scheduled for early 1980.

The indicative price ranges of the Informal Arrangement on Jute, Kenaf and Allied Fibres were reviewed by the Intergovernmental Group in October 1979. The Group decided to keep the indicative price for jute for 1979/80 at the 1978 level and to raise the price range for Thai kenaf.

The use of International Guidelines to provide a "code of conduct" for the achievement of certain agreed goals continues to be favoured by three FAO Intergovernmental Groups as an alternative to formal commodity arrangements. The Intergovernmental Group on Rice adopted in March 1979 a revised and strengthened set of Guidelines on National and International Action of Rice. The Intergovernmental Group on Meat, reviewed follow-up action to the Guidelines for International Cooperation in the Livestock and Meat Sector at its session in May 1979. The February 1979 session of the Intergovernmental Group on Oilseeds, Oils and Fats gave detailed consideration to a draft of Guidelines for

International Cooperation in the Oilseeds, Oils and Fats sector and a revised draft was to be prepared as the basis for further discussion at the next session in April 1980.

The negotiations under the Tokyo Round of the Multilateral Trade Negotiations (MTNs) of GATT were concluded after six years of work. The explicit inclusion of agriculture, non-tariff barriers and the emphasis on the interests of developing countries, differentiated the Tokyo Round from earlier rounds of negotiations on trade liberalization.

According to preliminary GATT calculations, tariff reductions made as the result of the negotiations affect $15 billion of imports of agricultural products in 18 developed countries out of total "most favoured nations" (m.f.n.) imports of $48 billion. The average tariff cut, on the items on which concessions were made, is estimated at 32% or 40% depending on the method of calculation. As regards imports of agricultural products into developed countries, the average m.f.n. tariff rates before the MTNs was 8% or 12% depending on the method of calculation. As a result of the negotiations, the average rate is 7% or 11%.

On non-tariff measures agreement was reached on international codes on subsidies and countervailing measures, technical barriers to trade, customs valuation, government procurement and import licensing procedures. Many of the major barriers affecting trade in agricultural and processed agricultural products were not covered in the codes. In particular the negotiations concerning quantitative restrictions applied against exports were handled through specific requests and offers. It is clear that the offers made in response to the requests leave a large body of restrictions still intact.

Two specific agreements were reached concerning agricultural trade: an International Dairy Arrangement and an Arrangement Regarding Bovine Meat, both coming into force in January 1980. The former superseded the arrangement earlier negotiated in GATT, on skimmed milk powder and milk fats. It includes provisions for minimum prices in international trade of milk powder, certain cheeses, milk fats (including butter) and for the establishment of an International Dairy Products Council to keep under review the world market situation and the functioning of the Arrangement. The Arrangement Regarding Bovine Meat covers beef and veal and live cattle and aims, through the establishment of a consultative International Meat Council, to promote cooperation in international meat and livestock trade, but it contains no price or market regulatory provisions.

DEVELOPMENT ASSISTANCE

During 1978 there was a substantial increase in official commitments[1/] of external assistance to agriculture (OCA) covered under the "broad" OECD definition of agriculture[2/] amounting to U.S. $1,965 million. OCA rose to an estimated $8,936 million from $6,971 million in 1977 and $5,114 million in 1976 (Table 1-27). This represents an increase in constant prices of 12% over 1977 and 40% over the low 1976 figure. OCA in constant prices almost doubled between 1973 (the first year for which data are available) and 1978.

Table 1-27. Official commitments of external assistance to agriculture in the OECD "broad" definition

Source	1974	1975	1976	1977	1978 [1/]
	.....		million $		.....
Value					
Multilateral agencies [2/]	2,165	3,193	2,878	3,858	5,111
Bilateral [3/]	2,204	2,466	2,236	3,113	3,825
TOTAL	4,369	5,659	5,114	6,971	8,936
In constant 1975 prices [4/]	4,909	5,659	5,113	6,395	7,149
	.....		%		.....
Distribution					
Multilateral agencies	50	56	56	55	57
Bilateral	50	44	44	45	43
TOTAL	100	100	100	100	100

1/ Preliminary. - 2/ African Development Bank and Fund, Arab Bank for Economic Development in Africa from 1976, Arab Fund for Economic and Social Development, Asian Development Bank, International Fund for Agricultural Development in 1978, Inter-American Development Bank, Islamic Development Bank from 1977, OPEC Special Fund from 1977, FAO Technical Cooperation Programme from 1977, UNDP/FAO, World Bank (IBRD/IDA). - 3/ DAC (including EEC) and OPEC. - 4/ Deflated by the United Nations unit value index for exports of manufactured goods.

Source: OECD and FAO.

1/ Data on flow of external resources to agriculture on a net disbursement basis are not yet available.

2/ Including rural development and rural infrastructure, agro-industries, fertilizer production, and regional and river projects as part of the agricultural sector.

Almost all the major lending agencies contributed to the increase in OCA in 1978. Commitments from the multilateral agencies rose by $1,253 million (+32%) and accounted for 64% of the total increase in OCA in 1978. The World Bank - still the largest single source of external funds for direct investment in agriculture - increased its commitments by 48%, OPEC sources by 27%, FAO/UNDP by 26% and the Asian Development Bank by 12%. OCA from the African Development Bank and Fund combined remained at the 1977 level, however, and it actually declined by 25% from the Inter-American Development Bank. Bilateral commitments in 1978 were some $712 million higher (up 23% over 1977) with the major share of the increase coming from DAC member-countries and the EEC.

During 1974-77 about 14% of total commitments of external assistance were allocated to agriculture (under the "broad" definition). The corresponding proportion for the multilateral agencies was 34%, for DAC 9%, and for OPEC bilateral assistance 6%. The external resources made available to agriculture are used for a wide variety of purposes. During the period 1974-77 about two-thirds were committed for uses which may be classified under the "narrow" definition of agriculture (Table 1-28). Of the total commitments as indicated in this table, nearly one quarter was allocated for land and water development, and 15% for rural development and rural infrastructure. Substantial commitments were also made for agricultural services (e.g. cooperatives, marketing, credit, research and extension) and the manufacturing of agricultural inputs.

Table 1-28. Total commitments of external assistance to agriculture (excluding technical assistance) by purpose during the period 1974-77

	Million $ 1/	%
Land and water development 2/	4,400	22,4
Agricultural services 3/	2,500	12.7
Supply of inputs	1,300	6.6
Crop production	1,100	5.6
Livestock	800	
Fisheries	500	4.1
Agriculture, unallocated	2,000	10.2
Total "narrow" definition	12,600	64.1
Rural development and rural infrastructure 4/	3,000	15.2
Manufacturing of inputs 5/	2,300	11.6
Agro-industries	1,100	5.6
Forestry	500	2.5
Regional development	200	1.0
Total "broad" definition	19,700	100.0

1/ Rounded to the nearest US$ 100 million. - 2/ Including river development which is usually classified under the "broad" definition. - 3/ Including agricultural development banks, credit schemes, cooperatives, marketing, storage, transportation, research, training and extension. - 4/ Including rural electrification, housing, health clinics, rural industrial development, roads, water supplies, and land settlement and compensation. - 5/ Mainly fertilizers.

Source: OECD and FAO.

OCA in the OECD "narrow" definition also increased significantly in 1978. Measured by OECD's improved new definition of "resources directly channelled to food and agricultural sector", OCA increased by nearly a third to $6,218 million in 1978. This was equivalent to $4,974 million constant prices or an increase of 16% over 1977 (Table 1-29).

Table 1-29. Official commitments of external assistance to agriculture in the OECD "narrow" definition, 1/ total and concessional 2/

Source	1974	1975	1976	1977	1978 3/
			million $		
Total					
Multilateral agencies	1,502	1,873	1,916	2,720	3,586
DAC bilateral 4/	1,505	1,233	1,456	1,862 5/	2,577 5/
OPEC bilateral	103	232	189	106 5/	55 5/
TOTAL	3,110	3,338	3,561	4,688	6,218
In constant 1975 prices 6/	3,494	3,338	3,526	4,301	4,974
Concessional 2/					
Multilateral agencies	660	688	1,070	1,194	1,695
DAC bilateral 4/	1,348	1,214	1,326	1,850 5/	2,381 5/
OPEC bilateral	103	232	189	106 5/	55 5/
TOTAL	2,111	2,134	2,585	3,150	4,131
In constant 1975 prices 6/	2,372	2,134	2,559	2,890	3,313
Concessional as % of total	68	64	73	67	67

1/ Data for 1974-76 in the OECD "narrow" definition which excluded infrastructural investment and fertilizer; data for 1977 and 1978 in OECD's new definition "resources directly channelled to food and agricultural sector" which is a closer measure of official external assistance commitments to food production than under the earlier "narrow" definition. It includes the items which made up the narrow definition minus forestry and rural water supplies but includes technical cooperation to food and agriculture. - 2/All grants and loans with a minimum grant element of 25%. - 3/ Preliminary. - 4/ Including EEC. - 5/ Based on partial data. - 6/ Deflated by the UN Unit Value Index for the Export of Manufactures.

Source: OECD and FAO.

Similarly, OCA in concessional terms rose to almost $3,315 million in constant (1975) prices ($4,131 million in current prices) in 1978, an increase of 15% over 1977. This, however, represents only 60 % and 51%, respectively of the estimated requirements of $8,300 million (in 1975 prices) of annual external assistance to the food sector, including $6,500 million as concessional assistance (ODA), noted by the FAO Conference and World Food Council. It is most unlikely that these requirements will be met by the end of 1980 as the Committee of the Whole established under UN General Assembly Resolution 32/174, recommended in its Second Session.

While OCA in the "narrow" and in the later "improved" OECD definition has almost doubled in constant prices since 1973, commitments of concessional (ODA) assistance have risen by about three-quarters. The proportion of ODA in total commitments has therefore declined, mainly because of the larger share of the multilateral component. The changes, however, largely took place between 1973 and 1974 as reported in earlier issues of SOFA.

Thus the share of the 21 poorest countries[1/] in total capital commitments of ODA rose from 29% in 1973 to 39% in 1977. Total commitments reached $1,309 million in 1977 compared with $605 million in 1974 and $347 million in 1973 (Table 1-31). The multilateral agencies have together committed more than half their capital ODA to the 21 poorest countries in each year since 1973 (except in 1976) while DAC/EEC bilateral ODA commitments to these countries rose from 14% of their total in 1974 to 28% in 1977, and similarly for OPEC bilateral aid (from 6% to 29%).

Table 1-30. Official capital commitments of ODA to agriculture: all developing countries and the 21 poorest countries, with per caput GDP up to $150 in 1975, 1973-78

	1973	1974	1975	1976	1977	1978
	..... million $					
All developing countries	1,198	2,005	2,147	2,689	3,386	...
21 poorest countries	347	605	832	834	1,309	...
of which: India	174	352	459	181	532	...
% of total to 21 poorest	29	30	39	31	39	...
Commitments to 21 poorest by:						
Multilateral agencies	274	479	610	520	743	1,102
DAC/EEC bilateral 1/	72	113	188	262	480	...
OPEC bilateral 1/	1	13	34	52	86	...
% of total to 21 poorest by:						
Multilateral agencies	40	51	54	38	53	53
DAC/EEC bilateral 1/	15	14	25	25	28	...
OPEC bilateral 1/	3	6	13	20	29	...

1/ Incomplete data.

Source: OECD and FAO.

1/ Countries with per caput GNP of up to $150 in 1975 comprising: Africa (12): Burundi, Cape Verde, Chad, Ethiopia, Guinea-Bissau, Malawi, Mali, Mozambique, Niger, Rwanda, Upper Volta, Zaire; Near East (1): Somalia; Asia (8): Bangladesh, Butan, Burma, India, Lao PDR, Maldives, Nepal, Vietnam.

An important development which is expected to provide additional help to such countries is the adoption by the Development Assistance Committee (DAC) of new guidelines in which DAC members have agreed to consider the financing of recurrent costs (as part of local cost financing) where this is necessary to ensure the successful maintenance and operation of projects and programmes.

Economic cooperation among developing countries

Economic cooperation among developing countries (ECDC) has been a field of discussion in a number of fora. Most recently, FAO held a Technical Consultation on ECDC in Food and Agriculture in June/July, 1979. The meeting reviewed progress and assessed prospects in ECDC in the fields of increasing food, agricultural, fisheries and forestry production, ensuring food security, joint investment and finance for agricultural development, and expansion of trade in agricultural, fisheries and forestry commodities. It suggested an ECDC programme of action for achieving global food self-sufficiency of developing countries, encompassing production, distribution and trade of agricultural inputs, land and water development, control of pests and diseases, desertification, food security, trade, fisheries, forestry, finance and investment, planning for increased food and agricultural production, and training. The Consultation also recommended institutional arrangements for the implementation of the programme of action and for follow-up action by developing countries, their integration with other cooperating groups of developed countries, and the organizations of the United Nations system, particularly FAO.

The FAO Conference in November 1979 endorsed the conclusions and recommendations of the Technical Consultation as well as the institutional arrangements recommended for their implementation. It welcomed the decision of the Group 77 to set up a Coordinating Committee of 16 members to deal with different aspects of ECDC in Food and Agriculture, as recommended by the Technical Consultation, emphasized the importance of the catalytic role that FAO played in promoting such cooperation, and it urged the Director-General to continue the support and assistance to ECDC programme.

EXPENDITURE ON AGRICULTURE

The pace of agricultural development is directly influenced by the flow and quality of investment on fixed capital and the increases in working capital. Data on working capital are more difficult to come by because such expenditure is less easy to measure. Whereas an increasing proportion of investment in agriculture takes the form of fixed capital formation, particularly for irrigation, drainage and land development, the main input is often labour which tends to be undervalued in statistics. Much of such labour is unpaid family work, and is hardly or inadequately reflected in the estimates of fixed capital formation.

Nevertheless, one useful indicator is growth in public expenditure on agricultural development, on which the only available data are those published by the International Monetary Fund (IMF). These, however, relate only to expenditure by central governments of countries and hence they are only of limited value as they do not cover the expenditure on agriculture provided by provincial and local governments and parastatal organizations, which in certain developing countries is very significant.

Available data for 27 countries for the period 1973-77 appear to indicate that most governments increased their real expenditure on agriculture after the food crisis of the early 1970s. Such expenditure (measured in constant price terms) fell in only four of these 27 developing countries, rose by up to 10% in six countries, by between 10% and 20% in a further ten and increased by more than 20% in the remaining seven countries (Table 1-31).

Table 1-31. Central government expenditure on agriculture in 27 developing countries, 1973-77

Annual rate of change (%)	At current prices	At constant prices 1/
Less than 0		Philippines, Sri Lanka, Iran, Syrian Arab Rep.
0.1 - 10	Sri Lanka, Philippines, Malaysia	Malaysia, Paraguay Malawi, Guatemala, Chad, Burma.
10.1 - 20	Paraguay, Malawi, Chad, Zambia, Syrian Arab Rep., Guatemala, Tunisia.	Tunisia, Zambia, Venezuela, Pakistan, Bolivia, Uruguay, Dominican Rep., Costa Rica, Mexico, Turkey.
20.1 - 30	Iran, Burma, Dominican Rep., Venezuela, Pakistan	Ghana, Somalia, Kenya, Nepal, Tanzania.
30-1 and above	Nepal, Somalia, Costa Rica, Mexico, Kenya, Bolivia, Turkey, Ethiopia, Tanzania, Ghana, Rwanda, Uruguay.	Ethiopia, Rwanda.

1/ Obtained by deducting the annual rate of inflation, from World Bank sources, from the annual rate of change of current expenditures.

Source: IMF Government Finance Statistics Yearbook, Vol. III, 1979.

This generally encouraging picture shows considerable improvement in the situation since 1967-73. The State of Food and Agriculture 1978 (pp. 1-56, 1-58) reported that in 1967-73 public capital expenditure in agriculture increased in real terms in only 17 out of 45 developing countries and actually fell in 28. Public current expenditure in agriculture for the 7-year period increased in only 11 out of 43 developing countries and fell in 32 (p.1-59). In contrast, central government expenditure on agriculture during 1973-77 increased (in real value) in more than four-fifths of the 27 countries reviewed.

The proportion of central government expenditure allocated to agriculture gives an indication of the priority that countries feel should be given to agriculture. Again, information is very scarce but shows that, in the period 1973-78, out of 71 developing countries, 20 allocated to agriculture less than 5% of their central government expenditure, 32 between 5% and 10% and 19 over 10%.

Agricultural investment

World Bank and FAO data which are available for 23 countries indicate that average annual investments (public and private) in agriculture (in current prices) increased in all but two of these countries between 1971-73 and 1974-76 (Table 1-32). In constant prices, agricultural investments rose in 17 of the 23 countries studied. Increases in national investments in agriculture were particularly noteworthy in Tanzania (180%), Sri Lanka and Panama (120%), El Salvador, Guatemala and Mauritania (90%) and Algeria, Republic of Korea and Turkey (around 40%).

The share of agricultural in total investment increased in a number of these countries. Most remarkable improvements have taken place in Malawi, Sri Lanka and Tanzania, where agricultural investment increased its share of total investment to 30%, 28% and 25% respectively, over the above-mentioned period.

Although the data refer to only a limited number of countries, Table 1-32 also indicates that poorer countries with a higher proportion of GDP from agriculture are generally shown to invest less in agriculture in relation to agricultural GDP than higher income countries (with the exception of Sri Lanka and Tanzania).

Table 1-32. Changes in average annual gross fixed capital formation in agriculture in selected developing countries, 1971-73 to 1974-76, and related data

	Change 1971-73 to 1974-76		Agricultural investment as share of total investment		Agriculture as share of total GDP
	Current prices	1970 prices	1971-73	1974-76	1976
	.....	..... %			
Trinidad and Tobago 1/	133	26	14	8	3
Algeria	68	39	7	5	8
Kenya 2/	60	11 3/	9 4/	10	14
Panama	...	125 6/	12	15	16 7/
Tunisia	66	27	15	12	17
Costa Rica	73	1 9/	2	2	20 10/
Fiji 1/	23	- 14	16	15	20 10/
Nicaragua 8/	35	- 2 3/	7	4	23
El Salvador	184	92 13/	8	7 13/	25 10/
Bolivia 5/	202	32 14/	5	4 13/	25
Mauritius	362	88	10	11	26
Colombia 8/	57	- 19	14	12	26
Egypt 8/	57	23	13	8	27
Guatemala 1/	158	89 6/	6	7	27
Korea, Rep. of 15/	145	41	9	9 14/	28
Turkey	...	37 16/	11	13 13/	29 10/
Thailand 5/	10	- 23	13	11	31 10/
Sri Lanka 17/	162	121	16	28	32 10/
Tanzania 18/	356	181 19/	16 20/	25	37 10/
Zambia 1/	- 41	- 59	21	11	38
Ethiopia 8	- 7	- 27	8	8	46
Burundi 8/	80	25	24	21	58
Malawi 18/	48	10	23	30	60

1/ Central government capital expenditure. - 2/ Market economy. - 3/ 1972 prices.- 4/ 1972-73. - 5/ Public investment. - 6/ 1975 prices. - 7/ 1974. - 8/ Public fixed investment. - 9/ 1966 prices. - 10/ 1975. - 11/ 1968 prices. - 12/ 1965 prices. - 13/ 1974-75. - 14/ 1974 prices. - 15/ Gross domestic capital formation. - 16/ 1971 prices. - 17/ Capital expenditure and net landing. - 18/ Government development expenditure. - 19/ 1969 prices. - 20/ 1970/71 to 1973/74.

Source: Based on World Bank data; countries arranged in ascending order of share of agriculture in total GDP.

AGRARIAN REFORM AND RURAL DEVELOPMENT

The World Conference on Agrarian Reform and Rural Development, held in Rome from 12 to 20 July 1979, marked a real step forward in understanding the problems of the rural poor as well as in achieving a consensus on national and international action to tackle these problems. The documentation 1/ prepared for it reviewed various aspects of rural development and these, together with the Declaration of Principles and Programme of Action 2/ adopted by the Conference, are summarized here.

REVIEW OF POLICIES AND PROGRAMMES AFFECTING AGRARIAN REFORM AND RURAL DEVELOPMENT

In the policies and programmes introduced since the mid-1960s, two main types of measure may be discerned: first, those aimed at an equitable distribution of rights to land and water, as a start toward increasing productivity and meeting the needs of the rural poor; and second, those aimed at technical modernization, broadly within existing structures, including area development projects and programmes covering extension, education and health services, improved nutrition and family planning. These two types are not mutually exclusive and both are continuing processes. The first aims at alleviating poverty directly; the second is less direct and its success in helping the poor depends upon the extent to which measures are inhibited by existing agrarian structures, the level of investment in the rural sector and political acceptance. This section briefly reviews by region the experience of both types of programmes.

Latin America

In most Latin American countries where the bulk of land is held within large estates, attempts to help the rural poor through tenancy legislation met with some difficulties. Imposing size limits on large estates proved to be more effective and a number of countries attempted to do this, some with considerable direct participation by peasant organizations. In several countries ceilings were initially applied only to the holding of "unused" or "inadequately farmed" lands and this resulted in lengthy legal debate on the meanings of these concepts and consequent delay in fully implementing the reforms. Later efforts to apply ceilings to sizes of large estates in the hands of absentee owners and to redistribute unused land also led to evasions through delays in procedure. Legislation to clarify the concepts by reference to productivity standards was equally unsuccessful. The bias of such legislation was clearly more toward "farm efficiency" and less toward an equitable distribution of land rights. Ceiling programmes were far more successful in countries where the objective was equitable distribution and lands above a certain size of estate were expropriated, generally without reference to entrepreneurship, residence or productivity standards. In some countries, slow implementation of the programmes led to sales by large estates of marginal agricultural land in small plots at high prices. Other countries confined themselves to legislation abolishing precarious tenancy arrangements, but these programmes had little merit as land reform.

Settlement programmes on public lands were politically more acceptable and had wide appeal in countries with large land reserves. Some "agrarian reform colonies" were established in almost every country, but studies show that the poorer landless labourers or smallholders hardly benefitted. Considerable investments in infrastructure and credit were concentrated on small population groups who were already relatively well off.

1/ FAO. Review and Analysis of Agrarian Reform and Rural Development in the Developing Countries since the Mid-1960s, WCARRD/INF 3, Rome, 1978.

2/ FAO. World Conference on Agrarian Reform and Rural Development, Rome, 12-20 July 1979, Report, WCARRD/REP, Rome, July 1979.

In a few countries land reform beneficiaries were organized into cooperative production units, but the continuing existence of private farms, and uncertainty in government policy, created difficulties in management. There were also problems of incorporating landless workers or holders of very small plots into production cooperatives, because resident peasants objected to the inclusion of outsiders.

In countries such as Peru and Chile, which had rapidly created a large reformed sector organized into associative production structures, output increased considerably as relatively idle lands were taken into more intensive use. Peasant participation in management stimulated investments in infrastructure, and within a short period, net incomes of direct beneficiaries nearly doubled. The main objective of these programmes was to dismantle controls exercised by the latifundia over the lives of the peasants.

In Cuba by 1965 some 70% of the agricultural land was on state farms with workers receiving fixed wages. Within the private sector, the small farmers organized themselves into a National Small Farmers Association (ANAP) and also formed service cooperatives. Individually they continue to be owners of the land but collectively they own irrigation works, machinery, storage and processing facilities, supported by credit obtained as a group. In recent years there has been closer integration of the production plans of the ANAP and those of the state sector with the aim of grouping small farms into larger units to facilitiate technological advances. The rural sector has benefited from increasing investment and agricultural workers are experiencing security and rising real wages.

By late 1973, despite the progress achieved, some 85 million people, consitituting about 70% of the Latin American farm population, were still living at the subsistence level. Of this total, 45 million were agricultural wage earners and 40 million small farmers. Together they earned only 35% of the total agricultural income and held only 2.5% of the land. Big landowners (2% of the farming population) still controlled 47% of the land.

Near East

Distributive reform in this region has been influenced by a number of special local conditions, particularly aridity, customary laws conducive to fragmentation, and nomadism. The reform movement started with programmes enacted in Egypt in 1952, in Iraq and Syria in 1958 and in Iran in 1962, to expropriate the very large estates, break the economic and political power of the large landowners and improve the control over land of the poorer classes. One basic feature, notably in Egypt, was the attention paid to the integration of land distribution with new production arrangements and supporting services. Following the initial programmes of land reform, many countries enacted legislation to prevent the fragmentation and subdivision of the redistributed land. In several of them, redistribution was followed by the adoption of group production arrangements, such as farm corporations in Iran, crop consolidation and cooperatives in Egypt, agricultural cooperatives on government land in the Sudan and state farms in Yemen P.D.R.

Problems still to be resolved are the relationship between the administrator and the peasant, especially the participation of peasants in decision-making, and the education and training required to make such participation effective.

In most countries there has been considerable emphasis on large-scale irrigation schemes. Egypt, using the waters of the High Dam, reclaimed 380,000 ha by the end of 1976 of which about 100,000 ha were distributed to landless families in planned settlement schemes, while another 110,000 ha were kept as state farms or for large-scale agro-industries. The importance of special training for administrators in settlement areas and for education of the settlers themselves was stressed in the High Dam Settlement projects, since experience had shown that their success could be jeopardized by ineffective communication between the settlers and the administration.

Nomads form a significant part of the population in many Near Eastern countries and schemes for their settlement have been developed notably in Afghanistan, Egypt, Jordan, Libya and Yemen P.D.R.. In Afghanistan, however, experience has shown that settlement programmes alone unaccompanied by reform do not benefit the poor.

Africa

The programmes and problems affecting the distribution of rights to land and water vary widely throughout Africa and are markedly different from those in other regions.

In the Maghreb countries the main problems at their accession to independence concerned the relationship between the modern agricultural sector (mainly foreign-owned estates) and the traditional sector employing the great majority of the rural people. In Aleeria after independence, foreign-owned estates were initially consolidated and organized into self-contained units averaging nearly 1000 ha. Basic modifications were made in the cropping pattern in an attempt to limit the effects of foreign markets (e.g. for wine) on production. Although initially output declined there was at the same time an increase in in the income and consumption levels of the estate workers involved in the management of the units. This part of the reform, however, proved less difficult than the reorganization of the traditional sector with its problems of inequality and lack of supporting services. In the agrarian revolution of the early 1970s, absentee landownership was virtually abolished, ceilings were placed on the size of holdings, surplus land was distributed in leaseholds and beneficiaries were required to become members of multipurpose cooperatives.

South of the Sahara, customary tenures vested in traditional chiefs, and which for generations have provided a safeguard against extreme inequality, are disintegrating under commercial pressures, misuse of powers and the emergence of exploitative tenancies. The major challenge is to adapt customary tenures to development needs without sacrificing their inbuilt equity. Some countries have responded by separating customary-tenure lands from others, by creating statutory land boards limiting the powers of chiefs (as in Botswana) and by granting individual titles on public land (as in Liberia). Such measures have helped to slow the negative effects of the demise of traditional tenures, but with demographic pressure and commercialization conflicts between the two systems of tenure can be expected to become more acute.

Recently, a number of countries have promoted programmes to restructure their rural areas, particularly Malagasy Republic and Ethiopia. The latter, with a high degree of concentration of landownership and widespread share tenancy, introduced low ceilings on landholding in 1975. Peasant associations which exclude landowners with more than 2 ha played an important part in the redistribution of expropriated land. Former servile tenures were abolished and many landless people gained rights to land and water.

Countries with specific programmes explicitly favouring small farmers include Ethiopia, Kenya and Malawi. Equity in the distribution of land rights and the adequacy of loans on flexible terms have emerged as important conditions for the success of these programmes.

In Tanzania the emphasis is on "rural socialist transformation" through self-reliance with agriculture playing the leading role in economic development. The main feature is the grouping of scattered households into village settlements and the transformation of the latter into Ujamaa ("familyhood") villages which will eventually function as multipurpose cooperatives. Incentives and liberal provision of social amenities have helped to speed up the regrouping of the population into villages but very few have yet attained full Ujamaa status. The most significant programmes of rural development in Tanzania relate to health, water supply and education. Agricultural development programmes have progressed less rapidly and effectively than social welfare measures for a variety of reasons.

Far East

The traditional hierarchical pattern of land tenure still dominated the Far East in the mid-1960s. except for a few cases where small peasant ownerships and communes had been created. Population pressures were high, absolute poverty widespread, and there were very limited opportunities for work outside agriculture.

Soon after independence many countries introduced tenure and tenancy reform legislation. "Superior" rights in land of the feudal type were abolished. But land scarcity in such countries as India, Nepal and Sri Lanka made it difficult to implement legislation providing security of tenure and control of rent. The focus of tenancy legislation, therefore, shifted from rent regulation to tenancy protection through conversion of tenancy into ownership. In spite of early evading action by landowners and the difficulties in implementation, there were some striking successes. Where there were strong peasant organizations and determined governments (as in the Indian state of Kerala) many small tenants received ownership rights. In the Philippines, sharecroppers became leaseholders and subsequently outright owners. Appropriate production arrangements and support services are required as a follow-up to tenancy reforms, together with measures to promote stability. The Philippines experimented with new form of "cooperation in cultivatorship", under which five to ten neighbouring farms were merged into one production unit and provided with assistance in planning and finance from state agencies.

Even before 1965 some countries had enacted ceiling legislation. This was mainly directed against inefficiently operated large farms, and equitable distribution of rights to land was only a secondary aim. Ceilings were high, many farms were exempted on efficiency grounds and much time elapsed between enactment and implementation of the legislation. Later, as the need to increase food production acquired urgency and social unrest started mounting, ceilings were lowered and various examptions removed in many countries, but again little land was made available for redistribution and delays permitted various forms of evasion. Sri Lanka which passed ceiling laws for the first time in the 1970s, simplified the procedures, acted with speed and achieved better results in the acquisition of land than other countries, but not necessarily in their distribution. However, even there the surpluses were mainly plantation land rather than paddy.

Policies of which the aim was mainly social were included in the development strategies of many countries in the early 1970s, though in some cases such steps had been taken earlier. Perhaps the best-known example is the Comilla approach which was the forerunner of the current integrated Area Development in Bangladesh. In India, the Small Farmer and Marginal Farmer Development Agencies were intended to help the poorer groups while working through the existing network of departments and cooperatives. These agencies have been fairly successful when small farmers have had guaranteed prices, input supplies and markets as in the case of Integrated Milk Projects, but there have been difficulties both in implementing the scheme and in ensuring that its benefits reached those it was intended to help.

The Republic of Korea has one of the world's lowest land/man ratios and the average size of holding after land reform was only 0.9 ha. Before reform the land was concentrated in a few hands and mostly rented out in small units. The land reform of 1953 gave ownership to the former tenants and established a ceiling of 3 ha per holding. Thus the rural community today is composed of small peasant owners. The success of the reform has been attributed to a number of factors. It was radical and covered a large proportion of the area and of the peasant population. Ownership was given to former tenants without disturbing the operational units. It resulted in a substantial redistribution of assets and income in the rural economy. Rigid enforcement of reform legislation prevented the re-emergence of tenancy and new inequalities. Non-agricultural enterprises were able to absorb labour and prevent a new growth of landlessness. Substantial foreign aid was available and agriculture was protected in the initial stages of the drive for industrialization. Many countries in the Far East lack some of these factors. However, this case shows that agricultural production can be organized on the basis of private ownership of land and a relatively egalitarian system of peasant farming, and that land reform can succeed under conditions of extreme land scarcity.

The history of the transition of China to communes is well documented. The area of a commune, covering some 3,000 to 12,000 ha, with 4,000 to 16,000 families, corresponds roughly to that of the lowest local government unit above the village level in some of countries of the Far East. The commune is responsible for other functions not generally performed by such local government units elsewhere. The most significant of these is the organization of labour for production and for improvement of the quality of rural life under a system of collective ownership of land. All the available land is collectively owned by the commune so that rent has disappeared as a source of income, inequality and power. Problems of landless labour and uneconomic holdings (faced by other countries) after redistribution of rights in land do not arise. Labour is remunerated on the basis of individual work points and collective labour is mobilized for irrigation and land improvement. Difficulties of credit management for agricultural development, with the attendant problems of default and the diversion of credit to unintended purposes, are avoided under the commune system. The Chinese price policy has been dynamic, gradually increasing prices for agricultural produce and decreasing prices for inputs and consumer goods. In addition to a social minimum for the underprivileged, there is also a corresponding concept of social maximum, which discourages individuals, teams and brigades from increasing consumption beyond the prescribed limits. In assessing the Chinese experiment, the whole package of its measures would have to be viewed together.

WORLD CONFERENCE ON AGRARIAN REFORM AND RURAL DEVELOPMENT

Policies and programmes of the kind summarized above were discussed in detail at the World Conference on Agrarian Reform and Rural Development which in July 1979 adopted a comprehensive programme of national and international action to combat rural poverty.

In a Declaration of Principles preceding the Programme of Action, the World Conference stated its conviction "that agrarian reform is a critical component of rural development and that the sustained improvement of rural areas, in the context of promotion of national self-reliance and the building of the New International Economic Order, requires fuller and more equitable access to land, water and other natural resources; widespread sharing of economic and political power; increasing and more productive employment; fuller use of human skills and energies; participation and integration of rural people into the production and distribution systems; increased production, productivity and food security for all groups; and mobilization of internal resources". It went on to enunciate 17 "guidelines and principles" on which a Programme of Action should be founded.

As regards national programmes of action in developing countries, the Programme of Action covers objectives and strategies; access to land, water and other natural resources; people's participation; integration of women in rural development; access to inputs, markets and services; development of non-farm rural activities; and education, training and extension.

Among the objectives and strategies, particular stress is laid on the need to set specific targets for various aspects of rural development, including income and its distribution. Quantitative data on rural conditions of life should be collected and monitored.

Where systems of ownership and use of land "are judged to be constraints on rural development, achievement of social equity, and wide access to land and other natural resources for the vast majority of rural masses, governments should consider institutional, legal and policy changes within the context of their national and rural development goals, and promote a broad understanding by the people concerned of the need for such measures and of the procedures". Governments should consider, where appropriate: action concerning reorganization of land tenure; tenancy reform and regulation of rural wages; regulation of changes in customary tenure; land consolidation, promotion of group farming, cooperatives and collective and state farms; community control over natural resources; settlement of unoccupied public lands; and reduction of inter-regional and inter-community inequalities.

"Participation by the people in the institutions and systems which govern their lives is a basic human right and also essential for realignment of political power in favour of disadvantaged groups and for social and economic development". To provide for effective participation by the people, governments should consider action to promote popular organization; to strengthen local government; and to encourage the formation of organizations of the intended beneficiaries of agrarian reform.

"Recognition of the vital role of women in socio-economic life in both agricultural and non-agricultural activities ..... is a prerequisite for successful rural development planning and programme implementation". Governments should consider action to ensure equality of legal status, women's access to rural services, the promotion of women's organization and participation, and educational and employment opportunities of similar quality and content for both sexes.

"Use of improved seeds, fertilizer, pesticides and other technological inputs is low in all developing regions and is often confined to a small section. Policies and strategies are needed to develop and promote technologies which enhance the use of more productive inputs and better use of labour, as well as to improve distribution of inputs and services to smallholders and peasant cooperatives and ensure stable markets and fair prices, critical infrastructure, adequate public utilities and improved social and economic services in rural areas".

"Higher agricultural production and more equitable distribution of income provide a mass market and effective demand for industrial goods and services. Viable rural development in its turn requires industrialization. Many industries can be located in rural areas".

"Education, including preschool and primary education, and training and education services are fundamental needs for human development in rural areas and also for expansion and modernization of rural economies". In formulating policies and programmes, governments should consider action to strengthen educational and training policies and priorities and to broaden the understanding of development personnel.

As regards international policies for agrarian reform and rural development the Programme of Action states that "agrarian reform and rural development should be strengthened and supported by further improvement in the present system of international economic relations in order to overcome protectionist policies, distribution in international markets of production inputs and technology, inadequate technical cooperation and insufficient resource flows".

"Changes in international trading systems to improve access to industrialized markets for raw and processed agricultural commodities, particularly from developing countries, and to ensure market stability and steadily expanding levels of trade and earnings have an important contribution to make to the achievement of rural development goals. International trading systems should be based on principles of equality, sovereignty and non-interference in internal affairs. External trade policies of the developing countries should be geared more directly to objectives of rural development and alleviation of rural poverty".

"Economic and technical cooperation among developing countries in activities affecting rural development should be expanded. Joint measures should be taken to expand trade among developing countries as well as to improve conditions of trade for agricultural products in international markets. Scope also exists for greater cooperation in the exchange of knowledge and experience in agricultural technology, institutional reforms and rural development planning."

"National and international action, with full regard to the right of each country to determine its own national policies and priorities is required to maximize the contribution of foreign investment to the goals of agrarian reform and rural development and to ensure that the activities of foreign investment in developing countries, in particular by transnational agro-industry corporations, are not inconsistent with and do not impede the accomplishment of overall economic and social development objectives".

"The volume, terms and conditions of development assistance through official bilateral and multilateral channels are of great importance in supplementing national efforts by developing countries to achieve objectives of agrarian reform and rural development. Both donor and recipient countries should seek to expand the amount and proportion of resources for agricultural and rural development and in particular consider direct support for programmes of agrarian reform".

In order to help implement the Programme of Action, the World Conference recommended that the appropriate international organizations, with FAO as lead agency, consider the adoption of a number of specific measures, including monitoring agrarian reform and rural development, analysis and dissemination of knowledge, technical assistance activities, and assistance in mobilizing resources.

Follow-up of WCARRD

The 34th Session of the UN General Assembly endorsed the Declaration of Principles and Programme of Action, urged the Governments of all member states to take appropriate measures on a priority basis to implement the Conclusions and Recommendations of WCARRD and invited the organizations, organs and bodies of the UN system to implement as appropriate the WCARRD Conclusions and Recommendations.

A resolution on follow-up action adopted by the 20th Session of the FAO Conference stressed that while the primary responsibility for implementing the Programme of Action rested with member governments, special efforts would be required of the international community, including organizations of the UN system, in particular FAO, and financial institutions - to support any substantial global follow-up programme. The Conference also called upon all sources of voluntary funds to provide resources of up to $ 20 million over the next five years to support FAO's catalytic role in implementing the Programme of Action.

Subsequently, meetings were held with potential donors, and bilateral assistance organizations, as a result of which, extra-budgetary assistance of about $ 8 million had been pledged by the beginning of 1980 and more was expected to be channelled to developing countries through FAO. Useful meetings have also been held with a number of international non-governmental organizations, including the International Cooperation Alliance, the International Federation of Agricultural Producers, the three main international Trade Union Organizations, the World Council of Credit Unions, and the Agricultural Cooperative Development International, which it is hoped will cooperate with FAO in fostering popular participation in rural development through the promotion of self-help projects.

At a meeting of the Administrative Committee on Coordination (ACC) Task Force on Rural Development agreement was reached on the coordination of activities for the implementation of the Programme of Action. In order to assist countries to strengthen their capability to undertake monitoring and evaluation, the experimental rural development effort undertaken in Bolivia, Liberia, Lesotho, Samoa and Somalia is being evaluated. The Inter-Sectoral Working Group of ILO, UNESCO and FAO on Agricultural Education, Science and Training, decided in December 1979 to undertake a joint field project in selected areas of four countries, one in each region to develop training programmes to meet the needs of national rural development programmes. Within FAO, an interdepartmental committee and working group have been established and sectoral guidelines and action proposals are under preparation.

The Centre for Integrated Rural Development for Asia and Pacific Region (CIRDP) has already been established at Comilla in Bangladesh, while the one for the African region (CIRDAfrica) will be established in Tanzania (Arusha) in the near future with four Governments of the six included having already ratified the Agreement. Active consultations are under way for the setting up of similar centres for Latin America and the Near East.

At the country level, the main effort is to provide the support, to begin with, to a limited number of developing countries. FAO Representatives in the countries have been requested to approach the Governments to set up coordination committees and start discussions to stimulate action. On the request of the Governments, FAO would consider sending missions to countries to discuss their priorities and strategies. The missions would help to identify immediate requirements for assistance to rural development and to establish a base for formulating coordinated projects including those dealing with requisite infrastructural, institutional and training support enabling the rural people to benefit from them. Particular emphasis would be given to developing appropriate peoples' institutions to enable the mass of rural people to enter the mainstream of national development programmes.

2. FORESTRY AND RURAL DEVELOPMENT

INTRODUCTION

Until recently, rural development was generally considered from the point of view of food and agricultural production. Forestry tended to be regarded as a separate and isolated sector of interest only if it were possible to promote wood production for export or domestic industry or necessary to regulate water supply or control erosion. Attention was focused on the control of dense forests or on the creation of large plantations. Forest resources were treated as unutilized capital to be mobilized mostly for investment in other sectors of the economy. The harvesting and sale of commercial timber grew rapidly but the net flow of capital into producing countries was much less impressive. Most timber was exported, and continues to be exported, as roundwood raw material so that no potential added value was retained in the country. Mechanized harvesting methods required considerable amounts of imported equipment and other inputs, and in some cases a large part of the profits accrued to foreign owners or partners 1/. The local people frequently lost access to the land taken over for forest estates or plantations but which had formerly enabled them to meet their own needs. As they could not adopt the new technology because of its complexity and expense, most of them were worse off than before. Indeed, there was a tendency to regard them almost as enemies from whom the trees had to be protected. On the other hand, in areas where wood was in great demand but trees were scarce, foresters were not to be found though their advice and assistance could have been invaluable.

The overall development policy had favoured industries and urban areas, leaving the basic rural problems unresolved. The influx of rural migrants seeking better jobs has been far greater than the numbers that could be absorbed so that immense burdens were imposed on the economic and social fabric of the urban areas. At the same time the emphasis on urban development left untouched the problems of poverty in rural areas where the majority of the people in developing countries live.

There is now increasing effort to solve some of these problems through a comprehensive rural development approach. In the words of President Nyerere of Tanzania at the World Conference on Agrarian Reform and Rural Development in July 1979: "A policy of rural development is a policy of national development. You cannot have 'rural development' as an extra, tagged on to the other policies of Government. That would be a continuation of what we have been doing until now. Rural Development must be a description of the whole strategy of growth - the approach to development, and the prism through which all policies are seen, judged, and given priority".

At the same Conference it was recognized that "diversification of rural economic activities, including integrated crop-livestock development, fisheries and aquaculture and integrated forestry development, is essential for broadbased rural development" 2/.

This new approach has some major policy implications for forestry. The advantages of wood as a renewable resource, the presence in forests of some 90% of continental biomass and 60% of continental primary production 3/, and the absence of sustainable alternative uses for many soils make forestry an essential element in development.

1/ Hansjürg Steinlin. The role of forestry in rural development, Applied Sciences and development, 13, 1979, p. 11.

2/ FAO. World Conference on Agrarian Reform and Rural Development, Rome 12-20 July 1979, Report, Rome, 1979, p. 3.

3/ H. Lieth and R.H. Whitaker (ed.), Primary Productivity of the Biosphere, Springer Verlad, Berlin, 1973.

The Jakarta Declaration, adopted in 1978 by the Eighth World Forestry Congress (the theme of which was "Forest for People"), states that "the Congress paid particular attention to the role which forests can play in improving the conditions for agricultural and livestock production, for instance through shelterbelts, regulation of waterflow, erosion control, as well as a source of supplementary animal fodder in dry periods". 4/ None of these contributions is a new discovery. The novelty lies in a more widespread recognition of the potential of forestry support for agriculture, especially as regards the small farmer. The availability of hitherto little known species with high growth rates and multiple uses bring results far earlier than seemed possible before.

In the past, priority for the policing of marketable forests and for the establishment of industrial plantations has resulted in insufficient attention to the protection of commercially less valuable woodlands and of trees outside forests. Recent FAO studies 5/ indicated that the world is currently losing about 7 million ha a year of closed tropical forest, out of a total of more than 1,100 million ha. Considerable areas of open woodland are also being deforested, and it is these open areas that are closest to rural populations. Lack of healthy relations between foresters and forest neighbours (agriculturists) has added to the difficulty of safeguarding resources, and the compartmentalized sectoral division of forestry and agricultural services has hindered collaboration in promoting integrated forms of land use where the production of trees, annual crops and livestock are combined.

There are many political, economic, institutional and technical problems to be overcome before all wood-hungry communities can be helped to produce trees, before agriculture and forestry can reach their appropriate level of integration, and before all those lands that are or should be forested can be protected and managed. These activities are, however, complementary. The economic and social development of farming people will take much of the pressure off forests, and the improvement of forestry will contribute directly or indirectly to the well-being of the whole nation.

The next section of this chapter analyzes some of the principal benefits that forestry can provide and the threat to the future if appropriate national forest policies are not adopted. The elements required in a new balanced development are then described with examples of successful activities that could be more widely diffused in the future. A framework is outlined for action that could lead to a fuller contribution of forestry to rural development.

HISTORICAL CONTEXT

In earliest times when both density and rate of growth of population were very low the forests were a ready source of food, fuel and materials for mankind. However, as population grew and society became more industrialized and urbanized, the situation also increased in complexity.

In the developed countries the forests have become primarily suppliers of wood to industry, and providers of secondary benefits as recreation areas for the urban population. Agriculture has become heavily dependent on non-renewable energy-intensive inputs, such as chemical fertilizers and farm machinery, and the use of forest products by the rural population is little more than that by the urban population. The competition for land use does not appear to be acute any more. In western Europe, for example, the area under forests has increased by about 10% during the last 15 years and it seems that there are seldom any major conflicts with other potential users of the land.

4/ FAO "Jakarta Declaration". Final Document, 8th World Forestry Congress, Rome, p. 1 (para. 5).

5/ J.P. Lanly and J. Clement, Present and Future Forest and Plantation Areas in the the Tropics, FO: Misc/79/1, FAO, Rome, January 1979.

In the developing countries the situation is quite different. Over half the population still live in rural areas and are primarily engaged in agriculture. In some places the high density of population is leading to a shortage of available land for cultivation and the forests are being cleared increasingly rapidly. Where the search for land has been pushed into areas with steep slopes or shallow top soils, erosion and soil degradation had nearly always been the inevitable result. Furthermore, increasing quantities of tropical timber are being extracted for export and for use in local industrial undertakings. It has frequently happened that neither the logging companies nor the forest authorities have ensured regeneration or replanting. Furthermore, forest services are usually insufficiently funded and staffed tc cope with these problems. The potential supply of forest products to which rural people have been accustomed, and especially the fuelwood which is their main source of energy, has consequently been greatly reduced.

It is unproductive to try to apportion blame for what has gone wrong in the past. What is important now is that the progressive deterioration of land caused by deforestation should be arrested and that the potential contribution of forestry to development should be fully exploited. The fact is that the essential role of forestry in integrated rural development has not yet been sufficiently understood.

THE ROLE OF FORESTS

There are three main ways in which forestry contributes to rural development:

- maintaining its ecological balances,
- increasing the supply of products for local consumption, and
- improving the benefits from industrial uses of timber.

These are illustrated in Figure 2-1 and apply as much to developed as to developing countries, though this chapter is concerned with their implications for developing countries unless specifically stated otherwise.

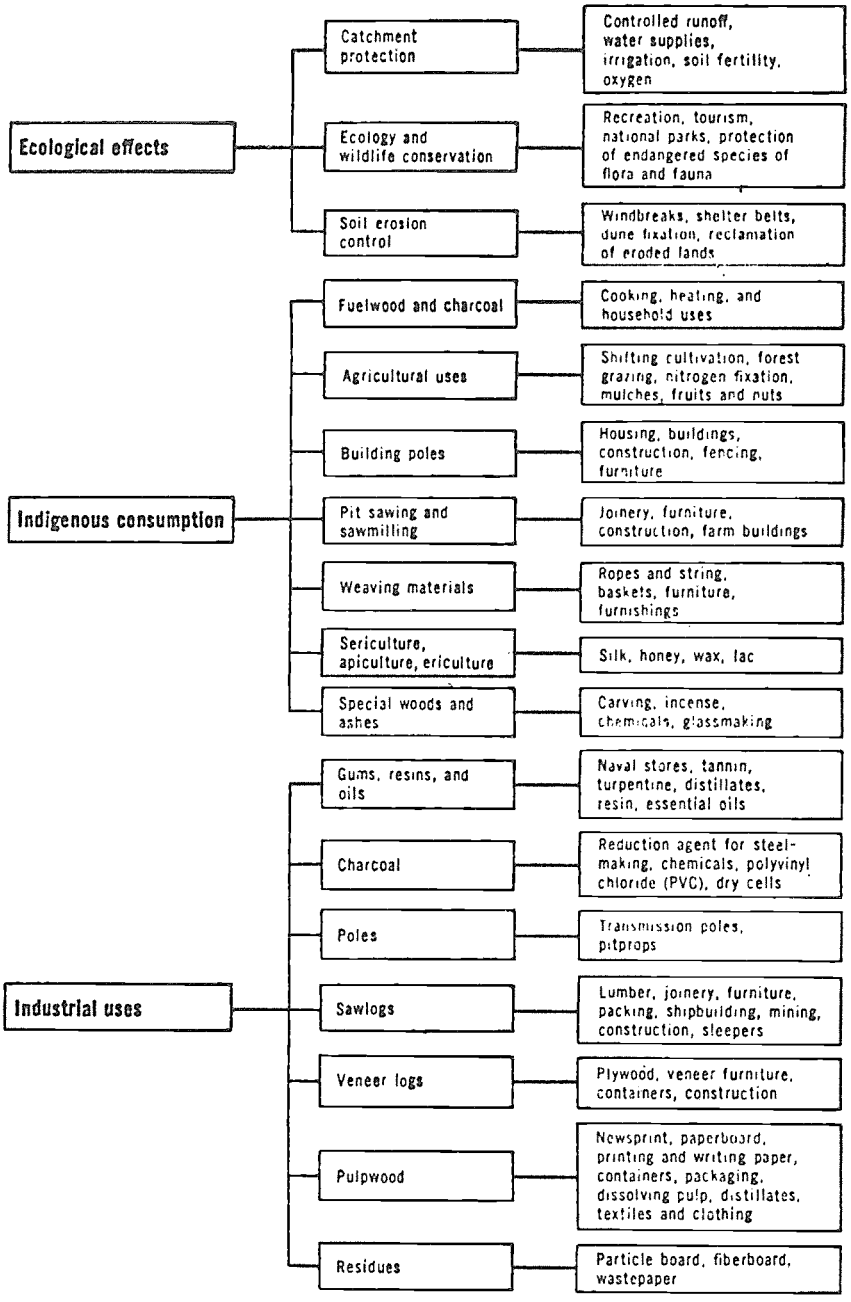
Under "ecological effects" are included some of the major conservation measures necessary to ensure catchment protection, soil erosion control and the maintenance and safeguarding of supplies of usual species of flora and fauna. All these factors are of concern to the maintenance of a viable farming system, the products of which are included under "indigenous consumption". The supply of fuelwood and charcoal is the main source of energy for the rural population and is also important in many places to the urban communities. Local supplies of forest products are the principal sources of building materials, fencing and furniture in rural areas; and in some places other products such as honey, silk and wood for carving are major sources of income.

How far trees which can be used for industrial purposes can bring an income to the rural dwellers depends in part on the employment possibilities in felling and extraction. More importantly, it depends on the economies of location of the processing plant and in particular whether the costs of transport of the logs are greater than the costs of transporting the finished product.

FORESTRY AND AGRICULTURE

The ecological effects of forestry are of vital importance to rural development in general and agricultural development in particular. Because of their sheer size, trees have a major role to play in the cycle by which nutrients pass from the soil through plants and animals back to the soil. The slow removal of nutrients through leaching by rainwater is compensated by the steady release of minerals through the weathering of the underlying rock. Tree roots reach far down, bringing up water and nutrients from depths that few smaller plants can reach. In addition, many tropical species of trees belong to the family of Leguminosae whose roots harbour bacteria that enable nitrogen to be fixed from the atmosphere. The canopy of foliage protects the soil from the direct impact of sun, rain and wind, and the falling leaves and fruit provide a regular flow of nutrients.

Figure 2-1. The role of forests



Source: World Bank. Forestry: Sector Policy Paper, Washington, D.C., February 1978, p. 16.

Forest vegetation also strongly influences the stream flows on watersheds by intercepting rainfall so that it reaches the forest floor more gently and does not cause compaction. The presence of litter and humus further enhances the infiltration into the soil, which is a key hydrological property affecting surface run-off. Deep and large root nets, both living and decayed, act as underground storage which maintains the yield and quality of water, thus shortening the dry season and attenuating its damage. The reduction of surface water run-off also means fewer and less violent floods.

The establishment of agriculture tends to break this cycle. Scarce nutrients are concentrated in the very parts of crop plants that are removed for human consumption, and the transfer of elements from deeper layers to the top-soil is reduced. The surface is laid bare between harvest and sowing, often when the sun is hottest or storms most violent. Forest exploitation, unless very intensive, is quite different in its effects, for wood is precisely that part of the tree in which nutrients are least abundant. The drain on the system can be further reduced if not only leaves and small branches but also the nutrient-rich bark is removed from logs before transport. The baring of the soil is much less frequent and less complete than in agriculture.

The oldest known system for restoring the fertility of agricultural soil is non-continuous cultivation. After two or three years of cropping, the site is abandoned and natural vegetation returns. Under moist tropical conditions forest rapidly re-establishes itself and the nutrient cycles are restored, making it possible to clear the trees and plant new crops after 10 to 20 years. In temperate regions the return of the forest is slower, but it is not necessary to wait so long before recultivating, because the rate at which nutrients are lost under agriculture is slower in a mild climate. Before the introduction of crop rotations and manuring, temperate zone farmers therefore practised a short fallow which did not revert to forest, and which they were able to use for low intensity grazing.

It has been estimated that between 1957 and 1977 the number of people living by non-continuous cultivation in tropical forests increased from about 200 million to about 240 million people, or some 30% of the total population of the zone. 6/ The density of settlement varies greatly from locality to locality according to population pressure and to soil and rainfall, from about 3 to 300 persons per km^2.

Increasing demand for food has been met partly by moving into new areas of forest, and partly by shortening the fallow period, or even eliminating it and going over to continuous cultivation. Both processes lead to a decline in productivity. Newly cleared sites were often not used before precisely because they were less suitable, and existing sites yield less as the fallow is reduced. The process is further aggravated by the tendency to cultivate the soil for longer periods and more thoroughly, before releasing it to fallow. Tree roots, suckers and seeds are thus destroyed, permitting weeds rather than forest to colonize the area. In this manner tens of millions of hectares of forest land in southeast Asia have been lost to alang-alang grass. The expansion of such waste lands together with falling productivity, increases the demand for fresh land in a vicious circle of deforestation and site deterioration.

In more arid zones, grazing rather than cultivation is the principal use to which forest land is transferred. At a low intensity, the introduction of animals into forests is not harmful, and may even confer benefits by stimulating the nitrogen cycle and preventing ground vegetation from building up to become a fire hazard. Increasing grazing pressure, however, prevents the regeneration of woody species, and causes the slow conversion of forest to savanna or grassland. The process is often speeded up by deliberate firing to obtain a short-lived burst of grass production. This is a very ancient phenomenon and has long since reduced the forests of arid regions to mere relics.

6/ UNESCO. Tropical Forest Ecosystems, Natural Resources Research XIV, Paris, 1978, p. 469.

The removal of forests for crop or livestock production has in many cases been disastrous, exposing the soil to destruction by rain, wind and sun. Unintercepted rain reaches the soil faster, and as a bare surface absorbs rain more slowly, more water runs off, carrying soil particles which in turn add to the water's erosive power. Erosion is worst where there is a pronounced dry season, where people or grazing animals trample the ground, where there are mountains, and where there is heavy precipitation in a short period. These conditions are often combined in the developing countries, particularly those with a monsoon climate. In the driest lands, similar destruction is effected by wind erosion.

Erosion not only destroys the soil that has been cleared, but also inflicts grave damage on land, crops and structures downstream or downwind. Irrigation and drainage channels may become choked and dams blocked with silt. Much water is lost to both farming and forestry by runoff to the sea or to underground deposits instead of being stored in the soil for slow release. Likewise, sand and dust storms can cover farmland with sheets or dunes.

Erosion is not the only process that robs soil of its fertility. Rain leaches nutrients down from surface layers and, if they are not speedily taken up by roots and returned to the surface in the form of plant and animal debris, they are removed from the system by groundwater.

Though large amounts of forest are being transferred to agriculture, much agricultural land is at the same time being lost through erosion and soil degradation. Reliable statistics are not available, but many experienced people believe that the net effect has been to reduce the total potential world farming area. There are, of course, cases in which one country's loss has been another's gain, for example the Nile Valley's former fertilization by silt from east Africa, but such examples are exceptional.

Though it has not been proved that deforestation has a substantial local effect on rainfall, there is evidence that the cumulative effect on the global atmospheric cycles of water and energy may be considerable. Similarly, the exact contribution of deforestation and forest burning to the increase of carbon dioxide in the atmosphere is not yet known. At the local level it is clear that the presence of trees affects microclimate, lowering extremes of air temperatures, raising humidity, and reducing wind speeds at surface level. These bring a substantial reduction in the rate of water loss from field crops, and hence an increase in agricultural productivity. The inclusion of shelter belts and windbreaks must therefore be regarded as an integral part of farming. In addition to increasing the yield of crops and livestock they have the further advantage of producing fuelwood as well. The more adverse the climatic conditions, the more substantial the effects of shelterbelts.

ENERGY FROM THE FOREST

As has already been shown in Chapter 1 (Table 1-18), about 80% of all the wood cut in developing countries is used as fuel. A special estimate made for 1974 showed that fuelwood constituted about a quarter of the total energy consumed in these countries though the proportion varied widely from under 10% in the Asian centrally planned economies to nearly 60% in the Africa region (Table 2-1).

In the developing countries, the greater part of the 2,000 million or so people who live in the rural areas depend mainly, and often wholly, on fuelwood for cooking and heating. Apart from domestic use, it is also the principal source of energy for many rural industries, such as potteries, brickworks, smithies and the curing of meat, fish and tobacco.

Table 2-1. Fuelwood and roundwood consumption and energy from fuelwood, developing countries, 1974

	Total roundwood	Fuelwood Total	Fuelwood Share of roundwood	Commercial energy	Energy from fuelwood 1/ Total	Energy from fuelwood 1/ Share of total 2/
	.... x 10^6 m^3....		... % ...	x 10^{15} joules		%
Developing market economies	1,336	1,145	86	22,038	11,074	33
Africa	299	268	90	1,848	2,594	58
Far East	668	577	86	7,577	5,579	42
Latin America	298	244	82	9,383	2,358	20
Near East	71	56	79	3,230	543	14
Asian centrally planned economies	206	154	75	16,790	1,485	8
TOTAL DEVELOPING COUNTRIES	1,542	1,299	84	38,828	12,559	24

1/ Assuming 1 m^3 of fuelwood contains 9.67 x 10^9 joules. - 2/ Commercial energy plus energy from fuelwood.

Source: FAO. The State of Food and Agriculture 1976, Rome, 1977.,p. 90.

In the form of charcoal wood is a fuel for many of the 500 million urban dwellers in developing countries. It is also used in small enterprises in towns such as bakeries and laundries. The production of charcoal by traditional methods is, however, very wasteful, since 50% to 80% of the energy content of wood is lost in the process of carbonization. To supply a given amount of energy in charcoal therefore requires from two to five times as much wood and correspondingly more forest. In some cases, villagers have been forced by the need to earn income to produce charcoal for sale to urban markets instead of conserving their wood resources to meet their own future needs.

Population growth and rising levels of living have caused many forests to be used faster than they can regenerate themselves. Ideally, only fallen branches are taken for fuel. They are already air dry and yield more energy per unit of weight. Above all, their removal does not affect forest growth. As demand rises, however, pressure grows to loo or fell living trees, legally or illegally, and over-exploitation can rapidly destroy not only the forest but any residual woody vegetation. The process is exacerbated by some of the new methods of agriculture. Mechanization and monoculture both encourage the disappearance of intercropping systems employing trees, which are a feature of much traditional agriculture. More productive strains of coffee and tea have been evolved which grow better in the open than under a canopy of shade trees.

The search for firewood is one of the main causes of deforestation in the vicinity of human settlements and the consequence is that people have to go further to find wood. It is not uncommon now for villagers to have to spend a whole day going to a source of wood, collecting it and bringing it back, only to have a few days' supply. It has been estimated that in some areas of east Africa it now takes 250 to 300 man-days a year of labour to supply household with firewood. 7/ This is a task for women in many societies and the growing labour burden is therefore a major impediment to the improvement of their lot.

7/ E.M. Mazawa, Village afforestation in Dodoma District. Background Paper for the Second FAO/SIDA Expert Consultation on Forestry for Community Development, Rome, 1977, p. 13.

In some areas where forest sources of fuel have been exhausted, and in the absence of any other alternative supplies of fuel being within reach, use has been made of other organic fuels, such as crop residues or dung. As organic manure is usually the only available soil conditioner, its use for burning lowers soil fertility. Thus, once again, the pressure on forestland contributes to declining agricultural yields.

The reduction in fuel supplies is also highly detrimental to nutritional levels 8/. None of the principal food crops is palatable or even fully digestible unless cooked. There are reports from a number of areas of peasant communities that now eat only one cooked meal a day where formerly they had two, and of the cultivation of vegetables than can be eaten raw in place of those that must be cooked. Reduced cooking times have been found in west Africa to decrease the biological availability of proteins in staple foods. 9/ In various countries the intestinal parasite loads have been observed to increase because of the ingestion of partially cooked meat as a result of shortages of fuel.

FOREST MATERIALS

Timber is a major element in the industrial economy as well as in the life of the rural population. It can in fact be used at any level of technology for a wide range of purposes from building materials, fencing and furniture, to farm implements, carts and water-wheels, even to carving.

At a higher levels of technology, timber is the raw material for a great variety of industries, including sawmilling and the manufacture of such products as plywood, block-board, particleboard, fibreboard, pulp, paper and paperboard, celluloid and rayon. Many species of tropical hardwood are greatly appreciated as decorative woods, or because of exceptional stability or durability, or their freedom from flaws and the ease with which they can be worked.

Between 1968 and 1978 the value of exports of industrial roundwood and forest products from the developing market economies rose more than fourfold (Table 2-2). Three quarters of the volume exported is in the form of logs, so that little of the value added accrues to the country of origin. 10/ However, recent developments indicate a faster growth of exports of processed products than of logs, with an increase in their share of the total value from 44% in 1968 to 51% in 1978.

Much of the exploitation of tropical hardwoods has taken the form of timber mining - the removal of all valuable material without concern for regeneration or improvement. Poorly conceived or badly drafted contracts have largely been responsible for tracts of forest being made over as concessions on short-term leases to logging companies without the prescription of conservation measures. Even where contracts were properly drafted many forest services have not been adequately staffed, equipped or organized to supervise their application. 11/.

8/ G. Poulsen. Wood-fuel and nutrition: the complementarity of tree cover and food supply, In Man and Tree in Tropical Africa, International Development Research Centre, Ottawa, 1978, p. 13.

9/ W.M. Floor. The energy sector of the Sahelian countries. Policy Planning Section, Ministry of Foreign Affairs, The Netherlands, p. 9.

10/ S.L. Pringle. Tropical moist forests in world demand, supply and trade, Unasylva, Vol. 28, nos. 112-113, 1976, pp. 106-118.

11/ F. Schmitthüsen. Forest utilization contracts on public land in the tropics, Unasylva, Vol. 28, nos. 112-113, 1976, pp. 52-73.

Table 2-2. Production, consumption and gross exports of industrial roundwood and forest products, developing market economies, 1968-78

	Industrial roundwood		Sawnwood		Panels		Paper	
	1968	1978	1968	1978	1968	1978	1968	1978
	million m^3				million metric tons			
Production	141	226	33	52	4.0	10.6	6.6	15.1
Consumption	118	189	31	50	2.8	8.0	10.5	19.9
Gross exports	29	48	5.5	9.3	1.7	4.0	0.5	1.3
	million $							
Value of gross exports	672	2,499	278	1,181	181	943	67	429

Source: FAO, Yearbook of Forest Products, 1978, Rome 1980.

The rural poor have gained very little from the rapid increase in the demand for wood for industry. Not being titular owners of commercial forests, even where they have been sole occupiers for generations, their only benefit from sales has been the opportunity for some employment. Being unable to compete with the prices paid by industrial buyers, they have lost their freedom to use the wood for their own needs. In those countries of south-east Asia, for example, where teak was the traditional building material, villagers now have to make do with inferior woods.

The cost of the increasing shortage of wood can be measured only partly in terms of the price of substitutes and the value of goods foregone. Many rural people have turned to alternatives such as metal or plastic which may be aesthetically displeasing but are nevertheless practical, durable and, not least, cheap. In some cases, such as that of metal cans salvaged from the industrial economy and beaten flat for use as roofing, the cost may even be negligible. There are, however, also less tangible losses involved in the decline of people's artifacts so necessary to maintain their identity and self-respect. Indigenous woodcraft and the traditional skills that go with it have often been victims of the shortage or high prices of the wood used as raw material. In the process, rural occupations such as carpentry have in many areas become depressed.

FOREST EMPLOYMENT AND INCOME

Though forest have diminished in area and access become more difficult, rural communities have had some compensating benefit from employment in forestry and forest-based industries. So far, there has been relatively little mechanization in forestry and logging, both because of the natural irregularity of trees and of the terrain on which they stand, and because of their frequent remoteness from sources of fuel and servicing for mechanical equipment. Foresters and loggers have relied greatly on manual labour for planting, tending, thinning, pruning, felling and extracting trees, as well as for the harvesting of products like cork and resin. Much of the processing of wood has also been carried out in the forest or in small local sawmills using labour-intensive methods. Table 2-3 illustrates the labour requirements for the primary processing of forest products in a number of tropical countries.

Employment on forest work can provide extra income for farmers during the slack season for crop production. Some of the work does not require much skill or training. It can be particularly convenient for remote forest communities, who would otherwise have to go to work far from their homes.

Table 2-3. Estimated labour requirements for primary processing of forest products

	Man-days per ha per year
Indigenous forest, Ghana	1.97
Indigenous hill forest, Malaysia	2.11
Indigenous swamp forest, Malaysia	1.66
Teak plantation, Nigeria	8.87
Teak plantation, Thailand	9.82
Albizzia plantation, Philippines	36.45
Gmelina plantation, Nigeria	28.77
Pine plantation, Malaysia (manual)	23.35
Pine plantation, Malaysia (mechanized)	17.35
Taungya, Nigeria (teak)	17.18
Taungya, Nigeria (Gmelina)	61.43
Taungya, Thailand (teak)	16.71
Tree farming, Philippines (Albizzia)	124.36
Rubber plantation, Malaysia	112.48

Source: Nils Svanquist. Employment Opportunities in the Tropical Moist Forest Under Alternative Silvicultural Systems Including Agrisilvicultural Techniques, FAO, Rome, 1976, p. 67.

Unfortunately this is not always the case. Forest work may only be temporary employment, or available when there are also heavy seasonal demands for labour in agriculture. It may be far from the nearest villages, so that workers have either to camp for long periods away from home or to travel substantial distances each day. The wages are often insufficient to compensate for the potential dangers of felling and logging or the risks of heat stroke in plantation work without shade. 12/ Furthermore, they have usually been low in relation to those in other sectors, so that there have been many cases where sufficient labour could not be recruited for establishing or tending plantations.

Parallel with the growth of employment in commercial forestry, there has been a rapid increase in employment in the supply of firewood and charcoal to urban markets. 13/ This activity is often destructive, and in some cases illicit, and it is by no means clear that it can sustain the present levels of employment. Table 2-4 gives estimates of the magnitude of such employment in different parts of Africa. In Upper Volta the 325,000 man-days required to supply wood fuels to Ouagadougou generated income equivalent to $520,000, and further income of $2.5 million was generated from the transport and distribution of wood fuels.

The production of wood fuels for urban markets is also an important rural activity in many parts of Asia and Latin America. For example, charcoal production, for both industrial and urban markets, is one of the principal economic activities in the Chaco region in northern Argentina. Sales of fuelwood are an important source of income for the poor in forest villages in many parts of India, where it has been found that it is the poorest in the

12/ Olav Axelson. Heat Stress in Forest Work, FAO, Rome, 1974.

13/ J.E.M. Arnold, Wood Energy and Rural Communities, Eighth World Forestry Conference, Jakarta, 1978, p. 16.

Table 2-4. Estimated rural employment in the supply of wood fuels to selected urban markets in Africa

Urban market	Annual employment
Bamako, Mali, 1974	246,000 man-days full time 325,000 man-days part time
Ouagadougou, Upper Volta, 1975	325,000 man-days
Northern cities, Nigeria, 1974	16,700 man-years
Maputo, Mozambique, 1977	6,000 families
Ghana, 1974	45,000 persons 1/

1/ Total employment in commercial wood fuel production, distribution and marketing.

Source: Canadian International Development Agency. Study Mission on Forest Energy in the Sahel and West Africa, 20 October-17 December 1974, Ottawa, 1974, p. 57, 106, 134. Le déboisement en Haute Volta; les besoins de chauffe de Ouagadougou, Le Développement Voltaique, 40, 1976, unpublished FAO studies.

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community, the landless and jobless, who depend on selling fuelwood. 14/ In a number of countries it is the poorest areas, where physical and climatic conditions do not permit the expansion of crop or animal production, and the natural woody vegetation is the only resource, in which sales of firewood are most important.

Employment in the production of both industrial wood and fuelwood is being increasingly threatened by new forms of mechanization as well as by the degradation and loss of forests, which are often worst in precisely those areas where surplus labour has the least opportunities for other work. Increasing mechanization has also reduced the labour requirements for logging. There have even been instances where tree-planting machines have been imported to work in areas of high rural underemployment, on the grounds that workers could not be recruited at the going rates and on the terms offered.

The most ubiquitous introduction has been the chain saw which is nearly always imported from industrialized countries and requires continuing imports of spare parts, lubricants and fuel. A two-man crew working in tropical conditions with axe and cross-cut saw can fell 10 to 20 m^3 day, whereas with a power saw their productivity rises to 30 to 80 m^3 a day. 15/ Working conditions in logging have been greatly improved by the chain saw and in financial terms the forestry sector has profited. The foreign-exchange costs and social costs, however, have been high.

What is true of the chain saw is even more true of the heavier machines, that have come into forestry, many of them capable of very substantially increasing the productivity of labour. The type of sylviculture, based on the uniform treatment of large areas, that such machines make possible or even require, is precisely that which does not need the skills of rural people, such as their knowledge of soils and plants and readiness to tend trees individually.

14/ B. Sivaraman, Forestry for Community Development (Village Forestry). Background Paper for the Second FAO/SIDA Expert Consultation on Forestry for Community Development, Rome, 1977, p. 26.

15/ R. Heinrich and H.A. Hilmi. The Training, Motivation and Social Promotion of Forest Workers. Eighth World Forestry Congress, Jakarta, 1978, p. 14.

The search for economies of scale has also caused much wood processing to leave the forest. Modern factories are mostly designed for large-scale centralized production, and the problems of providing adequate infrastructure and services have caused them usually to be sited in large towns. Sawmilling was perhaps the most despersed form of wood processing, with the widespread use of pit-sawing (the ancient practice of converting a tree to boards where it was felled with a hand-operated saw). However, today even a small-scale modern sawmill requires road access and a power supply, which usually means that it cannot be located in the remoter rural communities.

Though future demand for forest products will undoubtedly increase, greater efficiency may result in very few extra workers being employed; indeed, numbers may actually fall. However, the importance of employment in forestry lies not in its volume but in its location. Choice of appropriate technology and of processing operations is, therefore, crucial in ensuring that forestry contributes significantly to stability, employment and income in rural communities, particularly of developing countries.

ELEMENTS OF A NEW BALANCE

In their efforts to increase rapidly food and agricultural production, the developing countries will have to give due consideration to achievement of optimum and sustained productivity. It is urgently necessary to restore the balance (as has already been done in much of the temperate world) between soil formation and soil loss, between biological production and human consumption, between perennial and annual plants, between food and wood production, between exploited land and wilderness, and above all between the living levels of people in different regions and under different productive systems. Forestry has a vital role to play in restoring this balance.

The problems of shifting cultivation exemplified the sort of mutually supporting improvements that are needed. To help farmers settle permanently, technical and institutional support is necessary, including security of tenure in those parts of the forest more suitable for cultivation. The introduction of a planted fallow of appropriate species could provide additional output for local use, and (where the necessary infrastructure exists) for industrial or urban markets. Improved crop combinations for sustained production most relevant to the capability of the land and the people could improve their income from cultivation and lengthen the period between fallows.

The development of proper farming systems for many of the poorer soils is likely to require multi-storied or mixed associations of trees with crops on the same piece of land. Preference should be given to developing land use systems that are closest to traditional systems, and fit into existing socio-economic patterns. Credit would have to be extended to cover purchase of seeds and fertilizers. However, the need for external inputs can be limited by the use of draught animals, rotation with leguminous crops (either arboraceous or herbaceous), and the use of all locally available organic material for green manure and composting.

Another example concerns mountain regions which, with their steeper slopes and higher rainfall, are particularly subject to erosion. The process of erosion can be reversed effectively only through proper land use based on suitable cultivation practices and appropriate cropping patterns. This may require supplementary engineering measures, but since these are costly and do not last very long, the main emphasis should be on proper land use. If this is to succeed, it must have the cooperation of the local people. In the short run, they experience substantial inconvenience, losing access to their grazing lands and for several years getting little or no return from the newly terraced slopes and newly planted trees. A full programme must include help for them to produce food in the period of transition, to intensify their animal husbandry techniques, and to learn to tend and market the new perennial crops. Improved communication with the outside world and the provision of other essential services are also necessary.

There have as yet been too few attempts at integrated solutions to the various problems posed in different regions by the loss of trees and forests. The following pages describe a number of the approaches that have been made, and some of the technical innovations or rediscoveries that can contribute in the future. Figure 2-2 indicates the main factors that may have to be taken into account in such approaches.

TREES OUTSIDE THE FOREST

There is enormous potential for introducing trees on land that is conventionally sees as strictly agricultural. The objective is not only to increase wood supply, thus reducing the pressure on forests. It is also to contribute to food production, whether directly by the fruit or fodder from the trees, or indirectly by giving shelter from wind and sun, restoring nutrients from deeper layers, and increasing nitrogen fixation. Such planting may take many forms, occupying strips and pockets of land not used for crops, mixing

Figure 2-2. Factors for analyzing the place of forestry in rural development

Factors	Possible responses
Competition for land (trees are a less intensive use of land than crops)	
- Competition for forest land	- Intercrop trees and crops - Allocate forest land rationally between trees and crops - Improve non-food benefits to forest communities: forest and forest industries employment, secondary forest product income, social infrastructure
- Competition for crop and grazing land to afforest	- Plant trees on roadsides, river banks, field boundaries and other unused areas, areas marginal for crop production, erodable areas unsuitable for crop production and grazing - Improve productivity on the better arable areas in order to release land for tree growing - Plant multiple-use species or mixtures of species to increase productivity - Intercrop trees with other crops or combine with grazing - Introduce additional sources of income (e.g. beekeeping)
Timescale for forestry (delayed returns from tree growing)	
- Output from trees will not meet immediate needs	- Plant multiple-use species, or mixtures of species, which give some early return - Provide financial support during the establishment periods: low-interest loans, grants, subsidies, wage employment - Introduce or expand complementary non-forestry sources of income
- Risk that producer will not benefit	- Ensure security of tenure of land used for tree crops
Dispersed distribution of benefits from forestry	
- Benefits from protection forests or from timber production may accrue in part outside the community	- Provide compensation for those benefits foregone or inputs provided by the community which generate benefits elsewhere
Seasonal shortage of labour	- Adopt forestry systems which do not compete with peak demands for labour
Lack of a tradition of forestry (unfamiliarity with the necessary techniques, lack of understanding of cause and effect, behavioural patterns inimical to forestry, inappropriate institutional framework)	- Provision of guidance and support through extension services: education of the people, technical advice and technical inputs, grass-roots training - Demonstration projects - Encourage producer groupings (cooperatives, etc.) - Legislation and regulation

Source: FAO, Forestry for Local Community Development, FAO Forestry Paper No. 7, FAO, Rome, 1978, p. 9.

trees with agricultural crops in varying proportions, or alternating annual crops with tree fallow. The trees used may have as their primary products timber, poles, fuelwood, fodder or food, and preferably several of these together. 16/

Many people have long cultivated trees alongside their crops. Such practices have their origin either in pragmatic observation that the presence of trees improved yields, or as a response to the progressive disapperance from the forests of trees that provided food, fodder, shade, gums, medicines, and other benefits. 17/ Besides gains in productivity, there are advantages in the form of increased security and better diet from enlarging the range of products, and a better spread of income over time. Where the trees have a value as timber, they can provide a wide range of commodities from fuel and building materials, down to such things as the stakes used as supports for growing yams in west Africa.

The consequences of clearing trees from agricultural land to make way for farming systems involving mechanization or monoculture have included rising water tables, wind damage to crops, disruption of nutrient cycles, vulnerability to pests and diseases, loss of diversity in the local economy, and shortages of fuelwood, timber and poles. Truly modern systems for much of the tropical regions (and elsewhere) would extend and elaborate the well-tried methods of the past, adding new or improved species and varieties of tree, and developing new combinations of crop plants and trees that maximize the use of space and light and limit competition. Where forest is cleared for agriculture, it should be ensured that appropriate trees are retained or replanted.

The retention of wild trees is common in most forest areas. Farmers maintain and protect tree species that are of direct use to them for food, fodder, minor commercial products, windbreaks or soil improvement. In Latin America and elsewhere, forest trees are retained on coffee and cocoa plantations in an agro-forestry system where they provide shade and humus, and mobilize through their root systems the mineral nutrients in the soil. The people in Latin America also have a long list of palm trees which are retained because of their usefulness in providing such things as edible fruit, oil-bearing seeds, palmito shoots for food, woody stems for a wide variety of uses, and fibre for ropes.

In the difficult environment of the arid zones, various legumes are respected by local people for their close association with agriculture, their beneficial effect on soil fertility, and their usefulness as windbreaks. In the Sahel, Acacia albida is left standing when land is cleared for cultivation. Its roots go mostly straight downwards rather than sideways, drawing up nutrients and using water that otherwise would be lost to local production. It provides shade for cattle in the dry season but sheds its leaves in the rainy season, when agricultural crops are growing, thus providing them with humus and not competing with them for nutrients, and it produces poles, fuelwood and fodder for local needs. 18/

Trees are not only retained when their direct usefulness to rural people is recognized but are also planted for green manure, fodder, fuelwood, and nitrogen fixation for soil improvement. Intimate mixtures of trees and agricultural crops occur in intercropping and multiple cropping systems and, recent research has shown that these widely used

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16/ FAO. The Place of Forests and Trees in Integrated Rural Development, COFO-78/3, Rome, 1978.

17/ B.N. Okigbo. Neglected plants of horticultural and nutritional importance in traditional farming systems of tropical Africa, Acta Horticulturae, 53, 1977.

18/ G. Poulsen. Man and Tree in Tropical Africa, International Development Research Centre, Ottawa, 1978, p. 9.

tropical systems, which were formerly considered primitive, are highly productive. Yields may be 20% to 50% higher than for the same crops growing separately, and the yield advantage is greatest when annual crops are mixed with perennials, including trees. 19/

Instead of trees and annual crops growing side by side, they may be alternated in a controlled and improved version of the natural forest or shrub fallow of shifting cultivation. Many of the fast-growing leguminous trees used in forestry plantations have also been found suitable as a planted fallow to be used in restoring soil fertility in only three or four years, at the same time providing fuelwood, poles and green manure. 20/ The intimate symbiosis of forest tree and food crop cultivation has been observed in several countries, where certain trees are widely used as a cash crop in agricultural diversification, or play a role both in timber production and in support of agriculture, or in an agro-forestry system with fruit trees or rice. 21/

Some of the benefits of the presence of trees on cropland can be obtained in their absence by spreading a mulch of foliage or leaf litter, gathered from a nearby forest or plantation. The mulch protects the soil surface against the direct impact of sun and rain, replenishes the nutrient stock and maintain the population of earthworms. In parts of western Guatemala, for example, farmers spread as much as 40 tons of litter per ha on their fields each year, mostly from oak forests that produce only 4 tons per ha; thus the required ratio of forest to farmland is ten to one. 22/ Research into mulches of various origins and into mixtures of species might reveal ways of obtaining these benefits with a smaller ratio of areas, using foliage from fast-growing plantations.

Where it is not desirable or practicable for trees to be cultivated on cropland, they can instead be planted wherever there are strips and pockets of unused land. This system has been very effectively developed in China in the so-called "four-side" or "all around" planting programme. Communes are encouraged to plant trees wherever there is a place: along the banks of streams and rivers, beside roads, between fields, and next to houses and villages. In Chunhua County of Shaanxi Province, which has a relatively dry climate and poor soils, "four-side" planting has established 15.2 million trees, of which 10.5 million are around houses and villages, 4.5 million along 1,600 km of roads, and 160,000 along 232 km of rivers and canals. 23/ Success of this kind is evidently made much easier by the absence of freely grazing ruminants in most of China.

The amount of technical advice and material help necessary to get such a programme started depends very much on local circumstances. Some of the most successful examples have started by being organized like a reforestation project but have then acquired a momentum of their own, forming a transition either to spontaneous planting on "four sides",

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19/ M. Stelly (ed.), Multiple Cropping: Proceedings of a Symposium held at Knoxville, Tennessee, 1975, American Society of Agronomy. Madison, Wisconsin, 1977.

20/ B.N. Okigbo. Legumes in farming systems of the humid tropics; A. Ayanaba and P.J. Dart. Biological nitrogen fixation, in Farming Systems of the Tropics, Wiley, New York, 1977, p. 69.

21/ Tran Van Nao. Forest resources of humid tropical Asia, Natural Resources of Humid Tropical Asia, UNESCO, Paris, 1974, p. 211.

22/ G.C. Wilken. Integrating forest and small-scale farm systems in Middle America, Forest Ecology and Management, 1, 1977, pp. 223-234.

23/ FAO. China: Forestry Support for Agriculture, FAO, Forestry Paper No.12, Rome, 1978, p. 75.

or village forestry. For example, in the State of Gujarat in India, the State Forest Service started roadside and canal bank plantations, each strip being linked to a nearby community that had grass-cutting rights among the trees, helped protect the saplings, and shared in the profits of the operation. Although the early plantations did not involve much popular participation, they marked a critical psychological turning point. People started to realize that forestry was possible around their communities and in many cases gained for the first time favourable impressions of the forest department when they saw that its activities could benefit them directly. By 1978 about 6,000 km of State's 17,000 km of roads and canals were lined with trees, and each year trees are planted along another 1,500 km. 24/

The constraints to be overcome vary greatly according to the nature of the community and its present land use. They may include problems of reorganizing grazing or of going through a period in which the use of land has to be partially foregone while waiting for trees to grow. Difficulties of the latter kind may be partly solved by using fast-growing species. For example, Calliandra callothyrsus, of central American origin, grows 2.5 to 3.5 m in six to nine months in Indonesia, and can be harvested for firewood after a year, yielding 5 to 20 m^3 per ha. It regrows from the stump, sending up coppice shoots that reach 3 m in six months. Once in full production it yields 20 to 100 m^3 per ha per year. It has many uses, providing edible foliage and fruit for animals, and is valuable for soil restoration and conservation. 25/ Other tropical legumes exist with similar properties.

AGRICULTURAL PRODUCTION INSIDE THE FOREST

Even where forestry rather than agriculture is the primary use of the land, systems exist for combining the two. Indeed, it becomes difficult to draw the line between agriculture with forest fallow on the one hand, and forestry with agricultural interludes on the other. The classic version of the latter is the "taungya" system (from the Burmese taung ya, which means hill cultivation). It was first developed in Burma in 1856, as a method for reducing the cost of replanting teak forests, and has since been widely adopted. The essence of the system is that the forest trees are planted by workers who at the same time cultivate crops alongside the seedlings for two or three years.

In the original version of taungya the planters were paid in kind, merely obtaining temporary use of the land in return for planting and tending the trees. They remained landless labourers, carrying out arduous work without security or rights to permanent settlement. Various improved versions are aimed not only at replanting forests, but also at improving the lot of the local population and helping to solve the problem of shifting cultivation.

In Indonesia, for example, planters who enter into two-year tenancy contracts are helped by the forest authority (Perum Perhutani), which provides a superior variety of dry-paddy rice, as well as loans for the purchase of fertilizers and insecticides. Rice yields have more than doubled, and the fertilizer has also had beneficial effects on tree growth. The intensified programme, started in 1975, has been well received, as the income from crop production per contract period is some $ 50 higher than with the traditional system. By the end of 1978 the programme was expected to cover an area of 20,000 ha. 26/

24/ B.K. Jhala. Social Forestry in Gujarat, Ahmedabad, 1978 (mimeographed), quoted in E. Eckholm, Planting for the Future: Forestry for Human Needs, Worldwatch Paper 26. Worldwatch Institute. Washington, D.C., 1979, p. 52.

25/ National Academy of Sciences. Tropical Legumes: Resources for the Future, Washington, D.C., 1979, p. 197.

26/ Soekiman Atmosoedarjo and S.G. Banyard. The prosperity approach to forest community development in Java, Commonwealth Forestry Review 57(2), 1978, pp. 89-96.

In Thailand taungya is used within the framework of a programme to resettle dispersed forest populations and reconstitute the forest. The Forest Industry Organization concentrates the cultivators and their families in those areas where viable settled agriculture can be practised, and at the same time employs the people in replanting the degraded forest areas they no longer use, and in other forest work. To encourage people to settle in villages they are provided with roads, electricity, schools, tap water, medical and other social and physical services, together with an allocation of land for growing crops, and assistance in obtaining materials for house building and in transporting their crops to the market. Reforestation is carried out by the taungya system, which is improved in two ways besides the provision of permanent cropland. Transport is provided to enable farmers to cultivate and tend taungya areas over a wide area without having to move from the village. Dependence on crop growing is reduced by enabling villagers to earn alternative income. In addition to the proceeds from the crops they grow, they receive a cash payment for the land they clear and plant, and bonuses for extra productivity. They are also given priority in recruitment for forestry work. 27/

The Thailand "forest village" system points the way to a probably more permanent and sustainable formula. The allocation of forest land between crop production and tree growing is based on an assessment of site capability. Land use is based to the fullest extent possible on intercropping, vertically structured cropping mixes, and other ways of maximizing productivity. Conscious efforts are made to develop the social as well as physical infrastructure necessary to provide the basis for sustainable, socially acceptable conditions for the communities living within the forests. Similar approaches are being worked out in other countries as for example in southern Nigeria. 28/

Forest grazing is a very widely practised production system, especially in more arid regions, but it appears to be particularly difficult to regulate and render stable, perhaps because grazing people do not have a tradition of cultivating trees. Nevertheless, with the wide spacing of trees and high pruning to obtain knot-free stems, it is possible to cultivate improved mixtures of grasses and legumes on the forest floor for grazing, as is done in New Zealand with Pinus radiata. 29/ In Indonesia, elephant grass (Pennisetum purpureum) has been sown experimentally under teak, mahogany and pine plantations since 1973. It is sold to farmers to cut for their cattle, but no animals are allowed inside the forest. 30/

Orchards are normally regarded as part of agriculture, though their wood production is a supplement to that from forests. There is scope for foresters to develop forest orchards of species whose potential has not yet been discovered by farmers, especially in the case of plantations for the production of fodder. This may be only a transitory phase in a plantation whose main purpose is to produce wood, with low branches being pruned and fed to animals in the early years, or it may be the primary purpose. A fodder orchard could be managed very simply on the coppice system, with edible branches being removed regularly and replaced by new shoots from the stump. A combination of fodder plantations and silvicultural measures to improve forest grazing could be the incentive offered in exchange for the acceptance by graziers of the regulation of the size and movements of their herds.

27/ Sa-ard Boonkird. Taungya System: its Application, Ways and Means of Improvement in Thailand, Eighth World Forestry Congress, Jakarta, 16-28 October 1978, pp. 14-15.

28/ J.B. Ball. Taungya in Southern Nigeria, NIR/71/546, December 1977, FAO, Rome, p. 82.

29/ J. Kirby. A technique for the tropics: forest grazing, World Crops, Nov./Dec. 1978, pp. 14-15.

30/ Soekiman Atmosoedarjo and S.C. Banyard, op. cit., p. 82.

There are also many other ways in which forests may be exploited to supply additional products or income to local people. Fungi and a long list of seeds, nuts, fruits, leaves and shoots can be collected for home consumption or for sale. Urban dwellers may not fully realize their importance, but rural people know them as a supplement to their diet and an addition to food reserves. The importance is well known, for example, in south-east Asia of Sagu palm, from which a low-protein starch is extracted which can replace rice or wheat. Encouragement of these lesser known items of diet, if approved should be included in the national nutrition policy.

Honey used to be an important commodity throughout the tropical and sub-tropical forests and wild bees' nests are still collected. Bee-keeping can be encouraged by simple measures such as making available suitable clearings for hives. As production depends largely on the plants which exist in the forest, account has to be taken of nectar or pollen quality when selecting species for plantation. Where legislation expressly forbids the lighting of fires in the forest, amendment is necessary to allow bee-keepers to use devices of approved design to produce smoke for controlling bees. The collection of honey from wild nests is a frequent cause of forest fire, and public expenditure on popularizing domesticated bees might be amply repaid by its impact on this alone.

In planning the management of forests, especially in the context of agro-forestry, the potential contribution that wildlife can make as a source of food, especially protein, is often neglected. In the southern parts of Nigeria, wildlife has been estimated to account for 19% of the consumption of animal foods, compared with 60% for fish and 21% for domestic livestock. The proportion of animal protein from wildlife was particularly high amongst communities in forested areas, where it contributed over 80% of the total in some places . 31/

As many of the impacts of forestry activities can result in greater productivity of certain wild animal species, the possibilities need to be explored for modifying forestry and sylvicultural practices and management in order to optimize the benefits in terms of food production.

VILLAGE FORESTRY

Where land is available for a small forest plantation, or where woodland is destined primarily for local use, the problems are less technical than organizational. There may in the first place be difficulties in persuading villagers to plant trees or to accept the constraints of forest management. Once their participation is obtained, there may be material difficulties to be overcome.

An example of successful persuasion starting from strip plantations comes from Gujarat, India. In 1973, following the initial success of the roadside and canal-bank programme described above, foresters began visiting villages to discuss the possible establishment of plantations on some of their communal lands. They proposed to the panchayats (the elected councils that govern each village) that they should set aside a minimum of 4 ha for this purpose. The government would supply seedlings to the poorer villagers who derive their income from the communal lands, either as village herdsmen or by collecting the meagre grass or fuelwood they might produce, and pay for the preparation and planting of the land. The village would in turn guarantee to protect the areas from grazing and unauthorized gathering, a guarantee that was easier to maintain since the previous users obtained some gainful employment. The villagers would have the right to harvest grass and fruit from the plantations free of charge. When the time came to harvest the trees, the panchayats and the forest department would share the proceeds. Harvested firewood and timber would be sold through government-run depots at prices well below those of the market place. The system was designed for the betterment of all villagers and to be carried out by them, particularly those who were most affected by it.

31/ Federal Office of Statistics. Rural Economic Survey of Nigeria, 1965-66 - Rural Consumption Enquiry, Food Items, West, Mid-West and Eastern Nigeria, Lagos.

At first the panchayats were suspicious, and some villages had to be visited by foresters five or six times every year or two. Indeed, the relationship and trust between the villagers and the extension agents has been crucial. The extension service has been greatly expanded to cover this activity. By 1978 nearly 3,000 of the State's 18,000 villages had established woodlots through this programme. Each year more agree to enter the scheme, and many have decided to devote more than the minimum 4 ha to forestry. Some have even made precious irrigation water available for tree growing. One reason for the village programme's growing popularity is the quick return it generates. Most of the land planted was degraded common pasture that produced hardly any grass. After a year of protection from livestock, grass that could be harvested by hand usually sprang up on these lands. In the second year, some fruit trees began to produce, even in the absence of irrigation. The villagers then began to realize that they had an economic system bringing added benefits from an area formerly treated as almost worthless. Evidence of success was to be seen in the absence of good fencing around both the roadside and village woodlots. The trenches, live cacti or thorny shrubs now used to demarcate the forests would scarcely be sufficient to deter someone intent on stealing fodder or fuel. 32/

Similar results have been achieved in the Republic of Korea, using a very different system of remunerating labour and distributing the produce. In 1973, to counter serious and deteriorating erosion, overcutting, and fuelwood shortages, the Government adopted measures designed to enable every village to set up a fuelwood plantation. To enter the scheme, a village has to set up a Village Forestry Association (VFA) to which all villagers belong. Planting is on communal land or on private land reserved by law for use only for forestry. Private landowners who turn over their land to the VFA receive 10% of the output in return. The rest of the output is distributed among the VFA members in relation to the voluntary labour they contribute. By the end of 1977, there were over 21,000 VFAs, grouped into 141 Forestry Association Unions belonging to nine provincial branches of the National Federation of VFAs. The VFAs are also part of wider inter-village associations, grouping them with village horticultural, farm cooperatives and livestock associations. In 1977, the VFAs established 77,000 ha of fuelwood plantations.

This programme has achieved a remarkable degree of collaboration between local regional and national organizations. In addition to the establishment and maintenance of village fuelwood forests, the VFAs also take care of the protection of other forests in the neighbourhood of the village. They provide forest patrols to control the illegal use of forests, and voluntary forest fire brigades, as well as the carrying out of pest control measures. The Forestry Association Unions provide marketing services for the sale of minor forest products collected by VFA members, such as Kuzu fibres (for wallpaper), mushrooms, moss, and medicinal herbs. In 1977, the revenue from such sales amounted to $ 18.7 million. The National Federation provides technical advice to the VFAs through its extension agents, and helps them organize their activities. The national forest service extension service also provides the VFAs with planting stock and fertilizer. All cash costs for these and other inputs are subsidized by the Government. 33/

FORESTRY FOR JOINT SATISFACTION OF LOCAL AND INDUSTRIAL NEEDS

Forestry for industrial or export markets may also cater for local needs, either indirectly by providing employment and income, or directly by furnishing goods and services. The local population may also be helped to become producers themselves, either of industrial wood from plantations that they can manage themselves, or of forest products that they can collect and market from an existing forest. Their grouping into cooperatives has great potential for expanding this type of activity.

32/ E. Eckholm. Planting for the Future: Forestry for Human Needs, Worldwatch Paper 26, Worldwatch Institute, Washington, D.C., 1979, p. 55.

33/ Bong Won Ahn. Village Forestry in Korea, Eighth World Forestry Congress, p. 11.

In one type of scheme, local people are organized for producing wood as a cash crop from land they themselves manage. An example is given by the smallholder plantations organized by the Paper Industries Corporation of the Philippines (PICOP), which are designed to improve the lot of the small farmers on the edge of the corporation's forest land. 34/ The principal element of this programme is the encouragement of farmers to grow trees as a cash crop on their land for sale to the corporation for use as pulpwood. The species grown is Albizzia falcataria ("falcata"), a fast-growing leguminous tree, the fibre of which is particularly suitable for the manufacture of newsprint. It is ready for harvesting in eight years, and saleable thinnings can be harvested even earlier. It thus provides income within a short enough time to make it attractive and feasible for small farmers.

The Development Bank of the Philippines provides credit for the programme, supported in part by a World Bank loan. Farmers who do not have title to the land are assisted in obtaining it. In addition to providing advice and tree planting stocks, the extension agents help in improving farmers' crop and livestock practices. Farmers are encouraged to devote 20% of their farm area to food production and 80% to tree growing. PICOP undertakes to buy pulpwood from farmers prepared to enter into a marketing agreement at prevailing market prices, but leaves them free to sell elsewhere at higher prices.

Starting in 1968, participation in the programme has grown rapidly since the results achieved by the first demonstration farmers made it clear that the growing and harvesting of falcata pulpwood is well within the capabilities of small farmers, and quite profitable for them. It has been estimated that the financial rate of return to the farmer from tree growing would be about 25%. By March 1978, some 3,400 farmers were growing about 17,000 ha of falcata for pulpwood on their smallholdings. The programme is now being developed further, to introduce a second species, Eucalyptus deglupta (Bagras), which can be grown for lumber as well as pulpwood, and to help farmers to set up cooperatives to improve their purchasing position.

Producer cooperatives may also help to solve the problems of small private owners of natural forest and perhaps even of some shifting cultivators. At present much timber is inefficiently extracted and marketed (or not used at all) because of organizational difficulties. A producer cooperative can pool resources to buy or rent equipment, organize felling and transport to achieve economies of scale, and undertake direct sale, bypassing middlemen. There are successful examples of this in several countries of Latin America. In Guatemala, cooperatives enabled smallholders to carry out the sanitary felling and marketing of beetle-infested pine trees.

India has a long history of forest labourers' cooperatives. They have taken over cutting rights formerly allocated to contractors by the State Forestry Departments. The workers, through their organization, schedule the cutting, transport and distribution of labour, oversee finance and marketing, and reimburse the State for the timber harvested. Maharashtra and Gujarat States have large numbers of forest workers' cooperatives with thousands of members, which have been further extended to include the collection of minor forest products. 35/

34/ Michael Arnold. A habitat for more than trees: new approaches to tropical forestry. Ceres: FAO Review on Agriculture and Development, 12(5), 1979, pp. 32-37.

35/ T.E. Edwardson. Prospects for Forestry Cooperatives in Smallholding and Forest Communities, Eighth World Forestry Congress, Jakarta, 1978. For a more detailed review, see: M. Digby and T.S. Edwardson. The Organization of Forestry Cooperatives. Occasional Paper No. 41, The Plunkett Foundation for Cooperative Studies, London, 1976.

The exploitation of timber by cooperatives is likely to remain a relatively unusual system, as most commercial forest is publicly owned and managed. There is great scope, however, for the cooperative organization of the exploitation of other forest products. In addition to wood, other materials that come from the forest include the corky or fibrous bark of certain trees, the resins, gums and latex of others, the natural ropes made by climbers, the thatch of some grasses, the tubular stems of certain plants (of which the best known are the bamboos), the products of forest insects (for example, beeswax and shantung silk), and the many medicinal products, dyestuffs, tanning substances and other chemicals obtained from forest plants and animals. The past century has seen many of the latter fall into disuse in the industrialized countries as synthetic replacement became available, but pharmacologists and chemists are now realizing that many half-forgotten natural products are potentially valuable either as sources of substances for refinement or as models for future synthetic molecules.

It is also possible to cater for local needs within the conventional systems of large-scale forestry. The concept of multi-use forestry is inherent in the very nature of trees. An example of a joint production system is coppice-with-standards. A lower tier of smaller trees cut on a short rotation, typically for fuelwood, is produced by the coppice method (regeneration by stump shoots), while an upper tier of full-sized trees is grown from seedlings or cuttings. This system appears to be well adapted to the heterogeneous composition of tropical forests, as well as appropriate for meeting the needs of local people. It can also accommodate a short cultivation period for food crops in the annual felling areas, provided sufficient care is taken to avoid any damage to stump shoots and seedlings.

Even where forestry has been organized entirely for industrial ends, small-dimensioned wood is an inevitable by-product, whether in the form of thinnings (small trees removed to make room for the better ones), or of branchwood from final felling. This is often left in the forest to rot, simply because it does not pay to make it by conventional methods. Ways might be found to make use of it, for example by assisting a group of villages to invest in efficient mobile charcoal kilns to be used in collaboration with the forest management. In the forests of the Salva Lacandona in Chiapas, Mexico, a small sawmill enterprise is being set up to make use of the tops and branches of the mahogany trees left by the more demanding industrial operation that only takes out peeler logs and high-quality sawlogs. The capital to set up the small sawmill comes from timber royalties due by law to local populations. The traditional hunter-gatherers are now supplementing their meagre agricultural derived incomes with chichle collection and camedora palm cutting.

Purely commercial forestry may provide other services to local communities. For example, the network of forest roads may be planned in such a way as to reach isolated villages. Indeed, in areas being opened up, the road system could be the key to land use planning by guiding colonization towards the areas of the best soils. In Belize, the forest service has for many years been the chief constructor of rural roads.

CONTRIBUTION OF WOOD-PROCESSING INDUSTRIES

The wood-processing industries potentially have a great contribution to make to rural development. The direct and indirect off-farm employment created by forest-based industries should help in siphoning off some of the population pressure on the land resource. In addition, the availability of a wider range of construction materials and of the infrastructural services associated with the industry should bring some urban amenities to rural life.

In practice, however, forest-based industrialization has so far failed to achieve its expected results. The reason seems to be essentially that the potential of the forests has not yet been effectively mobilized. Until recently, exports of wood from developing countries have been in the form of unprocessed logs. Thus, it has been estimated that if the 49 million m^3 exported as logs in 1973 had been processed in the countries of origin, this would have brought them another $2,000 million, as well as several hundred thousand man-years of employment. 36/ Almost all of the development potential has therefore been

36/ S.L. Pringle. Tropical moist forests in world demand, supply and trade, Unasylva, 28, 1976, p. 118.

exported with the logs. Furthermore, some logging operations have been short-lived investments, with the subsequent collapse of what local employment had been generated.

For the growth of forest exports to contribute fully to development, it is necessary to carry out their processing in the developing countries now exporting them in unprocessed form. This policy is already being implemented in a number of countries, as has been mentioned in Chapter 1 above, though progress is slow. For it to contribute fully to rural development, it is desirable that most of the employment should be in the countryside and that the products should if possible be partly destined for rural uses. This should be possible wherever processing results in a saving in weight and space, as in the case of sawmilling and plywood, and so reduces transport costs.

More common sense and flexibility are needed in technological transfer and development. Too often, investment has been in factories using labour-saving technology, expensively imported from industrialized countries. It has also been in towns, where it was cheaper to provide the necessary infrastructure and establish the professional and technical personnel.

Factory design should be adapted to circumstances of abundant unskilled labour, but should also take account of scarce capital and managerial talent. Fortunately, sawmilling, which is the most widespread form of processing and likely to remain so in developing countries at least, has a very flexible technology. It can therefore be viable over the whole range of scales from a craft to a quite sophisticated industry. This means that investment and mechanization can be high or low, according to the prevailing situation. In addition, economies of scale are not particularly significant.

However, conventional sawmilling is often very wasteful, using only a small part of the timber volume potentially available. The flexibility of the process can be utilized to reduce waste. In Honduras, for example, rather than accept the closure of many old sawmills with the consequent loss of employment, the Government established a number of modern plants to buy a rough-sawn lumber from the old mills and resaw it to export standards. This is one of several possible ways of achieving adequate standards of quality and reliability in small rural mills.

With the more complex wood-using processes, economies of scale and rising labour costs have forced developed countries towards highly capital-intensive technology. The adaptation of these industries to the situation in the developing countries presupposes that viable alternatives, if not already available, can be designed and produced. As a result of collaboration between FAO and industry, there is now a portfolio of appropriate designs for small-scale labour-intensive mills, especially for the manufacture of a variety of wood-based panels. The transition is not quite so easy in these industries as it is in sawmilling. Nevertheless, under certain conditions, fibreboard shows some promise as a contributor to rural development, since it does not require expensive imported adhesives, can use a great variety of raw materials (including agricultural residues), and produces a product that could easily be used in rural housing.

Small-scale paper industries in rural areas, based on the pulping of non-wood materials, have been successfully developed in India and elsewhere. Wood-based pulping has, in contrast, been much more difficult to modify or develop on a scale suitable for rural development. However, recent advances in mechanical and chemi-mechanical processes have gone a long way towards overcoming the technical and economic obstacles. Even the possibility of small-scale chemical pulping is now less remote than it was two or three years ago.

Because of the more complex physical and mechanical processes involved in the panel and pulping industries, they will generally be less suitable than sawmilling for stimulating rural development. This disability might be overcome by grouping a number of individual communities to provide adequate resources to support industries of these types. However, the main obstacle to a successful programme of rural development based on the employment and income potential of forest industries will be the availability

of skilled operators and managers. Major training programmes will be required and these in turn could make a further contribution to rural development by providing additional educational opportunities. New formulae are also needed for ownership, management and profit sharing, if forest-based and other industries are to contribute fully to rural development.

The capacity of commercial forestry to employ local labour may also be greatly improved by the introduction of appropriate technology. A study in the Philippines compared the use of redesigned manual or animal-powered devices with that of imported machinery. The cost of manual methods for many operations was found to be less than that of mechanical methods that used less labour. For example, it cost $ 35.50 per 1,000 stems to thin by bow saw, and $ 35.27 to do so by chain saw. The manual loading of small logs costs $ 88 per 100 m^3, as against $ 91 using a mechanical loader. Underbush cutting with a brush hook cost $ 23.24 as compared with $ 51.35 per ha with a motorized clearing saw. 37/

APPROPRIATE TECHNOLOGY FOR UTILIZATION

Many ways have been envisaged of increasing the supply of forest products for rural use or at least of satisfying more needs with the present level of supply. Some of the current techniques for using wood are very wasteful, and can be improved by appropriate technology.

The requirements for wood could be decreased by the introduction of simple techniques for the prevention of decay and insect attack. The wood of many species lasts for only a few years in contact with the soil under a tropical climate. Termite damage in particular is widespread and rapid. Most of the preservation treatments available are expensive and have to be carried out on an industrial scale, but in Papua New Guinea, for example, the Forest Products Research Centre has developed simple preservation techniques for rural users. 38/

Much decay and damage can be attributed to wrong conditions of use. Untreated timber is placed in contact with the soil and thus remains damp and accessible to fungi. The top of timber structures is often left inadequately protected from the elements, cracking in the sun and absorbing rain. Improved building design, by ensuring protection from above and below, ensures greater durability, and the painting of exposed surfaces can further improve performance.

Much may also be achieved by the appropriate choice of tree species. Some of the most durable timbers, such as teak, are now exported because of their highly sought-after characteristics, and the high price they fetch. Research into the durability of less well-known species, particularly those with high growth rates, may in the meantime help rural users.

The customary methods of extracting energy from firewood are highly inefficient, allowing most of the heat to escape. Cooking on an open fire is estimated to need five times as much energy as on a kerosene stove, and even with a simple wood-burning stove 90% of the heat may be wasted. A well-designed stove, simply built of mud or mud bricks, can greatly reduce the amount of wood needed, and also increase the range of wood and other organic fuels that can be conveniently burned. The addition of a chimney also removes smoke from the house, where it is a danger to health.

37/ ILO. Appropriate Technology in Philippine Forestry, Report of the Joint Philippines Bureau of Forest Development/ILO/Government of Finland Project, Geneva, 1977, p. xv.

38/ Papua New Guinea, Forest Products Research Centre. Manual of Rural Wood Preservation, Department of Forests, Ministry for Natural Resources, Port Moresby, 1977.

Studies in Indonesia 39/ have shown that good stove design can increase efficiency from 6% to 7% to between 23% and 19%. By using cooking pots that sit deeper and more tightly into the cooking hole, a further improvement is obtained. The overall gain from combining the new stoves and pots is a reduction of 65% in the wood requirement. By simple measures, such as always covering the pot with a lid and always replacing a cooking pot by a water pot when cooking has finished, it can be ensured that all the available energy is used. Waste can also be prevented by the use of suitable tools for cutting fire-wood to size for use in a stove. 40/

In countries with a cold season, where wood is important for domestic heating, similar gains may be made by better stove design and by simple techniques of insulation. Local application of heat, for example through warming pans and hot-water bottles, are often more efficient than general space heating. Better methods for making and using charcoal can also bring great gains. A modern retort gives three times more charcoal per unit of wood than a traditional burning-pit, and may also provide valuable distillation products such as wood alcohol and biogas. Energy may also be saved by ensuring that wood is as dry as possible before being converted. Charcoal burning should therefore preferebly take place at the end of a dry season

The charcoal thus produced can be made to go still further by improvements in the design of charcoal stoves, the efficiency of which can be increased more easily than that of wood-burning stoves. Nevertheless, the direct use of fuelwood should be preferred wherever possible because of the substantial loss of energy in the conversion to charcoal.

The more efficient use of fuel is vital in the face of increasing difficulties in supplies and not least in its relation to nutrition. Despite much research, no one has yet invented a cheaper or more adaptable system for capturing and storing solar energy than leaves and wood. Petroleum fuels and natural gas may be easier to distribute and more convenient to use, and coal contains more energy per unit of volume than wood. However, these fuels come from non-renewable resources, entail heavy capital investment for their production and distribution, and require the user to install and maintain costly equipment. Liquid and gaseous fuels can be extracted from wood, and charcoal pressed into briquettes has as high an energy content per unit of weight as coal. The alternatives, however, are as yet rarely used in the rural areas of developing countries, not least because the techniques of manufacture are very little known.

39/ H. Singer. Improvement of Fuelwood Cooking Stoves and Economy in Fuelwood Consumption, Report No. TA: 1315, FAO, Rome, 1961, p. 12.

40/ J. Ki-Zerbo, and G. Lepeleire. L'Amélioration des Foyers pour l'Utilisation Domestique du Bois de Feu: ses Possibilités et son Impact au Sahel, CILSS, Mai 1979, p. 8.

FRAMEWORK FOR ACTION

POLITICAL COMMITMENT

The previous section has shown how many ways there are in which forestry is not only beneficial but essential to rural development. For them to be translated into action involves political decisions at the highest level. The viability of a rural development programme depends on the effective integration of all the activities involved: agriculture, transport, education and so on as well as forestry. There must therefore be a clearly stated recognition at the highest political level of the importance of the role played by each sectoral activity. This must permeate to all levels of officials and professional officers so that their expertise may be mutually respected and their work properly coordinated. In the case of forestry, the relations with agriculture are of particular importance. The production of food crops and of trees and forests, together with the management of natural ecosystems, are interrelated parts of plant husbandry, which, combined with animal husbandry, is itself part of a larger land and water husbandry. Without this understanding by all concerned there is very little chance of any rural development programme being successfully implemented.

In some quarters in the past there has been a tendency to regard forestry as a peripheral activity to which no priority need be attached. Because forest projects are essentially long-term, the short-term benefits are difficult to identify and so have been discounted to the point of being treated as negligible. Though comprehension is still far from being universal, it is now becoming much better understood that forestry is an integral part of the rural development and that foresters have a much broader field of activity than merely caring for large areas of wild or semi-wild forest.

Liaison at the central government level is inadequate without comparable coordination at the local level. The widest possible involvement, including that of foresters should be ensured wherever there is a discussion of any aspect of rural development, including food production, soil and water conservation, energy policy, rural industry, housing development, resettlement or rural road construction. The involvement of officials must be accompanied by involvement of the people. The precise form it may take will vary from country to country but it is essential in assisting to locate projects, organizing self-help, recruiting local technical skills or forming cooperative societies. Popular participation can be almost total in tree-planting outside forests but is bound to remain more limited in the management of complex or fragile forest ecosystems. Its most important function is to inculcate a sense of self-reliance among local communities and encourage them to promote enterprises themselves, within the framework of the national plans and subject always to the activities being approved as technically and economically sound.

The degree of political and administrative action required will vary greatly according to the circumstances. The most straightforward sort of forestry project is the creation of a large-scale plantation or the management of natural forest. Provided there is no problem of population pressure or extensive grazing, the necessary actions are mainly technical, financial and organizational on all of which there is a large literature. More commonly the existing use is the main limiting factor and the development outside the forest or plantation area is likely to be a prior condition for forestry.

The scale and type of problem involved in small-scale tree planting may cover a wide range. Some people are already cultivating trees as part of their land husbandry and only need help in the form of the provision of planting stock of new species and the introduction of new uses and systems. Others who are cultivating trees but are limited by shortage of land need help in raising agricultural productivity. There are, however, many people who

have relied on existing natural woodland or trees and have little or no experience in planting them. This is the situation which exists in many arid areas and calls for a very great effort of education and mobilization. If such an effort is to succeed it requires high-level political commitment and the fullest possible popular participation.

MOTIVATION, MOBILIZATION AND EDUCATION

Motivation must begin with the rural people themselves. Peoples' participation in development activities is not only a means but also an end in itself. The organizing of small farmers and landless labourers into strong homogeneous groups is an important aspect of rural development work. The links between programme and people are the extension workers, change agents or development workers at the community level, who play a crucial role in setting in motion a process of participatory development. They must be properly trained, prepared and briefed, and must possess not only technical extension capabilities but also social skills and a sense of dedication and accountability to the people.

The motivational process required will vary greatly according to the existing place of trees and forests in local practice. It is necessary not only to generate motivation for planting but above all to sustain it through the months (or more often years) during which the young trees remain easily vulnerable. The main need is to communicate the necessary ideas to those on whose land trees are to be planted, but it is also desirable to inform urban populations and increase their solidarity with the rural development process.

The task is challenging but perhaps less so than that of introducing industrial methods to people who have no previous experience of them. Although it has taken mankind a very long time to develop the science and art of forestry and tree planting the principles and techniques can easily be assimilated by rural people familiar with agriculture and horticulture. Some countries have successfully introduced the basic notions of forestry into primary or secondary schooling. Species recognition, the importance of trees and for forests in rural life, the destructive effects of over-exploitation, and simple methods of tree-planting can all be taught to quite young children. An example is provided by the State of Gujarat in India, where some schools run tree nurseries. The children share in the proceeds from the sale of the planting stock they help to produce and become directly interested in the progress of plantations.

The most effective method of extension is probably participation in the actual work and benefits of tree-planting. Many countries organize national tree days on which large numbers of people, mostly volunteers, plant trees. The effectiveness of this approach is probably inversely proportional to the distance between the planting site and the volunteers' home or work place. A tree planted and then never seen again is likely to make only a fleeting impression and to teach nothing about the maintenance or use of trees. More effective by far is the involvement of local people, who are thereby drawn in into the protection of <u>their</u> trees. To the extent that voluntary work replaces paid labour however, it takes away the opportunity to put money into the pockets of the rural poor and give them an early benefit from the plantation. The possibility of such earnings was one of the factors that helped to persuade villagers to accept the woodlot planting scheme in Gujarat discussed earlier.

Particular importance needs to be attached to the role of women. They are generally the main users of fuelwood, which they often gather themselves, so that they are likely to be very conscious of the potential benefits of tree-planting and the conservation of forests. It is not by chance that it has been the women who have triggered the Chipko movement in areas of northern India, in which local people have intervened to prevent the felling of trees. Their closeness to young children gives them special power to shape the ideas of the next generation, and the theme "plant a tree for your child" has great potential appeal to them. This has been one of the initiatives adopted at the international level by non-governmental organizations concerned with children, as a contribution to the International Year of the Child.

The organization of visits by villagers to similar communities that are already enjoying benefits from forestry or tree-planting is another potential means of spreading information and enthusiasm. One of the greatest problems is the time lapse between planting and its results. Even in the tropics, the interval for some sites and objectives is well over ten years. To see the possible future with one's own eyes is far more impressive than merely to hear about it from experts from outside the community in whom one has little confidence. Friendly rivalry between villages or regions may also play a useful part as a catalyst for action.

INFORMATION BASE

Correct action can only be based on a sound knowledge of the situation and one of the main hindrances to rural development, and to forestry activities within it, is the scarcity of the necessary information. There is no simple remedy and more resources will certainly have to be devoted to obtaining and analysing data. The collection of information is expensive and it is therefore essential that what is sought is that which is needed for the decisions that have to be taken.

At the national or regional level, information is required to determine government strategy and the need for legislation and special programmes of action. This entails the collection of general information that allows the identification of the problems that need to be tackled. At the local level, the community needs to know about the availability of land and its potential, the trees to use and the techniques for growing them, and what products they will produce. At all levels, the people involved will want to know what will be the cost of the goods and labour and effort that have to be put in, the amount and value of the goods and other benefits which will be produced, and the cost of the other possible products they have to give up in order to grow trees. Only when they see the result as worthwhile will they be prepared to support the effort and sacrifice involved.

For the development of a rational land use policy, the first requirement is a land capability survey to indicate the areas most suitable for forestry, cultivation or grazing. With the aid of data on requirements, on present and potential yields and on the erosion hazards of different land categories, such a survey can provide the basis for a target distribution of land between uses.

In conducting such surveys, there is much scope for the improvement of information on tree resources. The classic form of enquiry is the forest inventory, which typically is an assessment of the wood volume and the growth rate within the boundaries of a forest. Vast areas of the forests of developing countries have not yet been surveyed. Only 30% to 40% of the area of closed forest of Asia and Africa have been inventoried in any manner. Though the intensive survey of areas which will remain remote from forestry and other community activity is not a priority, the aim in any country where forests constitute an important potential source of economic activity should be the development of a regularly maintained national forest survey to provide the basic data for planning forestry and related community activity.

Major shortcomings of the conventional forest inventory for decision-making on rural development are the absence of data on trees outside the forest, and the failure to include enough data on products and benefits other than wood. Even the information on forest wood may be inadequate for local needs, for it is usually limited to commercial species, and volume is a less useful measure than mass for the assessment of the energy content of wood as a fuel. A fully adequate survey would cover all trees inside and outside forests, and might even include those standing in private gardens insofar as they can contribute to the stock of consumable products. It would distinguish the main species or species groups, and would use density to convert volume into mass. It would also cover all the products that come from trees and forest, except that food production from orchards would normally be assessed by agriculturalists. In areas, where the forest cover is of critical importance in regulating water flow from watersheds, a typological survey is also needed, in order to identify the areas at risk and the potential of the forest to support such uses as grazing and fuel wood cutting.

Within any specific area the aim should be to find out as much as possible about the physical and biological environment (climate, soil, vegetation, land use, etc.); the existing forest and forest related resources, wood use, wood needs and market prospects; and the population, including social systems, land tenure, numbers, income and expenditure, labour budget, and food habits 41/. The people themselves should be involved as much as possible in the survey, in order to create the feeling of trust and confidence that will be needed when the time comes to begin the action programmes.

Adequate physical data on the relations between vegetation, land use and erosion are notoriously difficult to assemble, even though the relations between the destruction of cover and the disasters of siltation and flooding are all too evident. Given the urgency of such problems, policy makers will usually have to accept broadly based assessments as a basis for decisions about measures to protect and to secure the livelihood and well-being of the large number of people at risk.

For information about demand, forest managers are often content to study the market, perhaps adding a nominal figure for material gathered by right-holders. As so much rural consumption takes place outside the market, this can only lead to gross underestimates of actual needs. A full survey should include the assessment of all the existing and potential requirements for forest products, leaving until later the question of whether they are to be satisfied through the market or through some other mechanism.

An adequate understanding of the use of fuelwood is particularly important. Although this is by far the largest use of wood in most developing countries, it is generally the one about which the least is known. Governments are increasingly recognizing the need to carry out special consumption surveys to remedy the information gap. To be of use in clarifying what has to be done, such surveys must do more than just identify how much fuelwood and charcoal is being used. They must also cover alternative fuels, such as crop residues and animal dung, and try to shed light on alternative supply options.

RESEARCH AND THE COMMUNICATION OF NEW KNOWLEDGE

Forestry research is already being conducted by a host of organizations at every level from the local to the international and from the applied to the purely scientific. However, there has been far too little work in the area that falls between forestry and agriculture. This gap can probably best be filled by collaboration between existing institutions, rather than the founding of new ones.

Much knowledge already exists in the form of local practices. This is a field in which the specialists have much to learn from people who have discovered techniques for improving and maintaining the productivity of their land. The reconditioning of soil, the prevention of erosion, and the moderation of climate are not the only benefits threatened by deforestation. Over the centuries farms have taken many foodbearing species from forests and improved them for use as agricultural crops. This is true, for example, of the "home gardens" found in the countryside of such countries as Indonesia, Sri Lanka and Thailand, where fruit trees occupy different levels of the canopy and provide food almost all the year round. These cases of the mixing of planted or self-sown trees with agricultural crops have mostly been found by observing land use systems in various localities.

41/ See FAO. Draft Guidelines on Collection of Socio-Economic Data for Designing Rural Development Projects, Rome, 1979; Idem. Guidelines for the Development of Less Favourable Environment Areas: A Comprehensive Integrated Management Approach, Rome, 1977; L.E. Virone. A Practical Approach to Rural Development, Borgo a Mozzano, Agricultural Studies Centre, 1969.

There is enormous scope for communicating local knowledge to other areas of similar climate and conditions within a country and still more between countries. International organizations such as FAO and the International Union of Forestry Research Organizations (IUFRO) have an important part to play in collecting and disseminating data. Certain national organizations have also been active in recent years. There are many useful recent handbooks on tree-planting outside the forest 42/. Exchanges of personnel could also be greatly expanded, especially between countries of similar climate but different language.

LEGAL FRAMEWORK

Laws are directives for implementing policy and guidelines for resolving conflicts. Rural development and forest policies therefore need to be codified by law. However, to be effective the law must accurately reflect these policies and also be enforceable. Existing legislation affecting the use of forests and land often falls down on both these counts.

Most forest law still reflects earlier policies directed primarily towards conservation. It has not generally been conceived as a positive agent of development, but merely as a means of preventing the misuse of the forest, and has been developed chiefly in terms of litigation 43/. The consequence of this emphasis on the deterrent and punitive aspects of forest law is that law becomes an obstacle to development, embodying the constraints on their use of the forest and its benefits that so frustrate forest neighbours.

Most countries therefore face the need to overhaul their forest laws, so that they properly reflect their new concerns and policies aiming at a more equitable distribution of benefits in favour of the rural people in and around the forests. There is also a wide range of other laws and regulations, such as legislation on land tenure, land reform, colonization and credit, the provisions of which directly or indirectly influence the implementation of rural forestry programmes. This legislation too may need to be reexamined, to see whether it is consistent with the desired new directions.

Particularly difficult problems arise in the law of land ownership. Where landless peasants have occupied forest land illegally for a number of years, strict enforcement of the law cannot be contemplated unless associated with a generous resettlement programme. Recognition of a fait accompli, however, must not be done in such a way as to condone future repetitions. Worst of all perhaps is the absence of any explicit solution, for this leaves the squatters in perpetual fear of expulsion and the authorities with no credible protection against further encroachment. Where a government wishes to convert certain publicly-owned forest land to a system of agriculture with forest fallow, it is desirable that the cultivators be given some security of tenure, if necessary through new legislation.

However successful the policy and law may be, there will always be those who follow their own interests at the expense of those of the public. Because the private gain from over-exploiting a common resource exceeds the user's share in the collective loss, there will always be a need for protective legislation. This is not just a modern or western notion: in Afghanistan, for example, in the mountains of Nuristan, the village elders fine those who take more than their share of wood or wantonly damage trees.

42/ See: FAO. Forestry for Local Community Development, Rome, 1978; FAO. China Forestry Support for Agriculture, Rome, 1978; National Academy of Sciences. Underexploited Tropical Plants with Promising Economic Value, Washington, D.C. 1975; Idem. Leucaena: Promising Forage and Tree Crop for the Tropics, 1977. Idem. Underexploited Tropical Legumes with Promising Economic Value (in preparation); Idem. Firewood Crops. Bush and Tree Species for Energy Production (in preparation).

43/ FAO. Modernizing institutions to promote forestry development. The State of Food and Agriculture 1969, Rome, 1969, p. 127-133.

However, law enforcement should, as far as possible, be visibly in the interest of those who are asked to restrain their activities. In too many cases it has seemed that rural people are kept out of forests in order that outsiders may consume their produce. This is not only due to the restrictive and punitive nature of much forest law, but also to its often excessively complicated nature. If the legislation could be simplified and reduced to its essentials, it is much more likely that people would be able to understand and accept the need for certain restrictions on the use of forests and forest land 44/.

There is also considerable scope for improvement in the system for the enforcement of forest law 45/. In many countries the same person is both the forester charged with technical supervision and the guardian of the law responsible for detecting and prosecuting miscreants. The same officer may also have power to grant permits for activities that are otherwise illegal, and to collect fines from admitted culprits without recourse to the courts. At best these duties and powers are a distraction from the forester's technical job, and at worst they are an invitation to corruption. Law enforcement should be the role of a branch of the police, or of an independent corps of forest guards, or (as in the Korean Village Forest Associations) of patrols of villagers, and sentencing should be by properly constituted courts. The granting of permits should not be the prerogative of individuals, but of boards under some public powers of inspection and control.

ADMINISTRATION AND MANAGEMENT

Traditionally the public forestry administration or forest service has been the motive force in the sector. There is still an important place for the forester as the skilled manager and protector of forests and plantations, and the forest service can serve as a vehicle for bringing those skills to bear. It is necessary, however, to examine the roles involved in forestry support for rural development, and the alternative ways of organizing it.

In many developing countries it is now recognized that forestry's administrative structures must be changed if foresters are to become agents of development instead of only conservationists. A model is emerging which takes into account the complex inter-relationships between the social, protective and productive functions of the forest 46/.

The role of the forester is not only purely technical but also social in the sense of making decisions in the long-term interests of all concerned. On occasion it may involve the embarassing problem of placing the interests of some distant public authority or private owner above the short-term interests of the local population.

The question arises of what role the forester should now perform, and what qualifications he requires for it. The forestry profession has already undergone an evolution from one predominantly based in the biological sciences to one oriented to the management of production. The forester must now become in addition a manager of socio-economic systems, and also be sufficiently conversant with agriculture and animal husbandry to be able to relate them to the broader needs of rural development.

Education, training and preparation for this broadened profession has to be rather different from the conventional patterns. Besides the biology of trees, the ecology of forests, and the uses of forest products, the student needs to learn enough about agriculture and the social sciences to have some insight into the life of forest dwellers and farming

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44/ M. Allaouai. L'Administration forestière, les populations et les exigences du développement, Eighth World Forestry Congress, Jakarta, p. 7.

45/ D. Kamweti. Law and Forest Management in Kenya (M.Sc. thesis, University of Oxford, 1979).

46/ David Palin. A Comparative Study of Public Forestry Administration in the Asia-Pacific Region, FAO, Rome (in preparation).

communities, and enough about the theory and techniques of communication to make imaginative use of all the means of informing and persuading people. On the technical side, more attention should be given to fuelwood production, to forest foods and forage, and to fast-growing trees suitable for planting outside forests and capable of supplying fuel, food, fodder and other rural needs. This may require some substantial changes in the syllabuses of university faculties and institutes where forestry is taught.

Possession of the appropriate expertize will not in itself ensure that a forest service has the essential capacity to organize forestry development. Its organizational structure must also be appropriate to the task. With so much of forest land in the ownership of the state, in most countries the task of the forest administration will remain primarily that of a manager of public land and of the resources of that land. The management objectives of producing a sustained output of wood raw material for industry, and of maintaining environmental stability, remain as important as ever. Many of the main organizational issues facing forest administrations stem from these continuing management tasks. They include how best to control the use of large remote areas with limited resources of trained manpower, and how to ensure the continuity of financing necessary for the orderly development of such a long-term activitiy as industrial forestry 47/.

There are a number of alternative approaches for effectively accommodating within an organizational structure the social objective that has been added to the production and protection objectives of forest management. An example is the multiple uses of its forest land that the Indonesian State Forest Corporation has developed in order to broaden the range of benefits accruing to local people. Alternatively, new institutional arrangements can be envisaged. For example, state-owned land may (without any change of ownership) be placed at the disposition of local authorities to be managed in the local interest. This is the solution adopted in Senegal, with the transfer of responsibility to the Local Community Councils. In such cases the forester is answerable to the local authority. A more definitive step with similar implications is the transfer of titular ownership to the local authority. With either arrangement, the forester may either be directly employed by the local authority or seconded to it.

Another alternative would be to entrust the management of forests to organizations of local people, such as farmers' associations and cooperatives. These might be simply marketing organizations, as have quite commonly been formed to handle non-wood forest products, such as mushrooms and resin. They could also be more ambitious, engaging in the harvesting and even processing of the timber, as has occurred under the Social Forestry System in Honduras.

Alongside the task of managing the forests is that of helping to get trees planted outside the forests and collaborating with the agricultural services to promote the combination of trees with crop and livestock production. This should not be seen as the task of a new profession, but as a new job for foresters. Many of the skills required are those that they already possess, while others can be acquired through in-service training and be included in the education of future foresters. The supplies of tree products from outside and inside forests are two parts of a single set of problems. To divide them between two separate corps of specialists would weaken both, and would destroy their unity of action. Moreover, the future of relations with forest neighbours will be greatly improved if the forester is the provider of new benefits as well as the continuing guardian against over-exploitation.

The various ways in which forestry can be adapted to make it more responsive and effective in the context of rural development have in common the growing role of the forester as an extension agent. In many situations, the task of foresters will be to advise and assist others in the planting, tending and utilization of trees, rather than to manage

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47/ FAO. Modernizing institutions to promote forestry development, op. cit.; Louis Velay. Administrative Organization of Forestry in the Developing Countries, FO: FDT/75/5(a), FAO, Rome, July 1978.

them themselves. This does not necessarily mean that a separate forestry extension service should be created, especially as it could heighten the risk of farmers receiving contradictory advice from different sources. Advice on forestry might more effectively be channelled through existing agricultural extension machinery. It does mean, however, that a major challenge facing forest administrations in many countries is that of adding to their existing capability to manage forest land a capability to deliver the necessary support to enable others to grow and manage trees, both within the forest and outside it.

FINANCIAL IMPLICATIONS

If forestry and tree-planting are to play their full part in rural development, they will need a larger share of the government budget than has been customary. The pattern of spending that is required is, however, such as to contribute to both the growth and the distribution of national income. The capital investment required is mainly in works that can be achieved by the rural labour force combined with a small element of imported machinery and equipment. With the use of fast-growing species, returns can be expected in a few years. They should include import savings on food and fuels, as well as providing the basis for export earnings or import savings on wood products.

The extension forester needs to be able to negotiate particular forms of financial and material aid to villagers. One of the main impediments to tree-planting in many areas is the inability to give up the use of any food-producing land, however poor, while waiting for tree products to become available. This may be overcome by offering loans on easy terms or by giving grants or food aid. Where the trees are destined for sale, advance purchase of the crop may be possible. Interim intercropping with food products would also help.

Land rehabilitation and soil conservation programmes in mountainous and semi-arid lands are particularly onerous and require generous help. In most cases the financial burden of restoration work is beyond the economic possibilities of the local people. As such work will result in the protection of human settlements and agricultural lands downstream, it is only right that society as a whole, through the government should share in the cost.

Incentive schemes and conservation programmes to restore degraded land need to be carefully chosen, so as to lead to increased production and to enable farmers to become self-reliant again. Incentives that have been successfully applied in watershed management and soil conservation programmes include tax exemptions, cost-sharing contracts, village revolving funds, village labour banks, the provision of government-paid labour, food for work, subsidies in kind or cash, and preferential rates in irrigation systems and other government services.

FUTURE PERSPECTIVES

The previous pages have given many examples of the ways in which forestry can contribute to rural development and some of the principal factors which have to be taken into account in formulating a programme of action. These contributions are of particular concern to those developing countries where, until recently, it has generally been believed that vast areas of arable soils lay beneath tropical forests, waiting to be exploited by modern methods of agriculture, such as mechanization. The need for the most careful husbandry of these soils, which are often shallow and very fragile, is now being increasingly recognized.

The implementation of forestry policies as an essential and integral part of rural development involves no great technical problems. There is, however, an urgent need to inculcate a far deeper understanding on the part of all concerned, from policy makers to land users, of the importance of trees both within and outside the forests. The opportunity costs of the various uses to which land may be put must be carefully examined; the short term benefits must be weighed against the long-term need to conserve the environment and ensure the optimum and sustained productivity of plants and animals. This is a matter which transcends any local interests and is vital to all sectors of the community, to both rural and urban dwellers alike. The amount of work that will have to be done is immense and adequate popular support will be necessary if the programmes envisaged are to be feasible.

An indication of the scale of activity likely to be required is given by FAO's latest perspective study, Agriculture: Toward 2000. A cautious estimate suggests that fuelwood consumption in the developing market economies may rise by the year 2000 from the present level of about 1,000 million m^3 to some 1,200 m^3, and that, if availability were not a limiting factor, the figure would be closer to 1,900 m^3 48/. If it is assumed that 300 million m^3 would come from using up the living capital of trees and forests, then to replace this capital and make good the shortfall of 700 million m^3, it would be necessary to install capacity to produce the equivalent of an extra 1,000 million m^3 of wood in 20 years. The "average tree" is too fictitious an entity for such figures to be translated into a certain number of trees. However, even making optimistic assumptions about the provision of energy from crop residues, biogas reactors, solar cookers, and other sources, and about improvements in the efficiency of stoves and cooking apparatus, the required extra number of trees would be several thousand million.

The volume of wood required for all other needs in the developing market economy countries is much smaller and is estimated at 550 million m^3. The need for resources in the immediate locality is also less, so that it should be relatively easy to meet the requirements from existing forests, although great efforts will be needed if this is to be achieved on a sustainable basis. However, if most of this wood is to be processed in rural industry, there is a vast task ahead in designing and installing plant, and in training workers, technicians and managers.

The degree of effort required to ensure that trees make their full contribution to integrated land husbandry will vary very greatly from area to area. There is an immense task ahead if 240 million people who are estimated to live by non-continuous cultivation in tropical forests are all to be reached by extension services. They will need to be helped not only with such things as credit and planting stock but also with the means to become settled communities with access to schooling, health facilities and other necessities. In comparison expanding the number of trees over the vast areas of settled agriculture is relatively easier.

48/ FAO. Agriculture: Toward 2000, Rome, 1979, p. 129.

Hardest of all in terms of material organization is no doubt the renovation of mountainous regions ravaged by erosion. To restore depleted and eroded soils and establish a vegetation cover which can fulfil production and protection objectives, it is necessary not just to plant trees or appropriate crops wherever needed, but to treat the land by constructing check dams, bench terraces and other structures to stabilize the soil. To make this possible, radical alterations in the present production systems will often be necessary. At the very minimum, local people will be faced with a transitional period during which their customary practices are severely disrupted. The rehabilitation of mountain watersheds requires enormous labour and material inputs, and the costs are far beyond the resources of the populations of the upland areas. In order to provide the necessary support and incentives, massive outside aid will be needed, much of it from the industrialized countries.

The hardest task in psychological terms is probably that of reintroducing trees in the arid and semi-arid grazing lands of the world, which occupy some 14 million km^2. Although isolated shade trees and relic forests exist and are valued, there is a general belief that the lack of trees is dictated by the climate. There are far too few successful fuelwood plantations to have an impact as demonstrations to the contrary, and fodder orchards are so few that even many foresters and agricultural specialists have never seen one. The widespread combination of collective land ownership with private herd ownership, with the attendant incentive for each grazier to maximize the size of his herd, is an obstacle even to rational pasture management, let alone the planting of trees. The magnitude of the psychological barrier should not, however, discourage determined efforts to introduce change, for these vast areas threaten to turn to desert if not better managed.

ANNEX TABLES

ANNEX TABLE 1. VOLUME OF PRODUCTION OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
WORLD												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	1002185	1204421	1214996	1314690	1275952	1382443	1345660	1377851	1487111	1476265	1593679	2.89
WHEAT	254812	314574	318386	354132	347368	378741	364277	359688	424744	390774	448998	3.46
RICE PADDY	254550	301372	315572	317565	305814	332450	332292	358377	350454	369735	384562	2.62
BARLEY	103974	134605	135222	145620	146865	164199	166770	152376	186950	176320	194839	4.06
MAIZE	220518	268935	262374	303859	300706	311441	293502	324871	332832	346220	363334	3.25
ROOT CROPS	483347	511955	523385	500268	494485	533745	521310	500914	512153	512627	538789	.27
POTATOES	266864	270574	288103	269035	260877	292634	271141	258956	262867	265627	275957	- .37
CASSAVA	76303	95399	97312	97366	99711	100335	103313	107346	110435	114646	120622	2.54
TOTAL PULSES	44535	46965	48224	46805	46717	47901	48223	46463	52287	49189	52337	1.01
CITRUS FRUIT	25458	37044	37595	40229	42692	46424	47359	49419	50194	51856	51904	4.24
BANANAS	22469	29642	30758	31953	31995	32385	33010	32604	33982	35908	37477	2.19
APPLES	22049	28145	28601	28009	26050	29859	28436	32074	32381	30645	32785	1.93
VEGETABLE OILS,OIL EQUIV	29176	33863	36257	37605	37006	40777	40181	43249	41433	46719	49004	3.73
SOYBEANS	32476	45225	46536	48480	51964	62662	57171	69221	62660	78458	80531	6.83
GROUNDNUTS IN SHELL	15865	17168	18471	19239	16387	17432	17851	19733	17891	18005	18967	.57
SUNFLOWER SEED	7349	9892	9938	9785	9599	12073	10949	9392	10137	12076	13112	2.40
RAPESEED	4293	5006	6727	8116	6766	7203	7168	8545	7664	8322	11089	5.64
COTTONSEED	20213	21508	22279	23676	25277	25665	26422	22978	22746	25782	24469	1.05
COPRA	3700	3778	3904	3831	4022	3728	3972	4285	4478	4538	4617	2.39
PALM KERNELS	1087	1075	1178	1222	1199	1176	1351	1375	1443	1480	1422	3.39
SUGAR (CENTRIFUGAL,RAW)	56567	66292	72738	73540	72252	76940	76178	79481	83733	89730	90561	3.20
COFFEE GREEN	4383	4249	3876	4650	4572	4198	4718	4652	3550	4257	4600	.12
COCOA BEANS	1253	1366	1541	1602	1454	1366	1552	1544	1375	1436	1473	- .17
TEA	1085	1269	1308	1320	1422	1462	1487	1547	1586	1750	1792	3.91
COTTON LINT	10931	11568	11804	12658	13604	13811	13897	12294	12097	13913	13152	1.09
JUTE AND SIMILAR FIBRES	3386	3737	3584	3336	3751	4005	3210	3267	3476	3745	4519	.97
SISAL	642	648	619	668	672	638	680	603	420	466	423	- 4.96
TOBACCO	4381	4620	4673	4541	4868	4937	5301	5416	5638	5506	5688	2.76
NATURAL RUBBER	2185	2993	2962	3036	3011	3429	3422	3522	3739	3576	3684	2.89
TOTAL MEAT	84248	102242	106889	110639	113444	114618	120921	122834	126507	130615	134674	2.98
TOTAL MILK	358021	397680	399238	401365	411561	417922	425876	429916	437799	450083	457340	1.64
TOTAL EGGS	16717	20456	21363	21991	22565	22756	23332	23976	24410	25231	26218	2.53
WOOL GREASY	2617	2802	2844	2784	2735	2574	2537	2638	2596	2580	2603	- 1.10
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	5609	6777	6970	7044	7092	7391	7388	7716	7513	7684	7736	1.50
MARINE FISH	35842	48276	54309	53882	49303	49402	53188	52443	55709	54100	55220	.98
CRUST+ MOLLUS+ CEPHALOP	4398	5314	5555	5695	5969	6090	6254	6654	7008	7458	7746	4.24
AQUATIC MAMMALS	25	31	25	22	17	11	11	12	13	13	6	-13.34
AQUATIC ANIMALS	72	82	215	145	152	255	136	140	143	234	263	6.33
AQUATIC PLANTS	1176	1340	1533	1985	2126	2187	2469	2331	2392	2855	2967	8.09
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	499485	535024	549702	570191	564456	589603	565572	542046	601092	613817	617014	1.32
SAWLOGS NONCONIFEROUS	169795	200098	207067	209360	219311	236977	224455	209963	229878	235234	245063	1.83
PULPWOOD+PARTICLES	221490	290921	314210	308640	302669	324069	354866	318846	319996	312151	314086	.65
FUELWOOD	1028669	1082873	1090623	1106727	1114588	1124867	1153883	1169576	1201191	1197593	1217976	1.40
SAWNWOOD CONIFEROUS	276686	310761	312182	325422	332508	339034	321432	305251	329393	338649	340104	.69
SAWNWOOD NONCONIFEROUS	77757	93296	92599	94158	95690	99148	97723	92640	98175	97426	100443	.68
WOOD-BASED PANELS	40383	65576	69785	78202	87562	95416	88047	84804	95701	100158	102427	4.57
PULP FOR PAPER	69049	99064	102997	103167	109064	115431	119341	104818	114475	116243	120933	1.88
PAPER+PAPERBOARD	86711	123926	128057	129815	138747	148353	151287	132257	148651	153739	160025	2.54
WESTERN EUROPE												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	109385	134015	128242	148326	148056	150834	158950	146863	142314	153274	168208	1.91
WHEAT	44565	50132	47491	56463	56023	55491	62768	52960	57131	53467	64099	1.87
RICE PADDY	1397	1673	1596	1598	1411	1784	1729	1703	1534	1337	1683	- .51
BARLEY	27480	39394	36028	42118	44151	45077	47558	45670	42575	51213	55285	3.53
MAIZE	14236	21731	23354	25571	25442	28940	26253	27411	24098	29596	28198	2.35
ROOT CROPS	72458	60263	63224	60845	56419	56535	58535	47486	45091	55030	53005	- 2.46
POTATOES	72269	60117	63080	60698	56272	56395	58391	47346	44942	54882	52860	- 2.47
TOTAL PULSES	2593	2533	2436	2257	2038	1966	2066	1901	1632	1691	1738	- 4.57
CITRUS FRUIT	4114	5911	5220	5585	6480	6537	6666	6737	6798	6668	6572	2.32
BANANAS	372	470	456	459	406	480	426	385	362	422	431	- 1.68
APPLES	10199	12161	11591	10666	8959	11591	9908	11473	10200	7684	10541	- 2.28
VEGETABLE OILS,OIL EQUIV	1709	1898	2020	2247	2226	2426	2249	2627	2141	2654	2761	3.36
SOYBEANS	9	6	8	7	9	26	59	47	56	78	87	41.27

1/ NOMINAL CATCH (LIVE WEIGHT) EXCLUDING WHALES
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 1. VOLUME OF PRODUCTION OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
GROUNDNUTS IN SHELL	26	16	17	18	16	18	16	19	17	19	20	1.69
SUNFLOWER SEED	247	482	490	668	666	842	692	858	773	1020	1148	9.01
RAPESEED	549	976	1104	1324	1462	1456	1608	1334	1388	1338	1720	4.03
COTTONSEED	356	340	323	326	379	333	365	335	303	341	330	- .33
SUGAR (CENTRIFUGAL,RAW)	8589	11158	10739	12459	11596	12246	11168	12902	13802	15434	15444	3.83
COTTON LINT	191	178	170	169	192	171	187	169	152	177	170	- .57
JUTE AND SIMILAR FIBRES	1											
TOBACCO	313	294	317	304	334	350	329	401	445	391	402	4.12
TOTAL MEAT	16523	20149	21451	22318	22182	22728	24681	24609	25079	25721	26599	2.92
TOTAL MILK	111415	119435	117991	117740	122551	124315	125464	126667	129156	131847	135650	1.52
TOTAL EGGS	3740	4480	4748	4744	4925	4825	4860	4987	5049	5107	5201	1.35
WOOL GREASY	189	166	163	162	160	163	167	149	154	151	158	- .89
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	147	160	157	164	165	172	175	178	179	179	185	1.78
MARINE FISH	7950	9380	9958	10002	10009	10160	10146	9775	10888	10929	10224	1.08
CRUST+ MOLLUS+ CEPHALOP	631	802	795	854	961	1014	970	1034	960	969	961	2.32
AQUATIC ANIMALS	8	4	6	7	2	5	5	2	7	5	12	5.81
AQUATIC PLANTS	124	132	135	133	126	129	147	117	109	104	136	- 1.59
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	71480	79302	84900	86262	85086	95978	93409	74275	84772	86624	88357	.36
SAWLOGS NONCONIFEROUS	20836	23451	24645	23146	22488	24621	23697	20565	20244	21899	23286	- 1.12
PULPWOOD+PARTICLES	61562	74023	83637	87070	76297	76495	84761	82782	76206	69997	72770	- 1.04
FUELWOOD	64493	43432	41631	38687	34167	30729	30581	28332	29034	25734	24969	- 6.08
SAWNWOOD CONIFEROUS	40640	46085	47754	49365	49779	53441	51715	42943	47349	48922	48888	.01
SAWNWOOD NONCONIFEROUS	9659	11533	11973	12587	12499	13134	12292	10524	11621	12460	12496	.01
WOOD-BASED PANELS	9870	16548	17866	19525	22407	25332	24340	22756	25272	25265	25540	4.73
PULP FOR PAPER	17405	23533	24642	23705	24969	26847	27498	23126	24097	23252	24724	- .05
PAPER+PAPERBOARD	23412	33548	34855	34435	36580	39962	41196	33222	38300	38991	41277	1.79
USSR AND EASTERN EUROPE												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	172035	217180	234744	242644	235192	287635	263354	208451	293823	265909	312355	2.86
WHEAT	78994	100614	118985	123455	111857	136681	111752	90307	125562	120811	151358	1.85
RICE PADDY	510	1298	1470	1641	1826	1961	2096	2231	2130	2385	2259	6.47
BARLEY	26619	41531	46770	44993	47886	66993	68374	49605	83287	67032	78059	7.16
MAIZE	24582	27582	23178	24468	29089	29998	28228	27706	30919	30920	29090	2.12
ROOT CROPS	148036	155384	169291	152576	149907	181029	153757	151141	152743	145245	154418	- .76
POTATOES	148034	155381	169288	152572	149904	181025	153754	151137	152741	145242	154416	- .76
TOTAL PULSES	8680	8877	8638	7949	7917	9202	9587	6153	9327	8227	8592	- .33
CITRUS FRUIT	39	46	140	42	56	58	126	158	132	231	200	17.38
APPLES	3856	6361	7377	7343	6934	8196	7348	8744	10436	11012	9213	5.28
VEGETABLE OILS,OIL EQUIV	3522	4275	4461	4412	4068	5120	4842	4311	4503	4741	4519	.70
SOYBEANS	400	485	693	715	457	711	710	1111	834	861	1012	7.25
GROUNDNUTS IN SHELL	1	2	2	2	3	3	3	5	4	4	5	12.44
SUNFLOWER SEED	6032	7787	7437	7090	6546	8768	7978	6328	6652	7385	6784	- 1.09
RAPESEED	573	441	861	973	834	966	983	1311	1531	1284	1306	10.32
COTTONSEED	3332	3737	4450	4643	4779	5009	5501	5137	5401	5717	5550	3.94
SUGAR (CENTRIFUGAL,RAW)	11752	12646	12925	11959	12746	13758	11817	12113	11597	13878	13953	.56
TEA	45	60	67	69	71	75	81	86	92	106	111	6.85
COTTON LINT	1722	1934	2146	2371	2382	2496	2497	2667	2597	2708	2743	3.43
JUTE AND SIMILAR FIBRES	41	53	50	57	56	45	39	36	49	47	44	- 2.62
TOBACCO	421	503	536	522	614	615	608	649	700	610	566	2.20
TOTAL MEAT	14615	18250	18811	20166	21208	21505	23318	24094	22347	23837	25106	3.39
TOTAL MILK	93565	115484	117086	117626	119226	125720	130155	128754	127678	134500	135226	1.88
TOTAL EGGS	2629	3327	3612	3925	4104	4340	4641	4826	4766	5152	5385	5.19
WOOL GREASY	440	482	510	519	513	527	558	566	534	567	578	1.75
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	791	1039	1204	1272	1177	1200	1072	1338	1068	1088	1038	- .80
MARINE FISH	3675	6236	6914	7010	7597	8505	9393	9997	10333	9227	8768	4.94
CRUST+ MOLLUS+ CEPHALOP	114	123	114	119	102	105	131	158	109	248	221	7.42
AQUATIC ANIMALS		1	5	5	5	5	2	5	2	2	15	5.60
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	167917	157863	166303	166373	167416	165178	163360	171306	166649	164012	158582	.01
SAWLOGS NONCONIFEROUS	33351	33716	35080	35640	35650	35065	34896	36349	35177	35004	34472	.10
PULPWOOD+PARTICLES	27342	40593	44660	46125	47240	59446	62358	58856	57586	57256	55436	3.93
FUELWOOD	117985	103536	101654	101436	100803	97664	98072	95262	95937	94038	91801	- 1.25
SAWNWOOD CONIFEROUS	107344	113076	116480	119217	119356	117331	116371	117613	114640	110953	108500	- .58
SAWNWOOD NONCONIFEROUS	19999	19808	20371	20774	20772	20524	20382	20492	20057	19632	19252	- .45

1/ NOMINAL CATCH (LIVE WEIGHT) EXCLUDING WHALES
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 1. VOLUME OF PRODUCTION OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
WOOD-BASED PANELS	5266	9155	9899	10711	11412	12644	13866	15157	15798	16728	17076	7.65
PULP FOR PAPER	5653	8098	8978	9397	9564	9961	10719	11066	11613	11946	12351	4.57
PAPER+PAPERBOARD	6778	9773	10587	11098	11648	12288	12814	13495	13930	14261	14495	4.49
NORTH AMERICA DEVELOPED												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	197287	241251	215381	276549	263650	274328	235445	286003	302434	306194	314761	3.32
WHEAT	48404	57532	45808	58465	56596	62720	61792	74843	81894	75282	70067	4.82
RICE PADDY	3084	4169	3801	3890	3875	4208	5098	5825	5246	4501	6040	4.61
BARLEY	12536	17382	17949	23167	20478	19314	15306	17672	18624	20949	20170	.40
MAIZE	96634	120939	108105	146367	144262	146845	121997	151706	162927	167410	184041	4.55
ROOT CROPS	15134	17185	17891	17081	15873	16225	18656	17431	19191	19206	19673	1.66
POTATOES	14454	16543	17289	16555	15316	15669	18046	16827	18578	18586	19021	1.69
TOTAL PULSES	1161	1217	1098	1119	1115	1015	1303	1146	1112	997	1296	.12
CITRUS FRUIT	6678	10174	10292	11135	11031	12604	12167	13237	13415	13827	12932	3.50
BANANAS	4	3	3	3	3	3	3	3	2	3	2	- 1.67
APPLES	3101	3537	3307	3282	3059	3216	3391	3876	3348	3438	3918	1.25
VEGETABLE OILS,OIL EQUIV	5471	7573	8039	8248	8612	9941	8107	9851	8254	11835	12915	4.79
SOYBEANS	19741	31048	30958	32288	34956	42514	33383	42445	35293	48475	51414	5.26
GROUNDNUTS IN SHELL	890	1150	1353	1363	1485	1576	1664	1750	1701	1690	1809	4.52
SUNFLOWER SEED	33	96	111	273	411	394	282	386	413	1411	1959	32.57
RAPESEED	279	758	1638	2155	1300	1207	1164	1749	838	1974	3498	7.02
COTTONSEED	5556	3690	3690	3846	4892	4550	4091	2919	3739	5009	3873	.47
SUGAR (CENTRIFUGAL,RAW)	4702	5200	5383	5581	5898	5329	5048	6443	6170	5403	5482	.74
COFFEE GREEN	3	1	2	1	1	1	1	1	1	1	1	- 9.43
COTTON LINT	3245	2175	2219	2281	2984	2825	2513	1807	2304	3133	2364	.97
TOBACCO	1065	930	965	875	878	907	1019	1096	1050	972	1033	1.64
TOTAL MEAT	20098	23854	24850	25700	25621	24611	26106	25405	27586	27867	27833	1.57
TOTAL MILK	65355	61161	61388	61712	62468	60052	60062	60066	62246	63405	62928	.25
TOTAL EGGS	4116	4301	4372	4444	4385	4213	4186	4125	4135	4140	4275	- .60
WOOL GREASY	129	90	87	84	81	73	65	60	54	51	47	- 7.39
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	375	321	411	354	319	338	309	264	329	356	395	- .10
MARINE FISH	2597	2537	2661	2673	2488	2485	2374	2411	2604	2523	2973	.48
CRUST+ MOLLUS+ CEPHALOP	979	976	1033	1038	1022	1013	1057	1075	1164	1272	1344	3.14
AQUATIC ANIMALS	3	5	4	2	2	4	6	6	6	9	11	15.00
AQUATIC PLANTS	25	56	56	184	182	180	224	198	189	195	196	13.29
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	197633	227771	227741	246128	239166	255365	237683	222108	270487	280998	287058	2.29
SAWLOGS NONCONIFEROUS	37834	38827	38931	38424	41002	41472	37932	32125	36652	37629	39116	- .74
PULPWOOD+PARTICLES	112192	144216	150005	137726	142366	149291	165000	132931	139779	135858	135858	- .76
FUELWOOD	39723	24862	19430	17894	16836	17623	17672	17217	18768	17832	17832	- 1.97
SAWNWOOD CONIFEROUS	86799	95252	90379	100139	104867	109561	96191	88181	106512	113630	115435	1.83
SAWNWOOD NONCONIFEROUS	17022	21376	18172	17556	17346	17896	17626	14831	16373	16613	18801	- 1.57
WOOD-BASED PANELS	19557	26529	26314	31054	34656	36275	31038	28739	33861	35760	35977	2.83
PULP FOR PAPER	36420	52316	52576	52624	56078	58644	59779	50410	56890	58086	60648	1.29
PAPER+PAPERBOARD	42670	57997	57370	58270	62859	64974	64617	54919	62913	64947	66681	1.28
OCEANIA DEVELOPED												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	11351	15171	13479	15585	11672	17795	16974	18419	18374	15312	26220	4.94
WHEAT	8470	11005	8177	8932	6979	12363	11572	12162	12213	9724	18579	5.66
RICE PADDY	136	255	247	300	248	309	409	388	417	530	490	9.17
BARLEY	1076	1931	2525	3324	2062	2655	2755	3442	3132	2655	4254	5.44
MAIZE	193	200	251	313	330	257	194	291	316	355	305	3.45
ROOT CROPS	808	1125	1068	1032	1074	1003	888	1007	984	1037	1045	- .86
POTATOES	803	1116	1059	1023	1064	991	876	997	975	1028	1037	- .87
TOTAL PULSES	49	84	80	94	129	93	127	157	191	106	123	6.14
CITRUS FRUIT	247	299	394	372	436	402	434	458	428	461	485	3.94
BANANAS	126	131	131	128	124	125	118	103	115	98	112	- 2.73
APPLES	432	535	565	569	511	574	487	527	447	447	444	- 2.75
VEGETABLE OILS,OIL EQUIV	22	38	59	73	111	85	93	98	74	86	146	9.28
SOYBEANS	1	2	5	9	34	38	64	74	45	55	77	45.27
GROUNDNUTS IN SHELL	18	17	43	31	46	38	29	32	35	32	39	2.90
SUNFLOWER SEED	2	6	13	59	148	102	84	113	80	75	158	28.82
RAPESEED		4	34	55	25	11	9	12	9	16	21	- 1.95
COTTONSEED	7	55	48	31	73	53	50	54	41	46	72	1.45
SUGAR (CENTRIFUGAL,RAW)	1801	2214	2525	2793	2835	2526	2848	2855	3296	3344	2902	3.31

1/ NOMINAL CATCH (LIVE WEIGHT) EXCLUDING WHALES
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 1. VOLUME OF PRODUCTION OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
					THOUSAND METRIC TONS							PERCENT
COTTON LINT	4	32	29	20	44	31	31	50	25	28	44	2.54
TOBACCO	18	21	22	23	19	20	20	18	18	19	19	- 1.97
TOTAL MEAT	2442	2877	3053	3203	3544	3633	3215	3512	3985	4057	4325	4.08
TOTAL MILK	12522	13821	13666	13235	13853	12973	12561	12819	13025	12469	11496	- 1.59
TOTAL EGGS	194	234	247	259	267	265	259	268	263	264	274	1.19
WOOL GREASY	1062	1215	1251	1225	1202	1044	986	1088	1066	1005	988	- 2.66
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	1	2	2	3	4	4	4	5	4	5	5	11.66
MARINE FISH	69	80	97	93	93	116	122	97	110	131	136	4.92
CRUST+ MOLLUS+ CEPHALOP	45	59	65	81	79	70	77	70	72	74	80	1.63
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	5552	7557	7801	7576	7912	8339	6537	6356	7595	7178	6913	- 1.37
SAWLOGS NONCONIFEROUS	7275	7261	6992	7457	6984	6902	7240	6490	6631	6518	6336	- 1.49
PULPWOOD+PARTICLES	2260	3284	3557	3745	3640	5374	5006	7613	7191	8596	8335	12.86
FUELWOOD	3665	3002	2776	2776	2719	2402	2850	1870	1250	1250	1250	-10.56
SAWNWOOD CONIFEROUS	2272	2462	2540	2312	2515	2836	2882	2821	3067	2917	2882	2.55
SAWNWOOD NONCONIFEROUS	2481	2510	2531	2637	2497	2482	2533	2505	2430	2340	2189	- 1.30
WOOD-BASED PANELS	416	686	789	800	748	933	988	920	1054	1043	1070	4.98
PULP FOR PAPER	623	996	1075	1090	1127	1326	1505	1524	1660	1714	1697	7.02
PAPER+PAPERBOARD	889	1368	1514	1540	1546	1686	1732	1697	1761	1890	1893	3.36
AFRICA DEVELOPING												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	37084	42600	41941	43592	44854	39230	45726	44455	48016	43108	47715	1.11
WHEAT	4070	4223	4853	5347	5873	4456	4939	4659	5700	3796	4538	- .81
RICE PADDY	3436	4644	4762	4887	4803	4977	5388	5531	5649	5678	5991	2.92
BARLEY	2783	3318	3426	3860	4133	2634	3611	2862	4681	2506	3666	- .68
MAIZE	10153	12698	12003	12788	13482	11937	14084	14392	14456	13801	15084	2.14
ROOT CROPS	53290	66366	67345	67358	68595	70310	73073	74407	75665	76442	77118	1.90
POTATOES	1362	1700	1818	1871	2088	2234	2303	2545	2566	2498	2685	5.31
CASSAVA	30779	37613	39284	38140	39261	39969	41326	42585	43272	43316	42770	1.68
TOTAL PULSES	3299	4208	4470	3966	4310	4099	4522	4657	4918	4325	4598	1.20
CITRUS FRUIT	1510	2053	2309	2150	2245	2422	2446	2213	2313	2441	2326	1.13
BANANAS	2943	3400	3709	3522	3410	3581	3881	3797	4030	4027	4131	2.08
APPLES	37	38	37	42	43	47	49	56	49	58	57	5.18
VEGETABLE OILS,OIL EQUIV	3772	3818	3886	4259	3726	3600	3857	4094	3982	3748	3837	- .12
SOYBEANS	64	70	67	72	73	75	77	76	85	90	89	3.22
GROUNDNUTS IN SHELL	4732	4954	4513	5013	4024	3400	3960	4181	4318	3469	3956	- 2.60
SUNFLOWER SEED	31	39	61	51	79	72	65	64	76	83	79	6.07
RAPESEED	20	20	20	20	20	20	20	20	20	20	20	-
COTTONSEED	616	1046	1123	956	1023	953	963	900	944	861	890	- 2.24
COPRA	145	149	151	151	143	152	149	148	168	170	167	1.51
PALM KERNELS	811	680	725	728	667	616	722	707	684	682	582	- 1.09
SUGAR (CENTRIFUGAL,RAW)	1783	2520	2550	2770	2872	2956	2946	2743	3128	3115	3293	2.63
COFFEE GREEN	962	1253	1312	1251	1297	1383	1254	1301	1169	1201	1055	- 1.56
COCOA BEANS	930	999	1115	1178	1035	963	1018	998	858	941	899	- 2.26
TEA	62	111	120	118	148	153	149	148	156	190	192	5.92
COTTON LINT	313	546	581	504	528	517	495	494	521	488	471	- 1.57
JUTE AND SIMILAR FIBRES	13	20	18	14	12	12	11	11	8	8	8	-10.45
SISAL	408	390	365	342	332	330	338	245	218	204	188	- 8.00
TOBACCO	195	152	164	183	192	175	200	210	217	205	188	2.90
NATURAL RUBBER	160	187	224	225	221	229	241	221	198	204	218	.10
TOTAL MEAT	2959	3553	3670	3625	3611	3625	3665	3781	3920	4095	4219	1.75
TOTAL MILK	5584	6738	6788	6892	6858	6718	6729	7085	7313	7522	7801	1.49
TOTAL EGGS	308	384	393	404	406	416	435	461	494	520	536	3.96
WOOL GREASY	47	59	55	54	60	66	62	63	65	65	67	2.03
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	683	987	1212	1190	1298	1337	1315	1355	1405	1447	1488	3.62
MARINE FISH	883	1269	1488	1562	1934	1930	1814	1548	1514	1604	1663	1.26
CRUST+ MOLLUS+ CEPHALOP	13	34	32	36	42	42	55	55	60	55	68	8.75
AQUATIC ANIMALS	1	3	1	2	1	1	1	1	1	1	1	- 6.84
AQUATIC PLANTS	3	3	7	6	6	7	5	6	51	5	5	9.52
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	553	845	918	1042	1014	1042	1051	1046	1085	1108	1093	2.41
SAWLOGS NONCONIFEROUS	9892	14880	14734	15306	15681	17506	15393	14540	16403	17340	16265	1.18
PULPWOOD+PARTICLES	514	894	958	1307	1428	1375	1498	2137	2213	2194	2309	11.71
FUELWOOD	211415	247670	255543	261283	262233	269535	278070	286189	293129	300994	308467	2.45
SAWNWOOD CONIFEROUS	259	344	383	408	411	401	417	432	483	435	430	2.41
SAWNWOOD NONCONIFEROUS	1789	2545	2645	2733	2592	3062	3380	3391	3462	3602	3468	4.36
WOOD-BASED PANELS	266	466	534	600	694	737	759	644	671	725	721	3.98

1/ NOMINAL CATCH (LIVE WEIGHT) EXCLUDING WHALES
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 1. VOLUME OF PRODUCTION OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	...THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
PULP FOR PAPER	121	221	231	239	255	281	290	305	297	325	335	4.82
PAPER+PAPERBOARD	92	156	172	180	184	186	196	217	219	258	257	5.53
LATIN AMERICA												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	53136	64097	71247	72583	67856	74521	78198	80324	86046	86253	85238	3.27
WHEAT	11757	12397	11510	11568	12432	12084	13474	14971	19336	11537	14835	2.99
RICE PADDY	9018	10158	11820	10711	10881	11791	12218	14073	15420	15141	13437	4.26
BARLEY	1427	1314	1173	1389	1778	1665	1249	1556	1883	1399	1777	2.94
MAIZE	26974	33137	38073	39426	35139	37514	39426	38058	37236	43789	40290	1.68
ROOT CROPS	36878	48569	48648	49857	48286	44641	44537	45207	44684	45461	46469	- .98
POTATOES	7553	9181	9552	9444	8383	8584	9969	9261	9741	10118	10862	1.54
CASSAVA	25746	34886	34612	35817	35390	31898	30793	32013	31233	31932	31683	- 1.47
TOTAL PULSES	3790	4250	4391	4886	4886	4548	4656	4713	3937	4450	4606	- .21
CITRUS FRUIT	6128	8610	8615	9551	9855	11288	12196	13005	14028	14402	15591	7.40
BANANAS	11539	15780	16248	16937	17434	17036	17161	16822	17573	18373	18046	1.31
APPLES	786	822	849	882	912	680	1296	1090	1207	1328	1512	7.13
VEGETABLE OILS,OIL EQUIV	2292	2760	3076	3023	3235	3577	4224	4404	4692	5380	5234	8.17
SOYBEANS	459	1509	1926	2573	3886	6100	9180	11410	12643	14956	12927	31.57
GROUNDNUTS IN SHELL	1167	1176	1394	1573	1445	1243	977	1045	1054	1139	952	- 3.88
SUNFLOWER SEED	727	967	1221	926	917	969	1033	804	1191	952	1705	2.64
RAPESEED	57	71	77	91	85	46	41	68	111	91	60	- .11
COTTONSEED	2766	3075	2902	2492	3013	3016	3319	2856	2381	3253	3113	.38
COPRA	265	224	227	244	237	202	229	224	231	232	245	.38
PALM KERNELS	202	249	283	278	280	282	290	279	341	312	311	2.29
SUGAR (CENTRIFUGAL,RAW)	17166	18716	23424	21834	21044	23342	24523	23817	25955	27216	27077	3.49
COFFEE GREEN	3163	2660	2198	2990	2909	2449	3094	2915	1941	2587	3013	.21
COCOA BEANS	288	327	385	379	373	361	477	481	454	436	505	4.16
TEA	14	29	34	40	41	40	44	52	44	47	39	3.76
COTTON LINT	1539	1696	1574	1390	1677	1669	1857	1512	1332	1823	1740	.51
JUTE AND SIMILAR FIBRES	71	73	64	66	81	115	77	92	110	102	87	4.55
SISAL	214	233	233	307	328	293	323	340	187	248	222	- 1.38
TOBACCO	496	540	540	536	568	565	676	675	715	748	800	4.94
NATURAL RUBBER	30	30	31	30	32	28	24	25	26	30	31	- .83
TOTAL MEAT	8326	10611	10677	10109	10640	10858	11182	11741	12503	13054	13398	3.01
TOTAL MILK	20397	24789	25103	25990	26904	27058	28683	30924	32717	32844	34857	4.07
TOTAL EGGS	933	1321	1402	1467	1544	1645	1710	1817	1891	1937	2012	4.87
WOOL GREASY	344	352	339	322	309	299	291	294	300	305	325	- 1.19
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	215	263	154	161	199	201	286	275	246	277	256	4.51
MARINE FISH	8424	11149	14740	13262	6843	4558	6810	5968	7523	6150	7669	- 7.20
CRUST+ MOLLUS+ CEPHALOP	275	387	433	431	457	444	440	452	515	472	550	2.84
AQUATIC ANIMALS	8	16	67	38	60	49	34	47	21	59	50	3.24
AQUATIC PLANTS	45	91	88	74	79	81	90	80	92	112	89	1.73
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	11014	14928	16237	16603	16815	16359	16315	19171	21673	23837	25197	5.68
SAWLOGS NONCONIFEROUS	14729	16245	17357	18598	18652	19550	19879	21753	22827	23614	24408	4.54
PULPWOOD+PARTICLES	4166	7580	8512	8746	9056	9080	9866	11556	12913	13667	16055	8.09
FUELWOOD	157561	169789	172545	176813	179089	180080	187951	188826	192153	195927	199342	1.80
SAWNWOOD CONIFEROUS	5275	6994	7420	7405	7692	7063	7430	9051	9739	10566	11099	5.31
SAWNWOOD NONCONIFEROUS	6596	7973	8035	8434	8076	8443	8778	9705	10788	11802	12117	5.15
WOOD-BASED PANELS	770	1467	1659	1937	2397	2574	2671	2837	3158	3289	3402	9.75
PULP FOR PAPER	1109	1920	2137	2215	2453	2674	2974	2828	3250	3691	4144	8.33
PAPER+PAPERBOARD	2105	3409	3787	4069	4241	4694	5230	4819	5276	5809	6161	6.32
NEAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	36594	43117	40063	44312	46903	40566	44850	51847	55981	51946	54257	3.36
WHEAT	17623	21179	19999	23105	25947	21221	24339	28374	31278	29254	30532	4.89
RICE PADDY	3407	4524	4482	4535	4583	4446	4304	4602	4742	4556	4553	.23
BARLEY	6657	7392	6004	6400	7275	5197	6271	7859	8941	7554	7925	2.66
MAIZE	3650	4257	4215	4268	4265	4536	4841	5028	5453	5099	5535	3.38
ROOT CROPS	3245	3826	3848	3997	4338	4587	4615	4966	5758	5880	5771	5.54
POTATOES	2753	3407	3475	3625	3956	4250	4239	4537	5329	5468	5355	5.98
CASSAVA	200	130	110	105	100	92	92	130	120	115	110	.16
TOTAL PULSES	1545	1672	1493	1613	1827	1519	1748	1635	1871	1889	1805	1.76
CITRUS FRUIT	1428	2261	2336	2669	2769	2908	3056	3096	3114	3321	3491	4.67
BANANAS	195	241	232	260	275	276	297	293	282	305	303	2.86
APPLES	560	853	991	1133	1286	1245	1334	1393	1624	1585	1690	7.25
VEGETABLE OILS,OIL EQUIV	924	1089	1194	1237	1552	1250	1556	1426	1528	1440	1550	3.40

1/ NOMINAL CATCH (LIVE WEIGHT) EXCLUDING WHALES
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 1. VOLUME OF PRODUCTION OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
					THOUSAND METRIC TONS							PERCENT
SOYBEANS	5	14	18	18	24	30	47	82	122	119	214	36.49
GROUNDNUTS IN SHELL	418	499	447	502	684	656	1036	1040	957	1145	924	10.90
SUNFLOWER SEED	118	347	435	511	613	616	484	541	587	505	529	3.02
RAPESEED	6	8	3	3	1	1	1		6	14	13	9.03
COTTONSEED	2140	2617	2570	2813	2941	2780	3037	2524	2396	2645	2415	- 1.02
SUGAR (CENTRIFUGAL,RAW)	1128	1751	1877	2331	2194	2221	2327	2458	2846	2652	2576	4.51
COFFEE GREEN	6	5	5	5	5	5	5	4	4	4	4	- 2.42
TEA	22	53	53	50	69	66	67	77	82	104	119	9.37
COTTON LINT	1193	1524	1490	1630	1699	1608	1763	1453	1379	1589	1491	- .58
JUTE AND SIMILAR FIBRES	6	10	18	19	15	15	12	14	14	13	13	- 1.39
TOBACCO	178	198	204	235	241	214	238	244	371	296	340	6.20
TOTAL MEAT	1899	2308	2363	2432	2465	2582	2720	2815	2962	3104	3223	3.93
TOTAL MILK	10155	11362	11172	11207	11597	11986	12451	12900	13379	13623	14369	2.92
TOTAL EGGS	222	314	325	343	383	401	419	466	505	574	613	7.91
WOOL GREASY	133	158	155	149	151	152	160	164	167	170	178	1.59
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	111	132	129	123	130	130	127	135	134	136	140	.87
MARINE FISH	346	408	496	488	513	500	632	675	634	557	551	3.63
CRUST+ MOLLUS+ CEPHALOP	22	31	23	26	34	36	34	32	41	44	44	6.03
AQUATIC MAMMALS	1	8	5	4	3	3	2	2	2	2	2	-14.08
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	1967	3461	3269	3689	3624	4259	4569	4770	4778	5188	5119	5.57
SAWLOGS NONCONIFEROUS	832	1445	1263	1416	1775	1626	1805	1287	1314	1769	1796	1.89
PULPWOOD+PARTICLES	151	438	874	672	960	1133	1363	869	906	1732	1738	11.91
FUELWOOD	33129	40256	38981	38541	39520	37000	39954	41394	48761	46195	46881	2.42
SAWNWOOD CONIFEROUS	1067	2167	2194	2190	2179	2303	2293	2271	2902	2961	2930	3.92
SAWNWOOD NONCONIFEROUS	389	610	672	579	711	750	733	693	646	816	824	2.77
WOOD-BASED PANELS	137	306	322	349	389	406	428	509	613	761	781	11.63
PULP FOR PAPER	94	144	177	290	349	437	394	338	327	352	356	8.41
PAPER+PAPERBOARD	190	291	329	413	515	595	606	638	658	718	715	10.55
FAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	163227	202099	211751	209323	200193	225266	211564	238923	233816	252551	267079	2.93
WHEAT	15769	25898	28063	30909	33880	32774	29984	32447	38340	38957	41056	4.52
RICE PADDY	114943	138969	141719	142169	132840	150945	143685	162887	152915	171812	181247	2.87
BARLEY	3902	4235	4461	4444	4334	3979	3947	5021	5131	3325	3823	- 1.10
MAIZE	11027	13119	16063	13727	13732	15511	15268	17424	16232	15691	17812	2.53
ROOT CROPS	30207	36667	36686	37258	38150	41159	43748	46891	49964	51880	58539	5.47
POTATOES	4342	6845	6048	7032	6854	6552	6948	8710	9773	9465	10292	5.75
CASSAVA	17043	19812	20236	20037	21492	24724	27400	28822	31261	33908	39778	8.26
TOTAL PULSES	13414	12434	13894	13266	12732	12725	11486	12450	14627	13771	13853	.75
CITRUS FRUIT	1903	2158	2173	2197	2207	2341	2446	2621	2684	2853	2984	3.94
BANANAS	5570	7407	7845	8504	8262	8707	9001	9183	9549	10538	12361	4.72
APPLES	202	453	523	609	729	857	946	1054	1088	1203	1259	12.30
VEGETABLE OILS,OIL EQUIV	6794	7300	8102	8587	7923	8902	9178	10374	10323	10754	11277	4.75
SOYBEANS	600	682	799	816	841	925	1128	1158	1077	1098	1296	6.60
GROUNDNUTS IN SHELL	6071	6294	7364	7423	5239	7125	6408	8127	6571	7477	7859	1.65
SUNFLOWER SEED				1	1	1	1	1	1	3	13	39.24
RAPESEED	1597	1737	1968	2421	1869	2221	2131	2648	2351	1997	2043	1.48
COTTONSEED	2920	3311	3079	4044	3819	3789	3936	3440	3068	3614	3634	.18
COPRA	2966	3066	3212	3112	3341	3080	3275	3580	3757	3792	3845	2.71
PALM KERNELS	64	121	143	184	212	234	292	341	365	430	470	16.36
SUGAR (CENTRIFUGAL,RAW)	5641	7103	8532	8284	7184	8581	9575	10529	10808	12415	13392	6.84
COFFEE GREEN	232	294	322	365	319	312	308	379	377	404	457	3.84
COCOA BEANS	8	10	12	13	14	17	22	26	30	28	34	15.32
TEA	681	718	729	731	772	791	807	813	826	896	901	2.62
COTTON LINT	1461	1655	1541	2024	1911	1896	1967	1726	1541	1808	1820	.21
JUTE AND SIMILAR FIBRES	2852	3031	2838	2558	2888	3135	2254	2257	2407	2666	3224	- .76
SISAL	8	8	5	2								-99.08
TOBACCO	735	901	863	813	922	873	961	892	852	988	1046	1.54
NATURAL RUBBER	1868	2693	2652	2729	2704	3114	3092	3212	3441	3251	3332	3.08
TOTAL MEAT	2871	3470	3583	3700	3776	3857	3961	4065	4179	4302	4559	2.82
TOTAL MILK	28878	31927	32476	33409	34051	34832	35582	36086	36971	37786	38228	2.07
TOTAL EGGS	526	763	782	841	911	947	1010	1062	1103	1185	1241	5.71
WOOL GREASY	56	59	61	65	60	59	61	65	69	73	76	2.57

1/ NOMINAL CATCH (LIVE WEIGHT) EXCLUDING WHALES
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 1. VOLUME OF PRODUCTION OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
					THOUSAND METRIC TONS							PERCENT
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	1869	2399	2324	2360	2376	2422	2513	2493	2505	2532	2580	1.06
MARINE FISH	2896	4743	4798	5292	5640	6181	6735	6916	7018	7802	7968	6.37
CRUST+ MOLLUS+ CEPHALOP	509	846	1087	1188	1133	1241	1219	1436	1681	1811	1887	8.34
AQUATIC ANIMALS	2	8	36	32	24	87	26	24	50	106	118	22.34
AQUATIC PLANTS	53	107	131	135	144	238	351	260	297	347	308	14.54
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	1718	2467	2289	2667	2579	1992	2688	3051	3041	4095	2949	4.42
SAWLOGS NONCONIFEROUS	29723	46690	51245	51991	59755	72592	65465	59142	71669	72161	79685	5.40
PULPWOOD+PARTICLES	265	971	1354	1360	1847	2623	3058	2810	2851	3033	3082	13.68
FUELWOOD	245031	283607	288632	299827	306186	314675	320127	328228	336467	326350	334424	1.92
SAWNWOOD CONIFEROUS	1048	1483	1443	1707	1643	1530	1932	1782	1781	2643	2749	6.56
SAWNWOOD NONCONIFEROUS	8726	11363	11938	11506	13404	13757	13868	13938	15703	16213	16841	4.56
WOOD-BASED PANELS	774	2134	2695	3002	3430	4023	3144	3724	4339	5244	5633	9.68
PULP FOR PAPER	513	927	983	1067	1110	1252	1334	1312	1462	1534	1567	6.24
PAPER+PAPERBOARD	846	1353	1490	1660	1875	2023	2116	2081	2179	2759	3121	8.56
ASIAN CENT PLANNED ECON												
AGRICULTURAL PRODUCTS												
TOTAL CEREALS	195763	217743	232211	235311	229084	249047	260126	273055	280233	271880	288049	3.12
WHEAT	22866	29364	31504	33579	35451	38636	41556	46689	50621	45629	51708	6.66
RICE PADDY	102152	117459	129156	133662	129872	136229	141371	144006	147080	146767	152484	2.50
BARLEY	20009	17255	16270	15371	14378	16419	17385	18395	18404	19391	19411	2.44
MAIZE	27716	29883	30956	28293	25442	31507	32072	33682	33851	29903	33022	1.47
ROOT CROPS	111061	113375	106274	101971	103314	110420	116166	104765	110059	104356	114896	.28
POTATOES	11022	12052	12104	12173	12717	12764	12829	13481	13640	13860	15181	2.31
CASSAVA	2371	2776	2884	3075	3273	3451	3499	3590	4340	5162	6065	8.28
TOTAL PULSES	9597	11348	11343	11355	11367	12380	12372	13374	14407	13427	15425	3.47
CITRUS FRUIT	861	1122	1195	1241	1249	1329	1371	1358	1373	1402	1432	2.52
BANANAS	917	1293	1199	1172	1120	1183	1114	982	1021	1079	1010	- 2.46
APPLES	1643	2023	2068	2173	2303	2158	2493	2579	2676	2512	2844	3.67
VEGETABLE OILS,OIL EQUIV	4100	4552	4904	4966	4978	5332	5360	5461	5326	5319	5953	2.22
SOYBEANS	10891	11266	11931	11855	11553	12120	12371	12671	12379	12586	13188	1.41
GROUNDNUTS IN SHELL	2156	2553	2867	2779	2886	3052	3086	3174	2990	2684	2989	.99
SUNFLOWER SEED	65	73	70	70	65	70	70	80	100	150	279	12.74
RAPESEED	1035	943	992	1052	1152	1262	1201	1394	1405	1583	2404	8.63
COTTONSEED	2472	3527	4003	4435	4261	5085	4997	4650	4346	4112	4347	1.35
COPRA	31	25	29	30	30	32	31	30	32	40	43	4.53
PALM KERNELS	10	25	28	32	37	38	39	39	40	42	44	5.75
SUGAR (CENTRIFUGAL,RAW)	2205	2415	2313	2727	2985	3267	3277	3044	3193	3151	3301	3.59
COFFEE GREEN	7	9	9	9	9	12	12	13	18	21	23	11.69
TEA	178	206	212	217	222	231	237	259	277	295	313	4.82
COTTON LINT	1236	1764	2002	2218	2130	2543	2498	2325	2173	2055	2173	1.35
JUTE AND SIMILAR FIBRES	398	548	593	619	697	682	816	856	887	909	1142	7.68
SISAL	10	10	8	9	8	8	10	9	9	11	10	1.83
TOBACCO	760	864	868	863	918	1027	1064	1039	1060	1065	1076	2.98
NATURAL RUBBER	123	78	49	47	48	52	60	59	70	87	99	5.51
TOTAL MEAT	12821	14820	15852	16543	17334	18090	18777	19526	20558	21031	21574	4.23
TOTAL MILK	4655	5084	5333	5475	5641	5930	6196	6458	6733	7044	7316	4.15
TOTAL EGGS	2812	3493	3524	3571	3633	3687	3788	3906	4038	4156	4393	2.50
WOOL GREASY	78	77	79	80	79	81	82	82	81	81	82	.56
FISHERY PRODUCTS 1/												
FRESHWATER + DIADROMOUS	1174	1193	1113	1149	1165	1298	1299	1342	1342	1364	1341	2.25
MARINE FISH	3012	3730	4078	4252	4759	4818	5136	5322	5489	5573	5523	4.58
CRUST+ MOLLUS+ CEPHALOP	512	589	616	670	711	828	887	952	986	1069	1114	7.85
AQUATIC ANIMALS			51	16	17	59	22	17	16	13	15	22.76
AQUATIC PLANTS	501	502	532	828	978	833	899	997	943	1397	1568	11.38
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	12688	15077	15389	15739	16133	16725	18340	19145	19993	20768	21717	4.45
SAWLOGS NONCONIFEROUS	8439	10016	9726	10024	10160	10531	11702	12088	12999	13546	14108	4.54
PULPWOOD+PARTICLES	1492	2220	2550	2680	2810	2930	4000	4291	4476	4671	4876	9.83
FUELWOOD	132549	150120	153650	156300	159965	162512	165938	169540	172967	176471	180054	2.02
SAWNWOOD CONIFEROUS	7406	9381	9664	10004	10354	10604	11074	11166	11697	12256	12814	3.40
SAWNWOOD NONCONIFEROUS	4862	6196	6143	6351	6571	6753	6734	6739	7039	7354	7685	2.32
WOOD-BASED PANELS	377	870	1026	1130	1570	1573	1327	1339	1508	1518	1892	6.59
PULP FOR PAPER	2572	3316	3487	3604	3722	3837	4693	5025	5279	5665	6010	7.39
PAPER+PAPERBOARD	2987	4067	4290	4536	4817	5027	6127	6638	7010	7308	7792	8.14

1/ NOMINAL CATCH (LIVE WEIGHT) EXCLUDING WHALES
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 2. INDICES OF FOOD PRODUCTION

	TOTAL						PER CAPUT					
	1974	1975	1976	1977	1978	CHANGE 1977 TO 1978	1974	1975	1976	1977	1978	CHANGE 1977 TO 1978
	1969-71=100					PERCENT	1969-71=100					PERCENT
FOOD PRODUCTION												
WORLD	110	113	116	119	124	4.20	102	103	104	104	107	2.88
DEVELOPED COUNTRIES	110	112	113	116	121	4.31	106	107	108	110	113	2.73
WESTERN EUROPE	111	110	109	111	116	4.50	109	107	105	107	112	4.67
EUROPEAN ECON COMMUNITY	110	107	105	109	114	4.59	107	105	102	106	111	4.72
BELGIUM-LUXEMBOURG	114	104	101	106	108	1.89	112	103	99	104	106	1.92
DENMARK	110	100	98	110	109	- .91	108	98	95	106	106	
FRANCE	113	108	107	108	116	7.41	109	104	102	103	110	6.80
GERMANY FED.REP. OF	105	102	101	106	112	5.66	103	100	100	105	111	5.71
IRELAND	117	134	115	134	135	.75	113	127	108	124	123	- .81
ITALY	107	108	105	106	110	3.77	104	104	101	101	104	2.97
NETHERLANDS	116	122	119	124	133	7.26	112	116	113	117	124	5.98
UNITED KINGDOM	113	106	102	113	115	1.77	113	106	101	112	114	1.79
OTHER WESTERN EUROPE	115	116	120	118	122	3.39	112	112	114	112	115	2.68
AUSTRIA	106	109	109	109	112	2.75	104	107	108	108	111	2.78
FINLAND	103	108	120	106	108	1.89	101	106	117	103	105	1.94
GREECE	120	127	126	122	132	8.20	118	123	121	116	124	6.90
ICELAND	125	128	123	120	130	8.33	119	120	114	110	118	7.27
MALTA	100	98	114	126	137	8.73	99	97	113	124	133	7.26
NORWAY	121	105	108	120	124	3.33	118	101	104	115	118	2.61
PORTUGAL	100	99	95	80	78	- 2.50	100	95	88	76	73	- 3.95
SPAIN	120	126	129	126	137	8.73	115	120	121	117	126	7.69
SWEDEN	122	109	115	116	120	3.45	120	107	112	113	116	2.65
SWITZERLAND	105	108	114	114	115	.88	102	105	112	113	114	.88
YUGOSLAVIA	118	117	123	128	123	- 3.91	114	111	116	119	114	- 4.20
USSR AND EASTERN EUROPE	113	112	115	117	125	6.84	109	107	110	111	117	5.41
EASTERN EUROPE	116	118	117	120	125	4.17	113	114	112	115	119	3.48
ALBANIA	110	112	123	127	129	1.57	100	99	106	107	106	- .93
BULGARIA	98	104	115	112	116	3.57	96	101	111	108	112	3.70
CZECHOSLOVAKIA	117	116	115	124	131	5.65	115	113	111	119	124	4.20
GERMAN DEMOCRATIC REP.	120	119	114	120	122	1.67	121	120	116	122	124	1.64
HUNGARY	120	126	115	128	133	3.91	119	124	113	125	128	2.40
POLAND	114	115	110	109	116	6.42	110	110	104	102	107	4.90
ROMANIA	123	126	157	154	159	3.25	119	120	148	144	147	2.08
USSR	111	108	114	116	125	7.76	107	103	108	109	117	7.34
NORTH AMERICA DEVELOPED	106	114	118	122	121	- .82	103	109	112	115	113	- 1.74
CANADA	97	108	120	121	126	4.13	92	101	111	111	114	2.70
UNITED STATES	107	114	118	122	121	- .82	104	110	112	116	113	- 2.59
OCEANIA DEVELOPED	110	120	128	124	141	13.71	103	110	116	112	126	12.50
AUSTRALIA	113	123	130	127	150	18.11	105	113	118	114	133	16.67
NEW ZEALAND	102	111	122	118	118		95	101	111	107	106	- .93
DEVELOPING COUNTRIES	110	116	119	122	127	4.10	101	104	104	104	106	1.92
AFRICA DEVELOPING	107	108	111	109	114	4.59	96	94	94	89	91	2.25
NORTH WESTERN AFRICA	110	107	115	97	108	11.34	99	93	97	79	85	7.59
ALGERIA	99	102	112	91	101	10.99	87	87	92	72	77	6.94
MOROCCO	110	94	107	85	100	17.65	99	83	91	70	79	12.86
TUNISIA	132	153	146	145	146	.69	124	140	131	126	124	- 1.59
WESTERN AFRICA	105	108	110	109	116	6.42	93	93	91	89	91	2.25
BENIN	107	106	116	117	129	10.26	96	92	98	96	102	6.25
GAMBIA	110	112	113	101	87	- 13.86	97	96	94	81	68	- 16.05
GHANA	115	108	99	97	101	4.12	103	93	83	79	79	
GUINEA	104	107	108	103	106	2.91	94	95	94	87	88	1.15
IVORY COAST	127	133	135	147	152	3.40	105	106	103	108	108	
LIBERIA	120	118	121	123	127	3.25	105	100	99	98	98	
MALI	89	102	104	103	115	11.65	81	90	90	87	94	8.05
MAURITANIA	75	78	83	86	89	3.49	67	69	71	71	72	1.41
NIGER	84	78	104	104	113	8.65	75	68	88	86	90	4.65
NIGERIA	103	106	109	110	115	4.55	91	91	91	89	90	1.12
SENEGAL	120	139	125	89	134	50.56	106	119	104	73	106	45.21
SIERRA LEONE	103	110	111	115	115		93	97	95	96	94	- 2.08
TOGO	88	91	94	88	103	17.05	79	80	79	72	82	13.89
UPPER VOLTA	105	115	107	109	120	10.09	96	103	93	92	99	7.61
CENTRAL AFRICA	109	110	111	113	112	- .88	99	98	96	95	92	- 3.16
ANGOLA	103	100	103	103	102	- .97	94	89	90	88	85	- 3.41
CAMEROON	121	124	122	126	130	3.17	112	112	108	109	110	.92
CENTRAL AFRICAN EMPIRE	113	113	113	117	120	2.56	104	102	100	101	102	.99
CHAD	96	99	104	106	109	2.83	88	89	91	91	91	
CONGO	100	99	100	100	96	- 4.00	91	88	86	85	79	- 7.06
GABON	89	89	88	91	102	12.09	86	86	83	85	95	11.76
ZAIRE	108	110	111	113	108	- 4.42	98	97	95	94	87	- 7.45
EASTERN AFRICA	107	107	111	112	114	1.79	96	93	94	92	91	- 1.09
BURUNDI	113	113	119	122	125	2.46	106	104	107	107	106	- .93
ETHIOPIA	101	101	102	102	101	- .98	91	89	88	86	83	- 3.49
KENYA	110	117	121	128	124	- 3.13	95	97	97	99	92	- 7.07
MADAGASCAR	116	112	115	114	113	- .88	106	99	99	96	93	- 3.13
MALAWI	115	109	118	124	133	7.26	102	93	98	100	104	4.00
MAURITIUS	111	85	119	113	117	3.54	104	78	107	100	101	1.00

ANNEX TABLE 2. INDICES OF FOOD PRODUCTION

	TOTAL						PER CAPUT					
	1974	1975	1976	1977	1978	CHANGE 1977 TO 1978	1974	1975	1976	1977	1978	CHANGE 1977 TO 1978
	1969-71=100					PERCENT	1969-71=100					PERCENT
FOOD PRODUCTION												
MOZAMBIQUE	106	97	96	96	94	- 2.08	96	86	83	81	77	- 4.94
RHODESIA	131	128	128	129	127	- 1.55	115	109	105	103	98	- 4.85
RWANDA	103	117	123	125	129	3.20	92	101	103	102	103	.98
TANZANIA	100	104	113	117	117		89	90	95	95	92	- 3.16
UGANDA	106	105	109	109	117	7.34	94	90	92	88	92	4.55
ZAMBIA	121	125	135	130	139	6.92	108	108	113	106	109	2.83
SOUTHERN AFRICA	121	104	110	109	115	5.50	110	92	95	92	94	2.17
BOTSWANA	110	105	122	113	121	7.08	100	93	105	95	99	4.21
LESOTHO	122	97	83	117	120	2.56	111	87	72	99	100	1.01
SWAZILAND	119	110	125	130	135	3.85	109	98	109	109	110	.92
SOUTH AFRICA	121	113	114	121	126	4.13	109	99	97	101	102	.99
LATIN AMERICA	112	116	123	127	131	3.15	101	102	105	105	106	.95
CENTRAL AMERICA	113	116	118	127	135	6.30	100	99	97	101	105	3.96
COSTA RICA	116	131	127	134	137	2.24	105	116	110	113	112	- .88
EL SALVADOR	116	131	130	131	151	15.27	104	113	109	107	120	12.15
GUATEMALA	113	119	129	136	137	.74	100	102	107	110	107	- 2.73
HONDURAS	98	84	98	107	115	7.48	87	72	81	85	88	3.53
MEXICO	114	116	117	126	135	7.14	101	99	96	100	104	4.00
NICARAGUA	107	119	125	131	138	5.34	94	101	103	104	106	1.92
PANAMA	111	117	117	125	130	4.00	100	102	100	104	105	.96
CARIBBEAN	100	101	104	110	114	3.64	92	91	92	96	98	2.08
BARBADOS	80	74	79	69	76	10.14	78	72	77	66	73	10.61
CUBA	91	97	99	110	113	2.73	85	89	89	98	100	2.04
DOMINICAN REPUBLIC	115	109	116	118	125	5.93	102	95	98	97	100	3.09
HAITI	105	104	105	107	117	9.35	96	93	91	91	97	6.59
JAMAICA	109	105	109	111	107	- 3.60	101	96	98	99	94	- 5.05
SOUTH AMERICA	114	119	127	130	133	2.31	103	105	109	109	109	
ARGENTINA	107	111	120	120	135	12.50	102	104	111	109	122	11.93
BOLIVIA	121	131	138	127	135	6.30	109	114	118	106	110	3.77
BRAZIL	123	129	142	146	139	- 4.79	110	112	120	120	111	- 7.50
CHILE	101	107	104	113	104	- 7.96	94	98	94	100	91	- 9.00
COLOMBIA	115	123	131	132	147	11.36	105	110	115	112	122	8.93
ECUADOR	114	120	121	130	128	- 1.54	102	104	102	106	101	- 4.72
GUYANA	108	107	104	112	119	6.25	99	96	91	96	100	4.17
PARAGUAY	114	112	123	137	136	- .73	102	97	104	113	108	- 4.42
PERU	112	109	111	111	107	- 3.60	100	95	94	91	86	- 5.49
URUGUAY	105	103	118	98	98		105	102	116	97	96	- 1.03
VENEZUELA	110	117	113	122	131	7.38	97	99	93	97	100	3.09
NEAR EAST DEVELOPING	114	121	128	125	131	4.80	102	106	109	104	106	1.92
NEAR EAST IN AFRICA	111	115	116	115	119	3.48	101	103	101	97	98	1.03
EGYPT	106	110	112	108	110	1.85	98	99	99	93	92	- 1.08
LIBYA	160	165	177	128	201	57.03	135	134	138	96	144	50.00
SUDAN	117	122	117	128	130	1.56	105	107	100	107	106	- .93
NEAR EAST IN ASIA	114	122	131	128	134	4.69	102	106	111	105	107	1.90
AFGHANISTAN	113	117	124	112	121	8.04	102	103	106	93	99	6.45
CYPRUS	96	87	89	96	96		94	84	86	93	92	- 1.08
IRAN	122	128	141	135	140	3.70	108	111	119	110	111	.91
IRAQ	97	92	117	110	114	3.64	85	78	96	87	87	
JORDAN	151	96	101	101	141	39.60	133	82	83	81	109	34.57
LEBANON	124	108	92	93	113	21.51	112	95	79	78	92	17.95
SAUDI ARABIA	138	149	143	160	150	- 6.25	123	129	120	130	119	- 8.46
SYRIA	152	162	189	176	206	17.05	133	137	155	140	158	12.86
TURKEY	110	121	129	129	134	3.88	100	107	111	109	110	.92
YEMEN ARAB REPUBLIC	100	123	116	108	97	- 10.19	94	113	104	94	83	- 11.70
YEMEN DEMOCRATIC	121	127	127	124	123	- .81	112	115	113	107	103	- 3.74
ISRAEL	132	128	133	140	141	.71	117	110	112	115	113	- 1.74
FAR EAST DEVELOPING	105	115	115	123	128	4.07	96	102	100	104	105	.96
SOUTH ASIA	101	113	111	120	123	2.50	92	100	96	102	102	
BANGLADESH	98	109	103	111	114	2.70	90	97	89	94	94	
INDIA	99	113	110	120	124	3.33	90	101	96	102	103	.98
NEPAL	108	111	110	106	109	2.83	100	99	96	90	91	1.11
PAKISTAN	113	115	121	127	128	.79	100	99	101	103	100	- 2.91
SRI LANKA	114	118	124	127	137	7.87	107	109	112	113	119	5.31
EAST SOUTH-EAST ASIA	116	121	125	132	140	6.06	105	106	108	110	114	3.64
BURMA	106	106	109	114	119	4.39	97	94	94	96	98	2.08
INDONESIA	117	116	114	123	133	8.13	106	102	98	104	109	4.81
KOREA REP	112	122	130	141	142	.71	103	110	115	123	121	- 1.63
SOMALIA	102	103	101	104	108	3.85	92	91	87	87	88	1.15
PHILIPPINES	118	127	139	141	145	2.84	105	110	116	115	114	- .87
THAILAND	121	133	138	140	174	24.29	108	115	116	114	138	21.05
JAPAN	104	110	101	108	108		98	102	93	99	98	- 1.01
ASIAN CENT PLANNED ECON	114	118	122	121	128	5.79	107	108	111	108	113	4.63
CHINA	115	118	122	121	128	5.79	107	109	111	108	113	4.63
KAMPUCHEA, DEMOCRATIC	52	67	71	71	60	- 15.49	47	59	61	60	50	- 16.67
KOREA DPR	128	137	149	160	160		116	121	128	133	130	- 2.26
LAO	109	112	111	113	113		100	100	98	97	94	- 3.09
MONGOLIA	117	132	122	110	116	5.45	104	114	102	90	92	2.22
VIET NAM	108	109	120	121	126	4.13	100	98	105	104	105	.96

ANNEX TABLE 3. INDICES OF AGRICULTURAL PRODUCTION

	TOTAL						PER CAPITA					
	1974	1975	1976	1977	1978	CHANGE 1977 TO 1978	1974	1975	1976	1977	1978	CHANGE 1977 TO 1978
	1969-71=100					PERCENT	1969-71=100					PERCENT
AGRICULTURAL PRODUCTION												
WORLD	110	113	115	118	123	4.24	102	103	103	104	106	1.92
DEVELOPED COUNTRIES	110	111	113	116	120	3.45	106	107	107	109	113	3.67
WESTERN EUROPE	111	110	109	111	116	4.50	109	107	105	107	112	4.67
EUROPEAN ECON COMMUNITY	110	108	105	109	114	4.59	108	105	102	106	111	4.72
BELGIUM-LUXEMBOURG	114	104	101	105	108	2.86	113	103	99	104	106	1.92
DENMARK	110	100	98	110	109	- .91	108	98	95	106	105	- .94
FRANCE	113	108	107	108	116	7.41	109	104	103	103	110	6.80
GERMANY FED.REP. OF	105	102	101	106	112	5.66	103	101	100	105	111	5.71
IRELAND	117	134	115	134	134		113	127	108	124	123	- .81
ITALY	107	108	106	106	110	3.77	104	104	101	101	105	3.96
NETHERLANDS	117	123	120	125	133	6.40	113	117	114	117	124	5.98
UNITED KINGDOM	113	107	102	113	115	1.77	112	106	101	112	114	1.79
OTHER WESTERN EUROPE	115	116	120	118	122	3.39	112	112	114	112	115	2.68
AUSTRIA	106	109	109	109	112	2.75	104	107	108	108	111	2.78
FINLAND	103	108	120	106	108	1.89	101	106	117	103	105	1.94
GREECE	118	126	127	122	132	8.20	115	123	121	116	124	6.90
ICELAND	123	126	122	119	129	8.40	117	118	112	109	116	6.42
MALTA	100	98	114	126	137	8.73	99	97	113	124	133	7.26
NORWAY	120	105	108	120	123	2.50	117	101	104	115	118	2.61
PORTUGAL	100	99	95	81	78	- 3.70	100	95	88	76	73	- 3.95
SPAIN	120	125	128	125	136	8.80	115	119	121	116	126	8.62
SWEDEN	122	109	115	116	120	3.45	120	107	112	113	116	2.65
SWITZERLAND	105	108	114	114	115	.88	102	105	112	112	114	1.79
YUGOSLAVIA	118	117	124	127	122	- 3.94	113	111	117	119	113	- 5.04
USSR AND EASTERN EUROPE	113	112	115	117	125	6.84	109	108	109	111	117	5.41
EASTERN EUROPE	116	118	117	120	125	4.17	113	114	112	114	118	3.51
ALBANIA	110	112	122	125	128	2.40	100	100	105	105	105	
BULGARIA	102	108	117	110	116	5.45	99	105	114	106	112	5.66
CZECHOSLOVAKIA	117	116	114	123	130	5.69	114	113	110	118	124	5.08
GERMAN DEMOCRATIC REP.	120	119	114	120	122	1.67	121	120	116	122	124	1.64
HUNGARY	120	125	115	128	132	3.13	118	123	112	124	128	3.23
POLAND	112	115	110	108	115	6.48	108	110	104	101	106	4.95
ROMANIA	123	126	157	154	158	2.60	118	120	148	144	147	2.08
USSR	111	109	114	116	125	7.76	107	104	108	109	116	6.42
NORTH AMERICA DEVELOPED	106	113	117	122	120	- 1.64	103	108	111	115	113	- 1.74
CANADA	97	107	117	120	125	4.17	92	100	108	110	113	2.73
UNITED STATES	107	113	117	122	120	- 1.64	104	109	111	115	113	- 1.74
OCEANIA DEVELOPED	104	113	119	115	128	11.30	97	104	108	103	114	10.68
AUSTRALIA	105	115	119	116	133	14.66	98	106	108	104	118	13.46
NEW ZEALAND	100	107	117	114	114		93	98	106	103	103	
DEVELOPING COUNTRIES	110	115	118	121	126	4.13	101	103	103	103	105	1.94
AFRICA DEVELOPING	107	107	110	108	112	3.70	95	93	93	89	89	
NORTH WESTERN AFRICA	110	107	115	97	108	11.34	99	93	97	80	86	7.50
ALGERIA	99	102	112	91	101	10.99	87	87	92	73	77	5.48
MOROCCO	110	95	107	85	100	17.65	99	83	91	70	80	14.29
TUNISIA	132	152	146	145	146	.69	124	139	131	126	124	- 1.59
WESTERN AFRICA	104	108	110	109	115	5.50	92	93	92	89	90	1.12
BENIN	108	106	114	115	126	9.57	97	92	96	94	100	6.38
GAMBIA	110	112	113	101	87	- 13.86	97	96	94	81	68	- 16.05
GHANA	115	108	99	97	101	4.12	103	94	83	79	79	
GUINEA	103	106	106	101	104	2.97	94	94	92	85	86	1.18
IVORY COAST	117	129	133	142	138	- 2.82	97	102	102	104	98	- 5.77
LIBERIA	116	114	114	117	126	7.69	102	97	94	93	96	3.23
MALI	90	105	109	107	119	11.21	81	93	94	90	97	7.78
MAURITANIA	75	78	83	86	89	3.49	67	69	71	71	72	1.41
NIGER	84	79	104	104	113	8.65	75	68	88	85	90	5.88
NIGERIA	102	106	109	110	115	4.55	91	91	91	89	89	
SENEGAL	121	140	126	91	134	47.25	107	120	105	74	107	44.59
SIERRA LEONE	102	110	110	115	115		93	98	95	96	94	- 2.08
TOGO	88	92	93	88	101	14.77	78	80	79	72	80	11.11
UPPER VOLTA	105	115	109	110	120	9.09	95	102	94	94	99	5.32
CENTRAL AFRICA	109	108	106	107	107		99	96	92	91	88	- 3.30
ANGOLA	104	91	79	78	75	- 3.85	95	82	69	67	63	- 5.97
CAMEROON	120	121	118	123	128	4.07	111	109	104	106	108	1.89
CENTRAL AFRICAN EMPIRE	113	112	114	115	118	2.61	104	101	100	99	100	1.01
CHAD	99	105	106	107	110	2.80	91	94	94	92	93	1.09
CONGO	100	99	100	100	97	- 3.00	91	88	86	85	79	- 7.06
GABON	89	89	87	90	101	12.22	86	85	83	85	94	10.59
ZAIRE	108	110	111	112	107	- 4.46	97	97	95	93	87	- 6.45
EASTERN AFRICA	107	107	110	112	112		96	93	93	92	89	- 3.26
BURUNDI	114	111	118	122	125	2.46	107	103	106	106	106	
ETHIOPIA	100	101	102	102	102		90	89	88	86	84	- 2.33
KENYA	115	119	126	139	135	- 2.88	100	99	101	107	100	- 6.54
MADAGASCAR	117	113	115	113	113		106	100	100	95	93	- 2.11
MALAWI	117	114	123	133	141	6.02	104	98	103	108	111	2.78
MAURITIUS	112	86	119	114	118	3.51	104	79	107	100	102	2.00

ANNEX TABLE 3. INDICES OF AGRICULTURAL PRODUCTION

	TOTAL						PER CAPUT					
	1974	1975	1976	1977	1978	CHANGE 1977 TO 1978	1974	1975	1976	1977	1978	CHANGE 1977 TO 1978
	1969-71=100					PERCENT	1969-71=100					PERCENT
AGRICULTURAL PRODUCTION												
MOZAMBIQUE	105	92	92	93	92	- 1.08	95	81	80	78	75	- 3.85
RHODESIA	125	125	125	119	114	- 4.20	110	106	102	95	88	- 7.37
RWANDA	106	118	125	128	132	3.13	94	103	105	105	105	
TANZANIA	100	104	112	113	112	- .88	89	89	94	92	88	- 4.35
UGANDA	99	98	95	95	98	3.16	88	84	80	77	77	
ZAMBIA	120	125	133	129	136	5.43	107	108	112	105	107	1.90
SOUTHERN AFRICA	121	104	109	109	115	5.50	109	92	94	92	94	2.17
BOTSWANA	110	105	122	113	121	7.08	100	93	105	95	99	4.21
LESOTHO	115	91	78	108	111	2.78	105	81	68	92	92	
SWAZILAND	123	114	129	134	139	3.73	112	102	112	113	114	.88
SOUTH AFRICA	118	111	111	119	124	4.20	107	97	95	99	101	2.02
LATIN AMERICA	113	115	118	124	129	4.03	102	101	101	103	105	1.94
CENTRAL AMERICA	115	115	115	125	132	5.60	101	98	95	100	102	2.00
COSTA RICA	113	124	121	129	133	3.10	102	109	105	108	109	.93
EL SALVADOR	119	128	120	120	129	7.50	106	111	101	98	102	4.08
GUATEMALA	122	124	128	137	138	.73	108	106	107	110	108	- 1.82
HONDURAS	100	89	101	110	123	11.82	88	76	83	88	95	7.95
MEXICO	115	113	113	124	132	6.45	101	96	93	99	101	2.02
NICARAGUA	121	127	130	136	142	4.41	107	108	107	108	109	.93
PANAMA	110	116	117	125	130	4.00	99	101	100	104	106	1.92
CARIBBEAN	101	102	105	111	115	3.60	93	92	93	96	98	2.08
BARBADOS	80	74	79	69	76	10.14	78	72	77	66	73	10.61
CUBA	92	98	100	110	114	3.64	86	90	90	98	100	2.04
DOMINICAN REPUBLIC	117	112	119	123	129	4.88	104	97	100	101	103	1.98
HAITI	105	105	103	106	115	8.49	96	94	90	91	96	5.49
JAMAICA	108	104	108	110	106	- 3.64	101	96	98	98	93	- 5.10
SOUTH AMERICA	114	117	121	126	130	3.17	103	103	104	106	106	
ARGENTINA	107	111	120	120	134	11.67	102	104	111	110	121	10.00
BOLIVIA	126	134	139	131	139	6.11	113	118	118	109	113	3.67
BRAZIL	123	124	125	136	132	- 2.94	110	108	106	111	105	- 5.41
CHILE	100	106	103	112	103	- 8.04	94	98	93	100	90	- 10.00
COLOMBIA	112	121	127	130	144	10.77	102	108	111	110	119	8.18
ECUADOR	116	121	123	131	132	.76	103	104	103	106	104	- 1.89
GUYANA	108	107	104	112	119	6.25	99	96	91	96	100	4.17
PARAGUAY	117	116	130	146	142	- 2.74	105	100	110	120	113	- 5.83
PERU	110	106	108	108	105	- 2.78	99	93	92	89	85	- 4.49
URUGUAY	99	98	113	96	96		99	97	111	94	94	
VENEZUELA	110	118	111	121	130	7.44	96	100	91	96	100	4.17
NEAR EAST DEVELOPING	113	118	125	123	129	4.88	102	104	107	102	104	1.96
NEAR EAST IN AFRICA	108	109	107	108	113	4.63	98	97	93	92	93	1.09
EGYPT	102	103	105	103	105	1.94	94	93	93	88	88	
LIBYA	157	164	176	129	199	54.26	133	133	137	97	143	47.42
SUDAN	117	116	102	119	122	2.52	105	102	88	99	99	
NEAR EAST IN ASIA	115	121	130	128	133	3.91	103	105	110	105	106	.95
AFGHANISTAN	114	118	125	113	122	7.96	103	104	107	94	99	5.32
CYPRUS	96	86	89	96	96		94	84	86	92	92	
IRAN	122	126	138	133	137	3.01	109	109	116	108	108	
IRAQ	97	91	115	108	113	4.63	85	77	94	86	86	
JORDAN	149	96	101	102	140	37.25	131	82	83	81	108	33.33
LEBANON	123	104	91	90	108	20.00	111	92	78	76	89	17.11
SAUDI ARABIA	136	148	142	159	149	- 6.29	122	128	119	130	118	- 9.23
SYRIA	143	150	173	162	186	14.81	125	127	142	129	143	10.85
TURKEY	112	121	129	130	134	3.08	101	107	111	109	110	.92
YEMEN ARAB REPUBLIC	102	124	116	108	98	- 9.26	95	114	104	95	84	- 11.58
YEMEN DEMOCRATIC	120	125	122	121	120	- .83	111	113	108	104	100	- 3.85
ISRAEL	133	129	134	143	145	1.40	117	111	113	117	117	
FAR EAST DEVELOPING	106	114	114	122	127	4.10	96	101	99	103	105	1.94
SOUTH ASIA	102	112	110	119	122	2.52	93	99	95	101	101	
BANGLADESH	96	106	101	110	114	3.64	88	95	88	93	94	1.08
INDIA	100	113	110	120	124	3.33	92	100	96	102	103	.98
NEPAL	107	110	109	105	109	3.81	99	98	95	90	91	1.11
PAKISTAN	111	111	115	123	123		99	96	96	99	96	- 3.03
SRI LANKA	106	108	110	113	119	5.31	99	99	100	100	104	4.00
EAST SOUTH-EAST ASIA	116	121	125	131	138	5.34	105	106	108	110	113	2.73
BURMA	107	106	108	114	120	5.26	97	94	94	96	99	3.13
INDONESIA	115	116	115	121	130	7.44	104	102	99	102	107	4.90
KOREA REP	114	123	132	143	143		105	111	117	124	123	- .81
SOMALIA	101	103	101	104	108	3.85	92	91	87	86	88	2.33
PHILIPPINES	118	128	139	142	145	2.11	105	111	117	115	114	- .87
THAILAND	118	128	133	135	166	22.96	105	111	112	110	132	20.00
JAPAN	103	109	101	107	107		98	102	93	98	97	- 1.02
ASIAN CENT PLANNED ECON	114	118	122	121	128	5.79	107	108	110	108	113	4.63
CHINA	115	118	122	120	128	6.67	108	109	111	108	113	4.63
KAMPUCHEA, DEMOCRATIC	53	67	71	71	61	- 14.08	47	58	61	60	50	- 16.67
KOREA DPR	128	136	148	158	158		115	120	126	132	129	- 2.27
LAO	108	111	111	113	112	- .88	99	99	97	96	94	- 2.08
MONGOLIA	117	129	119	109	114	4.59	104	111	100	89	90	1.12
VIET NAM	109	109	120	121	126	4.13	100	98	105	104	106	1.92

ANNEX TABLE 4. VOLUME OF EXPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
					THOUSAND METRIC TONS							PERCENT
WORLD												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	51353	48629	57144	58507	64937	81563	65361	73737	68938	72928	84963	4.78
RICE MILLED	7636	7919	8669	8656	8551	8430	8285	7739	8993	10870	9746	2.04
BARLEY	6881	7141	10469	11003	13817	12344	11590	12483	13795	12973	14428	5.35
MAIZE	20476	27471	29432	30966	37397	48052	49451	51255	62027	57427	68401	11.08
MILLET	233	242	182	271	218	239	226	233	307	301	327	4.34
SORGHUM	3560	4406	6209	6228	6169	9050	10753	10155	11161	11936	11047	11.14
POTATOES	3294	3591	3782	3263	5131	3913	3877	3895	4378	4695	3983	1.88
SUGAR,TOTAL (RAW EQUIV.)	18630	19425	21844	21344	22086	23120	23245	21776	23040	28842	26304	3.09
PULSES	1523	2144	1776	1781	1932	2005	1642	1779	1903	1973	1914	- .24
SOYBEANS	5520	9332	12622	12332	13788	15622	17232	16459	19756	20012	24051	9.34
SOYBEAN OIL	622	666	1120	1333	1102	1053	1546	1365	1836	2104	2596	12.39
GROUNDNUTS SHELLED BASIS	1395	1282	995	867	910	958	839	895	1010	806	811	- 2.99
GROUNDNUT OIL	375	381	429	359	524	498	368	394	551	580	401	2.17
COPRA	1548	1064	916	1067	1355	1043	527	1086	1147	944	696	- 2.75
COCONUT OIL	440	482	617	714	867	737	667	1042	1372	1093	1290	10.58
PALM NUTS KERNELS	689	438	458	491	397	303	360	309	391	276	180	- 7.75
PALM OIL	611	861	906	1162	1382	1514	1684	2006	2114	2176	2117	11.83
OILSEED CAKE AND MEAL	6931	9761	11195	11889	12856	14342	14566	14292	18358	18659	21645	8.36
BANANAS	4267	5669	5805	6525	6749	6786	6626	6371	6636	6557	6990	1.60
ORANGES+TANGER+CLEMEN	3260	4003	4375	4238	4624	5029	4952	5140	5210	5364	5070	3.01
LEMONS AND LIMES	533	711	725	756	733	789	827	807	966	894	925	3.33
COFFEE GREEN+ROASTED	2876	3432	3280	3260	3575	3803	3409	3561	3655	2913	3371	- .33
COCOA BEANS	1096	1020	1134	1187	1253	1108	1197	1152	1148	952	1092	- .57
TEA	626	683	740	757	760	788	800	813	858	892	828	2.39
COTTON LINT	3729	3756	3975	4072	4108	4717	3791	3994	4022	3919	4346	.51
JUTE AND SIMILAR FIBRES	1048	925	872	810	800	905	903	556	637	604	485	- 6.27
TOBACCO UNMANUFACTURED	931	1020	1004	1031	1214	1240	1389	1270	1317	1297	1424	3.87
NATURAL RUBBER	2304	2933	2853	2892	2852	3361	3198	3009	3255	3293	3348	1.77
WOOL GREASY	1231	1264	1261	1146	1204	1119	834	852	1010	1096	881	- 3.69
BOVINE CATTLE 1/	5120	6543	6902	6918	7758	6881	6048	6865	6774	6674	7294	.09
SHEEP AND GOATS 1/	8150	9785	10060	10417	11052	10817	10523	11789	10509	12323	13940	2.96
PIGS 1/	2894	3962	4628	5381	6096	5928	6071	6428	6941	6955	7990	6.65
TOTAL MEAT	3100	4315	4601	4739	5366	5651	5144	5468	6193	6792	7145	5.33
MILK DRY	153	208	229	286	293	381	358	376	440	565	583	11.82
TOTAL EGGS IN SHELL	428	367	413	431	437	461	514	568	523	578	676	5.61
FISHERY PRODUCTS												
FISH FRESH FROZEN	1462	1890	2275	2321	2491	2849	2787	2968	3036	3482	3967	7.22
FISH CURED	573	539	567	532	557	531	465	450	461	446	452	- 2.83
SHELLFISH	269	400	471	557	692	714	719	771	883	828	937	9.02
FISH CANNED AND PREPARED	521	593	613	607	677	739	747	721	829	786	816	3.94
SHELLFISH CANNED+PREPAR	51	75	77	77	91	93	90	88	95	99	114	4.02
FISH BODY AND LIVER OIL	665	701	637	709	749	551	558	597	575	578	695	- 1.49
FISH MEAL	1950	3038	3009	3033	3008	1634	1954	2189	2114	2039	2093	- 5.11
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	8480	20427	24380	21615	25489	28761	26206	23866	28378	28476	29434	3.36
SAWLOGS NONCONIFEROUS	17570	35050	38751	40701	42822	52404	45084	36442	45648	46963	48064	2.53
PULPWOOD+PARTICLE	14110	22554	26594	24110	23071	29208	32765	31546	32480	32698	26447	3.34
FUELWOOD	2725	2890	2778	2282	1826	2219	2511	2214	1879	2206	2045	- 2.98
SAWNWOOD CONIFEROUS	40884	47341	49349	51670	57095	60914	51834	43251	56329	61691	66011	2.45
SAWNWOOD NONCONIFEROUS	4778	6897	7186	7234	8398	10612	8937	8015	11777	11199	11969	6.37
WOOD-BASED PANELS	4742	8955	9444	10680	12459	14542	12885	12274	14197	14578	15829	5.88
PULP FOR PAPER	9653	14463	15116	13197	14755	16811	17392	13695	15515	15636	17506	1.57
PAPER AND PAPERBOARD	14238	22398	23363	23517	25298	27600	29879	22845	27127	28201	29741	2.68
WESTERN EUROPE												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	4855	10935	9392	7130	10143	12714	12393	14406	14494	12850	13695	5.49
RICE MILLED	269	303	507	556	517	386	605	613	659	738	834	8.58
BARLEY	2461	4324	4387	3780	5311	5586	5966	5686	5075	4408	8634	4.97
MAIZE	1111	3242	3883	5300	4593	5613	6012	5666	5876	4458	4869	3.60
MILLET	4	3	4	10	4	9	7	14	11	12	11	15.19
SORGHUM	65	111	181	136	196	276	712	737	771	385	263	17.53
POTATOES	1835	2415	2220	2138	2763	2485	2358	2579	2337	2708	2763	1.70
SUGAR,TOTAL (RAW EQUIV.)	1465	1448	1980	2025	2817	2827	2638	2249	2932	3924	4449	10.18
PULSES	184	284	259	256	291	288	253	323	226	301	354	1.59
SOYBEANS	2	8	19	17	269	113	15	111	189	120	237	36.03
SOYBEAN OIL	85	224	384	445	395	470	720	719	744	767	1087	15.54
GROUNDNUTS SHELLED BASIS	14	13	16	14	17	17	17	13	24	21	28	6.62
GROUNDNUT OIL	37	48	34	31	32	54	51	74	49	44	44	3.61
COPRA	3	2	1	1	7	6		1	17	3	4	15.52

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 4. VOLUME OF EXPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
					THOUSAND METRIC TONS							PERCENT
COCONUT OIL	47	70	52	79	143	117	78	203	269	163	120	12.60
PALM NUTS KERNELS				2	1	1	5	1	1	1	1	10.50
PALM OIL	19	26	30	55	77	80	68	86	98	111	95	15.58
OILSEED CAKE AND MEAL	970	1342	1567	1793	2150	2710	2875	2258	2630	2518	3422	8.77
BANANAS	117	43	45	41	30	23	27	35	25	31	41	- 2.94
ORANGES+TANGER+CLEMEN	1316	1444	1815	1514	1838	1943	1933	1999	2056	2113	1931	3.36
LEMONS AND LIMES	356	483	475	470	424	384	444	461	525	464	490	.55
COFFEE GREEN+ROASTED	15	32	38	38	47	62	76	86	92	78	101	14.11
COCOA BEANS	6	6	4	4	2	3	6	11	15	30	34	29.28
TEA	18	39	41	53	47	58	61	43	46	60	50	2.49
COTTON LINT	78	75	98	99	74	101	79	65	89	70	59	- 3.42
JUTE AND SIMILAR FIBRES	33	40	39	38	29	28	25	21	18	17	19	- 9.81
TOBACCO UNMANUFACTURED	106	112	119	122	149	141	196	177	179	156	222	6.79
NATURAL RUBBER	62	15	19	19	24	30	40	29	32	27	21	5.45
WOOL GREASY	68	61	59	55	66	55	43	55	64	57	60	- .17
BOVINE CATTLE 1/	1730	2478	2601	2736	3094	2566	2312	3416	3021	2979	3316	2.61
SHEEP AND GOATS 1/	1182	980	629	718	790	619	575	1152	1155	1284	1619	8.17
PIGS 1/	600	1896	2348	2175	2445	2552	2576	2596	3111	3106	3421	5.77
TOTAL MEAT	880	1357	1556	1812	1823	1933	2215	2434	2393	2653	2822	8.01
MILK DRY	120	174	183	223	221	289	272	285	334	432	450	11.03
TOTAL EGGS IN SHELL	233	190	229	224	237	262	308	345	335	349	384	7.92
FISHERY PRODUCTS												
FISH FRESH FROZEN	818	954	1099	1036	1061	1095	1017	1054	1116	1153	1376	2.40
FISH CURED	349	338	339	314	349	328	283	278	288	268	262	- 3.11
SHELLFISH	106	133	150	186	243	196	225	250	277	234	267	7.27
FISH CANNED AND PREPARED	197	178	188	177	198	235	226	207	244	239	256	4.12
SHELLFISH CANNED+PREPAR	9	17	19	21	26	28	24	27	34	33	38	8.40
FISH BODY AND LIVER OIL	221	270	172	149	196	271	196	249	330	339	269	5.68
FISH MEAL	367	656	606	724	840	797	803	864	948	1020	882	4.81
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	1108	1225	1463	1354	1380	2236	2784	1704	2428	2590	1889	7.33
SAWLOGS NONCONIFEROUS	963	1233	1354	1474	1549	1850	1930	1663	2022	2054	2098	5.95
PULPWOOD+PARTICLE	4554	6476	8287	7755	6089	7114	7771	8367	8093	7470	6313	.18
FUELWOOD	1584	1180	1268	814	752	1021	1164	1068	850	1075	1020	- .65
SAWNWOOD CONIFEROUS	14029	16237	16213	16529	17929	20295	17258	12640	17106	16554	18193	.08
SAWNWOOD NONCONIFEROUS	1046	1444	1504	1522	1766	2274	1852	1607	2894	2486	2514	7.34
WOOD-BASED PANELS	2502	3976	4237	4621	5270	6337	5854	5096	6094	6199	6670	5.30
PULP FOR PAPER	5598	7089	7156	5842	6639	8054	7454	5198	5697	5564	6714	- 1.91
PAPER AND PAPERBOARD	6056	10089	10727	10834	12008	13744	14902	10626	13081	13664	15312	3.77
USSR AND EASTERN EUROPE												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	4196	8003	6827	9276	5883	7036	8307	5261	4137	4380	3942	- 7.96
RICE MILLED	30	5	10	17	92	90	149	16	11	11	14	1.13
BARLEY	1089	849	724	802	664	460	1046	917	781	1602	83	- 7.96
MAIZE	1762	1544	1116	884	946	1570	1727	983	1536	1318	1481	2.31
MILLET	4	4	5	4	4	6	14	8	13	7	7	10.77
POTATOES	719	311	631	344	1510	534	648	490	442	682	358	- .08
SUGAR,TOTAL (RAW EQUIV.)	2469	2149	2114	1706	962	819	787	438	573	808	854	-12.96
PULSES	199	487	157	249	127	118	115	119	112	117	137	-10.16
SOYBEANS		4	1	50	10	34	31	11	10	32	6	14.35
SOYBEAN OIL		9		3	3	6	8	2	12	13	7	25.24
GROUNDNUTS SHELLED BASIS	2	1	2	3	1		1					-86.74
GROUNDNUT OIL	1											
OILSEED CAKE AND MEAL	254	338	84	88	79	75	47	49	13	40	46	-18.94
BANANAS			3									-73.31
ORANGES+TANGER+CLEMEN	3	13	2									-97.99
LEMONS AND LIMES	2											
COCOA BEANS	2											-48.34
TEA	8	13	10	11	12	13	14	17	15	22	17	6.94
COTTON LINT	386	465	528	571	662	734	740	801	880	976	859	7.91
JUTE AND SIMILAR FIBRES	1		6	2	2	3						-98.95
TOBACCO UNMANUFACTURED	101	97	94	92	88	97	100	102	101	99	89	.30
NATURAL RUBBER	24											-69.34
WOOL GREASY	1	6	2	1	1	1	1	1	1			-18.23
BOVINE CATTLE 1/	217	729	735	818	817	783	630	686	498	528	509	- 5.17
SHEEP AND GOATS 1/	708	2311	2948	3128	3183	3168	2875	3457	3025	3517	3277	2.68
PIGS 1/	702	171	179	571	787	412	628	944	720	720	1157	19.28
TOTAL MEAT	292	439	329	374	395	433	510	627	540	622	620	6.87
TOTAL EGGS IN SHELL	101	86	98	114	108	103	111	121	101	120	116	2.41

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 4. VOLUME OF EXPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS....			.....	.....	.....	.....	PERCENT
FISHERY PRODUCTS												
FISH FRESH FROZEN	80	235	319	351	345	379	494	606	609	540	589	10.65
FISH CURED	37	23	22	17	16	15	13	19	12	11	14	- 6.10
SHELLFISH	1	2	5	5	4	7	3	1	1	1	2	-13.18
FISH CANNED AND PREPARED	22	29	30	28	29	31	32	45	47	48	41	6.65
SHELLFISH CANNED+PREPAR	4	3	4	4	3	2	2	3	2	1	1	-11.52
FISH BODY AND LIVER OIL	32	64	35	15	17	6	6	4	2	1	1	-35.95
FISH MEAL	5	33	14	12	18	13	11	19	18	14	21	- 1.09
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	3131	6382	7572	7383	7982	10195	9829	8884	9534	9763	9868	4.50
SAWLOGS NONCONIFEROUS	70	252	288	275	290	334	397	354	201	199	197	- 3.33
PULPWOOD+PARTICLE	5366	8232	9334	8437	8021	11019	12480	12170	12455	12075	11284	4.94
FUELWOOD	391	326	282	212	221	239	308	230	87	114	130	-10.73
SAWNWOOD CONIFEROUS	9464	10735	11006	10764	11059	11085	9865	10362	11009	10551	10739	- .30
SAWNWOOD NONCONIFEROUS	686	894	936	948	827	825	767	749	748	685	1018	- 1.54
WOOD-BASED PANELS	519	1062	1113	1108	1248	1481	1462	1594	1710	1774	1858	7.02
PULP FOR PAPER	348	632	554	569	672	691	684	673	854	856	952	5.45
PAPER AND PAPERBOARD	340	930	1079	1107	1180	1264	1304	1095	1480	1616	1621	5.66
NORTH AMERICA DEVELOPED												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR, WHEAT EQUIV.	31865	21101	30585	31171	37245	51359	36738	43589	38890	40158	50832	6.93
RICE MILLED	1193	1920	1741	1479	2037	1630	1726	2139	2107	2288	2279	3.35
BARLEY	1993	800	4146	5161	5749	5168	3547	4068	5432	4343	4218	8.94
MAIZE	11365	13968	14412	12918	22409	33215	29875	33526	44692	40580	50502	17.15
SORGHUM	2864	2752	3772	2849	3858	5629	5722	5848	5797	6139	5177	8.80
POTATOES	274	327	321	254	300	313	356	369	857	503	281	5.37
SUGAR, TOTAL (RAW EQUIV.	24	17	16	13	20	71	105	291	122	166	149	39.94
PULSES	269	347	403	340	359	416	339	390	399	374	390	.83
SOYBEANS	5000	8493	11868	11555	12034	13250	13953	12506	15361	16234	20794	7.44
SOYBEAN OIL	507	413	696	823	618	439	766	355	506	768	916	2.66
GROUNDNUTS SHELLED BASIS	33	25	51	109	192	189	255	241	130	302	381	26.54
GROUNDNUT OIL	14	15	15	39	28	47	21	12	48	45	40	9.19
COCONUT OIL	3	4	5	10	6	11	5	8	26	17	9	13.97
OILSEED CAKE AND MEAL	1615	3283	3968	4435	4012	4971	5215	4030	5162	4554	6961	5.32
BANANAS	50	87	191	180	188	188	195	187	201	199	201	5.22
ORANGES+TANGER+CLEMEN	196	280	266	257	303	292	328	481	461	410	356	6.01
LEMONS AND LIMES	95	108	128	137	157	201	202	183	225	236	237	9.08
COFFEE GREEN+ROASTED	36	27	28	25	34	72	85	55	69	106	59	14.99
COCOA BEANS	7	9	6	5	4	9	23	9	10	14	9	7.61
TEA	1	3	3	3	3	3	3	4	3	4	5	4.86
COTTON LINT	1075	544	677	936	701	1246	1172	871	748	973	1279	6.06
JUTE AND SIMILAR FIBRES	3	1	1	1	1	1	1	1	1	2		.18
TOBACCO UNMANUFACTURED	245	295	264	249	314	313	335	293	292	314	364	2.31
NATURAL RUBBER	26	26	16	25	21	27	26	29	29	25	20	1.47
WOOL GREASY	2	1	1	1	1	1		1				- 9.58
BOVINE CATTLE 1/	459	282	335	338	405	699	360	421	684	651	591	9.05
SHEEP AND GOATS 1/	43	129	140	220	174	214	293	344	250	214	153	4.67
PIGS 1/	19	36	114	106	101	107	213	47	56	54	201	3.37
TOTAL MEAT	265	315	319	341	369	444	406	472	693	701	721	10.96
MILK DRY	18	7	6	11	18	23	21	17	16	16	7	4.63
TOTAL EGGS IN SHELL	10	12	15	11	11	18	21	22	22	38	39	14.59
FISHERY PRODUCTS												
FISH FRESH FROZEN	167	225	211	225	234	264	200	236	250	352	383	5.38
FISH CURED	54	50	53	58	52	49	49	47	62	65	65	2.43
SHELLFISH	22	38	36	38	36	47	39	42	48	71	119	10.41
FISH CANNED AND PREPARED	32	37	32	33	43	52	39	36	46	51	63	5.64
SHELLFISH CANNED+PREPAR	6	10	9	10	9	10	8	8	9	9	11	- .72
FISH BODY AND LIVER OIL	79	104	93	118	95	121	101	93	91	60	110	- 2.48
FISH MEAL	50	73	77	72	42	63	85	35	63	61	81	- .98
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	3786	10926	13391	10854	14104	14248	12118	12196	14842	14362	15565	2.85
SAWLOGS NONCONIFEROUS	388	432	368	339	497	567	622	328	470	481	522	2.48
PULPWOOD+PARTICLE	3876	7130	7777	6473	6768	7837	8402	6867	8337	8572	4365	- 1.42
FUELWOOD	24	84	102	84	91	112	110	206	162	200	170	10.72
SAWNWOOD CONIFEROUS	15851	18274	20057	22023	25705	27339	22944	18553	26379	32305	34494	5.48
SAWNWOOD NONCONIFEROUS	633	752	674	787	1006	1072	705	807	814	847	1276	3.36
WOOD-BASED PANELS	493	986	884	979	1225	1558	1518	1507	1567	1500	1750	7.42
PULP FOR PAPER	3481	6183	6823	6125	6628	7185	8076	6672	7664	7722	8132	2.82
PAPER AND PAPERBOARD	7346	10424	10495	10573	10981	11255	12255	9726	10935	11232	11124	.58

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 4. VOLUME OF EXPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS....			.....	.....	.....	.....	PERCENT
OCEANIA DEVELOPED												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	6083	5374	7376	9484	8712	5659	5326	8201	7875	8196	11170	3.80
RICE MILLED	59	110	121	102	181	158	137	174	218	255	277	10.88
BARLEY	498	452	631	1123	1828	844	808	1760	2022	2157	1375	13.84
MAIZE	2		1	22	38	19	3	1	33	79	32	52.54
MILLET	10	9	14	27	40	25	31	21	20	23	15	2.81
SORGHUM	16	69	54	517	993	736	748	856	815	829	385	24.75
POTATOES	16	19	30	22	16	21	16	21	25	29	20	.54
SUGAR,TOTAL (RAW EQUIV.)	1052	2066	1389	1574	2012	2087	1784	1999	2002	2558	2481	4.30
PULSES	20	32	37	46	37	44	42	37	32	41	36	.05
SOYBEANS						1	2	4	32			53.40
GROUNDNUTS SHELLED BASIS		1		1	1	7	7	2	2	4	2	26.02
OILSEED CAKE AND MEAL	2	1	2	1	2	1		1	3	2	1	- .73
ORANGES+TANGER+CLEMEN	17	30	21	26	34	32	24	15	18	11	22	- 7.19
LEMONS AND LIMES			1		1	1	1	1	1	1		1.27
COCOA BEANS					1	1	1					6.85
TEA	1	1	1	1	1	1	1	1	1		1	- 1.56
COTTON LINT		4	12	7	2	22	3	8	16	6	10	5.46
TOBACCO UNMANUFACTURED		1	1	1							1	- 2.77
WOOL GREASY	820	910	941	863	905	859	634	588	750	826	631	- 3.87
BOVINE CATTLE 1/	9	6	3	4	7	17	34	13	33	45	71	39.17
SHEEP AND GOATS 1/	247	376	566	788	891	1145	1159	1456	1847	3409	4143	27.37
PIGS 1/		2	1	2	2	1	1	1	1		1	-16.62
TOTAL MEAT	857	1038	1210	1202	1367	1542	1208	1182	1446	1634	1665	4.08
MILK DRY	12	23	35	41	37	48	51	56	52	92	109	15.03
TOTAL EGGS IN SHELL	3	4	3	3	4	4	2	2	2	1	1	-11.42
FISHERY PRODUCTS												
FISH FRESH FROZEN	4	4	8	10	14	14	13	12	19	28	32	19.82
SHELLFISH	6	13	14	16	18	17	16	16	14	17	20	2.81
FISH CANNED AND PREPARED		1		1		2		1				- 5.35
SHELLFISH CANNED+PREPAR		2	2	3	4	3	2	2	2	2	2	- .89
FISH BODY AND LIVER OIL	7	6	4	6	6	8	8	4	8	6	5	.56
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	321	1661	1809	1797	1844	1916	1302	534	958	1027	970	- 9.27
SAWLOGS NONCONIFEROUS	19	11	11	13	14	9	12	3	1	3	3	-19.48
PULPWOOD+PARTICLE		3	185	565	1047	2199	2931	3061	2745	3774	3669	78.26
FUELWOOD	2							6				78.04
SAWNWOOD CONIFEROUS	81	250	259	301	266	248	245	160	232	295	329	.33
SAWNWOOD NONCONIFEROUS	41	36	40	28	27	54	51	32	23	31	33	- 1.93
WOOD-BASED PANELS	22	64	68	87	75	93	52	61	28	32	52	- 8.26
PULP FOR PAPER	64	80	98	100	114	142	232	335	375	452	435	24.60
PAPER AND PAPERBOARD	98	182	186	187	204	200	187	203	274	294	333	6.55
AFRICA DEVELOPING												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	218	87	138	66	77	76	41	25	16	4	6	-30.65
RICE MILLED	56	80	88	58	52	43	29	17	54	42	12	-14.68
BARLEY	147	132	236	12		65	2	7	15	16	15	-16.40
MAIZE	403	619	274	347	541	507	326	211	174	84	493	- 9.81
MILLET	47	71	73	73	56	36	59	32	76	41	41	- 5.81
SORGHUM	9	13	5	2	5	5	7	8	2			-30.41
POTATOES	144	107	119	119	124	104	83	94	89	82	68	- 5.46
SUGAR,TOTAL (RAW EQUIV.)	1166	1444	1475	1258	1441	1571	1445	1096	1301	1375	1201	- 1.74
PULSES	314	365	403	299	451	457	344	320	412	268	181	- 5.28
SOYBEANS	18	8	12	6	2	1	1	2	2	1	1	-27.40
GROUNDNUTS SHELLED BASIS	1050	910	617	389	356	371	183	163	285	182	79	-19.17
GROUNDNUT OIL	214	247	276	151	318	239	155	224	284	261	102	- 3.96
COPRA	85	78	74	69	59	69	62	45	61	55	29	- 7.32
COCONUT OIL	12	15	16	13	11	17	18	9	11	7	12	- 5.51
PALM NUTS KERNELS	626	344	382	414	334	254	319	270	353	236	154	- 6.90
PALM OIL	317	179	178	125	151	135	199	207	153	117	106	- 3.17
OILSEED CAKE AND MEAL	582	814	806	654	909	722	581	667	771	662	449	- 4.18
BANANAS	446	377	394	395	452	438	465	354	320	312	337	- 2.66
ORANGES+TANGER+CLEMEN	654	782	771	697	752	867	688	551	628	640	688	- 2.48
LEMONS AND LIMES	12	7	6	5	5	6	3	1	1	1	1	-25.61
COFFEE GREEN+ROASTED	785	985	1010	930	1082	1186	1176	1096	1145	880	916	- .33
COCOA BEANS	884	755	866	915	977	889	867	808	860	674	788	- 1.37
TEA	58	102	109	107	135	139	135	130	145	163	162	5.20
COTTON LINT	265	358	449	398	379	401	292	271	346	271	241	- 5.38

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 4. VOLUME OF EXPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
					THOUSAND METRIC TONS							PERCENT
JUTE AND SIMILAR FIBRES	3	4	3	1	2	1						-98.49
TOBACCO UNMANUFACTURED	128	73	84	98	114	131	131	132	147	136	133	7.09
NATURAL RUBBER	156	187	201	200	195	198	203	184	166	163	169	- 2.08
WOOL GREASY	6	7	7	4	5	5	6	4	3	4	3	- 8.39
BOVINE CATTLE 1/	1138	1143	1267	1297	1511	1424	1291	1018	1044	982	1042	- 2.98
SHEEP AND GOATS 1/	2831	3565	3266	3147	3738	3361	3287	3474	2439	2599	2947	- 2.88
PIGS 1/	17	17	23	24	22	17	13	13	13	15	16	- 4.98
TOTAL MEAT	52	54	64	72	75	95	88	74	81	80	80	3.49
MILK DRY		1	1	1	2	3	1		1			-14.88
TOTAL EGGS IN SHELL	2		1	1	1	1	1	1	1			- 3.22
FISHERY PRODUCTS												
FISH FRESH FROZEN	25	18	32	42	53	107	106	76	75	95	93	16.84
FISH CURED	58	55	67	64	62	50	42	46	39	39	38	- 6.29
SHELLFISH	3	7	12	14	19	23	29	39	44	40	41	21.23
FISH CANNED AND PREPARED	53	62	60	69	61	83	80	59	76	69	62	.76
FISH BODY AND LIVER OIL	9	17	17	13	25	31	18	12	7	6	6	-12.21
FISH MEAL	65	123	93	80	150	142	95	83	43	18	38	-15.34
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS		47		65	13	14	14	15	14	14	14	7.62
SAWLOGS NONCONIFEROUS	5204	7839	6842	6804	7377	8801	6935	5286	6372	6512	6024	- 2.56
FUELWOOD	238	563	344	354	68	188	175	58	3	7	7	-42.29
SAWNWOOD CONIFEROUS	32	82	97	100	74	104	108	98	105	111	111	2.93
SAWNWOOD NONCONIFEROUS	636	736	760	657	722	896	831	717	811	773	769	.90
WOOD-BASED PANELS	180	278	306	290	344	347	334	207	188	260	252	- 3.42
PULP FOR PAPER	93	176	191	195	204	217	235	170	229	231	250	2.94
PAPER AND PAPERBOARD	33	26	28	21	20	22	34	24	30	28	28	2.41
LATIN AMERICA												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR, WHEAT EQUIV.	3549	2788	2466	1164	1812	3142	1940	2054	3343	6095	1873	4.92
RICE MILLED	279	364	403	424	184	319	337	440	504	1065	920	12.00
BARLEY	240	216	112	104	122	170	119	28	59	130	33	-13.30
MAIZE	3302	5524	6782	7764	3645	4113	6664	5088	4560	6858	6009	- .21
MILLET	145	119	60	129	81	118	78	94	124	169	195	7.27
SORGHUM	413	1388	2026	2319	635	2108	3154	2180	3499	4327	4724	14.61
POTATOES	27	68	83	37	36	11	21	49	95	110	40	2.18
SUGAR, TOTAL (RAW EQUIV.)	8878	9235	11647	10709	10894	11996	12131	11101	10559	13060	12740	2.26
PULSES	91	143	87	97	163	166	175	232	315	424	388	17.87
SOYBEANS	57	311	291	225	1079	1841	2831	3435	3934	3442	2838	39.90
GROUNDNUTS SHELLED BASIS	21	33	57	41	60	56	53	59	25	45	43	- 1.17
GROUNDNUT OIL	48	41	74	102	114	124	101	38	140	181	129	9.22
COPRA	19	7	4	3	2	1	2	2	2	1	1	-20.75
COCONUT OIL	3	4	5	9	11	9	5	5	5	5	10	1.51
PALM NUTS KERNELS	2	2	4	1	5	6	5	4	2	3	9	8.94
PALM OIL	3	6	4	6	3	6	6	4	5	4	4	- 2.69
OILSEED CAKE AND MEAL	1434	1713	2180	2379	2636	2814	3087	4238	5712	7218	7351	18.06
BANANAS	3386	4687	4750	5195	5329	5345	5055	4780	5127	5118	5405	.83
ORANGES+TANGER+CLEMEN	202	145	145	177	216	220	213	191	180	244	291	6.92
LEMONS AND LIMES	6	2	2	3	7	11	14	22	23	25	42	44.54
COFFEE GREEN+ROASTED	1865	2098	1951	2035	2165	2232	1826	2053	2042	1528	1906	- 1.75
COCOA BEANS	176	214	226	226	226	173	255	270	209	183	207	- .75
TEA	10	18	23	28	24	25	30	23	32	33	33	5.42
COTTON LINT	934	1173	923	682	861	829	663	806	600	704	897	- 3.20
JUTE AND SIMILAR FIBRES	5	6	3	7	4	4	3	1	1			-40.92
TOBACCO UNMANUFACTURED	127	140	150	160	184	185	244	244	256	238	262	7.76
NATURAL RUBBER	11	10	12	10	9	8	5	6	5	5	5	-10.46
WOOL GREASY	166	133	129	113	78	81	64	108	93	108	105	- 2.14
BOVINE CATTLE 1/	1120	1363	1476	1281	1491	1030	1041	994	1191	1189	1493	- 1.36
SHEEP AND GOATS 1/	98	151	216	158	81	48	65	92	84	106	105	- 6.32
PIGS 1/	62	23	29	27	42	32	33	42	65	36	54	8.58
TOTAL MEAT	669	936	941	742	1047	891	502	448	763	831	946	- 2.24
MILK DRY			2	6	12	15	9	14	34	19	10	36.90
TOTAL EGGS IN SHELL	6	4	4	4	1	1	1	1	2	3	3	- 2.33
FISHERY PRODUCTS												
FISH FRESH FROZEN	31	47	56	60	64	107	131	146	196	297	372	26.53
FISH CURED	1	1	2	2	3	7	9	5	3	9	6	24.21
SHELLFISH	62	74	88	91	98	94	90	94	99	94	95	1.84
FISH CANNED AND PREPARED	19	8	9	16	21	20	20	16	28	47	65	21.48
SHELLFISH CANNED+PREPAR	4	5	4	3	2	1	1	3	3	5	3	- .87
FISH BODY AND LIVER OIL	143	174	218	308	318	10	93	148	39	46	70	-15.34
FISH MEAL	1221	1862	2011	1957	1711	402	749	909	842	733	830	-11.33

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 4. VOLUME OF EXPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	37	17	10	8	9	14	9	15	18	162	690	42.73
SAWLOGS NONCONIFEROUS	418	378	362	302	217	524	202	40	70	33	38	-26.44
PULPWOOD+PARTICLE	313	418	380	373	382	784	183	107	115	100	100	-17.86
FUELWOOD	47	18	13	18	5	10	7	8	12	14	3	- 9.32
SAWNWOOD CONIFEROUS	1272	1600	1523	1724	1718	1530	1132	1135	1048	1379	1425	- 3.44
SAWNWOOD NONCONIFEROUS	273	505	585	552	622	872	837	592	644	744	588	2.23
WOOD-BASED PANELS	74	158	168	219	266	295	265	252	323	366	441	10.44
PULP FOR PAPER	42	164	158	150	267	300	318	332	382	443	715	16.98
PAPER AND PAPERBOARD	40	120	130	115	110	186	213	146	201	222	266	9.28
NEAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	187	59	44	31	626	606	29	15	25	640	2092	22.35
RICE MILLED	358	788	681	546	493	326	151	115	241	242	167	-16.86
BARLEY	451	363	226	17	142	17	7	12	366	281	33	- 7.56
MAIZE	4	1	2	3	7	3	2	3	15	37	20	37.95
MILLET	15	10	4	3	7	9	4	4	6	3	3	- 6.86
SORGHUM	84	3	3	37	61	104	98	48	75	104	120	46.47
POTATOES	193	247	294	254	284	326	299	184	354	436	296	2.87
SUGAR,TOTAL (RAW EQUIV.)	238	260	144	163	160	55	59	58	47	80	49	-15.75
PULSES	148	109	103	122	143	170	105	100	113	168	186	3.90
SOYBEANS	2											-97.45
SOYBEAN OIL									1			-76.09
GROUNDNUTS SHELLED BASIS	140	100	90	143	136	160	140	218	295	162	184	9.21
COCONUT OIL										1		6.10
OILSEED CAKE AND MEAL	498	697	704	581	751	545	401	452	365	250	265	-11.47
BANANAS	18	14	14	14	16	10	6	10	8	3	3	-15.29
ORANGES+TANGER+CLEMEN	188	402	448	600	527	766	680	709	749	793	743	7.15
LEMONS AND LIMES	43	85	88	114	108	152	129	109	159	130	128	4.87
COFFEE GREEN+ROASTED	10	5	7	7	10	8	6	4	3	4	4	- 8.39
TEA	2	14	18	23	19	26	19	4	8	8	7	-13.06
COTTON LINT	766	863	1089	1101	1049	1097	706	856	1027	747	798	- 2.84
JUTE AND SIMILAR FIBRES				1								-97.60
TOBACCO UNMANUFACTURED	75	80	87	94	137	120	123	74	81	70	84	- 2.24
WOOL GREASY	16	14	12	14	21	25	10	8	5	1	2	-25.77
BOVINE CATTLE 1/	167	165	155	134	92	52	77	18	11	15	14	-28.52
SHEEP AND GOATS 1/	1489	1198	1233	1146	932	987	980	720	721	600	1146	- 5.04
TOTAL MEAT		6	6	8	15	32	22	16	9	20	17	11.23
TOTAL EGGS IN SHELL	3	13	15	19	21	15	17	18	2	2	12	-15.21
FISHERY PRODUCTS												
FISH FRESH FROZEN	11	11	11	8	14	20	18	6	4	3	2	-16.61
FISH CURED	15	16	20	23	21	17	20	12	10	11	11	- 7.39
SHELLFISH	3	4	4	7	13	16	12	7	10	9	8	7.55
FISH CANNED AND PREPARED	1	1	2	1	1	1	1	1	2	2	1	7.21
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	2	1	4	17	14	7	5	4	3		1	-18.50
SAWLOGS NONCONIFEROUS	23	20	23	20	22	24	8	17	10	9	5	-13.85
FUELWOOD	4	28	32	23	33	31	20	21	22	31	22	- 2.78
SAWNWOOD CONIFEROUS	1	10	30	57	37	37	61	49	60	66	74	16.83
SAWNWOOD NONCONIFEROUS	14	13	18	22	28	23	21	1	1	1	1	-36.65
WOOD-BASED PANELS	5	21	25	14	26	32	31	27	29	40	39	7.98
PAPER AND PAPERBOARD		4	4	4	3	10	22	9	10	11	10	15.47
FAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	140	221	274	135	342	555	145	115	83	373	1129	6.12
RICE MILLED	3945	2235	2540	2911	3175	2189	2006	1877	3595	4778	3007	4.01
BARLEY		3	6	5	1	19	95		32	28	12	21.04
MAIZE	807	1731	1716	2140	1952	1630	2554	2243	2485	1756	1955	1.76
MILLET	3	6	5	2	1	4	2	1	1	8	1	-12.99
SORGHUM	14	62	88	141	134	135	189	213	182	138	151	8.97
POTATOES	29	31	21	32	35	40	35	47	96	70	63	13.49
SUGAR,TOTAL (RAW EQUIV.)	1701	1204	1610	2216	1837	2000	2581	2915	3804	4510	2950	12.63
PULSES	216	219	225	233	216	219	167	170	189	184	165	- 3.61
SOYBEANS	18	15	20	18	20	59	18	32	38	47	29	9.98
SOYBEAN OIL	2	1	8	22	9	8	7	4	2	4	6	2.28
GROUNDNUTS SHELLED BASIS	47	87	65	60	50	62	109	93	182	40	20	- 5.20
GROUNDNUT OIL	44	6	8	8	6	10	7	9	10	5	11	2.37
COPRA	1231	766	657	790	1109	800	285	834	878	683	463	- 3.36
COCONUT OIL	330	339	487	548	642	525	508	760	1004	845	1083	11.41

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 4. VOLUME OF EXPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
					THOUSAND METRIC TONS							PERCENT
PALM NUTS KERNELS	59	91	73	73	57	42	29	33	33	30	12	-16.88
PALM OIL	271	649	694	977	1147	1284	1400	1690	1827	1911	1872	13.57
OILSEED CAKE AND MEAL	1455	1357	1670	1735	1986	2174	1977	2018	3183	2834	2528	7.73
BANANAS	35	52	138	302	461	503	705	872	846	739	891	31.08
ORANGES+TANGER+CLEMEN	16	22	28	29	33	41	39	137	86	112	60	18.86
COFFEE GREEN+ROASTED	156	260	216	198	204	206	203	225	261	264	338	3.35
COCOA BEANS	3	4	4	5	7	10	14	15	18	18	22	23.86
TEA	474	437	480	462	451	457	455	507	513	499	453	.88
COTTON LINT	215	239	153	237	341	246	96	244	218	68	146	- 7.31
JUTE AND SIMILAR FIBRES	999	870	815	756	759	866	872	532	614	578	457	- 6.05
TOBACCO UNMANUFACTURED	118	166	167	173	182	197	211	198	210	232	216	3.72
NATURAL RUBBER	1907	2619	2561	2597	2566	3052	2869	2738	2960	3021	3078	2.08
WOOL GREASY	22	4	2	3	2	2	3	1	2	2	3	- 1.29
BOVINE CATTLE 1/	100	114	146	134	148	123	114	74	74	65	61	- 9.42
SHEEP AND GOATS 1/	68	29	28	31	47	20	28	28	80	76	71	11.95
PIGS 1/	150	11	11	15	7	13	5	10	22	7	11	- .47
TOTAL MEAT	4	7	7	7	15	19	26	33	44	47	53	29.92
MILK DRY	1	2	2	2	2	2	3	4	4	5	7	14.77
TOTAL EGGS IN SHELL	13	9	7	7	7	4	3	5	6	8	8	- .76
FISHERY PRODUCTS												
FISH FRESH FROZEN	76	164	198	217	229	304	285	418	286	536	551	13.59
FISH CURED	41	43	54	41	42	53	36	31	30	29	37	- 5.05
SHELLFISH	43	81	104	132	171	215	212	226	287	293	306	15.60
FISH CANNED AND PREPARED	6	10	6	6	7	11	17	18	25	35	46	24.43
SHELLFISH CANNED+PREPAR	10	13	15	13	20	23	26	27	21	26	37	10.46
FISH BODY AND LIVER OIL							1	1	1	1	5	36.28
FISH MEAL	14	32	45	44	65	81	66	58	84	112	131	14.09
FOREST PRODUCTS 2/												
SAWLOGS NONCONIFEROUS	10361	24493	29032	30775	32177	39635	34096	28167	35816	36996	38475	3.68
PULPWOOD+PARTICLE		296	629	506	763	754	986	906	592	592	600	4.67
FUELWOOD	434	682	729	770	653	616	724	611	715	718	645	- .62
SAWNWOOD CONIFEROUS	9	8	7	8	109	188	117	134	251	258	467	62.29
SAWNWOOD NONCONIFEROUS	1176	2325	2518	2506	3120	4352	3657	3298	5553	5366	5474	10.83
WOOD-BASED PANELS	317	1351	1583	2029	2573	3076	2424	2512	3110	3190	3276	9.32
PULP FOR PAPER		5	8	3	4	14	9	2	3	2	2	-11.85
PAPER AND PAPERBOARD	26	68	58	59	99	196	115	108	177	128	139	11.00
ASIAN CENT PLANNED ECON												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	169	10	8	5	5	12	5	4	4	6	7	- 4.22
RICE MILLED	1447	1751	1980	1648	1637	2743	2832	2337	1602	1431	2151	.32
BARLEY		1	1			16		6	2			.73
MAIZE	244	74	45	120	110	65	130	315	430	356	240	23.80
MILLET	4	19	17	23	24	33	30	56	52	37	30	10.08
POTATOES	20	49	44	47	52	54	49	50	55	53	62	2.36
SUGAR,TOTAL (RAW EQUIV.)	999	704	500	655	655	646	614	512	548	645	418	- 2.75
PULSES	74	154	94	132	128	115	86	83	100	84	68	- 6.54
SOYBEANS	423	492	411	461	373	321	375	355	190	129	146	-13.26
SOYBEAN OIL	2	3	3	2						2	6	- 6.53
GROUNDNUTS SHELLED BASIS	26	51	20	25	41	36	29	30	30	17	20	- 5.70
GROUNDNUT OIL	5	12	8	12	15	13	16	15	11	5	11	- 2.53
COPRA						1						-16.45
COCONUT OIL	1	1										-97.10
PALM NUTS KERNELS	2											
PALM OIL							1					1.49
OILSEED CAKE AND MEAL	21	44	35	43	28	44	31	29	28	22	21	- 7.24
BANANAS	168	383	241	372	245	270	165	127	103	148	108	-13.39
ORANGES+TANGER+CLEMEN	41	83	75	87	90	83	74	79	56	80	80	- 1.56
COFFEE GREEN+ROASTED	1	3	3	3	4	6	6	4	6	4	4	4.37
TEA	49	54	53	66	66	60	74	78	87	92	90	5.68
COTTON LINT	6	22	22	22	22	22	22	43	65	71	22	9.96
JUTE AND SIMILAR FIBRES	4	4	4	4	2	2	1		3	7	8	2.75
TOBACCO UNMANUFACTURED	17	39	24	28	32	43	41	43	43	45	46	5.52
NATURAL RUBBER	112	70	38	33	32	40	49	18	55	47	51	- .30
WOOL GREASY	20	24	25	22	22	23	22	24	25	21	22	- .52
BOVINE CATTLE 1/	155	246	160	157	171	162	166	204	195	196	173	- .07
SHEEP AND GOATS 1/	1387	955	958	1042	1186	1220	1225	1030	873	482	443	- 7.59
PIGS 1/	1345	1806	1923	2460	2699	2794	2601	2775	2953	3016	3129	5.63
TOTAL MEAT	43	120	115	118	185	192	141	153	184	135	153	2.98
TOTAL EGGS IN SHELL	33	40	38	45	41	47	46	46	43	44	53	2.20

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 4. VOLUME OF EXPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...			.....	.....	.....	.....	PERCENT
FISHERY PRODUCTS												
FISH FRESH FROZEN	19	52	159	163	176	193	153	182	186	221	242	10.68
FISH CURED	5	5	4	6	4	5	4	5	6	5	6	2.78
SHELLFISH	5	19	26	33	45	50	56	56	59	44	58	11.19
FISH CANNED AND PREPARED		1	1	2	3	6	6	6	11	11	12	37.68
SHELLFISH CANNED+PREPAR	1	4	4	6	8	8	7	7	11	10	9	10.46
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	48	97	100	106	119	98	125	145	96	96	96	.02
SAWLOGS NONCONIFEROUS	87	78	43	12	28	5	3	17	12	12	12	-15.52
SAWNWOOD CONIFEROUS	34	64	72	70	139	53	66	95	103	102	111	5.25
SAWNWOOD NONCONIFEROUS	46	61	43	111	177	160	118	133	199	154	178	13.09
WOOD-BASED PANELS	159	523	591	811	953	959	687	770	872	949	1244	6.57
PULP FOR PAPER	14	28	43	63	66	26	25	33	31	31	31	- 4.01
PAPER AND PAPERBOARD	62	82	103	113	115	116	107	132	161	161	161	7.08

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 5. WORLD AVERAGE EXPORT UNIT VALUES OF SELECTED AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....US $	PER METRIC TON....	.....	.....	.....	.....	.....	PERCENT
AGRICULTURAL PRODUCTS												
WHEAT	65	65	62	68	69	106	171	169	153	125	132	11.87
WHEAT FLOUR	85	85	86	91	93	135	210	237	214	190	198	13.35
RICE MILLED	121	158	130	119	136	226	402	377	280	280	373	13.58
BARLEY	58	58	53	60	59	94	135	140	138	132	136	13.69
MAIZE	55	55	60	63	63	92	128	136	123	111	117	10.91
POTATOES	59	68	74	62	71	114	111	149	247	198	156	15.29
SUGAR CENTRIFUGAL RAW	116	108	118	128	147	187	384	521	332	257	292	15.43
SOYBEANS	101	98	103	115	126	216	246	225	215	272	253	13.11
SOYBEAN OIL	259	225	278	317	288	358	701	695	455	586	616	12.48
GROUNDNUTS SHELLED	177	190	208	230	245	339	511	513	453	610	667	16.25
GROUNDNUT OIL	320	316	340	391	374	444	937	803	721	792	926	14.05
COPRA	157	167	185	166	118	210	507	237	183	311	359	8.85
COCONUT OIL	262	274	307	288	207	358	929	417	361	556	629	10.06
PALM NUTS KERNELS	135	140	150	140	107	179	364	179	160	279	292	8.78
PALM OIL	167	86	126	118	95	128	262	189	362	521	564	23.82
PALM KERNEL OIL	244	267	308	313	238	342	826	457	402	537	601	9.71
OLIVE OIL	602	652	680	701	806	1168	1793	1860	1307	1254	1382	10.92
CASTOR BEANS	114	127	117	121	158	384	329	207	252	332	333	13.09
CASTOR BEAN OIL	251	259	265	325	453	967	838	575	557	875	817	14.24
COTTONSEED	67	62	65	78	72	100	134	139	147	173	182	14.25
COTTONSEED OIL	284	271	302	357	317	355	602	676	554	605	609	10.95
LINSEED	126	122	112	107	121	258	426	336	285	272	215	12.73
LINSEED OIL	219	213	214	206	196	316	900	762	520	500	397	13.78
BANANAS	83	90	86	85	89	94	99	128	136	144	158	7.65
ORANGES	122	126	119	133	137	153	165	198	200	216	269	9.00
APPLES	139	157	157	169	196	249	241	317	275	357	413	11.84
RAISINS	299	334	334	300	362	726	907	717	697	968	1078	15.99
OATES	108	105	109	125	154	166	213	245	241	300	349	14.83
COFFEE GREEN	719	720	937	832	902	1137	1259	1180	2290	4247	3194	19.91
COCOA BEANS	455	783	764	625	567	841	1326	1401	1509	2910	3334	19.92
TEA	1124	915	940	936	985	928	1088	1273	1234	2187	2041	9.81
COTTON LINT	628	616	629	693	774	880	1296	1120	1305	1541	1369	11.61
JUTE	223	254	249	250	279	250	241	281	252	270	331	1.82
JUTE-LIKE FIBRES	154	148	136	166	205	193	169	203	210	250	251	6.27
SISAL	232	129	117	115	151	320	716	469	325	353	362	17.36
TOBACCO UNMANUFACTURED	1190	1296	1288	1280	1370	1496	1751	2062	2183	2349	2676	9.37
NATURAL RUBBER	559	492	444	382	336	552	825	556	746	808	849	9.09
RUBBER NATURAL DRY	476	416	385	325	309	572	712	544	725	796	908	11.55
WOOL GREASY	1233	1055	967	808	932	2057	2803	1766	1800	2166	2245	11.98
CATTLE 1/	129	150	154	172	229	282	261	301	288	302	351	9.97
BEEF AND VEAL	601	768	863	1048	1256	1659	1556	1713	1629	1850	2101	11.17
MUTTON AND LAMB	434	481	529	554	586	872	1223	1067	1003	1133	1369	12.78
PIGS 1/	39	45	49	47	57	78	81	90	90	99	104	10.93
BACON HAM OF SWINE	707	808	865	855	1027	1507	1620	2021	1979	1850	2188	13.29
MEAT CHIKENS	651	677	666	663	742	1043	1033	1136	1186	1235	1342	9.29
MEAT PREPARATIONS	798	895	938	1163	1264	1523	1686	1533	1524	1541	1664	6.97
EVAP COND WHOLE COW MILK	321	309	308	359	432	482	560	682	637	659	757	11.37
MILK OF COWS SKIMMED DRY	237	319	314	448	569	659	841	992	813	638	742	11.12
BUTTER OF COWMILK	832	752	728	979	1231	991	1321	1728	1677	1734	2288	12.94
CHEESE OF WHOLE COWMILK	735	902	942	1076	1259	1461	1718	2026	1976	2153	2513	12.64
FISHERY PRODUCTS												
FISH FRESH FROZEN	310	380	403	455	541	665	669	746	875	1024	1089	12.91
FISH CURED	358	451	479	574	651	872	1167	1252	1421	1575	1642	17.60
SHELLFISH	837	1137	1169	1268	1369	1762	1796	2047	2459	2774	3049	12.23
FISH MEALS AND PREPARATIONS	564	779	780	847	957	1187	1343	1329	1435	1688	1976	11.69
SHELLFISH CANNED/PREPAR	1192	1696	1936	1922	1717	2243	2624	2861	3121	3634	3791	12.44
FISH BODY OIL (LIVER OIL)	160	129	201	211	159	272	468	338	364	429	433	14.39
FISH MEAL	109	129	163	146	146	401	377	243	324	429	419	37.24
FOREST PRODUCTS												
SAWLOGS CONIFEROUS 2/	18	22	24	24	27	46	52	51	52	59	63	14.03
SAWLOGS NONCONIFEROUS 2/	24	25	23	23	25	39	49	39	51	54	58	12.27
PULPWOOD+PARTICLE 2/	11	11	12	13	14	17	22	25	24	25	26	11.49
FUELWOOD 2/	8	7	9	9	10	12	18	20	23	22	23	15.75
SAWNWOOD CONIFEROUS 2/	37	43	44	47	53	74	96	89	93	101	109	12.49
SAWNWOOD NONCONIF. 2/	61	64	65	65	80	105	132	128	132	147	160	12.30
WOOD-BASED PANELS 2/	114	120	121	120	135	169	188	185	199	213	228	8.40
PULP FOR PAPER	115	122	142	149	147	175	279	351	336	314	283	13.07
PAPER AND PAPERBOARD	163	175	186	195	205	253	351	418	407	414	445	12.99

1/ U.S. DOLLARS PER HEAD
2/ U.S. DOLLARS PER CUBIC METRE

ANNEX TABLE 6. VOLUME OF IMPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
WORLD												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	49460	48409	54771	57531	60878	76045	67359	73433	72202	71175	81244	5.01
RICE MILLED	7497	7554	8888	8619	8736	9016	8418	7546	9235	10090	10304	2.16
BARLEY	7001	7060	10683	10759	13995	12097	12424	12511	13685	12382	14723	5.31
MAIZE	19857	27013	28970	30761	37861	46841	48902	51575	61804	54908	67492	10.97
MILLET	241	267	273	331	282	402	381	307	351	418	486	5.51
SORGHUM	3256	4346	5729	6410	5295	7250	10114	9036	9932	9875	9487	9.49
POTATOES	3218	3395	3756	3191	4896	3838	3850	3749	4334	4716	3934	2.24
SUGAR,TOTAL (RAW EQUIV.)	18337	19156	22336	21378	21825	23268	22747	22010	22693	27578	25285	2.62
PULSES	1437	2084	1875	1753	2065	2026	1689	1869	1893	2001	1912	- .26
SOYBEANS	5430	9378	12295	12701	13846	14675	17503	16313	20006	19709	23165	9.11
SOYBEAN OIL	642	680	1037	1312	1101	1046	1489	1411	1647	2158	2641	12.59
GROUNDNUTS SHELLED BASIS	1376	1259	1052	869	851	962	859	881	1010	802	800	- 3.13
GROUNDNUT OIL	382	409	435	389	519	539	390	429	510	563	469	2.15
COPRA	1504	1112	864	1063	1309	1061	545	1033	1199	900	757	- 2.36
COCONUT OIL	421	492	594	671	849	764	612	953	1398	1098	1292	10.70
PALM NUTS KERNELS	694	442	435	493	398	300	353	293	362	311	179	- 7.46
PALM OIL	593	857	924	1209	1372	1549	1559	1882	1963	2212	2143	11.35
OILSEED CAKE AND MEAL	7083	10564	12109	13175	14375	15421	14768	14871	18520	18945	21827	7.17
BANANAS	4079	5352	5603	5989	6406	6369	6329	6288	6332	6565	6802	2.13
ORANGES+TANGER+CLEMEN	3234	4061	4336	4223	4719	4949	4864	4993	5134	5312	5051	2.77
LEMONS AND LIMES	526	694	698	752	733	778	837	821	929	906	937	3.70
COFFEE GREEN+ROASTED	2893	3244	3249	3368	3459	3634	3443	3645	3743	3107	3384	.42
COCOA BEANS	1073	1039	1110	1219	1250	1171	1155	1192	1161	1003	1088	- .43
TEA	630	708	742	746	751	757	822	803	843	894	799	2.01
COTTON LINT	4106	3722	4047	3980	3960	4741	4125	4003	4175	3956	4416	.92
JUTE AND SIMILAR FIBRES	957	862	909	838	795	883	802	559	648	555	508	- 6.24
TOBACCO UNMANUFACTURED	911	1033	1020	1065	1215	1239	1286	1303	1302	1298	1402	3.51
NATURAL RUBBER	2299	2922	2889	2908	2951	3261	3312	3107	3282	3360	3361	1.89
WOOL GREASY	1191	1250	1206	1116	1200	950	749	847	1033	871	873	- 4.26
BOVINE CATTLE 1/	5202	6871	6967	7162	7949	7092	5964	6521	6726	6583	7076	- .73
SHEEP AND GOATS 1/	8367	10093	9909	10277	11961	10911	10113	11352	11005	13303	13553	2.97
PIGS 1/	2793	3977	4412	5401	5973	5779	5985	6377	6765	6718	7799	6.48
TOTAL MEAT	3031	4265	4528	4787	5284	5492	5046	5533	6020	6643	6824	5.04
MILK DRY	166	232	249	233	238	233	241	239	313	347	375	5.07
TOTAL EGGS IN SHELL	406	348	402	424	433	443	504	522	508	565	611	5.62
FISHERY PRODUCTS												
FISH FRESH FROZEN	1426	1819	2072	2143	2438	2770	2861	2798	2908	3104	3325	6.40
FISH CURED	533	495	496	495	482	416	380	384	370	347	357	- 4.53
SHELLFISH	291	436	499	568	686	716	769	820	944	886	1059	9.62
FISH CANNED AND PREPARED	519	586	622	628	635	736	769	720	839	771	815	3.77
SHELLFISH CANNED+PREPAR	61	94	102	103	115	134	130	129	145	153	150	5.69
FISH BODY AND LIVER OIL	729	773	695	741	739	631	624	631	612	569	648	- 2.64
FISH MEAL	1925	3172	3012	2994	3110	1715	1904	2284	2191	2114	2021	- 5.26
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	8998	20891	24263	21591	26420	29856	26848	23930	27167	28979	29387	3.11
SAWLOGS NONCONIFEROUS	16805	33153	36119	38948	41840	48943	44438	35282	43111	45330	46873	2.83
PULPWOOD+PARTICLE	13904	22953	28049	23742	22659	28559	33675	31207	30977	31608	29037	3.33
FUELWOOD	3614	2705	2982	2964	2788	3558	3690	3293	3362	3503	3261	2.44
SAWNWOOD CONIFEROUS	40069	47025	48906	50872	56802	60788	52169	42170	54406	59564	63906	2.10
SAWNWOOD NONCONIFEROUS	4598	6776	6786	6774	7831	10610	9311	7896	10495	10668	11182	6.09
WOOD-BASED PANELS	4699	9212	9764	10472	12797	15275	13294	12098	14201	14017	16248	5.51
PULP FOR PAPER	10018	14761	15251	13237	14838	16491	17348	13592	15293	15527	17717	1.39
PAPER AND PAPERBOARD	14093	22038	23003	23807	24935	26949	28731	22836	26189	27506	29601	2.57
WESTERN EUROPE												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	12787	13572	13572	13348	13491	13594	12558	12460	13184	12691	13380	- .62
RICE MILLED	584	697	651	729	764	797	794	797	1214	1310	1458	9.00
BARLEY	4378	4617	6400	6684	5694	5364	6345	5477	6329	6136	6589	1.64
MAIZE	13531	16625	17473	19599	20156	22641	24324	25301	26441	26733	24721	5.48
MILLET	87	86	62	130	108	119	100	105	83	175	187	7.41
SORGHUM	2086	614	1094	1547	584	1158	2808	2676	2899	2153	1432	13.54
POTATOES	1818	2357	2320	2049	2549	2390	2235	2372	3149	2999	2560	2.71
SUGAR,TOTAL (RAW EQUIV.)	4627	4431	4486	4661	4969	4950	5335	5263	4608	4224	3463	- 1.48
PULSES	686	1174	937	888	1098	1103	786	794	828	889	908	- 2.60
SOYBEANS	2934	5246	7220	7515	8323	8327	11275	10524	11719	11616	14176	9.85
SOYBEAN OIL	247	172	335	469	368	316	545	575	532	502	570	10.27
GROUNDNUTS SHELLED BASIS	1104	1038	811	633	592	694	614	603	726	557	538	- 4.69
GROUNDNUT OIL	288	336	357	321	435	422	327	338	351	355	325	- .56
COPRA	786	612	450	624	822	630	354	816	961	670	514	1.69

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 6. VOLUME OF IMPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS....			.....	.....	.....	.....	PERCENT
COCONUT OIL	141	148	164	208	287	277	177	281	427	333	403	10.91
PALM NUTS KERNELS	618	371	367	435	353	251	329	260	327	271	153	- 7.09
PALM OIL	417	499	520	686	693	752	698	797	860	829	785	5.49
OILSEED CAKE AND MEAL	5867	8154	9104	9800	10383	11039	9927	10099	12778	12845	15343	5.76
BANANAS	1802	2224	2119	2310	2554	2556	2430	2332	2259	2433	2508	.98
ORANGES+TANGER+CLEMEN	2642	3044	3223	3035	3309	3459	3200	3203	3176	3322	3143	.33
LEMONS AND LIMES	341	387	389	398	368	378	386	398	432	408	427	1.15
COFFEE GREEN+ROASTED	1105	1475	1496	1512	1606	1674	1642	1747	1810	1543	1702	1.61
COCOA BEANS	554	552	533	552	602	584	574	564	565	561	589	.52
TEA	292	278	316	306	289	298	313	289	297	336	250	- .39
COTTON LINT	1483	1438	1349	1262	1281	1543	1145	1188	1318	1135	1219	- 1.81
JUTE AND SIMILAR FIBRES	519	442	468	357	398	353	356	177	232	216	156	-11.08
TOBACCO UNMANUFACTURED	518	573	582	627	646	681	661	677	695	677	785	2.77
NATURAL RUBBER	765	848	901	912	910	947	958	875	941	950	861	.34
WOOL GREASY	715	668	630	557	597	423	370	391	528	418	425	- 5.09
BOVINE CATTLE 1/	1881	3329	3287	3530	3933	3305	2691	3444	3306	3175	3478	- .47
SHEEP AND GOATS 1/	1371	2499	2545	2461	3017	2529	1968	2570	2370	2353	2723	- .42
PIGS 1/	979	1826	2129	2371	3000	2819	3009	3314	3629	3284	3870	7.73
TOTAL MEAT	1922	2684	2709	2858	3350	3446	2876	3105	3314	3464	3760	3.13
MILK DRY	72	107	125	120	118	102	85	92	117	98	116	- 1.20
TOTAL EGGS IN SHELL	309	215	241	246	247	270	318	311	306	327	365	5.52
FISHERY PRODUCTS												
FISH FRESH FROZEN	712	827	932	974	1026	1143	1231	1147	1132	1230	1331	4.58
FISH CURED	203	197	211	222	233	186	181	158	158	163	171	- 3.54
SHELLFISH	121	160	177	196	249	245	261	295	335	275	354	8.50
FISH CANNED AND PREPARED	257	255	248	256	283	310	288	275	307	291	281	1.66
SHELLFISH CANNED+PREPAR	23	37	42	46	46	57	56	60	63	68	74	7.64
FISH BODY AND LIVER OIL	595	660	599	620	665	569	551	558	537	510	591	- 2.04
FISH MEAL	1275	2084	1884	1736	1855	1106	1086	1204	1187	1084	1076	- 7.60
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	2290	2379	2523	2252	2767	4316	4756	3221	4417	4890	4087	8.48
SAWLOGS NONCONIFEROUS	6067	8337	7784	8184	9070	10952	8668	6799	8540	8800	7908	- .30
PULPWOOD+PARTICLE	8728	13233	16977	14578	11882	14941	18136	17867	16350	15794	14143	1.27
FUELWOOD	1775	1598	1512	1415	1166	1772	2131	1979	1987	1979	1585	3.25
SAWNWOOD CONIFEROUS	21867	23880	24408	23558	25396	28214	23709	17177	24120	22087	23585	- 1.23
SAWNWOOD NONCONIFEROUS	2243	3363	3541	3426	3995	5677	4033	3619	5854	5521	5624	6.10
WOOD-BASED PANELS	2717	4780	5255	5272	6137	8098	6952	6082	7507	7524	9519	6.44
PULP FOR PAPER	6061	8525	9095	7218	8462	9386	9683	7293	8446	8282	9662	.51
PAPER AND PAPERBOARD	5355	9370	9815	10164	11287	12485	13396	9806	12299	12739	13389	3.48
USSR AND EASTERN EUROPE												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	8755	4899	6872	8745	13121	20247	7448	13457	13099	11996	10942	7.69
RICE MILLED	485	574	548	611	503	417	441	543	647	720	684	2.50
BARLEY	1070	857	2161	1319	5487	3416	2368	3283	4118	2225	4136	11.63
MAIZE	1072	1354	1065	2506	6090	7816	6927	9131	17664	7493	16584	33.01
POTATOES	535	220	634	385	1365	584	642	514	368	664	336	.65
SUGAR,TOTAL (RAW EQUIV.)	2933	2004	4339	2868	2841	3578	2920	3951	4606	5653	4656	7.93
PULSES	52	66	54	28	34	32	49	59	39	33	38	- 2.79
SOYBEANS	126	210	179	208	478	914	265	520	2093	1596	1321	29.32
SOYBEAN OIL	70	23	26	69	87	34	38	31	46	67	37	3.71
GROUNDNUTS SHELLED BASIS	113	56	57	64	69	52	66	60	54	59	60	.05
GROUNDNUT OIL	3				1	1	4	4	6	1	1	24.64
COPRA	19	4	1	3	35	28	29	29	10	20	10	23.16
COCONUT OIL	27	23	36	43	38	24	27	42	95	50	67	10.36
PALM NUTS KERNELS	26	23	18	9	6	13	3	4	4	11	4	-14.29
PALM OIL	5	6	6	11	13	10	22	17	27	54	54	27.84
OILSEED CAKE AND MEAL	609	1463	1852	2159	2763	3009	3404	3541	3730	3720	3825	10.94
BANANAS	49	102	99	116	174	189	198	267	224	281	299	13.97
ORANGES+TANGER+CLEMEN	181	468	480	523	686	680	762	715	693	719	709	5.10
LEMONS AND LIMES	139	222	208	245	253	273	308	310	330	314	320	5.20
COFFEE GREEN+ROASTED	91	158	168	164	185	171	183	205	199	200	179	2.24
COCOA BEANS	111	174	180	225	239	215	250	280	256	175	201	1.45
TEA	33	40	42	57	64	54	69	88	82	80	71	7.98
COTTON LINT	683	675	870	804	744	710	748	769	679	720	673	- 1.23
JUTE AND SIMILAR FIBRES	82	75	97	74	88	85	67	83	80	68	69	- 2.02
TOBACCO UNMANUFACTURED	156	107	120	129	160	151	142	147	127	133	134	1.45
NATURAL RUBBER	446	478	519	440	450	495	548	473	470	409	447	- 1.01
WOOL GREASY	110	137	139	144	143	148	151	162	162	161	182	2.80
BOVINE CATTLE 1/	130	113	90	70	61	90	232	506	195	224	100	11.31
SHEEP AND GOATS 1/	1786	1403	1400	1316	1601	1907	1918	1520	1401	1003	1085	- 2.68
PIGS 1/	232	258	288	462	145	126	103	185	17	276	457	- 6.57
TOTAL MEAT	364	273	454	535	282	269	600	543	412	741	243	2.36

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 6. VOLUME OF IMPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	...THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
MILK DRY	12	15	22	22	30	22	28	23	28	43	27	6.58
TOTAL EGGS IN SHELL	25	34	43	60	63	51	51	50	37	43	43	- .74
FISHERY PRODUCTS												
FISH FRESH FROZEN	155	134	185	129	128	120	132	141	159	147	167	1.12
FISH CURED	49	20	14	31	20	18	18	24	28	18	19	.94
FISH CANNED AND PREPARED	28	32	30	31	27	27	26	41	52	41	40	4.99
FISH BODY AND LIVER OIL	69	20	21	17	21	15	28	34	4	7	4	-15.28
FISH MEAL	157	340	461	567	453	287	458	498	445	407	380	- .20
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	423	966	1033	1013	780	1188	1248	830	787	885	859	- 1.90
SAWLOGS NONCONIFEROUS	197	614	475	514	480	577	541	588	545	550	433	- .76
PULPWOOD+PARTICLE	1188	1526	1288	1480	1397	1208	1533	1722	1548	1440	1345	.45
FUELWOOD	620	37	53	36	33	32	31	32	31	31	27	- 4.34
SAWNWOOD CONIFEROUS	2352	2814	3097	3299	2999	2841	3438	3599	2638	3028	3228	.42
SAWNWOOD NONCONIFEROUS	399	416	398	385	371	354	441	442	366	363	327	- 1.41
WOOD-BASED PANELS	226	600	745	740	835	939	1127	1248	1395	1337	1192	9.40
PULP FOR PAPER	349	707	875	894	857	913	869	1106	1041	1028	1043	3.77
PAPER AND PAPERBOARD	420	1182	1402	1351	1440	1417	1507	1713	1706	1711	1709	4.00
NORTH AMERICA DEVELOPED												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	113	38	43	10	3	4	83	17	23	35	1	-14.58
RICE MILLED	57	58	83	144	94	92	71	74	80	80	82	- .67
BARLEY	220	215	232	205	360	181	328	307	195	180	108	- 4.81
MAIZE	634	691	547	249	448	825	1320	818	838	623	476	3.64
MILLET						1				1		-63.49
SORGHUM		1	1			1						-74.47
POTATOES	150	199	189	163	141	175	239	208	213	301	235	4.68
SUGAR,TOTAL (RAW EQUIV.	4541	5289	5717	5725	5656	5707	6137	4485	5047	6380	4833	- .78
PULSES	19	17	19	26	29	32	66	44	34	52	43	12.18
SOYBEANS	402	405	442	425	309	232	391	385	422	318	325	- 1.98
SOYBEAN OIL	12	10	23	24	17	19	34	23	31	28	34	9.79
GROUNDNUTS SHELLED BASIS	42	50	49	52	54	60	60	61	62	55	66	2.82
GROUNDNUT OIL	6	8	9	5	7	7	6	7	8	7	6	- 1.42
COPRA	287	272	198	190	209	199	27					-93.93
COCONUT OIL	167	240	282	298	374	280	271	435	603	495	503	9.21
PALM OIL	24	89	76	116	226	196	217	483	416	282	173	15.59
OILSEED CAKE AND MEAL	276	262	252	213	238	216	300	301	386	374	423	6.95
BANANAS	1612	1824	2045	2125	2146	2169	2268	2179	2411	2410	2543	2.99
ORANGES+TANGER+CLEMEN	203	242	242	241	259	265	259	264	339	380	307	4.37
LEMONS AND LIMES	17	18	19	17	18	19	20	23	24	27	28	5.58
COFFEE GREEN+ROASTED	1456	1301	1267	1398	1343	1435	1246	1324	1290	986	1195	- 1.85
COCOA BEANS	329	236	301	338	308	268	238	248	252	186	226	- 3.57
TEA	78	86	83	103	93	102	105	96	106	117	91	1.96
COTTON LINT	118	89	77	90	93	86	72	61	73	53	59	- 5.18
JUTE AND SIMILAR FIBRES	73	37	33	20	16	33	31	23	25	14	18	- 5.99
TOBACCO UNMANUFACTURED	84	107	101	87	153	158	163	177	161	179	173	7.45
NATURAL RUBBER	468	654	621	685	685	727	759	747	818	903	847	3.79
WOOL GREASY	87	62	50	34	30	18	8	13	17	12	15	-16.19
BOVINE CATTLE 1/	974	1051	1220	1081	1260	1264	716	516	1183	1184	1317	- .58
SHEEP AND GOATS 1/	43	45	40	43	58	71	33	61	71	52	40	1.67
PIGS 1/	4	18	72	78	90	88	197	30	46	44	204	8.36
TOTAL MEAT	445	664	711	668	797	785	637	719	862	755	875	2.24
TOTAL EGGS IN SHELL	4	7	18	7	6	12	15	12	13	19	16	7.90
FISHERY PRODUCTS												
FISH FRESH FROZEN	331	492	525	531	728	792	689	611	709	727	800	4.61
FISH CURED	37	30	38	34	32	33	31	30	37	30	34	- .35
SHELLFISH	102	130	140	132	149	140	148	139	157	158	146	1.61
FISH CANNED AND PREPARED	68	83	101	87	108	104	131	82	103	78	89	- .55
SHELLFISH CANNED+PREPAR	18	26	28	25	31	32	33	27	35	41	38	4.56
FISH BODY AND LIVER OIL	48	27	31	28	10	11	8	7	11	8	9	-13.85
FISH MEAL	290	327	228	257	357	63	62	108	129	74	40	-18.51
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	1233	1501	1786	1787	2387	1954	1737	1728	2025	2174	2043	2.26
SAWLOGS NONCONIFEROUS	350	469	477	415	459	459	492	318	291	294	409	- 4.39
PULPWOOD+PARTICLE	3377	2437	2552	1995	2081	1863	2187	1859	2039	2188	2150	- 1.37
FUELWOOD	90	146	176	209	187	158	191	209	181	303	352	7.26
SAWNWOOD CONIFEROUS	11316	14058	13859	17378	21522	21750	16639	14175	19583	25061	28128	5.90
SAWNWOOD NONCONIFEROUS	969	1355	1008	1116	1429	1732	1412	963	1287	1351	1448	1.20
WOOD-BASED PANELS	1334	3058	2723	3481	4666	4147	3245	3100	3645	3546	3755	1.50
PULP FOR PAPER	2369	3407	2979	2973	3266	3531	3587	2712	3270	3392	3522	.69
PAPER AND PAPERBOARD	5495	6644	6557	6858	7143	7546	7602	6165	6982	7017	8387	1.36

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 6. VOLUME OF IMPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...			.....	.....	.....	.....	PERCENT
OCEANIA DEVELOPED												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	175	5	16	80	47		50	134	112			-32.25
RICE MILLED	4	6	7	5	5	6	7	7	6	9	8	4.06
BARLEY		30	14	24	13		5					-75.28
MAIZE	1	1	1	2	1	1	1	1	1	2	3	11.64
POTATOES	2						1					-26.28
SUGAR,TOTAL (RAW EQUIV.)	126	154	139	157	186	171	153	192	173	185	179	2.30
PULSES	9	17	14	16	16	12	16	20	13	12	13	- 2.24
SOYBEANS	2		1	11			33	16	10	21	15	54.94
SOYBEAN OIL	5	7	11	9	4	6	10	18	38	33	30	22.11
GROUNDNUTS SHELLED BASIS	5	6	11	5	6	5	6	4	7	5	12	1.08
GROUNDNUT OIL	9	6	8	6	5	3	4	4	2	4	2	-11.86
COPRA	36	37	33	35	26	24	20	12	10	11	5	-18.88
COCONUT OIL		1	1	2	8	9	13	11	18	20	18	40.32
PALM OIL	3	4	5	7	8	7	14	16	17	23	23	22.41
OILSEED CAKE AND MEAL	5	21	30	30	24	12	21	15	3	6	30	-11.16
BANANAS	30	23	24	22	24	33	37	43	29	35	37	6.27
ORANGES+TANGER+CLEMEN	14	17	14	15	16	18	18	18	15	17	18	1.57
COFFEE GREEN+ROASTED	15	23	28	30	29	29	32	35	32	34	26	2.26
COCOA BEANS	15	12	20	17	18	21	21	25	16	19	17	2.31
TEA	37	39	35	34	37	36	34	35	33	35	30	- 1.47
COTTON LINT	21	6	5	7	9	4	9	4	4	5	4	- 3.82
JUTE AND SIMILAR FIBRES	9	11	12	13	19	16	26	17	14	12	11	.21
TOBACCO UNMANUFACTURED	16	17	17	17	15	14	17	17	17	13	16	- .83
NATURAL RUBBER	41	50	51	46	51	55	74	52	61	55	65	2.93
WOOL GREASY	2	3	2	4	4	5	6	1	1	1	1	-21.06
BOVINE CATTLE 1/			1	2	3	3	3	1	1	2	1	15.79
SHEEP AND GOATS 1/		1	2	2	1	1					1	- 9.80
TOTAL MEAT	1	1	1	1	1	2	4	2	2	2	1	9.40
MILK DRY						1	1	1	1	1	1	22.29
FISHERY PRODUCTS												
FISH FRESH FROZEN	14	23	22	29	22	18	22	19	19	21	21	- 2.14
FISH CURED	5	5	4	4	4	3	6	4	4	5	3	- 1.07
SHELLFISH	1	1	1	1	1	2	1	1	3	3	2	13.74
FISH CANNED AND PREPARED	13	13	13	14	15	25	27	23	19	25	26	8.80
SHELLFISH CANNED+PREPAR	1	2	3	3	3	4	6	5	6	7	6	16.13
FISH BODY AND LIVER OIL	4	4	4	5	1	1	1	1	1	1	1	-19.75
FISH MEAL	8	30	27	32	27	14	14	24	13	8	3	-19.13
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	7	13	4	4	5	1	3		5	2	2	-49.88
SAWLOGS NONCONIFEROUS	145	116	127	93	95	101	106	41	46	26	21	-18.05
FUELWOOD	1	1	1	1	1	1	1	9	4	1	1	11.38
SAWNWOOD CONIFEROUS	620	709	654	675	672	793	886	637	693	754	638	.08
SAWNWOOD NONCONIFEROUS	207	229	278	273	254	338	449	282	346	445	311	4.85
WOOD-BASED PANELS	26	58	65	73	73	92	131	123	137	121	91	8.47
PULP FOR PAPER	203	271	323	298	242	315	352	302	234	277	236	- 1.67
PAPER AND PAPERBOARD	428	506	528	557	531	631	677	664	439	648	584	1.38
AFRICA DEVELOPING												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	1795	2262	2872	3574	3740	4000	4733	5221	5248	6452	7352	12.45
RICE MILLED	576	624	698	854	806	981	1005	586	902	1568	2064	10.04
BARLEY	144	68	25	30	78	108	115	173	68	218	519	27.47
MAIZE	243	303	384	610	480	472	830	862	688	890	1044	12.84
MILLET	95	145	167	169	132	195	163	136	172	180	230	2.87
SORGHUM	42	42	61	42	40	74	179	28	84	41	93	4.84
POTATOES	234	145	164	147	131	192	208	188	150	220	242	4.92
SUGAR,TOTAL (RAW EQUIV.)	1210	992	1302	1383	1495	1432	1344	1326	1470	1899	2084	5.85
PULSES	76	62	70	72	82	82	58	94	81	96	104	4.68
SOYBEANS	10	1	4		1	13	10	9	16	50	48	63.74
SOYBEAN OIL	55	46	87	132	97	88	143	150	126	214	289	15.93
GROUNDNUTS SHELLED BASIS	24	27	27	16	20	24	10	18	8	11	14	- 9.98
GROUNDNUT OIL	15	12	17	11	24	40	8	8	29	24	20	4.43
COPRA	4	4	3	7	5	6	2	3	3	3	3	- 5.64
COCONUT OIL	12	8	14	16	17	14	13	8	12	20	18	3.72
PALM NUTS KERNELS	11		1	1				1				-94.29
PALM OIL	11	24	19	29	27	41	38	29	69	80	79	16.49
OILSEED CAKE AND MEAL	16	38	52	55	54	36	51	56	54	109	120	10.21
BANANAS	38	43	38	37	56	59	47	41	56	51	59	3.69
ORANGES+TANGER+CLEMEN	9	10	11	9	11	10	10	12	10	11	12	1.80

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 6. VOLUME OF IMPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
LEMONS AND LIMES	1					1	1			1		2.06
COFFEE GREEN+ROASTED	46	41	39	30	35	42	56	65	76	58	53	7.42
COCOA BEANS	1	1	1	1	2	2	2	1	1	3	1	1.02
TEA	34	40	40	39	40	35	42	43	39	41	48	1.29
COTTON LINT	16	28	31	28	33	41	50	54	48	49	44	7.56
JUTE AND SIMILAR FIBRES	20	37	42	59	58	74	94	76	56	71	68	6.24
TOBACCO UNMANUFACTURED	32	28	34	35	41	45	57	52	45	49	47	5.81
NATURAL RUBBER	7	14	18	17	18	20	23	19	23	24	25	5.76
WOOL GREASY			1	1	1	1	1	1	2	2	4	19.88
BOVINE CATTLE 1/	858	982	952	991	983	899	756	641	603	677	718	- 5.40
SHEEP AND GOATS 1/	1757	1510	1398	1498	1395	1263	1252	1215	1066	1142	1110	- 3.75
PIGS 1/	10	3	5	1	7	2						-86.06
TOTAL MEAT	52	44	45	48	51	41	45	56	87	140	152	14.60
MILK DRY	3	7	7	11	8	14	23	17	19	21	18	14.11
TOTAL EGGS IN SHELL	4	2	1	2	2	3	4	8	13	21	29	43.70
FISHERY PRODUCTS												
FISH FRESH FROZEN	66	79	113	155	195	233	312	304	284	275	299	14.89
FISH CURED	94	74	72	65	55	52	43	49	55	44	37	- 6.40
SHELLFISH	2	1	5	2	3	4	3	11	14	14	13	31.91
FISH CANNED AND PREPARED	33	32	55	51	57	67	65	63	90	86	109	11.11
FISH BODY AND LIVER OIL	1	2	2	2	2	3	4	1	2	2	2	- 3.26
FISH MEAL	7	9	11	11	13	9	14	8	11	18	18	5.46
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	8	25	37	7	20	8	9	38	41	37	37	9.36
SAWLOGS NONCONIFEROUS	103	162	232	221	197	221	305	156	171	241	201	.33
PULPWOOD+PARTICLE			5	14	5							-86.67
FUELWOOD	46	82	95	73	77	32	6	27	2	1	1	-42.96
SAWNWOOD CONIFEROUS	479	709	914	937	648	628	1022	803	880	939	782	1.15
SAWNWOOD NONCONIFEROUS	130	169	190	157	165	144	231	177	133	137	171	- 1.43
WOOD-BASED PANELS	80	149	153	190	140	150	209	197	186	184	181	2.66
PULP FOR PAPER	20	28	47	34	34	54	72	207	81	253	247	28.57
PAPER AND PAPERBOARD	227	371	449	491	437	535	618	511	483	512	495	2.49
LATIN AMERICA												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	5026	6650	5652	6276	6947	8357	8541	7122	8989	7806	10887	5.34
RICE MILLED	416	391	384	472	415	390	620	564	575	459	543	4.07
BARLEY	129	126	162	137	120	186	320	262	189	185	370	9.57
MAIZE	465	668	1417	667	797	2333	2582	3895	2585	3535	5045	24.56
SORGHUM	71	21	219	377	615	450	1048	1348	612	1331	1341	40.20
POTATOES	210	223	221	182	468	252	226	197	187	173	206	- 3.01
SUGAR,TOTAL (RAW EQUIV.)	304	416	187	260	353	438	256	113	229	667	650	5.15
PULSES	163	209	234	212	220	253	274	307	306	384	260	5.21
SOYBEANS	50	88	191	193	134	184	590	127	462	669	898	23.66
SOYBEAN OIL	54	84	112	104	97	149	240	143	229	268	335	15.77
GROUNDNUTS SHELLED BASIS	3	5	5	6	10	6	13	54	27	6	7	11.83
GROUNDNUT OIL	15	17	15	15	16	33	12	41	59	136	78	25.62
COPRA	78	8	2	12	1		1	21	1			-44.87
COCONUT OIL	10	9	19	13	19	33	26	39	84	27	38	17.45
PALM NUTS KERNELS			1	1			2	2	2	1		15.15
PALM OIL	6	6	3	10	9	23	9	3	18	16	1	- 4.12
OILSEED CAKE AND MEAL	93	148	176	310	246	279	332	305	420	538	538	14.09
BANANAS	247	287	303	252	224	218	253	208	163	167	203	- 5.61
ORANGES+TANGER+CLEMEN	17	8	11	12	11	17	15	16	15	17	16	7.06
LEMONS AND LIMES	3	2	2	2	2	1	2	1	1	1	1	-10.50
COFFEE GREEN+ROASTED	46	58	47	50	53	56	82	52	63	45	42	- .98
COCOA BEANS	20	18	26	28	20	16	20	15	12	6	4	-15.52
TEA	9	15	13	12	12	12	18	10	13	14	16	.80
COTTON LINT	68	79	74	85	83	95	67	68	79	76	75	- .96
JUTE AND SIMILAR FIBRES	14	13	25	11	13	32	52	42	25	10	10	- .67
TOBACCO UNMANUFACTURED	15	13	14	14	11	14	24	16	20	18	18	4.85
NATURAL RUBBER	84	95	102	117	138	139	167	144	163	167	173	6.75
WOOL GREASY	14	19	14	18	14	5	4	6	8	7	8	-11.29
BOVINE CATTLE 1/	608	568	545	597	664	590	633	660	709	652	708	2.54
SHEEP AND GOATS 1/	142	128	140	180	137	64	226	316	41	54	60	- 9.85
PIGS 1/	67	23	33	38	48	38	42	48	64	39	57	7.59
TOTAL MEAT	64	103	121	138	151	126	232	158	190	202	344	10.71
MILK DRY	54	44	41	24	32	41	44	46	66	95	105	12.89
TOTAL EGGS IN SHELL	8	8	8	7	7	6	6	6	8	15	15	6.67

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 6. VOLUME OF IMPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
FISHERY PRODUCTS												
FISH FRESH FROZEN	12	29	37	41	40	58	68	126	97	92	95	16.28
FISH CURED	72	102	91	77	73	75	59	69	58	58	59	- 5.82
SHELLFISH	1	7	9	6	4	7	9	5	3	4	4	- 8.37
FISH CANNED AND PREPARED	21	26	31	36	42	35	39	43	46	52	54	7.41
SHELLFISH CANNED+PREPAR		1		1	1	1	2	1	1	1	1	- 2.41
FISH BODY AND LIVER OIL	9	42	25	55	29	19	23	20	44	27	28	- 3.10
FISH MEAL	57	134	162	224	187	44	61	143	75	69	103	- 8.30
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	26	72	65	19	16	25	27	7	11	9	5	-23.18
SAWLOGS NONCONIFEROUS	273	209	224	224	180	135	145	158	68	67	107	-11.83
FUELWOOD	41	4	5	9	12	19	27	7	8	5	5	- .16
SAWNWOOD CONIFEROUS	1212	1601	1569	1631	1499	1460	1230	1229	1338	1366	1336	- 2.61
SAWNWOOD NONCONIFEROUS	88	143	148	186	181	195	677	733	334	423	755	20.65
WOOD-BASED PANELS	56	119	118	165	150	134	177	160	160	146	175	3.28
PULP FOR PAPER	426	535	607	559	637	622	774	506	491	398	453	- 3.31
PAPER AND PAPERBOARD	927	1646	1906	1721	1806	1746	2056	1622	1660	2088	1891	.94
NEAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	3855	3349	4806	7724	4737	5385	8658	8673	7764	9298	11779	11.71
RICE MILLED	371	438	521	700	575	498	934	932	1098	1490	1496	14.78
BARLEY	144	180	469	926	297	594	530	473	465	1037	928	11.62
MAIZE	315	201	260	317	460	423	803	807	1024	1398	1870	27.45
MILLET	16	4		3	2	3	30	3	10	6	10	24.11
SORGHUM	3	4		9	3	5	4	77	197	189	371	97.96
POTATOES	108	125	104	145	122	113	165	155	152	237	219	7.65
SUGAR,TOTAL (RAW EQUIV.)	1317	1032	1081	1309	1214	1680	1774	2084	1721	2103	3005	11.37
PULSES	90	96	103	89	151	109	127	241	233	174	175	9.85
SOYBEANS		5	9	7	14	28	62	28	29	45	132	36.64
SOYBEAN OIL	78	110	146	188	181	108	232	270	335	184	409	11.75
GROUNDNUTS SHELLED BASIS	24	8	8	15	9	7	8	10	9	17	17	6.51
GROUNDNUT OIL	5	2	2	2	2	2	1	1	2	2	1	- 3.43
COPRA	4	3			1			8	7			- 4.25
COCONUT OIL	5	7	9	9	8	5	8	22	31	10	11	9.29
PALM NUTS KERNELS								1				-14.67
PALM OIL	36	62	102	85	91	89	78	137	73	145	157	6.98
OILSEED CAKE AND MEAL	30	54	82	116	136	88	117	100	232	256	392	18.97
BANANAS	36	58	66	83	112	135	177	254	297	314	292	23.29
ORANGES+TANGER+CLEMEN	81	138	195	219	229	284	404	530	656	599	571	19.24
LEMONS AND LIMES	16	23	25	27	13	14	27	24	49	50	43	10.06
COFFEE GREEN+ROASTED	39	39	48	55	59	54	56	49	48	50	44	.06
COCOA BEANS	3	3	3	3	3	2	2	4	4	2	3	.40
TEA	88	125	129	105	122	113	143	130	157	148	178	4.05
COTTON LINT	12	6	6	8	8	12	12	26	8	29	11	12.15
JUTE AND SIMILAR FIBRES	27	27	30	20	18	27	31	31	40	34	25	2.99
TOBACCO UNMANUFACTURED	21	24	24	25	28	29	32	44	44	44	43	8.57
NATURAL RUBBER	20	34	41	51	52	49	57	51	50	45	51	2.55
WOOL GREASY	12	18	21	18	29	20	23	26	27	32	23	4.42
BOVINE CATTLE 1/	210	194	177	167	187	156	152	161	159	157	186	- 1.17
SHEEP AND GOATS 1/	2739	3847	3810	4135	5072	4455	4126	5074	5483	8149	8051	8.40
PIGS 1/			1			1		2				-91.72
TOTAL MEAT	22	57	68	65	76	90	141	247	327	493	519	31.98
TOTAL EGGS IN SHELL	9	30	37	46	54	43	54	75	71	72	71	9.97
FISHERY PRODUCTS												
FISH FRESH FROZEN	8	19	20	22	22	23	30	41	60	53	43	14.30
FISH CURED	4	3	3	3	5	3	4	4	4	4	2	2.08
SHELLFISH				1	1	1	1	1	1	1	1	9.89
FISH CANNED AND PREPARED	10	10	15	14	16	23	27	34	48	48	47	20.39
FISH BODY AND LIVER OIL	1	1	1	2	2	2	2	2	2	3	1	5.30
FISH MEAL	1	5	5	7	13	12	28	27	51	42	75	36.37
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	30	152	120	76	154	152	83	202	139	159	135	2.49
SAWLOGS NONCONIFEROUS	60	37	32	65	44	47	49	84	107	99	82	12.63
PULPWOOD+PARTICLE	41	8	41	17		29	20	6	2	1	1	-24.44
FUELWOOD	200	393	322	213	154	344	180	177	177	116	114	-11.09
SAWNWOOD CONIFEROUS	916	927	1219	1201	1638	1552	1713	1539	1512	2480	2208	8.75
SAWNWOOD NONCONIFEROUS	83	154	96	114	103	107	93	184	191	216	194	7.49
WOOD-BASED PANELS	70	118	125	136	236	331	407	413	393	414	423	17.84
PULP FOR PAPER	40	72	60	96	63	70	69	135	179	141	133	10.76
PAPER AND PAPERBOARD	282	514	468	614	531	480	513	634	539	634	642	2.49

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 6. VOLUME OF IMPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
					THOUSAND METRIC TONS							PERCENT
FAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	7943	8104	8619	7499	6684	10943	11515	15066	13651	7276	10495	4.10
RICE MILLED	4166	3485	4459	4123	4411	4596	3043	3024	3669	3818	3475	- 1.95
BARLEY	152	121	32	77	349	494	497	539	8	327	106	3.01
MAIZE	445	766	764	964	1174	1337	1250	1425	1964	2608	3204	16.75
SORGHUM	12	377	33	2		1188	727	204	398	13		-81.70
POTATOES	134	92	91	95	90	96	100	89	95	103	116	1.85
SUGAR,TOTAL (RAW EQUIV.)	903	1592	1338	1388	1122	1451	1097	1123	1118	1426	1823	.19
PULSES	167	178	168	144	191	127	100	98	90	82	111	- 8.09
SOYBEANS	67	73	136	149	146	168	135	153	433	370	486	19.49
SOYBEAN OIL	100	175	252	269	184	178	175	118	237	674	753	11.56
GROUNDNUTS SHELLED BASIS	44	24	24	20	23	22	24	18	43	24	31	3.50
GROUNDNUT OIL	38	25	24	25	25	27	24	23	48	29	32	4.19
COPRA	178	54	44	64	79	34	19	55	96	98	135	9.36
COCONUT OIL	34	27	36	41	36	58	29	36	44	83	172	14.55
PALM NUTS KERNELS	13	17	12	8	20	19	4	4	5	5	5	-14.54
PALM OIL	75	124	150	224	240	315	358	277	320	602	714	18.34
OILSEED CAKE AND MEAL	100	179	187	200	233	151	272	333	439	612	705	17.23
BANANAS	40	41	53	45	46	55	50	56	45	48	57	1.66
ORANGES+TANGER+CLEMEN	83	129	151	158	179	193	170	208	199	212	216	5.30
COFFEE GREEN+ROASTED	60	67	50	37	25	45	34	31	42	32	19	- 7.81
COCOA BEANS	5	5	6	8	12	11	9	9	9	8	11	4.59
TEA	32	46	44	49	49	54	52	64	70	81	77	7.17
COTTON LINT	428	488	569	600	538	672	577	736	830	846	947	6.99
JUTE AND SIMILAR FIBRES	94	60	46	146	96	112	71	80	123	78	100	3.98
TOBACCO UNMANUFACTURED	38	109	65	59	60	51	74	55	61	71	64	- 2.33
NATURAL RUBBER	112	132	89	91	92	114	125	123	140	160	194	6.64
WOOL GREASY	7	21	24	20	21	14	16	26	27	34	32	5.20
BOVINE CATTLE 1/	207	296	295	274	328	303	286	286	286	301	318	.31
SHEEP AND GOATS 1/	307	302	321	334	352	244	224	253	296	269	250	- 2.78
PIGS 1/	1500	1847	1882	2447	2680	2700	2629	2796	3004	3072	3205	5.93
TOTAL MEAT	47	90	97	97	100	109	125	149	173	211	276	12.70
MILK DRY	25	59	54	55	49	52	57	56	76	82	88	5.36
TOTAL EGGS IN SHELL	47	47	51	55	52	56	54	58	57	65	69	3.44
FISHERY PRODUCTS												
FISH FRESH FROZEN	92	96	117	119	121	140	132	148	156	162	190	6.41
FISH CURED	59	57	56	52	55	42	32	32	21	19	23	-12.62
SHELLFISH	36	29	38	48	61	68	80	69	89	95	114	14.52
FISH CANNED AND PREPARED	69	87	86	94	96	91	97	114	112	83	82	.71
SHELLFISH CANNED+PREPAR	18	21	20	15	18	17	15	16	16	15	9	- 5.72
FISH BODY AND LIVER OIL	2	7	10	8	5	6	2	2	7	3	3	-10.32
FISH MEAL	45	77	78	78	86	53	60	99	84	90	95	2.26
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	124	230	293	435	373	827	773	460	758	1202	2412	23.17
SAWLOGS NONCONIFEROUS	1288	4461	5156	5736	5854	5981	5132	5758	6911	7951	8389	8.83
FUELWOOD	808	383	432	429	421	406	454	479	471	557	503	3.20
SAWNWOOD CONIFEROUS	24	15	13	36	38	41	65	179	220	228	221	42.48
SAWNWOOD NONCONIFEROUS	195	467	469	480	662	1207	1108	977	1462	1733	1869	18.77
WOOD-BASED PANELS	135	168	184	233	252	347	341	394	473	497	623	15.99
PULP FOR PAPER	203	308	315	341	502	470	470	287	428	554	705	9.90
PAPER AND PAPERBOARD	634	1166	1210	1371	1272	1418	1307	1144	1460	1486	1706	4.93
ASIAN CENT PLANNED ECON												
AGRICULTURAL PRODUCTS												
WHEAT+FLOUR,WHEAT EQUIV.	5326	4772	6909	4934	6554	7710	7956	5040	3720	9389	10178	4.20
RICE MILLED	340	1045	1274	719	948	963	1241	737	784	317	159	-14.97
BARLEY	451	97	244	327	452	279	321	174	333	265	330	5.60
MAIZE	288	491	631	732	2090	3079	2797	1598	1921	2146	3648	19.59
MILLET	11											
POTATOES	2											-98.56
SUGAR,TOTAL (RAW EQUIV.)	881	1070	1152	1127	1184	1291	678	718	1010	2051	2005	4.33
PULSES	19	28	29	25	40	40	32	33	39	44	48	5.67
SOYBEANS	148	472	618	525	712	799	1181	854	829	980	1094	8.87
SOYBEAN OIL	4	36	21	32	44	123	34	62	47	179	171	20.04
GROUNDNUTS SHELLED BASIS	3	3		5	5	4	4				3	-78.34
GROUNDNUT OIL	1											-95.71
COPRA	14	4	4	4	4	4	4					-96.42
COCONUT OIL	17	20	22	30	38	20	20	44	33	21	27	.97
OILSEED CAKE AND MEAL		2	2	3	5	6	5	1	28	40	40	39.95
COFFEE GREEN+ROASTED	1	1										.82

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 6. VOLUME OF IMPORTS OF MAJOR AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	AVERAGE 1961-65	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	....THOUSAND METRIC TONS...	.....	.....	.....	.....	.....	.....	PERCENT
COCOA BEANS	5		1	1	2	8	6	8	7	7	8	49.43
TEA	6	4	4	4	4	6	7	6	5	5	5	5.11
COTTON LINT	544	207	267	305	327	676	616	386	437	376	654	9.50
JUTE AND SIMILAR FIBRES	40	51	52	63	27	97	14	18	20	26	31	-10.52
TOBACCO UNMANUFACTURED	6	13	13	15	24	20	23	11	13	15	22	2.01
NATURAL RUBBER	128	299	210	194	219	301	235	274	271	295	277	2.32
WOOL GREASY	13	18	20	20	25	23	18	17	21	20	23	.61
BOVINE CATTLE 1/	1				1	1	4	8	1			-58.73
SHEEP AND GOATS 1/		4	4	4	4	5	6	6				-96.14
TOTAL MEAT	1			1	2	2	2	29	10	4	3	65.32
FISHERY PRODUCTS												
FISH FRESH FROZEN			1	1		1	8	4	4	6	6	42.25
SHELLFISH	1	1	1	1	1		3	4	4	4	4	21.07
FISH CANNED AND PREPARED		15	3	3	11	3	4	2	4	4	3	- 8.74
FISH MEAL	2	33	35	45	48	33	40	95	129	124	136	19.32
FOREST PRODUCTS 2/												
SAWLOGS CONIFEROUS	561	1	2	2	122	492	610	196	200	200	200	89.77
SAWLOGS NONCONIFEROUS	484	1264	1564	2252	4000	3990	3801	3887	4183	5977	7224	18.52
PULPWOOD+PARTICLE		7	7	7	7	7	7	88	199	199	199	60.02
SAWNWOOD CONIFEROUS			1	16	2			21	29	29	29	59.45
SAWNWOOD NONCONIFEROUS	2	12	10	10	8	9	27	23	30	38	56	22.56
WOOD-BASED PANELS	4	1	1	2	5	1	1	3	12	13	24	37.67
PULP FOR PAPER	107	123	99	224	56	57	66	32	50	50	50	-12.52
PAPER AND PAPERBOARD	57	103	157	227	105	60	82	67	87	87	87	- 6.79

1/ THOUSAND HEAD
2/ EXCEPT FOR PULP FOR PAPER AND PAPER AND PAPERBOARD, ALL FOREST PRODUCTS ARE EXPRESSED IN THOUSAND CUBIC METRES

ANNEX TABLE 7. INDICES OF VALUE OF EXPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
						1969-71=100						PERCENT
WORLD												
AGRICULTURAL PRODUCTS	87	91	101	108	128	189	236	245	257	292	325	16.64
FOOD	84	89	100	111	131	195	256	276	268	289	336	17.28
FEED	81	85	102	113	131	281	262	221	319	402	421	20.44
RAW MATERIALS	96	99	100	100	116	169	199	167	195	227	237	11.66
BEVERAGES	90	89	108	103	125	165	166	175	270	386	364	18.08
FISHERY PRODUCTS	75	84	101	115	139	187	202	215	268	321	382	18.00
FOREST PRODUCTS	81	92	102	106	125	181	237	211	253	271	300	15.42
DEVELOPED COUNTRIES												
AGRICULTURAL PRODUCTS	84	88	100	112	134	207	254	268	272	296	346	17.52
FOOD	82	86	100	114	136	209	260	286	283	297	354	18.03
FEED	76	84	100	116	130	291	296	208	276	320	392	18.33
RAW MATERIALS	102	99	101	100	116	179	221	181	203	257	264	13.20
BEVERAGES	76	84	98	118	159	219	229	252	289	373	423	19.80
FISHERY PRODUCTS	78	87	100	113	139	193	206	204	253	296	359	16.76
FOREST PRODUCTS	81	91	103	106	124	174	236	214	251	268	297	15.37
WESTERN EUROPE												
AGRICULTURAL PRODUCTS	76	87	99	114	143	203	239	274	281	316	385	18.59
FOOD	75	87	98	115	141	199	238	279	281	313	382	18.59
FEED	72	81	100	119	153	368	379	272	344	419	499	22.48
RAW MATERIALS	101	99	103	98	123	176	219	203	236	233	296	14.05
BEVERAGES	74	81	98	121	165	230	231	257	294	362	438	20.02
FISHERY PRODUCTS	75	84	100	116	142	202	222	220	273	324	371	17.98
FOREST PRODUCTS	79	90	103	107	125	184	260	223	264	275	314	16.16
USSR AND EASTERN EUROPE												
AGRICULTURAL PRODUCTS	98	101	94	105	114	150	192	191	185	219	212	11.00
FOOD	95	103	93	105	109	149	193	184	172	196	193	9.63
FEED	165	178	49	73	59	95	115	115	264	245	208	13.77
RAW MATERIALS	112	93	100	106	128	151	192	210	229	298	272	14.87
BEVERAGES	83	94	95	111	135	159	187	224	218	257	275	14.04
FISHERY PRODUCTS	87	90	103	106	119	151	189	238	241	233	269	14.25
FOREST PRODUCTS	84	91	103	106	118	165	222	224	239	266	278	14.94
NORTH AMERICA DEVELOPED												
AGRICULTURAL PRODUCTS	88	81	103	115	134	250	318	315	323	329	399	20.27
FOOD	86	80	105	115	138	265	337	351	351	338	418	21.17
FEED	74	81	102	117	123	271	270	185	254	282	362	16.85
RAW MATERIALS	102	89	96	115	122	173	242	195	206	273	312	15.14
BEVERAGES	94	92	109	99	130	265	376	285	515	1168	790	32.88
FISHERY PRODUCTS	77	92	98	111	131	206	182	196	257	335	497	19.26
FOREST PRODUCTS	83	93	103	104	124	165	211	197	241	260	285	14.54
OCEANIA DEVELOPED												
AGRICULTURAL PRODUCTS	88	92	103	104	128	187	223	217	226	252	247	13.43
FOOD	84	83	101	116	145	180	224	259	254	261	272	15.10
FEED	64	87	121	92	112	235	274	205	219	499	475	21.03
RAW MATERIALS	95	110	107	83	96	201	221	142	174	234	198	10.01
BEVERAGES	98	93	92	115	147	151	204	228	238	205	239	12.45
FISHERY PRODUCTS	74	87	89	124	160	185	176	184	208	284	324	14.90
FOREST PRODUCTS	73	85	98	117	146	228	288	281	294	345	388	19.42

ANNEX TABLE 7. INDICES OF VALUE OF EXPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	.....	1969-71=100	.....	.....	.....	.....	.....	PERCENT
DEVELOPING COUNTRIES												
AGRICULTURAL PRODUCTS	90	95	103	102	118	162	209	210	236	287	293	15.30
FOOD	90	95	101	104	119	163	248	255	236	270	298	15.64
FEED	88	86	106	108	133	266	212	239	381	522	462	22.98
RAW MATERIALS	89	100	100	101	116	160	177	154	187	196	209	9.77
BEVERAGES	94	91	111	98	114	146	145	149	264	390	344	17.43
FISHERY PRODUCTS	69	78	103	119	139	175	195	239	301	378	432	20.58
FOREST PRODUCTS	78	92	98	110	134	236	241	191	266	294	322	15.98
AFRICA DEVELOPING												
AGRICULTURAL PRODUCTS	91	96	107	97	112	145	185	170	207	271	264	13.50
FOOD	94	99	105	96	111	135	194	181	182	222	263	12.25
FEED	110	101	112	88	126	177	142	132	178	212	130	6.36
RAW MATERIALS	81	91	104	105	112	153	191	148	186	179	179	8.73
BEVERAGES	89	92	112	96	115	158	167	161	268	416	318	17.45
FISHERY PRODUCTS	79	92	98	110	144	231	251	246	259	271	290	15.25
FOREST PRODUCTS	87	106	99	95	119	214	230	165	224	240	242	12.18
LATIN AMERICA												
AGRICULTURAL PRODUCTS	87	93	105	102	122	173	218	232	261	322	333	17.20
FOOD	81	90	104	107	126	179	264	287	253	294	319	16.94
FEED	73	80	101	119	146	326	248	331	548	805	741	30.86
RAW MATERIALS	97	112	98	89	110	150	169	158	181	213	238	10.83
BEVERAGES	95	91	113	97	116	153	139	141	288	382	365	17.75
FISHERY PRODUCTS	74	78	106	116	112	97	132	134	178	191	243	11.08
FOREST PRODUCTS	79	96	98	106	119	176	233	203	204	232	279	13.43
NEAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS	86	94	99	107	123	163	179	161	196	202	214	10.40
FOOD	89	108	94	98	127	173	184	177	217	250	303	13.69
FEED	96	96	110	94	124	140	117	91	78	72	63	- 5.19
RAW MATERIALS	84	85	101	114	120	157	178	154	189	176	164	8.33
BEVERAGES	81	88	111	101	133	179	182	121	159	237	210	9.61
FISHERY PRODUCTS	77	82	96	122	154	229	202	210	234	258	249	13.56
FOREST PRODUCTS	80	88	105	107	142	210	316	211	252	290	280	15.24
FAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS	95	95	100	105	112	147	221	216	241	295	287	15.70
FOOD	96	90	98	112	113	149	293	291	291	316	310	18.22
FEED	97	81	111	108	118	274	239	203	342	404	339	19.35
RAW MATERIALS	90	106	100	94	114	157	172	147	185	198	231	10.20
BEVERAGES	102	93	105	102	104	103	122	147	193	374	311	15.76
FISHERY PRODUCTS	69	88	95	117	171	290	316	461	579	856	928	33.48
FOREST PRODUCTS	76	86	98	116	135	278	265	206	322	355	382	19.04
ASIAN CENT PLANNED ECON												
AGRICULTURAL PRODUCTS	104	102	93	105	126	191	249	248	213	215	254	12.83
FOOD	110	103	93	103	119	183	270	270	211	201	250	12.76
FEED	109	107	81	112	97	193	146	154	229	196	174	9.68
RAW MATERIALS	86	102	90	108	153	242	195	180	225	241	260	12.38
BEVERAGES	94	90	95	115	124	129	163	184	199	311	298	15.12
FISHERY PRODUCTS	12	22	125	153	236	378	240	482	634	790	882	39.50
FOREST PRODUCTS	64	80	94	125	188	209	167	169	225	250	328	14.22

ANNEX TABLE 8. INDICES OF VOLUME OF EXPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	1969-71=100											PERCENT
WORLD												
AGRICULTURAL PRODUCTS	94	95	102	104	112	121	115	116	126	129	137	3.67
FOOD	92	93	102	105	114	124	119	121	131	138	147	4.64
FEED	84	89	103	108	115	130	133	129	169	173	198	8.48
RAW MATERIALS	99	99	101	100	107	112	99	97	103	103	108	.39
BEVERAGES	95	99	101	100	110	118	108	114	118	105	111	1.31
FISHERY PRODUCTS	93	95	101	105	114	114	111	117	128	133	146	4.23
FOREST PRODUCTS	89	96	102	102	112	125	122	100	120	124	132	2.88
DEVELOPED COUNTRIES												
AGRICULTURAL PRODUCTS	92	91	101	107	116	130	125	128	137	142	155	5.39
FOOD	91	91	102	107	116	131	126	131	140	145	160	5.74
FEED	79	88	101	112	113	138	143	117	146	137	186	6.46
RAW MATERIALS	105	96	100	103	109	117	110	101	108	116	119	1.78
BEVERAGES	80	85	98	117	138	140	146	160	169	173	165	7.72
FISHERY PRODUCTS	95	98	100	102	111	116	109	113	128	129	144	3.94
FOREST PRODUCTS	90	97	102	101	110	122	122	99	118	122	130	2.67
WESTERN EUROPE												
AGRICULTURAL PRODUCTS	86	92	101	107	117	128	133	137	144	147	159	5.96
FOOD	87	93	101	107	114	126	131	135	141	146	158	5.78
FEED	76	85	101	114	137	174	189	158	182	177	230	10.01
RAW MATERIALS	105	100	102	99	112	111	121	118	125	111	131	2.72
BEVERAGES	77	83	98	120	144	143	144	162	173	168	164	7.60
FISHERY PRODUCTS	94	97	101	102	112	114	107	113	134	134	144	4.25
FOREST PRODUCTS	89	98	102	100	110	129	127	94	116	118	130	2.34
USSR AND EASTERN EUROPE												
AGRICULTURAL PRODUCTS	107	107	93	100	95	100	109	103	99	108	97	-.27
FOOD	107	110	91	99	90	93	104	94	85	93	84	- 1.68
FEED	182	176	53	70	54	64	83	86	144	124	121	4.87
RAW MATERIALS	112	94	101	105	115	124	124	133	141	153	136	5.06
BEVERAGES	85	93	97	109	114	111	129	136	135	155	143	5.54
FISHERY PRODUCTS	99	97	103	101	101	97	111	141	135	118	117	3.22
FOREST PRODUCTS	92	96	103	101	104	115	111	108	119	120	123	2.58
NORTH AMERICA DEVELOPED												
AGRICULTURAL PRODUCTS	94	85	106	109	124	154	138	141	156	162	193	7.82
FOOD	90	83	108	109	129	160	139	150	169	172	205	8.79
FEED	76	84	102	113	104	129	131	103	134	122	177	5.48
RAW MATERIALS	113	94	97	110	111	132	133	107	103	122	143	3.05
BEVERAGES	105	100	105	95	120	216	258	211	252	374	317	17.08
FISHERY PRODUCTS	89	102	95	103	104	126	98	102	115	149	191	5.63
FOREST PRODUCTS	91	96	103	101	111	117	119	99	117	124	129	2.68
OCEANIA DEVELOPED												
AGRICULTURAL PRODUCTS	90	92	102	106	113	111	92	96	114	126	123	2.32
FOOD	89	87	101	112	118	118	102	109	126	140	146	4.43
FEED	67	99	132	78	113	144	94	117	178	209	201	9.09
RAW MATERIALS	92	99	104	97	104	99	72	72	92	98	81	- 2.34
BEVERAGES	109	100	91	108	124	111	128	133	137	109	117	2.59
FISHERY PRODUCTS	83	87	96	117	128	121	112	113	107	132	141	3.50
FOREST PRODUCTS	81	89	101	110	122	151	156	156	170	204	210	9.91

ANNEX TABLE 8. INDICES OF VOLUME OF EXPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
						1969-71=100						PERCENT
DEVELOPING COUNTRIES												
AGRICULTURAL PRODUCTS	96	99	102	100	108	110	101	102	113	112	114	1.39
FOOD	95	96	102	101	109	110	106	103	117	126	121	2.51
FEED	91	92	105	103	116	119	116	140	194	214	206	10.14
RAW MATERIALS	94	102	101	97	104	106	88	92	97	89	97	- 1.14
BEVERAGES	100	102	100	97	105	112	100	104	107	89	99	- .44
FISHERY PRODUCTS	89	87	102	111	121	111	118	129	137	157	166	6.34
FOREST PRODUCTS	80	90	99	110	123	149	122	112	135	140	152	4.77
AFRICA DEVELOPING												
AGRICULTURAL PRODUCTS	101	100	104	96	109	110	103	93	99	84	84	- 2.07
FOOD	106	100	102	97	113	105	99	87	92	81	81	- 2.76
FEED	111	106	110	84	116	96	81	87	109	94	64	- 3.20
RAW MATERIALS	85	90	107	103	103	110	96	91	101	88	84	- 1.56
BEVERAGES	96	103	107	91	106	121	114	105	109	89	91	- .96
FISHERY PRODUCTS	85	93	99	108	127	155	152	137	141	130	128	3.91
FOREST PRODUCTS	92	106	99	95	103	121	104	80	94	96	92	- 1.48
LATIN AMERICA												
AGRICULTURAL PRODUCTS	93	100	103	98	104	107	100	103	114	122	128	2.50
FOOD	88	95	107	99	104	109	107	103	120	141	138	3.83
FEED	75	85	103	113	122	128	140	190	262	327	330	17.01
RAW MATERIALS	96	117	100	84	90	87	77	90	79	86	102	- 1.63
BEVERAGES	104	103	96	101	107	110	91	102	102	77	96	- 1.48
FISHERY PRODUCTS	105	91	102	107	104	59	72	79	79	88	98	- 1.51
FOREST PRODUCTS	98	98	98	104	117	136	117	100	113	137	169	4.36
NEAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS	89	94	102	104	111	115	85	86	102	94	104	- .50
FOOD	91	106	94	99	114	122	101	91	110	128	145	2.85
FEED	102	102	109	89	108	76	58	60	48	34	37	-12.70
RAW MATERIALS	87	86	106	108	109	111	76	84	100	74	80	- 2.82
BEVERAGES	81	81	102	116	126	138	101	53	63	78	66	- 5.70
FISHERY PRODUCTS	92	94	94	112	158	190	193	88	70	64	55	- 6.79
FOREST PRODUCTS	73	82	106	111	115	122	124	101	99	116	110	1.42
FAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS	98	95	99	107	111	109	105	111	133	135	124	3.46
FOOD	94	87	98	115	120	109	109	122	158	167	143	6.15
FEED	104	90	106	105	112	138	122	119	189	166	142	6.40
RAW MATERIALS	102	104	97	99	106	113	102	97	103	97	101	- .26
BEVERAGES	100	100	102	97	96	97	97	108	112	111	111	1.59
FISHERY PRODUCTS	70	85	101	114	143	192	191	235	274	373	400	19.18
FOREST PRODUCTS	69	83	102	115	129	171	134	126	157	158	165	6.56
ASIAN CENT PLANNED ECON												
AGRICULTURAL PRODUCTS	104	104	95	101	112	126	116	111	110	104	113	1.03
FOOD	107	102	96	102	106	124	117	109	98	89	100	- .53
FEED	102	107	84	109	80	96	69	69	100	80	73	- 2.98
RAW MATERIALS	95	111	93	95	140	141	112	113	148	147	152	4.57
BEVERAGES	96	94	93	113	114	109	129	132	149	158	155	6.38
FISHERY PRODUCTS	15	24	128	148	148	171	143	110	117	114	136	7.91
FOREST PRODUCTS	68	84	94	122	155	131	108	128	142	146	176	6.07

ANNEX TABLE 9. INDICES OF VALUE OF IMPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
						1969-71=100						PERCENT
WORLD												
AGRICULTURAL PRODUCTS	86	90	101	109	126	182	233	250	259	295	329	16.92
FOOD	83	88	100	111	130	187	254	284	274	294	344	17.77
FEED	77	83	102	115	132	265	248	214	289	364	371	18.76
RAW MATERIALS	94	100	101	99	114	166	197	169	198	221	241	11.67
BEVERAGES	87	87	106	107	122	159	167	183	258	394	371	18.43
FISHERY PRODUCTS	78	85	100	114	139	184	208	210	263	305	362	17.34
FOREST PRODUCTS	81	92	102	106	122	179	235	206	245	269	302	15.32
DEVELOPED COUNTRIES												
AGRICULTURAL PRODUCTS	84	90	101	108	127	181	217	234	249	281	308	15.96
FOOD	81	88	100	112	132	186	234	267	263	277	318	16.58
FEED	78	84	102	114	132	268	246	211	283	349	354	18.08
RAW MATERIALS	96	102	102	97	113	163	189	161	187	203	220	10.33
BEVERAGES	87	86	106	108	123	162	168	183	260	401	378	18.68
FISHERY PRODUCTS	78	86	100	114	141	188	210	209	264	308	365	17.33
FOREST PRODUCTS	82	93	102	106	123	181	234	203	244	265	299	15.04
WESTERN EUROPE												
AGRICULTURAL PRODUCTS	83	91	100	109	128	180	210	222	234	275	306	15.39
FOOD	80	89	98	113	133	183	222	247	240	268	312	15.76
FEED	80	86	101	113	127	247	220	190	263	318	334	16.75
RAW MATERIALS	96	105	100	95	112	157	180	151	184	199	221	10.08
BEVERAGES	83	86	108	106	126	171	175	189	263	413	387	19.00
FISHERY PRODUCTS	79	87	101	112	128	175	199	195	224	260	314	14.98
FOREST PRODUCTS	79	91	104	105	122	181	251	210	258	273	301	15.64
USSR AND EASTERN EUROPE												
AGRICULTURAL PRODUCTS	84	85	106	109	133	195	235	323	349	349	378	20.26
FOOD	84	82	107	112	145	219	254	423	460	416	480	24.26
FEED	71	74	104	122	170	370	395	350	396	505	477	24.34
RAW MATERIALS	89	91	108	101	106	150	200	180	173	197	196	9.97
BEVERAGES	71	89	101	111	131	139	175	215	257	375	334	17.78
FISHERY PRODUCTS	72	78	101	122	117	150	204	203	229	233	210	12.80
FOREST PRODUCTS	80	88	102	110	116	145	200	265	239	247	261	14.72
NORTH AMERICA DEVELOPED												
AGRICULTURAL PRODUCTS	91	91	104	104	116	156	195	181	208	244	263	13.26
FOOD	84	91	104	105	120	158	216	193	189	196	221	10.92
FEED	75	91	110	99	118	214	200	194	265	303	330	16.38
RAW MATERIALS	114	116	99	85	99	146	188	166	220	230	251	12.48
BEVERAGES	100	84	106	110	116	153	149	158	248	363	368	17.69
FISHERY PRODUCTS	85	89	101	110	152	170	186	172	235	260	277	13.64
FOREST PRODUCTS	90	100	92	108	134	164	179	171	212	245	306	13.65
OCEANIA DEVELOPED												
AGRICULTURAL PRODUCTS	84	93	103	105	112	129	224	240	214	272	314	15.76
FOOD	80	85	105	109	118	137	265	342	271	310	361	19.22
FEED	117	77	107	115	88	58	186	111	29	51	223	- .39
RAW MATERIALS	82	99	105	95	100	124	224	155	175	178	216	9.97
BEVERAGES	91	98	94	108	118	129	154	188	183	353	377	16.78
FISHERY PRODUCTS	76	84	94	122	124	164	246	223	212	273	305	15.65
FOREST PRODUCTS	82	90	103	108	100	146	203	219	200	250	242	13.48

ANNEX TABLE 9. INDICES OF VALUE OF IMPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
	.....	.....	.....	.....	.....	1969-71=100	.....	.....	.....	.....	.....	PERCENT
DEVELOPING COUNTRIES												
AGRICULTURAL PRODUCTS	91	90	100	110	121	186	300	315	301	350	418	20.66
FOOD	93	89	100	110	122	192	322	346	314	355	436	21.45
FEED	59	73	92	135	131	204	284	263	392	619	656	28.10
RAW MATERIALS	86	93	97	111	121	179	240	214	258	313	352	17.35
BEVERAGES	89	98	102	100	106	127	160	184	236	337	311	16.32
FISHERY PRODUCTS	78	83	102	115	125	155	193	222	257	282	336	16.83
FOREST PRODUCTS	78	87	101	113	116	162	245	227	245	296	319	16.72
AFRICA DEVELOPING												
AGRICULTURAL PRODUCTS	85	86	100	114	129	178	290	348	313	389	456	22.17
FOOD	83	84	99	117	131	185	307	371	320	390	489	22.97
FEED	63	74	101	125	112	140	216	216	246	574	627	25.28
RAW MATERIALS	89	86	101	114	141	176	298	299	291	352	357	19.23
BEVERAGES	100	101	108	92	102	123	155	218	274	396	264	16.86
FISHERY PRODUCTS	71	75	108	117	131	158	214	264	341	313	345	19.17
FOREST PRODUCTS	69	83	104	113	103	145	278	260	241	263	256	15.55
LATIN AMERICA												
AGRICULTURAL PRODUCTS	90	93	99	108	124	188	301	277	286	301	383	18.69
FOOD	92	94	99	107	126	195	317	300	298	305	406	19.40
FEED	56	69	77	153	133	276	307	263	367	593	506	26.47
RAW MATERIALS	90	93	97	110	112	144	233	166	206	234	257	12.96
BEVERAGES	75	93	103	104	119	153	194	168	236	299	258	14.27
FISHERY PRODUCTS	78	82	102	116	107	121	150	176	159	187	224	10.57
FOREST PRODUCTS	83	91	104	105	110	129	223	187	192	217	213	11.50
NEAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS	81	78	93	128	129	177	403	498	443	533	653	29.32
FOOD	79	74	92	134	130	185	445	554	476	559	692	30.81
FEED	47	55	98	147	148	183	329	241	511	633	935	32.82
RAW MATERIALS	85	96	98	106	129	152	253	322	330	419	427	21.80
BEVERAGES	96	99	102	99	123	135	189	204	258	403	488	20.39
FISHERY PRODUCTS	76	76	103	121	140	198	356	395	571	745	845	32.94
FOREST PRODUCTS	78	86	98	116	138	176	264	351	327	444	450	22.78
FAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS	98	96	100	104	104	170	226	262	261	271	306	16.41
FOOD	101	97	101	102	103	183	245	287	267	255	302	16.28
FEED	62	83	102	116	124	161	265	271	362	605	640	26.96
RAW MATERIALS	92	92	97	111	111	139	176	197	250	319	323	16.82
BEVERAGES	78	99	97	104	72	93	99	128	172	234	207	10.92
FISHERY PRODUCTS	83	87	99	114	133	177	195	212	251	282	354	16.64
FOREST PRODUCTS	78	86	99	115	112	191	238	206	266	316	382	18.34
ASIAN CENT PLANNED ECON												
AGRICULTURAL PRODUCTS	97	90	110	100	137	247	375	256	245	367	432	19.45
FOOD	107	88	116	96	138	231	388	272	235	388	427	19.72
FEED	102	115	92	93	154	173	193	441	770	1164	1081	36.85
RAW MATERIALS	72	94	94	111	135	290	345	213	272	306	444	18.66
BEVERAGES	122	101	99	100	116	149	190	126	107	164	159	5.25
FISHERY PRODUCTS	69	111	82	107	165	223	232	404	501	586	737	28.40
FOREST PRODUCTS	74	70	91	139	150	232	308	218	293	408	490	22.25

ANNEX TABLE 10. INDICES OF VOLUME OF IMPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
						1969-71=100						PERCENT
WORLD												
AGRICULTURAL PRODUCTS	93	94	101	104	112	120	115	117	127	127	136	3.71
FOOD	91	93	102	106	114	123	120	122	133	136	146	4.58
FEED	80	89	102	110	119	128	122	122	154	156	177	6.81
RAW MATERIALS	99	99	101	100	106	110	101	99	105	102	109	.54
BEVERAGES	95	97	101	102	108	114	109	116	118	109	112	1.67
FISHERY PRODUCTS	96	95	100	105	116	116	118	120	129	132	142	4.15
FOREST PRODUCTS	89	96	102	102	112	126	122	100	117	122	133	2.77
DEVELOPED COUNTRIES												
AGRICULTURAL PRODUCTS	92	95	101	104	113	119	111	114	124	120	125	2.77
FOOD	90	93	101	105	115	123	116	119	131	129	133	3.76
FEED	81	89	102	109	119	129	122	120	151	150	170	6.33
RAW MATERIALS	99	99	102	99	105	105	95	94	99	94	98	- .66
BEVERAGES	95	96	101	103	109	115	108	117	118	107	111	1.55
FISHERY PRODUCTS	97	95	100	104	117	117	117	118	128	132	142	4.10
FOREST PRODUCTS	89	97	102	101	112	127	122	98	117	120	130	2.50
WESTERN EUROPE												
AGRICULTURAL PRODUCTS	92	96	100	103	110	113	109	111	119	117	123	2.48
FOOD	91	96	99	105	112	114	113	115	122	123	128	3.03
FEED	83	91	101	108	115	122	111	110	141	140	164	5.41
RAW MATERIALS	99	102	100	97	101	101	89	88	98	91	97	- .97
BEVERAGES	91	96	104	100	110	118	111	120	120	111	115	1.95
FISHERY PRODUCTS	100	98	99	103	111	104	104	107	113	115	124	2.16
FOREST PRODUCTS	90	98	103	99	109	127	121	93	118	118	132	2.44
USSR AND EASTERN EUROPE												
AGRICULTURAL PRODUCTS	87	86	106	108	127	143	123	144	158	144	147	5.67
FOOD	88	82	106	112	142	174	130	164	194	170	177	8.28
FEED	73	78	103	119	152	165	192	200	212	209	215	11.49
RAW MATERIALS	95	91	107	102	102	101	104	106	97	97	99	- .02
BEVERAGES	64	94	99	106	114	131	113	131	126	121	109	2.54
FISHERY PRODUCTS	91	86	106	108	94	75	96	113	113	99	98	1.05
FOREST PRODUCTS	84	91	104	105	104	108	115	129	123	121	121	3.15
NORTH AMERICA DEVELOPED												
AGRICULTURAL PRODUCTS	101	97	101	102	109	113	107	103	115	111	117	1.66
FOOD	93	95	103	102	110	113	108	99	115	113	113	1.50
FEED	77	94	108	98	104	100	104	109	133	131	159	4.83
RAW MATERIALS	116	108	98	94	107	106	105	106	112	117	113	1.52
BEVERAGES	114	96	96	108	108	117	107	111	115	103	126	1.99
FISHERY PRODUCTS	105	98	104	98	122	118	117	103	120	119	120	2.00
FOREST PRODUCTS	93	100	95	105	121	123	112	94	113	121	137	2.48
OCEANIA DEVELOPED												
AGRICULTURAL PRODUCTS	92	96	102	102	106	104	125	121	114	114	114	2.12
FOOD	97	93	104	104	105	109	135	146	124	131	131	4.20
FEED	123	80	108	115	88	40	83	63	18	25	110	- 9.75
RAW MATERIALS	89	99	101	100	107	98	125	95	107	90	103	- .14
BEVERAGES	87	99	99	102	107	107	111	119	113	123	103	1.68
FISHERY PRODUCTS	89	95	94	111	101	96	124	116	117	139	131	4.06
FOREST PRODUCTS	89	94	102	104	104	128	143	120	98	124	109	1.80

ANNEX TABLE 10. INDICES OF VOLUME OF IMPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	ANNUAL RATE OF CHANGE 1969-78
						1969-71=100						PERCENT
DEVELOPING COUNTRIES												
AGRICULTURAL PRODUCTS	95	93	102	106	108	124	132	131	140	158	183	7.02
FOOD	95	91	102	106	109	124	134	133	141	162	191	7.55
FEED	60	79	94	127	125	106	138	154	212	273	312	15.15
RAW MATERIALS	96	96	98	106	108	133	129	127	136	142	161	5.57
BEVERAGES	94	104	102	94	97	99	111	109	124	125	119	2.76
FISHERY PRODUCTS	89	94	99	107	110	104	112	124	128	124	134	3.76
FOREST PRODUCTS	86	91	101	109	110	116	125	114	120	139	147	4.47
AFRICA DEVELOPING												
AGRICULTURAL PRODUCTS	92	89	101	110	112	116	130	130	137	171	194	7.78
FOOD	88	87	101	112	114	119	131	128	137	176	210	8.37
FEED	67	78	103	120	107	72	96	88	107	187	212	7.74
RAW MATERIALS	103	90	101	109	123	128	159	162	148	160	152	6.58
BEVERAGES	112	107	102	91	92	90	101	123	135	142	103	3.03
FISHERY PRODUCTS	83	84	107	109	126	137	157	152	191	186	196	9.52
FOREST PRODUCTS	70	85	104	111	93	107	137	120	109	124	117	3.09
LATIN AMERICA												
AGRICULTURAL PRODUCTS	95	96	100	104	110	123	146	130	142	154	186	7.03
FOOD	96	96	101	103	110	126	149	136	146	160	198	7.73
FEED	55	72	84	144	122	125	151	146	190	245	241	13.22
RAW MATERIALS	98	92	97	111	108	111	121	102	112	113	119	2.05
BEVERAGES	87	105	97	98	105	111	138	101	125	114	109	1.70
FISHERY PRODUCTS	89	97	98	106	96	78	80	98	83	84	91	- 1.68
FOREST PRODUCTS	91	94	106	100	103	99	119	99	94	103	104	.28
NEAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS	87	83	97	121	111	111	152	179	189	219	253	12.69
FOOD	86	79	95	125	109	113	158	188	198	234	272	14.06
FEED	50	59	99	141	138	107	153	123	246	266	427	18.16
RAW MATERIALS	95	96	99	105	125	108	136	176	173	181	170	8.28
BEVERAGES	92	100	106	94	107	99	119	109	128	127	150	4.14
FISHERY PRODUCTS	82	85	104	110	126	159	204	242	357	348	361	19.62
FOREST PRODUCTS	82	94	96	110	120	121	128	141	133	167	159	6.31
FAR EAST DEVELOPING												
AGRICULTURAL PRODUCTS	100	97	101	102	98	119	107	121	131	128	147	4.45
FOOD	100	96	103	101	99	122	109	122	129	122	144	4.06
FEED	64	89	99	111	123	97	130	165	214	281	326	15.27
RAW MATERIALS	103	98	97	105	96	109	100	119	131	142	155	5.26
BEVERAGES	80	103	97	100	95	112	102	119	133	147	135	4.56
FISHERY PRODUCTS	94	95	99	106	110	105	104	112	110	103	111	1.16
FOREST PRODUCTS	89	92	97	111	112	131	121	112	140	157	186	6.76
ASIAN CENT PLANNED ECON												
AGRICULTURAL PRODUCTS	97	93	112	95	124	162	156	113	112	155	184	5.56
FOOD	102	91	118	91	126	148	149	106	101	159	179	5.09
FEED	100	113	96	91	130	91	109	252	309	391	391	19.42
RAW MATERIALS	83	97	98	105	120	198	173	128	142	140	198	6.56
BEVERAGES	129	111	91	96	111	153	180	136	111	122	122	2.70
FISHERY PRODUCTS	91	115	81	103	129	68	119	193	225	241	280	13.79
FOREST PRODUCTS	80	72	87	141	152	174	185	146	163	215	254	11.76

ANNEX TABLE 11. CARRY-OVER STOCKS OF SELECTED AGRICULTURAL PRODUCTS

Product / Country	Date	1961-65 average	1971	1972	1973	1974	1975	1976	1977	1978	1979 a/	1980 b/
		million metric tons										
WHEAT												
Selected exporting countries												
United States	1 June	30.7	22.4	26.8	16.2	9.3	11.8	18.1	30.3	32.0	25.1	26.5
Canada	1 Aug.	13.3	20.0	16.0	9.9	10.1	8.0	8.2	13.3	12.1	15.0	13.7
Argentina	1 Dec.	1.5	0.7	0.5	0.1	1.0	0.7	0.7	1.1	0.8	0.8	0.5
Australia	1 Dec.	0.6	3.5	1.4	0.5	1.9	1.7	2.7	2.1	0.8	4.7	4.7
E.E.C.	1 Aug.	6.5	5.8	7.5	6.1	7.3	10.3	8.2	8.4	7.2	9.8	9.9
Total of above		52.6	52.4	52.2	32.8	29.6	32.5	37.9	55.2	52.9	55.4	55.3
Selected importing countries												
India c/	1 April	...	2.4	3.4	0.5	0.8	1.0	4.9	11.2	8.6	6.2	5.2
COARSE GRAINS d/												
Selected exporting countries												
United States		62.7	32.2	46.6	31.7	21.8	15.4	17.3	30.0	41.3	46.1	56.8
Canada		4.3	5.4	6.2	5.8	6.2	5.6	4.4	5.0	7.3	7.1	3.8
Argentina		0.3	0.8	0.3	0.3	0.7	0.3	1.1	0.8	0.3	0.4	0.4
Australia		0.2	1.6	1.0	0.5	0.5	0.3	0.3	0.2	0.2	1.3	1.6
Total of above		67.5	40.0	54.1	38.3	29.2	21.1	23.1	36.0	49.1	54.9	62.6
RICE (milled equivalent)												
Selected exporting countries												
Pakistan c/	31 Oct.	...	0.26	0.38	0.10	0.30	0.58	0.39	0.12	0.32	0.28	0.25
Thailand	31 Oct.	...	1.97	1.73	1.24	2.14	2.13	2.50	1.36	1.29	1.45	1.19
United States e/	31 July	0.25	0.61	0.37	0.17	0.26	0.23	1.17	1.29	0.87	1.02	1.12
Japan	31 Oct.	...	5.34	2.79	1.34	0.80	1.13	2.49	3.41	5.24	5.90	5.90
Total of above		...	8.18	5.27	2.85	3.50	4.07	6.55	6.18	7.72	8.65	8.46
Selected importing countries												
India c/	31 Oct.	...	1.56	1.00	0.57	0.47	1.19	4.43	4.21	5.94	8.50	6.00
DRIED SKIM MILK												
United States	31 Dec.	0.18	0.04	0.02	0.03	0.14	0.21	0.23	0.25	0.27	0.21	...
E.E.C.	31 Dec.	0.03	0.12	0.29	0.33	0.50	1.11	1.20	1.00	0.83	0.44	...
Total of above		0.21	0.16	0.31	0.36	0.64	1.32	1.43	1.25	1.10	0.65	...
SUGAR (raw value)												
World total	1 Sept.	14.1	18.8	16.9	16.1	16.0	17.5	20.6	24.9	30.1	30.4	...
COFFEE												
Exporting countries f/		4.30 g/	3.28	3.29	3.35	2.46	3.00	2.61	1.71	1.93	1.97	...

a/ Preliminary. - b/ Forecast. - c/ Government stocks only. - d/ Barley, oats, maize, sorghum, and rye; Argentina, Australia (Dec./Nov. for rye, barley and oats, April/March for maize and sorghum); Canada (August/July); South Africa, maize only (May/April); United States (June/May for rye, barley and oats, October/September for maize and sorghum). - e/ Including paddy converted to milled rice. - f/ Excludes privately held stocks in Brazil. - g/ 1963-66 average.

ANNEX TABLE 12. - ANNUAL CHANGES IN CONSUMER PRICES: ALL ITEMS AND FOOD

Region and country	All items						Food					
	1960 to 1965	1965 to 1970	1970 to 1975	1975 to 1976	1976 to 1977	1977 to 1978	1960 to 1965	1965 to 1970	1970 to 1975	1975 to 1976	1976 to 1977	1977 to 1978
	Percent per year											
Developed countries												
WESTERN EUROPE												
Austria	3.9	3.3[a]	7.4	7.3	5.5	3.6	4.4	2.1	6.7	5.9	6.3	3.6
Belgium	2.5	3.5	8.3	9.2	7.1	4.5	2.9	3.5	7.5	11.8	6.1	1.4
Denmark	5.5	7.5[b]	9.5	9.0	11.1	10.0	4.2	7.5[b]	10.7	10.8	11.6	9.7
Finland	5.3	4.6	2.0	14.4	12.6	7.6	5.9	5.2[b]	12.4	16.3	18.6	4.0
France	3.8	4.3	8.8	9.6	9.1	9.1	4.3	3.8	9.6	10.8	11.7	9.7
Germany, Fed. Rep. of	2.8	2.4	6.2	4.5	3.9	0.2	2.6	1.3	5.6	5.1	2.1	1.6
Greece	1.6	2.5	13.1	13.3	12.1	13.1	2.5	2.6	14.7	13.8	14.0	17.1
Iceland	11.0	12.8	24.8	32.2	30.0	44.9	15.2	13.3	28.3	36.0	33.8	43.9
Ireland	4.2	5.3	13.0	18.0	13.7	7.6	3.9	4.3	14.3	16.5	16.4	10.0
Italy	4.9	3.0	11.4	16.8	18.4	12.1	4.6	2.2	11.6	17.1	19.3	13.1
Netherlands	3.5	4.8	8.6	8.8	6.7	4.1	4.0	4.3	6.9	9.9	6.7	...
Norway	4.1	5.0	8.3	9.2	9.1	8.1	4.5	5.3	8.3	10.2	8.3	5.5
Portugal	2.6	6.4	15.3	21.0	23.9	14.0	2.8	5.2	16.3	23.3	30.1	16.2
Spain	7.0	5.1	12.0	17.7	24.5	19.7	7.7	3.7	12.1	18.7	23.6	19.2
Sweden	3.6	4.5	7.8	10.3	11.4	10.0	5.3	4.5	7.9	12.9	14.6	9.6
Switzerland	3.2	3.4	7.9	1.7	1.3	1.1	2.9	0.9	7.3	- 1.3	1.4	4.0
United Kingdom	3.6	4.6	12.3	16.5	15.9	8.3	3.6	4.6	15.1	19.9	19.0	7.1
Yugoslavia	13.6	10.5	19.3	11.7	15.8	15.1	17.3	9.0	19.1	14.1	20.2	17.1
NORTH AMERICA												
Canada	1.6	3.8	7.4	7.5	8.0	8.9	2.2	3.4	11.1	2.6	8.4	15.5
United States	1.3	4.2	6.7	5.8	6.5	7.6	1.4	4.0	9.5	3.1	6.3	7.3
OCEANIA												
Australia	1.8	3.1	10.2	13.6	12.3	7.9	2.0	2.1	9.8	12.3	11.6	9.5
New Zealand	2.7	4.1	9.8	17.0	14.3	11.9	2.4	4.1	9.4	18.5	17.1	7.3
OTHER DEVELOPED COUNTRIES												
Israel	7.1	4.0	23.9	31.3	34.6	50.5	5.6	3.1	25.1	27.7	41.9	46.3
Japan	6.0	5.4	12.0	8.3	2.1	3.8	7.2	6.1	13.0	9.1	6.7	3.5
South Africa	2.1	3.4	9.3	11.2	11.2	10.9	2.6	3.0	11.7	7.4	10.3	12.9
Developing countries												
LATIN AMERICA												
Argentina	23.0	19.4	59.5	444.1	176.0	175.0	23.0	18.3	58.0	458.6	...	163.2
Bolivia	5.1	5.9	23.7	4.5	8.1	10.4	2.1	7.8	27.2	57.6	8.2	10.0
Brazil	60.0	28.0	23.5[c]	35.3	40.5	38.3	60.0	26.0	25.9[c]	34.5	39.1	40.6
Chile	27.0	26.0	225.4	211.9	92.9	40.1	30.0	26.0	245.5	212.8	175.5	34.6
Colombia	12.4	10.1	19.5	17.4	30.0	17.4	13.4	9.2	24.0	16.9	36.3	13.4
Costa Rica	2.3	2.5	14.3	3.5	4.2	6.0	2.2	3.8	14.9	- 0.2	4.0	10.2
Dominican Republic	2.7	1.0	11.1	7.8	12.8	3.5	2.5	0.1	13.3	- 2.8	9.3	- 3.1
Ecuador	4.0	4.6	13.7	10.7	13.0	11.6	4.9	6.0	18.4	9.5	15.7	10.3
El Salvador	0.2	1.1	8.4	7.0	11.8	13.5	1.1	2.2	8.8	6.9	8.7	10.7
Guatemala	0.1	1.5	2.9	10.7	12.6	8.1	0.1	1.7	3.3	9.6	11.2	...
Guyana	1.9	1.5	8.2	9.0	8.2	15.2	2.3	2.8	12.2	13.8	8.5	17.2
Haiti	3.7	1.7	13.7	6.7	6.9	- 3.8	4.1	1.8	15.5	6.9	7.8	- 7.0
Honduras	2.7	1.6	6.5	5.1	8.4	6.1	3.2	1.8	8.0	6.0	10.9	6.6
Jamaica	2.9	4.3	14.9	9.7	11.2	34.9	2.4	4.7	17.2	9.0	9.4	36.7
Mexico	1.9	3.5	12.4	15.8	29.1	17.3	1.6	3.8	13.9	12.7	28.6	16.5
Panama	1.1[d]	1.6	7.8	2.3	8.6	3.8	1.4[d]	1.7	9.9	1.2	5.8	6.1
Paraguay	...	1.2	12.6	4.5	9.4	10.6	...	0.3	15.4	4.2	11.3	13.0
Peru	9.4	7.8[e]	12.1	33.4	38.1	57.8	10.5	7.1[e]	13.9	32.1	40.3	59.7
Puerto Rice	2.2	3.2	8.8	2.0	4.4	4.9	3.0	4.1	12.6	- 0.6	5.5	5.9
Trinidad and Tobago	2.2	3.8	13.7	10.3	11.8	10.2	2.1	3.7	17.1	7.4	6.9	9.1
Uruguay	16.2[f]	60.0	73.4	50.7	58.1	44.6	13.1[f]	60.0	76.0	47.6	64.0	44.5
Venezuela	1.7	1.6	5.5	7.7	7.7	7.0	1.7	0.9	8.5	8.8	12.4	9.2

See notes at end of table

ANNEX TABLE 12. - ANNUAL CHANGES IN CONSUMER PRICES: ALL ITEMS AND FOOD (concluded)

Region and country	All items						Food					
	1960 to 1965	1965 to 1970	1970 to 1975	1975 to 1976	1976 to 1977	1977 to 1978	1960 to 1965	1965 to 1970	1970 to 1975	1975 to 1976	1976 to 1977	1977 to 1978
	Percent per year											
FAR EAST												
Bangladesh	...	4.0 b/	39.0 g/	- 9.6	10.3	13.2	...	3.2 b/	42.0 g/	-19.5	10.1	13.5
Burma	...	6.4 b/	17.8	25.8	- 3.8	- 6.4	...	2.9 b/	21.0	22.5	- 3.0	- 7.9
Dem. Kampuchea	4.3	4.5	100.9	...	...	...	2.7	6.7	112.8	...	...	...
India	6.1	8.9 h/	13.2	- 7.8	8.4	2.5	6.5	9.8 h/	14.2	- 12.6	9.9	0.9
Indonesia	...	100.0	21.3	19.9	11.1	8.3	...	100.0	25.2	22.1	10.7	7.8
Korea, Rep. of	15.4	12.3	14.3	15.3	10.2	14.4	18.3	12.5	16.8	17.8	11.6	16.6
Lao People's Dem. Rep.	38.0	6.0	35.2	...	...	...	39.0	4.0	40.9	...	...	...
Malaysia (peninsular)	0.5	0.4 b/	6.7	2.1	4.7	4.9	0.6	0.4 b/	10.4	0.8	5.5	4.9
Nepal	...	6.2	10.3	- 2.2	7.3	5.3	...	7.2	9.8	- 7.5	9.9	5.4
Pakistan	2.6	5.6	15.2	7.2	10.1	6.7	3.8	6.0	16.6	6.0	11.3	5.6
Philippines	4.8	3.6 a/	18.7	9.2	9.9	7.3	6.8	5.2 a/	20.1	9.2	9.6	6.3
Sri Lanka	1.7	4.2	8.0	1.2	1.2	12.1	1.3	4.9	9.1	- 1.1	0.6	16.9
Thailand	1.5	2.5	9.8	4.9	8.5	8.7	2.0	4.2	11.9	5.5	11.5	8.5
NEAR EAST												
Cyprus	0.3	2.9	8.0	3.8	...	7.4	0.2	3.2	10.2	2.6	...	5.7
Egypt	3.2	3.2 a/	5.8	10.3	12.7	11.1 i/	6.5	6.2 a/	8.6	14.8	14.3	9.6 i/
Iran	2.0	1.4	9.6	11.3	27.2	11.8 i/	3.1	0.9	10.0	6.9	18.8	8.1 i/
Iraq	...	3.5	11.3	10.4	7.7	4.5	...	3.1	18.1	4.5	12.9	5.6
Jordan	...	2.8 b/	6.0	15.0	31.2	7.0	...	3.1 b/	9.2	21.9	44.1	3.6
Lebanon	...	1.8 e/	4.5	...	...	...	...	2.0 e/	- 3.5	...	...	...
Libya	...	6.1 a/	16.4	5.4	6.2	29.5	...	8.3 a/	15.9	12.8	12.1	11.7
Sudan	3.3	3.4 a/	11.6	1.7	16.8	19.8	4.2	2.8 a/	12.0	1.8	18.8	26.4
Syria	1.3 d/	4.2	16.7	14.8	...	5.0	1.3 d/	4.7	18.2	14.1	...	5.1
Turkey	3.6	7.1 j/	6.2	15.3	28.4	49.5	4.8	8.7 j/	7.7	17.9	30.6	44.7
AFRICA												
Algeria	...	... i/	5.1	9.4	11.9	17.1 k/	...	... i/	7.2	14.7	15.3	18.8 k/
Cameroon	...	3.3 i/	10.2	9.9	14.6	12.6	...	4.6 i/	11.5	11.2	23.5	11.5
Ethiopia	...	3.0 e/	3.7	28.5	16.7	14.3	...	3.5 e/	2.7	41.9	16.8	17.1
Gabon	4.4 d/	3.0	11.4	20.2	13.8	10.8	3.3 d/	2.1	2.7	...	...	...
Gambia	...	...	10.5	17.0	12.4	8.8	...	...	12.8	19.3	12.5	6.3
Ghana	11.8	3.7	17.4	169.3	80.6	...	14.0	2.1	20.3	64.1	114.1	...
Ivory Coast	2.6	4.9	8.2	12.0	27.4	13.0	2.8	5.9	9.3	7.2	40.0	11.3
Kenya	2.0	1.7	13.9 c/	10.9	10.3	10.3	1.9	2.0	14.7	6.3	11.8	12.2
Liberia	...	4.4	12.1	5.6	6.2	7.3	...	3.4	13.7	- 0.6	9.9	11.3
Madagascar	...	2.3	9.7	5.0	3.0	6.5	...	2.2 b/	12.0	3.8	1.4	7.7
Malawi	...	2.0 b/	8.9	4.3	4.2	8.7	...	3.4 b/	10.7	2.3	1.7	6.4
Mauritius	1.0 d/	3.0	13.1	11.4	9.2	8.5	0.6 d/	3.0	14.7 e/	6.3	18.6	6.7
Morocco	4.0	0.6	5.4	8.5	12.6	9.8	4.6	0.1	7.2 e/	10.2	13.8	8.4
Mozambique	1.9 m/	3.7	10.5	4.5	...	...	0.7 m/	4.7	11.1	8.3	...	...
Niger	...	3.8	7.9	23.6	23.3	10.1	...	4.4	10.6	25.9	26.7	7.0
Nigeria	3.2	5.6	11.5	21.8	21.1	...	2.0	8.8	13.1	25.2	33.4	...
Senegal	...	...	13.0	2.7	9.6	3.9	...	...	16.5	...	11.9	4.3
Sierra Leone	3.9 n/	4.3	8.4	17.1	8.3	10.9	0.6 n/	4.8	11.0	17.4	7.3	8.2
Somalia	7.4	2.5 j/	7.5	14.1	10.6	12.0	7.5	2.8 j/	9.1	18.4	13.2	14.1
Swaziland	...	2.7 b/	9.3	6.4	16.5	8.5	...	2.5 b/	9.8	5.9	18.9	8.3
Tanzania	1.2	3.7	13.1	6.9	11.6	11.5	1.2	2.5	17.7	- 0.2	13.9	15.4
Togo	...	2.1 e/	8.9	11.6	21.3	1.3	...	2.6 e/	9.7	11.8	27.3	- 8.0
Tunisia	4.5	2.9	4.8	5.4	6.7	6.2	4.8	3.1	5.2	6.4	5.0	6.5
Uganda	5.4 m/	4.0	23.4	58.9	...	...	7.3	3.5	24.3	65.7	...	...
Zaire	15.6 m/	23.0	18.6	63.3	65.4	58.4	19.0 m/	22.0 h/	21.2	67.0	70.3	64.9
Zambia	2.4	8.7 h/	7.1	18.9	19.8	16.4	2.4	8.8 h/	7.4	22.5	18.2	17.0

Source: International Labour Office, Bulletin of Labour Statistics, Geneva, third quarter, 1979.

a/ 1965-69. - b/ 1967-70. - c/ 1972-75. - d/ 1962-65. - e/ 1966-70. - f/ 1960-62. - g/ 1973-75. - h/ 1965-68. - i/ January-November. - j/ 1968-70. - k/ January-September. - l/ 1970-73. - m/ 1963-65. - n/ 1961-65.

Source: International Labour Office, Bulletin of Labour Statistics, Geneva, third quarter, 1979.

ANNEX TABLE 13. PER CAPUT DIETARY ENERGY SUPPLIES IN RELATION TO NUTRITIONAL REQUIREMENTS, SELECTED DEVELOPING COUNTRIES AND AREAS

	Averages				Requirements
	1966-68	1969-71	1972-74	1975-77	
	% of requirements				Kilocalories per caput per day
AFRICA	92	94	93	95	2 334
Algeria	77	79	89	98	2 400
Angola	83	85	86	88	2 350
Benin	95	97	94	94	2 300
Botswana	87	88	87	89	2 320
Burundi	100	98	99	97	2 330
Cameroon	99	104	102	104	2 320
Central African Republic	92	98	103	100	2 260
Chad	95	88	76	75	2 380
Congo	94	98	100	101	2 220
Ethiopia	82	83	76	79	2 330
Gabon	93	94	90	103	2 340
Gambia	95	97	92	96	2 380
Ghana	93	97	97	88	2 300
Guinea	86	89	85	83	2 310
Ivory Coast	96	104	104	111	2 310
Kenya	94	98	93	89	2 320
Lesotho	93	91	90	94	2 280
Liberia	93	96	101	103	2 310
Madagascar	108	109	105	109	2 270
Malawi	88	101	104	98	2 320
Mali	90	88	79	90	2 350
Mauritania	85	83	75	82	2 310
Mauritius	103	105	110	113	2 270
Morocco	96	102	108	106	2 420
Mozambique	84	88	85	82	2 340
Niger	92	88	83	87	2 350
Nigeria	93	97	95	97	2 360
Rhodesia	102	98	101	106	2 390
Rwanda	88	94	90	98	2 320
Senegal	96	95	92	94	2 380
Sierra Leone	93	94	91	91	2 300
Somalia	95	96	96	92	2 310
Swaziland	85	89	91	98	2 320
Tanzania	90	89	89	90	2 320
Togo	96	95	90	88	2 300
Tunisia	85	90	107	111	2 390
Uganda	91	97	94	89	2 330
Upper Volta	86	83	77	84	2 370
Zaire	100	101	102	104	2 220
Zambia	85	86	88	87	2 310
ASIAN CENTRALLY PLANNED COUNTRIES	89	95	98	103	2 353
China	88	94	99	103	2 360
Democratic Kampuchea	98	99	93	84	2 220
Korea Dem. Rep.	99	105	106	117	2 340
Mongolia	100	96	100	103	2 430
Viet Nam, Socialist Rep. of	94	98	97	92	2 160
FAR EAST	88	94	93	93	2 216
Bangladesh	91	88	87	88	2 210
Bhutan	89	89	90	89	2 810
Burma	97	101	98	102	2 160

ANNEX TABLE 13. PER CAPUT DIETARY ENERGY SUPPLIES IN RELATION TO NUTRITIONAL REQUIREMENTS, SELECTED DEVELOPING COUNTRIES AND AREAS (concluded)

	Averages				Requirements
	1966-68	1969-71	1972-74	1975-77	
	% of requirements				Kilocalories per caput per day
FAR EAST (concluded)	88	94	93	93	2 216
Hong Kong	113	118	119	121	2 290
India	85	92	90	88	2 210
Indonesia	85	91	95	98	2 160
Korea, Republic of	103	112	113	114	2 350
Lao People's Dem. Rep. of	94	94	90	89	2 220
Malaysia	107	112	113	110	2 240
Nepal	94	94	92	94	2 200
Pakistan	89	96	95	98	2 310
Philippines	90	93	94	95	2 260
Singapore	113	126	130	132	2 300
Sri Lanka	105	106	95	92	2 220
Thailand	103	103	102	99	2 220
LATIN AMERICA	106	106	106	107	2 380
Argentina	123	127	124	127	2 650
Bolivia	85	88	88	89	2 390
Brazil	105	105	104	106	2 390
Chile	112	110	110	108	2 440
Colombia	92	93	96	97	2 320
Costa Rica	104	107	108	111	2 240
Cuba	104	111	115	114	2 310
Dominican Republic	87	90	93	93	2 260
Ecuador	87	89	90	92	2 290
El Salvador	80	81	84	91	2 290
Guatemala	98	102	100	99	2 190
Guyana	104	102	101	101	2 270
Haiti	85	87	90	90	2 260
Honduras	98	98	91	92	2 260
Jamaica	103	111	117	119	2 240
Mexico	114	112	113	114	2 330
Nicaragua	112	110	107	109	2 250
Panama	106	109	101	102	2 310
Paraguay	114	120	117	120	2 310
Peru	97	98	98	97	2 350
Uruguay	115	118	114	116	2 670
Venezuela	93	96	95	100	2 470
NEAR EAST	98	99	102	108	2 455
Afghanistan	89	81	82	81	2 440
Cyprus	112	120	126	123	2 480
Egypt	104	104	103	108	2 510
Iran	95	97	110	132	2 410
Iraq	87	91	95	96	2 410
Jordan	87	93	89	84	2 460
Lebanon	100	100	101	101	2 480
Libya	98	105	124	126	2 360
Saudi Arabia	89	89	93	102	2 420
Sudan	84	92	89	96	2 350
Syria	95	98	101	105	2 480
Turkey	111	112	112	116	2 520
Yemen Arab Republic	86	81	87	90	2 420
Yemen, People's Dem. Rep. of	93	89	85	79	2 410

Source: FAO food balance sheets.

ANNEX TABLE 14. - MAIN FEATURES OF CURRENT DEVELOPMENT PLANS

Region and country	Average annual growth rate (from UN/FAO reference data)		Duration and Scope of Plan a/	Targets indicated in national development plan													
				Planned growth rate of:							Planned investment b/						
				GDP	Total employment	Agricultural production		Fertilizer consumption	Export earnings		Share of total investment in GDP	Share of public investment in total investment	Share of agriculture in:		Share of expenditure in land and water development in total investment c/	Share of external resources in total plan outlay
						Total	Cereals		Total	Agriculture			Total investment	Public investment		
	Population	Domestic demand for food															
	Percent per year			Percent per year							Percent						
AFRICA																	
Burundi	2.2	5.2	1978-82 C	5.8	....	3.4	...	...	7.9	...	27.0	...	22.2	...	...	44.0
Cameroon	1.9	2.6	1976-81 C	7.1	6.2	...	...	...	...	...	19.5	70.7	17.3	16.6	...	...
Gabon	1.0	4.3	1976-80 C	5.5	6.7	3.5	...	...	3.7	....	49.0	68.0	3.5	.5	...	...
Gambia	1.9	4.3	1975-80 C	...	...	4.7	7.0	...	...	...	...	...	14.9	...	...	...
Ghana	2.7	5.1	1975-80 C	5.5	...	...	...	...	2.0	...	...	...	...	...	...	...
Ivory Coast	2.5	3.6	1976-80 C	8.7	...	6.9	...	10.7	...	8.3	5.6	32.0	51.9	13.6	26.2	...
Lesotho	1.9	...	1976-80 C	7.9	2.1	6.5	2.3	...	22.0	...	13.5d/	...	...	32.6	5.0	...
Liberia	2.3	2.8	1976-80 C	6.8	3.3	...	...	...	13.0	...	9.0d/	...	19.3	19.3	...	60.5
Madagascar	2.9	3.6	1978-80 C	5.7	...	4.3	...	...	7.3	...	...	40.2	27.7	22.6	...	36.5
Malawi	2.4	6.3	1971-80 C	8.2	...	5.4	...	...	10.0	9.0	23.8	36.7	8.2	19.3	...	...
Mauritius	1.8	2.8	1975-80 C	6.9	4.7	...	...	...	...	...	28.0	...	...f/	...	...g/	32.0
Morocco	3.2	4.3	1978-80 C	4.9	4.1e/	4.1	3.6	...	6.6	4.7	24.0	26.3	16.2f/	18.0	57.0g/	...
Nigeria	2.7	2.9	1975-80 C	9.5	2.6	5.0	5.0	...	5.0	0.6	26.6	66.7	8.3	6.5	...	-
Senegal	2.9	0.5	1977-81 C	5.8	2.2	...	...	12.0	...	...	...	...	...	...	...	...
Sierra Leone	2.4	1.4	1975-79 C	6.2	2.0	4.6	6.5	...	8.2	9.1	22.9	45.6	15.5	25.6	5.9	33.1
Tanzania	3.1	...	1976-81 C	6.7	...	5.6	...	...	...	...	...	56.8	15.2	...	...	...
Togo	2.8	0.4	1976-80 C	8.0	...	5.2	...	...	...	...	33.0	88.4	21.8	...	...	35.1
Tunisia	2.3	7.1	1977-81 C	7.5	4.0	3.6	3.5	...	10.0	4.7	25.0	43.0	15.8	26.2	...	10.0
Uganda	3.0	...	1976-80 C	...	...	...	...	...	...	...	...	...	20.0	...	...	75.9
Zambia	3.3	...	1979-83 C	4.8	3.8	5.5	...	...	5.4	...	29.0	...	...	...	...	...
FAR EAST																
Bangladesh	2.8	...	1978-80 C	5.6h/	...	4.1	4.0i/	...	11.0	...	29.2	84.5	25.0	27.0	...	56.0
Fiji	2.1	...	1976-80 C	7.0h/	3.0	4.6	13.4i/	6.0	8.3	8.6	22.7i/	54.0	...	21.8	16.8	...
Korea, Rep. of	2.0	4.5	1977-81 C	9.0h/	3.1	4.0	3.3	...	16.0	...	25.4k/	...	11.2	...	...	...
Malaysia	2.8	3.0	1976-80 C	8.5	3.3	7.3	...	...	13.4	...	27.8	40.3	10.7	25.5	5.9	12.8
Pakistan	2.8	...	1978-83 C	7.0	3.4	6.0	7.5	15.0	11.0	...	19.4	69.6	15.7	21.7	...	24.2
Thailand	3.3	4.8	1977-81 C	7.0	2.3	5.0	...	...	14.0	...	11.1	41.9	15.5	36.9	10.5	12.8
LATIN AMERICA																
Bolivia	2.5	5.0	1976-80C/AS	7.7h/	2.9	7.4	6.8	9.2	...	17.9	28.0i/	70.0k/	9.6	10.1	...	31.0
Brazil	2.9	4.7	1975-79 C	10.0h/	3.5	7.0	8.4	14.1	20.0	8.5	25.0k/	19.0k/	6.0	3.5	...	...
Chile	1.8	0.9	1975-80 AS	6.6h/	4.0n/	4.8n/	7.5	...	...	11.8	13.0l/	47.0	...	...	...	...
Dominican Rep.	2.6	...	1980-82 AS	...	...	5.4	...	...	...	6.9	...	...	...	...	...	...
El Salvador	3.2	3.2	1978-82C/AS	7.5	3.6	5.5	4.9	8.4	7.1	5.1	24.0	41.9	...	...	14.0	...
Grenada o/	0.4	...	1977-82 AS	4.8	...	...	...	...	5.6	...	27.4	34.1	...	21.4	...	...
Guatemala	3.1	...	1979-82 C	...	...	3.5	3.8	...	...	...	...	...	...	...	...	...
Guyana	2.3	...	1979-81 C	...	...	...	...	...	...	...	16.0h/	...	...	30.0	...	...
Haiti	1.5	2.6	1976-81C/AS	5.0	...	3.0	4.7	...	9.3	8.0	19.9h/	67.0	15.0	18.8	29.0	50.0
Jamaica	1.5	...	1978-82 C	3.2	...	7.0	...	...	...	...	...	...	...	...	...	...
Nicaragua	3.3	3.6	1975-79 PS	6.1	1.7	6.5	...	...p/	7.2	9.5	...d/	...	...	...	...	...
Panama	2.9	4.1	1976-80 PS	7.0	2.5	5.7	3.7	14.0p/	...	...	16.0d/	54.4	4.9	7.	...	28.0
Paraguay	3.0	...	1977-81 C	7.6	...	6.9	...	...	11.7	...	26.3	26.4	...	10.0	...	24.2
Venezuela	3.0	2.7	1976-80 PS	8.2	0.5	9.6	10.7	18.0	25.4	11.0	25.0	53.0	9.0	7.0	3.0	16.0
NEAR EAST																
Afghanistan	2.4	3.3	1976-83 C	6.2	2.1	4.7	...	...	8.2	...	19.1	84.7	18.2	24.7	...	65.8
Jordan	3.5	...	1976-80 C	12.0	...	7.0	...	...	22.7	5.1	36.4	49.9	5.2	...	12.7	46.4
Libya	4.1	4.8	1976-80 C	10.7	6.5	15.8	9.0	...	7.9	...	30.5	87.0	12.0	12.0	...	-
Saudi Arabia	3.0	5.5	1975-80 C	10.2	7.8	4.0	...	...	...	...	30.0	...	8.0	...	...	-
Sudan	3.1	3.5	1977-83 C	7.5	...	6.5g/	...	...	11.0	11.0	22.0	58.0	26.0	30.0	...	52.0
Syrian Arab Rep.	3.3	4.9	1976-80 C	12.0	4.9	9.0g/	9.7	...	7.0	...	29.0	83.0	3.5	4.3	20.0	...
Yemen Arab Rep.	3.0	4.5	1976-80 C	8.2	1.7	5.5g/	5.2	31.0	12.3	...	47.0	48.3	14.2	12.7	56.7	41.2
Yemen, People's Dem. Rep. of	2.9	1.8	1975-79 C	13.4	7.2	10.8	8.6	...	20.0	...	21.4	99.0	36.8	37.0	29.4	55.0

a/ C = Comprehensive; PS = public sector; AS = agricultural sector. - b/ Where possible, data refer to net investment. In many cases, however no distinction is made in the plan, and data may refer to gross investment or may include some elements of recurrent expenditure. The agricultural sector includes animal production, fisheries, forestry, irrigation, land reclamation, community development and agricultural extension.
c/ Land and water includes land reclamation and land clearance, irrigation, drainage and flood control projects and dams and dikes which are part of these projects; establishment of perennial pastures; preparation and initial stocking of fish ponds. However, the country data available do not always correspond entirely to this definition. d/ Share of public investment in GDP. - e/ Wage earning employment. - f/ Including water resource development and rural development. - g/ Share in agricultural investment. - h/ GNP. - i/ The planned annual growth rate of total food production is 2.7%. - j/ Share of total investment in GNP. - k/ Total investment does not include private investment in agriculture and technology development. Data on investment refer to 1979 only. - n/ Employment in agriculture only. - o/ Reference is made to the intermediate alternative of the Public Investment Alternatives, 1978-82. - p/ Average annual rate 1973-85. - q/ Growth rate refers to agricultural GDP.

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