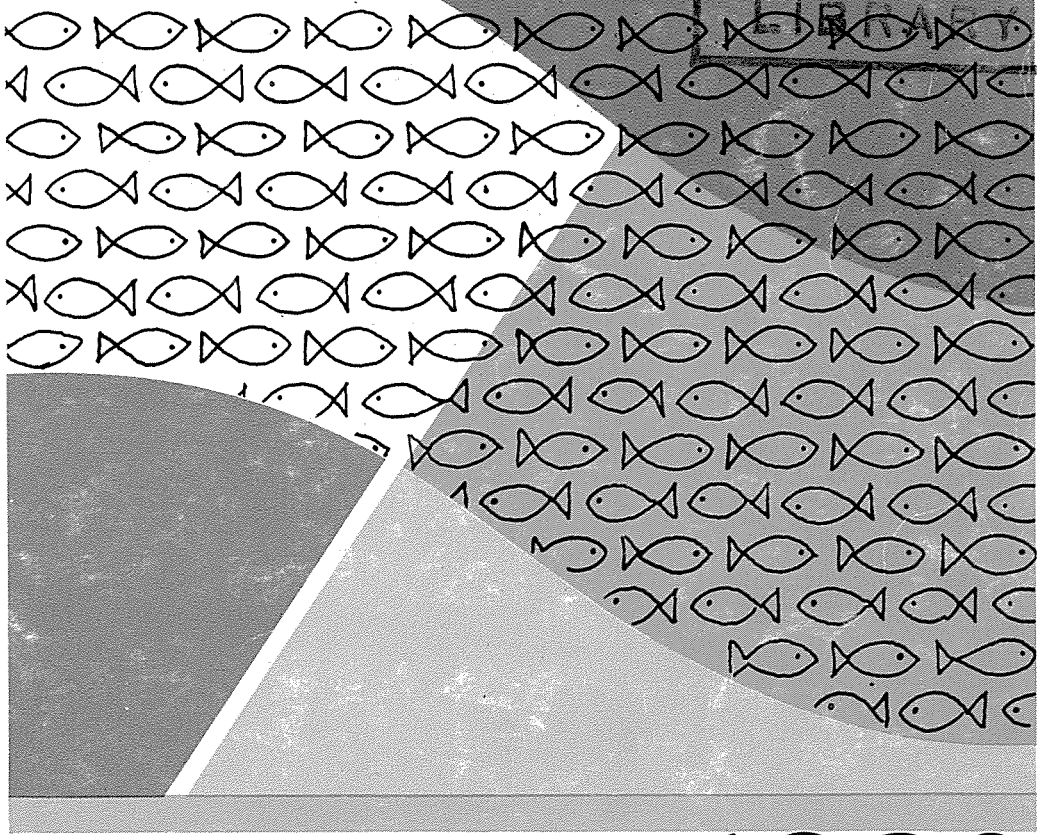
# THE STATE OF FOOD AND AGRICULTURE





**World food security**
**World fisheries**
**and the Law of the Sea**

# 1980

## SPECIAL CHAPTERS

In addition to the usual review of the recent world food and agriculture situation, each issue of this report from 1957 has included one or more special studies of problems of longer-term interest. Special chapters in earlier issues have covered the following subjects:

**1957** Factors influencing the trend of food consumption
Postwar changes in some institutional factors affecting agriculture

**1958** Food and agricultural developments in Africa south of the Sahara
The growth of forest industries and their impact on the world's forests

**1959** Agricultural incomes and levels of living in countries at different stages of economic development
Some general problems of agricultural development in less developed countries in the light of postwar experience

**1960** Programing for agricultural development

**1961** Land reform and institutional change
Agricultural extension, education and research in Africa, Asia and Latin America

**1962** The role of forest industries in the attack on economic underdevelopment
The livestock industry in less developed countries

**1963** Basic factors affecting the growth of productivity in agriculture
Fertilizer use: spearhead of agricultural development

**1964** Protein nutrition: needs and prospects
Synthetics and their effects on international trade

**1966** Agriculture and industrialization
Rice in the world food economy

**1967** Incentives and disincentives for farmers in developing countries
The management of fishery resources

**1968** Raising agricultural productivity in developing countries through technological improvement
Improved storage and its contribution to world food supplies

**1969** Agricultural marketing improvement programmes: some lessons from recent experience
Modernization of institutions to promote development

**1970** Agriculture at the threshold of the Second Development Decade

**1971** Water pollution and its effects on living aquatic resources and fisheries

**1972** Education and training for development
Accelerating agricultural research in the developing countries

**1973** Agricultural employment in developing countries

**1974** Population, food supply and agricultural development

**1975** The Second United Nations Development Decade: mid-term review and appraisal

**1976** Energy and agriculture

**1977** The state of natural resources and the human environment for food and agriculture

**1978** Problems and strategies in developing regions

**1979** Forestry and rural development

# the state of food and agriculture 1980

World Review
Marine Fisheries in the New Era of National Jurisdiction

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME 1981

*The statistical material in this publication has been prepared from the information available to FAO up to March 1981.*

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*The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. In some tables, the designations "developed" and "developing" economies are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.*

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# THE STATE OF FOOD AND AGRICULTURE 1980

# FOREWORD

The Third UN Development Decade gets underway when the food, agricultural and general economic situation in the world gives cause for increased concern. Greater insecurity characterizes the state of food and agriculture during the period since the mid-Seventies. Accelerated inflation, renewed recession, high unemployment, continued monetary instability and payments imbalances have combined to make for a gloomy outlook of the world economy.

World food production in 1980 increased marginally, even less than in 1979. With cereal production falling short of consumption requirements in two consecutive years, there have been significant increases in cereal import demand and prices, particularly of coarse grains during 1980. World cereal stocks in 1981 will fall considerably below the minimum level of safety needed for world food security.

Domestic food price inflation also appears to have accelerated in 1980, with little prospect of any respite in 1981. So, also, have the world market prices for fertilizers. By the end of 1980, prices of several important types of fertilizers were 20-30% or more above the levels twelve months earlier.

The worst sufferers in this situation are low income food-deficit countries (including China) whose cereal imports in 1980/81 are expected to increase by more than 10%. The bulk of their imports will have to be purchased commercially, at an estimated cost of US$ 9 billion.

The current deficits of the non-oil exporting developing countries have nearly doubled to 70 billion dollars between 1978-80 and may worsen still further in 1981. Their medium and long-term debts have increased nearly fourfold since 1973 to 280 billion dollars and the servicing of these debts is absorbing a large part of their slow-growing export earnings.

The insecurity of the present situation is such that the world now depends more heavily on the outcome of the 1981 harvests of food crops, especially cereals, than in any year since 1973/74. Concerned at this situation, the FAO Council meeting in November 1980 endorsed my call for a global alert and requested me to keep the situation under constant review and call a special consultation should this become necessary.

Fortunately, the prospects for cereal production in 1981 appear encouraging. Larger areas are reported to have been planted to cereal crops and growing conditions have so far been reasonable. However, the harvests are still several months away. Furthermore, we estimate that the world cereal production will have to increase by at least 4% if it is to meet the consumption requirements of 1981 and about double this rate if stocks are to be rebuilt to a reasonably safe level.

An alarming feature of the immediate food situation is the sharp rise in the incidence of emergencies in the past two years. According to our Early Warning System, as of April 1981, 31 countries faced abnormal food shortages due to natural and man-made causes, as against half this number two years ago. Drought in particular has reduced food crops in many countries and the number of refugees has assumed alarming proportions, notably in Africa. The plight of more than a score of countries in Africa led me in September 1980, in collaboration with the Executive Director of the World Food Programme (WFP), to call a meeting of donors to assess this critical situation and consider concrete measures to alleviate it. I welcome the generous contributions which have been made to meet the emergency needs in Africa. Food aid allocations have increased significantly to 1.9 million tons. However, the overall response, though encouraging, remains inadequate, as only

about two-thirds of the total 1980/81 import requirements of the 26 affected countries have been secured so far.

The International Emergency Food Reserve (IEFR) has started playing an important role. However, even after five years of operation, and despite increased contributions in recent years, it has yet to reach the minimum target of 500,000 tons. Moreover, not all contributions are placed freely at WFP's disposal. As a result, the IEFR is not a truly international emergency reserve. In these circumstances, I have proposed that the present voluntary arrangements should be replaced by a legally binding convention to provide the IEFR with a guaranteed level of resources.

It is particularly worrying that food aid still tends to shrink when the number of food emergencies and the cereal deficits of many low income developing countries are increasing. This year food aid in cereals is likely to be less than 9 million tons, and thus be further away from the World Food Conference target of at least 10 million tons. A major factor causing erosion of the volume of food aid has been the continuing inflation in food prices, especially of cereals and in freight and handling costs. The experience of the World Food Programme bears it out. While the money value of resources pledged to the WFP over the past ten years rose by 150%, the increase in volumes of food commodities was only 2%. The international community needs to consider ways and means of allocating food aid in quantitative terms, as the EEC has done.

Without progress towards establishing a new Wheat Trade Convention, the extension of the 1980 Food Aid Convention to mid-1983 is welcome. Further efforts should now be made to enlist new contributors and to increase the commitments of the present ones so that the target of 10 million tons could be attained under the Convention in 1981/82. This target too should be revised. FAO estimates that by 1985 food aid requirements may average between 17 million and 18.5 million tons. Meanwhile, the implementation of the FAO Plan of Action on World Food Security assumes the utmost importance.

I welcome the recent decision of the Executive Board of the International Monetary Fund (IMF), made in response to the proposal contained in the Plan, that the Fund will extend financial assistance to member countries to tide over temporary surges in their cereal import costs. The assistance which will be integrated with the compensatory financing facility already existing for shortfalls in export earnings, will provide badly needed help to these countries in tackling their balance of payments difficulties in times of emergency food needs.

Of prime importance for strengthening world food security is, of course, the expansion of food production in developing countries where increased efforts are being made. During the DD2, the developing countries managed to increase their food production at an average annual rate of 3.2%, though falling short of the 4% target set in the development strategy. Initiatives have also been taken to establish regional food security systems comprising food reserves - in Southern Asia, the Sahel, Southern Africa, the Arab Countries and the non-Aligned Group. FAO intends to pay special attention to ways of facilitating these regional and sub-regional schemes and I trust that donors will provide the support needed.

The nutritional status of the developing world population does not yet show any significant and sustained improvement. Since 1978, when dietary energy supplies attained the modest level of average requirements in the developing world, there has been no improvement in the situation. If nutrition can be regarded as a "leading edge" of development, it is vital that nutritional considerations are formally and deliberately introduced into agricultural and rural development projects and programmes. FAO has developed guidelines for this purpose.

The Governments of most developing, but particularly the slow growing low income countries, need urgently to review and redefine their policies and priorities for action so as to remove the major constraints to implementing programmes. The framework and perspectives for such reviews are provided by the WCARRD Programme of Action, the AT 2000 analysis and, for Africa, the Lagos Plan of Action of the OAU.

Within the limits of its resources, FAO is willing to assist in the formulation of priority programmes and policies for food and nutrition, agricultural and rural development, as well as in the identification of the needs for additional assistance, both technical and financial.

In this connection it is necessary to mobilize larger resources for investment in agriculture. Our study on Agriculture: Towards 2000 estimates that investment requirements of primary agriculture should rise at a rate of 4.0% a year to a level of about $ 63 billion in 1990 (in 1975 prices) if the target agricultural growth rates are to be achieved. The external assistance requirements for 1990 would be of the order of $ 12.5 billion at 1975 prices, more than two and a half times the actual level of 1979. This is not an excessively ambitious objective when compared to past growth rates. It is particularly disappointing therefore that the flow of assistance in 1979 increased only nominally at current prices but declined by about a tenth in real terms, the first such decline since 1975.

In the very important but difficult sphere of international trade in food and agricultural commodities, progress seems elusive. Between 1977 and 1979 the agricultural export earnings of the developing countries increased by $ 12 billion, to a total of $ 75 billion. But all of this increase went to finance their increased imports of food alone. The trade deficit for the non-oil exporting developing countries increased between 1979 and 1980 by nearly a half to $ 73 billion. Unfortunately, for trade as a whole, and agricultural trade in particular, there is not yet in place even a consensus among nations on what should be done to enable the developing countries to expand their export earnings and thus finance their vital imports.

Agriculture has remained for far too long outside the negotiating arena on trade. Nations have pursued their short-term interests, all too often through non-tariff barriers and the protectionist policies which have seriously distorted international trade, limited the market opportunities for efficient exporters - developed and developing countries alike - and inordinately raised costs to their own consumers. A recent FAO study estimated that for beef alone even a reduction by a quarter in import barriers could enable low-cost developing countries to raise their beef export earnings by over one-half. For processed products the protectionist barriers are, in many cases, even more formidable.

These and other issues pertaining to food, agriculture and rural development are discussed in detail in the first chapter on World Review, which has as its overall theme the fragile state of world food security. I should also mention the modification in style and presentation introduced this year. Apart from thematic orientation efforts have been made to briefly focus on topics and events both relating to the theme and to agricultural development in general.

The second chapter carries an analysis of the problems and opportunities in the fishery sector. The delimiting of a major part of the marine fishery resources of the world within national jurisdiction has added a new dimension to the perspectives of the coastal states, and is a tangible manifestation of the New International Economic Order. The implications are discussed of the extension of economic zones for the distribution of the marine fishery resources, the immediate effect on catches and the problems and possibilities for achieving optimal sustained growth.

FAO's Special Action Programme on the development and management of fisheries in Exclusive Economic Zones, seeks to help developing countries overcome the problems and meet the challenges born of the adjustments needed in the size and composition of national fishing fleets because of the changed ownership of the resources. Developing countries must acquire the capability to manage effectively their newly acquired fishery resources if they are to reap the greater benefits.

The year 1980 saw a number of initiatives in various fora. I am particularly pleased at the adoption of the New International Development Strategy by the 35th Session of the UN General Assembly and at the launching of the UN Third Development Decade from

January 1981. FAO assisted in the formulation of the parts of the strategy dealing with agriculture. There is evidence that governments of developing countries are increasingly making the hard decisions associated with giving greater priority to agriculture in their development strategies. The challenge facing the international community at this difficult time is for it to come forward and support the new IDS, both politically and materially. Some measure of how this challenge is being met will be clear at the forthcoming UN Conference on the Least Developed Countries.

The continued need to keep hunger and malnutrition, world food supplies and food security in the forefront of public opinion and in public consciousness spurred the 20th Session of the FAO Conference to resolve that a World Food Day be observed annually on 16 October. The first such day will be held in 1981, the 36th anniversary of the founding of FAO.

I hope that through the observance of the World Food Day, humanity will demonstrate its determination to work towards the eventual eradication of hunger and malnutrition and to the redressal of poverty, particularly in rural areas. It is with this in view that FAO's activities have been action oriented.

EDOUARD SAOUMA
DIRECTOR-GENERAL

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## Explanatory note

The following symbols are used in statistical tables:

- \- none, or negligible
- ... not available

"1978/79" signifies a crop, marketing or fiscal year running from one calendar year to the next; "1978-79" 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 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.

### 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 1979 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 export (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.

### 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"

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1/ For full details, see FAO Production Yearbook 1979, Rome, 1980.
2/ For full details, see FAO Trade Yearbook 1979, Rome, 1980.

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.

## Glossary of terms for Chapter 2

Maximum Sustainable Yield (MSY) - The MSY represents the maximum tonnage of fish that can be harvested from a non-cultivable stock of fish over a long-term basis.

Fishing effort - It is defined in terms of the inputs used in catching fish. This has three elements: (a) the number of vessels; (b) the amount of time spent fishing; and (c) the fishing power of each vessel.

Yield curve - The yield curve represents, for a non-cultivable stock of fish, the average annual yield that would be harvested at different levels of fishing effort.

Catch per unit of effort - Catch per unit of effort generally refers to the tonnage of fish caught by a vessel during a season.

Depletion - Depletion occurs where a stock is producing a lower sustainable yield than the maximum, at a level of effort greater than that required to take the maximum. It can occur either because the reproductive capacity of the stock has been diminished or because greater tonnages of fish could be taken by not fishing the younger and smaller individuals.

Overfishing - Overfishing refers to the level of fishing effort rather than to the yield from the stock and it means that a greater amount of effort is being used than the minimum amount necessary to take a desired level of catch.

Common property - Common property resources are those for which access is both free and open.

Baseline - The baseline is the line from which the territorial sea and the extended economic zone is measured. It generally follows the low-tide line of the coast, but can cross bays of certain size and configuration as well as inlets between certain islands.

# 1. WORLD REVIEW

## INTRODUCTION

The world food and agricultural situation in 1980 marked a further accentuation of the problems which had already manifested themselves in 1979. With only a marginal increase in world food production in two consecutive years and the consequent drawdown of cereal stocks to below safety levels, there was a sharp deterioration in world food security so much so that the Director-General of FAO declared a state of global alert. Meeting in late November 1980, the 78th Session of the FAO Council endorsed the Director-General's assessment of the grave food situation and outlook and requested that he should keep it under constant review and call a special consultation should a further deterioration warrant it.

The world thus depends more heavily on the outcome of the harvests of foodcrops in 1981, especially cereals, than at any time since the world food crisis of 1973-74. The prospects for food production in 1981 appear encouraging so far, with reports of larger areas planted to cereals in late 1980 and early 1981. The harvests are, however, still several months away.

This precarious situation has been accentuated by the problems besetting the world economy. The economies of the major industrialized countries had entered a recession by late 1980. The developed market economies are estimated to have had a growth rate of only about 1% in real GNP in 1980, less than a third of the average rate for the previous 10 years. The prospects are for only a weak recovery in 1981 and a return to a modest rate of growth in 1982. Inflation which had become greater and more widespread among the developed market economies in 1979, continued through 1980. Although it may slow, it remains at an historically high level of about 10% per annum . Unemployment, already high in the industrialized countries, is expected to continue its rise through 1981 to over 7% of their labour force.

Slowing down of economic growth rate, acceleration of inflation and rising unemployment have also affected the immediate overall prospects of the developing world. The current account deficits of the non-oil exporting developing countries have nearly doubled between 1978 and 1980 to about $ 70 billion and are bound to worsen still further in 1981, possibly to $ 80 billion. Although these figures represent a smaller share of these countries' combined GDP than in the previous monetary crisis of the mid 1970s, their chances of covering these deficits have deteriorated since then. Most of these countries now have less scope to reduce their demand for energy and other imports than they had in 1975. The low-income countries among them face a particularly difficult period of further adjustment, difficulties compounded by their limited access to private capital markets as a source of finance.

Since the end of 1973, the medium and long-term debt of developing countries without oil for export has increased drastically, rising nearly fourfold to $ 280 billion, equivalent to nearly 20% of their combined GDP. The cost of servicing this debt has greatly increased because of prevailing high interest rates, reflecting anti-inflationary measures in many countries.

These problems are compounded by the deteriorating international climate for trade and development assistance. Because of world recession, exports of developing countries which are not major oil producers, to industrialized countries are currently increasing at an annual rate of only 2% compared to more than 10% in 1979, while the growth in the volume of world exports of agricultural commodities also markedly decelerated in 1980 to 4% from 7% in 1979. In many cases the prices of primary commodities of major export interest to these developing countries fell back in 1980 with little prospect for recovery in 1981: as an example, the International Coffee Organization's composite price for coffee fell by nearly 28%.

Flows of development assistance have failed to keep pace with the price inflation. Official external assistance commitments to agriculture in the "broad" definition, declined in real terms in 1979 to just under $ 7 billion in 1975 prices, the first decline since 1976. A marked recovery in 1980 does not seem likely nor are prospects for increased flows in 1981 particularly good given the current economic climate. This sets a sombre background to the difficulties faced by the low-income developing countries in financing their development, and in accelerating the pace of their food and agricultural production.

Another aspect of the food situation in the 1970s has been the continued inflation in food prices. Having shown signs of easing in 1978, food prices again accelerated in 1979 with little sign of respite since then.

The difficult economic situation feced by many countries in the world, both developed and developing, has been made worse by the generally poor performance of crops and livestock production which increased only marginally (0.3%) in 1980. This was the second poor year in succession and the worst since 1972 when crops and livestock production actually declined.

The overall performance in 1980 confirms the trend that was appearing by the previous year: world food production in the latter 1970s faltered. In the developed countries as a group food output, which declined slightly in 1979, fell even more in 1980 (-1.4%). Over the whole of the Second Development Decade the developing market economies, though failing to reach the 4% target, raised their total output of crop and livestock products by 2.8% annually and their food production by 3.2%. The issue of greate t concern has been the declining per caput food production in Africa during the 1970s. The fact that the great majority of the countries facing abnormal food shortages at the beginning of 1981 were in Africa, underlines the continent's precarious food situation.

Per caput food production in the other developing regions increased during this period, but by a slender margin. In the Near East and Asia and the Far East the margin of food production over population growth was small, only about one half to three quarter percent per annum.

In terms of supplies of dietary energy, while the level of nutrition in developing countries as a whole had modestly improved from the late 1960s to 1978, the latest year for which data are available, this was not true for all regions or group of countries: it did not in Africa and the MSA countries barely exceeded the level achieved in 1969-71. The available evidence does not indicate any likelihood of improvement since 1978.

A marked change for the worse has taken place recently in the world cereal position. Output in 1980 was virtually the same as in 1979 but a further increase in demand in 1980/81 over the previous year will reduce carryover stocks for the second year in succession to their lowest level since the grain crisis years of the early seventies. At an estimated level of 14% of world consumption, they will fall short of the minimum needed to safeguard world food security in 1981/82. Nearly all the increase in import requirements in the current grain year is due to the increase in the requirements of the less developed countries.

While the cereal import needs of developing countries have been rising, food aid shipments in 1979/80 declined to 8.9 million tons of cereals. A major problem has been the rising prices of cereals which eroded the value of budgetary allocations of such aid. On the other hand, the new Food Aid Convention which came into effect on 1 July 1980, was a positive step. Initially concluded for one year only, the Convention has just been extended for a further two years to 30 June 1983. Not only was there a substantial increase in the annual commitments to 7.6 million tons but it also allows a more flexible response from donor countries when low income, developing countries face emergency food needs.

The number of World Food Programme emergency operations involving food aid has greatly increased since the Programme was established in 1962. On average there were 17 such operations each year during its first 20 years: in both 1979 and 1980, the number

was over 60 and the costs have nearly doubled in only two years. The voluntary contributions to the International Emergency Food Reserve increased to over 400 thousand tons of food-grains, still short of the target of 500 thousand tons but a welcome contribution to the emergency food relief programme.

Some progress has been recorded under the FAO Plan of Action on World Food Security testifying to the growing determination among governments of many developing countries to implement policies that will provide more permanent and adequate protection against shortages. Measures taken include attempts to build reserve stocks, national or regional, to regularly monitor the national food situation and to improve storage and other facilities. FAO is assisting governments in these efforts with field projects under its Food Security Assistance Scheme and its Action Programme for the Prevention of Food Losses.

In fisheries, 1979 was a disappointing year for the developing countries with the main increases in production being in export products and with a widespread decline in per caput availability. For developed countries there was a further slight fall in the catch. The value of world fish trade, however, was significantly higher.

The latest session of the Law of the Sea Conference ended in August 1980 and raised hopes that a formal treaty might be signed in 1981 although these hopes have since receded. The main provisions on the sovereignty of coastal states over living marine resources within 200 mile zones have been generally agreed for some time, so that recent sessions have been little concerned with fisheries.

The production of most forest products in 1979 showed a further advance, with the rate of growth generally higher in developing than in developed countries. Use of fuel, the major use of wood in developing countries, now involves cutting in Africa and Asia at a rate greater than the forests are able to sustain. Increasing output of industrial forest products has been accompanied by increases both in current and real prices.

A strong export demand characterized the 1980 fertilizer market with steadily increasing prices reflecting increasing costs and changing currency values, rather than major supply-demand imbalances. These trends could seriously set back the efforts of developing countries to increase food production, since these countries import over half their fertilizer consumption. FAO's Commission on Fertilizers, meeting in mid 1980, drew particular attention to the price issue and has initiated a study of major factors affecting fertilizer supply, demand and prices.

Countries exporting agricultural commodities felt the impact of the recession and price instability in international markets. The value of world agricultural exports in 1979 increased by 13% but for developing countries the increase was 8%. This increase was the result mainly of price rises, the volume of trade showing little growth. The purchasing power of these exports over manufactured goods, petroleum and fertilizers fell significantly and there was consequently a substantial increase in the trade deficits of the non-oil developing countries. The year 1980 is likely to have brought further deterioration in the purchasing power of agricultural exports, notwithstanding a further overall rise in the nominal prices of some of these products. The experience of individual developing countries will have varied widely since there were considerable differences in the price movements of commodities. Beverage crops, oilseeds, oils and fats, and hides and skins underwent marked price declines in 1980 while prices of sugar, cereals and other foods, some fibres, rubber and forest products increased, some by wide margins.

The main development of note in international agricultural trade negotiations in 1980 was the agreement reached on the Common Fund for Commodities. When the required ratifications are completed this Fund will be in a position to provide finance for buffer stocks operations through international commodity agreements and also for commodity programmes and projects aimed at improving productivity, processing and marketing. A new International Cocoa Agreement was concluded in 1980 and the economic provisions of the International Coffee Agreement were reactivated. With the completion of the required ratifica-

tions, the International Price Stabilization Agreement on Natural Rubber has entered into provisional force.

World food security stands out among the many current issues relating to agricultural development which demand international attention. The long-term resolution of this problem lies partly within the domain of the low-income, food deficit developing countries which must expand their food production at a faster pace. In the meantime the food surplus developed and other donor countries will be required to increase development assistance and food aid. Cooperative measures between developing countries are also required, including the establishment of mutual assistance arrangements such as regional grain reserves and coordinated action by the international community to improve world preparedness against larger scale food shortages.

Agriculture receives heightened emphasis in the new International Development Strategy (IDS) for the Third UN Development Decade (DD3) recently adopted by the UN General Assembly in December 1980. A priority is the elimination of hunger and malnutrition as soon as possible and certainly by the end of this century. As for the previous development decade, a target growth rate of 4% per annum has been set for agricultural production of developing countries, keeping in view the objectives of elimination of hunger, improved food self-sufficiency, food security and sustained industrialization of their economies. Greater emphasis must be given by developing countries in their national policies towards agricultural and rural development and to the equitable distribution of the benefits of economic growth. On the other hand the developed countries are called upon to contribute to the success of the strategy by making available additional financial resources, by supporting measures to improve world food security and to make the structure of international trade more equitable.

The achievement of the goals set down in the new IDS also requires accelerated development of the Least Developed Countries (LDCs). The UN Conference on the LDCs scheduled for September 1981 will seek to finalize and adopt the Substantial New Programme of Action for this group of countries.

The agricultural sector also is a key element in the current debate on the cost and long term supplies of energy. It is essential that agriculture, as the provider of food, receives priority claim in national energy policies, that the energy needs of low income developing countries are met, but equally that the sector should use energy more efficiently. Agriculture also has an important but controversial role to perform as a renewable source of energy derived from biomass: trees, crops, livestock and their residues.

# THE CURRENT FOOD SITUATION AND WORLD FOOD SECURITY

This discussion around the theme of world food security broadly follows the lines of the International Undertaking on World Food Security adopted by the FAO Conference and by the World Food Conference of 1974. The Undertaking recognized that the problem of food security needs to be tackled from several sides. The emphasis is on strengthening the food production base, especially in developing countries, together with the adoption of cereal stock policies and food aid programmes to ensure adequate supplies of basic foodstuffs, primarily cereals, at all times. There are many other facets to food security, the achievement of which can be regarded as an integral part of the process of national development itself, and some of these are also explored.

## WORLD AND REGIONAL FOOD PRODUCTION IN 1979-80 AND PROSPECTS FOR 1981

Following the disappointing increase of less than 1% (Table 1-1) in world food production in 1979, the production in 1980, according to preliminary estimates, was even worse and recorded the smallest increase (0.3%) since 1972 when it actually declined. The performance in 1980 confirms the trend that was appearing by the previous year: world food

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

| | 1978 | 1979 | 1980 1/ | Change 1978 to 1979 | Change 1979 to 1980 | Annual rate of change 1971-75 | 1976-80 | 1971-80 |
|---|---|---|---|---|---|---|---|---|
| | .. 1969-71=100 .. | | | ..... % ..... | | | | |
| FOOD PRODUCTION | | | | | | | | |
| Developing market economies | 127 | 127 | 131 | -0.3 | 3.4 | 3.1 | 2.5 | 3.2 |
| Africa | 113 | 115 | 118 | 1.7 | 2.4 | 1.6 | 1.9 | 1.8 |
| Far East | 128 | 125 | 130 | -2.8 | 4.2 | 3.2 | 2.4 | 3.2 |
| Latin America | 132 | 137 | 140 | 3.6 | 2.5 | 3.7 | 3.5 | 3.9 |
| Near East | 132 | 131 | 136 | -0.8 | 3.6 | 3.7 | 1.6 | 3.3 |
| Asian centrally planned economies | 129 | 137 | 137 | 6.0 | 0.5 | 3.6 | 3.5 | 3.4 |
| Total Developing Countries | 128 | 130 | 133 | 1.7 | 2.4 | 3.3 | 2.8 | 3.2 |
| Developed market economies | 119 | 122 | 120 | 2.9 | -1.8 | 2.3 | 1.8 | 2.0 |
| North America | 121 | 126 | 121 | 4.4 | -4.4 | 1.9 | 0.8 | 2.3 |
| Oceania | 142 | 136 | 120 | -3.9 | -11.9 | 3.5 | -0.2 | 2.8 |
| Western Europe | 116 | 120 | 122 | 2.9 | 2.0 | 2.2 | 3.1 | 1.9 |
| Eastern Europe and the USSR | 125 | 118 | 117 | -5.7 | -0.4 | 2.5 | 0.4 | 1.6 |
| Total Developed Countries | 121 | 121 | 119 | -0.1 | -1.4 | 2.4 | 1.4 | 1.9 |
| World | 124 | 125 | 125 | 0.7 | 0.3 | 2.7 | 2.0 | 2.5 |
| PER CAPUT FOOD | | | | | | | | |
| Developing market economies | 104 | 101 | 102 | -2.9 | 0.7 | 0.5 | -0.2 | 0.5 |
| Africa | 91 | 89 | 89 | -1.3 | -0.6 | -1.2 | -1.1 | -1.1 |
| Far East | 106 | 100 | 102 | -5.2 | 1.7 | 0.7 | - | 0.7 |
| Latin America | 107 | 108 | 108 | 0.8 | -0.2 | 0.9 | 0.8 | 1.2 |
| Near East | 106 | 103 | 103 | -3.6 | 0.8 | 1.0 | -1.3 | 0.5 |
| Asian centrally planned economies | 114 | 119 | 118 | 4.5 | -0.8 | 1.9 | 2.1 | 1.8 |
| Total Developing Countries | 107 | 106 | 107 | -0.5 | 0.2 | 1.0 | 0.6 | 1.0 |

1/ Preliminary.

production in the latter half of the 1970s had faltered. This slowing down in the pace of food production was not of small consequence being one quarter below the rate of increase in the 1971-75 period and it is of major social, economic and, indeed, political significance.

Although performances in 1979 and 1980 were broadly similar in that both were marked by only very marginal increases in world food production, there were striking differences in the way the increases and decreases were distributed among regions. For the developing market economies, 1979 was a poor year but 1980 showed a significant improvement, such that per caput food production increased, although not sufficiently to offset the decline of the previous year. This partial recovery in per average caput food production largely stemmed from the large production increases in developing market economies of Asia and the Far East where the monsoon generally favoured crop production, and of the Near East. Food production also accelerated somewhat in Africa although to a level which is still inadequate, while in Latin America it slackened.

For the centrally planned economies of Asia, in which China predominates by virtue of its size, 1980 failed to continue the good performance in food production of the previous two years for the region as a whole. Conditions of food supply in some countries in this region remain extremely difficult.

## FOOD SHORTAGES AND EMERGENCY SITUATIONS IN 1979/80

As well as the low level of world food production recorded in 1979 and 1980, one of the more disturbing aspects of the current situation has been the continued high incidence of food shortages and similar emergencies, especially in Africa. Reports received through FAO's Global Information and Early Warning System on Food and Agriculture shows that by early 1981 twenty-eight countries were affected by abnormal food shortages. Of these, 13 are least developed countries (LDCs). The great majority are in Africa (22) where the situation has worsened since last year, three are in Asia, two in Latin America and one is in the Far East.

The situation tended to deteriorate through 1980 as the effects of poor food crop harvests of 1979 were felt, particularly in large parts of sub-Saharan Africa where food supplies were affected for the second year in succession.

The main factors responsible for this deterioration have been the unfavourable growing conditions for food crops in eastern Africa, continued drought in some countries in the Sahel and several Asian countries and, most disturbing of all, by the avoidable dislocation of food production and distribution brought about by wars or civil strife, both in parts of eastern Africa and in Asia.

There has been a dramatic increase in the number of refugees and displaced persons in both Asia and Africa. Their needs may be very large in relation to their host country's food supplies which, in some cases, will be inadequate for the domestic population alone. For example, Somalia, a country with an indigenous population of about 4.2 million, is having to support 1.3 million refugees whose cereal needs are estimated to be 190 thousand tons in 1981. The country now faces a renewed drought and the cereal deficit including the needs of the refugees is over half a million tons.

Much of the slackening in the pace of growth of world food production in the latter 1970s can be attributed to the fluctuations in the developed market economies, a feature of significance for world food trade and food security. Once again in 1980, the developed countries showed their susceptibility to the vagaries of the weather at a time when the developing world is becoming increasingly dependent on them for its basic food needs. In North America and particularly Oceania, 1980 turned out to be a worse year for food production than 1979 as large areas suffered from drought. On the contrary, wetter than normal weather affected much of Europe as a whole, although food production in western Europe still recorded an increase well in excess of population growth for the region. Food production in east Europe and the USSR declined again in 1980 failing to regain the 1978 level, mainly because of poor weather conditions.

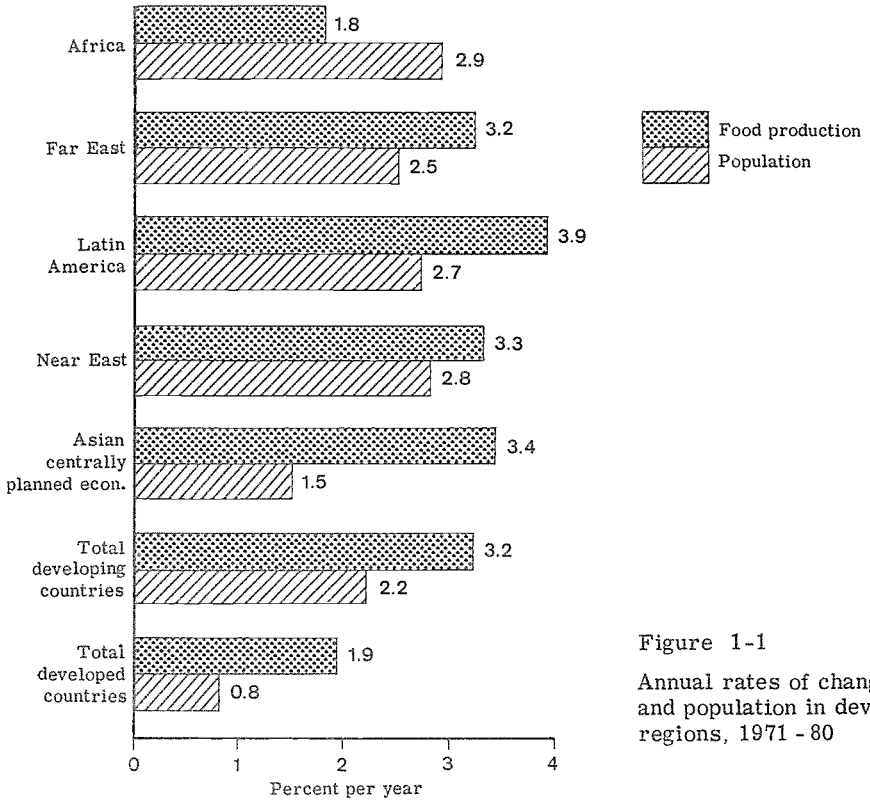



Figure 1-1

Annual rates of change of food production and population in developing and developed regions, 1971 - 80

The FAO Secretariat estimates that world cereal output in 1981 will have to increase by at least 4% to cover the requirements for consumption in 1981/82, but by 8% to meet both consumption needs and the replenishment of stocks to a minimum safe level, discussed below. The outcome of the 1981 cereal crop is thus of crucial significance.

Prospects for the 1981 crop season at this early stage appear to be reasonably favourable. The increases in the world market prices for cereals recorded in 1980 will act as incentives to producers to increase output and larger cereal acreages are expected. For the second consecutive year in the United States there will be no set aside programme for wheat in 1981 and another year of large sowings can be foreseen there. In such major grain exporting countries as Canada and Australia the grain area is expected to increase and the steps taken to liberalize prices in Argentina are being continued as part of the efforts to promote its grain production. A major effort by the centrally planned economies to expand cereal production can also be expected in eastern Europe and the USSR. However, partially offsetting these positive aspects, food production plans in 1981 are likely to be adversely affected by rising costs, particularly of energy and energy-related inputs such as fertilizers, and by high interest rates.

Up to late February 1981 the weather was reasonably favourable in most areas for food production which will influence world food supplies well into 1982.

The longer term trends in world food production show how slender is the current margin of the increase in food production over the requirements arising from population growth alone in the developing world (Fig. 1-1). The shortfall of a quarter in the DD2 target growth rate for agriculture of 4% per annum has widened the gap. However, there are regions and countries with commendable performances although no region achieved the 4% target. The growth rate for the Latin American region was 3.9% and that for the centrally planned economies of Asia was 3.4%. The developing market economies of the Near East and the

Figure 1-2

Annual rates of changes of per caput food production in developing countries by region, 1971 - 80

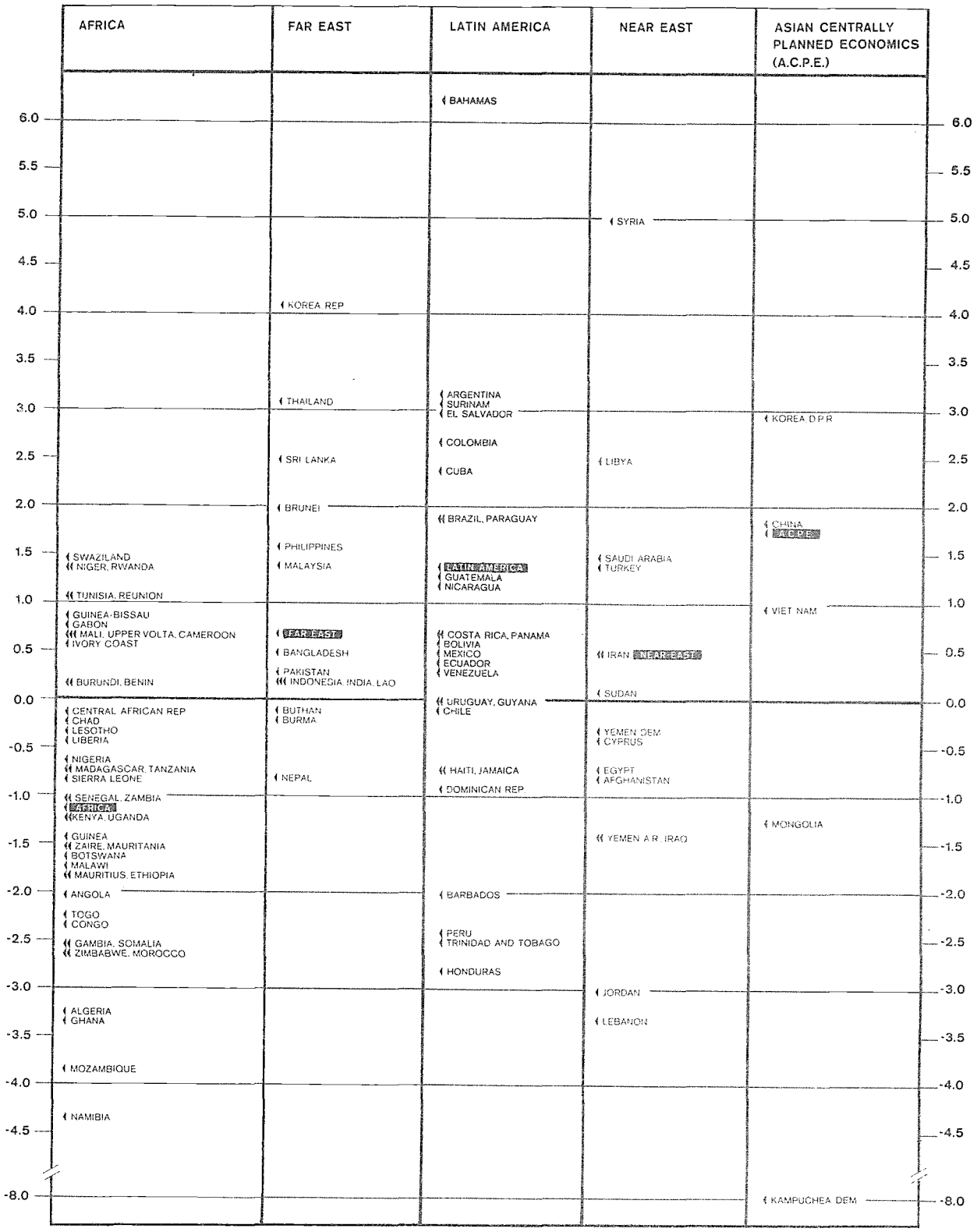
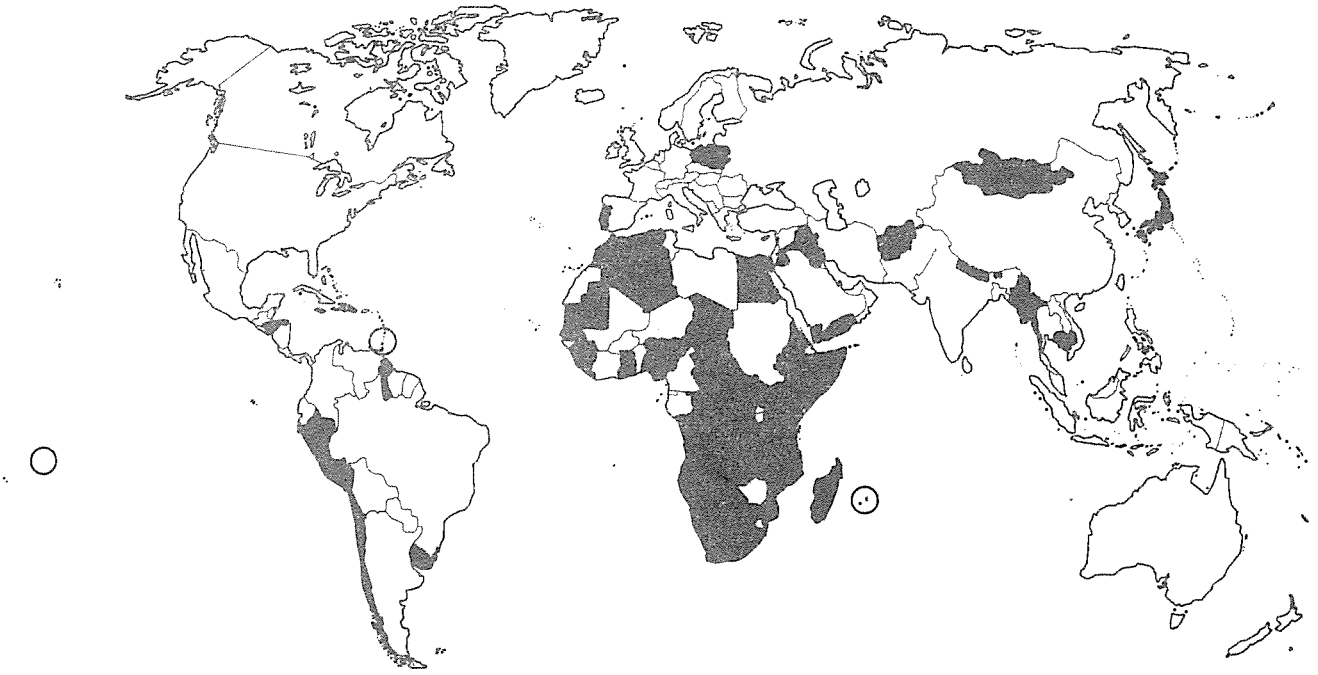


Figure 1-3

The geographical distribution of declining annual rates of change in per caput food production, 1971 - 80



very populous Far East regions recorded 3.2% to 3.3%, well below the target. The poorest performance was in Africa where the average inhabitant has access to 10% less domestically grown food supplies than 10 years ago.

The diversity of this picture appears clearly from Fig. 1-2 and Fig. 1-3. Fig. 1-2 shows that 30 of the 43 developing countries of Africa had a negative growth rate in per caput food production during 1971-80. The situation is also precarious in the Near East which shows a wide range from -3.3% to +5% and over half of the countries showed negative rates of growth. Even in Latin America nearly a third of the countries had negative rates of growth of food production per head of population in the 1970s. In the Far East only 3 out of the 13 developing countries listed have negative growth rates in per caput food production.

Of all the regions, the Asian centrally planned economies had the best performance on this narrow, if important, criterion. But this is largely due to China because the region also includes some countries with declining per caput food production.

The world map shows both developing and developed countries shaded in Fig. 1-3 with negative per caput food production in the 1970s. Although many countries throughout the world face problems derived from the inability of their agricultural sectors to feed their increasing populations, those of Africa with the highest rate of population growth, predominate.

Of particular concern has been the marked deceleration in the increase of food production in the Least Developed Countries (LDCs) during the 1970s where the average annual rate declined by a third in the last half of the decade (Table 1-2). In this group of the poorer

countries food output has increased by only 2.3% in the Seventies, well below those for developing countries as a whole. Although the African LDCs have doubled their rate of growth of food output, this is still well below their rate of population growth which approaches 3%. The LDCs in Asia have performed better in this respect although their rate of increase in food production more recently appears to have ominously slowed.

Table 1-2. Recent changes in food production in Least Developed Countries (LDCs)

| | Change 1978 to 1979 | Change 1979 to 1980 | Annual rate of change 1971-75 | 1976-80 | 1961-65 to 1970 | 1971-80 |
|---|---|---|---|---|---|---|
| | ..... % ..... | | | | | |
| LDC in Africa | 0.4 | 2.3 | 0.8 | 1.7 | 2.5 | 1.8 |
| LDC in Asia | 2.3 | 4.7 | 3.8 | 3.4 | 2.9 | 2.7 |
| LDC in Near East | -4.6 | 1.8 | 5.1 | -0.6 | 1.1 | 2.0 |
| Total LDC | -0.1 | 3.0 | 2.9 | 1.8 | 2.3 | 2.2 |

A particular effort is being made in 1981 to mobilize the resources required to enable the LDCs overcome their problems during the 1980s. A UN Conference on the LDCs will be held in September 1981 and is discussed at greater length at the end of this Chapter 1/.

## CHANGES IN WORLD PRODUCTION AND SUPPLIES OF MAIN FOOD COMMODITIES

Recent changes in the production of the main food commodities which underlie the food production indices, are shown in Fig. 1-4. These changes in production are in terms of calendar years, as are the production indices, while the following commentary 2/on the main food commodities is on the basis of crop or commodity seasons most of which coincide with calendar years 3/. It is only in isolated cases that these measures at the world level, though possibly based on different time periods, would differ widely.

World cereal production (including rice in milled equivalent) in the season ending in 1980 is estimated to have reached 1,437 million tons, virtually the same as the 1979 outturn. Production in the developing countries was slightly larger than in the previous year but output in developed countries was 2% lower.

Wheat production, at 446 million tons, showed an improvement on the somewhat reduced crop of 1979 but it failed to reach the 1978 record of 449 million tons. There were gains in developed countries, with larger crops in North America, and in both western and eastern Europe including the USSR. But there was a substantial decline in Australia. The developing countries, as a whole, produced slightly less, the decline being mainly located in China and India where the crops fell below the rather high levels of 1979.

Production of coarse grains was smaller for the second successive year, world output at 723 million tons, comparing with 753 million tons in 1979 and 763 million tons in 1978.

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1/ See "Review of Some Major Policy Issues".
2/ For a more detailed discussion see Commodity Review and Outlook 1980-81, Rome, 1981.
3/ The only major foodcrops whose crop seasons are not calendar years are sugar (July/June) and some oilseeds (Oct/Sept). In the case of the latter, FAO estimates aggregate production on the basis of oil equivalent per calendar year. Other foodcrops of less major importance not following calendar years are cocoa (Oct/Sept) and citrus (Sept/Aug).

The decline of 4% from 1979 was due to a fall in the United States maize crop. There were small improvements in western and eastern European production but a slight decline in the USSR output over the poor 1979 crop was recorded and Australia's crop was smaller. Production in developing countries showed only a marginal gain in total but Argentina, an important exporter, experienced a sharp drop in production partly offset by an increase in Brazil.

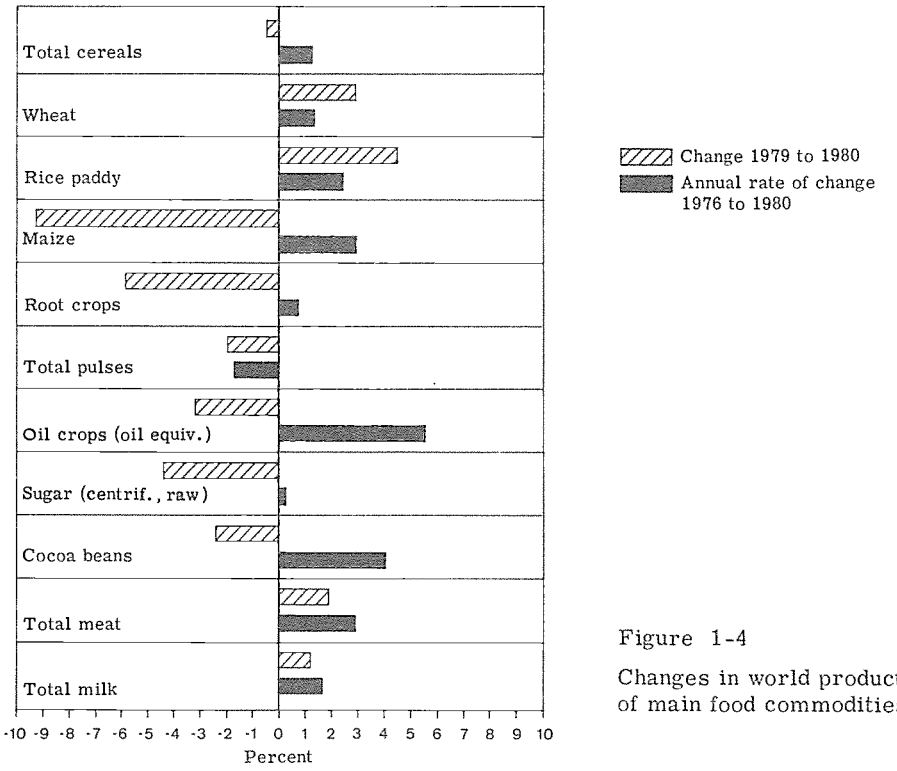


Figure 1-4

Changes in world production of main food commodities

World production of rice, at 399 million tons (paddy), was significantly larger than in 1979, mainly owing to a substantial recovery of over 30% in the Indian crop. There were larger crops also in Thailand, Burma and Indonesia. These gains in production far outweighed the declines recorded in China, Japan and the Republic of Korea. The improvement in output in developing countries amounted to 26 million tons, or 7%.

Preliminary information indicates that larger areas have been planted to wheat and other autumn sown grains in the northern hemisphere and to coarse grains in the southern hemisphere. Under the stimulus of strong demand, more springsown cereals are also likely to be planted. If the growing conditions remain normal, there should be an increase in world wheat and coarse grain production in 1981.

Among root crops world cassava production in 1980 was slightly above the previous record harvest in 1978 and 3% above the 1979 level, due to a partial recovery from the poor 1979 harvest in Thailand, a modest growth in other parts of Asia and an average crop in most parts of Africa. Giver normal weather in the main producing areas and the expected recovery in Thailand from the drought - reduced levels of the past two years, world output in 1981 could rise by 3% to 4%.

Production of potatoes in 1980 was significantly lower in all major producing countries.

Pulse production in 1980 is estimated at 48.2 million tons, a decline of 2% from 1979. The decline reflects lower crops in Asia, particularly India, and western Europe which increases in the USSR, eastern Europe and North America failed to offset.

World output of all fats and oils underwent a further significant expansion in 1979/80. Total output reached 63.8 million tons compared with 58.5 million tons in 1978/79. Developed countries accounted for over two thirds of the increase, with the United States contributing over half of it. With the exception of groundnut and olive oil, production of all major fats and oils increased in 1979/80. World output of soybean oil grew by 22%, the bulk of the increase being in the United States. Sunflowerseed oil production increased further, again due mainly to a large increase in the United States' crop. Production in the USSR remained practically unchanged at the low level of the preceding season and that in Argentina increased. Output of rapeseed oil declined, mainly due to smaller crops in Europe and in Canada. World cottonseed output was higher following a marked recovery in the United States and some gain in the USSR. The world groundnut crop was marginally lower in 1979/80 with smaller harvests in India and Senegal. Production of palm oil continued to expand, with increases in Malaysia and Indonesia, and coconut oil output recovered from the 1979 setback.

For the first time in four years, world output of fats and oils is likely to decline in 1980/81 possibly by 4% below the 1979/80 record, mainly because of a reduction in areas planted to oilseeds and lower yields of sunflower, soya and groundnuts in North America. The upward trend in oilseed output in developing countries is expected to continue although some groundnut producing countries report significantly smaller crops. This expected decline in output of oils and fats is reflected in Fig. 1-4 as a reduction in the production of oil crops in 1980.

Sugar production in 1980/81 is estimated to reach 86.6 million tons, raw value, or 2 million tons more than in 1979/80 but about 4 million tons lower than in the two preceding seasons. Under the impact of higher prices, sugar consumption in 1981 is forecast to increase only slightly for the second year in succession to 9 million tons but stocks will still be drawn down. Beet sugar output in Europe and the USSR is tentatively forecast at 27 million tons compared with last season's level of 28 million tons. Larger crops of cane sugar are expected in Australia, Brazil, India, Indonesia and Pakistan, but smaller crops in South Africa and Mauritius.

In 1980, for the second year in succession, the Caribbean was the centre of a major hurricane and as a consequence supplies of bananas were short in 1980. Exports in 1979, except those from the Caribbean, were maintained at about the 1978 level. A marked upward trend in prices beginning in August 1979 continued for much of 1980. A tight supply situation appeared likely to continue until the second half of 1981. Caribbean production might then recover while supplies from other sources should continue to be ample.

Strictly speaking cocoa is a food commodity and therefore is included here rather than with the tropical beverages with which it is often linked.

Preliminary estimates show little change in world cocoa output in 1979/80 from the high level of 1978/79. Output grew by nearly 7% in Latin America but this was largely offset by a fall of over 2% in the major producing countries in Africa.

World milk production in 1980 is estimated at 465 million tons, about 1% above the 1979 figure. In the developing regions output is placed at 104 million tons against 103 million tons in 1979, while the output of developed countries was 361 million tons against 358 million tons. All regions except the USSR maintained or slightly increased their production. The EEC produced 2% more milk despite policies to curb output. Growth rates were also up in the United States with a reversal of the downward trend in dairy cow numbers. In Australia a long-term downward trend in production was made worse by drought but in New Zealand good grazing conditions and improved export returns encouraged dairy production.

Milk production in developed countries is likely to continue its upward trend in 1981 as cow numbers are likely to be slightly higher and yields are still increasing. However, higher feed costs may lead to a slower growth in output. Production in developing countries is also expected to be moderately higher in 1981.

World meat production slowed further in 1980 with an increase of only 1%-2% on the previous year. Beef production continued its cyclical decline and the expansion of pig and poultry meat slowed down. Bovine meat production declined further in both North America and the southern hemisphere exporting countries. Cattle numbers continued to increase in Europe and the USSR. However, beef output in the USSR declined.

Output of pigmeat, now the most important item in world meat production, is estimated to have risen by about 2% in 1980, against 5% in 1979. Output of both pig and poultry meat continued to grow relatively fast in the developing countries, in particular in Brazil and China. Sheepmeat production in the USSR was adversely affected by poor fodder and feed crops but output increased in western Europe, Oceania and North America.

With weakening demand and rising feed costs, little change in world meat production is expected in 1981. There should be some recovery in beef production and a further rise in poultry meat production but pigmeat production could decrease and output of sheepmeat level off.

## Food fish

World production of fish, crustaceans and molluscs for direct human consumption showed no increase in 1979, the latest year for which data are available (Table 1-3). This tends to confirm the slowdown in the rate of growth apparent since the mid 1970s and underlined in 1978, although over the decade of the 1970s as a whole a rate of 2.5% per annum has been achieved. Within the unchanged total in 1979, however, there have been some important changes and a number of countries, particularly in Latin America, have increased production. The incentive to increased production in this region has come partly from export market opportunities provided by declining production of conventional North Atlantic species. It is also the result of extended jurisdiction which had displaced European vessels from more traditional fishing grounds. European countries are seeking relatively underexploited areas such as those within the jurisdiction of Latin American countries in which to deploy these vessels under joint venture agreements.

Table 1-3. Catches of food fish, world and developing and developed countries

| | | | | Change | | Annual rate of change | | |
|---|---|---|---|---|---|---|---|---|
| | 1977 | 1978 | 1979 | 1977 to 1978 | 1978 to 1979 | 1971-75 | 1976-79 | 1971 to 1979 |
| | .. million metric tons .. | | | ..... % ..... | | | | |
| World | 50.0 | 49.9 | 49.9 | -0.2 | - | 3.2 | 1.0 | 2.5 |
| Developing countries | 25.4 | 25.8 | 25.9 | 1.6 | 0.4 | 5.7 | 2.9 | 4.4 |
| Developed countries | 24.6 | 24.1 | 24.0 | -2.0 | -0.4 | 1.0 | -0.9 | 0.8 |

In Northwest Africa where changes in the Law of the Sea could also be expected to have an appreciable effect, catches by coastal states did not increase in 1979. There is evidence also that catches by the non-coastal Africa states fishing in inland waters have been declining. With one or two exceptions food fish production in other African countries have shown little or no growth. As most inland and marine stocks accessible to coastal states are already fully exploited and as the exploitation of offshore fisheries is being faced by a variety of difficulties 4/the stagnation of the past few years seems likely to continue.

4/ Some of these difficulties and the means to overcome them are discussed in Chapter 2. See also the box on page 40.

## THE ENVIRONMENT AND WORLD FOOD SECURITY

World food security is at stake if the natural resource base, essential to sustain and increase agricultural production, is being rapidly depleted or degraded through over exploitation or misuse. This challenge was recognized by the World Conservation Strategy launched in May 1980 which drew world attention to the urgency of living resource conservation. The strategy draws particular attention to the vast losses of productive soil incurred each year as a result of deforestation and poor land management. It also draws attention to the hundreds of millions of rural people in developing countries who, for fuel needs, are compelled to destroy the resources which are their only source of livelihood, stripping the land of trees and shrubs and burning large quantities of dung and crop residues needed to regenerate depleted soil. Not only is the natural resource base being slowly but remorselessly destroyed threatening food security for future generations but, as a consequence, financial costs arise through, for example, rapid siltation of reservoirs, devastating floods and pollution of coastal support systems for fisheries. Therefore sustained food security will be achieved only if environmental aspects also are secured - ecological, technological and sanitary.

Ecological security. In the process of allocating scarce resources amongst competing development projects, a revision in emphasis is required to achieve a compromise between conservation and exploitation. The objective should be to maximize the benefits derived from a given ecological site while minimizing the risk of irreversibly damaging the environment. The following are the priority areas to ensure ecological security:

- the maintenance of genetic resource diversity;
- combating soil degradation;
- controlling deforestation and overgrazing;
- arresting desertification;
- avoiding the over exploitation of terrestial and aquatic living resources.

Technological security. The rapid increase in the population of developing countries has placed great demands on their natural resources. For them the major environmental issues concern natural resource degradation or depletion as well as pollution. With most developing countries having tropical ecosystems which are more fragile than those of temperate zones, their agricultural production systems must be adjusted to conditions and needs of their rural societies while maintaining the natural resource base. Technological security therefore can involve the whole process of agricultural production and development: plant or livestock breeding; food processing and distribution; integrated production systems such as agroforestry; pest management systems; and village level recycling techniques for wastes and by-products.

Sanitary security. More intensive agricultural production and the associated increased use of centralized food storage, processing and handling methods create potential hazards of chemical or biological contamination of food and water. Chemical contamination of food and drinking water is more characteristic of industrialized countries - it posses major problems in situations where man is at the end of a contaminated food chain. In the developing countries, the main problems arise from the contamination of food and water by bacteria and other parasites which flourish particularly in the sub-humid and humid tropical zones. The climate conditions of these regions favour the development of fungi and hence the production of toxic metabolites such as mycotoxins in stored food, a serious problem gaining increasing recognition. Therefore, food security in the broad use of this term, should also embrace measures controlling food and drinking water contamination caused by environmental pollution.

Less than a quarter of the 2 billion people living in the developing countries (excluding China) have adequate supplies of safe water and access to sanitary waste disposal. Two thirds of their urban populations and 80% of their rural populations do not. It is for this reason that the UN has launched its World Water Decade with the aim to provide uncontaminated water and some form of sanitation for an additional 2 billion people between 1981 and 1990.

The total fish catch in Asia fell in 1979 although a number of countries, notably Indonesia and the Republic of Korea, recorded increases. There was a sharp drop in the catch made by both Thailand and China, the third largest fish producer in the world.

From the point of view of food fish supplies, 1979 was a disappointing year for the developing countries as a whole with the main increases in production being in export fisheries and with a widespread decline in per caput availability. For the developed countries the catch for direct human consumption again fell in 1979, for the second successive year, although supplies continued to be maintained by imports. Within the developed countries the main decline in production has come from the EEC and Spain but this was not entirely offset by increased landings in eastern Europe and Oceania.

Preliminary estimates suggest that 1980 was unlikely to see any significant increase in the production of fish for direct human consumption.

Incidence of Pests and Diseases

Pests and diseases pose a continual threat to food security. It is estimated that production losses due to agricultural pests including disease organisms, insects, rodents, birds and weeds, are of the order of one third. Losses can be particularly severe in countries prone to sudden outbreaks of plagues of insects or virulent disease, countries which often are the least able to overcome such catastrophes.

The greatest single threat by insect pests to regional food security in 1980 was the upsurge of the African Migratory Locust in the middle of the year. This new upsurge, the first since the last major plague of this species which lasted from 1928 to 1941, presented a grave threat to major cropping areas from Nigeria and Niger to Sudan.

Two extraordinary sessions of the Administrative Council of OICMA 5/ were held at the 11th FAO Regional Conference in Togo in late June, OICMA being the regional organization responsible for the surveillance and preventative control of the pest in its outbreak area in west and central Africa. The Council approved a plan of operations involving national campaigns by Nigeria, Cameroon and Chad with OICMA coordinating the survey work and its sister organization, OCLALAV 6/ undertaking large scale spraying operations. The Director-General of FAO authorized the provision of $ 500 thousand under its Technical Cooperation Programme (TCP) towards the costs of mounting these operations and for establishing and training local survey and control units, with additional support being provided by UNDP. As a result of these measures the upsurge appears to have been contained.

There was also an outbreak between March and June of African Migratory Locusts in South Africa and southeast Botswana. Although most sprayable targets were destroyed, the risk of further outbreaks remains.

The threat from the Desert Locust which assumed major proportions in 1978/79 has now receded as a result of the control operations which were assisted by FAO and discussed in the State of Food and Agriculture 1979. Nevertheless control operations against this pest continued: between February and June 1980 in Sudan, Egypt and Saudi Arabia, and in the southern Sahara following widespread rains there between June and August. By November most infestations had been controlled but substantial numbers of adults escaped to reach parts of Algeria and Morocco.

Plant disease epidemics continued to cause major food and non-food crop losses in a number of FAO member countries in 1980. One example is the introduction of diseases into previously unaffected areas such as coffee leaf rust (Hemileia vastatrix) and black sigatoka of bananas (Mycosphaerella fijiensis var. difformis) in several Latin American

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5/ Organisation Internationale contre le Criquet Migrateur Africain.
6/ Organisation Commune de Lutte Antiacridienne et de Lutte Antiaviare.

countries. Of great local economic significance has been the outbreak of a disease severely affecting the cigar tobacco crop in Cuba, the blue mould (Peronospora tabacina), caused by exceptional meteorological conditions which occurred there.

The third cause of outbreaks of plants diseases is the breakdown of the resistance of major cultivars due to genetic changes of their parasites. An example of this is the Brown Plant Hopper (Nilaparvata lugens) in southeast Asia which causes major losses of the rice crop in this region.

Due to the increase in trade in animals and animal products, emergency situations created by outbreaks of exotic diseases in livestock are increasing. Sudden outbreaks of African swine fever (ASF) in Malta, Sardinia (Italy), Brazil and the Dominican Republic in 1978 were the greatest threat to the swine industries both in Europe and the western hemisphere. The continuing risk of the disease spreading was demonstrated by its appearance in Haiti and Sao Tomé and Principe in 1979, and in Cuba in early 1980 where, by March, it was reported that approximately 130,000 pigs had died or had to be slaughtered for its eradication.

FAO assistance under TCP has been and still is provided to a number of countries either infected with ASF or at high risk. By the end of 1980, ASF in Malta, the Dominican Republic and Sao Tomé and Principe was eradicated with FAO assistance. The disease in Cuba was eradicated by the Government's own national effort which made full use of their experience gained in dealing with an earlier outbreak in 1971. The eradication programme in Haiti was delayed due to lack of veterinary services in the country, but the campaign is expected to start in 1981 with support from several donors.

Another animal disease which demands particular attention is Rinderpest which, in the West African sub-region, has had sporadic outbreaks in 1980 in Mauritania, Senegal, Upper Volta, Mali, Niger and Benin. There have also been sporadic outbreaks in the Near East in the Gulf States. Because of transhumance and trade, there are risks of further spread of this disease. FAO's assistance through TCP projects started in December 1980 in the form of the supply of vaccine, veterinary and cold store equipment and, in some cases, transportation facilities in an attempt to control the present outbreaks. Future activities in this sector aim at complete eradication.

After some years of a relatively favourable situation as regards Foot-and-mouth disease in Europe, the disease began to spread again in 1980 impeding livestock production and trade. Type C outbreaks were reported in Spain and Portugal. This was the first record of the disease in Portugal for ten years. Spread of the disease in Thailand and to Malaysia which had been free from the disease, created a serious situation for livestock producers. Necessary actions have been taken to prevent further spread of the disease and to eventually eradicate it from infected areas.

## LONG-TERM TRENDS IN YIELDS OF MAJOR CEREALS AND THEIR UTILIZATION

SOFA 1979 7/ pointed out that total cereal production in the developing countries had grown much more slowly in 1970-79 than in the previous decade. This is serious because cereals supply 60% of the dietary energy supplies of developing countries and they account for the major share of the gross value of these countries' food imports. It was also pointed out that for the world as a whole, the annual rate of increase of the area under cereals had increased in the 1970s compared to the 1960s, but yield increases had tended to fall back. Table 1-4 examines the regional changes in average cereal yields more closely, over a span of three decades from 1950 to 1979.

Average yields of individual cereal crops in developed countries continue to exceed those in developing countries. For 1970-79, average paddy yields were 128% larger in

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7/ SOFA 1979, Table 1-6, p. 1-16.

developed than in developing countries; and for maize the difference is even greater at 187%. Much less expected and a cause for some disquiet, the gap in average cereal yields between developed and developing countries has widened significantly for each of the cereals included in the table during the three decades since 1950. For wheat the gap has widened by 86% (0.36 tons/ha in 1950-59 to 0.67 tons/ha in 1970-79); for rice by 26%; for maize by a striking 182%; for barley by 91%; and even for millet and sorghum by 217%. If comparisons are made between average yields of cereals in developed and developing regions, between North America and Africa say, the differences are even more striking.

Of course these notable advances in average yields in the developed countries were achieved for the greater part over a period of time when costs of energy and energy related inputs were low.

Table 1-4. Average yields of major cereals, developing and developed regions, 1950-59, 60-69, and 70-79 averages

| | Total developed countries | Europe | North America | Total developing countries | Africa 1/ | Asia 2/ | Latin America |
|---|---|---|---|---|---|---|---|
| | ..... metric tons per ha. ..... | | | | | | |
| Wheat | | | | | | | |
| 1950-59 | 1.22 | 1.66 | 1.33 | 0.86 | 0.76 | 0.83 | 1.14 |
| 1960-69 | 1.48 | 2.21 | 1.67 | 0.97 | 0.87 | 0.94 | 1.34 |
| 1970-79 | 1.96 | 3.13 | 2.02 | 1.29 | 0.99 | 1.28 | 1.45 |
| Rice (paddy) | | | | | | | |
| 1950-59 | 4.15 | 4.48 | 3.08 | 1.73 | 1.41 | 1.39 | 1.67 |
| 1960-69 | 4.97 | 4.57 | 4.58 | 2.00 | 1.80 | 1.66 | 1.71 |
| 1970-79 | 5.41 | 4.57 | 5.09 | 2.37 | 1.79 | 1.99 | 1.83 |
| Maize | | | | | | | |
| 1950-59 | 2.25 | 1.66 | 2.76 | 1.20 | 0.93 | 0.92 | 1.08 |
| 1960-69 | 3.39 | 2.56 | 4.41 | 1.42 | 1.08 | 1.12 | 1.28 |
| 1970-79 | 4.54 | 3.88 | 5.64 | 1.58 | 1.15 | 1.28 | 1.53 |
| Barley | | | | | | | |
| 1950-59 | 1.50 | 1.98 | 1.52 | 0.97 | 0.63 | 0.98 | 1.10 |
| 1960-69 | 1.88 | 2.73 | 1.93 | 1.12 | 0.70 | 1.06 | 1.03 |
| 1970-79 | 2.19 | 3.20 | 2.30 | 1.18 | 0.83 | 1.21 | 1.24 |
| Millet and sorghum | | | | | | | |
| 1950-59 | 1.09 | - | 1.62 3/ | 0.55 | 0.62 | 0.44 | 0.98 |
| 1960-69 | 2.05 | - | 3.00 3/ | 0.64 | 0.73 | 0.48 | 1.57 |
| 1970-79 | 2.47 | - | 3.39 3/ | 0.76 | 0.64 | 0.57 | 2.33 |

1/ Excluding South Africa. - 2/ Excluding China and Japan. - 3/ Only USA.

It is also noteworthy that the percentage increase in the yield gaps between developed and developing countries for those cereals most closely associated with the Green Revolution form of technological improvement, rice particularly and wheat, are less than for the others. The wide body of criticism levelled against the Green Revolution 8/

8/ See, for example, Andrew Pearse. Seeds of Plenty, Seeds of Want: Social and Economic Implications of the Green Revolution. Clarendon Press, Oxford University Press, Oxford 1980. This book summarizes the findings of the research programme in this area by the United Nations Reserach Institute for Social Development.

has foundation to the extent that due account must be taken of the social and economic consequences of introducing technological improvements rapidly into agrarian societies in developing countries. However, sight must not be lost of the overwhelming need for these countries, in most cases, to expand their own food production and of the major role that applied agricultural research can play in achieving this objective. Given the normally long lead time required before new research effort results in higher average crop yields, the need to sustain this effort as an integral part of agricultural development policy has to be emphasized.

These wide differences between developed and developing countries in average cereal yields are reflected in equally striking differences in per caput cereal production (Fig. 1-5). During the 1970s average per caput production of cereals in developed countries including rice as 75% of the paddy weight was 3 1/4 times that in developing countries. And the gap is widening: in 1950s it was 2 1/2 times greater.

Table 1-5. Utilization of cereals production

| | Developed countries | | Developing countries | | World | |
|---|---|---|---|---|---|---|
| | 1961-65 | 1975-79 | 1961-65 | 1975-79 | 1961-65 | 1975-79 |
| | ..... % ..... | | | | | |
| FOOD | | | | | | |
| Foods and beverages | 26.1 | 19.4 | 69.5 | 70.1 | 45.9 | 42.3 |
| Beverages only | (2.0) | (2.2) | (1.2) | (1.3) | (1.7) | (1.9) |
| FEED | | | | | | |
| In all forms | 59.7 | 60.6 | 18.8 | 21.3 | 41.0 | 42.9 |
| Bran only | (7.5) | (5.3) | (8.2) | (8.8) | (7.8) | (6.9) |
| SEED | 7.4 | 5.1 | 5.6 | 4.9 | 6.6 | 5.0 |
| OTHER USES, WASTE AND OTHER LOSSES | 6.8 | 14.9 | 6.1 | 3.7 | 6.5 | 9.8 |

Regional differences are very much larger. North America in the 1970s on average produced 8 1/2 times more cereals per caput than Africa (excluding South Africa). In fact in the latter region average per caput production in Africa was nearly 7% lower than two decades earlier.

These major differences between developed and developing regions in the per caput production of cereals are associated with widely different patterns of cereal utilization and hence human diets (Table 1-5). In the developed countries between a quarter and a fifth of cereal domestic production is used directly for food with over one half being used as animal feed. The proportion of these end-uses in developing countries are nearly the reverse. Over two thirds of cereal production is used directly for human consumption and only about one fifth for livestock feed. These regional aggregations hide major differences between countries. For example, in Kenya less than 5% of total cereal production is fed to animals, and this mostly as milling by-products, and by the standards of many developing countries, Kenya has a well-developed feed industry.

Such marked regional variations in cereal utilization explain why people in developed countries are able to consume a far larger proportion of their greater intakes of carbohydrates and protein in the form of animal products. This situation has far reaching implications for food security at the national level. In times of restricted supplies of

cereals, in developed countries their use for animal feed is the first to be reduced. The initial result is that supplies of meat increase as stock are slaughtered to reduce feed costs. Later, or course, the situation is reversed, especially when the feed situation eases and stock numbers are being rebuilt again. However, the average food consumer in the developed country at worst experiences a change in the quality of his diet as a result of a cereal shortage, and this may even be beneficial to his health. In developing countries the situation is different because with cereals predominating in average human diets, a cereal shortage is far more likely to have a serious direct impact on food intake which in many cases is inadequate even in normal seasons.

## ADEQUACY OF CEREAL STOCKS FOR FOOD SECURITY

A major factor influencing world food security is the size of cereal stocks. It is the combination of production falling below consumption requirements with the consequent severe rundown of cereal stocks and rises in cereal prices which caused the Director-General of FAO to sound a global alert in his statement to the Tenth Session of the Committee on Food Aid Policies and Programmes in October 1980.

World carryover stocks of cereals are expected to decline to 210 million tons by the close of the 1980/81 crop season (Table 1-6). At this level they will be 40 million tons (16%) below their opening level and 64 million tons below the level of mid 1979. End-of-season stocks of wheat are expected to decline from 100 million tons in 1980 to 87 million tons in 1981, and those of coarse grains from 108 million tons to 78 million tons, a fall of over one quarter, to a level only 5 million tons above the lowest level attained during 1975-76, following the world food crisis. However, rice stocks are expected to increase by 3 million tons to 45 million tons.

Table 1-6. Estimated carryover stocks of cereals

| | Crop years ending in | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 1/ | 1981 2/ |
| | million metric tons | | | | | | |
| WHEAT | 75 | 76 | 114 | 97 | 117 | 100 | 87 |
| Main exporters | 32 | 38 | 55 | 53 | 55 | 48 | 44 |
| Others | 43 | 38 | 58 | 44 | 62 | 51 | 43 |
| RICE (milled) | 29 | 37 | 37 | 39 | 44 | 42 | 45 |
| Main exporters | 20 | 23 | 23 | 24 | 27 | 27 | 28 |
| Others | 9 | 14 | 14 | 15 | 17 | 15 | 17 |
| COARSE GRAINS | 73 | 73 | 91 | 101 | 113 | 108 | 78 |
| Main exporters | 24 | 25 | 37 | 51 | 58 | 59 | 27 |
| Others | 49 | 48 | 54 | 50 | 55 | 49 | 51 |
| TOTAL CEREALS | 178 | 185 | 242 | 237 | 274 | 250 | 210 |
| Developing countries | 69 | 86 | 97 | 92 | 98 | 96 | 96 |
| Developed countries | 109 | 99 | 145 | 145 | 176 | 154 | 114 |
| | % | | | | | | |
| Total stocks as percentage of consumption | 14 | 14 | 18 | 17 | 19 | 17 | 14 |

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.

Figure 1-5

Per caput production of cereals by region, 1950 - 59, 1960 - 69 and 1970 79

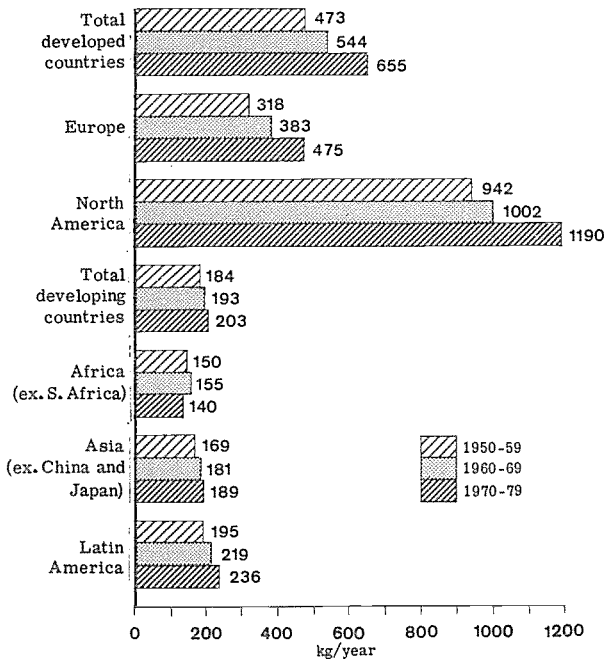
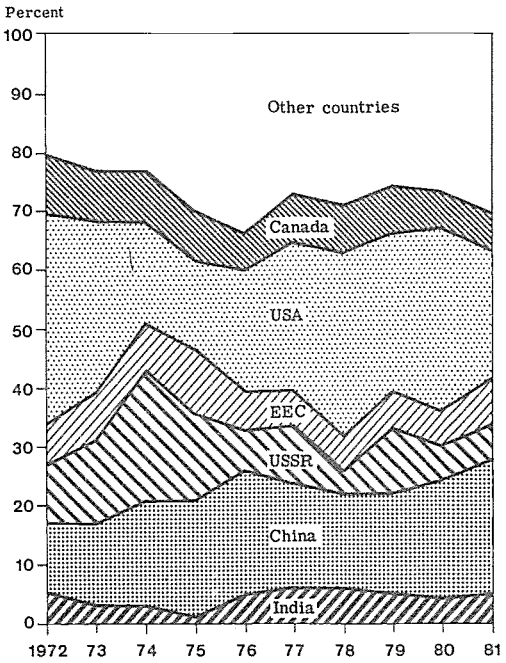



Figure 1-6

Cereal stocks by major countries




At 210 million tons, world carryover stocks of cereals would be equivalent to only 14% of the world's apparent consumption in 1981, a precarious level well below the 17% estimated by the FAO Secretariat as the minimum for world food security (see box on page 21). This would be the lowest since 1975/76 when stocks had been reduced by the heavy withdrawals of the food crisis years. With the expected decline in world stocks close to pipeline levels, that is, to levels which are needed to maintain distribution flows until the new crops reach the market, the 1981/82 season will begin with virtually no cushion against major crop shortfalls. The reserve element of stocks is expected to be reduced to about 30 million tons, equivalent to only one week's world consumption. World food security will, therefore, depend more heavily on the outcome of the forthcoming cereal harvests than at any time since the world food crisis of 1973/74.

Most of the decline in cereal stocks is expected in the major exporting countries, particularly in the United States where a very heavy fall of almost 40% is foreseen, mostly in stocks of coarse grains. In Australia, cereal stocks are expected to decline to about one third of their opening levels, while in the USSR a further decline is forecast from the already low opening level.

Stocks held by developing countries at the end of the 1980/81 crop seasons are estimated at 96 million tons, a level regarded as being inadequate in relation to needs and little changed from the previous two years. Small declines in China and India which together hold over 60% of the stocks recorded for developing countries are likely to be offset by increased holdings in Turkey and in a number of Asian countries. Reserve stocks have been completely exhausted in countries affected by drought in sub-Saharan Africa and aggregate holdings in east and west Africa have been reduced to well below half their estimated size of just under 2 million tons in 1977/78.

In the absence of any effective arrangement for international coordination of national cereal stocks, their concentration in a handful of exporting and importing countries is a cause for concern. These countries may adopt national stock policies irrespective of their combined effect on world food supplies. 9/ From Fig. 1-6, the rapid rundown in the

9/ Timothy Josling. Developed Country Agricultural Policies and Developing Country Supplies: the Case of Wheat. International Food Policy Research Institute (IFPRI), Research Report 14, March 1980. Also Daniel T. Morrow. The Economics of the International Stockholding of Wheat, IFPRI, Research Report 18, September 1980.

A MINIMUM SAFE LEVEL OF WORLD CEREAL STOCKS

The FAO Secretariat has estimated that the minimum safe level of cereal stocks for world food security is 17% to 18% of annual apparent world consumption. This estimate includes 5% to 6% representing a "reserve element", the rest being "working" or "pipeline" stocks equivalent to about 6 weeks' consumption (12%) required to maintain distribution flows until the new crops reach the market. The FAO Committee on World Food Security considers this estimate as a reasonable basis for assessing the adequacy of cereal stocks to meet the objectives of world food security without making commitments on the desirable level of stocks in an international grains agreement.

Three basic methods were used by FAO to estimate a minimum safe level of stocks: (i) an analysis of the range of past deviations in cereal crop area, yield and domestic production and consumption; (ii) the measurement of the maximum single year shortfall in actual production below trends over a long period of years for each commodity; and (iii) an historical analysis of past ratios of actual carryover stocks to total disappearance in exporting countries and to total domestic consumption in importing countries.

Assumptions underlying the methods include: (i) an internationally co-ordinated system of national stocks and complete accessibility to the reserves; (ii) the "safe" level would provide protection only against one major production shortfall; (iii) the estimate of a reserve of 5% to 6% would not provide complete insurance that all possible shortfalls would be covered; (iv) the variability in cereals production would be the same in the future as in the past; and (v) the possibility of some substitution between the three cereals or groups of cereals - wheat, coarse grains and rice.

the proportion of cereal stocks held by the United States during 1972-74 can be easily noted, as can the increasing or constant proportion of stocks held by the USSR, Canada and the EEC in 1974, the year of the world food crisis. Concern was also being expressed in 1979 about the increased concentration of the larger stocks in North America with the consequent apprehension about logistical problems being faced if import demand were to suddenly increase. Such apprehension remains although efforts are being made to increase the grain handling capacities of transportation systems there. Since the early 1970s, the concentration of stocks has declined with Canada, USA, EEC and USSR accounting for less than half the total in 1980/81 compared to more than 60% ten years earlier.

The Plan of Action on World Food Security

At its Seventy-Fifth Session in June 1979, the FAO Council adopted the Plan of Action on World Food Security as formulated by the Fourth Session of the Committee on World Food Security (CFS). The Plan was subsequently endorsed by the FAO Conference and the World Food Council.

The Plan consists of Five Points, summarized as follows:

(i) All governments subscribing to the Undertaking 10/ are called upon to adopt national stock policies and targets;

(ii) national stocks held in pursuance of the Undertaking should be released in the event of widespread crop failure, natural or man-made disasters or high price situations in order,

10/ In November 1974, the FAO Council adopted the International Undertaking on World Food Security, which had been endorsed earlier that month by the World Food Conference. The Undertaking is designed to ensure that adequate world supplies of basic foodstuffs particularly of cereals, are available at all times and that acute food shortages are avoided through a coordinated system of nationally held food reserves, special assistance to developing countries and the establishment of an effective food information and early warning system. Over 80 countries have subscribed to the Undertaking.

inter alia to maintain a regular flow of food supplies and to stabilize markets;

(iii) special measures were called for to assist low income, food deficit countries to meet current import requirements and emergency needs;

(iv) developed countries and other countries in a position to do so were called upon to support the Food Security Assistance Scheme (FSAS) and to strengthen their food aid programmes to help developing countries build up their national food reserves;

(v) the Plan stressed the urgent need to foster the collective self-reliance of developing countries in the vital sector of food security.

Progress achieved under these five points is regularly reviewed by the Committee on World Food Security. The present position is briefly reported below.

National Stock Policies. The number of developing countries which have adopted or are making plans to adopt, national reserve stock policies, and setting up food reserves, is increasing. Sixty countries representing over half of the population of all people living in developing countries have adopted explicit stock policies while several others either are in the process of formulating reserve stock policies or are using stock practices broadly meeting the aims of reserve policies. Some developing countries such as India, Indonesia, Pakistan and South Korea, have succeeded in establishing food grain reserves. Other smaller developing countries have been hampered by the lack of sufficient domestic supplies, foreign exchange to purchase from abroad or by inadequate storage facilities to implement cereal stock policies they have decided in principle to adopt. Conspicuously more external assistance has been given for the construction of storage facilities than in the form of cereal shipments for stockbuilding.

In the absence of an international grains agreement which would provide for a system for coordinationg national stocks, most developed countries do not appear ready to undertake stockholding obligations in excess of those considered necessary to ensure reliable supplies to domestic consumers and, where applicable, to export markets.

However, the United States which is the main exporting country, operates a reserve stock policy for wheat and feed grains. The US Secretary of Agriculture has established guidelines for cereal stocks levels which include farmer-held reserves, the inventory of the Commodity Credit Corporation and commercial stocks equivalent to a range of 5% to 7% of world consumption. In December 1980 a food security wheat reserve of up to 4 million tons was legally established, solely for humanitarian food needs in developing countries. Another major exporter, Canada, is studying the feasibility of establishing a formal inventory policy for cereals.

Special measures to assist low income, food-deficit countries

As recommended in the FAO Conference Resolution 3/79 on World Food Security, a new Food Aid Convention entered into force on 1 July 1980 with commitments increased to 7.6 million tons. This development will be discussed in greater detail under Food Aid as will developments affecting the International Emergency Food Reserve.

As envisaged in the Plan of Action, the Director-General of FAO requested the Managing Director of the International Monetary Fund (IMF) to invite the IMF Board to consider, within the context of its Financing Facilities, the feasibility of providing additional balance of payments support for meeting the rise in food import bills of low-income, food-deficit countries, particularly in the event of domestic food shortages. The Interim Committee of the IMF Board recognizing the seriousness of the problem faced by several of its member countries, has urged its Executive Board to give prompt consideration to this proposal.

FAO's Food Security Assistance Scheme (FSAS) is focussed on the more immediate need to improve food security in developing countries, particularly in building up national food reserve stocks, if possible in conjunction with the World Food Programme (WFP),

and improving their management. It therefore complements the longer-term development of marketing and storage towards which FAO provides assistance through its Regular Programme and Investment Centre. The FSAS has now completed its second biennium during which 12 field activities costing nearly $ 9 million were completed. By the end of February 1981, it had 26 projects or separate activities in operation with an approximate cost of $ 29 million. At that time a further 23 projects with an estimated cost of nearly $ 16 million had been approved by were not yet operational and 22 have been proposed for 1981 to follow up requests and to identify or formulate projects.

THE PREVENTION OF FOOD LOSSES

Understandably, the estimates of post-harvest losses of food products vary widely. For cereals which are fairly tolerant to handling and extended periods of storage, the world-wide losses are estimated to be of the order of 5% to 10% from mechanical and 10% from biological causes, or about 250 million tons. The percentage losses incurred by other more perishable food crops such as potatoes are likely to be even higher. A reduction in these massive losses would greatly improve world food security, as was noted by the Seventh Special Session of the UN General Assembly which called for a reduction in these losses by at least half in developing countries by 1985. Taking up this initiative, the Nineteenth Session of the FAO Conference in 1977 established an Action Programme for the Prevention of Food Losses with a target funding of $20 million for the first biennium, 1978-79.

By the end of December 1980, a total of 130 project requests had been received at an estimated cost of $37 million with a further 44 being evaluated. By this date 86 projects had been approved, an increase of 24 compared to 1979, costing about $22 million, drawing from the Programme's special account and from other sources. Of these approved projects, the majority (31) are in Africa, closely followed by Asia and the Pacific (26) with 17 being in Latin America and the remainder (12) in the Near East, North Africa and Europe.

The average project size is relatively small, about $250 thousand each, with emphasis being given to improved storage and food processing at farm and village level, of cereals and other staple foods.

Given the immense saving in food that a relatively small expenditure on improved storage and handling can bring about, it is disturbing to note that the initial target for funds has barely been attained even by the beginning of the last year of the Programme's Second Biennium, 1980-81. The direct contributions amounted to $11.5 million with another $5.9 million being contributed under trust fund arrangements. With accrued interest, the total resources made available since the programme began have been about $20 million but no new contributions have been made in the last half of 1980.

This high level of activity has been possible by the carryover of funds from previous years because contributions to the Scheme have not kept pace with demand - the list of identified but unfunded projects amounts to about $ 239 million. Some success has been achieved in mobilizing contributions as had been urged by the FAO Conference in 1979. While there were only three donors to the scheme in 1980 (Netherlands, Norway and Switzerland) four more countries have indicated an interest in contributing to the scheme. The funds projected for 1981 are $ 55.6 million, an increase of $ 10 million over 1980 but still far short of the finance needed for the projects already identified and approved.

Some progress also has been achieved in promoting the collective self-reliance of developing countries with respect to their food security. The agreement of the governments of ASEAN countries to establish a food security reserve in the region and the proposal by CILSS 11/ to set up a regional food reserve for the Sahel was reported in SOFA 1979. The FAO (FSAS) feasibility study for the Sahel was completed in 1980. The cost of capital

11/ Comité Inter-états pour la lutte contre la sécheresse au Sahel/the Inter-State Committee for Drought Control in the Sahel, set up in 1974.

investments, food aid and related projects recommended in the study amount to $ 217 million. An example of mutual assistance among developing countries to meet crop shortfalls is the cereal loans by India and Pakistan to other Asian countries in urgent need of supplies. The Committee on Food Security, monitoring progress in this field, also noted the establishment of a disaster relief fund in the Caribbean and the request for FAO's assistance in formulating a regional food reserve scheme for interested countries in the Mediterranean.

In Africa, the Lagos Plan of Action for the Implementation of the Monrovia Strategy for the Economic Development of Africa adopted by the Organization for African Unity in April 1980 aims, inter alia, to achieve self-sufficiency in food. It selects food losses, food security, food production and forestry as areas for priority attention. It calls also for the setting up of national strategic reserves equivalent to 10% of total food production and envisages the establishment of an African Mutual Guarantee and Solidarity Fund for food. To translate the Lagos Plan of Action into operational projects, FAO is launching review and programming missions to African countries. Ten such missions were sent in 1980 and about 20 are to be staged in 1981.

ANIMAL FEED SECURITY

Although the initial concentration of emergency relief is on saving the human population, it has come to be increasingly realized that unless their livestock are also saved, disastrous consequences will follow. Therefore when disaster strikes, through drought, flood or famine, the Office for Special Relief Operations (OSRO) of FAO is usually one of the first international bodies that is called upon to provide emergency relief aid for livestock. Valuable experience has been gained in the kinds of feed that may be suitable for emergency animal feed programmes, the ways in which they should be packed so as to facilitate their storage in the open without shelter, and how they could be distributed for use. Experience also has been gained in ways of providing water and vaccine to the affected areas. But, to date, no effective guidelines have been formulated that could be utilized for emergency livestock assistance on a global, regional or national basis.

Such guidelines are also important during other emergency situations that call for remedial animal feed measures, such as manmade emergencies caused by the influx of large numbers of refugees and their accompanying animals from one country to another. The destruction of natural vegetation that ensues can cause consequences as severe as a prolonged drought. Consideration is being given in FAO to formulate these guidelines, showing what combinations of actions might be most appropriate in different parts of the world, and under different conditions, to alleviate the consequences of a drought or an influx of refugees.

A further initiative on food security was taken in Africa at the Summit Conference held by the Southern African Heads of State in April 1980 and at the Second Southern African Development Coordination Conference (SADCC 2) in November 1980. The first conference agreed to explore the possibilities of coordinating national reserve policies and facilitating interstate exchanges to promote food security. The nine participating countries of the second conference - Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe - drew up a programme of action, including means to improve food security. These included the adoption of national food reserve policies by member countries, and the establishment of a regional food reserve and early warning systems at national and regional levels.

Food security was also a major theme in the discussions of four FAO regional conferences held in 1980 and particular stress was laid on the importance for countries to establish reserve stocks, either individually or collectively.

In the Near East, the Arab Organization for Agricultural Development is preparing a comprehensive study on a food security programme which envisages a food and feed reserve covering the needs of and funded by 20 Arab countries. Stocks are planned to reach 5 million tons of wheat for human consumption and 2 million tons of coarse grains for livestock feed, equivalent to approximately 3 months' consumption requirements. This development is of particular interest because explicit consideration is being given to feed needs of livestock (see box above).

## THE RISING TREND OF FOOD IMPORTS IN LOW-INCOME DEVELOPING COUNTRIES

A trend which has become manifest during the late 1970s is the increasing dependence of low-income developing countries on world markets for their food needs.

The rising trend of food imports during the late 1960s to late 1970s is shown in Table 1-7. The threefold increase in the value of food imports recorded during this period, however, largely stemmed from increased prices (unit values increased by over 120%) rather from increased volumes of imports which rose by only about 35% and 55% respectively for the MSA countries and the LDCs. What is of concern is not so much the volume of these food imports which has increased by only 3% and 4.5% per annum for the MSA countries and LDCs respectively over this 10 year period, but their costs that have become large in relation to the export earning capacities of these countries. Almost one quarter of the export earnings of low income countries are now needed to finance food imports. In terms of world trade in food products, the shares of MSA/LDCs are, of course, very small (Fig. 1-7). The problem they face is that the cost of food imports has increased in real terms per caput during the past 10 years and they cannot afford it. There is also the associated problem of the effect these rising costs may have on domestic food prices.

Table 1-7. Imports of food products into MSA countries and LDCs 1/, indices of value, volume and unit value

| | 1967-69 | 1977-79 |
|---|---|---|
| | ..... 1969-71=100..... | |
| MSA | | |
| Value | 114 | 334 |
| Volume | 113 | 152 |
| Unit value | 101 | 225 |
| LDC | | |
| Value | 83 | 291 |
| Volume | 85 | 132 |
| Unit value | 98 | 225 |

1/ Includes all countries recognized by the United Nations as being Most Seriously Affected (MSA) or Least Developed Countries (LDCs) as well as those recommended by the UN General As embly for inclusion in either category.

## FOOD AID IN RELATION TO NEEDS

### Regular Food Aid

Developing countries as a whole are expected to import 97 million tons of cereals in 1980/81, 9% more than the previous season. About 43% of the total is accounted for by low-income countries whose cereal imports are expected to increase to 42 million tons. Those of the poorest countries, with per caput incomes below $ 320 in 1977, are forecast to rise from 10 million to over 11 million tons. Cereal imports in Africa alone may rise from 13 million to 15 million tons.

In the face of these rising needs, food aid shipments totalled only 8.9 million tons in 1979/80 compared to 9.6 million tons in 1978/79 and with little improvement in prospect for 1980/81, in comparison with the minimum annual target of 10 million tons agreed at the World Food Conference. It had been hoped that this target would have been reached

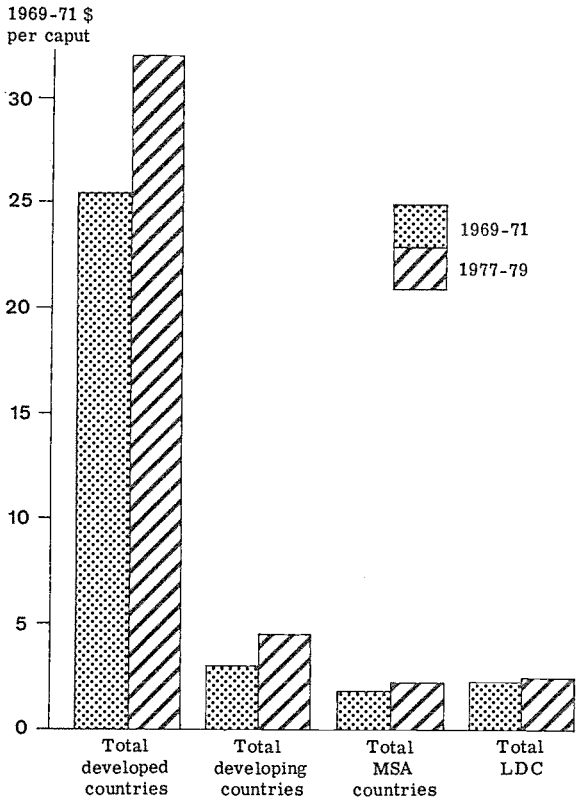



Figure 1-7

Per caput value of food imports at 1969-71 prices in developing and developed countries, most seriously affected countries (MSA) and least developed countries (LDC), 1969-71 and 1977-79 averages

in 1979/80 but rising cereal prices eroded the real value of funds allocated for food aid in several donor countries. Food aid to low income countries now represents the lowest proportion of their cereal imports since 1975/76 (Table 1-8). The longer term trend in food aid is shown in Fig. 1-8.

Against this gloomy background, the new Food Aid Convention (FAC) which came into effect on 1 July 1980, was a positive step. Participating governments to the Convention made commitments for food aid totalling 7.6 million tons of cereals, a substantial increase over the annual commitments of 4.2 million tons under the 1971 FAC. With firm food aid commitments of 7.6 million tons, it will no longer be possible, even in a crisis situation, for total food aid in cereals to fall as sharply as it did in the food crisis of 1973/74 when it dropped by more than half of the 1971/72 shipments of 12.6 million tons. As additional security, legislation passed in the United States in December 1980 provides for the establishment of a food security wheat reserve of up to 4 million tons, solely for emergency humanitarian food needs in developing countries. While wheat can be released from this government owned stock only when domestic supplies are so limited that they cannot be made available under Public Law 480 food aid programmes, 300 thousand tons may be released in any fiscal year to provide urgent humanitarian relief in developing countries, regardless of the domestic supply situation in the USA.

Another notable improvement of great potential benefit to low-income, developing countries is contained in Article IV of the new Food Aid Convention. This provides that in case of substantial production shortfall in these countries, the Food Aid Committee of the FAC shall consider at a session called for this purpose the seriousness of the production shortfall and it may recommend that member governments should respond by increasing the amount of food aid made available. Notwithstanding these improvements, the new FAC

does not yet guarantee that food aid in cereals will reach at least the annual target of 10 million tons. The Food Aid Convention 1980, initially concluded for one year only, has now been extended for two years, until 30 June 1983.

Emergency Food Aid. Attention has been drawn to the increasing incidence of food shortages and emergency during 1979/80 (see Box on page 6). FAO estimates that by 1985 emergency food aid needs arising from crop failures alone are expected to average between 2 million and 2.5 million tons annually, not counting the effects of man-made disasters.

The increased cost of emergency food aid and the much needed increase in involvement of the international community in the succour of those in distress is highlighted by the record of the combined World Food Programme (WFP) and International Emergency Food Reserve (IEFR) emergency programme in recent years. The number of operations involving the approval by FAO's Director-General of WFP emergency aid has risen from an average of 17 per year during 1962-71 to 37 in 1977, to 57 in 1978 and to 67 in 1979. While the number declined a little in 1980 to 62, the cost increased to nearly $179 million, nearly double the level of only 2 years previously.

Table 1-8. Shipments of Food Aid in Cereals, July/June

| Donors | 1975/76 | 1976/77 | 1977/78 | 1978/79 | 1979/80 1/ | 1980/81 2/ |
|---|---|---|---|---|---|---|
| | ..... thousand metric tons grain equivalent ..... | | | | | |
| Argentina | - | 22 | 32 | 30 | 38 | 48 |
| Australia | 268 | 230 | 252 | 312 | 304 | 400 |
| Austria | - | - | - | - | 20 | 20 |
| Canada | 1,034 | 1,176 | 884 | 735 | 550 | 600 |
| EEC 3/ | 928 | 1,131 | 1,494 | 1,240 | 1,389 | 1,650 |
| Finland | 25 | 33 | 47 | 9 | 14 | 20 |
| Japan | 33 | 46 | 135 | 352 4/ | 680 | 300 |
| Norway | 10 | 10 | 10 | 10 | 40 | 40 |
| Spain | - | - | - | - | - | 20 |
| Sweden | 47 | 122 | 104 | 104 | 99 | 80 |
| Switzerland | 35 | 33 | 32 | 32 | 32 | 27 |
| United States | 4,284 | 6,147 | 5,992 | 6,237 | 5,418 | 5,400 5/ |
| India | - | - | 100 | 295 | 80 | - |
| Turkey | - | 20 | 13 | 5 | 5 | 10 |
| Others | 199 | 137 | 240 | 213 | 515 6/ | 500 |
| TOTAL | 6,863 | 9,107 | 9,335 7/ | 9,574 7/ | 9,184 7/ | 9,115 |
| | ..... % ..... | | | | | |
| Proportion of cereal imports of low-income countries covered by food aid 8/ | 20 | 26 | 24 | 21 | 20 1/ | ... |

1/ Provisional. Partly estimated. - 2/ Commitments or allocations. - 3/Includes shipments made by member nations as well as those channelled through the Commission of the European Community, in wheat equivalent. - 4/ Based on information provided by recipient countries. - 5/Includes not only the grain equivalent of the budgetary allocation for fiscal year 1981 (October 1980-September 1981), but also the estimated grain equivalent of the supplemental allocations of US$ 142 million for fiscal year 1980, approved by the Congress in July 1980. - 6/ Of which 100,000 tons of Indian rice purchased by Oxfam for aid to Kampuchea. - 7/ In addition, according to unofficial reports, the USSR has provided to several countries in Asia 200,000 tons each in 1977/78 and 1979/80, and 400,000 tons in 1978/79, as emergency aid. - 8/ Includes all developing countries with a per caput income of US$ 680 or less in 1980 and which are eligible for concessional assistance by the IDA in accordance with the guidelines and criteria agreed by the CFA.

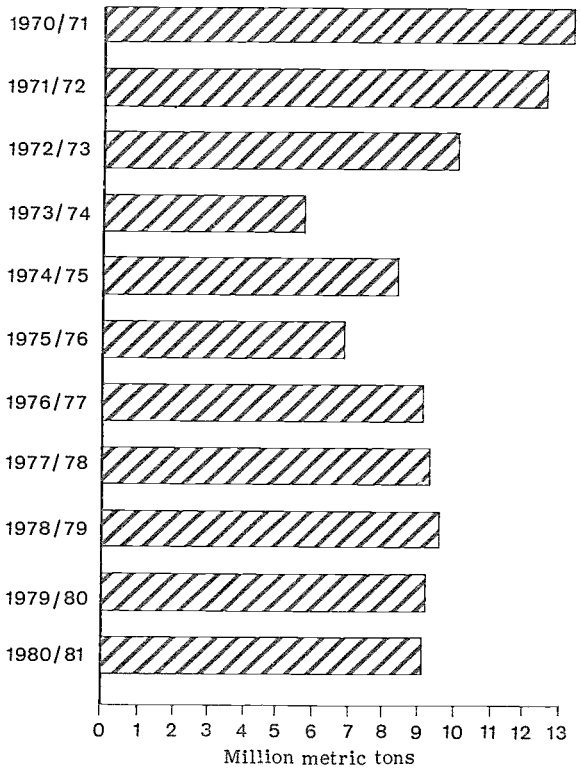



Figure 1-8

Shipments of food aid in cereals

This deteriorating situation has underlined the increasingly important role of the IEFR. This fund was established to place food stocks or funds drawn from voluntary contributions made by its members at the disposal of WFP to strengthen the latter's capacity to deal with food emergency situations. With the increasing incidence and cost of these, the emergency aid component of WFP funds which was set at $45 million annually, rapidly became exhausted. In 1979 the level was set at $65 million drawing an additional $20 million away from funds which otherwise could have been allocated to development purposes. The increased contributions to the IEFR in 1980 enabled the emergency aid component of WFP to revert to $45 million (Table 1-9).

The voluntary contributions to the IEFR, while greatly increased since 1976, the first full year of its operations, have fallen well short of the annual target of 500 thousand tons. The situation improved in 1980 with several new countries contributing during the year so that the total achieved was over 400 thousand tons of food grains. This welcome, if still inadequate, increase in contributions, enabled the IEFR to support a larger programme of emergency operations in 1980 compared to 1979 and to bring its contribution to the combined WFP and IEFR emergency programme to over 75%.

It has been proposed that the present voluntary arrangements of the IEFR should be replace by a legally binding convention to provide the Reserve with a guaranteed level of resources. This proposal has been embodied in the text of the New International Development Strategy for the Eighties recently adopted by the United Nations General Assembly and is before the Committee on Food Aid Policies and Programmes.

The African Food Emergency. Of particular note in 1980 was the emergency food supply situation which arose in 28 countries of sub-Saharan Africa as a result of continuing drought which affected food production in 1979 and 1980. In September 1980 the Director-General of FAO convened, in cooperation with the Executive Director of the World Food

Table 1-9. A summary of resources available to meet emergencies from the World Food Programme (WFP) and International Emergency Food Reserve (IEFR), 1976 to 1980

| | 1976 | 1977 | 1978 | 1979 | 1980 |
|---|---|---|---|---|---|
| | ..... million $ ..... | | | | |
| Approvals from WFP Regular Resources 1/ | 34.6 | 42.4 | 41.3 | 62.0 | 45.4 |
| Approvals from IEFR | 8.2 | 39.7 | 49.1 | 60.2 | 146.3 |
| Total approvals from WFP+IEFR | 42.8 | 82.1 | 90.4 | 122.2 | 191.7 |
| | ..... % ..... | | | | |
| Contribution to IEFR to total | 19.2 | 48.4 | 54.3 | 49.3 | 76.3 |

1/ The emergency aid component is $ 45 million annually, except in 1979 when it was increased to $ 65 million.

Programme, a meeting of interested donor countries to assess this critical food situation in Africa and to consider concrete measures to alleviate it. At the meeting 11 countries and the EEC announced their intentions to make specific responses to the import needs of these countries or indicated substantial increases in the levels of their food aid to them. By the end of January 1981 it was estimated that their cereal import requirements were 6.5 million tons. By February 1981 about 1.8 million tons of food aid and some $28 million in cash for food, transport, seeds, or other urgently needed inputs had been pledged. In addition known commercial imports amounted to 1.6 million tons of cereals. The meeting also endorsed the six points which were proposed covering the assessment and reporting of needs, speeding up of deliveries and additional commitments of aid, coordination of landing and transport arrangements. It requested FAO to report at regular intervals on the overall situation, the progress of crops and the level of food aid committed.

## RURAL INSTITUTIONS AND NUTRITION

As well as the expansion of food production, the creation of food reserves and organizational arrangements for coping with food shortages, food security for developing countries includes conceptually many of the institutional factors essential to the building up of a balanced and stable rural society based on the alleviation of poverty. This implies *inter alia* more equitable access to land and other natural resources, the elimination of hunger and malnutrition, productive employment and the fuller participation of rural people, including women, in the economic and social life of the community.

For many developing countries the process of economic and social development will involve structural change, particularly in the forms of land tenure. Agricultural populations with little or inadequate access to land and those dependent on wage-paid employment are liable to be exposed to food insecurity during unfavourable seasons either because the output of their holdings is then insufficient for their needs, or because employment opportunities are reduced. The increase in prices as a result of poor crops can further reduce the quantities of food they can purchase. 12/ Moreover, such population groups, because

12/ A United Nations study on India shows that disparities in calorie intake between different states are accounted for in part by the levels of food grain production and the degree of inequality in land distribution. See *Poverty, Unemployment and Development Policy*, United Nations, 1976.

of their poverty, may well be malnourished even in average crop seasons. It is thus important that governments should map the location of areas with substantial concentrations of landless people, small farmers or other vulnerable to crop failure in order to obtain the necessary basis for applying food security measures. Choices involved in the location of food reserves, programmes of distribution and measures to promote employment should also be made in the light of tenurial conditions. In areas where there are chronic food security problems due to inadequate access to land, enduring solutions may be possible only in the wider context of agrarian reforms.

Another essential element of a long-term strategy aiming to achieve food security is a determined attack on the nutritional problems of vulnerable groups. The effects of undernutrition and malnutrition on the mortality rates of infants and young children as well as on their physical and mental potentialities, call for organized and continuing supplementary feeding programmes for pre-school and primary school children, pregnant women and lactating mothers, supported by maternal and child health centres. Other groups will also be at risk in times of food shortage and consequently in need of supplementary feeding. Programmes aiming at improved nutrition require not only specialist trained staff, but also extension workers at the village level, with some basic training in nutrition and food science.

Success is very dependent on full local involvement and on sustained educational efforts to cultivate among all groups, particularly the poorest, an awareness of how nutrition of the family may be maintained or even improved without greater expenditure. Provision needs to be made for nutrition surveillance systems at village level based on practical, objective and sensitive indicators and manned by local workers with basic training, backed on by specialized personnel.

To ensure that local food needs and the problems likely to be faced in meeting them are fully appreciated, it is important to obtain the fullest possible integration of local people and of their local organizations, such as cooperatives and young farmer groups, in food security operations, and it is particularly important that women should be fully involved in them. In many countries, and particularly in Africa, women are major food producers, especially where men are engaged in work off farms. They are responsible for storing and processing of food and they are more aware of, and more concerned about, the importance of good nutrition. Their participation in food security programmes moreover will have a welcome side benefit by generally raising the status of women, by developing important social services and creating employment opportunities for them. 13/

These essential measures of a long-term strategy for food security need to be complemented, in a short-term or organizational context, by appropriate practical measures. Examples of these are the establishment and management of reserve stocks, the prevention of post-harvest losses, early warning and information systems on crop prospects and relief requirements, measures for food distribution and feeding programmes, employment programmes and rehabilitation projects for disaster-stricken areas. Of overriding importance is the pursuit of policies and programmes to improve production and productivity. All these measures require not only appropriate economic and social planning at the national level but also a high degree of decentralization and devolution of authority to local government reaching down to the village and even to individual families.

The first essential for an efficient food security administration is an early warning system to provide rapid communication between central administrations and local institutions. Many countries do not have at present a reliable and prompt system that could

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13/ The experience of the World Food Programme provides useful insights into the ways and means by which participation of women could be increased in food security programmes and projects. See WFP's Contribution to the United Nations Decade for Women: Priorities for 1980-1985: WFP/CF/-9/6 February 1980.

give timely warning of impending food shortages and their likely scale. Relevant data are often lacking and such data as may be collected are not analysed in time or in a way to make it possible to counter incipient shortages. Countries exposed from time to time to food shortages should make regular assessments and forecasts of food situations. The intelligence needed should cover weather conditions, areas planted, crop progress, information on pests and diseases, estimated production, procurement and marketing, likely requirements, local stocks and such factors as influxes of refugees. An adequate central organization supported by organizational arrangements at the village level will be required. Strengthening communication systems is essential to reduce the time lags between gathering the information, analyzing it, making decisions and acting on them.

Local institutions also have an essential role to play in the organization and administration of relief operations. They can also help to design employment projects and prepare programmes for the resumption of normal agricultural activities where these have been dislocated by natural disasters. Local agricultural cooperatives are particularly well qualified to assist in shortage situations as they can effectively help in the procurement and distribution of supplies and in the restoration of normal farm work. Voluntary organizations, such as young farmers' groups, and community leaders, such as teachers, should be closely associated with relief efforts, as they can effectively supplement at normally low cost the typically limited resources of central and local administrations by securing and guiding the voluntary participation of the local population.

The building up of food security services in the village can make a valuable contribution to human resource development since the management of food reserves and of relief distribution creates a need for skilled manpower which, with appropriate training, can be supplied from the local population. The services associated with relief work include, for example, warehouse management, food conservation, pest control, produce management and distribution, accounting, nutritional surveillance and the administration of group feeding programmes.

Assistance is being provided by FAO, with the help of trust funds, to a number of developing countries in the development of food security services, in the provision of the required training, in the setting up of crop forecasting systems, in the formulation of food security policies and in the building up and management of national food reserves. By means of its Global Information and Early Warning System on Food and Agriculture, FAO helps to ensure prompt action by aid agencies in shortage situations where help from external sources is needed.

The procurement of grain or other foods for security stocking will be difficult for food-deficit countries with limited resources of foreign exchange and for some time to come many of them will continue to be dependent on concessional supplies, whether from neighbouring countries or through international assistance. Some countries also lack the essential infrastructure of warehouses and transport facilities in areas liable to be affected by shortages. These difficulties further underline the need for international aid and for such international arrangements as the Food Aid Convention and the International Emergency Food Reserve.

## Trends in dietary energy supplies

The Seventy-eighth Session of the FAO Council urged that increasing use be made of food balance sheets in reviewing the world's food and nutrition situation. Estimates of dietary energy supplies drawn from food balance sheets data for 1978 which just became available (Table 1-10), show a relative improvement. Dietary energy supplies in relation to requirements increased by 3% for all developing countries between 1975-77 and 1978. Even the MSA countries were able to sharply reverse in 1978 the downward trend in per caput daily calorie supply shown during the previous 10 years. Among the regions, it is only in Africa that there was no improvement at all.

Table 1-10. Daily per caput calorie supply as percent of requirements

| | 1969-71 | 1972-74 | 1975-77 | 1978 |
|---|---|---|---|---|
| | ..... % ..... | | | |
| Developing market economies | 95 | 95 | 95 | 99 |
| Africa | 94 | 94 | 94 | 94 |
| Far East | 92 | 91 | 90 | 95 |
| Latin America | 108 | 108 | 110 | 111 |
| Near East | 100 | 103 | 112 | 116 |
| Asian centrally planned economies | 91 | 94 | 100 | 103 |
| TOTAL DEVELOPING COUNTRIES | 93 | 95 | 97 | 100 |
| MSA countries | 91 | 89 | 88 | 92 |
| Non-MSA countries | 95 | 98 | 103 | 106 |

However, 1978 was acknowledged as a reasonably satisfactory year for food production with developing countries recording an increase of 5% over the previous year. The situation since then has been much less satisfactory as food production during 1979 and 1980 in the developing countries as a group has barely kept pace with population growth. As has been seen in Table 1-1 aggregate food production in the developing countries increased by only about 4% during the past 2 years so that per caput production decreased. For some regions the deterioration has been even more marked. In Africa, per caput food production has declined by over 2%; and in the Far East the decline has been still worse - more than 3.5%.

Of course dietary energy supplies are derived not only from domestically produced food but also from food that is imported. The value of food imports of developing countries have been showing a strongly rising trend in recent years, but the main concern has been their increasing cost, particularly in relation to the precarious payments situation of many non-oil exporting developing countries. The volume of food imports has, however, been growing at a slower rate, particularly for the MSA countries and LDCs (Table 1-7) and they cannot have had a significant impact on dietary energy supplies for the mass of the people living in rural areas of these countries.

The lack of data renders the estimation of available dietary energy supplies for 1979 and 1980 an impossible task at the present time. It may be conjectured, however, that since this relatively favourable year, 1978, the nutritional status has deteriorated for much of the population in developing countries with the possible exceptions of Latin America and of the Asian centrally planned economies taken as a whole.

It was in recognition of the need to sustain widespread interest and support for the continued effort required to overcome widespread malnutrition that the Twentieth FAO Conference resolved that a World Food Day be observed annually on 16 October. It will be observed for the first time in 1981, marking the 36th anniversary of the founding of FAO.

The main purposes of the World Food Day are to increase public awareness of the nature and extent of world hunger and to encourage efforts to overcome it.

The main responsibility for initiating action rests with Member Governments, supported by FAO, with the fullest possible involvement of non-government organizations. Such action includes publicizing food issues through various media, promoting lectures and seminars,

incorporating food-related topics in school curricula and identifying suitable longer term projects and programmes for overcoming nutrition problems: such as for expanding food-crop production or for school feeding. These could be designated World Food Day projects and programmes and given nation-wide publicity to promote their aims and to monitor their progress.

Inflation and Consumer Food Prices

One of the most disturbing economic and social problems in recent years has been the increasing price inflation in nearly all market economy countries, both developed and developing. As measured by GNP deflators, the increase in consumer prices in developed countries between 1971 and 1979 has been in the range of 5% to 13% (Table 1-11), compared with an average of only 4% in the preceding decade. In developing countries, inflation rates were also unusually high during the seventies, ranging from 5% - 22%.

Food prices are a major element in the overall cost of living for sizeable sections of the populations of both developed and developing countries. Until the early seventies food prices tended, however, to exert a restraining influence on inflation. This tendency was reversed between 1972 and 1977 when food prices rose faster than other consumer prices in about 60% to 80% of the countries annually reviewed. In 47 developing countries the average rate of change in food prices between 1972 and 1977 was higher than the overall rate of inflation, with the exception of 1976.

In 1978 there was a slowing down in the rates of increases of both food and non-food consumer prices, but a generally faster rise became evident early in 1979 and continued throughout the rest of the year. There were fewer countries with inflation rates below 10% than in any previous year of the decade except 1974. Again, the number of countries with inflation rates above 10% represented nearly three quarters of the total number of countries covered in 1979 compared to less than 60% in the previous year.

Table 1-11. Changes in rates of inflation and consumer prices of food in 47 developing 1/and all developed market economy countries, 1971-79

| | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Average rate of inflation in developing market economies, 2/,% | 4.5 | 6.4 | 13.1 | 22.3 | 12.7 | 9.1 | 16.0 | 10.1 | 13.2 |
| 2. Average rate of change in consumer prices of food in developing market economies, 2/, % | 4.0 | 7.2 | 16.0 | 25.2 | 13.3 | 7.7 | 16.5 | 12.9 | 14.0 |
| 3. No. of developing countries with inflation rates | | | | | | | | | |
| a. below 10% | 44 | 41 | 24 | 6 | 16 | 25 | 22 | 20 | 12 |
| b. between 10% and 20% | 2 | 5 | 17 | 22 | 20 | 16 | 16 | 22 | 23 |
| c. 20.1% or more | 1 | 1 | 6 | 19 | 11 | 6 | 9 | 5 | 9 |
| Total | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 44 |
| 4. Average rate of inflation in developed market economies, 2/, % | 5.3 | 4.8 | 8.3 | 13.5 | 11.4 | 8.5 | 8.7 | 7.7 | 9.7 |
| 5. Average rate of change in consumer prices of food in developed market economies, 2/ % | 4.6 | 6.3 | 12.0 | 15.9 | 11.2 | 7.6 | 9.1 | 7.5 | 8.5 |

Sources: International Labour Organization Bulletin of Labour Statistics and FAO estimates.

1/ These are the countries consistently included in the quoted sources. The number fell to 44 in 1979. - 2/ Weights are proportional to GDP or GNP of the preceding year in US$.

Preliminary data for 1980 show a further acceleration of inflation in most market economy countries. In developed countries, consumer prices rose by about 11%, compared to 8.5% in 1979, with food prices rising by over 13% in Europe and by 9% in North America. The economic slowdown and restraints imposed on government spending since then are expected to contribute to some deceleration in prices, to an annual growth rate of around 9% to 10% by mid-1981.

In developing market economy countries information for 1980 is still fragmentary, but it seems to indicate a considerable upturn in consumer food prices. Estimates for the first half of 1980 show that 32 out of 44 developing countries experienced an acceleration in their annual growth rate in food prices in relation to 1979. While the highest regional rates were again recorded in Latin America, all nine countries in the Far East for which information is available showed higher increases in food prices than in 1979.

The provision of food supplies at prices within the reach of all income groups has thus been made more difficult by widespread inflation. Inflation, and particularly inflation of food prices, can be grossly inequitable with heavier burdens falling on those whose wages fall behind increases in consumer prices, and on poorer households spending a larger proportion of their incomes on food (see Box on opposite page).

In the now commonly found situation of chronic inflation of food prices in many developing countries, inefficient marketing and exploitative middlemen are often blamed for high marketing costs and ultimately, for higher retail food prices. The complexity of the factors involved and the scarcity of consistent price data render any conclusive appraisal difficult indeed. For example, the results of a recent survey on 14 developing countries indicate that in a majority of them producers of cereals benefited relatively more from the general increase in prices than did the other agents in the marketing chain. Producer prices of wheat during the past decade rose faster than retail prices of bread in eight out of eleven countries surveyed on this product; in the case of paddy, prices paid to producers rose faster than consumer prices in seven out of eleven countries; and, in the case of maize, in seven out of nine countries.

In a number of cases, the relative narrowing in marketing spreads and hence margins were linked to government subsidies and other forms of statutory intervention in prices. Governments of many countries use price control measures on basic foodstuffs, in particular cereals and dairy products, in an attempt to reduce the effects of inflation. Such consumer-oriented policies may be justified on social and political grounds. In some cases, however, the rigidities of price controls have distorted the marketing systems and, with farmers typically possessing the least market power, the end result has been a lowering of farm gate prices and hence a reduction in output. There are also example of countries where margins on transportation, processing and distribution have been squeezed by such controls with the consequent deterioration in the quality of these marketing services. In the case of dairy products, the FAO International Scheme on the Coordination of Dairy Development has found such a situation to be common in nearly all Latin American countries.

It could be conjectured also that the rising costs of imported foods will be having an inflationary effect on food prices in food-deficit developing countries, although this has yet to be satisfactorily analyzed.

Whatever the causes of inflation of food prices, one of the most difficult policy options facing governments is created by the conflict between making food available to poor consumers at fair prices and the necessity to ensure prices which are remunerative to producers. A widely operated policy to reconcile both objectives has been the adoption of food subsidies. 14/ Retail food prices may be also indirectly affected by the policy operated by some governments to reduce the aggregate costs of their food subsidy programmes

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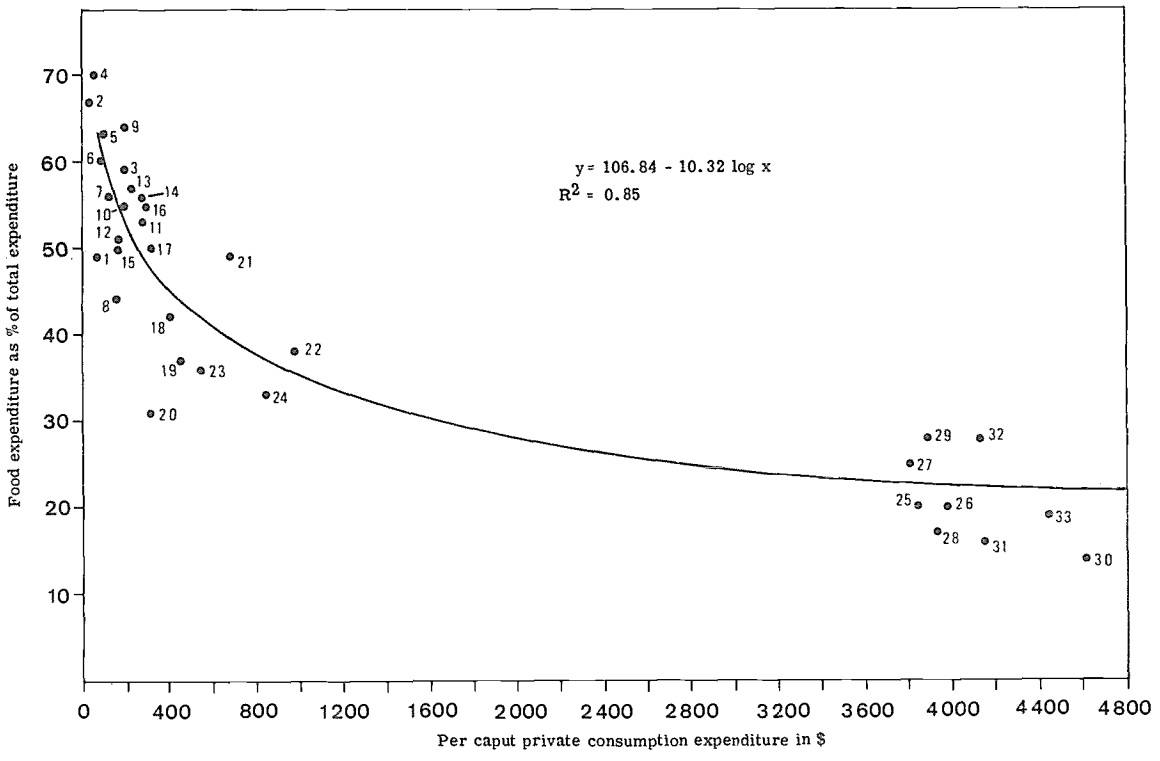
14/ A more detailed review of consumer food subsidies can be found in SOFA 1979.

## PROPORTION OF INCOME SPENT ON FOOD WITH CHANGES IN INCOME

According to a well-known economic relationship, named after the 19th Century economist Ernst Engel, "the poorer a family is, the greater is the proportion of the total outgo (total expenditure) which must be used for food" (Engel's formulation literally translated). The general validity of this inverse relationship, which was originally established on the basis of some empirical studies of family budgets, can be verified by comparing national aggregates of per caput income and food expenditure. The chart below presents data, for 24 developing and 9 developed countries, on the average expenditure on food as a proportion of total consumer expenditure and per caput private consumption expenditures. The heavy burden of food expenses in the budgets of low-income households is indicated by the large number of developing countries in which food accounts for 50% to 70% of consumer expenditure.

Several of the countries with the highest levels of food expenditure (more than 60% of total consumer expenditure) have been among the most severely affected by rising food prices in the past. For example, consumer food prices in Indonesia rose on average by 100% a year between 1965 and 1970, and a still high 25% per year between 1970 and 1975. In Zaire the average annual increase in food prices has been about 21% throughout the period 1965-1975, and this figure has more than trebled in the three years following.




1. Chad*
2. Zaire*
3. Sierra Leone
4. Indonesia*
5. India
6. Madagascar*
7. Pakistan*
8. Kenya
9. Sri Lanka
10. Ghana*
11. Honduras
12. Zambia*
13. Colombia*
14. Guatemala*
15. Iraq*
16. Jordan
17. El Salvador
18. Korea
19. Malaysia
20. Brazil
21. Panama
22. Cyprus
23. Libya*
24. S. Africa
25. Belgium
26. France
27. W. Germany
28. Australia
29. Norway
30. U.S.A.
31. Canada
32. Denmark
33. Sweden

Available data for food consumption expenditure in developing countries refer in most cases to the years 1974 to 1976 and, in countries noted (*), to 1968 to 1972. Per caput consumption expenditure estimates refer to 1975 and for countries noted (*), to 1970.

Source: FAO Review of Food Consumption Surveys, 1977; United Nations Yearbook of National Accounts Statistics, 1979.

by setting low domestic procurement prices with the consequent depressing effect in domestic production. Such policies were more frequently adopted in the 1950s and 1960s when food aid programmes were larger than they currently are. 15/

The measurement of impact on consumer prices of food subsidies involves a number of complex problems concerning the marginal spending propensities of those funding and receiving the transfers, the influence on producers' incomes, and the methods of financing the subsidy and the secondary effects through supply, employment and wages. 16/ Some rough indication can be derived from available data on the number of people covered by the subsidy programmes and the importance of the subsidized item in the expenditure patterns of consumers. Subsidized food constitutes in some countries a substantial proportion of the total consumption of large sections of the population. In 1977 the value of subsidized wheat flour and sugar in Pakistan absorbed 36% of the incomes of low-income households, the lowest 5% of the population. In the Indian state of Kerala subsidized foodgrains in 1972/73 accounted for 37% of the total quantity consumed.

The effect of subsidized food in the level of prices also depends on the weight of subsidized commodities in the overall consumer price index. However, available consumer price indices may not be representative of actual price levels for a majority of consumers. Subsidy payments may also have only an initial impact on prices with no lasting effect on the rate of inflation. Despite these reservations it can be generally assumed that the impact of a subsidy on the level of prices is proportional to the weight of the subsidized item in the index. Such weight is often considerable and, in the case of rice, ranges from 11% in Burma to 31% in Indonesia. In India, the weight of foodgrains in the wholesale index is 15% and in Nepal (Kathmandu) as high as 40%. In Morocco, the weight of subsidized items (sugar, edible oils and flour products) accounts for 15% of the urban consumer price index.

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15/ See, for example, Leonard Dudley and Roger J. Sandilands, The Side Effects of Foreign Aid: The Case of Public Law 480 Wheat in Colombia, Economic Development and Cultural Change, Vol. 23.2 (1975): 325-336. In the early 1960s there was a substantial body stemming from Theodore W. Schultz's article Value of US Farm Surpluses to Underdeveloped Countries, Journal of Farm Economics, 42 (1960): 1018-1030.

16/ Consumer subsidies and wage indexing have been operated for example in Pakistan and Sri Lanka.

## THE PERFORMANCE OF WORLD AGRICULTURE IN 1980, LONGER TERM TRENDS AND THE USE OF INPUTS

The production of food commodities in recent years has made up over 90% of the value of world agricultural production. However, agriculture in its broader sense also covers non-food commodities including non-food fish and forestry products. This section reviews trends in these commodities as well as in the use of inputs such as fertilizers, improved seeds and irrigation as means to expand agricultural production.

World output of both food and non-food crops and livestock increased only very marginally in 1980 following the increase of less than 1% in the previous year (Table 1-12). In part this disappointing performance was a result of the poor output of foodcrops in 1980, discussed earlier, although in most regions the performance of non-food crops and livestock products was even worse.

Preliminary estimates indicate that both the world catch of fish and the output of forest products have not made significant progress during 1980, growth rates of 1% or less being expected. Therefore, the overall index of agricultural production, including fisheries and forestry, at best may show an increase of 0.5% over 1979.

A longer term view shows a very similar picture for the world with the increases in the combined food and non-food production indices being generally less than those for food crops and livestock commodities alone. Over the decade 1971-80 the former increased at an annual rate of only 2.4%, exceeding by just about half of one percentage point, the rate of population increase. Worse still, as with the food sector, there has been a marked deceleration in the rate of increase in the last half of the 1970s, to a rate barely exceeding that of population growth.

Table 1-12. FAO index numbers of world and regional agricultural (crops and livestock) production

| | 1978 | 1979 | 1980 1/ | Change 1978 to 1979 | Change 1979 to 1980 | Annual rate of change 1971-75 | Annual rate of change 1976-80 | Annual rate of change 1971-80 |
|---|---|---|---|---|---|---|---|---|
| | ..1969-71=100.. | | | ..... % ..... | | | | |
| Agricultural production | | | | | | | | |
| Developing market economies | 126 | 126 | 129 | - | 2.8 | 2.9 | 2.5 | 2.9 |
| Africa | 112 | 114 | 117 | 2.1 | 2.3 | 1.6 | 1.8 | 1.6 |
| Far East | 127 | 124 | 129 | -2.4 | 3.8 | 2.9 | 2.5 | 3.0 |
| Latin America | 130 | 135 | 137 | 3.6 | 1.4 | 3.4 | 3.7 | 3.6 |
| Near East | 129 | 128 | 132 | -1.1 | 2.8 | 3.2 | 1.4 | 2.9 |
| Asian centrally planned economies | 129 | 136 | 137 | 5.8 | 0.7 | 3.6 | 3.5 | 3.3 |
| TOTAL DEVELOPING COUNTRIES | 127 | 129 | 132 | 1.8 | 2.1 | 3.1 | 2.8 | 3.1 |
| Developed market economies | 118 | 121 | 119 | 2.9 | -1.9 | 2.2 | 1.7 | 2.0 |
| North America | 120 | 125 | 119 | 4.3 | -4.6 | 1.8 | 0.7 | 2.2 |
| Oceania | 129 | 125 | 114 | -2.7 | -9.2 | 2.0 | - | 2.1 |
| Western Europe | 116 | 120 | 122 | 2.9 | 2.0 | 2.3 | 3.1 | 1.9 |
| Eastern Europe and the USSR | 124 | 118 | 118 | -5.2 | -0.1 | 2.5 | 0.5 | 1.6 |
| TOTAL DEVELOPED COUNTRIES | 120 | 120 | 118 | - | -1.3 | 2.3 | 1.3 | 1.8 |
| WORLD | 123 | 124 | 124 | 0.8 | 0.3 | 2.6 | 2.0 | 2.4 |

1/ Preliminary.

## CHANGES IN WORLD PRODUCTION OF MAIN NON-FOOD COMMODITIES

As with the main food crops, the changes in production shown in Fig. 1-9 for main non-food commodities are on a calender year basis. The following brief commentary is on the basis of crop seasons ending in the year quoted 17/.

World coffee production in 1979/80 rose by 3.5% to reach 5.1 million tons as a result of good crops in all producing regions except Central America. At 1.3 million tons, the Brazilian crop recovered further from the effects of the 1975 frost but was below expectations due to another frost in August 1978. Output rose appreciably in Colombia and slightly in Africa. The 1980/81 world crop was forecast to decline, bringing it almost back to the level of 1978/79. The decline is expected from smaller crops in Brazil where frost affected again important producing areas in June 1979, and in El Salvador and Angola. This is shown in Fig. 1-9 as a decline in 1980.

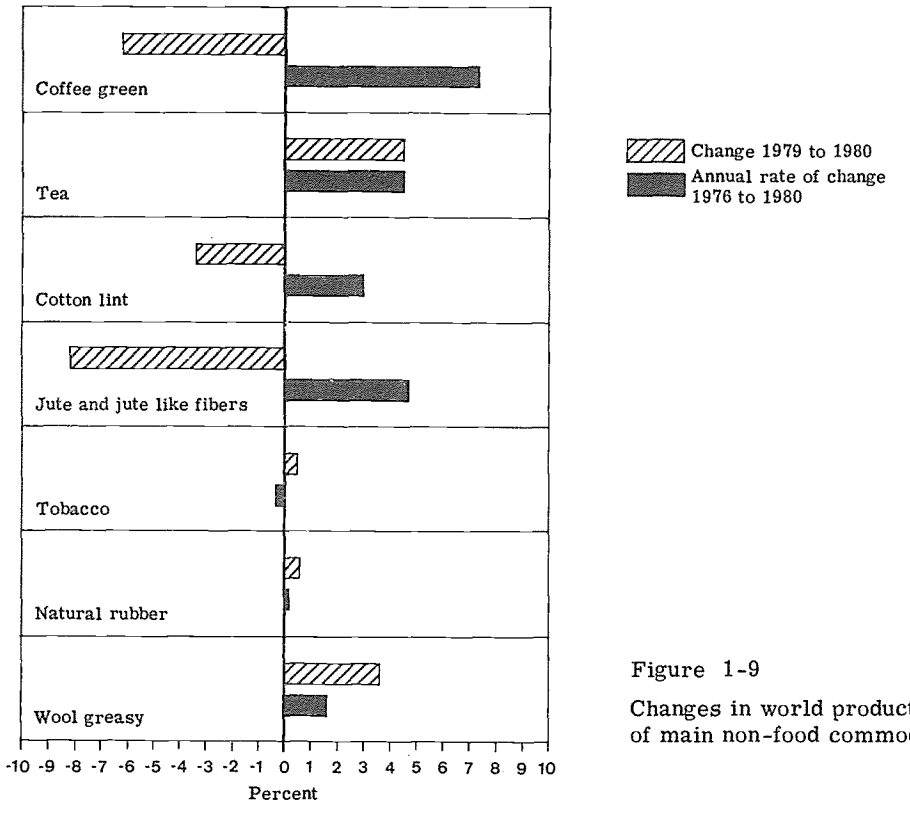


Figure 1-9

Changes in world production of main non-food commodities

At 1.8 million tons, world tea production in 1979 rose by less than 1% over the previous year, a far lower growth rate than the 3% average from the early sixties to mid-seventies. A record 0.3 million tons output in China, and larger crops particularly in Sri Lanka, Kenya and Near East countries, were largely offset by reduced production in India and

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17/ Most of these seasons are on a calendar year basis. For non-food crops the exceptions are coffee (October-Sept,), jute (July-June) and cotton (August-July

Japan. Expectations for 1980 are for a moderately higher output, with a bumber crop in North India, and larger crops in Bangladesh and Indonesia. On the other hand, drought-stricken crops in Sri Lanka, Southern India and Kenya are expected to be smaller than in 1979 although in Kenya a compensating improvement is expected in the quality of the crop.

World cotton production in 1979/80 increased by 1.2 million tons over the previous year and reached an all-time record of 14.2 million tons. The increase reflected a steep rise in yields in many parts of the world, more than offsetting a decline in areas planted. The United States accounted for two thirds of the expansion in global production, with a 35% increase above the level of 1978/79, to 3.2 million tons. There was also an increase in production in USSR. In developing regions, the output of standard types of cotton increased by about 2%.

With a persistent strong demand for cotton, global stocks declined moderately, for the second consecutive year, to an estimated 4.7 million tons in August 1980.

The total area under cotton in 1980/81 increased in response to favourable prices but widespread drought in the United States, the main exporter, was expected to result in a substantial decline in production and export availabilities. In many other producing countries, including the USSR, China and Pakistan, prospects for a higher output were good but this was unlikely to offset fully the fall in the United States. A decline in total output in 1980/81 to 13.9 million tons, but possibly a lower level, was expected. This would be about 3% below the record output of 1979/80. Production of extra-long staples could rise with a substantial increase in area and a return to normal yields in Sudan. World demand is also expected to shrink, however, and no major changes were foreseen in stock levels.

World output of jute, kenaf and allied fibres in 1979/80 fell by only 3% from the previous year's record, although the quality of the fibre was adversely affected by insufficient water at the time of retting in the major producer countries. Stocks in Bangladesh and India, already extremely high, rose further during the season.

Production of jute, kenaf and allied fibres in 1980/81 was expected to show a decline of more than 15% from the rather high level of 1980 mainly due to a sharp fall in area in Bangladesh as growers shifted to more remunerative crops. Total supplies, however, were likely to remain ample as carryovers from the previous season were very large.

World output of sisal and henequen declined again in 1979 by about 4.5%, but at a slower pace than in the previous year. However, with remunerative prices ruling in late 1979 and early 1980 and some reorganization of the sisal sector in some producing countries, a reversal of the downward trend in total production may have occurred in 1980.

World output of abaca increased by more than 10% to an estimated 80,000 tons in 1979 under the stimulus of rapid price increases. The rise was expected to continue in 1980, but with prices receding, at a slower rate.

Output of natural rubber in 1980 rose only marginally to about 3.9 million tons. Production growth in Thailand was temporarily halted by drought conditions and adverse weather also led to a further fall in output in Malaysia. A rise in output was expected in Indonesia but little change in most other countries.

Production of natural rubber is expected to rise in most producing countries during 1981 and world production could reach 4 million tons, following the significant rise in prices in 1980.

World production of cattlehides and calfskins continued its downward trend in 1979 with the cyclical decline in cattle numbers and slaughterings in the main beef producing countries. Preliminary information indicated that the rate of decline slowed down in

1980 with the levelling off in cattle numbers. Output changed little in North America but was expected to be higher in western Europe and perhaps the USSR. There was a contraction in Argentina as a consequence of incentives to retain breeding stock. Production levels in developing countries as a whole remained largely unchanged.

World production of sheep and lambskins grew further in 1979, with a moderately higher output in developing regions as a whole. With gradually increasing goat numbers, mainly in Asia and the Far East, the slow upward trend in world production of goatskins continued in 1979 and possibly in 1980.

With the ending of the cyclical decline in world cattle numbers, world production of cattlehides and calfskins could stabilize or rise marginally in 1981. Increases in production were foreseen in North America, Europe and possibly in developing countries as a whole. By contrast, a decline in production was expected in Oceania and Argentina where incentives to retain breeding stock were attractive. World output of sheepskins and lambskins was also likely to expand further.

After a fall of 5% in 1979, world tobacco production made a partial recovery to about 5.5 million tons in 1980, compared to the reduced crop of the previous year. This reflected considerable increases in North America following more effective control of blue mould disease. The crops of the Republic of Korea and the USSR recovered while Zimbabwe also produced another large crop. These increases were, however, largely offset by reductions in the output of other countries, notably India. Output was also reduced in Brazil.

World tobacco production and demand can be expected to level off in 1981, continuing the trend of the past two years towards much slower growth. With the continuing cost/price squeeze in most developed countries, the developing countries are likely to increase further their share of world production.

## FISHERIES POLICIES AND THE EEZs

The principle of the freedom of the seas governed the use of the oceans for over 2000 years. It is now being dismantled as nations acquire exclusive economic zones out to 200 nautical miles and enclose the seas' wealth within their jurisdiction. Two major developments, discussed in detail in Chapter 2, are occurring. One is a redistribution of the seas' wealth away from the maritime states with highly developed distant-water fishing fleets to the coastal states. The other is the acquisition of authority and, with it, both the opportunity and the incentive to prevent the waste of economic and natural resources that occurred under the freedom of the seas.

The redistribution of fisheries wealth is far from uniform in nature. To a large extent the redistribution has occurred among the developed countries, with a few acquiring major benefits and the rest incurring significant problems of adjustment. Among developing countries, the extension of jurisdiction has been most immediately rewarding to the states bordering the central and southern Atlantic Ocean, where foreign fishing has taken place on a large scale.

Although there is wide disparity in immediate gains, all coastal states will achieve long-term gains in the sense of greater control over their coastal waters. When the resources off their shores were free and open to anyone, there was no incentive to invest unilaterally in management measures because others would reap the benefits. But with exclusive rights coastal states have both the incentive and the authority to regulate the users. The exercise of this authority provides the challenge for the future. Coastal states need to improve their competence to acquire and analyze data, undertake development programmes, formulate and adopt regulations, and conduct surveillance and enforcement activities. As they gain this competence they can expect to greatly enhance their benefits from the seas' fisheries.

Fish

World production of fish, crustaceans and molluscs in 1979, the latest year for which data are available, increased by nearly one million tons to reach a level of 71.3 million tons (Table 1-13). The increase is slightly less than in the previous year and in line with the generally disappointing trend of the 1970s of between one and two percent per annum. Production of aquatic plants showed little change following recent sharp growth. Of the major components of the world catch, fish for direct human consumption showed a marginal decline, the overall increase being due to fish used for reduction to meal and oil.

The major increase in landings has been in Latin America where substantial increases in catch in Chile (36%), Mexico (24%) and Peru (7%) have resulted in a regional catch of 10 million tons, some 1.3 million tons greater than in 1978 but nevertheless still below the level of the early seventies when the anchoveta of the Southeast Pacific was yielding its highest catches. This region has, however, again been the main source of the increase in fish for reduction to meal and oil which elsewhere has remained unchanged or, as in the case of Africa, has fallen.

Table 1-13. World and regional catch of fish, crustaceans and molluscs including all aquatic organisms except whales and sea weeds

| | 1977 | 1978 | 1979 | Change 1977 to 1978 | Change 1978 to 1979 | Annual rate of change 1971-75 | 1976-79 | 1971-79 |
|---|---|---|---|---|---|---|---|---|
| | ... million m.t. .. | | | ..... % ..... | | | | |
| Developing market economies | 23.9 | 25.7 | 26.8 | 7.9 | 4.1 | -4.3 | 4.0 | 1.5 |
| Africa | 3.5 | 3.6 | 3.5 | 2.9 | -2.8 | 2.2 | 0.3 | -0.7 |
| Far East | 12.3 | 12.2 | 12.1 | -0.7 | -0.9 | 5.6 | 2.0 | 4.5 |
| Latin America | 6.9 | 8.7 | 10.0 | 27.3 | 14.8 | -13.8 | 8.6 | -0.3 |
| Near East | 0.8 | 0.8 | 0.8 | -3.8 | -2.3 | 4.8 | -2.2 | -0.9 |
| Other | 0.4 | 0.4 | 0.4 | 9.1 | 1.3 | 8.0 | 9.0 | 6.3 |
| Asian centrally planned economies | 7.6 | 7.6 | 7.3 | -0.2 | -3.2 | 5.7 | - | 3.2 |
| TOTAL DEVELOPING COUNTRIES | 31.4 | 33.3 | 34.1 | 5.9 | 2.5 | -1.2 | 3.1 | 1.8 |
| Developed market economies | 27.2 | 27.3 | 26.9 | 0.2 | -1.3 | 0.4 | -0.1 | 1.0 |
| North America | 4.2 | 4.8 | 4.8 | 13.4 | 1.3 | -1.8 | 5.5 | 2.5 |
| Oceania | 0.2 | 0.2 | 0.2 | 5.7 | 6.8 | 0.9 | 8.0 | 3.7 |
| Western Europe | 12.1 | 11.4 | 11.2 | -5.3 | -2.5 | 0.4 | -2.6 | 0.6 |
| Other | 10.7 | 10.8 | 10.7 | 1.0 | -1.5 | 1.3 | 0.4 | 0.6 |
| Eastern Europe and the USSR | 10.6 | 10.0 | 10.3 | -5.5 | 2.9 | 8.4 | -3.8 | 2.4 |
| TOTAL DEVELOPED COUNTRIES | 37.8 | 37.2 | 37.2 | -1.4 | -0.2 | 2.6 | -1.2 | 1.3 |
| WORLD | 69.2 | 70.5 | 71.3 | 1.9 | 1.0 | 0.8 | 0.8 | 1.5 |

In fact, a drop in the landing of fish for reduction by Angola, Morocco, and Namibia has been the main factor in the overall drop of 2% in fish production in the African continent as a whole, but landings of fish destined for direct human consumption, such as in Ghana, have also fallen.

The catch by Asian countries is also rather lower than in 1978 due to lower landings by major producers such as China and Thailand, the fisheries of the latter continuing to be adversely affected by the extension of fishing limits.

In the developed countries the overall total catch has shown no change but notable features have been that the USSR and eastern European countries seem to have arrested the decline in production which followed their exclusion from, or the limitation of their catches in, some foreign fishing grounds. Catches of this group of countries, in fact, increased by nearly 3% in 1979. The effect of the establishment of exclusive economic zones limiting foreign fishing opportunities, continues to be felt by Spain and the United Kingdom in both of which the catch fell about 12%. The catch by Japan again held up well in the face of continuing limitation on catches in distant waters.

Preliminary estimates suggest that 1980 would not bring any significant increase in the world catch of fish, crustaceans and molluscs. Production of species used primarily for meat and oil was likely to be lower and the increase in the production of fish for direct human consumption was unlikely to compensate for this. Nor is there likely to be a significant change in supply in the medium term. Gains from good management and continued exploitation of those few remaining underexploited conventional stocks of fish should be sufficient to enable the world catch to grow by about 1% per year as in the past.

Forest Products

Compared to long-term trends, 1979 was a relatively good year for the production of forest products. The rates of change of output of total roundwood and processed forest products, except sawnwood and wood-based panels, exceeded those of the previous year and were above the average rates for the decade (Table 1-14). Total roundwood production rose by 2.2%, one of the highest yearly rates of the past decade, with developing countries accounting for nearly two-thirds of the total increase. Over half of the world roundwood production consists of fuelwood and wood for charcoal, produced mainly in developing countries where they represent 83% of the total roundwood production and some 20% of all fuel consumed in these countries. The current production of charcoal in developing countries, as estimated for the first time on the basis of a recent survey, was about 15 million-20 million tons per annum, consuming 100 million-120 million $m^3$ of fuelwood.

The current levels of wood utilized for fuel in developing countries represent potentially a major environmental problem. In Africa and Asia, particularly, the current output of fuelwood involves cutting at a rate greater than existing forests are able to sustain, contributing to their depletion. Only in very few developing countries is replanting being carried out at a rate which will ensure sustained supplies of wood. Investment in appropriate programmes is urgently needed, therefore, to replace forest resources being consumed.

World industrial roundwood production in 1979 increased by 2.3%. Most of the increase took place in developed countries where output exceeded the previous peak of 1973. The rate of increase in developing countries was unchanged but over the past decade their rate of growth in industrial roundwood production has been some 3% to 4% while that for developed countries has averaged barely 1%.

Estimates for 1980 are for sustained production of roundwood at 1979 levels in most countries. The major exception is the United States where the major recession in the housing sector has resulted in a 25% decline in the production of sawnwood and panel products. Roundwood production of the USSR which represents 14-15% of the world total, has been declining by about 2% a year since 1975.

Sawnwood production in 1979 increased only marginally by 1% in developed countries but rather higher, 2%, in developing countries. The differences between these rates over the decade were much larger, however, the annual rates being 0.5% and 4% for the developed and developing countries respectively.

There was only a moderate increase in woodbased panels production mostly in the major producing countries with a smaller percentage increase in output in developing countries. The overall increase rate was markedly smaller than the average for 1976-79, this part of the forestry economy being particularly affected by the slowdown in the construction industry, notably in the USA.

Table 1-14. World output of main forest products

| | 1977 | 1978 | 1978 | Change 1977 to 1978 | Change 1978 to 1979 | Annual rate of change 1971-75 | 1976-79 | 1971-79 |
|---|---|---|---|---|---|---|---|---|
| | ... million $m^3$ ... | | | ..... % ..... | | | | |
| TOTAL ROUNDWOOD | 2,909 | 2,955 | 3,021 | 1.6 | 2.2 | 1.2 | 1.7 | 1.6 |
| Developing countries | 1,667 | 1,709 | 1,749 | 2.5 | 2.3 | 2.7 | 2.6 | 2.8 |
| Developed countries | 1,242 | 1,246 | 1,271 | 0.3 | 2.0 | -0.1 | 0.1 | 0.1 |
| Fuelwood and charcoal | 1,534 | 1,566 | 1,600 | 2.1 | 2.2 | 2.0 | 2.0 | 2.1 |
| Developing countries | 1,386 | 1,421 | 1,455 | 2.5 | 2.4 | 2.5 | 2.4 | 2.5 |
| Developed countries | 148 | 145 | 145 | -2.0 | - | -2.5 | -2.0 | -1.7 |
| Industrial roundwood | 1,375 | 1,389 | 1,421 | 1.0 | 2.3 | 0.5 | 2.4 | 1.1 |
| Developing countries | 281 | 288 | 294 | 2.5 | 2.1 | 3.6 | 3.3 | 4.3 |
| Developed countries | 1,094 | 1,101 | 1,127 | 0.6 | 2.4 | -0.4 | 0.9 | 0.3 |
| PROCESSED WOOD PRODUCTS | | | | | | | | |
| Sawnwood and sleepers | 441 | 442 | 447 | 0.2 | 1.1 | 1.5 | 1.1 | 0.4 |
| Developing countries | 72 | 73 | 74 | 1.4 | 2.3 | 3.6 | 3.3 | 4.8 |
| Developed countries | 369 | 370 | 373 | 0.1 | 0.8 | -2.2 | 0.7 | -0.3 |
| Wood-based panels | 101 | 105 | 107 | 3.5 | 2.2 | 1.7 | 3.7 | 3.3 |
| Developing countries | 12 | 13 | 13 | 10.4 | 1.7 | 5.1 | 8.3 | 7.7 |
| Developed countries | 89 | 92 | 94 | 2.5 | 2.2 | 1.3 | 3.1 | 2.8 |
| | .. million metric tons .. | | | | | | | |
| Woodpulp | 113 | 118 | 125 | 4.4 | 5.3 | 0.9 | 3.8 | 1.7 |
| Developing countries | 6 | 7 | 7 | 8.2 | 9.8 | 9.3 | 9.2 | 8.6 |
| Developed countries | 107 | 112 | 117 | 4.3 | 5.1 | 0.6 | 3.5 | 1.6 |
| Paper and paperboard | 154 | 160 | 171 | 4.3 | 6.6 | 1.2 | 4.7 | 2.7 |
| Developing countries | 17 | 18 | 19 | 7.9 | 5.8 | 8.0 | 7.7 | 7.8 |
| Developed countries | 137 | 142 | 152 | 3.8 | 6.7 | 0.6 | 4.4 | 2.2 |

Woodpulp and paper and paperboard production was at a high level in 1979, generally in excess of the longer-term trends. Woodpulp output was estimated to be approximately 6% higher than in 1978 in the United States, Sweden and Japan, and 17% higher in Finland. Woodpulp production in developing countries, though a very small proportion of world production, increased by 10%. Production of paperboard rose by approximately 8%-10% in the United States, Japan and the Federal Republic of Germany. Estimates for the first six months of 1980 point to an appreciable increase in the production of pulp and paper in North America and Scandinavia, notwithstanding the recession in other sectors of these economies.

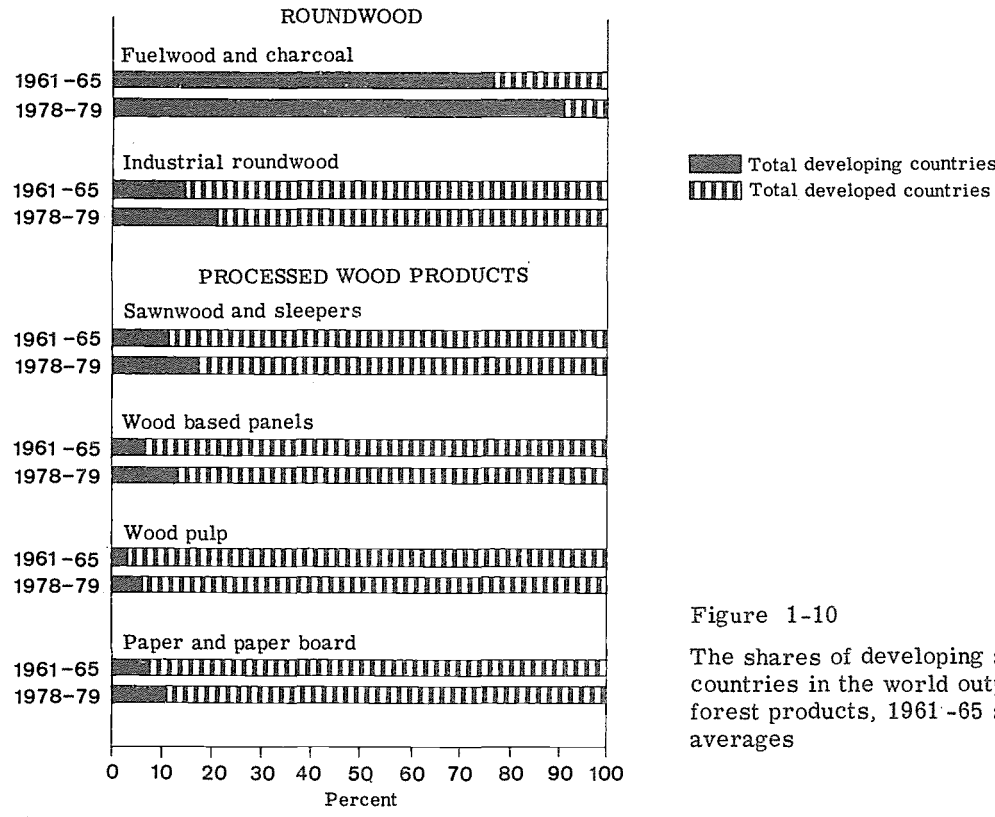


Figure 1-10

The shares of developing and developed countries in the world output of main forest products, 1961-65 and 1978-79 averages

## TOWARDS A FORESTRY STRATEGY FOR RURAL DEVELOPMENT

There is now a growing recognition of the fact that most of the problems of deforestation and of forest resource degradation have a socio-economic origin. Forest development strategies can, therefore, no longer disregard social considerations. The forest system is now expected to make a distinct contribution to rural development in addition to its traditional roles as a source of raw material for national industrial development and for domestic fuel needs.

FAO is advocating the incorporation of a strategy for rural development in overall development policies for the forestry sector. Basic to this strategy is the recognition of three interrelated missions for the forest system addressed to the production, protection and social objectives. These three missions must be considered concurrently and their interactions harmonized if forest goods and services are to be provided and the perpetuation of the forest resource base and of its productivity are to be ensured. In order to achieve these objectives, the management of the forest system must ensure the free interplay of its three main institutional components: (i) forest administrations and other public institutions; (ii) conventional enterprise institutions including industrial and commercial bodies; and (iii) local and rural institutions concerned with community interests.

This approach to forest management does not downgrade the importance of economic growth or the overall role of forestry in the national economy, but aims to orientate the production system and the distribution of forest goods and services to ensure a more equitable share for rural people, particularly those residing in and near forest areas. It can provide both opportunities for these people to become self-reliant and facilities to permit them to perform positively their role as a component in the management system. These will help to meet their specific needs for forest goods and services, while ensuring at the same time the production and protection missions of the forest system.

This will require much more attention to the production of fuelwood and its conversion to energy, the output of wood materials for domestic housing and a host of other special products for local use, the maintenance of adequate forest cover to ensure environmental protection of soil, water and local climate and, above all, much institutional reform and effort.

An imperative pre-requisite for the success of this strategy is the existence of national political will and of a commitment to rural development in overall development policies.

As may be seen in Table 1-14, although over the longer-term the annual rates of increases in the production of main forest products from developing countries has exceeded by significant margins the annual increases from developed countries, growth in 1979 was at a relatively low rate. The developing countries' share of world output of these products has increased appreciably in the past decade but, with the exception of fuelwood and charcoal, the share is 20% or less. For wood pulp and paper the share is less than 10% (Fig. 1-10).

The potentially great contribution of wood processing industries to rural development was discussed in the State of Food and Agriculture 1979 18/. During the decade of the seventies, the absolute increase of production of these industries in developing countries was substantial - sawnwood 40%, wood based panels 115%, pulp and paper 90% - but because of their initially low level, their proportion in total world production remains small. This is reflected in their continuing low levels of consumption of these products. There is clearly still a long way to go before the full potential of the sector is realized.

## THE USE OF INPUTS TO INCREASE AGRICULTURAL PRODUCTION

Much of the progress that has been achieved in increasing world agricultural production can be ascribed to the greatly increased use of inputs such as improved seeds and planting materials, fertilizers, pesticides and irrigation techniques. Nearly one half of the increase in crop production achieved through increased crop yields between the early 1960s and the mid 1970s can be attributed to increased fertilizers' use and one fifth to increased irrigation, the balance of about one third being accounted for by other factors. However, this increased usage of inputs associated with the Green Revolution type of technology is recognized to have environmental effects. The greatly increased costs of oil and energy with which these inputs are closely linked either through their manufacture or application also has affected their use.

The mechanization of agriculture during the last half century has been equally striking, particularly in the countries now regarded as being developed, but while this phenomenon certainly has greatly increased the productivity of agricultural labour, its direct impact on crop yields is negligible, unless associated with or made necessary by the use of other inputs such as sprayers for pesticides or pumps for irrigation. Indeed, in the labour-surplus, agrarian economies which typify many developing countries, the indiscriminate use of mechanization promoted by over-valued exchange rates, taxation policies or land tenure systems may well lead to inequitable growth and a reduction in employment opportunities. What is desirable is a policy of appropriate mechanization which may lead to higher output by relieving labour bottlenecks and by enabling field operations to be more timely even in situations where labour may be relatively abundant 19/.

### Fertilizers

World fertilizer consumption and production in terms of nutrients (NPK) have increased by over 75% in the past decade (Fig. 1-11). Over this period developing countries have increased their shares of consumption from 19% to over 30%; and of production from less than 10% to over 20%. However, their imports nearly doubled over approximately the same period, from 6.7 million to 12.6 million tons of fertilizer material (not nutrients) 20/.

As much of the fertilizer production capacity of developing countries installed during the last decade has been in the Asian centrally planned economies, the imports of developing market economies are relatively greater and are slow to decline. Their fertilizer imports more than doubled between 1969/70 and 1978/79 from 4.9 million to 10.5 million tons of

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18/ SOFA 1979, pp. 2-22 to 2-24.
19/ This issue was addressed in the Special Chapter "Agricultural Employment in Developing Countries", SOFA 1973.
20/ Data on fertilizer trade are available to 1978/79 only.

material, their dependency on imports decreasing only relatively slowly from 66% to 57%.

The increased use of inorganic fertilizers in developing countries is posing a considerable burden on their balance of payments. Between 1970 and 1978, the value of manufactured fertilizers imported by developing countries increased by nearly 300% to $ 3.3 billion; and that of the MSA countries by nearly 400% to $ 939 million. It is for this reason that developing countries are becoming more conscious of changing conditions in the world market for fertilizers likely to affect availabilities and prices. The establishment of domestic production facilities does not necessarily ease the burden as many countries do not possess the raw materials and lack the capital, skill and cheap sources of energy required. Furthermore only a relatively few developing countries have a sufficiently large domestic market to benefit from the economies of scale of modern fertilizer manufacture. This is but one of the areas where economic cooperation among developing countries can and deserves to be promoted.

The increase in world fertilizer consumption in terms of nutrients in 1979/80 (the fertilizer 'year' is July-June) was less than half the rate of the previous year and well below the average rate of increase for the 1970s (Table 1-15). This slowdown in fertilizer use can be attributed to the developed market and centrally planned economies because in the developing market economies the annual rate of use accelerated. But even this accelerated rate failed to attain the average rate for the developing market economies of the late 1970s although as fertilizer use expands, some deceleration in these historically high rates may be expected.

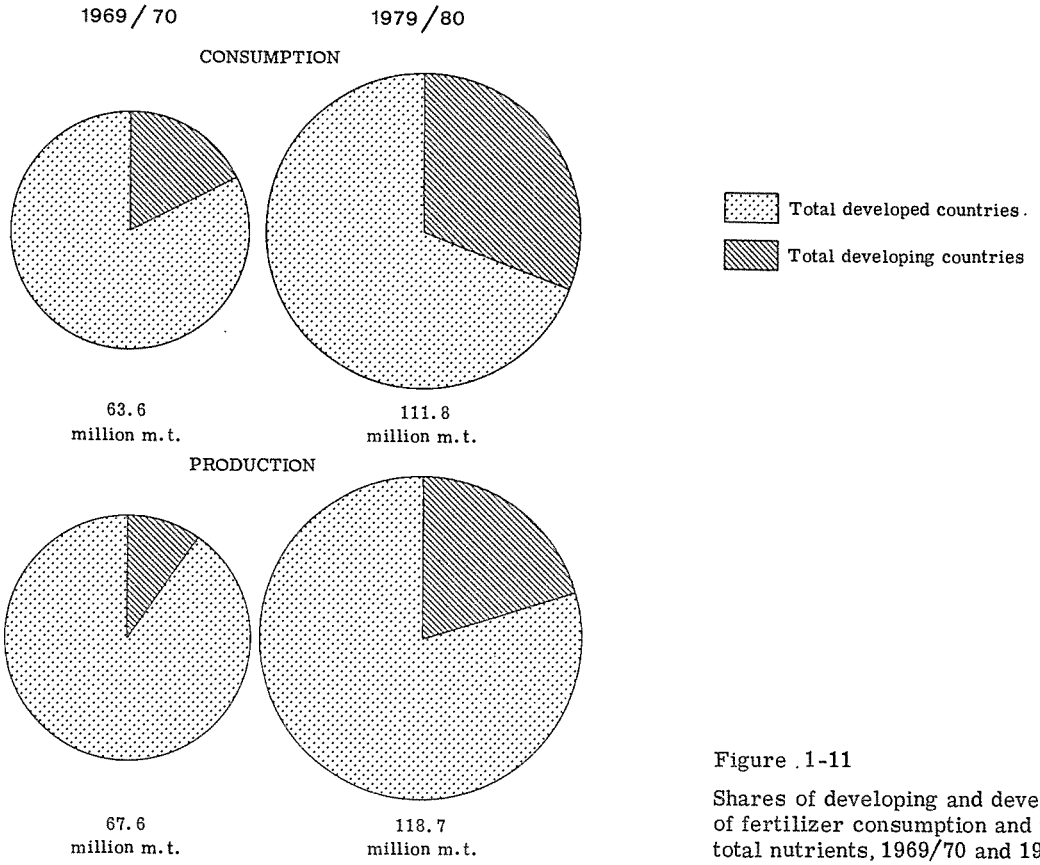



Figure 1-11

Shares of developing and developed regions of fertilizer consumption and production as total nutrients, 1969/70 and 1979/80

Table 1-15. Fertilizer consumption

| | 1977/78 | 1978/79 | 1979/80 1/ | Change 1977/78 to 1978/79 | Change 1978/79 to 1979/80 | Annual rate of change 1970/71 to 1974/75 | Annual rate of change 1975/76 to 1979/80 | Annual rate of change 1970/71 to 1979/80 |
|---|---|---|---|---|---|---|---|---|
| | ... million metric tons ... | | | ..... % ..... | | | | |
| Developed market economies | | | | | | | | |
| Nitrogen | 19.8 | 21.4 | 22.6 | 7.7 | 5.8 | 3.0 | 4.0 | 4.2 |
| Phosphate | 13.1 | 14.3 | 14.2 | 8.5 | -0.1 | 0.1 | 3.7 | 1.1 |
| Potash | 11.5 | 12.6 | 12.8 | 9.6 | 1.2 | 1.6 | 4.9 | 2.7 |
| Total nutrients | 44.5 | 48.3 | 49.6 | 8.4 | 2.8 | 1.7 | 4.1 | 2.8 |
| Developing market economies | | | | | | | | |
| Nitrogen | 9.6 | 10.2 | 11.3 | 6.1 | 11.5 | 8.6 | 11.0 | 9.3 |
| Phosphate | 5.2 | 5.6 | 6.1 | 7.3 | 9.2 | 14.1 | 11.9 | 11.5 |
| Potash | 2.6 | 2.9 | 3.1 | 10.6 | 6.3 | 12.8 | 14.1 | 10.0 |
| Total nutrients | 17.4 | 18.6 | 20.5 | 7.1 | 10.0 | 10.8 | 11.7 | 10.0 |
| Africa | 1.1 | 1.1 | 1.2 | -2.3 | 8.9 | 10.3 | 3.7 | 6.0 |
| Far East | 7.5 | 8.6 | 9.5 | 14.1 | 10.9 | 10.3 | 15.4 | 10.2 |
| Latin America | 6.1 | 6.2 | 6.8 | 1.6 | 8.5 | 11.5 | 10.0 | 10.0 |
| Near East | 2.6 | 2.7 | 3.0 | 3.7 | 11.2 | 10.7 | 9.0 | 11.5 |
| Centrally planned economies | | | | | | | | |
| Nitrogen | 20.4 | 22.1 | 23.2 | 8.4 | 4.9 | 8.0 | 7.7 | 8.0 |
| Phosphate | 9.4 | 10.1 | 10.8 | 7.8 | 6.7 | 7.7 | 5.8 | 6.9 |
| Potash | 8.8 | 8.9 | 7.6 | 1.6 | -14.9 | 9.6 | -3.7 | 5.7 |
| Total nutrients | 38.6 | 41.2 | 41.6 | 6.7 | 1.0 | 8.3 | 4.6 | 7.2 |
| World | | | | | | | | |
| Nitrogen | 49.9 | 53.7 | 57.2 | 7.7 | 6.5 | 5.8 | 6.7 | 6.6 |
| Phosphate | 27.7 | 29.9 | 31.1 | 8.0 | 3.9 | 4.2 | 5.8 | 4.5 |
| Potash | 22.9 | 24.4 | 23.4 | 6.6 | -4.1 | 5.3 | 2.5 | 4.4 |
| Total nutrients | 100.5 | 108.0 | 111.7 | 7.5 | 3.4 | 5.2 | 5.5 | 5.5 |

1/ Preliminary.

The reasons for the marked slowdown in fertilizer use by some major consuming countries in 1979/80 appear to have been higher prices and problems of the availabilities of some raw materials and types of fertilizers. Phosphate use in the developed market economies did not increase at all in 1979/80, especially in the USA, this demand situation having a consequent effect on prices as discussed later. Supplies of potash in relation to demand were difficult at times during the year and this was reflected in prices. World consumption of this nutrient actually declined. However, with certain exceptions, fertilizer supplies in total were adequate, and world production in 1979/80 at 118.7 million tons of nutrients covered consumption for agricultural use, other minor uses and losses in processing, transportation and storage.

A strong export demand characterized the fertilizer market in 1980 with steadily increasing prices which generally reflected increasing costs and changing currency values rather than an imbalance between world import demand and export availabilities. However there were some exceptions. One of these was diammonium phosphate, the export prices of which rose rapidly at the end of 1979 and maintained a high level until March 1980. In April

the export price fell because domestic demand in the United States was less than expected. It then rose again but by December 1980 was still 13% below the level reached a year earlier (Table 1-16). The export price for triple superphosphate followed a somewhat similar course, but by December 1980 its North America price was 2% above that of a year ago. Prices of some other fertilizer materials showed larger increases in 1980 ranging from 16% for the compound 15-15-15 to 35% for potassium chloride f.o.b. western Europe.

Table 1-16. Spot prices for selected fertilizers, 1979 and 1980

| | 1979 | | 1980 | | |
|---|---|---|---|---|---|
| | November | December | October | November | December |
| | ..... $/metric tons ..... | | | | |
| Urea (bagged) | | | | | |
| f.o.b. Western Europe | 185-195 | 190-200 | 230-235 | 230-240 | 235-240 |
| f.o.b. Near East | 190-200 | 200-210 | 240-250 | 250-255 | 260-265 |
| Ammonium Sulphate | | | | | |
| f.o.b. Western Europe | 70-75 | 75-80 | 100-105 | 100-105 | 100-105 |
| f.o.b. Far East | 85-95 | 85-95 | 115-125 | 115-120 | 115-120 |
| Diammonium Phosphate | | | | | |
| f.o.b. U.S. Gulf | 241-243 | 260-265 | 200-205 | 210-218 | 225-230 |
| Triple Superphosphate | | | | | |
| f.o.b. U.S. Gulf | 186-188 | 197-200 | 162-167 | 173-178 | 200-205 |
| f.o.b. North Africa | 210-220 | 205-220 | 195-205 | 200-205 | 215-220 |
| Potassium Chloride (standard) | | | | | |
| f.o.b. North America | 90-95 | 95-100 | 116-121 | 116-120 | 116-120 |
| f.o.b. Western Europe | 85-90 | 90-95 | 115-125 | 115-125 | 122-128 |

The bulk of the rise in the price of potassium chloride occurred early in 1980 when deliveries from the USSR were affected by the severe winter weather. Higher prices for urea of about US$ 5 per ton at the end of the year were apparently the result of the *force majeure* announced by Iraq on its contracted deliveries.

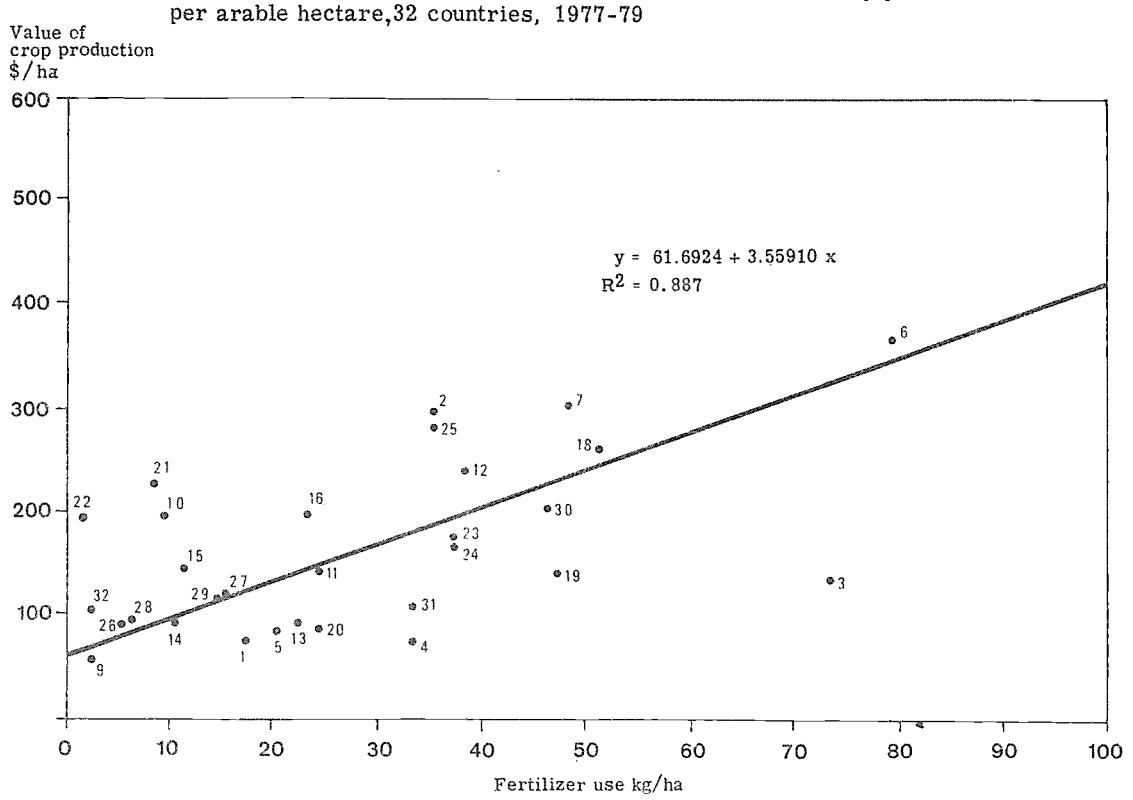
Contract negotiations for potassium chloride and phosphate rock deliveries during the first half of 1981 indicate that suppliers are seeking higher prices. For rock phosphate and for potassium chloride the increase is expected to be about 5%-10%. Future phosphate fertilizer prices could also be influenced by higher sulphur prices which, at US$ 110-120 a ton f.o.b. Vancouver, were the same in January and October 1980, but rose to US$ 130-135 a ton in December because of reduced exports from Iraq. In the first two months of 1981, export prices of fertilizers have held their levels of the end of 1980 although there has been some weakening in the prices of phosphates.

The Seventy-eighth Session of the FAO Council meeting in November 1980, reiterated the concern expressed earlier in the year by the Commission on Fertilizers at the upward trends in fertilizer prices which could seriously set back efforts to increase food production. By the late 1970s, the developing market economies were importing over half their fertilizer consumption. The recent rapid increases in world prices of fertilizers had forced a number of them to significantly raise their domestic selling prices with a consequent

## FERTILIZER USE AND INCREASING CROP PRODUCTION

Increased crop yields are closely linked to greater fertilizer use per hectare of arable land. If the full range of average fertilizer application rates by country are taken, from less than 10 Kg of nutrients per hectare at one extreme to more than 500 Kg per hectare at the other, then typically a square root transformation curve provides the best fit to the data and is conceptually logical complying with the law of diminishing returns. Such a curve is shown in SOFA 1968 p.88 where these relationships are explored. However, if data from the lower end of the range only are regarded, the relationship is better described by a linear curve. This is shown in the chart below where the average value of crop production in 1977-79 measured in US $ is regressed against fertilizer use as Kg of nutrients per arable hectare. The value of crop production per hectare is an imperfect measure of yield because countries produce different ranges of crops of differing values while fertilizer use frequently is associated with the use of other inputs or improved technology such as improved seeds and irrigation. With these reservations in mind, the use of an additional Kg of fertilizer nutrient per hectare together with other inputs with which it may be associated, increased crop output by about $3.6 per hectare in 1977-79, indicating a high benefit-cost ratio of up to 8 to 10:1, as would be expected at these generally low or very low rates of fertilizer use.

Average relationship between fertilizer use and value of crop production per arable hectare,32 countries, 1977-79




1. Argentina
2. Bangladesh
3. Brazil
4. Burma
5. Chile
6. China
7. Colombia
8. Egypt
9. Ethiopia
10. Ghana
11. India
12. Indonesia
13. Iran
14. Iraq
15. Ivory Coast
16. Kenya
17. Korea Rep.
18. Malaysia
19. Mexico
20. Morocco
21. Nepal
22. Nigeria
23. Pakistan
24. Peru
25. Philippines
26. Sudan
27. Syria
28. Tanzania
29. Thailand
30. Turkey
31. Venezuela
32. Zaire

adverse effect on use. The Council agreed on the need to conduct a study of the major factors affecting fertilizer supply, demand and prices. It endorsed the Commission's request that its Consultative Working Group undertake such a study and report back to the Commission at its next session.

The Commission on Fertilizers also urged donors to channel at least 10% of bilateral assistance through FAO's International Fertilizer Supply Scheme (IFS) which was established in 1974 to help developing countries and, in particular MSA countries, to overcome the critical fertilizer supply situation of that time. The continued and increasing difficulties of the poorest countries to procure fertilizers has called for a diversification of IFS emergency functions, integrating them into a wider context of development activities. This reorientation has been achieved through the combination of fertilizer supply with technical assistance provided through FAO's regular fertilizer programme. Since its inception in 1974/75 and up to its last accounting year, 1979/80, the IFS had received $ 124.6 million as pledges or contributions and it had participated in activities outside of regular pledges or contributions involving another $ 36.5 million. However, the pace of contributions under the scheme has dwindled so that from 245 thousand tons of fertilizers being distributed in 1975/76, only 13 thousand tons were distributed in 1978/79, a negligible figure in relation to the estimated consumption of MSA countries of over 6 million tons of nutrients. In 1980 a new pledge of over $ 1 million had been received from Italy while some other governments announced their willingness to review requests for fertilizer assistance from developing countries within their technical assistance programmes.

The Fertilizer Option System, established by FAO in 1979, aims to help to stabilize fertilizer prices particularly for MSA countries by linking, directly through FAO, contributors to the system and prospective buyers when export prices reach or exceed domestic prices in contributing countries. By mid-1980 over 500 thousand tons of fertilizer material had been committed to the system for the 5 year period from 1979 although as yet the relative prices of fertilizers in export and the domestic markets of contributors have not been such as to put the system into operation.

Pesticides

The increased use of pesticides undoubtedly has made a major contribution to increased agricultural production through the protection they afford crops to a myriad of pests and diseases and the control they provide to competition from weeds. Unfortunately, given the very large numbers of different types of pesticides, estimates of their consumption are less firm than they are for fertilizers. As an indication of their expanding use up to 1978, the latest year for which data are currently available, the values of imports of pesticides by developing countries have increased at high rates in the 1970s, exceeding 20% per annum (Table 1-17). These increases have tended to be concentrated more in the middle income developing countries because the annual rates of increase for the MSA and Least Developed Countries are somewhat less than for the developing countries as a whole.

The costs of these imports are beginning to assume significant proportions. Thus, in 1978, the value of pesticides imports by developing and MSA countries was almost one third that of fertilizers. For the LDCs, the corresponding value of pesticides imported in 1978 at $ 95 million actually exceeded the value of fertilizers ($ 86 million) although two years earlier it had been only 40% that of fertilizers.

Indeed the supply and cost of petroleum-based products are having an increasing impact in the world pesticide markets. Estimates made in 1978 anticipated a total pesticide market of approximately US$ 10 billion in 1980 and a further total overall growth of about 14% for the period 1980-84. It is now questionable whether even this modest growth can be achieved. As developing countries are being forced to conserve their scarce foreign exchange, less is available for increasingly expensive pesticides. Although no shortage of pesticide supplies is foreseen in the near future, some countries may have difficulty meeting their import requirements due to financial constraints.

Table 1-17. Values of imports of pesticides by developing countries, 1976-1978

| | 1976 | 1977 | 1978 | Change 1976 to 1977 | Change 1977 to 1978 | Annual rate of change 1971/78 |
|---|---|---|---|---|---|---|
| | .... million $ ..... | | | .....% ..... | | |
| Developing market economies | 809.2 | 935.7 | 1,063.0 | 15.6 | 13.6 | 21.8 |
| Africa | 158.2 | 183.2 | 216.7 | 15.8 | 18.3 | 23.2 |
| Far East | 181.7 | 191.2 | 210.4 | 5.3 | 10.0 | 22.8 |
| Latin America | 305.6 | 357.7 | 380.4 | 17.0 | 6.3 | 20.0 |
| Near East | 158.6 | 197.8 | 249.3 | 24.7 | 26.0 | 24.1 |
| Asian centrally planned economies | 0.4 | 0.5 | 0.6 | 26.3 | 20.8 | - 2.1 |
| Total developing countries | 809.6 | 936.2 | 1,063.5 | 15.6 | 13.6 | 21.8 |
| MSA countries | 223.9 | 282.6 | 319.7 | 26.2 | 13.1 | 19.8 |
| LDCs | 58.9 | 71.4 | 94.6 | 21.3 | 32.5 | 16.4 |

To alleviate this situation many more countries are developing domestic formulation and repackaging plants using local raw materials where possible. Recently such plants have been established with UN assistance in Burundi, Somalia, Sudan, Yemen Arab Republic, Jordan, Cuba, Guyana and Nepal. Plans to establish facilities to manufacture basic active ingredients have been somewhat less successful due to the inputs of petroleum products required. Some countries such as Pakistan and Tanzania, however, are developing small multi-product plants, particularly for the production of organochlorine pesticides.

In 1980 it has become apparent that there is an increasing concern over international trade in hazardous pesticides. Some of the industrialized nations are preparing legislation or regulations to control the export of certain pesticides. The proposed regulations are in response to charges that dangerous and/or unregistered pesticides are being exported to developing countries without those countries being made aware of the potential hazards. Proposals have also been made in some countries to improve the flow of information on these materials to importing countries.

Partly as a consequence of the publicity surrounding the export of hazardous pesticides and due also in part to the increasing impact of the work of the Codex Alimentarius Commission, more countries are becoming aware of the need to establish effective control schemes for agricultural pesticides. To provide advice to member governments on this subject FAO is continuing its activities in pursuit of the goal for the harmonization of pesticide legislation.

Irrigation

There are several ways in which irrigation plays an important role in food security. It can increase crop production by enlarging crop areas, improving yields and increasing the cropping intensity on a given planting area. Much of the impressive gains achieved in the Far East in increasing output of rice and wheat can be directly attributed to the irrigation systems in large areas of the region. Irrigation also represents an important element of security for the farmer by greatly reducing the natural risks that are inherent

in rainfed agriculture. There is a close relationship between irrigation and stability of production. For example, it has been observed that in Thailand where the 1975 irrigation rate (that is, the irrigated area as a percentage of total area) was relatively low at 35%, there was an apparent correlation between the onset of drought conditions and a decrease in yield. The coefficient of correlation was more than 0.70. Furthermore, rice yields were much more stable in Malaysia where the 1975 irrigation rate was 84%, than in Thailand. It has also been observed that in 16 Asian countries the stability index 21/ of total paddy production per caput between 1960 and 1975 was 0.74, which means that the lowest paddy production per caput in that period was 74% of the highest per caput paddy production. In comparison, the stability index was 0.87 for the same period in Japan, where almost all riceland is adequately irrigated and the adverse effects of the lack of rain on yields are minimized.

Improved Seeds and Planting Materials

When successfully introduced, high yielding varieties of crops (HYV) have provided the basis for obtaining increased and more stable agricultural production. The wide adoption of improved seeds and planting materials would therefore be a major factor contributing to improved world food security. Pursuing its effort in assisting developing countries in this important field, FAO has continued to expand the scale of operations of its Seed Improvement and Development Programme (SIDP).

By December 1980 SIDP covered 118 countries, while an additional 25 countries were cooperating in seed exchange activities. From the inception of SIDP in 1973 and until December 1980, 228 projects, with a total allocation of over US$ 91 million, have been put into operation. One hundred and nineteen institutions are at present working closely with the Programme. Several of these projects, namely in Burma, Bhutan, Mali, Nigeria, Sudan and Yemen Arab Republic, have obtained particularly good results in identifying and distributing improved varieties of rice, wheat, maize, food legumes, sugar cane, sunflower and groundnut as well as cotton and jute. During 1980, 43 new projects on seed production, processing, quality control, distribution and training have been implemented with an allocation of over US$ 25 million, supported by UNDP, Trust Funds and FAO's Technical Cooperation Programme. A total of 157 seed projects were operational in 1980 of which 127 projects were dealing with seed production and supply, 22 with training and 8 with publications.

During 1980, four seed production and training centres were established and/or strengthened bringing the total number of these centres established during 1979/80 to 20: 11 in Africa, three in Asia, three in the Near East and three in Latin America.

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21/ Stability index = $\frac{\text{Production per caput (yearly minimum)}}{\text{Production per caput (yearly maximum)}}$

# DEVELOPMENT ASSISTANCE TO AGRICULTURE IN THE 1970s

## Total Resource Transfers to Developing Countries in the 1970s

Major developments took place in the 1970s in the field of resource transfers to developing countries. Total net resource inflows into developing countries increased rapidly. Oil exporting countries emerged as a new source of external flows of resources to developing countries both on concessional and non-concessional terms and Eurocurrency markets expanded greatly. As developing countries, especially the middle income ones, increased their borrowing from capital markets to meet their growing financing requirements, their indebtness rose sharply. Debt servicing burdens increased heavily creating serious financing problems.

Total net resource inflows into developing countries amounted to about $82,000 million in 1979, representing more than a twofold increase over 1970. However, total Official Development Assistance (ODA), that is, official flows of external resources to developing countries on concessional terms 22/, increased at a lower rate than non-concessional flows. It reached about $ 28,000 million in 1979, representing only 34% of total net inflows, against 43% in 1970.

Member countries of the OECD's Development Assistance Committee (DAC) contributed 81% of total ODA in 1979 while the share of OPEC was about 17%. ODA by DAC members as a group represented 0.34% of their total GNP in 1979, the same proportion as in 1980. This is a disappointing performance particularly in relation to the target included in the International Development Strategy that ODA would increase during the UN Second Development Decade (DD2) to represent at least 0.7% of donors' GNP. Concessional assistance by OPEC members as a group accounted for 1.44% of their total GNP in 1979 but was far below the levels reached in 1975 and in 1976 when it amounted to 2.94% and 2.43% respectively.

The shortfalls in ODA targets have had a depressing influence on the economic growth of developing countries, particularly low-income ones which have difficulty in borrowing from financial markets. Loans from these commercial sources rose sharply in the 1970s, but the major part was made to a few middle-income countries. Total external debt of developing countries reached about $ 390,000 million in 1979 compared to about $ 87,000 million in 1971; their annual debt service amounted to $ 72,300 million, almost seven times higher than the 1971 level, 40% of which was represented by interest payments. Three-quarters of total debt service in 1979 was accounted for by 10 countries.

## Volume of External Assistance to Agriculture in the 1970s

As no data on disbursement are available on a sectoral basis, the analysis of external assistance to agriculture is based on commitments. Commitments are usually higher than disbursements, particularly for the project type of assistance which forms the bulk of external assistance to agriculture. Disbursements of commitments are spread over a number of years depending on the project duration and budgetary resources. Data available also relate only to official flows 23/, while data relating to centrally planned countries are still incomplete and have therefore been excluded.

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22/Official transactions which are intended primarily to promote the economic development and welfare of developing countries, and which are provided on concessional financial terms, i.e. with a minimum grant element of 25%.

23/Official flows = Official Development Assistance (ODA) + Other Official Flows (OOF). OOF consist mainly of official transactions which have a grant element of less than 25% or which facilitate export transactions through the provision of credit.

External assistance to agriculture played an important role in the 1970s by providing resources for rural and agricultural development, particularly in the poorest among developing countries. It has helped these countries in their efforts to overcome some of the major constraints on growth such as the lack of domestic savings, foreign exchange and skill availability. It resulted also in many instances in an increase in resources allocated to the agriculture sector.

Official Commitments to Agriculture (OCA) have grown at a faster rate than total commitments to all sectors in the 1970s (Table 1-18). The share of agriculture in the "broad" definition in commitments to all sectors increased from 11% in 1973 to 16% in 1978. In volume terms OCA in the "broad" definition reached $ 9,971 million in 1979, representing more than a fourfold increase over 1973 at current prices. In constant prices this amounted to 119% growth in real terms in the period 1973-79.

Table 1-18. Official commitments to agriculture, 1973-1979

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 4/ |
|---|---|---|---|---|---|---|---|
| I. Agriculture "narrow" definition 1/ | ..... | | | $ million | | ..... | |
| Concessional (ODA) | 1,322 | 2,111 | 2,137 | 2,377 | 3,257 | 4,433 | ... |
| Total in current prices 2/ | 1,848 | 3,110 | 3,341 | 3,360 | 4,760 | 6,423 | 6,680 |
| at 1975 prices 3/ | 2,530 | 3,494 | 3,341 | 3,360 | 4,367 | 5,138 | 4,671 |
| II. Agriculture "broad" definition 1/ | | | | | | | |
| Concessional (ODA) | 1,725 | 2,869 | 3,258 | 3,425 | 4,566 | 5,853 | 7,100 |
| Total in current prices 2/ | 2,320 | 4,208 | 5,481 | 5,199 | 7,141 | 9,088 | 9,971 |
| at 1975 prices 3/ | 3,178 | 4,728 | 5,481 | 5,199 | 6,551 | 7,270 | 6,973 |
| III. Share of ODA in total commitments to agriculture | ..... | | | % | | ..... | |
| "narrow" definition | 72 | 68 | 64 | 71 | 68 | 69 | ... |
| "broad" definition | 74 | 68 | 59 | 66 | 64 | 68 | 71 |
| Share of agriculture "narrow" definition in commitments under "broad" definition | 80 | 74 | 61 | 65 | 67 | 71 | 67 |
| Share of official commitments to agriculture in commitments to all sectors "broad" | 12 | 15 | 14 | 14 | 17 | 17 | ... |

Sources: OECD and FAO.

1/ Agriculture "narrow" definition excludes assistance for such purposes as forestry, rural development, rural infrastructure, agro-industries, fertilizer production and regional and river projects which are included in the broad definition. - 2/ Official concessional commitments (ODA) plus official non-concessional commitments defined by OECD as other official flows. - 3/ Deflated by the UN unit value index of the exports of manufactured goods. - 4/ Preliminary.

Year to year changes in commitments to agriculture ("broad" definition) have been positive except for 1976 and 1979. While the decline in 1976 was followed by a recovery in 1977, early estimates of development assistance in 1980 suggest little improvement from the disappointing results of the previous year and confirm the decelerating trend in the growth observed in the period 1973-78. Moreover the share of concessional flows in total official flows to agriculture has decreased slightly: from 74% in 1973 to 71% in 1979.

These recent developments cause particular alarm because the present levels of OCA are far below the estimated requirements of developing countries.

The 1975 Conference of FAO in the resolution on the Strategy of International Agricultural Adjustment, agreed that transfers to developing countries through official assistance for agricultural development needed to be at least $ 5,000 million annually during the period 1975-80 (at 1972 prices). The Third Session of the World Food Council (WFC) held in Manila in 1977 endorsed this figure which was equivalent to $ 8,300 million at 1975 prices and it further agreed that of this amount $ 6,500 million should be on concessional terms.

The "narrow" definition of agriculture relates more closely to the definition used by FAO and WFC in estimating the requirements of external assistance to agriculture. Official commitments to agriculture "narrow" definition represented about two thirds of total commitments to agriculture "broad" definition during the period under review. Although commitments to agriculture "narrow" definition increased at a relatively high rate during the 1970s, they were in 1979 still 44% below requirements as estimated by FAO and WFC. To bridge this gap, considerable expansion in total external assistance is required and agriculture should receive a larger share of total commitments.

Sources of External Assistance to Agriculture

Multilateral agencies gave higher priority to agriculture than bilateral sources in the 1970s (Annex Table 19). Agriculture represented 37% of their total commitments to all sectors in 1979 compared to 26% in 1973. The share of agriculture in total commitments by the World Bank in 1978 was as high as 42% against only 27% in 1973. On the other hand, agriculture accounted for only 6% and 9% of total commitments by bilateral sources in 1973 and 1978 respectively, though the proportion of commitments to agriculture in total commitments by DAC/EEC, the major contributor of bilateral assistance, has doubled during this period.

Despite the priority given by multilateral agencies to agriculture, their share of total official commitments to agriculture has declined a little in the 1970s, reaching only 52% in 1979 against 55% in 1973. The contribution of multilateral agencies as a group of ODA to agriculture has declined significantly in this decade passing from 46% in 1973 to 37% in 1979 (Fig. 1-12 and Annex Table 19).

The World Bank has been the largest single source of external resources for agricultural development, although its contribution to concessional and non-concessional OCA has declined over the period 1973-79. Total OCA by the World Bank has more than trebled at current prices during this period and amounted to $ 3,416 million in 1979.

Regional development banks 24/ as a group have increased their commitment to agriculture at a faster rate than the World Bank. They committed $ 1,174 million to agriculture in 1979, more than five times the level of their OCA in 1973 ($ 201 million). As a consequence their share of total OCA rose from 9% in 1973 to 12% in 1979. Regional Development Banks also accounted for a higher proportion of ODA to agriculture in 1979 (11%) than in 1973 (8%).

An important development in multilateral assistance to agriculture since the mid 1970s has been the establishment in 1977 of the International Fund for Agricultural Development

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24/ Regional Development Banks: African Development Bank, Asian Development Bank, Inter-American Development Bank.

(IFAD) in response to the World Food Conference. Most of its initial resources of just over $1 billion for its first triennium, 1977-80, have been committed. The replenishment of IFAD's resources has been approved recently to support an operational programme of $1.5 billion during 1981-1983.

Total commitments to agriculture from OPEC multilateral sources began in 1974 although they represented only 1% of OCA by 1978. Even this small proportion seems to have decreased considerably in 1979. Bilateral assistance to agriculture from OPEC countries has been, however, more significant. Its share in total OCA rose from 3% in 1973 to 11% in 1975 but this then declined in the second half of the 1970s.

The emergence of OPEC as a source of assistance for development financing in the 1970s has been accompanied by the creation of national and multilateral institutions which serve as a framework for its aid. 25/ The share of agriculture in total lending of OPEC national institutions is still very low but this may increase if more attention is given in their programmes to agriculture development activities.

DAC/EEC bilateral commitments to agriculture on concessional terms have increased in the 1970s, reaching about $4,174 million in 1979 when they represented 57% of total ODA to agriculture, compared to only 52% in 1973. DAC countries thus continue to rely heavily on bilateral channels to provide assistance to agricultural development in developing countries. Fig. 1-12 shows for 1979, the latest year for which data are available, the shares of multilateral and bilateral sources in both ODA to agriculture and OCA.

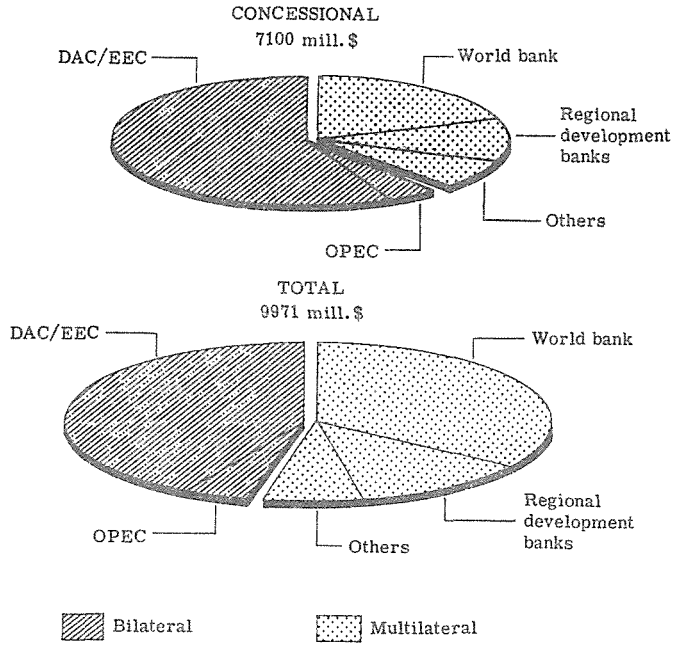


Figure 1-12

The sources of total and concessional official commitments to agriculture "broad" definition, 1979

25/ National institutions include the Abu-Dhabi Fund for Arab Economic Development, the Iraq Fund for External Development, the Kuwait Fund for Arab Economic Development, the Saudi Fund for Development. The Organization for Investment, Economic and Technical Assistance of Iran, the Venezuela Investment Fund and the Libyan Foreign Bank provide aid and investment funds for developing countries. On the multilateral side the OPEC Fund for International Development has been created. OPEC contributions are also preponderant in the Arab Bank for Economic Development in Africa, the Arab Fund for Economic and Social Development, the Islamic Development Bank, the Gulf Organization for the Development of the Arab Republic of Egypt and the Arab Authority of Agricultural Investment and Development in Sudan. OPEC is a formally recognized group of countries within IFAD.

No information is available on the extent to which bilateral aid to agriculture has been tied to procurement from the donor country. What is clear, however, is that the proportion of aid channelled through multilateral agencies, which is untied, has not increased in the 1970s as has been advocated for many years.

Tied aid is estimated to account for 40% of total aid to all sectors. Further liberalization of procurement policies are needed in the 1980s to reduce this share and so improve the quality of aid. Tied aid reduces in many instances the efficiency of external assistance as well as the real value of financial resource flows to developing countries.

## Purposes and Regional Distribution of External Assistance to Agriculture

There is insufficient information to quantify with any precision what pattern of agricultural investment is supported by external sources of finances. It does appear that food production 26/ received about two thirds of OCA in the 1970s. There were decreases in the proportions of commitments for the supply of production inputs and for livestock development during this period. On the other hand, commitments for research, extension and training have seen their share of the total rising from less than 0.5% in 1973 to about 3% in 1979 (Annex Table 20).

Figure 1-13 summarizes for the period 1977-79 the percentage distribution of OCA among regions and by purpose. Crops and livestock production together with land and water development approximately correspond to agriculture in the "narrow" definition.

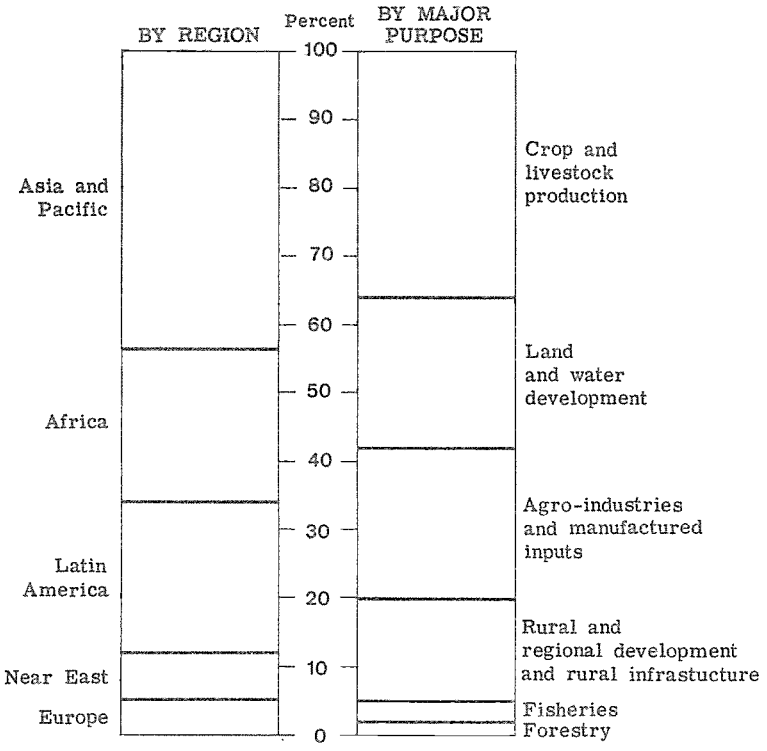


Figure 1-13

Distribution of official commitments to agriculture (excluding technical assistance grants) by region and major purpose, 1977-79 average

26/ The commonly accepted definition of food production is close to the OECD "narrow" definition of agriculture although not identical.

Table 1-19. Official commitments to agriculture (excluding Technical Assistance Grants): by major purpose and regions 1/

| Purpose classification | 1973-1975 | | | | | |
|---|---|---|---|---|---|---|
| | Far East Oceania | Africa | Latin America | Near East | Europe | Total |
| | % | | | | | |
| Land & Water Development | 35 | 10 | 26 | 20 | 9 | 100 |
| Crop & Livestock Production | 33 | 34 | 23 | 6 | 4 | 100 |
| Fisheries | 36 | 14 | 40 | 7 | 3 | 100 |
| Forestry | 17 | 26 | 1 | 56 | - | 100 |
| Rural development/infrastructure & regional development | 37 | 18 | 34 | 11 | - | 100 |
| Agro-industries/manufactured inputs | 64 | 10 | 6 | 15 | 5 | 100 |
| TOTAL | 41 | 20 | 21 | 13 | 5 | 100 |

| Purpose classification | 1977-1979 2/ | | | | | |
|---|---|---|---|---|---|---|
| | Far East Oceania | Africa | Latin America | Near East | Europe | Total |
| | % | | | | | |
| Land & Water Development | 61 | 12 | 15 | 4 | 8 | 100 |
| Crop & Livestock Production | 37 | 27 | 22 | 8 | 6 | 100 |
| Fisheries | 59 | 17 | 15 | 4 | 5 | 100 |
| Forestry | 29 | 29 | 24 | 14 | 4 | 100 |
| Rural development/infrastructure & regional development | 35 | 26 | 32 | 6 | 1 | 100 |
| Agro-industries/manufactured inputs | 43 | 20 | 20 | 14 | 3 | 100 |
| TOTAL | 44 | 22 | 22 | 7 | 5 | 100 |

1/ Based on available data on commitments by recipients and purpose. - 2/ Preliminary.

Source: OECD and FAO.

In the flows to agriculture in the "broad" definition, external assistance for rural infrastructure increased tenfold in the 1970s, reaching approximately $1,143 million in 1979. The manufacture of inputs is another item which received increased priority in the 1970s since it accounted for 11% of OCA in 1979 against only 4% in 1973.

There are considerable regional differences in the allocations of commitments by purpose (Table 1-19). According to available information the distribution of external assistance to agriculture by regions has not significantly changed in the 1970s. Between 1973/75 and 1977/79 the shares of the Far East and Oceania, Africa and Latin America have apparently increased a little at the expense of the Near East although this increase may be overestimated because it has not been possible to regionally distribute some commitments by OPEC bilateral aid in 1977/79. Neither has there been an increase in the share of the poorest among developing countries 27/ in total official commitments to agriculture. It amounted to about 45% in 1977/79, which was the same proportion as in 1973/75.

Outlook for the 1980s

Developing countries will have to continue raising their savings and investment rates in the 1980s in order to sustain their economic and social development. Although further increases in savings rates are possible in many developing countries, the scope appears very limited for low-income ones. These will need a considerable increase in external resource inflows, far greater than what has been achieved in the last decade.

Medium and long term economic projections show that considerable expansion of external resource inflows including concessional transfers during the 1980s will be essential to developing countries, if their investment requirements are to be met.

Net annual flows of medium and long-term capital (private and official flows) to developing countries will have to reach $177.9 billion at current prices in 1990 to sustain the "High Case" scenario of the World Bank economic projection for the 1980s 28/, compared to $74.6 billion in 1980. Official development assistance to all sectors will need to treble in the period 1980-1990 and reach $62.1 billion in the latter year. ODA also will have to proportionally increase to represent 35% of total net capital flows to developing countries by 1990 compared to 28% in 1980.

Requirements of offical external assistance to agriculture "narrow" definition are projected by FAO to reach $12.5 billion 29/ in 1990 (at 1975 prices). As has been seen, actual commitments to agriculture "narrow" definition in 1979 totalled only $4.7 billion at 1975 prices which implies that official external assistance will have to nearly treble in real terms during the next decade. The FAO projection assumes that ODA concessional flows would represent 80% of the estimated requirements of external assistance to agriculture. Therefore external assistance would have to rise sharply in early 1980s to overcome the considerable arrears which have accumulated in the 1970s. Considering the level of commitments in 1979 and early indications for 1980, the outlook for such a desirable increase is bleak indeed.

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27/ Countries which had per caput GDP below $300 in 1975.

28/ World Development Report, 1980; World Bank, August 1980 pp. 9-10 and 26-31. The World Bank "High Case" scenario projects a much more successful adjustment to current economic difficulties with growth slowing less in 1980-85 and accelerating more thereafter. Growth prospects for Sub-Saharan Africa remain poor even under this optimistic scenario.

29/ "Agriculture: Toward 2000", FAO, 1980 (The figures relate to the "Normative" scenario in which gross agricultural production increases by 4% per annum during 1980-1990) in the 90 developing countries included in the study.

Slow economic growth and rising balance of payment deficits of major donor countries have influenced recent flows of assistance to developing countries. Donor countries are facing political problems in expanding their assistance at a time they are having to restrict their domestic spending.

However, the required increase in official development assistance in the 1980s represents only a small rise of the share of ODA in the forecast total GNP of donor countries. It is believed that despite the present constraints on external assistance expansion, the volume of flows could reach the required level if appropriate measures are taken in the near future, backed by strong political will. A failure to obtain the necessary external assistance would have serious implications for the developing countries in general and to low-income ones in particular. Given the interdependence of all countries such a failure could lead to serious international economic and political consequences. The report of the Independent Commission on International Development Issues (the Brandt Commission) 30/, emphasizing the mutuality of interests of rich and poor countries, calls for a massive increase of flows of external resources to developing countries, including a major expansion of Official Development Assistance, particularly to low-income developing countries.

Apart from the need for an increase in the volume of external assistance to agriculture, the efficiency of this assistance would have to be further improved.

At present the bulk of official aid is provided for project assistance. There is a need for more programme and sectoral lending in the 1980s which would provide strategic support to agricultural development, reduce the administrative burden of donors as well as recipients and so increase the rate of disbursements.

Technical assistance should be expanded in line with investment assistance to improve the capacity of developing countries to absorb and use efficiently the resource flows for investment.

Finally, measures should be taken to further ease the burden of counterpart expenditures by governments through the financing of local costs, whether these relate to capital or recurrent expenditures.

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30/ North-South: A Programme for Survival, 1980.

# INTERNATIONAL TRADE AND AGRICULTURE

## Trends and Features of Agricultural Trade

A decline in the rate of growth of output in the industrial countries depressed global import demand in 1979. The volume of world merchandise trade in 1980 is expected to show virtually no increase at all having increased by 6% in 1979. Most developing countries faced exceptional difficulties in their attempts to expand the volume of their exports sufficiently rapidly to offset their rising import needs and declining terms of trade. These difficulties were particularly acute in the case of non-oil exporting developing countries, for many of which agricultural exports are a main source of foreign exchange. The aggregate current account deficit of these countries excluding official transfers nearly doubled in only two years reaching about US$ 70 billion in 1980. In an effort to alleviate this burden, many developing countries were forced to adopt restrictive demand policies which led to reductions in their imports of even essential consumer goods. Since increases in the volume and prices of exports are expected to be only marginal in 1981, agricultural trade offers these countries little prospect of reducing current account deficits and promoting economic growth in the short term.

The available information on world food and agricultural trade in 1980 is not yet complete. The latest estimates for 1979 confirm, however, the depressing influence overall economic conditions are having on some aspects of agricultural trade. Although the value of world exports of agricultural, fishery and forestry products in 1979 (of US$ 258 billion) was more than 17% larger than in 1978 and one percentage point above the annual average increase for 1970-79 (Table 1-20), a major part of this increase accrued to developed countries which benefited in particular from significantly higher prices for their exports of cereals. The growth in their earnings, at over 20%, was well above the average yearly growth of the seventies but nearly twice the gain of developing countries in 1979. As a result, the share of developing countries in world export earnings for agricultural, fishery and forestry products declined for the second consecutive year, falling to 28%.

During the last two decades, world exports of agricultural products have increased fivefold but the share of developing countries, and particularly the share of the LDCs, of this greater total has tended to decline (Fig. 1-14). World exports of agricultural products (crops and livestock only), amounted to US$ 199 billion, nearly 17% more than in 1978. This increase was due mainly to price increases, the volume of trade of these products increasing by only 6% in 1979.

The changing trading conditions experienced in 1979 were particularly detrimental to both the volume and unit value of crop and livestock exports of developing countries. Their volume rose by less than 2% compared to more than 7% for developed country exports, while their unit values grew by less than 7% compared to 11.5% for exports from developed countries.

Regionwise, the Far East achieved the largest increase in agricultural export earnings in 1979 (20%), largely as a result of a sharp increase in the value of exports of cereals, mainly rice, and raw materials which rose by 40% and 26% respectively. Exports of rubber in the region rose by a third and accounted for about 94% of the world exports of this commodity.

For Latin America earnings from agricultural exports rose by about 9%, well below the 16% average rate of increase in 1970-79 but, as in the past five years, the region still accounted for more than 40% of the value of all agricultural exports from developing countries. As much as one fourth of the total agricultural earnings of the region were obtained from exports of coffee, an increase in volume of about 14% more than offsetting depressed prices.

Table 1-20. Value at current prices of world exports of agricultural (crops and livestock), fishery and forestry products

| | 1969-71 | 1977 | 1978 | 1979 | Change 1977 to 1978 | Change 1978 to 1979 | Annual rate of change 1970-79 |
|---|---|---|---|---|---|---|---|
| | ... thousand million $ ... | | | | .....% | | |
| AGRICULTURAL PRODUCTS | 51.1 | 151.8 | 170.8 | 199.3 | 12.5 | 16.7 | 16.6 |
| Developing market economies | 17.3 | 51.3 | 52.9 | 58.0 | 3.1 | 9.6 | 15.8 |
| Asian centrally planned economies | 1.2 | 2.7 | 3.3 | 3.4 | 22.2 | 3.0 | 13.3 |
| TOTAL DEVELOPING COUNTRIES | 18.4 | 54.0 | 56.2 | 61.4 | 4.1 | 9.3 | 15.6 |
| Developed market economies | 29.0 | 89.3 | 106.3 | 128.3 | 19.0 | 20.7 | 17.5 |
| Eastern Europe and the USSR | 3.8 | 8.5 | 8.3 | 9.6 | -2.4 | 15.7 | 11.5 |
| TOTAL DEVELOPED COUNTRIES | 32.7 | 97.8 | 114.6 | 137.9 | 17.2 | 20.3 | 17.0 |
| FISHERY PRODUCTS | 2.2 | 9.6 | 11.7 | 13.3 | 21.9 | 13.7 | 18.1 |
| Developing market economies | 0.6 | 3.1 | 3.7 | 4.2 | 19.4 | 13.5 | 19.5 |
| Asian centrally planned economies | 0.1 | 0.6 | 0.7 | 0.7 | 16.7 | - | 21.0 |
| TOTAL DEVELOPING COUNTRIES | 0.8 | 3.7 | 4.5 | 4.9 | 21.6 | 8.9 | 19.7 |
| Developed market economies | 1.3 | 5.6 | 6.9 | 8.0 | 23.2 | 15.9 | 17.1 |
| Eastern Europe and the USSR | - | 0.3 | 0.3 | 0.4 | - | 33.3 | 14.2 |
| TOTAL DEVELOPED COUNTRIES | 1.4 | 5.9 | 7.2 | 8.4 | 22.0 | 16.7 | 17.0 |
| FORESTRY PRODUCTS | 12.3 | 33.7 | 37.5 | 45.6 | 11.3 | 21.6 | 15.5 |
| Developing market economies | 1.5 | 4.6 | 5.0 | 6.7 | 8.7 | 34.0 | 17.2 |
| Asian centrally planned economies | 0.1 | 0.3 | 0.5 | 0.5 | 66.7 | - | 12.6 |
| TOTAL DEVELOPING COUNTRIES | 1.6 | 5.0 | 5.5 | 7.1 | 10.0 | 29.1 | 16.8 |
| Developed market economies | 9.5 | 25.6 | 28.8 | 35.0 | 12.5 | 21.5 | 15.5 |
| Eastern Europe and the USSR | 1.2 | 3.2 | 3.3 | 3.5 | 3.1 | 6.1 | 13.9 |
| TOTAL DEVELOPED COUNTRIES | 10.7 | 28.8 | 32.0 | 38.5 | 11.1 | 20.3 | 15.3 |
| TOTAL | 65.6 | 195.2 | 220.0 | 258.2 | 12.7 | 17.4 | 16.4 |
| Developing market economies | 19.4 | 59.1 | 61.6 | 68.8 | 4.2 | 11.7 | 16.1 |
| Asian centrally planned economies | 1.4 | 3.6 | 4.5 | 4.6 | 25.0 | 2.2 | 13.3 |
| TOTAL DEVELOPING COUNTRIES | 20.8 | 62.7 | 66.1 | 73.4 | 5.4 | 11.0 | 15.9 |
| Developed market economies | 39.8 | 120.5 | 142.0 | 171.3 | 17.8 | 20.6 | 17.0 |
| Eastern Europe and the USSR | 5.0 | 12.0 | 11.9 | 13.6 | -0.8 | 14.3 | 12.2 |
| TOTAL DEVELOPED COUNTRIES | 44.8 | 132.5 | 153.9 | 184.8 | 16.2 | 20.1 | 16.6 |
| | ..... % ..... | | | | | | |
| SHARE OF DEVELOPING COUNTRIES | 32 | 32 | 30 | 28 | | | |

The situation was less favourable in Africa where export earnings in 1979 were only marginally higher than in the previous year, despite substantial gains in the value of exports of coffee and cotton.

In the Near East agricultural export earnings declined slightly owing to supply and marketing problems. Shipments of cotton, a key source of export income for the region, remained practically unchanged in terms of value, but declined in volume by over 100 thousand tons or about 13%.

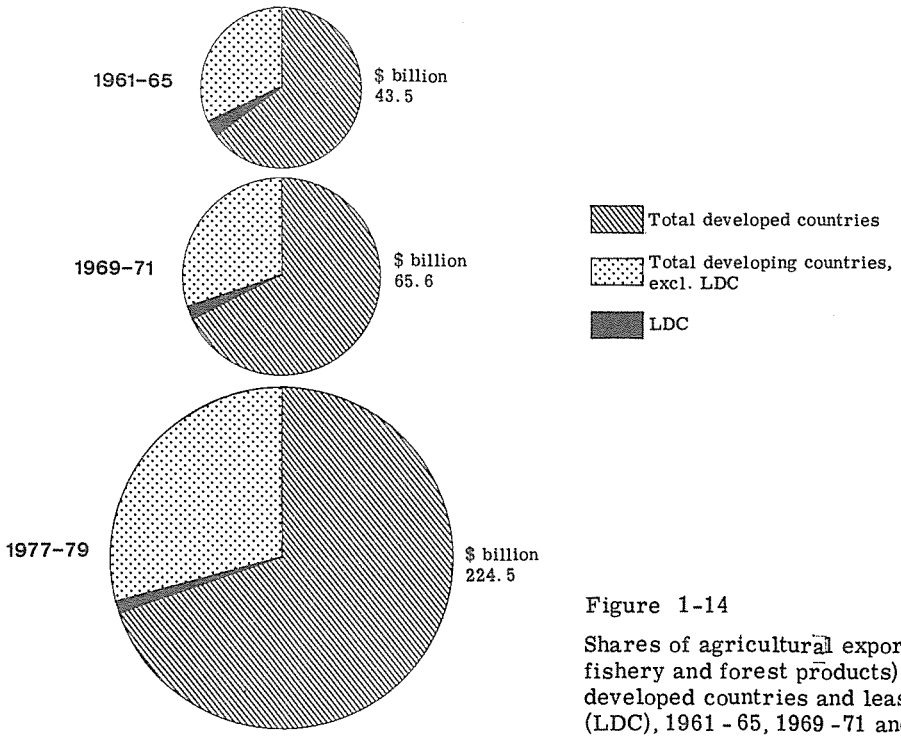


Figure 1-14

Shares of agricultural exports (crops and livestock, fishery and forest products) by developing and developed countries and least developed countries (LDC), 1961 - 65, 1969 -71 and 1977 - 79 averages

World exports of fishery products rose by nearly 14% in 1979, marking a slowdown in the rapid expansion that had taken place during the second half of the decade. In contrast to an increase of over 13% in the export earnings derived from fishery products by developing market economies, the fishery exports of Asian centrally planned economies declined so that earnings of the developing countries as a group from fishery exports increased by less than 9%, less than a half the average annual rate for the 1970s.

The world forestry sector and particularly trade in forest products, is being affected by the current world recession, but also by changes in wood marketing policies of some countries important in world trade in forestry products which have greatly affected the prices of some products. Earnings from exports of forest products rose by nearly 22% in 1979, almost double the increase in the previous year and above the average annual rate for the 1970s. The value of exports of forest products from developing market economies rose particularly fast, by over a third.

Turning to imports, a disquieting feature in recent years has been the accelerating dependence of developing countries on food and agricultural imports, the value of which rose, in constant prices, at an annual rate of nearly 7% during the past decade (Table 1-21). This rate is nearly twice that of the preceding decade and compares with an average

Table 1-21. Value at current prices of world agricultural trade (crops and livestock) by region

| | 1969-71 | 1977 | 1978 | 1979 | Change 1977 to 1978 | Change 1978 to 1979 | Annual rate of change 1970-79 current | Annual rate of change 1970-79 constant 1/ |
|---|---|---|---|---|---|---|---|---|
| | thousand million $ | | | | % | | | |
| Developing market economies | | | | | | | | |
| Export | 17.3 | 51.3 | 52.9 | 58.0 | 3.1 | 9.6 | 15.7 | 1.5 |
| Import | 9.4 | 32.5 | 38.8 | 43.6 | 19.4 | 12.4 | 20.0 | 7.1 |
| Africa | | | | | | | | |
| Export | 3.71 | 9.89 | 9.76 | 9.91 | -1.3 | 1.5 | 13.2 | -3.0 |
| Import | 1.55 | 5.84 | 6.90 | 7.22 | 18.2 | 4.6 | 20.4 | 7.4 |
| Far East | | | | | | | | |
| Export | 4.20 | 13.17 | 13.60 | 16.32 | 3.3 | 20.0 | 17.6 | 4.7 |
| Import | 3.64 | 10.13 | 11.51 | 13.17 | 13.6 | 14.4 | 16.6 | 5.0 |
| Latin America | | | | | | | | |
| Export | 7.30 | 23.65 | 24.71 | 26.95 | 4.5 | 9.1 | 17.0 | 2.5 |
| Import | 2.31 | 6.65 | 8.10 | 9.92 | 21.8 | 22.5 | 17.5 | 6.2 |
| Near East | | | | | | | | |
| Export | 1.90 | 4.11 | 4.25 | 4.20 | 3.4 | -1.2 | 10.0 | -1.6 |
| Import | 1.75 | 9.45 | 11.76 | 12.77 | 24.4 | 8.6 | 27.6 | 12.2 |
| Asian centrally planned economies | | | | | | | | |
| Export | 1.16 | 2.68 | 3.28 | 3.40 | 22.4 | 3.7 | 13.3 | 1.4 |
| Import | 1.18 | 4.25 | 5.02 | 6.43 | 18.1 | 28.1 | 19.2 | 6.2 |
| TOTAL DEVELOPING | | | | | | | | |
| Export | 18.4 | 54.0 | 56.2 | 61.4 | 4.1 | 9.3 | 15.6 | 1.5 |
| Import | 10.6 | 36.8 | 43.8 | 50.1 | 19.0 | 14.4 | 19.9 | 6.9 |
| Developed market economies | | | | | | | | |
| Export | 28.9 | 89.3 | 106.3 | 128.3 | 19.0 | 20.7 | 17.5 | 5.7 |
| Import | 40.1 | 111.9 | 124.9 | 146.2 | 11.6 | 17.1 | 15.5 | 2.6 |
| TOTAL DEVELOPED | | | | | | | | |
| Export | 32.7 | 97.8 | 114.6 | 137.9 | 17.2 | 20.3 | 17.0 | 5.2 |
| Import | 45.4 | 129.4 | 143.9 | 169.7 | 11.2 | 17.9 | 15.9 | 2.6 |
| WORLD TRADE | | | | | | | | |
| Export | 51.1 | 151.8 | 170.8 | 199.3 | 12.5 | 16.7 | 16.5 | 3.3 |
| Import | 56.0 | 166.1 | 187.7 | 219.8 | 13.0 | 17.1 | 16.7 | 3.5 |
| | % | | | | | | | |
| Share of developing countries in World agricultural trade | | | | | | | | |
| Export | 36 | 36 | 33 | 31 | | | | |
| Import | 19 | 22 | 23 | 23 | | | | |

1/ Constant values obtained by deflating current values of trade with the indices (1969-71=100) of export and import unit values of agricultural products.

increase of only 3.3% for developed countries. Imports of cereals, which represent a major component of total agricultural imports by developing countries, rose from an average of 40 million tons in the early 70s to about 89 million tons in 1979/80 and may rise further to 97 million tons in 1980/81. This increase illustrates the difficulties faced by developing countries to restrict imports as a means to reduce their foreign debt.

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

| | 1977 | 1978 | 1979 1/ | Change 1977 to 1978 | Change 1978 to 1979 | Annual rate of change 1970-74 | 1974-79 | 1970-79 |
|---|---|---|---|---|---|---|---|---|
| | ... 1969-71=100 ... | | | ..... % ..... | | | | |
| VOLUME | | | | | | | | |
| Food | 139 | 148 | 156 | 6.6 | 5.2 | 4.9 | 5.9 | 4.6 |
| Cereals | 150 | 167 | 175 | 11.3 | 4.7 | 7.8 | 6.1 | 5.7 |
| Feed | 173 | 199 | 202 | 15.1 | 1.8 | 7.2 | 10.3 | 8.3 |
| Raw materials | 103 | 109 | 109 | 5.4 | 0.4 | 0.8 | 2.3 | 0.5 |
| Beverages 2/ | 106 | 112 | 127 | 6.1 | 13.1 | 3.1 | 1.8 | 1.6 |
| VALUE | | | | | | | | |
| Food | 291 | 336 | 393 | 15.7 | 16.9 | 27.6 | 8.4 | 16.4 |
| Cereals | 294 | 351 | 412 | 19.4 | 17.4 | 35.3 | 3.9 | 17.2 |
| Feed | 400 | 418 | 490 | 4.6 | 17.2 | 32.1 | 16.4 | 19.2 |
| Raw materials | 227 | 239 | 272 | 5.5 | 13.6 | 20.8 | 8.3 | 12.0 |
| Beverages 2/ | 388 | 373 | 420 | -3.9 | 12.5 | 14.4 | 23.0 | 18.8 |
| UNIT VALUE | | | | | | | | |
| Food | 214 | 234 | 261 | 9.7 | 11.2 | 21.7 | 2.9 | 11.7 |
| Cereals | 197 | 214 | 239 | 8.5 | 11.9 | 25.8 | -2.0 | 11.1 |
| Feed | 230 | 207 | 238 | -9.9 | 14.8 | 22.7 | 5.3 | 9.9 |
| Raw materials | 222 | 222 | 250 | -0.2 | 12.9 | 21.5 | 4.9 | 11.4 |
| Beverages 2/ | 397 | 340 | 336 | -14.2 | -1.3 | 10.8 | 21.7 | 17.4 |

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

The growing imbalance in the growth of developing countries' agricultural exports and imports brought about considerable alterations in agricultural trade patterns. The value of agricultural exports of developed countries represented 81% of imports in 1979, compared to 72% ten years earlier: their agricultural trade balances had relatively improved. In contrast, agricultural imports by developing countries accounted for only 58% of the value of exports in 1969-71 compared to over 80% in 1979. The improvement in the developed countries' agricultural trade deficit and the corresponding deterioration of developing countries' surpluses partly reflected changes in supply and market conditions. For the developed countries, this reflects a purposeful policy adopted by some to achieve greater self-sufficiency in food and to exploit opportunities in the world market. In the case of many developing countries, however, this feature indicated difficulties in adjusting over-specialized production structures to changing demand both in world and their domestic markets. While this disturbing feature was evident to varying degrees in all developing regions, the situation appeared particularly unfavourable in Africa where agricultural exports actually declined in constant value by an average 3% per year during 1970-79, while imports were rising over 7% per year during the same period. The deterioration in the agricultural trade balances appears more significant in MSA countries, which typically depend on exports of a few agricultural products for their foreign exchange earnings. In these countries, the agricultural trade surplus in 1979 financed less than one-third of their non-agricultural trade deficit compared to one-half fifteen years earlier.

Terms of Trade and Purchasing Power of Agricultural Products of Developing and Developed Market Economies

In contrast to the two preceding decades in which the terms of trade of agricultural exports for manufactures appeared to deteriorate steadily 31/, no clear trend can be

31/ See Terms of Agricultural Trade, Volume I, Commodity Analysis, FAO, 1977.

discerned in the 1970s (Table 1-23). The sharp gains achieved by developing countries in the years of high commodity prices 1972-74 and 1976-77 were largely cancelled in 1975 and even more markedly in 1978-79. These movements were mainly determined by the price behaviour of a few commodities with a large weight in the export price index of developing countries, particularly tropical beverages. Preliminary data for the first half of 1980 indicate some improvement in the agricultural terms of trade of developing market economies, resulting from a slowdown in the rate of increase in export prices for manufactures (13% in the year ending June 1980 compared to 15% and 14% in 1978 and 1979 respectively) and increasing export prices for rice, maize, bananas and particularly sugar.

Table 1-23. Net barter and income terms of trade of agricultural exports for manufactured goods; developed and developing market economy countries and least developed countries

| | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
|---|---|---|---|---|---|---|---|---|---|---|
| | ..... 1969-71=100 ..... | | | | | | | | | |
| Net barter terms of trade of agricultural exports for manufactured goods | | | | | | | | | | |
| Developed countries | 100 | 99 | 103 | 122 | 127 | 116 | 110 | 105 | 99 | 97 |
| Developing countries | 102 | 97 | 97 | 110 | 127 | 113 | 115 | 137 | 116 | 108 |
| Least developed countries | 102 | 97 | 97 | 96 | 104 | 88 | 103 | 142 | 111 | 103 |
| Income terms of trade of agricultural exports for manufactured goods | | | | | | | | | | |
| Developed countries | 101 | 106 | 119 | 159 | 159 | 148 | 151 | 150 | 154 | 162 |
| Developing countries | 104 | 97 | 104 | 121 | 128 | 115 | 130 | 153 | 133 | 126 |
| Least developed countries | 104 | 97 | 101 | 103 | 93 | 77 | 103 | 126 | 87 | 89 |
| Constant values of agricultural exports | ..... thousand million $ at 1969-71 prices ..... | | | | | | | | | |
| Developed countries | 24.6 | 26.0 | 27.9 | 31.1 | 29.8 | 30.6 | 32.8 | 34.4 | 37.3 | 39.8 |
| Developing countries | 18.7 | 15.8 | 15.7 | 16.7 | 18.8 | 18.8 | 19.8 | 21.2 | 21.2 | 21.7 |
| Least developed countries | 1.5 | 1.5 | 1.6 | 1.6 | 1.3 | 1.3 | 1.5 | 1.2 | 1.1 | 1.3 |

Note: The indices of net barter terms of trade are calculated using FAO index numbers of agricultural export unit values (base 1969-71=100), while previous SOFA editions used the UN index of world export prices of agricultural products (base 1975=100). The two series may therefore be somewhat different.

The recent improvement in the agricultural terms of trade of developing countries may prove however short-lived, as the prices of several important export commodities tended to fall in the second half of 1980. In the year ending November 1980, export prices had declined by 42% for coffee, 29% for cocoa and 12% for tea, largely offsetting higher quotations for sugar, fruits and some non-food agricultural commodities such as cotton and rubber.

The absence of any real improvement in the agricultural terms of trade of developing countries is a disquieting feature insofar as price fluctuations are the main element behind changes in the purchasing power of exports. However, movements in the aggregate index of net barter terms of trade have only a limited significance at the country level. It may not move in the same way or even in the same direction as the index for an individual country. Furthermore changes in volumes of trade are excluded. In several countries including Argentina, Chile, Kenya and Thailand, a deterioration in the net barter terms

of trade of agricultural exports for total imports during 1970-78 was more than offset by increased volumes of agricultural exports. Conversely, improved commodity terms in Angola, Bolivia, Nigeria and Somalia were insufficient to compensate for reduced export volumes.

A better link between changes in countries' agricultural terms of trade and their capacity to finance imports is given by the index of income terms of trade, which takes into account changes both in the price and volume of agricultural exports. For developing countries as a whole, Table 1-23 shows that the variations in income terms of trade during the past decade followed fairly closely those of commodity terms of trade. But in the second half of the decade the index of income terms of trade showed a more favourable trend. In particular, substantial gains were achieved in 1976 and 1977 when high prices coincided with large volumes of agricultural exports. This trend was, however, reversed in 1978 and 1979 despite a continuing increase in the volume of agricultural exports. The experience of the low income countries was different. In the case of the Least Developed Countries (LDCs), their income terms of trade of agricultural exports for manufactured goods showed a steadily deteriorating trend through the decade except for 1977 32/. In terms of constant values, their agricultural export earnings in 1979 were 13% below their level of 1970 and nearly 20% below the peak years of 1972/73. The instability of their export markets particularly since 1975, is shown in Table 1-23.

For developed countries, the net barter terms of trade of agricultural exports for manufactured goods deteriorated slightly, for the fifth consecutive year, in 1979. Although the increase of 12% in agricultural export unit values in 1979 was the largest since 1974, it was still two percentage points below that of export unit values of manufactured goods. However, the growth in the volume of agricultural exports of developed countries of 9% and 7% in 1978 and 1979 respectively was sufficient to achieve a substantial improvement in the agricultural income terms of trade of these countries.

Recognizing that income terms of trade of agricultural exports for manufactures explicitly excludes the rising costs of imported energy, some preliminary analysis has been undertaken of income terms of trade in terms of total imports. Available data indicate that, between 1970 and 1978, the income terms of trade of agricultural exports for total imports deteriorated in 40 out of a total of 86 developing countries, improved in 37 countries, and remained relatively stable in nine. The losses in purchasing power of agricultural exports appeared to be particularly severe in 14 developing countries, for which the index of income terms of trade deteriorated on average by more than 10% per year. The worse cases were found in Africa. For example, in Niger the purchasing power of agricultural exports for total imports deteriorated by as much as 22% per annum, reflecting widely fluctuating exports, particularly in groundnut oil, and steadily declining export volumes of livestock and millet. In Benin and Mozambique exports of cotton lint declined contributing to a 17% yearly deteriorating in the purchasing power of exports in both countries. In the Far East region Bangladesh suffered from an average 5% yearly decrease in the volume of jute shipments which, added to weakening prices, resulted in an average decline of 13% per year in the income terms of trade of agricultural exports. A satisfactory growth in the volume of the main agricultural export commodities in India was offset by falling export prices and the income terms of agricultural trade remained stagnant.

More thorough studies are underway and will be published in future issues of the State of Food and Agriculture. The few country examples illustrate, however, the magnitude of the problems faced by many developing countries with a high average propensity to import, high dependence on a few agricultural commodities for their export earnings, and inadequate import-saving growth in agricultural output.

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32/ It must be recalled also that these are terms of trade of agricultural exports for manufactures. They imperfectly reflect their deterioration in terms of energy except that part of higher energy costs captured by the prices of manufacturers.

Commodity Market Situation and Prospects

The weakness of world import demand for agricultural products in 1980, combined with specific demand and supply factors, was reflected in declines in the prices of many commodities of export significance to developing countries, such as coffee, cocoa, tea, most oilseeds, citrus fruits, sisal and jute. For these countries, sugar, bananas, cotton and rubber were the main exceptions with export prices higher than in 1979. In contrast, prices of the main agricultural commodities imported by developing countries, notably cereals, increased in 1980. The price developments in 1980 suggest a further deterioration in the overall agricultural trade balance of the developing countries in the short run, particularly as the general economic outlook points to little improvement in world import demand for many agricultural commodities. On the other hand, the rapid increase in oil prices in 1979 and 1980 has increased the competitive position of some commodities such as natural rubber vis à vis their oil based, synthetic competitors.

World trade in cereals in 1980/81 is forecast at more than 200 million tons, a record some 4% above the previous year's level. The increase is largely accounted for by increased shipments to the developing countries, mostly to the low income countries. There were marked rises in prices in grain markets, particularly during the first half of the season. The largest increase was for maize: by the end of December 1980, United States export prices of US Yellow No. 2 were about 23% more than at the opening of the season in July and the highest since 1974. Quotations for US No. 2 Hard Red Winter wheat f.o.b. Gulf also rose by almost 20% between early July and mid November. Since then, prices of both wheat and maize have fallen somewhat, but they have remained above last year's levels. The price of Thai white rice 5% was US$ 470 by the end of December 1980, more than 20% higher than a year earlier.

Large supplies in 1980 brought about increased competition on world markets and falling prices for most oilseeds, oils and oilmeals in the first half of the year. The price fall was reversed in the third quarter of 1980 reflecting prospects for reduced world oilseeds harvests later in the year because of cuts in area and unfavourable weather. In 1981 world output of fats and oils and of oilcakes and meals will decline. This will not result in a shortage of supplies although it will be necessary to draw on inventories to meet demand. Overall, current supply/demand prospects for these groups of commodities point to a tighter situation than in 1979/80 when production exceeded demand, stocks accumulated and prices fell.

Supply and demand prospects suggest that the volume of trade in livestock and meat may not grow significantly in 1981. On the import side the petroleum exporting developing countries, the USSR and eastern Europe are likely to remain the main growth areas. Developed countries, however, are not expected to increase their imports significantly. EEC countries will again export substantial quantities and Oceania's exports of sheepmeat, if not of beef, will increase. There is likely to be an increase in current prices of most types of meat in international trade in 1981 but there is little prospect of any substantial rise in real terms.

World sugar production in 1979/80 fell short of consumption by more than 5 million tons. By the end of the year world stocks had fallen by nearly 5 million tons and prices rose markedly. Production in 1980/81 is expected to be only moderately above the previous year's level and again below expected consumption. A further decline in stocks of 3 million tons is therefore anticipated during the current season.

With slackening demand, coffee prices registered sharp falls in 1980. Future market developments will be largely determined by the degree of success achieved by member countries of the International Coffee Agreement in their reactivation of the quota mechanism of the Agreement decided on in October 1980. Prices could, however, come under further downward pressure if the 1981/82 bumper crop forecast by Brazil is realized.

Reduced shipments and lower prices caused a fall in export earnings from cocoa in 1979. For 1980/81, despite some increase in grindings, there is a prospect of a further addition to stocks and some further pressure on prices which declined continuously in 1979/80.

There was a 5% increase in the volume of tea exports in 1979 but, with some fall in prices, there was a decline in their value for the second year in succession. It appeared likely that there would be a further moderate increase in import demand in 1980 but with continuing downward pressure on prices. With the likelihood that production would again increase in 1980, the outlook for 1981 pointed to further downward pressure on world market prices, except for top quality teas.

For bananas, a tight supply situation is likely to continue until the second half of 1981 and prices are expected to remain high in the short term. But the outlook is not reassuring in some respects since exporters and importers continue to suffer from the cost-price squeeze and declining profitability. Further price increases, moreover, might discourage consumption.

The value of world cotton exports rose by about 10% in 1979, reflecting mainly a rise in prices and it was expected that there would be a continued rise in 1980. While global cotton usage may fall in 1981, rising costs of petroleum-based feedstocks for the production of synthetic fibres make it unlikely that the competitive position of cotton will deteriorate to any notable extent.

An increase in stocks of raw jute and kenaf in 1980 brought drastic price falls in 1979/80. In contrast, prices of jute products rose sharply in early 1979 and continued at very high levels until the first quarter of 1980. While supplies of fibre were likely to remain ample in 1980/81, an improvement in their prices in early 1981 is possible if domestic mill consumption in Bangladesh and exports are maintained and stocks are reduced. Prospects for trade in jute goods in 1981 were unclear though much depended on the maintenance of their competitive position vis-à-vis synthetics.

There was an expansion in demand for agricultural sisal twines in 1979 but preliminary data pointed to a decline in twine usage in 1980. With the revival of demand, average prices in 1979 were nearly 50% above the 1978 level but they weakened again towards mid-1980. With resumed penetration of the twine market by synthetics, demand for sisal is likely to shrink further in 1981 and prices will remain under pressure.

Prices of hides and skins were high in 1979 and earnings from exports of raw hides and skins and their products rose substantially. Prices lost much of these gains in 1980 with the contraction in the demand for raw materials. Demand and trade prospects for 1981 are uncertain with the deterioration in the world economic situation.

World exports of natural rubber rose by 2% in volume in 1979 and probably changed little in 1980. World demand in 1981 could exceed production, thus bringing about a further reduction in stocks. Prices rose considerably from 1977 to early 1980 after which they fell back to their 1979 level with the general slowdown in world automobile production. They recovered later in 1980 and 1981 may see some further rise.

There was a slight decline in the volume of world trade in tobacco in 1979 but the value of exports was well maintained. In 1980, economic recession, inflation, high interest rates and the effects of anti-smoking campaigns in developed countries were expected to keep world trade in unmanufactured tobacco at or near the 1979 level, especially in view of the plentiful stocks in importing countries. Growth of consumption was slowing down, especially in developed countries. In 1981, world production and demand were expected to level off, continuing the trend towards much slower growth. Developing countries appeared likely to increase further their share of the market.

## Trade in Fishery Products

The value of world trade in fishery products was again higher in 1979 but of the 19% increase roughly one third was due to increased quantities and two thirds to price increases (Table 1-24). All major product groups showed some increase in quantities exported but particularly prominent were exports of shellfish and fish meal. Exports of cured fish which until the mid-seventies had fallen for many years, continued their recovery reaching their highest point since 1970. Part of the explanation for the turn round in trade in this commodity group is the gradual replacement of traditional low cost products by luxury and semi-luxury items with much higher income elasticities of demand.

Table 1-24. Index numbers of value and volume of exports of fishery products, world and developing and developed countries

| | 1977 | 1978 | 1979 | Change 1977 to 1978 | Change 1978 to 1979 | Annual rate of change 1970-74 | 1974-79 | 1970-79 |
|---|---|---|---|---|---|---|---|---|
| | ...1969-71=100 ... | | | ..... % ..... | | | | |
| VALUE | 324 | 380 | 453 | 17.3 | 19.2 | 20.6 | 18.5 | 18.0 |
| Developing countries | 387 | 445 | 526 | 15.0 | 18.2 | 18.1 | 22.4 | 20.6 |
| Developed countries | 295 | 350 | 418 | 18.6 | 19.4 | 22.2 | 16.4 | 16.6 |
| VOLUME | 137 | 152 | 162 | 10.9 | 6.6 | 2.8 | 8.2 | 5.1 |
| Developing countries | 172 | 185 | 197 | 7.6 | 6.5 | 3.0 | 11.7 | 7.5 |
| Developed countries | 146 | 166 | 176 | 13.7 | 6.0 | 3.1 | 11.1 | 6.4 |
| UNIT VALUE | 244 | 257 | 283 | 5.3 | 10.1 | 18.9 | 9.5 | 12.4 |
| Developing countries | 238 | 246 | 271 | 3.4 | 10.2 | 19.6 | 8.6 | 11.9 |
| Developed countries | 216 | 232 | 255 | 7.4 | 9.9 | 19.2 | 6.6 | 10.4 |

There has also been a sharp increase of over 10% in trade in aquatic plants and derived products, in particular dried seaweeds both for industrial purposes and human consumption. The value of such trade, now around $ 175 million, increased by some 20% due to a significant growth in the unit value of the products traded.

Developing countries figure prominently in the source of the increased exports. Almost all countries in Latin America increased their overseas sales of fishery products but in particular Chile, Peru and Argentina may be mentioned. In Asia exports from both India and Thailand increased but sales by some other traditional exporters, such as Korea, fell. Trade between developed countries which accounts for around two-thirds of all trade in fishery products, again grew in 1979, although the quantities exported from Canada, now the world's major exporter of fishery products, showed little change.

Fish prices generally increased in 1979 but there was some weakening in the second half of the year and the first half of 1980. With no significant change in the world catch in 1980, trade developments in the short run, until mid-1981, are more likely to be affected by demand factors rather than supply problems.

Trade in Main Forest Products

World trade in forest products increased appreciably in 1979 (Table 1-25). The developing country contribution to trade is principally in roundwood where they account for 40% by volume, in sawnwood 13% and wood-based panels 30%. These proportions as well as the total volume of trade are substantially higher than at the beginning of the decade.

Table 1-25. Volume of exports of main forest products, world and developing and developed countries

| | 1977 | 1978 | 1979 | Change 1977 to 1978 | Change 1978 to 1979 | Annual rate of change 1970-74 | 1974-79 | 1970-79 |
|---|---|---|---|---|---|---|---|---|
| | .... million m3.... | | | .....% | | | | |
| INDUSTRIAL ROUNDWOOD | 114.6 | 114.1 | 118.2 | -0.4 | 3.6 | 6.8 | 2.7 | 2.8 |
| Developing countries | 46.6 | 48.1 | 47.6 | 3.4 | -1.1 | 5.3 | 3.4 | 2.1 |
| Developed countries | 68.0 | 65.9 | 70.6 | -3.1 | 7.1 | 5.3 | 2.2 | 3.3 |
| PROCESSED WOOD PRODUCTS | | | | | | | | |
| Sawnwood and sleepers | 73.8 | 78.4 | 82.7 | 6.3 | 5.4 | 3.5 | 8.1 | 3.3 |
| Developing countries | 9.3 | 9.3 | 11.0 | -0.4 | 18.4 | 8.4 | 8.8 | 6.3 |
| Developed countries | 64.5 | 69.1 | 71.7 | 7.3 | 3.7 | 2.9 | 8.0 | 2.9 |
| Wood-based panels | 14.6 | 15.9 | 16.3 | 9.0 | 2.4 | 9.7 | 5.8 | 5.2 |
| Developing countries | 4.8 | 5.4 | 5.1 | 11.2 | -5.2 | 10.6 | 7.8 | 6.0 |
| Developed countries | 9.8 | 10.5 | 11.2 | 7.9 | 6.3 | 9.3 | 4.9 | 4.9 |
| | .. million metric tons.. | | | | | | | |
| Pulp | 17.1 | 19.0 | 19.7 | 11.2 | 3.7 | 4.7 | 2.4 | 1.6 |
| Developing countries | 0.6 | 0.9 | 1.2 | 48.1 | 36.5 | 15.1 | 16.9 | 12.1 |
| Developed countries | 16.5 | 18.1 | 18.4 | 9.9 | 2.1 | 4.5 | 1.7 | 1.3 |
| Paper and paperboard | 28.3 | 30.1 | 33.0 | 6.4 | 9.6 | 6.8 | 3.9 | 3.1 |
| Developing countries | 0.6 | 0.6 | 0.7 | 11.3 | 8.8 | 15.0 | 8.0 | 8.8 |
| Developed countries | 27.7 | 29.5 | 32.3 | 6.3 | 9.6 | 6.7 | 3.8 | 3.0 |

During 1979 the volume of roundwood exports of developing countries was slightly below the total for 1978, as was the volume of wood-based panels. Developing countries' exports of sawnwood on the other hand increased by some 18%.

As a result of a further tightening of restrictions on the export of unprocessed roundwood, exports of logs by countries of south east Asia fell by some 10% in 1979 and prices increased to levels three times those of the previous year. Though prices have fallen from these peaks in some cases, they are still more than double the levels of 1978. The uncertainty in this market was reflected mainly by a reduction in supply from countries of developing east Asia dependent on log imports for the manufacture of wood products. Their exports of plywood, mainly to the United States, fell by some 20% because of the greatly increased cost of raw material and a decline in market demand.

The level of European and North American trade, dominated by the trade in coniferous sawnwood, was, on balance, stable with a slight reduction in North American trade being offset by an increase in Europe.

Trade in pulp and paper was maintained at the level of 1978 and the trade in pulp was notable for the increased exports from Brazil, China and Portugal.

The drastic decline in the United States market for sawnwood and panels in the first half of 1980 has led to a situation where both the United States and Canada have been seeking additional overseas market outlets. The combination of the lost American market and increased competition has had a sharp impact on developing country exports of sawnwood and wood-based panels.

The pulp and paper market was much less affected by recession and though prices have increased less in 1980, the supply situation particularly for developing country importers remains tight.

Recent Discussions and Intergovernmental Actions on Trade Problems and Issues

Commodity trade problems continue to be the subject of discussion and negotiation in several international forums 33/. A major development in 1980 was the successful conclusion of the negotiations on the UNCTAD Common Fund with the adoption in June 1980 of the Agreement Establishing the Common Fund for Commodities. The Common Fund will consist of two distinct accounts, a First Account which will contribute to the financing of internationally coordinated national stocks in a framework of international commodity agreements, and a Second Account which will finance other measures through approved commodity bodies, including research and development, productivity improvements and market development for individual commodities. The Common Fund is discussed at greater length in the following section which highlights selected policy issues.

A number of meetings were also held in 1980 under the framework of the UNCTAD Integrated Programme for Commodities. Some encouraging results were achieved towards the agreement on measures to be eventually financed under the Second Account of the Common Fund but no major progress was made in the field of market stabilization.

Meetings and negotiations on individual commodities included a negotiating conference for an international jute agreement in January 1981; the gathering of a Panel of Experts on vegetable oils and oilseeds to prepare a research and development programme for groundnuts and coconuts; and a number of preparatory meetings on hard fibers, cotton and cotton yarns, meat, tea and bananas.

Among major developments on international commodity agreements, the International Coffee Council reactivated in October 1980 the economic provisions of the 1979 International Coffee Agreement. The extremely strong rise in sugar prices early in 1980 rendered the export restrictions of the 1978 International Sugar Agreement inoperative during the year. A third International Cocoa Agreement was established in November 1980 after a number of difficulties, particularly on an appropriate price range, were finally overcome. Other developments were the entering into provisional force in October 1980 of the International Price Stabilization Agreement on Natural Rubber and the examining by the International Wheat Council of a new Wheat Trade Convention, simpler and more flexible than the one which was considered in 1979.

As regards action under FAO auspices, the various intergovernmental commodity groups held numerous meetings in 1980 to consider price and market arrangements, guidelines on national and international action and cooperation and possible commodity agreements.

Other important trade issues have been considered in discussions and negotiations of the GATT Contracting Parties. It was decided to bring into the GATT framework the agreements resulting from the Tokyo Round of multilateral trade negotiations. Negotiations

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33/ These issues are covered in greater depth in the Commodity Review and Outlook, 1980-81, FAO, 1981.

will continue on the rules on emergency safeguard action against disruptive imports. Two Sub-Committees were established to examine cases of protective measures being adopted by developed countries against imports from developing countries, in particular the least developed ones. It was agreed in UNCTAD to extend the duration of the Generalized System of Preferences which was due to expire in 1981, and to hold a comprehensive review of the operation of the System in 1990.

## REVIEW OF SELECTED POLICY ISSUES

This review covers a few of the more important issues related to agricultural development which currently demand international attention. World food security in its broadest sense merits particular attention at this time when the food situation is characterized by a global alert.

As part of the broader set of issues relating to the more balanced and just utilization of the world's resources and global development, the adoption by the UN General Assembly in December 1980 of the new International Development Strategy for the Third Development Decade (DD3) was an important step. Agriculture has a more accentuated role in the new strategy.

The UN Conference on LDCs, schedules to take place in September 1981, and the adoption of the substantial New Programme of Action for the 1980s warrant special and close scrutiny as they will affect the livelihood of some of the poorest and least privileged people of the world over the next decade and longer.

Agricultural trade presents a number of intractable problems. The Common Fund, part of the Integrated Programme of Commodities, not all of which are agricultural, is an attempt to tackle the problems of the stability and adequacy of earnings derived from the export of primary commodities by developing countries. The conclusion of the agreement on the Common Fund in 1980 and its near establishment - it should begin operations in early 1982 although its ratification has been regrettably slow - will enable a set of financially interlinked buffer stocks of these commodities to be set up and commodity development work to be undertaken.

Finally, but certainly not the least, comes the issue of energy and the agricultural sector: the energy it consumes and the renewable energy that it may provide, These two sides of the issue are linked to national and international policies towards agricultural development which demand attention.

### World Food Security

Famine and widespread food shortages call for much greater action by the international community to mitigate the mounting human suffering. Unfavourable crops combined with the results of civil strife and natural disasters, have caused a serious worsening in the food supply situation in 1980 of the poorest developing countries. Despite generous responses by several donors, the overall international response has so far been inadequate.

This demonstrates, yet again, that the present food security arrangements, both at national and global levels, are insufficient to avoid acute food shortages even at times when there are sufficient world supplies to cover the additional needs. In particular:

(a) Food production must be expanded at a faster pace in the developing countries, particularly in the poorer countries which are deficit in food and mainly dependent on agriculture for their development. Such countries need to intensify their efforts towards their self-reliance, as well as to receive greater support from the international community.

(b) To enable developing countries to meet their food import needs in times of widespread crop failure, it is necessary to increase food aid, to provide for minimum commitments under the International Emergency Food Reserve (IEFR) and to provide financing facilities to cover exceptional food import bills.

(c) In view of the continuing lack of an international grains arrangement with effective provisions for grain reserves, developing countries need to establish mutual assistance arrangements including regional reserves.

(d) Measures to improve preparedness against large-scale food shortages, both at the national and international level, need to be strengthened so that the international community can respond effectively to major emergency situations.

The FAO Council at its Seventy-Eighth Session expressed its grave concern at the serious deterioration in the world food security situation and recognized the importance of remedial measures. In particular it welcomed the decision of the Committee on Food Aid Policies and Programmes to consider at its Eleventh Session the Director-General's proposal to develop the IEFR into a legally binding convention. It also welcomed the attention being given by the International Monetary Fund (IMF) to the feasibility of providing additional balance of payments support for meeting the rise in food import bills of low-income, food deficit countries. The FAO Council urged governments to make additional voluntary contributions and/or to coordinate their bilateral assistance where appropriate, in order that the resources available through the Food Security Assistance Scheme were sufficient to respond to the increasing requirements for assistance. The Council also requested the Committee on World Food Security (CFS) to pay special attention to the possibilities of increasing collective self-reliance through the setting up of regional food security schemes. The Committee was also asked to invite the International Wheat Council to report on progress towards establishing a new wheat trade convention and to consider any further action to safeguard world food security, especially of developing countries, as specific in the Plan of Action on World Food Security and in pursuance of the FAO Conference Resolution 3/79.

Noting that the Ad Hoc Working Party on Preparedness to cope with acute and large-scale food shortages set up by the Committee on World Food Security had concluded a productive meeting, the FAO Council requested the Committee at its Sixth Session to make specific proposals on ways of improving preparedness both at national and international levels, taking into account the findings of the Ad Hoc Working Party.

Agricultural and the New International Development Strategy

The United Nations General Assembly, at its 35th Regular Session, adopted the text of the New International Development Strategy (IDS) for the Third UN Development Decade (DD3). The IDS aims at accelerated development of the developing countries, as an integral part of the efforts of the international community to establish a new international economic order. Among other things, it sets a target of 7% for the average annual growth rate of GDP for the developing countries as a whole during the Decade. Within this overall framework certain goals and objectives for the food and agricultural sector are formulated.

High among these goals is that hunger and malnutrition must be eliminated as soon as possible and certainly by the end of this century. To achieve such a goal, substantial progress should be made during DD3 towards food self-sufficiency and food security in developing countries and their agricultural production should expand at an average annual rate of at least 4%, as for the Second UN Development Decade (DD2). Such a rate of expansion wo also promote the enlargement of the economic base for industrialization of developing countries, the diversification of their economic structures and the redressal of the current imbalances in world agricultural production. Another objective calls for a substantial increase in the developing countries' share of world exports of food and agricultural products. To these ends, the developing countries should continue to strengthen their food and agricultural development plans within the context of their national development priorities and programmes. Additional external resource transfers, as well as an improved framework for agricultural development and trade of the developing countries would be necessary to provide support to their development efforts.

The policy measures to achieve the goals and objectives of agriculture are spelled out in greater detail than in the IDS for DD2. They relate, on the one hand, to action by the developing countries, especially to accelerate food and agricultural production to improve national and collective food self-sufficiency and to achieve greater equity in the distribution of benefits; and, on the other hand, to measures of support by the donor countries

and international institutions, especially the transfer of resources, food security, food aid and trade.

Emphasis has been placed on the pursuit by developing countries of effective policies to mobilize domestic resources, disseminate new and improved technology, provide appropriate price incentives, expand the distribution of credit, improve storage and transportation and reduce food losses. National policies and programmes should give priority to achieve wider and more equitable access to land, water and national resources, the effective management of forests, pastures, water and other resources, the conservation of soil and the improvement of the productive capacity of land.

Implementation of the conclusions and recommendations of the World Conference on Agrarian Reform and Rural Development (WCARRD) has been included among the priority measures to be taken by all countries. The implementation of agrarian reforms in conformity with national plans and priorities of developing countries, adaption of their institutional frameworks, development of social and economic services, adequate public utilities and non-agricultural employment in rural areas, particularly in agro-related industries, are among the national policy measures emphasized for the promotion of agricultural and rural development.

Donor countries and international financial institutions should take all possible steps to increase the flow of financial resources to support the efforts of developing countries to increase substantially investment in agriculture, including the financing of local and recurrent costs. The resources of the International Fund for Agricultural Development (IFAD) should be replenished on a continuing basis and at a sufficient level. The international community is also called upon to commit additional resources to intensify research particularly on techniques that demand less costly inputs, but rely more on renewable ones to disseminate more effectively and widely the results of research on improved agricultural technologies, and to support measures to provide agricultural inputs and efforts aimed at the prevention of food losses, and the control of desert locust and of African trypanosomiasis.

Urgent measures to establish effective world food security should be taken early in the Decade. Reflecting the increased concern of the world community over this issues, it is agreed that world cereal stocks should be maintained at an adequate level in relation to increasing consumption and that concerned efforts will be made to conclude an international grains arrangement, including a coordinated system of nationally held food reserves. FAO's Plan of Action on world food security is emphasized as an interim measure which countries should implement on a voluntary basis, and additional resources should be committed to its FSAS. The targets of at least 10 million tons of food aid and at least 500 thousand tons of emergency food aid are reaffirmed for a renewed food aid convention and for the IEFR respectively and it is stressed that they should be regularly examined in the light of needs.

The resources of the World Food Programme (WFP) should be augmented and maintained in line with its biennial targets. Support is given also to proposals for making the IEFR into a legally binding convention and for providing, within the context of IMF's financing facilities, additional balance of payments support for meeting the rise in food import bills of low income, food deficit countries.

UN Conference on the Least Developed Countries

The UN General Assembly in 1979 had endorsed a decision adopted by UNCTAD V to launch the substantial New Programme of Action for the Least Developed Countries for the 1980s and decided to convene a United Nations Conference on the Least Developed Countries in 1981. The Programme of Action reaffirmed the immediate need for a greatly expanded increase in the transfer of resources to meet the critical needs of the least developed countries (LDCs) and to help promote their rapid and self-sustained socio-economic development.

The General Assembly has now decided that the UN Conference to "finalize, adopt and support" the new programme of action will be held from 1 to 14 September 1981 in Paris. The Conference will be preceded by donor-recipient meetings at which programmes, prepared by individual least developed countries and giving estimates of assistance required from bilateral and multilateral donors, will be reviewed, the reviews providing the basis for consideration of the Programme of Action at the Conference.

FAO has been actively cooperating with UNCTAD in the preparatory work for the UN Conference on LDCs, and has been providing assistance to individual countries in preparing their country programmes in the food and agriculture sector. It has also prepared a paper on "Food and Agriculture in the Least Developed Countries in the 1980s: Problems and Prospects" for consideration by the Conference. The main points put forward in this paper form the basis for the following discussion.

Although the LDCs, the 30 poorest of the developing countries - 20 of them being in Africa - differ widely in many respects, they share the common characteristic of being predominantly agricultural. Their food and agriculture sectors contributed in 1975 more than half to their combined GDP against 21% for all developing market economies, employed 83% of their populations and provided 66% of their total export earnings compared with 65% and 21% respectively for all developing market economies. Therefore, the pace and pattern of their economic and social development would be significantly determined by the growth of production and productivity in agriculture.

Unfortunately the recent performance of the LDCs in food and agriculture has been typified by negative growth rates of per caput food and agricultural output, chronic food insecurity, a stagnant or deteriorating nutritional situation, stationary or declining agricultural exports, declining terms of agricultural trade, and rapidly rising imports of food and agricultural commodities, especially of cereals. Although there has been some increase since 1973-75 in the volume of food aid and in official commitments to external assistance for agriculture in the LDCs, their ability to finance imports of capital goods out of their agricultural export earnings has been steadily declining so that their dependence on external assistance for sustaining their development has been increasing at a faster rate.

There are a number of constraints which limit the development of food and agriculture in the LDCs. These are not different from the ones faced by the other developing countries except in degree and scale. They arise in some countries from the nature and degree of the pressure on their natural resource base for agricultural production; in others from their geographic location and size; but in most LDCs these constraints arise from inadequacies of institutions, trained manpower and investment resources. An important constraint frequently occurring in these countries is a highly skewed income distribution which worsens poverty and hinders development. Agrarian reform could alleviate the consequences of unequal income distribution by improving the access to land and water resources and to modern inputs, but major obstacles to such programmes may exist such as political and legal difficulties, financial limitations and the lack of administrative skills, as have been discussed at the World Conference on Agrarian Reform and Rural Development (CARRD) in 1979.

FAO's assessment of demand growth, potential for land and water development, and the possibilities of increased food and agricultural production in the LDCs, based on the results of its study Agriculture: Toward 2000, shows that demand for food and agricultural commodities in the period 1975-1990 is expected to increase at the average annual rate of 3.5%. If the degree of their food self-sufficiency is not to fall further below 1975 (92%), and the volume of their food imports, especially cereals, is to be stabilized at the 1975 level (4 million tons), the growth rate of food and agricultural production in the LDCs would be required to rise from the trend growth rate of 1.6% per annum to 4.2% per annum for the period 1980-1990. If achieved, this rate would improve per caput availability of dietary energy supplies as a proportion of requirements in the LDCs from 86% in 1975 to 96% and reduce the proportion of the undernourished in the total population from an estimated 32% in 1975 to 20% by 1990. However, the absolute number of undernourished persons would

only slightly deoreased from 76 million in 1975 to about 72 million in 1990 and the improvement in nutritional levels in a deoade and half would be only about 12%.

Faoed with suoh an expansion in the demand for food in the LDCs and to stabilize their food imports, partioularly oereals, at the levels of the mid-1970s, the appropriate polioies promoting agrioultural and rural development will have to be designed and implemented and high priority assigned to agrioulture in the allooation of resouroes. The produotion inoreases are feasible. For example, AT 2000 shows that to inorease oereal produotion of the LDCs to target levels, the rainfed harvested area would need to inorease by 3 million ha between 1975 and 1990, or less than 10%, mostly in the land-abundant LDCs of Afrioa. The irrigated area under oereals would need to be inoreased by a more daunting 77%, mostly in the LDCs of Asia and the Paoifio, and the intensity of its use inoreased by 75% to 117%, effeotively raising the irrigated harvested area by another 56%.

Average oereal yields ourrently are low in the LDCs, amongst the lowest in the world. There exists great potential for raising them through the wider adoption of irrigated farming and the more intensive use of inputs suoh as fertilizers. Thus in the 12 land-soaroe LDCs, average oereal yields are projeoted to inorease by 39% between 1975 and 1970, an annual rate of inorease of between 2% and 2.5%. For the land abundant LDCs, the expeoted inorease in average oereal yields is more modest at 16% or just about 1% per annum.

Not only will suoh an expansion in agrioultural produotion demand a major shift in emphasis in the national polioies of LDCs, but it will also oall for inoreased support from the international oommunity.

A oonservative estimate of the external assistanoe required annually for agrioulture, narrowly defined, in the LDCs alone exoeeds US$ 4 billion in 1975 prioes by 1990. The provisional estimate of offioial assistanoe to LDCs agrioulture in the "narrow" definition in 1979 is US$ 816 million in 1975 prioes, implying that an annual inorease in real terms of nearly 16% in external assistanoe will be required, oompared with 12.5% in the reoent past. In faot an even faster aooeleration is immediately needed beoause of the arrears of ourrent flows of external assistanoe in the faoe of investment requirements. Moreover, the present terms, oonditions and modalities under whioh external assistanoe is presently provided to the LDCs will need to undergo major improvements. A more flexible approaoh by external funding agenoies is required to grapple with the problems faoing LDCs to effeotively utilize investment funds. Suoh an approaoh would inolude investment support to the seotor rather than finanoing of individual projeots; the support of looal investment oosts; the funding of reourrent expenditures arising from investments both during the period of implementation and after the disbursement period is oomplete; and greater oontributions on a grant basis towards the preparation of projeots.

Developed oountries also will need to maintain and expand the aooess of their markets to exports of LDCs. Other developing oountries oan also assist through eoonomio and technioal oooperation.

## Trade Issues in the Common Fund

In a year whioh was not notable for substantial progress in intergovernmental efforts to improve the conditions of international oommodity trade, the oonolusion of negotiations in June 1980 on the UNCTAD Common Fund must be aooounted a suooess. As has been briefly desoribed elsewhere in this report, the Common Fund, whioh is expeoted to begin operations in 1982, will exeroise two broad funotions. Through its First Aooount with a capital of $ 400 million entirely from direot oontributions of member states, it will support the financing of internationally ooordinated national stooks held under international oommodity agreements. Through its Seoond Aooount having $ 350 million as oapital - $ 70 million as direct contributions and the balanoe as voluntary oontributions - it will finanoe other measures, including research and development and improvements in produotivity, prooessing and marketing, primarily to strengthen the oompetitive position of developing exporting oountries. Using this dual approach, the Common Fund, for the purposes of the First Aooount, will operate through existing and future international oommodity bodies administering international

agreements while, for the purposes of the Second Account, it will provide finance either to these bodies or other approved commodity bodies.

Thus, in the financing of stocks, the Fund's effective operation will depend on the association with it of existing international commodity agreements which include buffer stock arrangements and on the negotiation of new agreements. By providing additional resources for the financing of buffer stocks under these agreements, the Fund can serve as an additional arm in efforts to bring about stability of prices in international markets. Its success is however conditional on the realization of effective commodity agreements incorporating buffer stock arrangements. These depend primarily on the degree of success achieved in the negotiation of such difficult problems as the selection of price ranges and their adjustments needed to cope with wide price movements caused by changes in supply and demand, exchange rate fluctuations or other market disturbances. Nor does the existence of the Fund make any less important other approaches towards raising and stabilizing the export earnings of developing countries such as the STABEX Scheme under the Lomé Treaty, the Generalized System of Preferences (GSP) and the mitigation of protectionism.

Under the Fund's Second Account, operations can be started as soon as the Agreement enters into force.

Projects to be financed will be jointly sponsored and followed up by producers and consumers through approved commodity bodies. The Agreement provides for the Fund to enter into agreements and establish working arrangements with other organizations for these purposes. It is possible to envisage a wide range of commodity development measures of a technical or marketing character that might qualify for assistance under this Account and good progress has already been made towards the preparation of projects for potential financing.

The need for governments to speed up the process of signing and ratifying the agreement was underlined at a meeting held in February 1981 of the Preparatory Commission serviced by UNCTAD which, pending the entry into force of the agreement and the first meeting of the Governing Council of the Fund, is preparing proposals for its administration and management. Although the agreement opened for signature on 1 October 1980, by mid-February 1981 only about 70 governments out of the 90 needed, representing less than 60% of the sum needed in directly contributed capital ($ 470 million) have signed, and none has ratified.

## Agriculture as a user and a source of energy [34/]

Public and government awareness of the growing seriousness of the energy problem is reflected in the decision of the United Nations to convene a Conference on New and Renewable Sources of Energy in August 1981. For agriculture and the rural sector in general, the energy problem is crucial. Although agriculture uses only a very small proportion of total world consumption of commercial energy [35/], the increasing cost of energy and the prospective depletion of fossil-fuel resources hold serious implications for future food supplies, food prices and the balance of payments of food importing countries. Modern agriculture, including fisheries and forestry, is highly dependent at present on fossil fuels for its inputs and its requirements of energy will grow steadily in the future given the imperative need to expand food production. It is essential that this priority claim of agriculture should be recognized in national energy policies. But it is also essential that agriculture should make efficient and economical use of the energy it consumes.

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34/ For a fuller discussion of this subject, see FAO The State of Food and Agriculture 1976 and FAO Energy in Agriculture and Rural Development, COAG/81/9.

35/ It has been estimated by FAO that in 1972/73 agricultural production accounted for about 3.5% of total world use of commercial energy. This estimate does not include the energy used by the rest of the food system, i.e. the processing, transport, marketing and preparation of food.

Agriculture also has an important role to perform in the replacement of non-renewable sources of energy by producing and using renewable forms derived principally from wood and from crop and livestock residues.

Commercial energy currently used by agriculture in the developing countries is about 18% of the total world agricultural usage but a substantial and rapid increase will be necessary to meet future demand for food and other agricultural products. The "normative scenario" 36/ of FAO's study Agriculture: Toward 2000 proposes an annual growth of 3.7% in the agricultural production of the developing market economies between 1980 and the year 2000. Such an expansion would require their commercial energy use to rise by 8% a year, more than fourfold over the two decades. By far the greater part of this energy use is accounted for by fertilizer manufacture and the use of farm machinery. Farm machinery uses just over half of the total world use of energy in agricultre, followed closely by fertilizers, which, however, account for over two thirds of the total usage in developing countries.

A wide range of farm practices can contribute to more efficient energy use. They include, to mention only a few, improved methods of tillage and cultivation, better water management, improved methods of fertilizer application, better use and care of farm machinery and implements and improved weed and pest control. Substitution of non-renewable by renewable sources may be achieved through further research on the possibility of developing the capacity to fix atmospheric nitrogen in cereals and root crops. Chemical fertilizers can be partly replaced by suitable crop rotations, catch cropping or by ley farming and by the recycling of crop and livestock residues. Economies in fuel use must also be sought in handling, transport and storage. In fisheries, a major contribution would be the development of effective sail rigs. Some of these approaches to energy saving are of a long-term nature and others will require a considerable extension effort.

Among the sources of renewable energy available to rural areas, fuelwood is the most important. It now supplies over 5% of total world consumption of fuelwood and commercial energy together. In the developing countries, however, the proportion is 21% and in Africa as much as 56%. In many countries where population growth and urbanization are rapid, exploitation of this source is excessive and forest resources have been heavily depleted, with serious environmental consequences as well as a shortage of fuelwood. The aim of forestry policy must therefore be to expand the production of fuelwood on a sustained basis through appropriate forest management, and by such measures as the planting of fast-growing leguminous shrubs on degraded land near villages. Expanded use of wood and wood residues for conversion to liquid and gaseous fuels may become possible as techniques improve and if prices are favourable, but it will be important to ensure that production of these fuels does not further reduce the supply of fuelwood.

Animal dung, now widely used as fuel in parts of Asia and Africa, with consequent loss of its fertilizer value, can, by anaerobic digestion, be used to produce methane without loss of the plant nutrient value of the residue. Even greater supplies of energy can be obtained by fuller exploitation of crop residues. Food processing by-products (bagasse from cane sugar extraction and rice hulls from milling) are another large potential source of biomass for energy production.

Since the fossil fuel crisis began, there has been increasing interest in energy cropping, i.e., the production of crops specifically to provide commercial energy in the form of liquid fuels (ethanol or ethyl alcohol) suitable for use in internal combustion engines and as feedstock for certain industrial processes. At present, the crops considered usable for this purpose include sugarcane, sweet sorghum, maize and other grains, and cassava

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36/ A "normative scenario" is a selected alternative that is considered more desirable than the continuation of past trends, and indicates what could and should be accomplished in relation to certain objectives.

and other root crops, though there are other potential sources, particularly woody plants and plants rich in hydrocarbons like the Euphorbia genus and numerous types of oilseeds. In the United States interest is now mainly centered on maize but in Brazil sugar cane appears to be the cheapest source. Both of these countries have substantial programmes for the promotion of energy cropping based on these two crops but a number of other countries are also actively considering such programmes (including New Zealand, the Philippines, South Africa and Thailand). In France, the use of part of the sugar beet crop for alcohol production is well established and Sweden is planning to use rye and potatoes as sources of alcohol.

It is difficult at this stage to assess the potential of energy cropping and its possible effects on food production and food prices and to determine the most appropriate policies to be applied. Conversion processes are undergoing rapid technical development which alters their relative economic efficiency. There is a possibility also that large-scale energy cropping could encroach seriously on areas used for food and feed production with important implications for world food supplies and prices.

Some of the policy implications of the outlook for the fossil fuels and the need for their replacement, by other, renewable, sources of energy are already clear. It is essential in the first place, that national energy policies should ensure that agriculture and the food sector in general will be provided as a matter of priority with the supplies of commercial energy needed to maintain and expand food production, processing and distribution. This priority requirement includes also the energy required for the production of fertilizers and pesticides. It is equally essential that price and subsidy policies should take account of increasing costs of inputs and of possible pressure on food prices. A major task also, particularly for research and extension services, will be to promote farming systems that save fossil fuel. Production of alcohol from wood and crop residues, which would not compete with food crops, should be examined closely and high priority should be given to the development of the necessary conversion technologies. Fuller exploitation of wind, water and solar energy should also be encouraged. Policies for the promotion of energy cropping, however, should be pursued with caution and flexibility since the conversion processes involved are subject to rapid changes and since energy cropping in countries where land resources are already fully utilized may have serious effects on food supplies and prices.

This complex of national policies must be supported and complemented by appropriate international policies in such fields as the monitoring of the world's soil resources and possibly measures to encourage the production of natural fibres and rubber in replacement of synthetic products based on petrochemicals. The most important international issue, however, is the need to safeguard world food security if large-scale programmes of energy cropping threaten to compete seriously for scarce land and other agricultural resources.

Other desirable action on the international level would include strengthening research and development in new and renewable energy sources, the development of funding mechanisms to meet the particular problems of countries with acute energy shortages and countries heavily in debt, the promotion of training programmes in the organization, management, research and use of renewable energy resources in the rural sector and supporting programmes for the training of rural extension staff in energy matters.

## 2. MARINE FISHERIES IN THE NEW ERA OF NATIONAL JURISDICTION

### SUMMARY

The principle of the freedom of the seas dominated the use of the ocean and its resources for more than two centuries. In the decade of the 1970s, however, one of the fundamental elements of the principle - the freedom of fishing - has virtually been abolished as coastal states have extended their national jurisdiction out to 200 nautical miles. This dramatic change provides a necessary (though not sufficient) condition for the prevention of the massive waste that has marked the use of marine fisheries in the past, and creates the opportunity for increasing the flow of net benefits from these resources. It also throws a challenge to the coastal states in their adjustments to the redistribution of the seas' wealth and in the development of their competence to exercise their newly acquired authority.

During the period of the freedom of the seas, the resources belonged to everyone - or to no one - so that there was no incentive to rationalize their use. No individual fisherman could afford to restrain his own catch in the interest of future returns, for anything he left in the sea for tomorrow would be taken by others today. As a result, overfishing of the stocks became a pervasive and persistent condition. Atlantic cod, herring in the North Sea, North Pacific halibut, whales, hake off west Africa, sardinella off Ghana and the Ivory Coast, and numerous other valuable stocks throughout the world have been overfished and experienced declines in their annual yields.

For the world as a whole, the total tonnage of catch of marine fish has not increased significantly since 1970. However, an output index, which aggregates fish species in terms of their relative economic importance, shows an increase of 2.9% per year in the last decade. This provides a more realistic picture of marine fisheries than the conventional measure in total tons. Nevertheless the growth rate is still much lower than that which occurred prior to 1970 and reflects a continued increase in the number of stocks that are being fished to, or beyond, the point of maximum sustainable yields. Shortages of supply are seriously affecting prices and creating hardships for the low income consumers in developing countries.

Less obvious but more damaging than physical overfishing has been the waste in economic resources resulting from the principle of the freedom of the seas. With free and open access, the fishery attracts excessive amounts of capital and labour - too many vessels chasing too few fish. As prices have risen, it has become profitable to increase the amount of fishing effort and the total costs of fishing while taking the same, or even lower, levels of catch.

Prevention of both physical and economic waste requires the exercise of a high degree of authority and the assurance that future benefits will accrue to those who manage the resources. The extension of national jurisdiction is a first step in this direction, and offers the prospects of greatly enhanced benefits from the oceans' resources. Almost 99% of present catches of marine fish will now fall within someone's jurisdiction. The opportunity exists, as never before, for rational exploitation of marine fisheries.

Realization of the opportunity, however, will require major adjustments to the redistribution of benefits from the seas' wealth and improvements in the competence of the coastal states to exercise their newly acquired authority. The extension of jurisdiction has shifted the command over the resources away from countries with large distant-water fishing enterprises to the coastal states. The largest losses will fall on the Soviet Union and Japan which for decades have sent their vessels to all corners of the oceans and fished freely for high valued species. Difficult adjustments will also have to be made by several European states and some developing countries such as Cuba, the Republic of Korea, Ghana and Thailand whose vessels have fished extensively off foreign shores.

Although almost all coastal states gain from the increased ability to manage their resources, not all share equally in the redistribution of wealth resulting from the extension of jurisdiction. Those with resources highly valued by the distant-water fleets receive large immediate gains because of the ability to extract benefits from the foreign fishermen. This is particularly true for the countries of northwest Africa where foreign fleets, under the principle of the freedom of the seas, freely harvested large quantities of squids, cuttlefish, sardines and hakes. Significant gains also accrue to the states on both sides of the southern Atlantic and to a few developing states in east Asia. For most other developing coastal states, their shares in the redistribution of wealth are not as great, but their gained authority is still important.

The proper exercise of this authority, by both developed and developing coastal states, will require major improvements in their competence to manage the resources. Countries will want to improve their ability to acquire and analyze information about their stocks, the users of their stocks, and the domestic and foreign markets. They will want to know how best to develop their domestic fishing capacity so as to optimize the benefits and enhance opportunities for their traditional fisheries. They will need to improve the regulations and controls over their own fishermen as well as over the foreign fishermen to whom they wish to provide privileges within their zones. And they will need to make investments in the appropriate amounts and kinds of surveillance and enforcement activities.

One of the most intransigent difficulties facing coastal states will be the allocation and management of shared stocks. These stocks include not only the highly migratory tunas but also numerous other stocks that migrate along coastlines. In these cases, authority over the resources is still diffused and cannot be exercised satisfactorily without a high degree of cooperation among the sharing states.

The challenges are great, but the potential rewards are greater. The developments at the 3rd United Nations Conference on the Law of the Sea have been successful in establishing a new regime for the use of marine fisheries. The new regime is related to the New International Economic Order by its attempts to provide a more equitable control over the wealth of the seas. Equally significant, it has alerted nations to the importance of their fishery resources and to the need for better management. The 1980s provide the threshold for a new era in the enjoyment of the oceans' wealth in fisheries.

## THE CHANGES IN THE LAW OF THE SEA

In the 16th and 17th centuries, the struggles to dominate the oceans and the profitable trade routes were gradually resolved by a mutual accommodation of interests under the principle of the freedom of the seas. Although this principle has been variously interpreted from time to time to meet the exigencies of war and international hostilities, it has only been seriously challenged within the past decade.

The principle, so far as it affects fisheries, no longer exists to any meaningful extent. This change is the consequence of two factors: (1) the recognition that the benefits of the freedom of fishing have accrued to a small number of countries most of which have developed economies; and (2) under the principle of free fishing, it has not generally been possible to prevent a significant waste in economic and natural resources.

## THE DISTRIBUTION OF WEALTH UNDER THE FREEDOM OF THE SEAS

The use of the oceans' fishery resources provided the basis for one of the arguments supporting the establishment of the principle of the freedom of the seas. Hugo Grotius, in his treatise, Mare Liberum (1608), argued that fishery resources were so abundant that no one would benefit from having exclusive rights over them and there was no possibility of their being over-exploited. He also asserted that the resources were so extensive that exclusive rights could not be effectively maintained. Although the first point was somewhat specious, his arguments ultimately prevailed and the freedom of fishing became a major element in the freedom of the seas.

Under this principle, all countries could fish in all oceans beyond relatively narrow limits of coastal state jurisdiction, generally from three to twelve nautical miles. The initial beneficiaries were the western Europe countries whose fishermen, finding the herring in short supply in the North Sea, sailed across the Atlantic to fish on the Grand Banks off Newfoundland. As the fishing increased, the catches declined so that even by the early 1600s, the fleets were being urged to move further south to the banks off New England.

This pattern of fishing has prevailed for more than 300 years. With declines in catch per unit of effort on the traditional grounds, the fishermen either developed more intensive techniques or moved to other regions where they could develop new fishing grounds. As the demands for fishery commodities increased in developed countries, it became economically feasible to build larger and larger fleets capable of going greater distances from the home ports. Some of the fleets became very sophisticated, with large fishing vessels, factory ships, carriers and support vessels capable of moving quickly from ground to ground and operating throughout the year.

Until the 2nd World War, the distant-water fishing vessels came mostly from western Europe and Japan. Since then fleets capable of going anywhere in the world have been developed in the Soviet Union and eastern Europe and in a few developing countries such as the Republic of Korea and Cuba. The United States has developed distant-water fishing for a few highly valued species such as tuna and shrimp. In addition, a few developing states, such as Thailand and Ghana, have extended their activities into the water of their neighbours, frequently several hundreds of miles from their home ports.

Most of the beneficiaries of the freedom of the seas have been the developed maritime countries, both those with market economies and those with centrally planned economies. Although the principle has provided all countries, developed and developing alike, with equal opportunity to fish, the wealth of the seas has been appropriated only by those countries which have had sufficient capital and technological capability.

Most developing coastal countries received little or no benefit from the principle and the interests of some may actually have been damaged, at least temporarily, by depletion of stocks by foreign vessels off their shores. Even where there has been no damage, the presence of large foreign distant-water vessels near their coasts has made them increasingly aware of the inequities in the distribution of the wealth of the seas.

Initial reactions to the presence of foreign fishing vessels occurred in 1947 when Chile and Peru announced claims of extended jurisdiction over fisheries to 200 nautical miles from their coasts and when Ecuador joined them in 1952. They based their claims, in part, upon the precedent of the Truman Proclamation of 1945, which was primarily concerned with the conservation of fish stocks off the coasts of the US and which did not make any specific claims for exclusive rights. But the real impetus for the claims was the presence of US tuna vessels which had begun to extend their operations further and further south along the west coast of the Americas.

There is little or no relevance between 200 nautical miles and the habits of different fish species. Some species, such as oysters, clams, and most other bivalves, are capable of very limited movements even though, in larval stages, they may drift 100 or more miles. Others, such as tunas and salmon, may swim thousands of miles during their life cycles, occurring both within a range of 200 miles of the shores and also far beyond it. The vast majority occur well within the range, although many of them migrate along the coasts of the continents and through the zones of several neighbouring states.

There is also little relevance between 200 nautical miles and the richness of resources off different coasts. Rich resources tend to occur over the relatively shallow continental shelves and in areas where deep water currents rise to the surface bringing with them nutrient materials from the deep. Generally, the most extensive continental shelves occur along the east coasts of the continents. The major upwelling currents generally occur close to land along the coasts of the continental masses. Thus, one coastal state may find that virtually all of its fisheries wealth lies within 50 miles of its shores and another may find that there are some resources beyond 200 miles. No specific limit, therefore, can be universally related to the wealth of fishery resources.

The issue of the extent of jurisdiction, however, remained largely a local matter between the US and the Latin American countries until 1958, when it was raised at the First United Nations Conference on the Law of the Sea, held in Geneva. In addition to this issue the Conference also discussed the extent of jurisdiction over the continental shelves and the resources of the shelves; the freedom of scientific investigations in the oceans; and, most particularly, the extent of the "territorial sea". Under this latter concept, a coastal state has fully exclusive jurisdiction over all resources and uses, except that it must allow "innocent passage" of foreign vessels. The extent of the territorial sea was thus a matter of great concern to the major maritime powers which, at that time, had considerable influence over the Conference.

At the First Conference, the majority of the countries were in favour of a narrow territorial sea (three, six, or twelve miles). Many were willing to agree to a limited zone beyond the territorial sea, in which the coastal states could have exclusive jurisdiction over fishery resources but most felt that it should not exceed twelve nautical miles from the baselines of the states.

Neither this First Conference nor a second convened in Geneva in 1960 succeeded in reaching an agreement on the limits. Nevertheless, it was clear that the countries attending these two Conferences were generally in favour of some extended coastal jurisdiction though not on the scale claimed by Chile, Ecuador, and Peru. It was not until a decade later that support for these claims began to mount and that the principle of the freedom of the seas for fishing was seriously challenged.

## THE PROBLEMS OF MANAGEMENT UNDER THE FREEDOM OF THE SEAS

The developments in the international law of the sea, leading to the Third UN Conference and to the general acceptance of wide limits of jurisdiction, took place largely in response to the growing awareness of inequities in the distribution of wealth from fisheries and persistent and widespread overfishing of valued fish stocks. Under the principle of the freedom of the seas, satisfactory controls over fishing can only be adopted and implemented if all the countries engaged in the fishery are in full agreement. This is very difficult to achieve.

During this century, there have been numerous multinational agreements on marine fisheries. Some, such as the International Council for the Exploration of the Seas (ICES), have been limited primarily to scientific research. Others have emerged where overfishing of valued stocks has become particularly obvious and all the fishing states have agreed that some forms of control were necessary. Such agreements have not had a notable record of success and three examples illustrate the nature of the problems they have had to face.

The first example is the international agreement on the whales of the Antarctic. This was signed by a large number of states, including some with no whaling fleets of their own and provided for a total quota on the annual kill of whales. In a later agreement made by the member states with whaling fleets, the total quota was divided up into national quotas, to avoid a competitive race among the fleets to maximize their shares of the total. This did not prevent the continued decline of several varieties of whales since the whaling states accommodated the interests of their fleets by adopting high limits.

By adopting national quotas, the whaling states presumed they had exclusive rights to the resources and that other states would not enter the fishery. This presumption was sufficiently strong for the United Kingdom and the Netherlands to sell to the Japanese not only their whaling fleets but also the quotas they had obtained. This presumption of rights could not be enforced if other states began to participate in whaling. Nevertheless, it is a presumption that has not been uncommon in international fishery agreements.

A more successful arrangement has been the commission created by the Pacific Halibut Convention in 1923. The two member states - Canada and the United States - adopted several conservation measures including annual quotas as the result of which the annual catch of halibut rose from about 20,000 metric tons in the early 1930s to some 30,000 tons in the mid-1960s. In the past few years, for various reasons, including incidental catch of halibut by other countries, the annual yield has declined.

The biological success was not reached without damaging economic consequences. Where a total quota is in effect, fishing continues until the quota is reached and then the season closes. This creates an incentive for fishing enterprises to acquire more and larger vessels in order to increase their shares of the allowed catch and in turn, leads to a shorter season and an increase in the amount of fishing effort. In the Pacific halibut fishery between the early 1930s and the mid-1950s, the season dropped from about nine months to less than two months in one area and from seven months to about three weeks in another area. This strained processing and distribution facilities, so that prices to the fishermen declined and the quality of the product deteriorated. Furthermore, the number of vessels employed was about two or three times greater than required.

The third example is the only international agreement that can be considered successful in both biological and economic terms. This is the Fur Seal Treaty of the North Pacific, originally signed in 1911, and under which the four member states agreed not to harvest fur seals on the high seas but only on the breeding islands owned by the United States and the USSR. Japan and Canada, the other two members of the Treaty, receive 15% of the skins in exchange for having relinquished their rights to take seals on the high seas.

Through this agreement, the costs of sealing are minimized, not only because sealing is much less expensive on land than on the open sea, but also because there is no superfluous effort. It has also been very easy to control the harvest of the seals so that the maximum yield can be obtained. An additional important aspect of the Fur Seal Treaty is that the member states agreed to share in the benefits flowing from the use of the resource rather than in access to the resource. In all other international fishery agreements, where allocation has occured, the allocation has been in the form of national quotas. This has required member states to continue to invest in fishing in order to acquire their share. This severely limits the flexibility of the arrangements and impedes the adoption of more economically efficient operations.

The success of the Fur Seal Treaty has been directly due to the ability of the managers to exercise a high degree of authority. The two states which own the breeding islands have been able to operate as if they were sole owners of the resources, achieving this position by compensating the others for their loss of rights to harvest the stocks. Such an arrangement was possible because of the simplicity of the situation - only four countries involved, and a single resource seasonally concentrated on land and which non-member states have not attempted to harvest on the high seas. As with the whaling agreement and all other agreements involving allocation, there is a presumption that the members have exclusive rights to the resources.

## THE THIRD UN CONFERENCE ON THE LAW OF THE SEA

During the two decades following the end of World War II, challenges to the principle of the freedom of the seas were emerging not only with respect to fisheries but also other uses, such as oil and mineral exploitation and military activities. These various issues were raised before the UN General Assembly in 1967 when Dr. Arvid Pardo, the representative of Malta, introduced a detailed note verbale. The General Assembly responded with the creation of a committee on the Peaceful Uses of the Sea Bed and Ocean Floor Beyond the Limits of National Jurisdiction. Membership in the Committee increased rapidly from 35 in 1967 to 91 in 1971 as more and more states realized that they might be affected by the outcome of the deliberations. During the early sessions of the Committee, the issue of military uses of the sea-bed was transferred to the UN Conference of the Committee on Disarmament. It also became clear that virtually all other uses would have to be addressed in a Third United Nations Conference on the Law of the Sea.

The first session of this Conference was held in December 1973 with the 2nd part of 9th session being held in August 1980. These discussions have had enormous significance for fisheries. Even before the adoption of the convention on fisheries, the principle of an exclusive economic zone (EEZ) had become fully accepted because of the clear consensus gained during the early sessions of the Conference. By 1 August 1980, 98 coastal states had adopted zones of jurisdiction over fisheries beyond 12 nautical miles (Table 2-1). Most of the remaining coastal states intend to extend their fisheries jurisdiction but have refrained from formally asserting their claims for various reasons, including an unwillingness to force confrontations with their neighbours over islands whose ownership is in dispute. Thus, within the past decade, the principle of the freedom of the seas for fishing has virtually been abandoned except for those fishery resources found beyond 200 miles.

It has been estimated that the extension of jurisdiction to 200 nautical miles by all coastal states would allocate to the coastal states 24.5 million square nautical miles of the ocean. The areas gained by individual states are highly unequal, with some adding little to their present limits of jurisdiction, and others gaining over a million square nautical miles. A breakdown among states by per capita income levels is shown in Table 2-2.

Table 2-1. Zones of Fisheries Jurisdiction: Nations claiming extended jurisdiction and year of entry into force (December 1980)

200 miles

Exclusive Economic Zones

| | | | | | |
|---|---|---|---|---|---|
| Bangladesh | 1974 | Pakistan | 1976 | Kiribati | 1978 |
| Barbados | 1978 | Papua New Guinea | 1978 | 'Korea (Rep. of) | 1954 |
| Burma | 1977 | Offshore waters | | Netherlands | 1977 |
| Cape Verde | 1978 | Philippines | 1979 | Oman | 1977 |
| Colombia | 1978 | Portugal | 1977 | Senegal | 1976 |
| Comoro Islands | 1976 | Saõ Tomé & | | Solomon Islands | 1978 |
| Costa Rica | 1975 | Principe | 1978 | South Africa | 1977 |
| Cuba | 1977 | Seychelles | 1977 | Sweden | 1978 |
| Dominican Rep. | 1977 | Spain (except | | Tuvalu | 1978 |
| Fiji* | | Mediterranean) | 1978 | U.K. | 1977 |
| France (except | | Sri Lanka | 1977 | U.S.A. | 1977 |
| Mediterranean) | 1977 | Suriname | 1978 | U.S.S.R. | 1976 |
| Grenada | 1978 | Togo | 1977 | Vanuatu | 1980 |
| Guatamala | 1976 | Venezuela | 1978 | | |
| Guinea Bissau | 1978 | Viet Nam | 1977 | Territorial Sea | |
| Haiti | 1977 | Western Samoa* | | | |
| Honduras | 1951 | Yemen (People's | | Argentina | 1967 |
| Iceland | 1979 | Democratic Repub- | | Benin | 1976 |
| India | 1977 | lic of) | 1978 | Brazil | 1970 |
| Indonesia | 1980 | | | Congo (People's | |
| Ivory Coast | 1977 | Exclusive Fishing | | Republic of) | 1977 |
| Kampuchea | 1978 | Zones | | Ecuador | 1966 |
| Kenya | 1979 | | | El Salvador | 1950 |
| Korea (Dem. | | Angola | 1976 | Ghana | 1977 |
| People's Rep.) | 1977 | Australia | 1979 | Guinea | 1965 |
| Malaysia 3/ | 1980 | The Bahamas | 1977 | Liberia | 1976 |
| Maldives 3/ | 1976 | Canada | 1977 | Panama | 1967 |
| Mauritania | 1978 | Chile | 1952 | Peru | 1947 |
| Mauritius | 1977 | Denmark | 1977 | Sovereignty and | |
| Mexico | 1976 | Gambia | 1978 | jurisdiction over | |
| Mozambique | 1976 | Germany (Federal | | the sea, its soil | |
| New Zealand | 1978 | Republic of) | 1977 | and subsoil | |
| Nicaragua | 1978 | Guyana | 1977 | Sierra Leone | 1971 |
| Nigeria | 1978 | Ireland | 1977 | Somali Democratic | |
| Norway | 1977 | Japan | 1977 | Republic | 1972 |
| | | | | Uruguay | 1969 |

Extension between 12-200 miles

| | | | | | |
|---|---|---|---|---|---|
| Albania | 1976 | 15 miles | Madagascar | 1973 | 50 miles |
| Belgium | 1978 | median line | Malta | 1978 | 24 miles |
| Cameroon | 1974 | 50 miles | Morocco | 1973 | 70 miles |
| Gabon | 1972 | 100 miles | Poland 1/ | 1978 | median line |
| German Democra- | | | Qatar 1/ | 1974 | |
| tic Republic | 1978 | median line | Saudi Arabia 1/ | 1974 | |
| Iran 1/ 2/ | 1973 | | Tanzania | 1973 | 50 miles |

1/ Outer limit of superjacent waters of the continental shelf. - 2/ Median line in Sea of Oman. - 3/ Areas defined by geographical co-ordinates. - * Legislation enacted. Entry into force pending.

Table 2-2. Distribution of areas among coastal states within 200 nautical miles

| States, by per caput GNP in 1977 | Number of coastal states 1/ | 1000 square nautical miles 2/ | Average per coastal country square nautical miles |
|---|---|---|---|
| Under US$ 200 | 11 | 1,900 | 173,000 |
| US$ 200-499 | 35 | 4,800 | 137,000 |
| US$ 500-1,999 | 51 | 9,800 | 192,000 |
| Over US$ 2,000 | 55 | 8,100 | 147,000 |

1/ World Bank, World Bank Atlas, 1979. - 2/ US Department of State, Office of the Geographer, "Theoretical Areal Allocations of Seabed to Coastal States", International Boundary Study, Series A, Limits in the Seas, No. 46, 12 August 1972.

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For the 30 Least Developed Countries, the aggregate allocations from extensions of jurisdiction to 200 nautical miles would come to about 1.17 million square nautical miles, or about 5% of the world total. The average allocation to the least developed coastal states amounts to about 73,000 square nautical miles with a range from about 6,000 for The Gambia to 280,000 for the Republic of Maldives.

Allocations in terms of area only do not provide satisfactory measures of benefits from the extension of jurisdiction. Fishery resources are not uniformly distributed throughout the oceans but are concentrated in areas where nutrient levels are high. These tend to occur where there are upwellings from deep waters and over the shallow grounds of the continental shelves. In addition, the value of the resources differs widely so that one area with high nutrient levels may produce economic benefits considerably lower than those of another area with equally high levels. Estimates of the distribution of economic gains are discussed in a later section of this Chapter.

## UNRESOLVED PROBLEMS

Although the principle of an exclusive economic zone is now well established in international law, a number of problems remain. One of these is the actual determination of the boundaries; another is the content of the jurisdiction within the economic zone; and a third is the problem of management of stocks that are shared by two or more coastal states - both stocks that are "highly migratory" in nature, such as the tunas, and stocks that swim close to shore.

### Determination of Boundaries

The determination of boundaries is primarily a matter of negotiation between neighbouring coastal states where the distances between the states are less than 200 nautical miles. As one general principle, boundaries may be drawn along the "median line"; that is, a line every point of which is equal in distance to the nearest points on the baselines of the adjacent coastal states. The accidents of geography, however, mean that gains may be quite disparate among states with coastlines of similar length. A state along a coastline that is curved out into the ocean may gain a large fan-sized EEZ, whereas a state along an inward curving coastline may receive a small, pie-shaped EEZ. In the interests of good relations, neighbouring states may adopt a different basis for establishing their mutual boundary and some states advocate that delimitation be based on the concept of equitable principles. In the North Sea, for example, the boundaries of jurisdiction over sea-bed resources were redrawn to grant West Germany a larger share than it acquired under the median line principle.

The determination of boundaries also depends upon the way in which a coastal state sets its baselines. Where a coastal state has a large number of islands at varying distances from shore and from each other, or where there are large bays, the setting of a baseline can be very difficult and can become a source of dispute with a neighbouring country. In some regions, particularly where islands are formed of low-lying coral and may be far apart, it may be questioned whether the islands should serve as a basis for the extension of jurisdiction. Criteria for determining whether an island whatever its size provides a basis for extension of jurisdiction are not clear-cut and, because the gains and losses from such a decision may be extremely great, there is considerable potential for dispute. Difficulties are also created by territorial disputes where two or more countries lay claims to the same island or piece of land.

These difficulties are all concerned with the distribution of wealth. It is therefore not surprising that relatively few countries have actually established the precise limits of their extended zones. Whether the boundaries follow the principle of the median line or not, they must be acceptable to the parties sharing the line. In some areas, such as the southwest Pacific, this may take many years. There are numerous small islands and atolls, some of them uncharted and others incorrectly charted, and there may be disputes over sovereignty. Many of the island states will have to conduct negotiations with two, three, or more of their neighbours so that over 100 bilateral negotiations may have to be conducted.

Content of Jurisdiction

A second problem is to determine the content of jurisdiction within the extended zones. Some states have asserted claims to the extension of their "territorial seas" to 200 nautical miles to cover jurisdiction over all uses and resources except that foreign vessels have a right of innocent passage. Most states, however, have restricted their claims to jurisdiction over the natural resources within the zone. Some have made a distinction between fisheries and other natural resources, and the zone is referred to as an "exclusive fishing zone", but in all cases fishery resources come within the jurisdiction of the coastal state's zone.

Even though fishery resources are subject to coastal state jurisdiction, there still remain some questions on the degree of authority that can be exercised. Two questions are particularly important. One of these concerns the concept of "full utilization" of the stocks; and the other relates to the management of stocks that are shared by two or more coastal states or that are "highly migratory".

Under the concept of full utilization, if a coastal state does not have the fishing capacity to catch the optimum yield of a particular stock, it is supposed to permit the fishermen of other countries to have access to the balance. It must first determine this optimum which is the maximum sustainable yield as modified by economic, social, and ecological factors. The coastal state must then estimate the capacity of its own fishermen to harvest the stock, taking account of the number and size of vessels, the number and kind of nets and other fishing gear, and the amount of time spent fishing for the stock. If this capacity is less than that needed to take the optimum yield, the coastal state is supposed to allocate the surplus to foreign fishermen taking into account such factors as the interests of its neighbours, the interests of landlocked or geographically disadvantaged developing states in its region and the history of past use by other states. It can obtain benefits from the foreign fishermen by such means as licence fees, taxes on catch, participation in joint ventures or training programmes, or negotiations of outright grants or low interest loans.

The concept of full utilization cannot be fully implemented throughout the world. Each of the steps required to determine what surplus, if any, is available requires a good deal of information which few countries have the capacity to collect and analyze. The determination of the maximum sustainable yield of a stock is very complicated in tropical waters where numerous different species exist in the same environment and are taken in the same nets. Generally, little is known about the modifying factors which determine

the optimum yield or about the magnitude of fishing capacity.

It is, therefore, unlikely that the concept of full utilization can be comprehensively adopted. Nor is it necessarily desirable that all coastal states should adopt it. The exclusion of foreigners where surpluses are available, could lead to a diminution of the world catch of certain species but this likely to be temporary and no greater than what resulted from overfishing by the foreigners. Where there is a significant exclusion of foreign vessels, catches will eventually increase as coastal states build up their own capacity to harvest the stocks or find that they can earn large benefits by re-opening the zones to foreigners.

Shared Stocks

A more difficult problem is that of stocks of fish that are shared by two or more coastal states. The highly migratory species - the tunas, marlins, swordfish and a few other billfish - may cover vast distances of the oceans, swimming both within and beyond 200 nautical miles of the shore. The extent to which other species are shared by two or more states depends both on their migratory patterns and the size of the economic zones. The moderately migratory stocks almost always occur within 200 miles offshore and are thus always subject to the jurisdiction of some country.

Although there are special difficulties for the highly migratory species when they are harvestable on the high seas, the general problems of management of shared stocks of all species are similar, in that two or more countries must reach agreements on the controls to be established and on the distribution of the benefits from the use of the stocks. As there are significant differences in situations and regions, general principles of management can only be stated in very broad terms. It is not surprising that the discussions at the UN Conference on the Law of the Sea do not provide much guidance and the texts do little more than urge the states to reach agreements among themselves.

## THE CONSEQUENCES OF CHANGE

The changes in the law of the sea described in the previous section have far reaching consequences which fall into three groups: the distribution of the sea's wealth; the production of net benefits therefrom; and the problems of making adjustments to the new regime.

### THE EVALUATION OF THE RESOURCES

The measurement of the seas' wealth in fisheries is complicated by three factors:

(a) the lack of uniformity in the commodities;

(b) the difference in national objectives sought from the use of fisheries;

and (c) the problems of estimating the biological yields of the stocks.

The conventional practice of measuring solely by adding the weights of the catch of different species does not provide an adequate picture of the oceans' wealth. Fish species are far from uniform in value, with anchoveta, for example, being about $ 60 per ton whilst lobster is more than $ 5,000 per ton. At the height of the anchoveta fishery in Peru, the Peruvian catch was greater in tonnage terms than that of any other country in the world but in value was well down the list and only about 5%-10% of that of Japan.

The measures of wealth that follow are based on gross returns for each of the species or group of species derived by multiplying catch by estimates of the average unit values received by the fishermen at the point of landing and expressed in terms of U.S. dollars per metric ton liveweight.

Prices received by fishermen are collected and reported by very few countries. Where they are, they refer to narrowly classified items such as fish of a certain size and quality and in a specific market. They may refer to fish that are partially processed, such as headed and gutted fish, or to fillets and, in addition, there may often be wide seasonal fluctuations in prices in response to changes in supply conditions and other factors.

For some species there is a single end use, as in the case of lobsters which are generally sold fresh or frozen for human consumption. For others there may be alternative uses. Thus, many species in the herring group may be sold cheaply for fishmeal or much more dearly for human consumption in the fresh, canned, cured, salted, or frozen forms.

Furthermore, prices in one country for a certain species and grade of fish may be quite different from those in another where the taste preferences are not the same. For example, prices in some Mediterranean countries are several times higher than prices in northern Europe for the same species.

These three factors - the lack of data, the differing use of fish, and the great disparity in prices between nations - make it impossible to derive accurate estimates of the average unit values of the different species and groups of species. The global figures that follow should, therefore, only be considered as providing rough orders of magnitude of the gross returns from fisheries. It must be emphasized that the prices given cannot be satisfactorily applied at the country level.

Average unit values for the major groups of marine species and for a few important individual species have been estimated for 1978 and are given in Table 2-3. They are considered to be conservative and for some countries and species may be greatly understated. The disparity among the different species is very great. Those species used almost entirely for fishmeal - capelin, menhaden, anchoveta - have estimated average values of US$ 60 per metric ton. For tunas, flounders and squids, the value is over US$ 1,000 per ton and luxury commodities such as lobster may reach values of US$ 5,000 per ton.

Table 2-3. Estimated average unit values 1/ for selected species and species groups in 1978

| Species | 1978 US $ per metric ton |
|---|---|
| Salmons | 2,100 |
| Flounders, halibuts | 1,250 |
| Atlantic cod | 650 |
| Alaska pollack | 200 |
| Other cods, haddocks | 400 |
| Redfishes, basses | 700 |
| Capelin | 60 |
| Other jacks, mullets | 280 |
| Menhaden, Atl. & Gulf | 60 |
| Anchoveta, Peru & Cape | 60 |
| Other herrings | 140 |
| Tunas | 1,400 |
| Chub mackerel | 200 |
| Atlantic mackerel | 300 |
| Other mackerel | 300 |
| Sharks, rays | 300 |
| Misc. marine fishes | 350 |
| Sea-spiders, crabs | 1,400 |
| Lobsters, spiny lobsters | 5,500 |
| Squat lobsters | 1,800 |
| Shrimps, prawns | 2,200 |
| Misc. marine crustaceans | 2,200 |
| Squids, cuttlefish | 1,700 |
| Misc. marine molluscs | 700 |

1/ For the derivation of these average unit values, refer to text, p. 93.

## DISTRIBUTION OF WEALTH

On the basis of the estimated values, an attempt has been made to measure the value of the resources gained by coastal states through the extension of jurisdiction (Table 2-4). It has been assumed that catches by the countries with major distant-water fishing fleets (the major distant-water fishing countries) in 1972 represented the catches of the last year when the freedom of the seas fully prevailed 1/ and that now come under the extended jurisdiction of the coastal states. The major geographical entities engaged in distant-water fishing are the 20 states, together with two other entities, with the greatest tonnages of fishing vessels over 100 gross tons each (see pages 113-115). 2/

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1/ Only a few countries had claimed extensive limits of jurisdiction prior to 1972. Of these, most of the claims were associated with controls over tuna resources which are excluded from the present discussion. Only Argentina had exercised its claim over other fish species and had made significant exclusions of foreign fishing. To adjust for this, the data for the S.E. Atlantic region are for 1968 instead of 1972.

2/ The countries included are: Canada, Cuba, France, German Democratic Republic, Federal Republic of Germany, Iceland, Italy, Japan, Republic of Korea, Netherlands, Norway, Panama, Peru, Poland, Portugal, Romania, Spain, U.S.S.R., U.K., and U.S.A. The two entities are Interpêche(a corporation whose vessels fly various flags) and Taiwan Province of China. Peru is not truly a distant-water fishing country but is included here because of the large size of its fishing fleet.

Table 2-4. Estimated values of 1972 catches (excluding Oceanic Pelagics [1]) by major distant-water countries within EEZs of developed and developing countries at 1978 prices [2]

| Fishing areas | Developed countries | Developing countries | World | Percent of world value |
|---|---|---|---|---|
| | million $ | | | % |
| N.W. Atlantic | 1,160 | | 1,160 | 21 |
| N.E. Atlantic | 980 | | 980 | 18 |
| W.C. Atlantic | 20 | 140 | 160 | 3 |
| E.C. Atlantic | | 750 | 750 | 13 |
| S.W. Atlantic | | 200 | 200 | 4 |
| S.E. Atlantic | | 450 | 450 | 8 |
| W. Indian | | 30 | 30 | 1 |
| E. Indian | 10 | 10 | 20 | - |
| N.W. Pacific | 590 | 250 | 840 | 15 |
| N.E. Pacific | 880 | | 880 | 16 |
| W.C. Pacific | 10 | 10 | 20 | - |
| E.C. Pacific | 10 | 10 | 20 | - |
| S.W. Pacific | 40 | | 40 | 1 |
| S.E. Pacific | | 10 | 10 | - |
| Total | 3,700 | 1,860 | 5,560 | 100 |

1/ Oceanic Pelagics include species such as tuna and salmon. - 2/ Based on the average unit values of species shown in Table 2-3.

In certain fishing areas, it has been difficult to determine how much has been caught off foreign as against domestic coasts. In the northeast Atlantic, estimates have had to be made of the amount taken by the U.K. or Norway, for example, within the zones of other northeast Atlantic states. In some other areas, such as the northwest Pacific and west central Pacific, it has been difficult to separate the catches taken off developed as against developing countries.

Because of these difficulties the figures in Table 2-4 should be considered only as broad indicators of the effects of the extension of jurisdiction on the distribution of fisheries wealth. They show that before the extension of jurisdiction the total value in 1978 prices of the catches taken by the distant-water states off foreign shores was about US$ 5,600 million, roughly about 25% of the gross value of the world catch.

The estimates also indicate that the gross values accruing to the developed coastal states are about twice those to the developing states. This does not represent a gain to developed countries as a whole since nearly all of the major distant-water fishing countries are developed. The few developing countries with distant-water fishing fleets - Republic of Korea, Cuba and one or two others - took catches worth only about US$ 100 million (excluding tunas) off foreign shores in 1972 (Table 2-5). Almost all of the US$ 3,700 million worth of fish taken off the coasts of developed countries was taken by other developed countries so that the estimates essentially represent transfers between developed countries themselves.

The developing countries, as a whole, have acquired resources valued at US$ 1,900 million, which were hitherto taken by distant-water countries. The gains, however, vary considerably because of the differences in the value of the resources to these distant-water countries. Some developing countries such as the Republic of Korea, Cuba, Thailand, Ghana, and a few others, have actually incurred significant losses because large shares of their catches were taken off foreign coasts.

Table 2-5. Values of 1972 catches by countries with distant-water fleets at 1978 prices 1/ by major species and species groups

| Species | Developing countries | Japan | U.S.S.R. | All countries |
|---|---|---|---|---|
| | million $ | | | |
| Flounders | - | 350 | 210 | 670 |
| Atlantic cod | - | - | 130 | 790 |
| Alaska pollack | 30 | 490 | 78 | 600 |
| Other cods, haddocks | 20 | 60 | 550 | 920 |
| Red fishes | 3 | 260 | 410 | 1,030 |
| Capelin | - | - | 4 | 4 |
| Other jacks, mullets | 2 | 13 | 160 | 200 |
| Herrings, sardines | 7 | 9 | 64 | 160 |
| Chub mackerel | - | - | 61 | 65 |
| Atlantic mackerel | - | - | 65 | 145 |
| Other mackerels | - | 10 | 10 | 22 |
| Sharks, rays | 1 | 7 | 15 | 29 |
| Misc. marine fish | 6 | 53 | 44 | 200 |
| Sea-spiders, crabs | - | 66 | 1 | 66 |
| Lobsters, spiny-rock lobsters | - | - | 2 | 10 |
| Squat lobsters | - | - | - | 1 |
| Shrimps, prawns | 23 | 22 | - | 260 |
| Misc. marine crustaceans | - | - | 12 | 20 |
| Squids, cuttlefishes | 10 | 133 | 42 | 390 |
| Misc. marines molluscs | - | 1 | 4 | 20 |
| Sub-total | 102 | 1,474 | 1,862 | 5,602 |
| Tunas | 340 | 810 | - | 1,720 |
| Total | 442 | 2,284 | 1,862 | 7,322 |

1/ Based on average unit values shown in Table 2-3.

The countries of the east central Atlantic have been the greatest beneficiaries of the extension of jurisdiction, gaining about US$ 750 million worth of resources (excluding the tunas), previously taken by other countries. Gains to the other developing countries along the Atlantic have also been large, but gains to the developing countries of the Pacific and Indian Oceans where the resources did not attract foreign fishermen, have been quite small except for those in the area which covers part of Vietnam and the countries to the north.

Generally, in the areas where there have been large gains, it has been due to the availability of one or two species of particular value to the distant-water countries and which could be taken in large quantities. In the east central Atlantic the cephalopods (squids, cuttlefishes, and octopus) attracted a large amount of effort from Spain, Japan and the Republic of Korea and the horse mackerels attracted large Soviet Union vessels. In the southeast Atlantic, Soviet Union and Spanish vessels fished heavily for the cape hakes. The importance of individual species is indicated in Table 2-5 which shows that two species - Atlantic and Alaska pollack - made up about 25% of the total value of all foreign catches by the major distant-water states. Chub mackerel, Atlantic mackerel, squids, cuttlefish, and octopus also accounted for significant shares of the totals. For the Soviet Union and Japan, the estimates also show concentration on a few species.

In short, distant-water fishing effort has been highly selective, focussing on a relatively few high values species that can be readily taken by modern industrialized fishing gear. With a few exceptions (Peruvian anchoveta, krill, and tunas) such species have not been found in the Indian Ocean and the Central and South Pacific Oceans. Thus, the redistribution of wealth from distant-water countries to the countries bordering these oceans have been relatively small except possibly for the tunas.

Estimates of the quantities of tunas, which are highly migratory, taken within the EEZs of developed and developing coastal states cannot readily be made. Nevertheless, it is possible to estimate the quantities taken by the major distant-water countries outside their own zones and to derive some indication of the gross values that may be available for distribution in the different oceans. In 1972, the world catch of tunas was about two million metric tons with a current value of about US$ 2,700 million. Of this, the major distant-water countries took about 1.2 million tons outside their own zones (about 60% of the total). The estimated value of the catch by these countries was about US$ 1,720 million, of which US$ 1,170 million (or over two-thirds) came from the Pacific Ocean, US$ 420 million from the Atlantic Ocean and the remaining US$ 130 million from the Indian Ocean.

Only a small portion of the tunas - perhaps 10% to 20% - are taken within the zones of the developed countries. The rest are taken either within the zones of the developing states or on the high seas. They therefore offer some opportunities for gains to developing countries but considering the large number of coastal states through whose zones the tuna swim and that some tunas can be caught on the high seas, the gains to individual states, with a few exceptions, may not be very great.

With the extension of jurisdiction, two countries - Japan and the Soviet Union - have suffered particularly heavy losses as they had established exceptionally large distant-water fleets since the end of the Second World War. In 1972, Japanese vessels caught fish in all of the temperate and tropical fishing areas of the world and Soviet Union vessels in all but two of the fishing areas. As may be seen from Table 2-5, the estimated value of their catches in foreign zones, excluding tunas, accounted for over 60% of the total value of catches of all major distant-water countries in foreign zones, and the Japanese catch of tunas in foreign zones was 47 % of the total taken by the major distant-water countries.

The changes in the distribution of wealth resulting from the extension of jurisdiction can be summarized briefly as follows. First, two countries - Japan and the Soviet Union - have lost access to major resources that they formerly used freely and for which they will now have to pay in one way or another.

Second, the distribution of wealth in the highly migratory tuna resources remains to be worked out. This will be particularly difficult in the South Pacific where there are numerous small island states which are acquiring large sea zones and share important stocks of tuna.

Third, the disparity in the redistribution of wealth among the developing countries is very large. Amongst them, west African coastal states in the northern and southern parts of the Atlantic gain about two-thirds of the total values of the catches formerly taken by distant-water fleets. East African and Asian coastal states, except for Vietnam, the Democratic People's Republic of Korea, Republic of Korea and China, receive relatively small shares of the total made available by the extension of jurisdiction.

Finally, the major source of the gains is found in a few species which are high in price and/or harvestable at relatively low cost. These species have generally been harvested by large vessels using sophisticated gear and technology. These include large trawlers, purse seiners with power-blocks, and vessels with freezing and processing capabilities. For some of these species, economies of scale are important and, even though fuel costs are rising, the large vessels may still be more efficient than smaller vessels operating from isolated and poorly equipped local ports. The coastal states which have gained jurisdiction over these resources should consider carefully how they wish to extract the benefits from the resources, and whether they will be better off by the development of their own fishing capacity or by the collection of taxes and license fees from the foreign vessels.

## THE VALUE OF FISH CATCHES

Quite a different picture emerges from an examination of estimates of the value of the catches of all countries, not just of the major distant-water countries within the different fishing areas. These estimates have been derived for each of the areas by multiplying the 1978 catches by species and species groups by the estimated average unit values for 1978. Because of the difficulties of estimation, the divisions between developed and developing countries within each area should be considered as only approximate.

As can be seen in Table 2-6, the value of the total 1978 world catch of marine fishes, including the tunas, was about US$ 28,000 million, but its distribution was most unequal between regions. Almost a quarter of it came from the northwest Pacific area which includes China, the Democratic People's Republic of Korea, the Republic of Korea, Japan, the Soviet Union and part of Vietnam. This is not surprising as Japan, the U.S.S.R., and China rank as the first three countries in terms of total tonnage of catch. Although the first two catch large amounts outside their zones, they also fish intensively within their own, which are highly productive. The relative importance of the value of their catch is somewhat less than that of the quantity. As the area produces 24% of the gross value of the world's catch and 29% of the total tonnage much of the catch is of relatively low priced species.

The northeast Atlantic is the next most valuable fishing area, accounting for about 15% of the value and 19% of the tonnage. This is followed by the western central Pacific with about 10% of the value and 8% of the tonnage. Together, these three areas account for about half of the total value of the world catch. Ten percent is derived from the exploitation of tuna resources.

There are significant differences in the composition of species caught in the different fishing areas, as can be seen from the average unit values presented in Table 2-6. In the southwest Pacific where the catch includes fairly large quantities of squids, the average unit value for all species is about 2-3 times that of the southeast Pacific, where the low priced anchoveta and pilchards make up a large proportion of the catch. For the ocean pelagics, the average unit values are particularly high in such regions as the northeast Pacific where salmon make up a large proportion of the catch.

Dividing the 1978 value of catches (excluding tunas) between developed and developing countries shows that the gross value of the resources are roughly equal, with perhaps somewhat higher values off developing country coasts (Table 2-7). Among the developing coastal states, those of southeast and east Asia have the most valuable resources, accounting for nearly half of the total. Most of the countries in these areas have had long fishing traditions and take sizeable quantities of fish. The value of the fishery resources off the developing coastal states of other areas, however, are not insignificant.

For the developed coastal states, two areas predominate. Catches off Japan, the Soviet Union and off Western Europe account for more than two-thirds of the value of fish taken off all developed countries. The value of the northeast Atlantic catches is about three times the value of the northwest Atlantic catches, while the northwest Pacific catches have about four to five times the value of those of the northeast Pacific.

Table 2-6. Catches and estimated values of catches by major fishing areas, 1978 [1/]

| Fishing areas | Catch | | Gross values | | Average value of catch |
|---|---|---|---|---|---|
| | Total | As % of world | Total | As % of world | |
| | thousand m.t. | % | million $ | % | $/m.t. |
| Excluding Oceanic Pelagics | 56,720 | 95.1 | 23,880 | 84.5 | 420 |
| N.W. Atlantic | 2,140 | 3.6 | 1,460 | 5.2 | 680 |
| N.E. Atlantic | 11,300 | 19.0 | 4,340 | 15.4 | 380 |
| W.C. Atlantic | 1,540 | 2.6 | 820 | 2.9 | 530 |
| E.C. Atlantic | 2,420 | 4.1 | 1,120 | 4.0 | 460 |
| Mediterranean | 1,160 | 1.9 | 440 | 1.6 | 380 |
| S.W. Atlantic | 1,320 | 2.2 | 760 | 2.7 | 580 |
| S.E. Atlantic | 3,220 | 5.4 | 900 | 3.2 | 280 |
| W. Indian | 2,100 | 3.5 | 1,190 | 4.2 | 570 |
| E. Indian | 1,230 | 2.1 | 670 | 2.4 | 540 |
| N.W. Pacific | 17,200 | 28.8 | 6,660 | 23.6 | 390 |
| N.E. Pacific | 1,540 | 2.6 | 960 | 3.4 | 620 |
| W.C. Pacific | 5,000 | 8.4 | 2,860 | 10.1 | 570 |
| E.C. Pacific | 1,210 | 2.0 | 450 | 1.6 | 370 |
| S.W. Pacific | 260 | 0.4 | 190 | 0.7 | 730 |
| S.E. Pacific | 5,080 | 8.5 | 1,060 | 3.8 | 210 |
| Oceanic Pelagics | 2,905 | 4.9 | 4,384 | 15.5 | 1,510 |
| N.W. Atlantic | 17 | - | 27 | 0.1 | 1,590 |
| N.E. Atlantic | 91 | 0.2 | 135 | 0.5 | 1,480 |
| W.C. Atlantic | 56 | 0.1 | 78 | 0.3 | 1,390 |
| E.C. Atlantic | 245 | 0.4 | 342 | 1.2 | 1,400 |
| Mediterranean | 25 | - | 35 | 0.1 | 1,400 |
| S.W. Atlantic | 45 | 0.1 | 64 | 0.2 | 1,420 |
| S.E. Atlantic | 43 | 0.1 | 60 | 0.2 | 1,400 |
| Total Atlantic Ocean | 522 | 0.9 | 741 | 2.6 | 1,420 |
| W. Indian | 201 | 0.3 | 282 | 1.0 | 1,400 |
| E. Indian | 89 | 0.1 | 124 | 0.4 | 1,390 |
| Total Indian Ocean | 290 | 0.5 | 406 | 1.4 | 1,400 |
| N.W. Pacific | 632 | 1.1 | 1,017 | 3.6 | 1,610 |
| N.E. Pacific | 272 | 0.5 | 558 | 2.0 | 2,050 |
| W.C. Pacific | 789 | 1.3 | 1,100 | 3.9 | 1,390 |
| E.C. Pacific | 400 | 0.7 | 562 | 2.0 | 1,400 |
| Total Pacific Ocean | 2,093 | 3.5 | 3,237 | 11.5 | 1,550 |
| World | 59,625 | 100.0 | 28,264 | 100.0 | 470 |

1/ Based on average unit values per each species comprising the catch shown in Table 2-3.

Table 2-7. Estimated values of 1978 catches (excluding Oceanic Pelagics)[1] off developed and developing coastal states, by fishing area [2]

| | Off developed coastal states | Off developing coastal states | % of total: Off developed coastal states | % of total: Off developing coastal states |
|---|---|---|---|---|
| | ..... million $ ..... | | | |
| N.W. Atlantic | 1,460 | - | 12.7 | - |
| N.E. Atlantic | 4,340 | - | 37.8 | - |
| W.C. Atlantic | 440 | 380 | 3.8 | 3.1 |
| E.C. Atlantic | - | 1,120 | - | 9.0 |
| Mediterranean | 350 | 90 | 3.0 | 0.7 |
| S.W. Atlantic | - | 760 | - | 6.1 |
| S.E. Atlantic | - | 900 | - | 7.3 |
| W. Indian | - | 1,190 | - | 9.6 |
| E. Indian | 110 | 550 | 1.0 | 4.4 |
| N.W. Pacific | 3,540 | 3,130 | 30.8 | 25.3 |
| N.E. Pacific | 960 | - | 8.4 | - |
| W.C. Pacific | 30 | 2,840 | 0.3 | 22.9 |
| E.C. Pacific | 70 | 370 | 0.6 | 3.0 |
| S.W. Pacific | 190 | - | 1.7 | - |
| S.E. Pacific | - | 1,060 | - | 8.6 |
| Total | 11,490 | 12,390 | 100.0 | 100.0 |

1/ Oceanic Pelagics include species such as tuna and salmon. - 2/ Based on average unit values shown in Table 2-3.

## NET BENEFITS FROM FISHERIES

The nature of the gain in gross revenue and the opportunities for the future for each coastal state are different. The important question is not how much each country gains relatively to other countries but how much its own gains will contribute to the growth of its economy; or, in some cases, by how much it will be able to minimize the damage from the loss of free access. Many of the small island states of the southwest Pacific, for example, are extremely poor in natural resources, so that acquisition of rights over fishery resources, even though small in value, may constitute a significant increase in the country's wealth. For Thailand, Republic of Korea, Ghana and Cuba the gain from the extension of jurisdiction may be less than the losses of their free access to the waters of foreign countries.

The gains or losses are not measured by the gross value of the resources but by the net benefits obtainable. The major developing distant-water states may have lost free access to resources valued at about US$ 100 million but their actual loss is the amount they will have to pay the foreign states for access to the resources or how much they will lose in profits if access is prohibited. This will be reflected in the number of jobs lost and problems of labour displacement, in the diminished supplies of protein, or in the decrease in export earnings.

Similarly, where an individual coastal state obtains jurisdiction over valuable resources, its gains will depend on the costs associated with the harvest and management of the resources. These, in turn, will depend upon whether it chooses to develop its own domestic capacity to harvest the resources or to obtain benefits in various forms from foreign fishermen.

For all coastal states, whatever their gains, the change in the law of the sea provides an opportunity to increase their net benefits as they can now exercise a greater degree of authority over the use of the resources than they could with narrow limits of jurisdiction. With the enclosure of the resources, the coastal states acquire the right to regulate their use and particularly to limit the amount of capital and labour used in harvesting the stocks.

## THE SUPPLY OF FISHERY RESOURCES

The world catch of fish and other organisms from the sea rose from 28 million tons in 1958 to 62 million tons in 1970 and to 65 million tons in 1978. Such crude figures alone give no indication of changes in the composition of the catch. A more informative method of measuring the output is to assign weights to the different species and groups of species based on some criterion of their relative importance. One criterion, for example, might be the protein content so that fresh or frozen fish for human consumption counted for more than an equivalent quantity of a species used for fishmeal.

The usual way of measuring a mixed bag of commodities is to weight the constituent items according to their price. In this case, an index can be obtained for each year from 1958 through 1978 multiplying the quantity of catch for each of the major marine species or species groups by the estimated unit values for 1969-71 (Table 2-8).

Figure 2-1 shows the differing trends of the index of the quantity of the catch and that of quantity weighted by the 1969-71 unit values. Both show an almost continuous increase throughout the period but at much lower rates after the year 1970 than before. The decline in the rate of annual increase of the unweighted series from 6.5% in 1958-70 to 1.0 in 1970-78 was far more accentuated than that of the unit value weighted series which defined from 4.2% to 2.9%. The weighted index illustrates clearly how the increases in catches of high-value species have more than compensated for the heavy fall in the catches of low-value species. The most significant decline in catch has been for anchoveta which has declined from 13.4 million tons in 1970 to only 1.8 million tons in 1978.

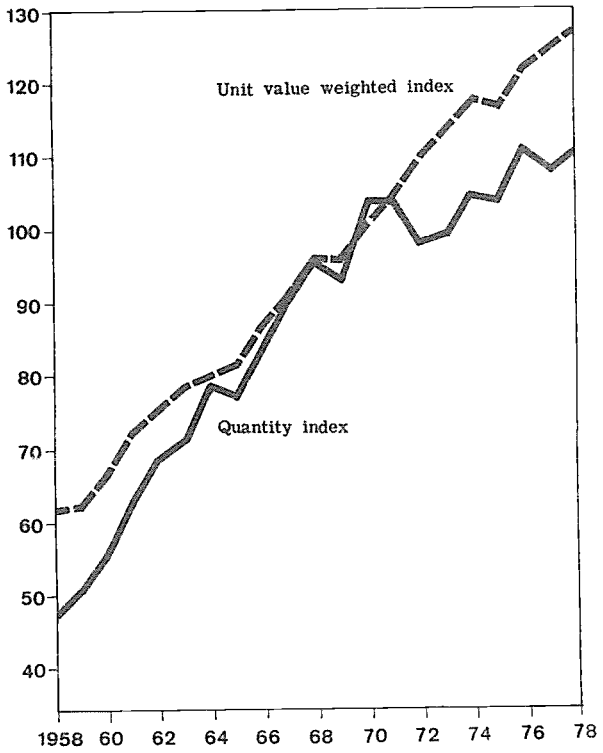


Figure 2-1

Quantity and unit value weighted output indices, 1969-1971= 100

Table 2-8. Indices of marine fisheries output,[1] 1958-78

| Year | Unweighted quantity Index | Unit Value weighted Index |
|---|---|---|
| | ..... 1969-71=100..... | |
| 1958 | 47.4 | 61.9 |
| 1959 | 50.9 | 62.1 |
| 1960 | 55.9 | 66.3 |
| 1961 | 63.0 | 72.5 |
| 1962 | 68.8 | 75.8 |
| 1963 | 71.2 | 78.7 |
| 1964 | 78.7 | 80.3 |
| 1965 | 77.4 | 81.6 |
| 1966 | 84.0 | 86.1 |
| 1967 | 89.6 | 90.4 |
| 1968 | 95.1 | 95.6 |
| 1969 | 92.7 | 95.1 |
| 1970 | 103.7 | 100.7 |
| 1971 | 103.5 | 104.2 |
| 1972 | 97.9 | 109.1 |
| 1973 | 98.4 | 114.0 |
| 1974 | 104.3 | 117.7 |
| 1975 | 103.7 | 116.6 |
| 1976 | 110.2 | 121.9 |
| 1977 | 107.5 | 124.5 |
| 1978 | 109.7 | 127.4 |
| Annual rates of increase % per year | | |
| 1958-70 | 6.5 | 4.2 |
| 1970-78 | 1.0 | 2.9 |

Note: The unit value weighted output index covers only marine species and differs from that in Chapter 1 which covers all fish species.

The slackening in the rate of growth since 1970 is due primarily to three factors limiting supplies. The first is that cultivation is generally not feasible in the marine environment and any particular stock has a maximum yield it can produce. The economic feasibility of increasing yields of certain species by man's actions is limited to situations where the product has a high price and the environment is susceptible to some degree of control at a reasonable cost. Thus, it has been possible for some countries to increase the yield of salmon by introducing salmon eggs into streams not previously used or into streams which have been rehabilitated. Lagoons, bays, and salt marshes and swamps also offer some opportunities for cultivation to improve yields of fish. But in the open sea, the vastness and fluidity of the environment preclude most cultivation practices.

Man's interference in the environment can also have a negative effect on the yields of certain species. The destruction of marshes, pollution of estuaries, and the interruption of the flow of nutrients from rivers can affect certain species at critical points in their life cycles and reduce the yields.

The second factor is that overfishing can significantly reduce the annual yields of certain species. In the last decade, fisheries for several species of herrings and other shoaling pelagic fish have collapsed, with a decline in catch of millions of tons. Depletion, however, is subject to control. The acquisition of national authority over the resources facilitates the establishment of satisfactory regulatory measures and the rehabilitation of depleted stocks so that higher yields can be obtained in the future. Effective conservation measures could lead to increases in world catch amounting to millions of tons, as, for example, through the rehabilitation of Peruvian anchoveta and Namibian pilchard. The problems of exercising satisfactory authority are discussed in a later section of this chapter.

The third factor is the limited number of species that are of interest to man. Although there are thousands of different species of marine organisms, only a few hundred are marketable. Nevertheless, with increasing prices for conventional species of fish, consumers become more willing to try unconventional species. At present the harvest of the most likely species requires high inputs particularly of fuel, but if technology develops to permit low cost harvest and processing of these species, it could lead to greater supplies.

Of these three factors, the only one that is significantly affected by the change in the law of the sea is the second. The other two will be affected more by economic forces than by the acquisitions of national authority.

## THE CONSEQUENCES OF FREE AND OPEN ACCESS

The economic theory of common property natural resources explains why an uncontrolled fishery tends to attract excessive amounts of capital and labour and why it may be fished beyond the point of maximum sustainable yield (MSY), a biologically determined quantity, depending on fish recruitment and mortality rates. At different levels of fishing effort (numbers of vessels or fishermen) maintained over the long term, a particular stock of fish will produce different levels of sustainable yields (Figure 2 - 2A). The yields will be greater at greater amounts of effort up to the point of maximum sustainable yield. For some stocks, as shown, fishing beyond that point will deplete the stock so that subsequent sustainable yields will be lower than the maximum although fishing effort is increased. For other stocks, depletion may not occur so rapidly, so that the maximum sustainable yield can be achieved over a wide range of fishing effort. However, excessive amounts of capital and labour will still be employed.

The total catch curve can also represent total revenues to the fishery on the assumption that varying sizes of catch do not affect average prices received. The total cost curve is shown as a straight line on the simplifying assumption that every additional unit of effort has identical costs.

With free and open access the fishery will come into equilibrium when total costs and total revenues are equal (at point E). This is also the point where the average revenue of each fisherman equals his costs. At any amount of fishing effort below that point, average revenues will be greater than average costs which will attract other fishermen into the fishery.

If the fishery were subject to private ownership, the owner would tend to operate at the point of maximum net revenue (MNR), where the cost of the additional unit of effort is equal to the additional revenue it produces. That is where marginal costs and revenues are equal. This is also the point of maximum economic efficiency.

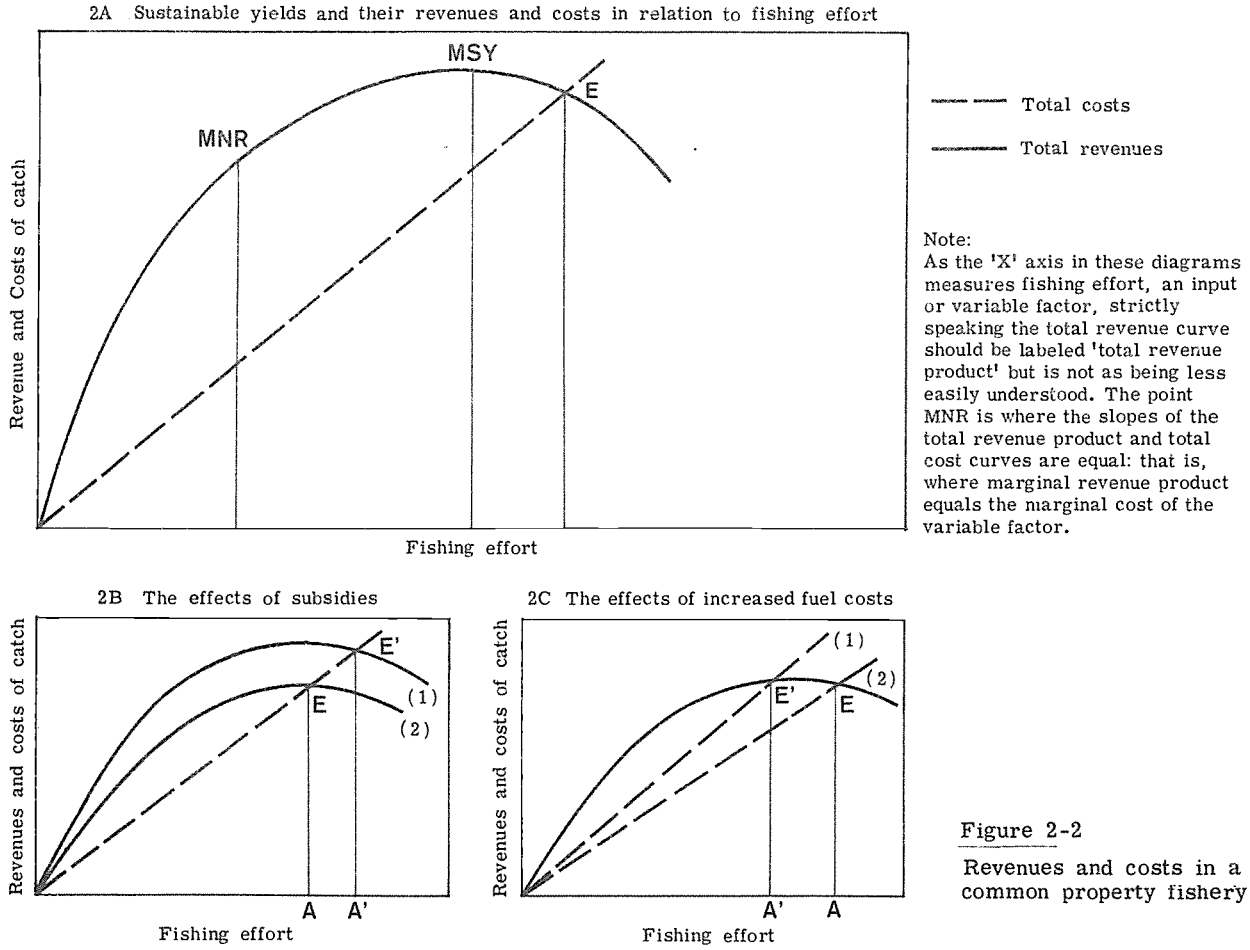


Figure 2-2

Revenues and costs in a common property fishery

With the extension of jurisdiction, many stocks now come under the sole ownership of a single country. That country, if it wishes, can control the amount of fishing effort through various techniques. Such controls could be used to increase the earnings per fishermen but they would, of course, reduce the number of fishermen. The fact that earnings per fisherman in a fully utilized fishery can be increased over the long run only by reducing or limiting the number of fishermen constitutes the essential dilemma facing fishery administrators.

In many situations in developing (and developed countries), administrators attempt to increase earnings per fisherman without limiting entry into the fisheries. They may do this by providing price supports or other devices which increase the revenue per unit of fishing effort, raising the total revenue curve as shown in Figure 2-2B. This will initially produce additional profits for the fishermen, attracting more into the fishery, raising total costs until they once again reach total revenues (at point E'). Average earnings per fisherman will decline to their former level but more fishermen will be employed (at point A' instead of point A). In some cases, the subsidy may also lead to greater depletion of the stock. It can be noted that a rise in prices, through increased demand, will also have the same results. Over a 30 year period in the Alaska salmon fishery, rising prices made it economically feasible for twice as many fishermen to be employed catching half as many fish.

An increase in fuel costs clearly has a negative effect on fisheries but the result, after a period of adjustment, will tend to be a drop in employment in the fishery rather than a decrease in average earnings. The increase in costs will force some of the fisher-

men out of the fishery but as they leave, those remaining will increase their average catches and revenues because of the reduced competition. The new equilibrium (point E' in Figure 2C) will come with fewer fishermen (at A' instead of A) receiving the same average net earnings they had before. If the stock had been depleted the higher fuel costs, by removing some of the excessive fishing pressure, could actually lead to higher total catches.

Thus, attempts by countries to protect their fishermen in fully utilized fisheries by subsidizing fuel will serve to maintain employment levels and preserve the excess capacity already in the fishery, as well as support high levels of fuel consumption. The introduction of fuel saving devices and techniques may have the same consequences. If they reduce the costs to fishermen, the excess profits will attract some fishermen and thus increase the use of fuel. Where fisheries are already fully utilized, the most effective technique for reducing fuel consumption will be through a reduction in the number of fishing vessels.

In other cases, the cost may be so high (or the prices so low) that the equilibrium point occurs before the point of MSY. Although total levels of catch could increase, a reduction in fishing effort would still be desirable in order to achieve increased net revenues from the fishery.

The diagrams represent typical fisheries but not, of course, all fisheries. In some cases, a fishery may be just developing so that there are opportunities to increase total catches and total revenues at rates greater than the increase in total effort and total costs. Many such opportunities are occurring where coastal states can replace foreign fishing effort by developing their own domestic capacity. But even in these cases, the growth in domestic fishing effort should be promoted with restraint so that excess capacity may be avoided.

These economic principles have been tested in numerous empirical studies. One example is the yellowtail flounder fishery in the United States where it was found that the net revenue to the fleet could increase from zero to over $ 6 million per year by removing 87 to 132 vessels that were fishing 3/. However, these principles are based on simplifying assumptions that do not accommodate the high degree of complexity existing in most fisheries. Fishermen generally fish several different species of fish either simultaneously or at different periods during a season. The species may be interrelated so that yields of all cannot be maximized at the same time. Yields may also fluctuate widely and, in some cases, may grow or decline in response to shifts in environmental conditions. In addition, economic factors may vary widely over time, as well as among fishermen using different techiques and gear for the same stock. However, although these various elements may obscure or change the timing and significance of the consequences, they will not prevent the consequences from occurring where the condition of common property is not controlled.

Where a coastal state has complete control over a fully utilized stock of value to foreigners and has no interest in developing its own fishing capacity, it can prevent excess effort by levying taxes on foreign fishermen. These taxes will deter some foreigners from fishing but those who pay will receive greater catches because of the reduced competition. The total catches will not necessarily diminish and the increased returns will tend to match the taxes paid to the coastal state.

Where the coastal state has exclusive control over the resource and a fully developed capacity to harvest the stocks, it will have to choose between the alternative objectives of maximizing employment opportunities or maximizing incomes since the latter will require limitations on the number of vessels and fishermen.

Where a state shares a fully utilized stock with one or more neighbours, the authority is diffused and it is more difficult to deal with the common property condition. The problems of shared stocks, discussed more fully below, are particularly difficult to resolve because they generally require decisions on the distribution of the resources.

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3/ John M. Gates and Virgil J. Norton, "The Benefits of Fisheries Regulation: A Case Study of the New England Yellowtail Flounder Fishery", Marine Technical Report No. 21, University of Rhode Island; Kingston: 1974, 35 pp.

## FACTORS INCREASING GLOBAL NET BENEFITS

There are three particularly important factors which tend to increase net benefits from the oceans' fishery resources: the acquisition of national authority over stocks; the opportunity for increased use of local rather than distant-water fisheries capital and labour; and the increase in consumer acceptance of unconventional species and of species which have generally been used for non-food purposes.

### The Acquisition of National Authority

The acquisition of national authority over fish stock is potentially the most important as it provides both opportunity and the incentive to improve the management of fisheries. In some cases the incentives are extremely high. It has been estimated, for example, that the fishery for squid, cuttlefish, and octopus off the coast of northwest Africa could produce net benefits of the order of US $200 million per year 4/. This would occur because a reduction of fishing effort of 30-40% could lead to an increase in annual yield of 10-20%. Total costs of fishing would decrease by about US $100 million and total revenues would increase by about US $90 million. These, it must be emphasized, are hypothetical figures because unless all states with cephalopod resources charge the maximum fee, the fishermen will go elsewhere where they can pay less. This is an extreme example but all coastal states with resources of value to foreigners can permit foreign fishing to continue subject to some payment. By such means they can both greatly improve economic efficiency and increase the net benefits from their resources.

Some states may place limits on the number of foreign vessels that can fish within their zones and charge no, or only moderate, fees. This will also tend to increase the net benefits that can be obtained but they will flow to the foreign fishermen rather than to the coastal states.

Not all states will want to permit foreign fishing to continue, nor will it necessarily be in their best interests to do so. They may wish to take advantage of their extended jurisdiction through the use of their own capital and labour. In some cases the resources they gain may already be utilized by their own fishermen, so that the exclusion of foreigners offers an immediate opportunity for increased domestic catches. Furthermore, by the exclusion of foreigners and the reduction of competition, their own fishermen will have increased catches and returns. By limiting the access of their own fishermen to the stocks, they can maintain the high rates of catch and either allow the fishermen to receive the gains or extract them in the form of taxes or licence fees. If fishing is mechanized a limitation of the amount of domestic effort may have an additional advantage by reducing the expenditure on fuel.

### The Shift to Domestic Production

The shift from distant-water to local fishing is occurring not only because of the acquisition of national authority over stocks but also because of the rising fuel costs. In the short run, the benefits may not be very great because of the difficulties in developing domestic capacity. But as this takes place, savings will be experienced in fuel costs and, in many cases, in capital and labour costs as well, although where fleets from developing countries are fishing in the zones of developed countries the replacement of foreign by domestic fishing could lead to higher labour costs. Capital costs in some of the developing countries may be high because of high costs of materials and of construction, and for certain fisheries, economies of scale may provide an advantage to large distant-water fishing vessels. In general, however, reductions in harvesting costs will eventually occur with increases in domestic fishing capacity and efficiency.

It is not possible to estimate the aggregate amount of capital that developing states may need to achieve full domestic fishing capacity. Although fishermen have some control over economic production, the size and composition of the harvest by fleets or individual vessels

4/ See: Griffin, W.L., J.P. Warren and W.E. Grant, a bio-economic model for fish management: the cephalopod fishery of northwest Africa. CECAF/TECH (79/16): 46, 1979. Christy, F.T., Jr., Economic benefits and arrangements with foreign fishing countries in the northern subregion of CECAF: a preliminary assessment. CECAF/ECAF Ser. (1979/19): 39 pp.

are affected to an unusually high degree by changing biological, environmental, economic and political conditions. Another important factor is the wide range of market values of various species and the related adjustment of fishermen's product-mix decisions and fishing strategies to changes in the availability and relative market values of various species.

An additional and perhaps more intransigent difficulty is that of making assumptions about the relative combinations of capital and labour. Squid, for example, can be taken by jigging with handlines from sail-powered canoes or by trawlers of 500 gross tons in size equipped with sophisticated electronic gear. For a given amount of squid, the former techniques might employ ten times as many fishermen as the latter at a fraction of the cost of capital. Very few developing countries have made explicit decisions about the combination of capital and labour they desire.

Finally, capital requirements depend upon the degree of existing capital and the yields from the resources. For some developing states an increase in the number of vessels or processing facilities may be highly desirable. For others over-capitalization may be a major problem, either throughout the country as a whole or in certain areas, so that a redistribution of fishing effort, replacement of old vessels with new ones or even a retrenchment of effort is necessary.

Shifts from Non-food to Food Uses of Fish

A third source of increased global net benefits may come from an increase in the demand for fish species not presently utilized for human consumption. It is generally difficult to overcome the conservatism of consumers and to develop taste preferences for species with which they have little familiarity. Consumers who are used to dark-fleshed fish are reluctant to accept white fish, and vice versa; those who prefer whole small fish will tend to reject fillets of large fish.

Though dramatic changes are unlikely, gradual changes are occurring and the consumption of species not formerly used for food is increasing. Hake in Latin America, mackerel, pilchard, horse mackerel in many parts of the world, and Alaska pollack have all shifted from non-food to food uses. In addition, markets have developed for highly processed fish products, such as fish sticks, fish burgers, fish sausages and cakes, enabling several species not generally familiar to consumers to be used.

Such developments are offering significant opportunities for certain countries such as Peru and Chile with large resources of pilchards and sardines off their coasts. Currently most of their catch of these species is used for reduction to fishmeal, but increases in canning facilities are taking place and will lead to greater production for the food market. It is not unlikely that, even though the Peruvian catches of pilchards and sardines will be only a fraction of their peak catches of anchoveta, Peru will be achieving higher net returns when they fully develop their export market for canned products.

These shifts from non-food to food use of fish species are the consequences of economic forces and technological developments in food processing rather than of any deliberate attempt to change taste preferences. As prices for conventional species increase in response to shortages of supply, consumers become more willing to try new species which are obtainable at lower prices.

Although the evidence is sparse, there appear to have been significant increases in prices of fish products over the past decade primarily due to shortages of supply rather than the rise in fuel costs. One readily available measure of change in fish prices can be derived from statistics for Japan. Here the figures show that the price of fish at the point of landing increased from 1961 to 1978 at about 6.5% per year greater than the increase in prices of all other commodities (Figure 2-3 and Table 2-9). The rate of increase is remarkable not only for its size but also because it has occurred steadily throughout the period. During the same time per capita consumption has increased at somewhat more than 1% per year. Rapid and continuous price rises have therefore resulted from relatively inelastic supplies facing increased demand arising largely from increasing per capita incomes.

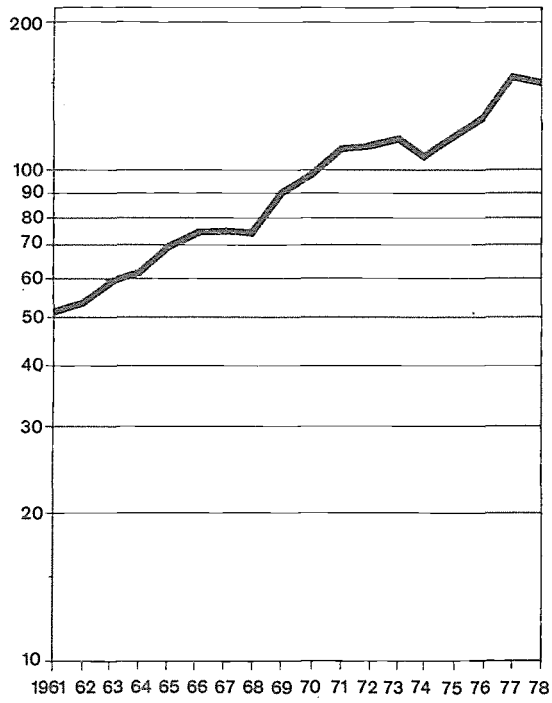


Figure 2-3

Japan: Deflated price index for all major fish species, at ex-vessel level (1969-1971 = 100)

The trends of prices in Japan of individual species and species groups, relative to the price of all commodities, show a wide diversity. Those of tunas and albacores, for example, rose rapidly until about 1970 and then levelled off, whilst those of prawns and shrimps (excluding kuruma prawns) were fairly level until 1970 when they showed a marked increase. The relative prices of Alaska pollack did not increase until 1977 - an increase undoubtedly due to the extension of jurisdiction by the U.S.A. and the U.S.S.R.; those of common squid increased fourfold between 1968 and 1971; but those of mackerels, sardines and round herrings fell. These disparities generally reflect the relative scarcities of the different species. In any one year changes may be due to a variety of factors including the quantities held in storage and speculations about price movements. But the significance and nature of the changes indicate that scarcity is the predominant factor in the increase in prices.

Increases in fish prices relative to other food commodities are probably occurring through the world, though probably not on the same scale as in Japan. The effects of these increases are mixed. One is to stimulate the shift from non-food to food uses and the production of unconventional species and thereby to increase the overall supply. On the other hand, in the absence of satisfactory management measures, the price increases make it profitable to deplete a stock since smaller quantities of catch can be offset by higher revenues.

The hardest hit are the consumers who must either pay more or decrease their consumption. In developing countries where the higher prices permit an export market to develop, there is a redistribution effect. The income generated by the exports goes to the fishermen and the exporting companies. The losses incurred by the domestic consumers who cannot afford to pay the equivalent of export prices may become quite severe in terms of reduced protein intake.

The effects on the fishermen are also mixed. If the common property condition, with free and open access, is maintained, the higher prices will attract more people into the fishery. Although this may increase employment opportunities, it will not lead to higher earnings for the fishermen. Where fishing is controlled, the higher prices will produce higher earnings for the fishermen or higher revenues to the government if the fishery is taxed.

Table 2-9. Japan, price index 1/ for all major fish species, at ex-vessel level

| | 1969-71 = 100 |
|---|---|
| 1961 | 52.3 |
| 1962 | 54.3 |
| 1963 | 59.6 |
| 1964 | 61.6 |
| 1965 | 70.9 |
| 1966 | 75.1 |
| 1967 | 76.1 |
| 1968 | 75.9 |
| 1969 | 89.6 |
| 1970 | 98.5 |
| 1971 | 111.8 |
| 1972 | 112.8 |
| 1973 | 114.7 |
| 1974 | 106.4 |
| 1975 | 115.7 |
| 1976 | 129.4 |
| 1977 | 154.5 |
| 1978 | 150.9 |

1/ The price index has been derived from estimates of catch and value of catch at the ex-vessel level for all major fish species caught by Japan. Average unit values were calculated for each of the species and species groups and then deflated by dividing by the Wholesale Price Index for all commodities in Japan. The deflated average unit values were weighted by 1969-71 catches and then aggregated for each year and divided by the average for 1969-71 to produce the index.

## PROBLEMS OF ADJUSTMENT FOR COASTAL STATES

The effects of some of the changes taking place may be to reduce the benefits from the seas' fisheries or to increase the cost of fishing. Though most such changes are likely to be temporary and confined to the period of adjustment to the new regime, they may be very significant over the next few years and could lead to decreases in total world output and increases in total fishing costs.

Four sets of problems can be expected: the exclusion of all foreign fishing effort; the difficulties of developing efficient domestic fishing capacity; the need to improve, or even create, research management and enforcement capabilities; and the difficulties of reaching agreements on the allocation and management of shared stocks of fish.

### Exclusion of Foreign Fishermen

Some coastal states are strongly inclined to exclude all foreigners from their economic zones from a justifiable concern that unrestrained foreign fishing has depleted their resources. This is particularly true of such countries as those of northwest Africa where large distant-water fleets have been fishing intensively in the past decade. In other countries with a large amount of domestic fishing capacity, the domestic fishermen wish to have the competition for the resources decreased.

Where the concept of "full utilization" is not accepted by the coastal state, the exclusion can occur simply by prohibiting foreign fishing. But even where it is accepted, the intent of the concept can be defeated by a variety of means. By underestimating the optimum sustainable yield or overestimating the domestic capacity, the "surplus" available to foreigners is reduced. Where foreigners do acquire quotas, the coastal state can impose such restrictive regulations and controls that fishing becomes inefficient and will either prevent the foreigners from reaching their quotas or add excessive costs to the operation.

Such actions reduce directly or indirectly the amount of catch available to foreign fishermen and where domestic capacity is not sufficient to fill the gap, lead to a fall in total catches from the same fishing area.

Development of Domestic Capacity

The development of domestic capacity may take many years, particularly in those coastal states which have had little experience in fishing and have little capital and few ports and facilities for processing and distributing the products. Joint ventures with foreign partners may help in providing training and equipment but care is needed to ensure that they are in the mutual interests of both partners. The foreign partner may try to use the venture to gain access to the resources and may wish to employ vessels and gear unsuitable for local use. The foreign partner's technology may be appropriate for large-scale operations but not readily transferable to the coastal states. If care is not exercised, the development of efficient domestic fishing capacity may be delayed.

Development of Management Competence

A third transitional difficulty is competence in management of the resources. When the limits of jurisdiction were narrow, management was either non-existent or was achieved by multinational committees which generally included developed distant-water countries. Now that the coastal states are acquiring much wider areas of jurisdiction, they are also acquiring increased responsibility for management. It is in their own interests to develop their capability for acquiring the necessary information, formulating and adopting desirable regulations, and enforcing regulations and agreements with foreigners. Performance of these tasks will incur costs and correspondingly reduce the net benefits from the extension of jurisdiction. Ways of minimizing the costs are discussed more fully in a later section.

Allocation of Shared Stocks

One of the most persistent and difficult problems will be that of reaching effective agreements on the allocation of benefits from stocks of fish that are shared by two or more states.

The least difficulties are created by those transboundary stocks which are relatively sessile in nature and where use by one state does not affect use by the sharing state or states. In these situations cooperation among the states on research may be desirable because of the advantages of sharing information on a common problem, but cooperation on management or allocation of benefits is not needed.

Greater problems occur for stocks that have relatively homogeneous seasonal migrations of individuals similar in size, age and patterns of behaviour. Since all species of fish pass through the cycles of spawning and growth complete homogeneity is impossible, but certain species such as some tunas, may have a high degree of similarity in individuals over a great range of migration. Use by one country will tend to diminish the availability of the stock to other countries. In the absence of agreement, each coastal state will seek to maximize its catch as the fish pass through its zone, resulting in overfishing.

Such consequences are now becoming apparent in the global fishery for highly migratory tunas. The coastal states sharing the stocks are in a competitive race to build up their own fleets to maximize their catches in their economic zones. The race is exacerbated by large recent increases in prices for tunas. In the U.S.A. between May 1979 and March 1980, price rises ranged from 27% to 90% for the different species and sizes. In Japan between February 1979 and February 1980, prices for skipjack, albacore and large yellowfin tunas rose 85%, 45% and 30% respectively. These price rises have stimulated some countries to increase their distant-water fleets and their fishing effort outside economic zones or in zones where they can gain access.

As a result shipyards received orders in 1979 for the construction of 70 new tuna vessels, representing an increase of 25% in the world tuna fleet. It is most unlikely that the world catch of tuna can be increased by anywhere near the same degree in the next year or two. Over the five years between 1973 and 1978, the world catch of tuna increased by only 21%, most of which was skipjack which has a relatively low price.

Some coastal states may be able to make some limited increases in their shares of the total tuna catch by increasing their investments in vessels. But for the tuna fishery as a whole, the total net benefits will diminish because the increase in revenue from the total catch will be less than the increase in costs. These consequences can only be prevented by an agreement among the sharing states on the allocation of the yield.

The third situation, the most difficult of all, occurs where there is little or no homogeneity in the characteristics of the fish as they migrate through the different zones. The zone of one coastal state may be used for spawning; of another, as a nursery ground; and of a third, as a feeding area. Differences in the vulnerability of the stock to fishing gear, in size of fish, in seasonal prices, and in the effects of fishing on yields may be very great in different zones.

The maximum net benefits from the fishery might occur and all countries be better off if fishing were restricted to one zone instead of allowing it in all zones, but there would be considerable difficulties in reaching and enforcing such an agreement. These difficulties would be minimized if all sharing countries sought only to achieve the maximum net returns from the resource, irrespective of the nationality of the fishermen, and could agree on how the revenues would be shared. They could then provide fishing privileges to the foreign fishermen that offered the greatest fees. Mostly, however, the states will have some interest in having their own fishermen use the stock so that such agreements will be very difficult to reach. Failure to resolve these problems will lead to a diminution in net benefits.

## PROBLEMS OF ADJUSTMENT FOR COUNTRIES WITH LARGE DISTANT-WATER FLEETS

The transition from the freedom of the seas to the enclosure of marine fishery resources will create hardships for the countries which have built up extensive distant-water fleets. In these countries, fishermen and fishing capital will become increasingly redundant, adding to the problems of unemployment and diminishing the contributions of fishing to the economy.

The countries that incur the greatest absolute losses are Japan and the U.S.S.R. whose catches in 1972 accounted for about US$ 3,400 million or over 60% of the value of all catches (excluding tunas) in foreign zones by major distant-water countries. How much these countries might have to pay in order to maintain access to these resources - if coastal states are prepared to permit fishing to continue - would have to be negotiated in relation to the values of the different stocks.

Losses to other distant-water fishing countries may not be as great in absolute terms but may be relatively quite important, especially to some developing countries. The

Republic of Korea and Cuba have both built up fairly large fleets of vessels which have fished thousands of miles from their shores. Thailand and Ghana have also fished intensively off foreign coasts, although at lesser distances and with smaller vessels. The redundancy of labour and capital in these countries will lead to particularly difficult adjustments. For most of the other countries with distant-water fishing fleets, the hardships will tend to be localized in the few ports from which the fleets sailed.

In general, the distant-water fishing countries will be facing adjustments in three major ways. One will be in paying for access to foreign zones, either directly or indirectly; a second will be in retrenchment of fishing fleets; a third, at least for some of the states, may be in increasing the amount of imports.

## The Costs of Gaining Access

The costs to foreign fishermen of gaining access to coastal states' zones can be incurred in a variety of ways. The most direct way is through some form of payment to the coastal state. This can be a lump sum payment with no limit on the amount of effort or of catch, a licence fee per vessel or per ton of vessel, or a tax based on the amount of catch or value of catch. All of these techniques are currently in use, sometimes in combination with each other.

Foreign countries can also gain access by making indirect payments of various kinds. These include grants-in-aid, the provision of low-cost loans, the provision of training programmes and facilities and the construction of ports, roads or processing plants. Such payments and benefits need not relate to fisheries.

In many cases access is gained through the use of joint ventures which coastal states may seek to use as a means for developing their own domestic fishing capacity. A wide variety of arrangements is possible. Coastal states may require that all or a major portion of the ownership be vested in local hands, vessels be transferred to its flag, the crews include domestic fishermen, or some or all of the catch be landed and processed domestically.

In the case of joint ventures and where direct payments are made the costs are generally incurred by private companies. In the case of grants-in-aid, low-cost loans and similar arrangements the costs tend to be borne by the governments of the distant-water fishing fleets. Generally, the latter fleets come from centrally planned economies and the former from the market economies.

In addition to these costs, foreign fishermen may have to incur other indirect costs such as being required to make port calls or to carry observers to ensure compliance with agreements and regulations, or being prohibited from using certain kinds of gear or from fishing in certain areas or at certain times. Although many such requirements may be desirable to conserve stocks or reduce competition to domestic fishermen, others may be employed as a means to discourage foreign fishermen and add greatly to the costs of fishing.

There is a limit to the costs that can be borne by foreigners fishing within the zones of coastal states. If the aggregate cost of the fees, joint ventures, and regulations goes beyond a certain point, there will be no profit and no point in continuing to fish in that zone.

The costs of gaining access to a particular stock will not necessarily lead to either a reduction in the amount of catch or to an increase in the price for the product. Many of the stocks used by foreign fishermen have been exploited excessively because of free and open access.

Though the costs of gaining access may deter some foreign fishermen, those who remain will take higher catches and increase their incomes which should, after a period of adjustment, compensate for the additional costs of the right to access.

Since each of the remaining fishermen is taking higher catches, the total catch of all fishermen would not necessarily be lower than it was before nor would prices necessarily increase. In some cases, where the stock had been depleted through over-fishing, the total catch might be higher. If the coastal state were to extract the maximum revenues, the total catch might be lower. The effect on prices will depend upon the degree to which the particular stock supplies the market.

A more significant effect on prices will occur where coastal states exclude or severely limit the catches of present foreign efforts. If the coastal states do not have the capacity to take the catch formerly taken by the foreigners, total world supplies may be significantly reduced and prices will rise. In the U.S. tuna industry, for example, the growing difficulties of the U.S. fishermen in gaining access to foreign zones is making processors and distributors offer higher prices to assure continued supplies. The reduction in quotas for Alaska pollack is also leading to increased prices in Japan.

These effects may be only temporary because supplies will increase as the coastal states develop their domestic capacity. Over the long run, after the process of adjustment has worked out, world prices for fish are not likely to increase significantly as a result of the extension of jurisdiction, though they may for other reasons.

Retrenchment in the Distant-Water Fishing Fleets

One of the most immediate effects of the extension of jurisdiction has been a general retrenchment in the number of large fishing vessels operated by the major distant-water fishing countries 5/. Between 1969 and 1979 the total tonnage of the large trawlers and fishing vessels of the major distant-water fishing countries rose from about 4.5 million to about 8 million gross tons 6/ as shown in Figure 2-4. For fish carriers and factory vessels the aggregate tonnage rose from about 2 million tons in 1969 to 3.5 million in 1976 and then fell to 3.25 million tons in 1979 (see Figure 2-5). For both groups combined the growth rate was about 14% per year from 1969 to 1971 and then dropped to about 5.5% per year for 1971 to 1976, after which it levelled off.

About 40% of total world tonnage of trawlers and fishing vessels over 100 gross tons in size and an even larger proportion of fish carriers and factory vessels, fly the flag of the Soviet Union (see Figure 2-6). The size of the Soviet Union fleet was two and one half times greater than the Japanese fleet in 1969 and four times greater in 1979. Most of the Soviet Union vessels are large, designed to go great distances and remain on foreign grounds for long periods of time. Very few of these vessels can be readily used by coastal states fishing in their own zones so that there is little likelihood that the Soviet Union can diminish its fleet by selling or transferring vessels to other countries. Retrenchment will present particularly acute problems for the Soviet Union.

The most remarkable development since 1969 has been the growth in the tonnage of vessels operated by the developing countries, as shown in Figures 2-6 and 2-7. Their tonnage has increased nearly fivefold between 1969 and 1979 and has risen from 5% to 15% of the world tonnage of trawlers and fishing vessels over 100 gross tons in size. Almost half comes from Cuba, Republic of Korea and Panama. Some represents the use of flags of convenience for developed countries, but most is genuine national fishing effort. These vessels are also largely engaged in distant-water fishing so that a high degree of retrenchment will be necessary and will cause severe problems of dislocation.

5/ As noted above, tuna vessels are an exception, since there cotninues to be a rapid increase in new construction.

6/ These estimates have been drawn from Lloyds Register of Shipping, Statistical Tables. They do not exactly measure tonnage of distant-water fishing countries, for several reasons. The 20 states included are those with the largest tonnages in 1979, of vessels over 100 gross tons in size. Some states, such as Peru, which fall within this categ ory cannot be considered distant-water countries because their vessels are used almost entirely within their own zones. Not all vessels over 100 gross tons in size engage in distant-water fishing. Since some vessels under 100 tons engage in distant-water fishing, and since not all vessels are registered, some countries, such as Thailand and Ghana are not included. These errors, however, do not significantly affect the general trends.

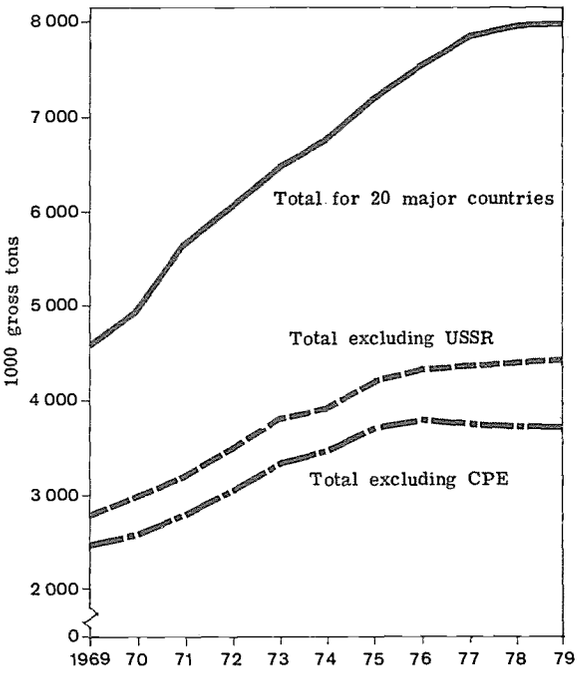


Figure 2-4

Tonnage of trawlers and fishing vessels of 20 major distant-water fishing countries (for vessels over 100 gross tons), 1969 to 1979

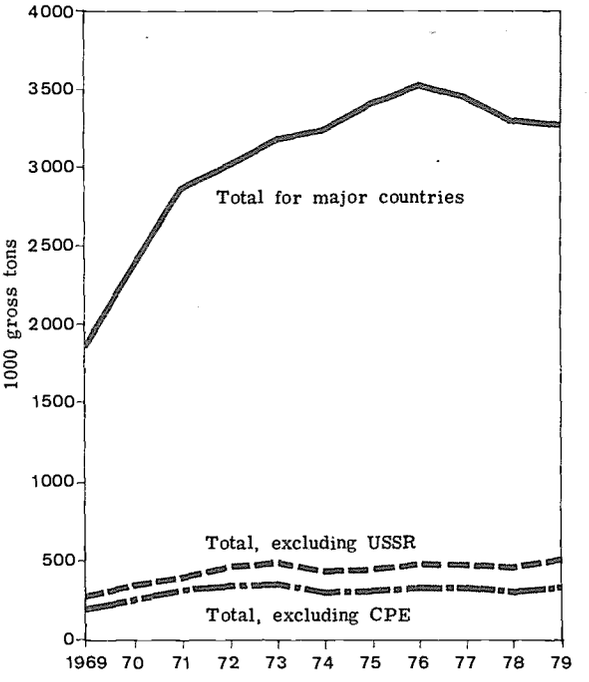


Figure 2-5

Tonnage of fish carriers and factory vessels of 20 major distant-water-fishing countries (for vessels over 100 gross tons), 1969 to 1979

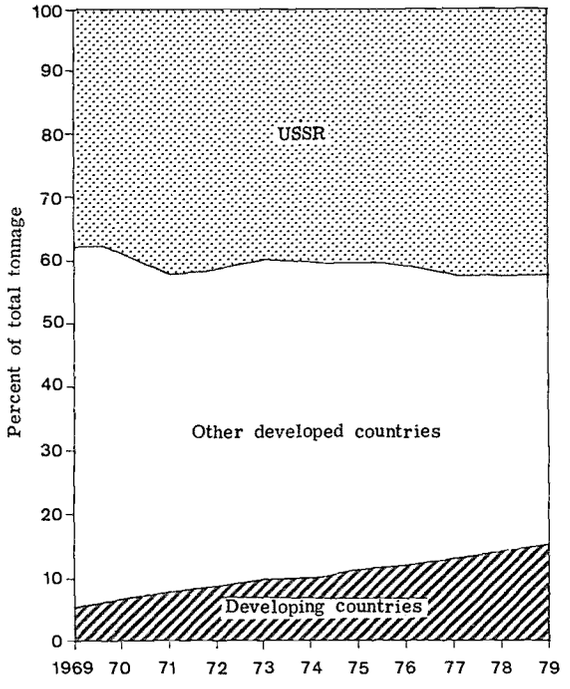


Figure 2-6

Distribution of tonnage of trawlers and fishing vessels (for vessels over 100 gross tons), 1969 to 1979

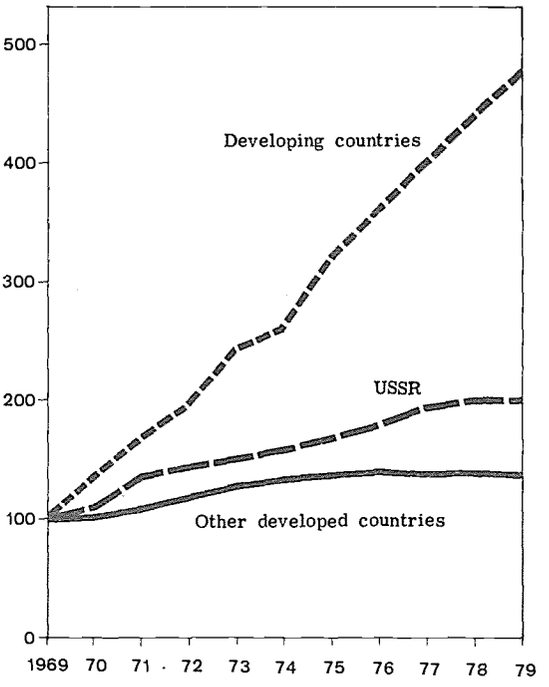


Figure 2-7

Indices of tonnage of trawlers and fishing vessels (for vessels over 100 gross tons), 1969 to 1979, (1969 = 100)

According to Lloyd's Register the tonnage of vessels over 100 tons from Ghana and Thailand has not increased during 1969 to 1979. However, not all vessels over 100 tons from these countries are registered and there are many vessels that are smaller. The severe problems incurred by both countries because of the extension of jurisdiction by their neighbours will be made worse by the excessive amount of fishing in their home waters.

Most other developing countries showing increases in tonnage of vessels over 100 gross tons use their vessels primarily in their own waters. These include Senegal, Argentina, Brazil, Mexico, Indonesia and the Philippines, all of which gain fairly large and rich areas from the extension of jurisdiction.

In summary, the countries with large distant-water fishing fleets are facing severe problems of dislocation because of the extension of national jurisdiction. These countries will have difficulties in absorbing the labour and capital displaced by the loss of free access to foreign zones. In general, the vessels of these countries are not suitable for use by the developing states although efforts might be made to sell, lease, or grant such vessels to them.

Even if displaced vessels were successful in developing fisheries in areas that still remain free, such as the waters of the Antarctic and the high seas, not many of them could be absorbed. The countries with large distant-water fishing fleets will therefore incur fairly severe hardships during the process of retrenchment.

The hardships experienced by the distant-water states will be outweighed by gains to coastal states and in improved economic efficiency in the use of the resources. In many cases, the foreign distant-water fishing effort has been excessive in economic, if not biological, terms.

## Effects on International Trade

In the past decade international trade in fishery commodities has changed significantly. In most recent years changes have undoubtedly been related to the extension of national jurisdiction, though other factors have also been at work.

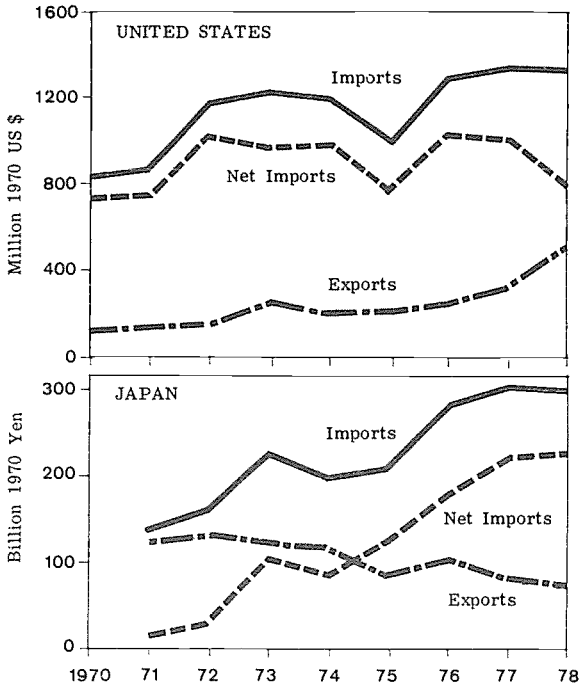


Figure 2-8

Japan and U.S.A.: Exports and imports of fishery commodities in constant currencies, 1970 to 1978

Table 2-10. Value of imports of fishery commodities by most important countries as percent of total world imports, 1970 and 1978

(current US dollars)

| Country by rank, 1978 | Imports by country as % of world total | |
|---|---|---|
| | 1970 | 1978 |
| 1. Japan | 8.8 | 25.3 |
| 2. U.S.A. | 25.5 | 18.5 |
| 3. France | 6.1 | 7.0 |
| 4. Germany, Fed. Republic of | 8.2 | 6.4 |
| 5. U.K. | 8.8 | 5.7 |
| 6. Italy | 4.9 | 4.5 |
| 7. Netherlands | 2.8 | 2.7 |
| 8. Belgium | 2.7 | 2.5 |
| 9. Hong Kong | 1.8 | 2.1 |
| 10. Sweden | 3.1 | 2.1 |
| 11. Spain | 1.5 | 2.1 |
| 12. Denmark | 1.5 | 1.8 |
| 13. Canada | 1.5 | 1.8 |
| 14. Australia | 1.2 | 1.2 |
| 15. Singapore | 0.9 | 0.8 |
| Sum of above | 79.3 | 84.5 |

Fifteen countries accounted for almost 85% of the value of the imports in 1978, with 25.3% taken by Japan, 18.5% the U.S.A. and 34.8% by nine western Europe countries. The only developing states in the list are Hong Kong and Singapore (Table 2-10).

The share taken by Japan has increased sharply but the share taken by the U.S.A. has declined. The shift in the U.S.A. is by no means as significant as that in Japan, particularly when changes in exports are taken into consideration. Although the U.S.A. is taking relatively less of total world imports, the real value of its imports has still been increasing, as shown in Figure 2-8 and Table 2-11. Exports from the U.S.A. have also been increasing so that net imports, in constant dollars, have remained about the same between 1970 and 1978.

In Japan the large increase in imports has been accompanied by a decrease in exports so that net imports have increased rapidly but steadily between 1970 and 1978. It is unlikely that the extension of national jurisdiction and the closure of foreign zones to Japanese fishermen has had a significant effect on Japanese trade until the most recent years. The large increases in net imports in the early 1970s reflect other factors, the most important of which are probably the rising cost of fisheries labour and the declining yields of stocks harvested by Japanese fishermen. These costs, reflected in the rising real prices of Japanese landings, indicate that the trend in Japanese trade was initiated well before the extension of jurisdiction began to take effect.

The Soviet Union has been exporting more fishery commodities than it has imported (see Table 2-11). Between 1970 and 1978 the value of the net exports has doubled, with virtually all of the increase occurring between 1972 and 1975. In the U.K. the value of exports has risen more than that of imports so that net imports have declined by about 20%. In the Federal Republic of Germany net imports show little change but for France there has been a significant increase.

Changes in the countries with the largest exports of fishery products were not as great as in major importing countries during 1970 to 1978 (Table 2-12). The 20 largest exporting countries made up only 73% of the total value of all exports of fishery commodities in 1978, down from 79% in 1970.

The most notable changes are the large declines in the relative importance of Peruvian and Japanese exports and the increases in the exports of the Republic of Korea and the United States. For Peru the change was due to the significant decline in the catch of anchoveta and the export of fishmeal. In the Republic of Korea it reflected the growth of distant-water fishing fleets and large exports to Japan.

For the developing countries as a whole the period was marked by an increase in their share of the world export market. Table 2-13 shows that the value of developing countries' exports of fishery commodities has risen from 29% to 34% of the world total between 1971/73 and 1979. It is not possible to determine the extent to which this change has been influenced by the extension of jurisdiction, because of other factors such as shifts in currency exchange rates and changes in prices.

Table 2-11. Exports and imports of fishery commodities in constant national currencies for selected countries

| | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Japan | | | | | | | | | |
| Imports, Bil.1970 Yen | ... | 134 | 161 | 224 | 199 | 210 | 281 | 301 | 300 |
| Exports, Bil.1970 Yen | ... | 121 | 130 | 122 | 115 | 85 | 102 | 83 | 74 |
| Net imports, Bil. 1970 Yen | ... | 13 | 31 | 102 | 84 | 125 | 179 | 218 | 226 |
| 2. U.S.A. | | | | | | | | | |
| Imports, Mil.1970 Dollar | 836 | 878 | 1,169 | 1,221 | 1,196 | 994 | 1,286 | 1,337 | 1,327 |
| Exports, Mil. 1970 Dollar | 112 | 131 | 141 | 250 | 199 | 214 | 253 | 326 | 534 |
| Net imports, Mil.1970 Dollar | 724 | 747 | 1,028 | 971 | 997 | 780 | 1,033 | 1,011 | 793 |
| 3. U.S.S.R. | | | | | | | | | |
| Imports, Mil.1970 Rubles | 15 | 14 | 14 | 10 | 20 | 25 | 21 | 34 | 30 |
| Exports, Mil.1970 Rubles | 81 | 84 | 79 | 91 | 120 | 154 | 150 | 144 | 163 |
| Net imports, Mil.1970 Rubles | -66 | -70 | -65 | -81 | -100 | -129 | -129 | -110 | -133 |
| 4. U.K. | | | | | | | | | |
| Imports, Mil.1970 Pounds | 123 | 117 | 120 | 161 | 129 | 106 | 132 | 128 | 134 |
| Exports, Mil. 1970 Pounds | 23 | 27 | 26 | 36 | 40 | 33 | 40 | 45 | 55 |
| Net imports, Mil.1970 Pounds | 100 | 90 | 94 | 125 | 89 | 73 | 92 | 83 | 79 |
| 5. France | | | | | | | | | |
| Imports, Mil.1970 Francs | 1,132 | 1,246 | 1,349 | 1,364 | 1,423 | 1,368 | 1,536 | 1,958 | 1,902 |
| Exports, Mil.1970 Francs | 205 | 256 | 290 | 378 | 386 | 309 | 389 | 405 | 483 |
| Net imports, Mil. 1970 Francs | 927 | 990 | 1,059 | 986 | 1,035 | 1,059 | 1,147 | 1,353 | 1,419 |
| 6. Germany, Fed. Republic | | | | | | | | | |
| Imports, Mil. 1970 DM | 976 | 959 | 881 | 957 | 1,046 | 891 | 956 | 1,059 | 1,024 |
| Exports, Mil. 1970 DM | 245 | 254 | 283 | 310 | 320 | 252 | 324 | 367 | 314 |
| Net imports, Mil. 1970 DM | 731 | 705 | 598 | 647 | 726 | 639 | 632 | 692 | 710 |

Table 2-12. Value of exports of fishery commodities by most important countries as percent of total world exports, 1970 and 1978

(current US dollars)

| Country by rank, 1978 | Exports by country as % of world total | |
|---|---|---|
| | 1970 | 1978 |
| 1. Canada | 8.8 | 8.8 |
| 2. U.S.A. | 3.7 | 8.1 |
| 3. Norway | 8.8 | 6.8 |
| 4. Japan | 11.6 | 6.7 |
| 5. Denmark | 5.8 | 6.5 |
| 6. Korea, Republic of | 1.4 | 5.7 |
| 7. Iceland | 3.7 | 4.5 |
| 8. Netherlands | 3.7 | 3.6 |
| 9. U.K. | 2.0 | 2.5 |
| 10. Spain | 3.4 | 2.5 |
| 11. Peru | 11.6 | 2.2 |
| 12. Mexico | 2.4 | 2.2 |
| 13. Thailand | 0.7 | 2.2 |
| 14. U.S.S.R. | 3.1 | 2.1 |
| 15. Germany, Fed. Republic of | 2.4 | 2.2 |
| 16. India | 1.4 | 1.9 |
| 17. France | 1.4 | 1.5 |
| 18. Chile | 1.0 | 1.5 |
| 19. Australia | 1.4 | 1.5 |
| 20. Hong Kong | 0.7 | 1.4 |
| Sum of above | 79.0 | 75.1 |

Table 2-13. Shares in international exports of fishery commodities by economic country group

| | Av.1971-73 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
|---|---|---|---|---|---|---|---|
| | ..... % ..... | | | | | | |
| World total | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Developed countries | 65 | 65 | 60 | 61 | 59 | 61 | 60 |
| Developing countries | 29 | 29 | 32 | 32 | 33 | 32 | 34 |
| Centrally planned economies | 6 | 6 | 8 | 8 | 7 | 7 | 6 |

Although the aggregate changes do not indicate significant effects on international trade from the extensions of jurisdiction, evidence of such effects can be found in certain specific situations. Japan's diminished access to stocks of Alaska pollack has led to an increase in pollack imports from the USSR. The decline in USSR's access to west African stocks of frozen mackerel, horse mackerel and similar species has decreased USSR exports of those species to the western African countries. The supply gap in the west African market was largely filled by frozen mackerel from the U.K. and by frozen horse mackerel and similar species from South America.

Undoubtedly these developments will continue to increase and there will be major changes in both the flow and the amount of international trade in fishery commodities due to the extension of jurisdiction. Other factors including increasing fuel and labour costs, changes in currency exchange rates and, particularly, the collapse of fish stocks (such as Peruvian anchoveta and Namibian pilchard), have had and will continue to have significant effects on trade.

## TASKS FOR MANAGEMENT AND DEVELOPMENT

The extension of national jurisdiction means not only increased benefits to coastal states but also increased political and management responsibilities for the future development and use of their fisheries. The extension has changed the conditions for development by providing greatly increased authority over the use of the resources. It has not, however, significantly changed the techniques of development. Administrators still need to go through the steps of assessing the resources and their domestic capacity; of formulating plans in accordance with their objectives; and of preparing and implementing development programmes. For these steps, they need a clear identification and specification of objectives and they need investments in research to produce the information required. In addition, as a consequence of extended jurisdiction many states will need to take steps on enforcement, on the allocation of stocks they share with their neighbours and, where desired, on methods of extracting the greatest benefits they can from foreign fishermen.

Governments have a particularly critical role to play in the management and allocation of fishery resources. For most other natural resources, such as forest and agricultural land, the resource users have some form of exclusive right to the resources. For these resources allocation is effected either through the market place or centrally by the planners. The holders of exclusive rights can also make appropriate decisions on investments and rates and techniques of use since they are the primary beneficiaries of maintaining or improving productivity. Enforcement is facilitated by the specificity of the rights, the interests of the holders of the rights, and usually by the institutional framework within which the rights are provided.

But for fisheries, where states maintain the conditions of common property domestically and exclusive use rights are not available, there is no value in the resource itself that can be appropriated and, therefore, no possibility of allocation through market mechanisms. Controls over the amount of total investments and rates of use cannot be exercised by the individual resource users. These decisions on allocation, investments and rates of use can only be made by a public agent, as long as the condition of free and open access is maintained for the users of the resource. Thus, administrators generally have significantly greater roles to play in the management and allocation of fishery resources than they do for most other natural resources.

Two kinds of decisions have to be made. The first concerns primarily the efficient utilization or management of the resource and is properly the responsibility of administrators. Included in this broad field are issues concerning the amount of investments in research, in production and in enforcement, the development of manpower, the possible need for external assistance, investments in development programmes, the formulation of regulations and, where desirable, the negotiation of agreements with foreigners. The second kind of decisions affects the distribution of wealth or benefits, either directly or indirectly, providing gains to one group of users and losses to another group. Decisions in such cases may have to be made at a higher level, either in the political structure or in a planning body. Such sensitive areas include not only the direct allocation of fishing privileges such as laws prohibiting trawling within areas used by artisanal canoe fishermen, but also the more fundamental choice of the objectives to be sought from fisheries management: for example, the maximization of employment opportunities for artisanal fishermen as against maximization of net economic revenues from the resources. The distinction between the two groups of decisions is not always clear, but a definite set of objectives will provide at least some guidelines for management.

## CLARIFICATION OF OBJECTIVES

It is thus important for coastal states to develop a set of clear and coherent objectives for the use of their fishery resources. Otherwise there are likely to be unwise investments in research and in production, ineffective regulations, difficulties in implementing programmes and conflicts among users.

The objectives might seek the maximization or optimization of sustainable yields, protein production, employment opportunities, net returns to the economy, and might even include less tangible values such as development of maritime skills. Some of them are in conflict with others so that choices between them must be made. In other cases resources may be already fully or over utilized so that these objectives cannot be achieved simultaneously. In these cases, for example, any improvements in net economic returns may only be achieved by limiting access to the resource and this means placing limits on employment.

The maximization of sustainable yields of stocks is superficially attractive as an objective and has been the stated aim of several international programmes in the past. Although it is important as a tool for measuring benefits from fisheries, it ignores the costs of harvesting the resources.

Maximization of protein production in the economy has similar deficiencies as an objective. The costs of producing additional protein from the sea, in order to achieve the maximum, may be greater than the benefits compared particularly to the production of protein from other sources.

The concept of optimum sustainable yield has recently been adopted by a number of states. The general validity of this objective for fisheries management and its usefulness as a guide for making decisions will depend on the adoption of objective criteria for optimization.

Perhaps the two most important general goals are those of maximizing employment opportunities and maximizing net returns to the economy. Each needs further refinement and more precision to serve as a useful guide for administrators. Employment opportunities need to be evaluated not only in terms of number of jobs but also with regard to earning levels and satisfactions in comparison with those in alternative sources of employment. Net returns to the economy can be assessed in a number of ways: simplistically and partially by measuring external financial flows such as fish export earnings or the taxes obtained from foreign fishermen; in a more complex but still partial way such as measuring returns to capital and labour; or, more comprehensively, through social cost-benefit analysis. Such measurements should provide for discounting of the cost-benefits flows over time and for the appropriate weighting of the distribution of benefits among different economic classes in society.

## MEETING INFORMATION NEEDS

Those responsible for management and development of fisheries require information not only for making policies but also for their administration. They need to know what are the present and potential yields from the fishery resources and the effects of fishing on these yields; the economic and social characteristics of the fisheries, including the revenues that can be received; the costs of fishing; the value of resources that are shared with other states, and the distribution of the benefits. Initially, this information might be scanty or of poor quality so that some decisions may not be as rational and effective as they should be. Every effort should be made, therefore, to ensure rapid improvement in the quality of the data.

Although it is desirable for some basic research to be undertaken without regard to its application, most developing coastal states need to concentrate their scarce research funds on the acquisition of information of direct value to administrators. Though it may

seem self-evident to say that the information collected should be clearly relevant to decision making, it is unfortunate that those responsibe for the acquisition and analysis of information of fisheries do not always operate closely with those responsible for decisions on development, management and allocation.

Unfortunately, costs of data collections are often high. Information on resources is difficult to acquire because of the problems of locating the fish and the complex interrelationship between a stock and its environment. Economic and social information can generally be acquired at lower costs but in most countries, developed as well as developing, little is known about the economic and social effects of alternative regulations or development programmes.

Most economic and social data needed should normally be collected by the individual coastal states. Indeed much of the information can be used for many purposes. For example, data on prices received by fishermen and on costs of fishing would be of value to many decisions on development programmes and regulatory measures. Some data, however, such as those on international trade, markets, prices, quality standards for products, shipping costs, fuel costs and availability, could be more easily collected through regional or international sources.

Much useful information on the biological characteristics of a fishery resource can be acquired from records of catches and effort by fishermen. If foreign fishermen are permitted to continue to fish within a coastal state's zone, they can be required to produce detailed logs of the species they catch by location, gear and time spent fishing. Similar kinds of records can be required from domestic fishermen where they operate on a commercial basis and land their catches in large ports. Collecting such data from artisanal fishermen will be more difficult and may require different techniques for estimating catch and effort.

Various techniques can be used where it is not possible to obtain full information. As uncertainty about the biological characteristics of fishery resources will always exist to some extent, decisions need not, or should not be postponed until more information is available. For example, a tax or licence fee on foreign fishermen can be increased by small amounts and the results observed until the maximum revenue is obtained. Such a strategy could not be applied to stocks with large fluctuations in annual yields but, where its use is possible, investments in research to determine the yield functions of a stock could be greatly reduced.

In many areas, all states will benefit from a regional approach to the collection and analysis of biological data. This is clear where stocks are shared and where the determination of yield functions or migratory patterns requires information on catches wherever the stock is found. Even where stocks are not shared, knowledge of the behavioural characteristics of one stock may be of value with regard to another stock of the same species. Individual states can, thus, reduce their research costs by cooperating with their neighbours.

## ENFORCEMENT OF REGULATIONS AND AGREEMENTS

An early decision will have to be made on the degree and methods of surveillance of fishing areas and the enforcement of regulations and agreements. Like the other tasks of management, enforcement carries costs that diminish the benefits gained from the extension of jurisdiction. The challenge to administrators is to limit these costs so that the greatest net benefits are obtained. Attempts to achieve complete effectiveness in enforcement will usually incur much greater costs than are justified by the benefits.

There are two kinds of enforcement problems within extended fisheries zones: (1) to prevent poaching by vessels that do not have permission to fish; and (2) to ensure that vessels, both domestic and foreign, that do have permission comply with the terms of the agreements and regulations. There are five phases of enforcement - surveillance, arrest, trial, punishment, and reporting - each of which must be satisfactorily fulfilled if enforcement is to be effective. Each of these phases may be the responsibility of different agencies. Thus, surveillance functions may be the responsibility of the coast guard, navy, and the fisheries agency. Arrest functions may be restricted to the coast guard or navy. Trial and punishment are usually the function of the justice department although, in at least one state, the navy was at one time authorized to levy and collect fines. Reporting functions might be handled by any of several agencies.

Where coordination among the various agencies is inadequate, enforcement is greatly weakened. For example, if justice departments fail to prosecute offenders or impose negligible fines, there is little incentive for other agencies to carry out surveillance and enforcement. If there is inadequate reporting, fishermen may not feel that the system is just and will have little respect for enforcement. Potential offenders must understand that the risks of non-compliance are sufficiently great to deter them from violations.

In many cases the most effective means for reducing the costs of enforcement may be to improve coordination between the concerned national agencies. Costs can also be reduced by a careful analysis of the benefits that might be gained by investments in means of enforcement. In the case of poaching it may be possible to estimate the value of the resources harvested by foreign fishermen prior to the extension of jurisdiction. If, for example, records show that foreign fishermen were taking 700 tons of tuna per year, the gross revenue would be of the order of US$ 1 million. Assuming that the potential royalties from the resource are about 20% of the gross value, the coastal state would be losing about US$ 200 thousand per year if fishing were to continue illegally. If the annual costs of surveillance and prevention of poaching were US$ 300 thousand per year, the coastal state would be better off by permitting the poaching to continue. Decisions are, however, not always made on economic grounds and the coastal state may be willing to take the loss in order to satisfy domestic political pressures.

The level of cost that would be justifiable would depend upon the degree to which poaching could be diminished, the amount of fines that could be collected, and the other uses for surveillance and arrest aircraft or patrol vessels. A large investment in enforcement could make foreigners appreciate that the risks are very high and deter them from poaching for many years. This would reduce the fines that could be collected but might also free the aircraft and vessels for other uses. Even though such calculations may be difficult, some rough estimates are desirable in order to determine the most beneficial level of investment.

The avoidance of regulations and controls that are difficult to enforce can greatly reduce costs. Agreements for foreigners to pay lump sums require almost no surveillance and arrest capabilities. Those that limit the number of fishing vessels involve moderate costs, and those based on quantities of fish caught somewhat higher costs. The alternatives for coastal states may be between obtaining smaller total revenues at very low costs of enforcement or potentially higher revenues but incurring higher costs. It is desirable, therefore, that those responsible for the functions of surveillance and enforcement participate in the formulation of agreements with foreigners.

The enforcement of regulations in domestic fishing depends on how far the fishermen consider the objectives of the regulations desirable. Where a regulation is adopted to achieve a redistribution of wealth as, for example, the prohibition against inshore trawling to protect the interests of artisanal fishermen, it may be very difficult to enforce. In these cases it may be less costly to provide compensation for the losers than to invest heavily in enforcement.

Where a regulation is designed to increase future yields, it generally means a sacrifice of present yields. The current fishermen may perceive, quite rightly, that the future benefits will be shared by additional fishermen rather than accrue solely to themselves. They may, therefore, be unwilling to abide by the regulations and this may result in high enforcement costs. Consideration will then have to be given to limiting entry into the fishery so that the present fishermen will be the sole beneficiaries of the measure.

In general, the greatest savings in enforcement costs can be made where the fishermen have a self-interest in abiding by the regulations and controls, and where all parties perceive that they are better off by compliance than by non-compliance. This can often be achieved by compensatory mechanisms, where the regulation has a distributive effect, or by the provision of some form of rights to the benefits produced by the measure. In any case, those responsible for enforcement should participate in the formulation of the regulations and controls to prevent the adoption of regulations that cannot be effectively implemented.

## THE ALLOCATION OF SHARED STOCKS

Perhaps the most difficult task facing coastal states is that of reaching viable and desirable agreements on the allocation and management of shared stocks of fish. The failure to reach satisfactory agreements could lead to large declines in the net benefits from fisheries and possibly in total catches.

There are numerous situations where individual stocks of fish are found in the zones of two or more states. The highly migratory species, such as tunas, swordfish, marlins and other bill fish, swim both within and outside of 200 mile limits. Salmon also cover vast areas of the oceans and, particularly in the Atlantic, swim through zones of other states than those in whose streams they spawn. But there are also large numbers of moderately migratory species which may never swim beyond 200 miles but may pass through the zones of several countries. These include mackerels and herrings in the North Sea, scads in the South China Sea, and pilchards and sardinella in the eastern central Atlantic. In addition, there are stocks with very limited migrations that straddle boundaries between two states.

The problems of shared stocks are essentially problems of the distribution of wealth and can only be resolved by negotiation among the relevant coastal states. Negotiations would be greatly facilitated if the interests of each state are clearly expressed, preferably in economic values, so that each state can compare its interests to those of the others and also that a basis for assessing compensation is provided. However, since the interests may sometimes be difficult to evaluate, such as the dependence of artisanal fishermen on a share of the yield, it may not be easy to arrive at fully satisfactory measures of interests. An alternative would be to use shares in annual yields but this would require modification to reflect the different values of harvest in each zone.

Since no approach is likely to be entirely satisfactory to all parties, the negotiations may become very complicated. If they fail, the stocks may be used to the point where net benefits disappear and all participants lose. However, as states become increasingly aware of the problems of shared stocks and the potential for common losses, they may be increasingly willing to restrain their own fishermen and seek compromises that will be beneficial for all.

## UTILIZATION OF FOREIGN FISHING ENTERPRISES

Though most coastal states will probably wish to develop their own domestic capacity, they may wish to permit some foreign fishing to continue in the interim as a means for improving their capabilities and in order to maintain a flow of benefits to their national economies. In their negotiations with foreign fishermen the choice of arrangements coastal states may make will be influenced not only by the amount of benefits they can obtain from

them but also by the ways in which the benefits are distributed through their own economies: that is, whether they go to the general treasury or to particular groups within the fishery sector or other sectors.

Benefits can be obtained through taxes on catch, revenues or profits; by licence fees; or by lump sum payments. The choice will be affected by the amount of revenues expected, the kinds and degrees of risks involved and the costs of ensuring compliance with the agreements.

In some instances profit-sharing arrangements have been made under which the risk is equally shared by both partners. These arrangements could produce greater revenues to the coastal state than taxes or licence fees which are based on expected rather than actual profits. In practice coastal states may find themselves at a disadvantage through manipulation of the accounts. The catch could, for example, be sold at a low price by a foreign company to another which it controlled and which would retain the profits.

Some countries seek to avoid profit-sharing difficulties by taxing the value of the catch so that both the country and the foreign partner share the risks of a fall in prices, as well as the gains from an increase. The foreign partner, however, which bears the entire risk of a rise in costs, will not be willing to pay a fee that it cannot be sure of covering fully. In addition it is sometimes difficult to determine the fair value of the catch. A tax on quantity of catch rather than value places the risk of a price drop or cost increase entirely on the foreign partner, so that its willingness to pay would be even less. These taxes may not give as great a revenue as profit-sharing but provided there is some system for verifying the catch reported by the foreign company, the administrative problems may be much less.

The use of licence fees on fishing capacity facilitates the resolution of enforcement problems. The fees can be expressed per vessel, per tonnage of vessel, or per unit of gear. Since vessels generally have to be registered before entering the coastal state's zone, compliance with the agreement requires little more than surveillance of vessels. In the short run, such a system is relatively easy to implement, but if it lasts more than two or three years, it may become increasingly less effective as a means of controlling levels of catch. Fishermen will seek to maximize their profits by taking as great a catch as they can and will substitute other inputs for the one that is controlled. If, for example, they pay a fee per vessel they will use larger vessels; or, if the fee is per ton of vessel they will use more efficient gear or more sophisticated equipment. Unless fees are adjusted upwards or the number of licences reduced, the total effective effort will increase and may possibly have negative effects on yields.

The easiest system to enforce is to extract revenues in lump sum payments without regard to the number of vessels or quantity of catch. Some states may find this the most attractive system for getting some immediate benefits but the foreign partner will not be willing to pay very much since it bears all the risks including that of taking a low catch. In addition the coastal state has no control over either effort or catch and may find yields diminished if it maintains the system for long.

In the South Pacific, several of the small island states have made arrangements with Japanese tuna vessels, employing a combination of the techniques, including a limit on the number of vessels, a flat sum and a royalty on the catch above a certain amount. Several Latin American countries base their fees on tonnage of vessels. Mauritania also has used this technique together with requirements for landing a share of the catch in its ports and for training its fishermen.

There are trade-offs in each of the systems described. Some may produce larger gross revenues but result in greater costs in enforcement. Others may have low enforcement costs but do not permit effective control over the use of the resources. Coastal states may decide that a combination of systems is most appropriate to their own capacities and interests. At the same time distant water fishing countries will have to learn that

with reduced numbers the remaining vessels can often achieve higher average catches and so can afford higher prices for access.

Where there is only one country whose fishermen want access to a particular stock and there are several coastal states wishing to sell access rights, the fishing country has a strong bargaining position. Unless the coastal states reach agreement amongst themselves on levels of fees or taxes, the fishing state can play one off against another and drive down the price of access. All the coastal states will lose potential revenues unless they cooperate in setting the fees or broaden the competition among buyers. Indeed, one of the most effective ways of determining the levels of fees or taxes is by auction either openly or by a series of bilateral negotiations among a large number of potential buyers.

None of these systems is perfect and there may well be a long period of "trial and error" before fees are set at an appropriate level. During this process of adjustment coastal states will need to develop cooperative procedures to ensure that they receive fair prices.

The revenues received from foreign fishermen can be used by coastal states in many ways. In some cases they go into the general treasury and provide benefits to the economy as a whole. In others they may be earmarked for special purposes, particularly in support of the fishing industry in such ways as subsidies for the construction of vessels, price supports, construction of processing or port facilities, or provision of training programmes. In any case they offer great flexibility to the coastal state in determining how the benefits should be distributed within the country.

Another situation characterizes systems that provide access privileges to a foreign country in return for payments or assistance in various tied forms such as grants-in-aid, low cost loans, port construction, processing facilities, training programmes, and requirements that catches be landed in the coastal state. These systems are generally negotiated with foreign governments rather than with private companies. They may be useful where there are currency problems between the foreign country and the coastal state; but it is very difficult to determine the real value of the benefits. What value for example can a coastal state place on low-cost loans to be used only for the purchase of fishing equipment from the foreign country making the loans?

The coastal state may not have much choice if the resource is of interest only to a foreign country that cannot readily pay in cash and especially in convertible currency for access privileges. Normally, however, there are a number of competing countries and the coastal state will evaluate in money terms the benefits offered by governments and companies and negotiate the best deal.

The third system of obtaining benefits is through the use of joint ventures with foreign partners. Developing coastal states can maintain control over the use of their resources and participate in partnerships from which they receive skills, experience and technology leading to the development of their own capacity. When joint ventures work successfully, coastal states can receive significant benefits. However, this is not always so because the major interest of the foreign fishermen is making an immediate profit, while the interest of the coastal state is generally that of acquiring expertise and capital. Unless these differing interests can be reconciled, there will be dissatification on both sides.

One area for compromise often lies in the technology used for fishing or processing. The foreign partner, particularly where it is a private company, may wish to use its surplus vessels and be reluctant to adapt them or build new ones to fit the changed circumstances. The coastal state may be tempted by the high technology that is offered but may not have the skills to use or maintain it. There are, at present, several developing countries which, as a result of ill-advised joint venture arrangements, have acquired vessels that are now rusting at docks.

Difficulties in joint ventures may also arise in training programmes, where language and cultural differences impede communication. Fishermen from distant-water fishing fleets may be accustomed to working erratic hours and remaining at sea for long periods of time. If such traditions are unfamiliar and not readily acceptable, training through joint ventures may be much less effective than training programmes designed to accommodate domestic cultural patterns.

Though these systems will do much to prevent the economic waste that occurred under free fishing and may even help to achieve higher yields from the stocks, none of them will obviate the need for other controls and regulations to ensure that the coastal states achieve the maximum benefits from foreigners.

## DEVELOPMENT OF DOMESTIC CAPACITY

Many coastal states may wish to exclude all foreign fishing and concentrate on the immediate development of their domestic capacity. Where they gain jurisdiction over stocks already utilized by domestic fishermen, the elimination or reduction of foreign fishing could significantly increase catches and spur development without major public investment.

In these situations there are also opportunities for new markets. Though the evidence is at present limited, it is likely that the major distant-water countries will increase their imports to replace their loss of access. This may stimulate the development of domestic fishing capacity in some developing countries and justify investments in processing and port facilities to establish an export market. Where the resources are not of interest to foreign countries, development of domestic fishing capacity depends upon the expansion of the home market.

In seeking to develop their domestic fishing capacity, some countries may be able to use some of the superfluous vessels being retrenched from the fleets of distant-water fishing countries. The price may be low but neither the scale nor the technology of such vessels is always readily transferable for use by developing states in local waters. Many of them have been designed to travel great distances and to fish far from ports. Some are equipped with freezing or processing facilities and they often use highly sophisticated gear and electronic equipment. Rising fuel costs and the generally high fuel consumption of these vessels also limit their use.

In the situations where the extension of jurisdiction covers stocks not utilized by foreigners and provides exclusive rights over the stocks, the development of domestic capacity will be well protected. Decisions on the kind and degree of development will depend on a number of factors including the net benefits anticipated and the availability of capital and labour.

In some cases there may not be a sufficiently large market for the newly acquired stocks to justify investments in their harvest. In other cases, however, some degree of public investment in vessels, gear, training and processing and port facilities may help to stimulate economically viable fisheries.

The development of domestic capacity must proceed with an understanding of the possible effects on fisheries which are already fully utilized. Fishermen using vessels developed to fish new stocks may be greatly tempted to seek greater profits in fishing old stocks. In several countries in southeast Asia, for example, the development of small trawlers greatly intensified the fishing effort on inshore shrimp stocks to the detriment of the inshore artisanal fishermen. In response to this, most countries in the region have adopted regulations prohibiting the use of trawlers close to shore but have generally not been able to enforce them effectively. Thus, the shrimp stocks have become overfished and the employment opportunities for artisanal fishermen have been diminished.

If there are alternative employment opportunities in the country or if the country wishes to increase the average earnings of its fishermen and returns to capital, then it will need to avoid the development of excess capacity by controlling the number of vessels or fishermen. Such controls might take several forms. One, which is desirable in theory but difficult in practice except when applied to foreign fishermen, is to impose a tax or licence fee sufficiently high to remove the superfluous fishing effort. This avoids the necessity of choosing who will leave the fishery and who will remain. In practice the imposition of a tax on fishermen whose incomes are already low would not be generally acceptable and although it would increase revenues to the state it would not increase revenues to the fishermen.

In the Republic of Maldives, however, a form of tax on the catch of domestic fishermen has been in effect for many years. This has produced a major source of public revenue which is used to subsidize the import and sale of staple commodities such as flour, rice and sugar. Although the tax reduces the opportunity for employment in fisheries unemployment is not a major problem in this particular case and the result is a remarkably efficient fishery.

Other controls, such as a limit on the number of vessels or fishermen or the provision of an exclusive fishing right to individuals or a community, directly distribute the benefits to those who acquire the rights and away from those who are excluded. Although such measures are not always easy to implement, they can be frequently adopted with less immediate disruption to the fishery than a tax or licence fee as, for example, by granting licences only to all current fishermen.

Furthermore, the provision of exclusive rights to fishermen, perhaps through some form of franchise to a stock or an area, approximates private property rights for land resources. This technique would considerably reduce the difficulties and costs of public management, leaving decisions on investments in capital and labour in the hands of the communities which acquire the rights. This system has been in effect for Japanese inshore fisheries for decades.

In many developing countries, there is a critical lack of employment opportunities. In these situations the controls described above may not be desired at the present time. The importance of providing employment opportunities may justify maintaining free and open access, even though it means the perpetuation of low earnings to the fishermen and provides small contributions to the growth of the economy. In all cases, however, management will be required to conserve the resources and prevent the loss of benefits to all.

It is essential in the national interest that there should be a clear understanding of the effects of development programmes on the use of capital and labour both in the short and the long run. The choice of the most appropriate combination of capital and labour is not easy since the benefits, both direct and indirect, will be distributed in different ways. In some cases, the maintenance or increase of the revenues to fishermen and contributions to the economy may be paramount. In others, however, the choice will be to develop fisheries as a means for meeting social objectives and increasing the opportunities for employment.

## TECHNICAL ASSISTANCE AND THE ROLE OF FAO

The extension of jurisdiction, notwithstanding the practical and economic problems of managing and developing fisheries, greatly improves the opportunity for increasing the benefits which can be derived from these resources. It has, perhaps above all, created a greater awareness that the fish resources themselves are but the means of achieving much wider economic, social and nutritional goals.

The tasks involved in grasping these new opportunities and accepting the concomitant responsibilities represent a tremendous challenge to individual nations and to the international community in general. Many coastal states do not have the capacity or the expertise as yet to take full advantage of the new situation. The staff available are often few in number and lack sufficient training and experience in many of the specialized biological, economic, technical and legal fields involved in resource management and development. External assistance is therefore urgently needed to enable developing coastal states to secure maximum benefits from the fishery resources now coming under their jurisdiction.

FAO is no newcomer to this kind of work. For 30 years the Organization has been assisting fisheries development in the Third World. It is uniquely equipped to support developing coastal nations in their efforts to meet this new challenge. FAO is fulfilling its mandate by providing a comprehensive special programme of assistance, in the depth and scale required by the new situation, to help developing coastal states in the management and development of the fisheries in their exclusive economic zones. This programme was endorsed by the 20th Session of the FAO Conference held in November 1979.

Much of this assistance is being channelled through multi-disciplinary field projects associated with the network of regional fishery commissions already established by the Organization and designed to promote collaboration between individual countries and groups of countries. Much of the work is being pursued in the spirit, and practice, of technical and economic cooperation among developing countries. A critical factor in the success of all these efforts will be the provision, by international and bilateral development assistance agencies, of substantial long-term financial and other forms of support to FAO's programme of assistance.

The need to make the most of our food resources was never more apparent. The opportunity to extract fuller benefits from the fisheries was never as promising. We have moved from the age of wasteful free-for-all into an age where there is a real chance of rational management and orderly fisheries development. What is now required is a concerted effort to realise these opportunities.

# ANNEX TABLES

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

| | AVERAGE 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ...THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| WORLD | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 1002223 | 1215447 | 1314969 | 1275826 | 1382322 | 1345474 | 1377793 | 1486600 | 1476217 | 1595250 | 1550483 | 2.77 |
| WHEAT | 254770 | 318385 | 354316 | 347347 | 378719 | 364367 | 359943 | 425103 | 391045 | 449817 | 423490 | 3.18 |
| RICE PADDY | 254550 | 316375 | 317565 | 305809 | 332446 | 332284 | 358412 | 350345 | 369683 | 386000 | 374244 | 2.50 |
| BARLEY | 103974 | 135222 | 145759 | 146831 | 164168 | 166724 | 152372 | 186950 | 176281 | 193913 | 173905 | 3.37 |
| MAIZE | 220641 | 262387 | 303857 | 300715 | 311471 | 293519 | 324832 | 332812 | 346284 | 363914 | 395477 | 3.68 |
| ROOT CROPS | 485811 | 523471 | 500349 | 494611 | 533827 | 521368 | 501259 | 512370 | 512276 | 538627 | 546311 | .56 |
| POTATOES | 266786 | 288120 | 269047 | 260945 | 292647 | 271149 | 258942 | 262884 | 265624 | 276272 | 283786 | - .14 |
| CASSAVA | 78749 | 97382 | 97442 | 99793 | 100426 | 103363 | 107410 | 110603 | 114815 | 121441 | 118003 | 2.64 |
| TOTAL PULSES | 44542 | 48225 | 46805 | 46710 | 47892 | 48230 | 46527 | 52273 | 49314 | 50690 | 49169 | .75 |
| CITRUS FRUIT | 25132 | 37070 | 39687 | 42044 | 45587 | 46367 | 48299 | 48988 | 50741 | 50841 | 53215 | 3.82 |
| BANANAS | 22555 | 30792 | 32005 | 32054 | 32461 | 33094 | 32676 | 34018 | 36359 | 36836 | 36983 | 2.08 |
| APPLES | 22049 | 28630 | 28043 | 26096 | 29902 | 28480 | 32088 | 32431 | 30567 | 32795 | 35922 | 2.63 |
| VEGETABLE OILS,OIL EQUIV | 29244 | 36262 | 37606 | 37003 | 40785 | 40195 | 43331 | 41477 | 46692 | 48509 | 52703 | 3.98 |
| SOYBEANS | 32476 | 46536 | 48480 | 51964 | 62662 | 57171 | 69257 | 62662 | 78458 | 80518 | 94323 | 7.65 |
| GROUNDNUTS IN SHELL | 15907 | 18472 | 19240 | 16388 | 17429 | 17863 | 19729 | 17890 | 17983 | 18481 | 18352 | .18 |
| SUNFLOWER SEED | 7349 | 9938 | 9785 | 9599 | 12077 | 10955 | 9582 | 10247 | 12066 | 13115 | 15334 | 4.00 |
| RAPESEED | 4293 | 6728 | 8116 | 6766 | 7203 | 7168 | 8544 | 7664 | 8314 | 10568 | 10540 | 4.51 |
| COTTONSEED | 20213 | 22279 | 23676 | 25254 | 25696 | 26399 | 22971 | 22753 | 25706 | 24749 | 26730 | .93 |
| COPRA | 3700 | 3904 | 3831 | 4022 | 3728 | 3972 | 4286 | 4333 | 4563 | 4422 | 4410 | 2.00 |
| PALM KERNELS | 1087 | 1178 | 1222 | 1199 | 1176 | 1351 | 1370 | 1432 | 1472 | 1406 | 1680 | 3.58 |
| SUGAR (CENTRIFUGAL,RAW) | 56753 | 72727 | 73557 | 72221 | 76866 | 76142 | 79470 | 83622 | 90143 | 90803 | 89054 | 2.89 |
| COFFEE GREEN | 4410 | 3877 | 4650 | 4572 | 4198 | 4713 | 4652 | 3551 | 4259 | 4645 | 4983 | .84 |
| COCOA BEANS | 1251 | 1541 | 1602 | 1454 | 1366 | 1553 | 1542 | 1372 | 1429 | 1483 | 1612 | - .13 |
| TEA | 1085 | 1307 | 1320 | 1424 | 1463 | 1487 | 1547 | 1586 | 1755 | 1787 | 1844 | 4.04 |
| COTTON LINT | 10931 | 11805 | 12659 | 13604 | 13811 | 13935 | 12281 | 12088 | 13858 | 13211 | 14265 | .96 |
| JUTE AND SIMILAR FIBRES | 3386 | 3584 | 3336 | 3751 | 4005 | 3210 | 3267 | 3476 | 3745 | 4523 | 4398 | 2.18 |
| SISAL | 642 | 619 | 668 | 672 | 638 | 680 | 603 | 420 | 456 | 418 | 451 | - 5.56 |
| TOBACCO | 4381 | 4663 | 4537 | 4863 | 4946 | 5301 | 5436 | 5669 | 5535 | 5726 | 5551 | 2.63 |
| NATURAL RUBBER | 2185 | 2963 | 3037 | 3012 | 3430 | 3423 | 3523 | 3739 | 3574 | 3666 | 3680 | 2.71 |
| TOTAL MEAT | 83913 | 106877 | 110776 | 113623 | 114803 | 121472 | 123417 | 127106 | 131697 | 136037 | 139742 | 3.02 |
| TOTAL MILK | 355294 | 398864 | 401469 | 411052 | 417424 | 425389 | 429376 | 437285 | 449114 | 455893 | 462138 | 1.72 |
| TOTAL EGGS | 16719 | 21365 | 21993 | 22566 | 22754 | 23334 | 23987 | 24341 | 25196 | 26254 | 27072 | 2.55 |
| WOOL GREASY | 2617 | 2843 | 2782 | 2735 | 2574 | 2537 | 2638 | 2596 | 2581 | 2592 | 2669 | - .78 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 5609 | 6970 | 7044 | 7084 | 7314 | 7313 | 7639 | 7431 | 7594 | 7632 | 7944 | 1.33 |
| MARINE FISH | 35842 | 54309 | 53882 | 49304 | 49494 | 53264 | 52507 | 55815 | 54366 | 55700 | 56254 | .84 |
| CRUST+ MOLLUS+ CEPHALOP | 4398 | 5555 | 5695 | 5970 | 6084 | 6239 | 6634 | 6951 | 7459 | 7773 | 8169 | 4.48 |
| AQUATIC MAMMALS | 25 | 25 | 22 | 17 | 11 | 11 | 12 | 13 | 13 | 13 | 22 | - 3.12 |
| AQUATIC ANIMALS | 72 | 217 | 146 | 154 | 257 | 137 | 140 | 142 | 232 | 257 | 234 | 3.02 |
| AQUATIC PLANTS | 1176 | 1533 | 1985 | 2126 | 2187 | 2469 | 2331 | 2392 | 2855 | 2967 | 2972 | 6.54 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 499485 | 549708 | 570199 | 564732 | 589742 | 565659 | 542138 | 601165 | 613800 | 614728 | 624558 | 1.29 |
| SAWLOGS NONCONIFEROUS | 169857 | 207086 | 209415 | 218628 | 236198 | 225105 | 209385 | 229218 | 237505 | 242221 | 243402 | 1.66 |
| PULPWOOD+PARTICLES | 221490 | 314206 | 303636 | 302528 | 323936 | 358182 | 322635 | 323369 | 314947 | 324829 | 346117 | .80 |
| FUELWOOD | 1036156 | 1338892 | 1361300 | 1385065 | 1409349 | 1442627 | 1469871 | 1508040 | 1533948 | 1565901 | 1599665 | 2.03 |
| SAWNWOOD CONIFEROUS | 276683 | 312174 | 325441 | 332492 | 339028 | 321420 | 305246 | 329384 | 338670 | 337925 | 341004 | .62 |
| SAWNWOOD NONCONIFEROUS | 77797 | 92631 | 94197 | 95724 | 99212 | 97672 | 93501 | 99388 | 99319 | 101295 | 102793 | .97 |
| WOOD-BASED PANELS | 40383 | 69785 | 78205 | 87578 | 95461 | 88018 | 84819 | 95706 | 101051 | 104551 | 106815 | 4.05 |
| PULP FOR PAPER | 69049 | 102997 | 103160 | 109064 | 115431 | 119341 | 104798 | 114475 | 116212 | 121497 | 127902 | 1.99 |
| PAPER+PAPERBOARD | 86711 | 128029 | 129815 | 138747 | 148353 | 151287 | 132257 | 148651 | 153576 | 160152 | 170785 | 2.73 |
| WESTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 109385 | 128242 | 148326 | 147968 | 150753 | 158798 | 146859 | 142299 | 153273 | 168002 | 164419 | 1.86 |
| WHEAT | 44565 | 47491 | 56464 | 56002 | 55468 | 62735 | 52959 | 57131 | 53467 | 64026 | 60340 | 1.66 |
| RICE PADDY | 1397 | 1596 | 1598 | 1411 | 1784 | 1729 | 1703 | 1533 | 1339 | 1677 | 1732 | .21 |
| BARLEY | 27480 | 36028 | 42118 | 44117 | 45045 | 47514 | 45665 | 42575 | 51206 | 55357 | 52889 | 3.64 |
| MAIZE | 14236 | 23354 | 25571 | 25442 | 28940 | 26253 | 27412 | 24098 | 29598 | 28275 | 32260 | 2.37 |
| ROOT CROPS | 72384 | 63254 | 60875 | 56449 | 56565 | 58565 | 47536 | 45121 | 55023 | 53104 | 49686 | - 2.48 |
| POTATOES | 72195 | 63110 | 60728 | 56302 | 56425 | 58421 | 47397 | 44972 | 54875 | 52962 | 49541 | - 2.49 |
| TOTAL PULSES | 2593 | 2436 | 2255 | 2048 | 1973 | 2076 | 1911 | 1611 | 1661 | 1742 | 1702 | - 4.02 |
| CITRUS FRUIT | 4114 | 5220 | 5585 | 6490 | 6537 | 6666 | 6737 | 6799 | 6668 | 6590 | 6658 | 2.22 |
| BANANAS | 372 | 456 | 459 | 406 | 480 | 426 | 385 | 362 | 422 | 430 | 432 | - 1.02 |
| APPLES | 10199 | 11591 | 10666 | 8959 | 11591 | 9908 | 11473 | 10200 | 7703 | 10565 | 10735 | - 1.05 |
| VEGETABLE OILS,OIL EQUIV | 1709 | 2020 | 2247 | 2226 | 2426 | 2249 | 2627 | 2141 | 2647 | 2724 | 2660 | 2.75 |
| SOYBEANS | 9 | 8 | 7 | 9 | 26 | 59 | 47 | 58 | 78 | 85 | 121 | 39.90 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | THOUSAND METRIC TONS | | | | | | | PERCENT |
| GROUNDNUTS IN SHELL | 26 | 17 | 18 | 16 | 18 | 16 | 19 | 17 | 19 | 20 | 23 | 2.52 |
| SUNFLOWER SEED | 247 | 490 | 668 | 666 | 842 | 692 | 858 | 773 | 1011 | 1152 | 1274 | 9.15 |
| RAPESEED | 549 | 1104 | 1324 | 1462 | 1456 | 1608 | 1334 | 1388 | 1329 | 1727 | 1668 | 2.93 |
| COTTONSEED | 356 | 323 | 326 | 379 | 333 | 365 | 335 | 303 | 341 | 330 | 279 | - 1.28 |
| SUGAR (CENTRIFUGAL,RAW) | 8589 | 10736 | 12482 | 11598 | 12250 | 11173 | 12917 | 13805 | 15436 | 15586 | 16015 | 4.39 |
| COTTON LINT | 191 | 170 | 169 | 192 | 171 | 187 | 169 | 152 | 177 | 170 | 142 | - 1.49 |
| JUTE AND SIMILAR FIBRES | 1 | | | | | | | | | | | |
| TOBACCO | 313 | 317 | 304 | 334 | 350 | 329 | 401 | 446 | 391 | 409 | 443 | 4.21 |
| TOTAL MEAT | 16528 | 21445 | 22319 | 22129 | 22690 | 24656 | 24558 | 25047 | 25683 | 26564 | 27897 | 2.84 |
| TOTAL MILK | 109293 | 118141 | 117891 | 122551 | 124312 | 125486 | 126661 | 129144 | 132302 | 136236 | 139322 | 1.84 |
| TOTAL EGGS | 3740 | 4748 | 4744 | 4925 | 4826 | 4860 | 4988 | 5049 | 5107 | 5207 | 5269 | 1.18 |
| WOOL GREASY | 189 | 163 | 162 | 160 | 163 | 167 | 149 | 154 | 152 | 158 | 164 | - .42 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 147 | 157 | 164 | 165 | 172 | 175 | 178 | 179 | 178 | 187 | 195 | 2.07 |
| MARINE FISH | 7950 | 9958 | 10002 | 10009 | 10157 | 10145 | 9775 | 10888 | 10929 | 10275 | 10197 | .62 |
| CRUST+ MOLLUS+ CEPHALOP | 631 | 795 | 854 | 961 | 1014 | 970 | 1034 | 960 | 969 | 977 | 922 | 1.36 |
| AQUATIC MAMMALS | 5 | 11 | 9 | 7 | 6 | 5 | 7 | 7 | 8 | 8 | 17 | 2.04 |
| AQUATIC ANIMALS | 8 | 6 | 7 | 2 | 5 | 5 | 2 | 4 | 3 | 5 | 2 | - 7.72 |
| AQUATIC PLANTS | 124 | 135 | 133 | 126 | 129 | 147 | 117 | 109 | 104 | 136 | 137 | - .83 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 71480 | 84906 | 86270 | 85362 | 96117 | 93496 | 74367 | 84845 | 86643 | 88215 | 94067 | .33 |
| SAWLOGS NONCONIFEROUS | 20836 | 24606 | 23143 | 22432 | 24639 | 23731 | 20682 | 20400 | 21894 | 22847 | 22158 | - 1.12 |
| PULPWOOD+PARTICLES | 61562 | 83633 | 87066 | 76156 | 76362 | 88077 | 86571 | 79579 | 72793 | 75177 | 93059 | - .11 |
| FUELWOOD | 64493 | 41631 | 38687 | 34167 | 30713 | 30581 | 28432 | 29334 | 25734 | 25562 | 25708 | - 5.23 |
| SAWNWOOD CONIFEROUS | 40640 | 47754 | 49400 | 49779 | 53441 | 51715 | 42943 | 47349 | 48922 | 48794 | 53671 | .20 |
| SAWNWOOD NONCONIFEROUS | 9659 | 11973 | 12587 | 12499 | 13134 | 12292 | 10521 | 11610 | 12708 | 12426 | 12348 | - .15 |
| WOOD-BASED PANELS | 9870 | 17866 | 19528 | 22422 | 25369 | 24296 | 22739 | 25149 | 25157 | 25981 | 26833 | 3.72 |
| PULP FOR PAPER | 17405 | 24642 | 23698 | 24969 | 26847 | 27498 | 23106 | 24097 | 23252 | 24826 | 26719 | .12 |
| PAPER+PAPERBOARD | 23412 | 34855 | 34435 | 36580 | 39962 | 41196 | 33222 | 38300 | 38991 | 41468 | 44756 | 2.16 |
| USSR AND EASTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 172007 | 234743 | 242631 | 235182 | 287585 | 263322 | 208372 | 293725 | 265956 | 312355 | 250889 | 1.72 |
| WHEAT | 78989 | 118985 | 123455 | 111857 | 136691 | 111876 | 90532 | 125922 | 121167 | 151358 | 113407 | .57 |
| RICE PADDY | 510 | 1470 | 1641 | 1826 | 1961 | 2096 | 2231 | 2130 | 2385 | 2259 | 2591 | 5.60 |
| BARLEY | 26619 | 46770 | 44993 | 47886 | 66993 | 68374 | 49605 | 83287 | 67032 | 78059 | 62915 | 5.31 |
| MAIZE | 24582 | 23178 | 24468 | 29089 | 29998 | 28228 | 27706 | 30919 | 30920 | 29090 | 32977 | 2.93 |
| ROOT CROPS | 148036 | 169291 | 152576 | 149907 | 181029 | 153757 | 151141 | 152743 | 145245 | 154418 | 162622 | - .58 |
| POTATOES | 148034 | 169288 | 152572 | 149904 | 181025 | 153754 | 151137 | 152741 | 145242 | 154416 | 162619 | - .58 |
| TOTAL PULSES | 8680 | 8638 | 7949 | 7917 | 9202 | 9587 | 6153 | 9327 | 8228 | 8593 | 5123 | - 2.61 |
| CITRUS FRUIT | 39 | 140 | 42 | 56 | 58 | 126 | 158 | 132 | 231 | 200 | 335 | 18.88 |
| APPLES | 3856 | 7377 | 7343 | 6934 | 8196 | 7348 | 8744 | 10436 | 10946 | 9056 | 11157 | 5.21 |
| VEGETABLE OILS,OIL EQUIV | 3522 | 4461 | 4412 | 4068 | 5120 | 4843 | 4313 | 4506 | 4742 | 4528 | 4518 | .34 |
| SOYBEANS | 400 | 693 | 715 | 457 | 711 | 710 | 1111 | 834 | 862 | 1012 | 1035 | 6.33 |
| GROUNDNUTS IN SHELL | 1 | 2 | 2 | 3 | 3 | 3 | 5 | 4 | 4 | 5 | 6 | 12.92 |
| SUNFLOWER SEED | 6032 | 7437 | 7090 | 6546 | 8768 | 7978 | 6328 | 6652 | 7385 | 6784 | 7200 | - .64 |
| RAPESEED | 573 | 861 | 973 | 834 | 966 | 983 | 1311 | 1531 | 1285 | 1306 | 590 | 1.52 |
| COTTONSEED | 3332 | 4450 | 4643 | 4779 | 5009 | 5506 | 5149 | 5419 | 5716 | 5549 | 5980 | 3.06 |
| SUGAR (CENTRIFUGAL,RAW) | 11752 | 12925 | 11959 | 12746 | 13758 | 11817 | 12113 | 11597 | 13878 | 13882 | 12224 | .29 |
| TEA | 45 | 67 | 69 | 71 | 75 | 81 | 86 | 92 | 106 | 111 | 120 | 7.11 |
| COTTON LINT | 1722 | 2146 | 2371 | 2382 | 2496 | 2497 | 2667 | 2597 | 2708 | 2743 | 2836 | 2.68 |
| JUTE AND SIMILAR FIBRES | 41 | 50 | 57 | 56 | 45 | 39 | 36 | 49 | 47 | 44 | 44 | - 2.29 |
| TOBACCO | 421 | 536 | 522 | 614 | 615 | 608 | 649 | 700 | 610 | 566 | 616 | 1.38 |
| TOTAL MEAT | 14615 | 18811 | 20166 | 21208 | 21505 | 23318 | 24094 | 22339 | 23829 | 25019 | 25329 | 3.02 |
| TOTAL MILK | 93219 | 116859 | 117398 | 119019 | 125506 | 129943 | 128556 | 127479 | 134455 | 135174 | 134497 | 1.77 |
| TOTAL EGGS | 2629 | 3612 | 3925 | 4104 | 4340 | 4641 | 4826 | 4766 | 5152 | 5376 | 5459 | 4.57 |
| WOOL GREASY | 440 | 510 | 519 | 513 | 527 | 558 | 566 | 534 | 567 | 578 | 587 | 1.58 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 791 | 1204 | 1272 | 1177 | 1200 | 1072 | 1338 | 1068 | 1088 | 1038 | 1146 | - 1.44 |
| MARINE FISH | 3675 | 6914 | 7010 | 7597 | 8505 | 9393 | 9997 | 10333 | 9227 | 8761 | 8686 | 3.22 |
| CRUST+ MOLLUS+ CEPHALOP | 114 | 114 | 119 | 102 | 105 | 131 | 158 | 109 | 248 | 221 | 491 | 14.43 |
| AQUATIC ANIMALS | | 5 | 5 | 5 | 5 | 2 | 5 | 2 | 2 | 15 | 10 | 4.09 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 167917 | 166303 | 166373 | 167416 | 165178 | 163360 | 171306 | 166649 | 164012 | 158531 | 159035 | - .46 |
| SAWLOGS NONCONIFEROUS | 33351 | 35080 | 35640 | 35650 | 35065 | 34896 | 36349 | 35177 | 35004 | 34540 | 34441 | - .26 |
| PULPWOOD+PARTICLES | 27342 | 44660 | 46125 | 47240 | 59446 | 62358 | 58856 | 57586 | 57256 | 55565 | 55599 | 2.51 |
| FUELWOOD | 117985 | 101654 | 101436 | 100803 | 97664 | 98072 | 95262 | 95937 | 94038 | 91173 | 91114 | - 1.30 |
| SAWNWOOD CONIFEROUS | 107344 | 116480 | 119217 | 119356 | 117331 | 116371 | 117613 | 114640 | 110953 | 108501 | 108203 | - 1.05 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ...THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| SAWNWOOD NONCONIFEROUS | 19999 | 20371 | 20774 | 20772 | 20524 | 20382 | 20492 | 20057 | 19632 | 19252 | 19264 | - .83 |
| WOOD-BASED PANELS | 5266 | 9899 | 10711 | 11412 | 12644 | 13872 | 15168 | 15813 | 16765 | 17330 | 17297 | 6.94 |
| PULP FOR PAPER | 5653 | 8978 | 9397 | 9564 | 9961 | 10719 | 11066 | 11613 | 11923 | 12318 | 12160 | 3.84 |
| PAPER+PAPERBOARD | 6778 | 10587 | 11097 | 11648 | 12288 | 12814 | 13495 | 13930 | 14261 | 14496 | 14567 | 3.82 |
| NORTH AMERICA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 197287 | 215381 | 276549 | 263650 | 274328 | 235445 | 286003 | 302434 | 306194 | 314761 | 335077 | 3.78 |
| WHEAT | 48404 | 45808 | 58465 | 56596 | 62720 | 61792 | 74843 | 81894 | 75281 | 70066 | 75474 | 5.08 |
| RICE PADDY | 3084 | 3801 | 3890 | 3875 | 4208 | 5098 | 5825 | 5246 | 4501 | 6040 | 6199 | 5.62 |
| BARLEY | 12536 | 17949 | 23167 | 20478 | 19314 | 15306 | 17672 | 18624 | 20949 | 20170 | 16698 | - .89 |
| MAIZE | 96634 | 108105 | 146367 | 144262 | 146845 | 121997 | 151706 | 162927 | 167411 | 184042 | 202172 | 5.29 |
| ROOT CROPS | 15134 | 17891 | 17081 | 15873 | 16225 | 18656 | 17431 | 19191 | 19169 | 19738 | 18716 | 1.71 |
| POTATOES | 14454 | 17289 | 16555 | 15316 | 15669 | 18046 | 16827 | 18578 | 18603 | 19086 | 18060 | 1.71 |
| TOTAL PULSES | 1161 | 1098 | 1119 | 1115 | 1015 | 1303 | 1146 | 1120 | 986 | 1311 | 1287 | 1.27 |
| CITRUS FRUIT | 6678 | 10292 | 11135 | 11031 | 12604 | 12167 | 13237 | 13415 | 12827 | 12932 | 12092 | 2.39 |
| BANANAS | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | - 2.53 |
| APPLES | 3101 | 3307 | 3282 | 3059 | 3216 | 3391 | 3876 | 3348 | 3438 | 3903 | 4105 | 2.45 |
| VEGETABLE OILS,OIL EQUIV | 5471 | 8039 | 8248 | 8612 | 9941 | 8137 | 9933 | 8299 | 11820 | 12908 | 15886 | 6.58 |
| SOYBEANS | 19741 | 30958 | 32288 | 34956 | 42514 | 33383 | 42481 | 35294 | 48477 | 51415 | 62386 | 6.82 |
| GROUNDNUTS IN SHELL | 890 | 1353 | 1363 | 1485 | 1576 | 1664 | 1750 | 1701 | 1690 | 1809 | 1805 | 3.39 |
| SUNFLOWER SEED | 33 | 111 | 273 | 411 | 394 | 282 | 574 | 523 | 1411 | 1960 | 3721 | 38.01 |
| RAPESEED | 279 | 1638 | 2155 | 1300 | 1207 | 1164 | 1749 | 838 | 1974 | 3498 | 3408 | 7.14 |
| COTTONSEED | 5556 | 3690 | 3846 | 4892 | 4550 | 4091 | 2919 | 3739 | 5009 | 3873 | 5258 | 1.48 |
| SUGAR (CENTRIFUGAL,RAW) | 4702 | 5383 | 5581 | 5898 | 5329 | 5048 | 6443 | 6168 | 5395 | 5481 | 5208 | - .11 |
| COFFEE GREEN | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - 8.46 |
| COTTON LINT | 3245 | 2219 | 2281 | 2984 | 2825 | 2513 | 1807 | 2304 | 3133 | 2364 | 3185 | 1.71 |
| TOBACCO | 1065 | 965 | 875 | 878 | 907 | 1019 | 1096 | 1050 | 972 | 1034 | 771 | .10 |
| TOTAL MEAT | 20098 | 24850 | 25667 | 25641 | 24625 | 26130 | 25426 | 27609 | 27894 | 27876 | 28336 | 1.52 |
| TOTAL MILK | 65355 | 61388 | 61712 | 62468 | 60052 | 60062 | 60066 | 62246 | 63182 | 62564 | 63674 | .36 |
| TOTAL EGGS | 4116 | 4372 | 4444 | 4385 | 4213 | 4186 | 4125 | 4115 | 4138 | 4288 | 4406 | - .34 |
| WOOL GREASY | 129 | 87 | 84 | 81 | 73 | 65 | 60 | 54 | 51 | 47 | 48 | - 7.36 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 375 | 411 | 354 | 319 | 338 | 309 | 264 | 329 | 356 | 396 | 432 | .95 |
| MARINE FISH | 2597 | 2661 | 2673 | 2488 | 2485 | 2374 | 2411 | 2606 | 2523 | 2963 | 2984 | 1.21 |
| CRUST+ MOLLUS+ CEPHALOP | 979 | 1033 | 1038 | 1022 | 1013 | 1057 | 1075 | 1130 | 1272 | 1346 | 1364 | 3.55 |
| AQUATIC ANIMALS | 3 | 4 | 2 | 2 | 4 | 6 | 6 | 9 | 9 | 11 | 10 | 20.64 |
| AQUATIC PLANTS | 25 | 56 | 184 | 182 | 180 | 224 | 198 | 189 | 195 | 196 | 196 | 7.57 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 197633 | 227741 | 246128 | 239166 | 255365 | 237683 | 222108 | 270487 | 280998 | 287058 | 287058 | 2.50 |
| SAWLOGS NONCONIFEROUS | 37834 | 38931 | 38624 | 41002 | 41472 | 37932 | 32125 | 36652 | 37629 | 39116 | 39116 | - .48 |
| PULPWOOD+PARTICLES | 112192 | 150005 | 137726 | 142366 | 149291 | 165000 | 132931 | 139779 | 135858 | 143891 | 146945 | - .32 |
| FUELWOOD | 39723 | 19430 | 17894 | 16836 | 17623 | 17672 | 17217 | 18768 | 17832 | 17832 | 17832 | - .21 |
| SAWNWOOD CONIFEROUS | 86799 | 90379 | 100139 | 104867 | 109561 | 96191 | 88181 | 106512 | 113630 | 116374 | 113682 | 2.05 |
| SAWNWOOD NONCONIFEROUS | 17022 | 18172 | 17556 | 17346 | 17896 | 17626 | 14831 | 16373 | 16614 | 17282 | 18371 | - .40 |
| WOOD-BASED PANELS | 19557 | 26314 | 31054 | 34656 | 36275 | 31038 | 28739 | 33861 | 36560 | 37317 | 37760 | 2.78 |
| PULP FOR PAPER | 36420 | 52576 | 52624 | 56078 | 58644 | 59779 | 50410 | 56890 | 58086 | 60648 | 63706 | 1.61 |
| PAPER+PAPERBOARD | 42670 | 57370 | 58270 | 62859 | 64974 | 64617 | 54919 | 62913 | 64947 | 66681 | 71354 | 1.72 |
| OCEANIA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 11351 | 13479 | 15585 | 11672 | 17795 | 16974 | 18419 | 18374 | 15312 | 26089 | 24236 | 6.52 |
| WHEAT | 8470 | 8177 | 8932 | 6979 | 12363 | 11572 | 12162 | 12213 | 9724 | 18419 | 16442 | 8.21 |
| RICE PADDY | 136 | 247 | 300 | 248 | 309 | 409 | 388 | 417 | 530 | 490 | 692 | 11.09 |
| BARLEY | 1076 | 2525 | 3324 | 2062 | 2655 | 2755 | 3442 | 3132 | 2655 | 4265 | 4051 | 4.95 |
| MAIZE | 193 | 251 | 313 | 330 | 257 | 194 | 291 | 316 | 355 | 305 | 385 | 3.10 |
| ROOT CROPS | 898 | 1068 | 1032 | 1074 | 1003 | 888 | 1007 | 984 | 1037 | 1046 | 1084 | .07 |
| POTATOES | 803 | 1059 | 1023 | 1064 | 991 | 876 | 997 | 975 | 1028 | 1037 | 1075 | .08 |
| TOTAL PULSES | 49 | 80 | 94 | 129 | 93 | 127 | 157 | 189 | 106 | 120 | 165 | 5.96 |
| CITRUS FRUIT | 247 | 394 | 372 | 436 | 402 | 434 | 458 | 428 | 461 | 494 | 506 | 2.92 |
| BANANAS | 126 | 131 | 128 | 124 | 125 | 118 | 103 | 115 | 98 | 113 | 141 | - 1.04 |
| APPLES | 432 | 565 | 569 | 511 | 574 | 487 | 527 | 447 | 447 | 444 | 531 | - 2.19 |
| VEGETABLE OILS,OIL EQUIV | 22 | 59 | 73 | 111 | 85 | 93 | 98 | 74 | 86 | 139 | 160 | 7.46 |
| SOYBEANS | 1 | 5 | 9 | 34 | 38 | 64 | 74 | 45 | 55 | 77 | 99 | 31.15 |
| GROUNDNUTS IN SHELL | 18 | 43 | 31 | 46 | 38 | 29 | 32 | 35 | 32 | 39 | 62 | 1.83 |
| SUNFLOWER SEED | 2 | 13 | 59 | 148 | 102 | 84 | 113 | 80 | 75 | 158 | 186 | 17.70 |
| RAPESEED | | 34 | 55 | 25 | 11 | 9 | 12 | 9 | 16 | 24 | 40 | - 4.22 |
| COTTONSEED | 7 | 48 | 31 | 73 | 53 | 50 | 54 | 41 | 46 | 72 | 87 | 5.06 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | THOUSAND METRIC TONS | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| SUGAR (CENTRIFUGAL,RAW) | 1985 | 2525 | 2793 | 2835 | 2526 | 2848 | 2855 | 3296 | 3318 | 2902 | 2963 | 2.02 |
| COTTON LINT | 4 | 29 | 20 | 44 | 31 | 31 | 33 | 25 | 28 | 44 | 53 | 5.20 |
| TOBACCO | 18 | 22 | 23 | 19 | 20 | 20 | 18 | 18 | 19 | 19 | 19 | - 2.02 |
| TOTAL MEAT | 2443 | 3058 | 3210 | 3563 | 3641 | 3249 | 3513 | 3987 | 4078 | 4353 | 4065 | 3.53 |
| TOTAL MILK | 12522 | 13666 | 13710 | 13853 | 12973 | 12561 | 12819 | 13025 | 12469 | 11521 | 12250 | - 1.62 |
| TOTAL EGGS | 194 | 247 | 259 | 267 | 265 | 259 | 268 | 263 | 264 | 274 | 269 | .68 |
| WOOL GREASY | 1062 | 1251 | 1225 | 1202 | 1044 | 986 | 1088 | 1066 | 1005 | 988 | 1026 | - 2.41 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 1 | 2 | 3 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 8.69 |
| MARINE FISH | 69 | 97 | 93 | 93 | 116 | 122 | 97 | 110 | 131 | 140 | 143 | 4.73 |
| CRUST+ MOLLUS+ CEPHALOP | 45 | 65 | 81 | 79 | 70 | 77 | 70 | 72 | 74 | 77 | 80 | .74 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 5552 | 7801 | 7576 | 7912 | 8339 | 6537 | 6356 | 7595 | 7178 | 6913 | 7021 | - 1.43 |
| SAWLOGS NONCONIFERCUS | 7275 | 6992 | 7457 | 6984 | 6902 | 7240 | 6490 | 6631 | 6518 | 6336 | 5846 | - 2.00 |
| PULPWOOD+PARTICLES | 2260 | 3557 | 3745 | 3640 | 5374 | 5006 | 7613 | 7191 | 8596 | 8335 | 8278 | 12.06 |
| FUELWOOD | 3665 | 1343 | 1356 | 1370 | 1121 | 1141 | 1154 | 1167 | 1178 | 1190 | 1200 | - 1.53 |
| SAWNWOOD CONIFEROUS | 2272 | 2540 | 2312 | 2515 | 2836 | 2882 | 2821 | 3067 | 2917 | 2795 | 2816 | 1.97 |
| SAWNWOOD NONCONIFEROUS | 2481 | 2531 | 2637 | 2497 | 2482 | 2533 | 2505 | 2430 | 2340 | 2063 | 1986 | - 2.57 |
| WOOD-BASED PANELS | 416 | 789 | 800 | 748 | 933 | 988 | 920 | 1054 | 1043 | 1059 | 1073 | 4.14 |
| PULP FOR PAPER | 623 | 1075 | 1090 | 1127 | 1326 | 1505 | 1524 | 1660 | 1714 | 1699 | 1699 | 6.25 |
| PAPER+PAPERBOARD | 889 | 1514 | 1540 | 1546 | 1686 | 1732 | 1697 | 1761 | 1890 | 1867 | 1955 | 2.93 |
| **AFRICA DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 37181 | 41917 | 43551 | 44822 | 39216 | 45699 | 44412 | 47666 | 42675 | 46951 | 43546 | .72 |
| WHEAT | 4070 | 4853 | 5347 | 5873 | 4456 | 4939 | 4659 | 5700 | 3753 | 4584 | 4310 | - 2.22 |
| RICE PADDY | 3436 | 4762 | 4887 | 4803 | 4977 | 5388 | 5566 | 5502 | 5438 | 5610 | 5883 | 2.34 |
| BARLEY | 2783 | 3426 | 3860 | 4133 | 2634 | 3611 | 2862 | 4681 | 2473 | 3666 | 3320 | - 1.04 |
| MAIZE | 10276 | 12016 | 12786 | 13490 | 11967 | 14101 | 14359 | 14480 | 13862 | 14785 | 12669 | 1.35 |
| ROOT CROPS | 55816 | 67391 | 67410 | 68641 | 70350 | 73129 | 74770 | 75841 | 76143 | 77121 | 80003 | 1.99 |
| POTATOES | 1363 | 1818 | 1870 | 2089 | 2234 | 2304 | 2543 | 2564 | 2523 | 2774 | 2926 | 5.28 |
| CASSAVA | 33224 | 39330 | 38187 | 39308 | 40013 | 41379 | 42642 | 43412 | 43486 | 42998 | 45054 | 1.73 |
| TOTAL PULSES | 3303 | 4469 | 3965 | 4309 | 4103 | 4531 | 4658 | 4935 | 4327 | 4580 | 4650 | 1.20 |
| CITRUS FRUIT | 1520 | 2329 | 2170 | 2258 | 2438 | 2454 | 2241 | 2321 | 2452 | 2622 | 2439 | 1.17 |
| BANANAS | 3030 | 3709 | 3522 | 3410 | 3578 | 3877 | 3793 | 4038 | 4024 | 4055 | 4140 | 1.92 |
| APPLES | 37 | 37 | 42 | 43 | 47 | 49 | 56 | 49 | 54 | 55 | 57 | 4.32 |
| VEGETABLE OILS,OIL EQUIV | 3841 | 3886 | 4259 | 3722 | 3607 | 3855 | 4098 | 3984 | 3749 | 3834 | 3906 | - .18 |
| SOYBEANS | 64 | 67 | 72 | 73 | 75 | 77 | 76 | 84 | 89 | 90 | 95 | 3.69 |
| GROUNDNUTS IN SHELL | 4774 | 4513 | 5013 | 4024 | 3400 | 3955 | 4177 | 4320 | 3461 | 3970 | 3787 | - 1.92 |
| SUNFLOWER SEED | 31 | 61 | 51 | 79 | 75 | 70 | 67 | 73 | 83 | 78 | 106 | 4.92 |
| RAPESEED | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | - |
| COTTONSEED | 616 | 1123 | 956 | 1000 | 984 | 951 | 924 | 962 | 919 | 900 | 899 | - 1.77 |
| COPRA | 145 | 151 | 151 | 143 | 152 | 149 | 148 | 168 | 170 | 172 | 171 | 1.96 |
| PALM KERNELS | 811 | 725 | 728 | 667 | 616 | 722 | 707 | 683 | 688 | 585 | 721 | - .69 |
| SUGAR (CENTRIFUGAL,RAW) | 1683 | 2550 | 2773 | 2851 | 2936 | 2911 | 2720 | 3121 | 3140 | 3346 | 3509 | 2.94 |
| COFFEE GREEN | 988 | 1312 | 1252 | 1297 | 1383 | 1249 | 1301 | 1173 | 1205 | 1045 | 1141 | - 2.01 |
| COCOA BEANS | 928 | 1115 | 1178 | 1035 | 963 | 1019 | 996 | 855 | 934 | 910 | 1009 | - 2.15 |
| TEA | 62 | 119 | 118 | 149 | 153 | 149 | 148 | 156 | 189 | 194 | 195 | 5.72 |
| COTTON LINT | 313 | 581 | 504 | 528 | 517 | 502 | 498 | 515 | 487 | 472 | 509 | - 1.25 |
| JUTE AND SIMILAR FIBRES | 13 | 18 | 14 | 12 | 12 | 11 | 11 | 8 | 8 | 8 | 8 | - 9.03 |
| SISAL | 408 | 365 | 342 | 332 | 330 | 338 | 245 | 218 | 204 | 188 | 186 | - 8.27 |
| TOBACCO | 195 | 154 | 179 | 188 | 184 | 199 | 230 | 240 | 228 | 231 | 266 | 5.33 |
| NATURAL RUBBER | 160 | 224 | 225 | 221 | 229 | 241 | 221 | 198 | 203 | 201 | 206 | - 1.51 |
| TOTAL MEAT | 2962 | 3664 | 3619 | 3607 | 3634 | 3678 | 3805 | 3944 | 4120 | 4427 | 4536 | 2.63 |
| TOTAL MILK | 5578 | 6754 | 6856 | 6822 | 6690 | 6699 | 7054 | 7300 | 7572 | 7877 | 8015 | 2.05 |
| TOTAL EGGS | 308 | 393 | 404 | 406 | 416 | 435 | 462 | 498 | 528 | 548 | 574 | 4.63 |
| WOOL GREASY | 47 | 55 | 54 | 60 | 66 | 62 | 63 | 65 | 56 | 58 | 60 | .57 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 683 | 1212 | 1190 | 1290 | 1260 | 1241 | 1279 | 1319 | 1356 | 1392 | 1455 | 1.94 |
| MARINE FISH | 883 | 1488 | 1562 | 1934 | 2012 | 1889 | 1611 | 1605 | 1698 | 1764 | 1812 | .69 |
| CRUST+ MOLLUS+ CEPHALOP | 13 | 32 | 36 | 42 | 42 | 55 | 55 | 60 | 55 | 74 | 70 | 9.34 |
| AQUATIC ANIMALS | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - 6.14 |
| AQUATIC PLANTS | 3 | .7 | 6 | 6 | 7 | 5 | 6 | 51 | 5 | 5 | 5 | 1.23 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 553 | 918 | 1042 | 1014 | 1042 | 1051 | 1046 | 1085 | 1108 | 1093 | 1078 | 1.42 |
| SAWLOGS NONCONIFERCUS | 9892 | 14734 | 15306 | 15000 | 16655 | 14407 | 13794 | 15511 | 16590 | 15803 | 16236 | .82 |
| PULPWOOD+PARTICLES | 514 | 958 | 1307 | 1428 | 1375 | 1498 | 2137 | 2213 | 2194 | 2309 | 2236 | 9.88 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | THOUSAND METRIC TONS | | | | | | | PERCENT |
| FUELWOOD | 203715 | 255906 | 262840 | 270170 | 278540 | 286248 | 294228 | 302726 | 311051 | 320127 | 329241 | 2.85 |
| SAWNWOOD CONIFEROUS | 259 | 383 | 408 | 411 | 401 | 417 | 432 | 483 | 460 | 422 | 424 | 1.41 |
| SAWNWOOD NONCONIFEROUS | 1789 | 2645 | 2733 | 2592 | 3062 | 3391 | 3522 | 3520 | 3758 | 3649 | 3810 | 4.73 |
| WOOD-BASED PANELS | 266 | 534 | 600 | 695 | 738 | 760 | 648 | 726 | 801 | 799 | 821 | 3.94 |
| PULP FOR PAPER | 121 | 231 | 239 | 255 | 281 | 290 | 305 | 297 | 324 | 335 | 369 | 4.94 |
| PAPER+PAPERBOARD | 92 | 172 | 180 | 184 | 186 | 196 | 217 | 219 | 258 | 257 | 313 | 6.38 |
| LATIN AMERICA | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 53141 | 71257 | 72591 | 67864 | 74546 | 78230 | 80359 | 86054 | 86267 | 85122 | 84751 | 2.66 |
| WHEAT | 11757 | 11510 | 11568 | 12432 | 12084 | 13474 | 14971 | 19336 | 11537 | 14848 | 14891 | 3.21 |
| RICE PADDY | 9018 | 11820 | 10711 | 10881 | 11791 | 12218 | 14073 | 15420 | 15141 | 13508 | 14245 | 3.64 |
| BARLEY | 1427 | 1173 | 1389 | 1778 | 1665 | 1249 | 1556 | 1883 | 1399 | 1765 | 1390 | 1.58 |
| MAIZE | 26974 | 38073 | 39426 | 35139 | 37514 | 39426 | 38050 | 37218 | 43796 | 40080 | 40771 | 1.08 |
| ROOT CROPS | 36875 | 48643 | 49841 | 48259 | 44618 | 44521 | 45181 | 44686 | 45428 | 46598 | 45533 | - .81 |
| POTATOES | 7553 | 9552 | 9444 | 8383 | 8584 | 9969 | 9261 | 9741 | 10100 | 10931 | 10752 | 2.04 |
| CASSAVA | 25746 | 34612 | 35817 | 35390 | 31898 | 30786 | 32005 | 31246 | 31915 | 32233 | 31325 | - 1.31 |
| TOTAL PULSES | 3791 | 4393 | 4893 | 4879 | 4540 | 4649 | 4774 | 3917 | 4592 | 4715 | 4803 | - .11 |
| CITRUS FRUIT | 5792 | 8069 | 8990 | 9194 | 10438 | 11093 | 11839 | 12739 | 13203 | 14257 | 16577 | 7.66 |
| BANANAS | 11539 | 16282 | 16989 | 17494 | 17113 | 17248 | 16892 | 17591 | 18385 | 18374 | 18638 | 1.27 |
| APPLES | 786 | 849 | 882 | 911 | 680 | 1296 | 1089 | 1207 | 1327 | 1505 | 1579 | 8.04 |
| VEGETABLE OILS,OIL EQUIV | 2292 | 3079 | 3023 | 3235 | 3578 | 4227 | 4398 | 4691 | 5363 | 5162 | 5720 | 8.00 |
| SOYBEANS | 459 | 1926 | 2573 | 3886 | 6100 | 9180 | 11410 | 12643 | 14956 | 12929 | 15347 | 26.76 |
| GROUNDNUTS IN SHELL | 1167 | 1394 | 1573 | 1445 | 1243 | 976 | 1042 | 1048 | 1140 | 841 | 1210 | - 4.32 |
| SUNFLOWER SEED | 727 | 1221 | 926 | 917 | 969 | 1033 | 804 | 1191 | 952 | 1705 | 1535 | 4.27 |
| RAPESEED | 57 | 77 | 91 | 85 | 46 | 41 | 68 | 111 | 91 | 62 | 70 | - .12 |
| COTTONSEED | 2766 | 2902 | 2492 | 3013 | 3016 | 3302 | 2813 | 2404 | 3177 | 3162 | 3133 | 1.08 |
| COPRA | 265 | 227 | 244 | 236 | 202 | 229 | 224 | 230 | 230 | 240 | 190 | - .87 |
| PALM KERNELS | 202 | 283 | 278 | 280 | 282 | 290 | 275 | 331 | 297 | 292 | 310 | 1.16 |
| SUGAR (CENTRIFUGAL,RAW) | 17159 | 23415 | 21825 | 21032 | 23283 | 24517 | 23814 | 25835 | 27602 | 27158 | 26619 | 2.66 |
| COFFEE GREEN | 3163 | 2198 | 2990 | 2909 | 2449 | 3094 | 2915 | 1937 | 2584 | 3049 | 3245 | 1.39 |
| COCOA BEANS | 288 | 385 | 379 | 373 | 361 | 477 | 481 | 454 | 435 | 504 | 532 | 3.93 |
| TEA | 14 | 34 | 40 | 41 | 40 | 44 | 51 | 44 | 52 | 39 | 45 | 2.41 |
| COTTON LINT | 1539 | 1574 | 1390 | 1677 | 1670 | 1857 | 1512 | 1332 | 1823 | 1743 | 1730 | 1.20 |
| JUTE AND SIMILAR FIBRES | 71 | 64 | 66 | 81 | 115 | 77 | 92 | 110 | 102 | 87 | 90 | 3.75 |
| SISAL | 214 | 233 | 307 | 328 | 293 | 323 | 340 | 187 | 241 | 218 | 253 | - 2.69 |
| TOBACCO | 496 | 540 | 536 | 568 | 565 | 676 | 675 | 715 | 751 | 778 | 801 | 5.14 |
| NATURAL RUBBER | 30 | 31 | 30 | 32 | 28 | 24 | 25 | 26 | 30 | 31 | 33 | .16 |
| TOTAL MEAT | 8326 | 10677 | 10109 | 10640 | 10859 | 11182 | 11728 | 12478 | 13116 | 13619 | 13789 | 3.64 |
| TOTAL MILK | 20398 | 25104 | 25991 | 26905 | 27059 | 28682 | 30920 | 32714 | 31940 | 33457 | 33596 | 3.64 |
| TOTAL EGGS | 933 | 1404 | 1469 | 1544 | 1643 | 1713 | 1820 | 1897 | 1950 | 2066 | 2169 | 4.94 |
| WOOL GREASY | 344 | 339 | 322 | 309 | 299 | 291 | 294 | 300 | 315 | 320 | 336 | |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 215 | 154 | 161 | 199 | 200 | 286 | 275 | 249 | 277 | 285 | 268 | 7.05 |
| MARINE FISH | 8424 | 14740 | 13262 | 6843 | 4558 | 6811 | 5970 | 7536 | 6126 | 7892 | 8635 | - 4.51 |
| CRUST+ MOLLUS+ CEPHALOP | 275 | 433 | 431 | 457 | 438 | 425 | 433 | 494 | 472 | 555 | 575 | 2.98 |
| AQUATIC ANIMALS | 8 | 67 | 38 | 60 | 49 | 34 | 47 | 21 | 59 | 52 | 28 | - 4.77 |
| AQUATIC PLANTS | 45 | 88 | 74 | 79 | 81 | 90 | 80 | 92 | 112 | 90 | 113 | 3.46 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 11014 | 16237 | 16603 | 16815 | 16359 | 16315 | 19171 | 21673 | 23837 | 22913 | 25345 | 5.61 |
| SAWLOGS NONCONIFEROUS | 14791 | 17415 | 18657 | 18706 | 19604 | 19933 | 21804 | 22903 | 23500 | 23662 | 25172 | 4.13 |
| PULPWOOD+PARTICLES | 4166 | 8512 | 8746 | 9056 | 9080 | 9866 | 11556 | 12913 | 13667 | 16284 | 16806 | 8.69 |
| FUELWOOD | 157231 | 221678 | 227488 | 232856 | 238991 | 244424 | 250174 | 257515 | 264889 | 271711 | 279472 | 2.59 |
| SAWNWOOD CONIFEROUS | 5275 | 7420 | 7405 | 7692 | 7063 | 7430 | 9051 | 9739 | 10541 | 10367 | 11175 | 5.46 |
| SAWNWOOD NONCONIFEROUS | 6636 | 8067 | 8473 | 8110 | 8477 | 8807 | 9747 | 10854 | 11790 | 11456 | 11475 | 4.97 |
| WOOD-BASED PANELS | 770 | 1659 | 1937 | 2397 | 2578 | 2675 | 2840 | 3173 | 3341 | 3491 | 3686 | 8.63 |
| PULP FOR PAPER | 1109 | 2137 | 2215 | 2453 | 2674 | 2974 | 2828 | 3250 | 3684 | 4090 | 4796 | 8.95 |
| PAPER+PAPERBOARD | 2105 | 3759 | 4069 | 4241 | 4694 | 5230 | 4819 | 5276 | 5645 | 6110 | 6665 | 6.05 |
| NEAR EAST DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 36593 | 40064 | 44636 | 46904 | 40567 | 44850 | 51879 | 55911 | 52089 | 54404 | 52808 | 3.39 |
| WHEAT | 17623 | 19999 | 23290 | 25947 | 21221 | 24338 | 28405 | 31278 | 29213 | 30518 | 29112 | 4.45 |
| RICE PADDY | 3407 | 4484 | 4535 | 4583 | 4446 | 4304 | 4602 | 4741 | 4554 | 4545 | 4818 | .54 |
| BARLEY | 6657 | 6004 | 6540 | 7275 | 5197 | 6271 | 7859 | 8941 | 7555 | 7930 | 8343 | 3.93 |
| MAIZE | 3649 | 4215 | 4268 | 4265 | 4536 | 4841 | 5028 | 5453 | 5100 | 5564 | 5384 | 3.42 |
| ROOT CROPS | 3256 | 3872 | 4026 | 4372 | 4637 | 4629 | 4878 | 5722 | 5860 | 5800 | 6197 | 5.56 |
| POTATOES | 2753 | 3475 | 3625 | 3956 | 4252 | 4253 | 4449 | 5293 | 5448 | 5364 | 5719 | 5.94 |
| CASSAVA | 200 | 134 | 134 | 134 | 140 | 92 | 130 | 120 | 115 | 131 | 130 | - .79 |
| TOTAL PULSES | 1546 | 1495 | 1612 | 1828 | 1519 | 1744 | 1628 | 1875 | 1898 | 1728 | 1691 | 1.43 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ...THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| CITRUS FRUIT | 1427 | 2336 | 2668 | 2769 | 2906 | 3159 | 3128 | 3182 | 3380 | 3490 | 3630 | 4.39 |
| BANANAS | 195 | 232 | 260 | 275 | 277 | 297 | 298 | 292 | 315 | 290 | 290 | 2.21 |
| APPLES | 560 | 990 | 1133 | 1286 | 1245 | 1335 | 1393 | 1624 | 1585 | 1850 | 1958 | 7.19 |
| VEGETABLE OILS,OIL EQUIV | 924 | 1194 | 1237 | 1552 | 1250 | 1561 | 1426 | 1521 | 1429 | 1556 | 1391 | 1.88 |
| SOYBEANS | 5 | 18 | 18 | 24 | 30 | 47 | 82 | 123 | 119 | 199 | 239 | 37.76 |
| GROUNDNUTS IN SHELL | 418 | 447 | 502 | 684 | 656 | 1036 | 1040 | 957 | 1124 | 943 | 1003 | 9.72 |
| SUNFLOWER SEED | 118 | 435 | 511 | 613 | 616 | 484 | 541 | 590 | 505 | 529 | 640 | 1.66 |
| RAPESEED | 6 | 3 | 3 | 1 | 1 | 1 | | 6 | 14 | 13 | 43 | 35.27 |
| COTTONSEED | 2140 | 2570 | 2813 | 2941 | 2780 | 3037 | 2524 | 2342 | 2546 | 2522 | 2281 | - 1.95 |
| SUGAR (CENTRIFUGAL,RAW) | 1128 | 1877 | 2331 | 2194 | 2221 | 2327 | 2458 | 2846 | 2666 | 2602 | 2617 | 3.41 |
| COFFEE GREEN | 6 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | - 2.35 |
| TEA | 22 | 53 | 50 | 69 | 66 | 67 | 77 | 82 | 104 | 113 | 144 | 11.29 |
| COTTON LINT | 1193 | 1490 | 1630 | 1699 | 1608 | 1763 | 1453 | 1378 | 1517 | 1491 | 1382 | - 1.52 |
| JUTE AND SIMILAR FIBRES | 6 | 18 | 19 | 15 | 15 | 12 | 14 | 14 | 13 | 13 | 13 | - 3.76 |
| TOBACCO | 178 | 204 | 235 | 240 | 214 | 238 | 244 | 378 | 296 | 350 | 341 | 6.40 |
| TOTAL MEAT | 1898 | 2371 | 2445 | 2480 | 2599 | 2731 | 2827 | 2976 | 3118 | 3219 | 3357 | 4.11 |
| TOTAL MILK | 10155 | 11176 | 11223 | 11613 | 12023 | 12465 | 12913 | 13387 | 13625 | 14351 | 14799 | 3.33 |
| TOTAL EGGS | 222 | 325 | 343 | 384 | 401 | 418 | 470 | 510 | 589 | 631 | 661 | 8.62 |
| WOOL GREASY | 133 | 153 | 148 | 151 | 152 | 160 | 164 | 167 | 170 | 180 | 182 | 2.34 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 111 | 129 | 123 | 130 | 130 | 127 | 135 | 136 | 138 | 142 | 145 | 1.54 |
| MARINE FISH | 346 | 496 | 488 | 513 | 500 | 632 | 674 | 634 | 752 | 740 | 523 | 3.76 |
| CRUST+ MOLLUS+ CEPHALOP | 22 | 23 | 26 | 34 | 36 | 34 | 32 | 41 | 44 | 44 | 45 | 7.09 |
| AQUATIC MAMMALS | 1 | 5 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | - 9.89 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 1967 | 3269 | 3689 | 3624 | 4259 | 4569 | 4770 | 4778 | 5188 | 5119 | 5170 | 5.35 |
| SAWLOGS NONCONIFEROUS | 832 | 1263 | 1416 | 1775 | 1626 | 1805 | 1287 | 1314 | 1769 | 1796 | 1803 | 2.37 |
| PULPWOOD+PARTICLES | 151 | 874 | 672 | 960 | 1133 | 1363 | 869 | 906 | 1732 | 1738 | 1734 | 9.28 |
| FUELWOOD | 33266 | 63640 | 63962 | 65967 | 66357 | 69998 | 71881 | 74519 | 74254 | 76044 | 77856 | 2.45 |
| SAWNWOOD CONIFEROUS | 1064 | 2186 | 2174 | 2163 | 2297 | 2281 | 2266 | 2893 | 2952 | 2921 | 2924 | 4.29 |
| SAWNWOOD NONCONIFEROUS | 389 | 672 | 579 | 711 | 750 | 733 | 693 | 646 | 816 | 824 | 824 | 2.76 |
| WOOD-BASED PANELS | 137 | 322 | 349 | 389 | 406 | 428 | 509 | 613 | 761 | 730 | 757 | 11.29 |
| PULP FOR PAPER | 94 | 177 | 290 | 349 | 437 | 394 | 338 | 327 | 352 | 356 | 397 | 4.78 |
| PAPER+PAPERBOARD | 190 | 329 | 413 | 515 | 595 | 606 | 638 | 658 | 718 | 715 | 727 | 8.20 |
| FAR EAST DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 163227 | 211752 | 209323 | 200188 | 225263 | 211562 | 238925 | 233832 | 252734 | 267069 | 250739 | 2.84 |
| WHEAT | 15769 | 28063 | 30909 | 33879 | 32774 | 29984 | 32447 | 38340 | 38957 | 41066 | 45982 | 4.77 |
| RICE PADDY | 114943 | 141719 | 142169 | 132836 | 150941 | 143681 | 162887 | 152956 | 172002 | 181245 | 162849 | 2.71 |
| BARLEY | 3902 | 4461 | 4444 | 4334 | 3979 | 3947 | 5021 | 5131 | 3325 | 3823 | 3803 | - 1.69 |
| MAIZE | 11027 | 16063 | 13727 | 13732 | 15511 | 15268 | 17424 | 16206 | 15684 | 17794 | 17480 | 2.15 |
| ROOT CROPS | 30218 | 36686 | 37258 | 33150 | 41159 | 43748 | 46891 | 49964 | 51880 | 58505 | 55318 | 5.63 |
| POTATOES | 4343 | 6048 | 7032 | 6855 | 6552 | 6949 | 8710 | 9773 | 9465 | 10292 | 12414 | 7.66 |
| CASSAVA | 17043 | 20236 | 20037 | 21492 | 24724 | 27400 | 28822 | 31261 | 33907 | 39778 | 34706 | 7.99 |
| TOTAL PULSES | 13414 | 13894 | 13266 | 12732 | 12725 | 11486 | 12450 | 14627 | 13772 | 13850 | 14418 | .93 |
| CITRUS FRUIT | 1903 | 2173 | 2197 | 2207 | 2341 | 2446 | 2607 | 2676 | 2853 | 2968 | 3057 | 4.29 |
| BANANAS | 5570 | 7845 | 8504 | 8262 | 8707 | 9001 | 9183 | 9549 | 10970 | 11481 | 11198 | 4.35 |
| APPLES | 202 | 523 | 609 | 729 | 857 | 946 | 1024 | 1088 | 1203 | 1259 | 1296 | 10.55 |
| VEGETABLE OILS,OIL EQUIV | 6794 | 8102 | 8587 | 7922 | 8902 | 9177 | 10374 | 10324 | 10752 | 11214 | 11640 | 4.48 |
| SOYBEANS | 600 | 799 | 816 | 841 | 925 | 1128 | 1158 | 1077 | 1098 | 1297 | 1384 | 6.25 |
| GROUNDNUTS IN SHELL | 6071 | 7364 | 7423 | 5239 | 7125 | 6408 | 8127 | 6571 | 7477 | 7859 | 7156 | 1.17 |
| SUNFLOWER SEED | | | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 13 | 49 | 58.19 |
| RAPESEED | 1597 | 1968 | 2421 | 1869 | 2221 | 2131 | 2648 | 2351 | 1997 | 2043 | 2291 | .55 |
| COTTONSEED | 2920 | 3079 | 4044 | 3819 | 3789 | 3936 | 3440 | 3072 | 3657 | 3749 | 4176 | .75 |
| COPRA | 2966 | 3212 | 3112 | 3340 | 3080 | 3274 | 3580 | 3613 | 3793 | 3627 | 3633 | 2.07 |
| PALM KERNELS | 64 | 143 | 184 | 212 | 234 | 292 | 341 | 365 | 430 | 469 | 587 | 15.88 |
| SUGAR (CENTRIFUGAL,RAW) | 5750 | 8532 | 8284 | 7184 | 8581 | 9575 | 10529 | 10823 | 12434 | 13392 | 12902 | 6.65 |
| COFFEE GREEN | 232 | 322 | 365 | 319 | 312 | 308 | 379 | 377 | 404 | 477 | 524 | 5.11 |
| COCOA BEANS | 8 | 12 | 13 | 14 | 17 | 22 | 26 | 30 | 28 | 34 | 38 | 14.78 |
| TEA | 681 | 729 | 731 | 772 | 791 | 807 | 813 | 826 | 896 | 899 | 895 | 2.56 |
| COTTON LINT | 1461 | 1541 | 2024 | 1911 | 1896 | 1967 | 1726 | 1541 | 1827 | 1875 | 2090 | .75 |
| JUTE AND SIMILAR FIBRES | 2852 | 2839 | 2558 | 2888 | 3135 | 2254 | 2257 | 2407 | 2666 | 3228 | 3098 | .74 |
| SISAL | 8 | 5 | 2 | | | | | | | | | -98.73 |
| TOBACCO | 735 | 863 | 813 | 922 | 873 | 961 | 892 | 852 | 988 | 1046 | 982 | 1.91 |
| NATURAL RUBBER | 1868 | 2653 | 2729 | 2705 | 3115 | 3092 | 3212 | 3441 | 3251 | 3332 | 3337 | 2.90 |
| TOTAL MEAT | 2802 | 3571 | 3674 | 3776 | 3858 | 3939 | 4089 | 4239 | 4371 | 4607 | 4782 | 3.24 |
| TOTAL MILK | 28878 | 32476 | 33409 | 34051 | 34832 | 35582 | 36086 | 36971 | 37786 | 38237 | 38555 | 1.96 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | THOUSAND METRIC TONS | | | | | | | PERCENT |
| TOTAL EGGS | 527 | 782 | 841 | 911 | 947 | 1010 | 1062 | 1103 | 1186 | 1251 | 1308 | 5.75 |
| WOOL GREASY | 56 | 61 | 65 | 60 | 59 | 61 | 65 | 69 | 73 | 76 | 80 | 3.23 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 1869 | 2324 | 2360 | 2376 | 2422 | 2513 | 2493 | 2505 | 2532 | 2591 | 2674 | 1.40 |
| MARINE FISH | 2896 | 4798 | 5292 | 5640 | 6194 | 6735 | 6916 | 7018 | 7803 | 7969 | 8159 | 6.03 |
| CRUST+ MOLLUS+ CEPHALOP | 509 | 1087 | 1188 | 1133 | 1241 | 1219 | 1436 | 1681 | 1811 | 1886 | 2014 | 7.68 |
| AQUATIC MAMMALS | 1 | 2 | 2 | | | | | | | | | -94.88 |
| AQUATIC ANIMALS | 2 | 38 | 34 | 26 | 89 | 28 | 25 | 50 | 106 | 118 | 123 | 15.90 |
| AQUATIC PLANTS | 53 | 131 | 135 | 144 | 238 | 351 | 260 | 297 | 347 | 308 | 308 | 11.66 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 1718 | 2289 | 2667 | 2579 | 1992 | 2688 | 3051 | 3041 | 4059 | 3135 | 4044 | 6.19 |
| SAWLOGS NONCONIFEROUS | 29723 | 51245 | 51991 | 59755 | 72592 | 67013 | 59142 | 71669 | 75302 | 78172 | 78609 | 4.78 |
| PULPWOOD+PARTICLES | 265 | 1354 | 1360 | 1847 | 2623 | 3058 | 2810 | 2851 | 3033 | 3027 | 2957 | 9.70 |
| FUELWOOD | 260411 | 433063 | 443581 | 454310 | 466335 | 478121 | 490555 | 502635 | 514936 | 527515 | 540672 | 2.51 |
| SAWNWOOD CONIFEROUS | 1048 | 1443 | 1707 | 1643 | 1530 | 1932 | 1782 | 1781 | 2673 | 2795 | 3153 | 8.39 |
| SAWNWOOD NONCONIFEROUS | 8726 | 11938 | 11506 | 13404 | 13787 | 13777 | 14630 | 16803 | 17713 | 18137 | 18500 | 5.72 |
| WOOD-BASED PANELS | 774 | 2695 | 3002 | 3430 | 4027 | 3149 | 3736 | 4382 | 5284 | 6014 | 5990 | 9.28 |
| PULP FOR PAPER | 513 | 983 | 1067 | 1110 | 1252 | 1334 | 1312 | 1462 | 1534 | 1579 | 1702 | 6.09 |
| PAPER+PAPERBOARD | 846 | 1490 | 1660 | 1875 | 2023 | 2116 | 2081 | 2179 | 2759 | 3133 | 3556 | 9.13 |
| ASIAN CENT PLANNED ECON | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| TOTAL CEREALS | 195763 | 232711 | 235311 | 229084 | 249047 | 260126 | 273055 | 280233 | 271878 | 290696 | 316335 | 3.39 |
| WHEAT | 22866 | 31504 | 33579 | 35451 | 38636 | 41556 | 46689 | 50621 | 45629 | 52708 | 60773 | 7.06 |
| RICE PADDY | 102152 | 129656 | 133662 | 129872 | 136229 | 141371 | 144006 | 147080 | 146765 | 154242 | 159659 | 2.29 |
| BARLEY | 20009 | 16270 | 15371 | 14378 | 16419 | 17385 | 18395 | 18404 | 19391 | 18410 | 19945 | 3.07 |
| MAIZE | 27716 | 30956 | 28293 | 25442 | 31507 | 32072 | 33682 | 33851 | 29903 | 34022 | 43114 | 3.29 |
| ROOT CROPS | 111061 | 106274 | 101971 | 103314 | 110420 | 116170 | 104780 | 110074 | 104375 | 114436 | 119155 | 1.08 |
| POTATOES | 11022 | 12104 | 12173 | 12717 | 12764 | 12829 | 13481 | 13640 | 13843 | 15162 | 16316 | 3.01 |
| CASSAVA | 2371 | 2884 | 3075 | 3273 | 3451 | 3503 | 3605 | 4355 | 5178 | 6085 | 6568 | 9.65 |
| TOTAL PULSES | 9597 | 11340 | 11350 | 11358 | 12368 | 12372 | 13374 | 14407 | 13436 | 13750 | 15056 | 3.25 |
| CITRUS FRUIT | 861 | 1195 | 1241 | 1249 | 1329 | 1371 | 1358 | 1394 | 1387 | 1411 | 1455 | 2.04 |
| BANANAS | 917 | 1199 | 1172 | 1120 | 1183 | 1114 | 982 | 1021 | 1079 | 1010 | 1047 | - 1.81 |
| APPLES | 1643 | 2068 | 2173 | 2303 | 2159 | 2494 | 2579 | 2671 | 2511 | 2848 | 3162 | 4.22 |
| VEGETABLE OILS,OIL EQUIV | 4100 | 4904 | 4966 | 4978 | 5332 | 5360 | 5461 | 5327 | 5319 | 5604 | 6067 | 1.90 |
| SOYBEANS | 10891 | 11931 | 11855 | 11553 | 12120 | 12371 | 12671 | 12379 | 12586 | 13188 | 13390 | 1.40 |
| GROUNDNUTS IN SHELL | 2156 | 2867 | 2779 | 2886 | 3052 | 3086 | 3174 | 2990 | 2684 | 2576 | 3012 | - .29 |
| SUNFLOWER SEED | 65 | 70 | 70 | 65 | 70 | 70 | 80 | 100 | 150 | 279 | 300 | 18.60 |
| RAPESEED | 1035 | 992 | 1052 | 1152 | 1262 | 1231 | 1394 | 1405 | 1583 | 1871 | 2404 | 8.89 |
| COTTONSEED | 2472 | 4003 | 4435 | 4261 | 5085 | 4997 | 4650 | 4346 | 4112 | 4347 | 4426 | .93 |
| COPRA | 31 | 29 | 30 | 30 | 32 | 31 | 30 | 32 | 40 | 43 | 44 | 4.70 |
| PALM KERNELS | 10 | 28 | 32 | 37 | 38 | 39 | 39 | 40 | 42 | 44 | 46 | 4.64 |
| SUGAR (CENTRIFUGAL,RAW) | 2205 | 2313 | 2727 | 2985 | 3267 | 3277 | 3044 | 3193 | 3151 | 3301 | 3702 | 3.51 |
| COFFEE GREEN | 7 | 9 | 9 | 9 | 12 | 12 | 13 | 18 | 21 | 23 | 24 | 13.05 |
| TEA | 178 | 212 | 217 | 222 | 231 | 237 | 259 | 277 | 295 | 313 | 325 | 5.25 |
| COTTON LINT | 1236 | 2002 | 2218 | 2130 | 2542 | 2498 | 2325 | 2173 | 2055 | 2173 | 2213 | .02 |
| JUTE AND SIMILAR FIBRES | 398 | 593 | 619 | 697 | 682 | 816 | 856 | 887 | 909 | 1142 | 1145 | 7.79 |
| SISAL | 10 | 8 | 9 | 8 | 8 | 10 | 9 | 9 | 8 | 9 | 8 | .33 |
| TOBACCO | 760 | 868 | 863 | 918 | 1027 | 1064 | 1039 | 1060 | 1065 | 1076 | 1097 | 2.74 |
| NATURAL RUBBER | 123 | 49 | 47 | 48 | 52 | 60 | 59 | 70 | 87 | 99 | 101 | 9.80 |
| TOTAL MEAT | 12549 | 15848 | 16723 | 17514 | 18260 | 19188 | 19964 | 21018 | 21862 | 22420 | 23411 | 4.42 |
| TOTAL MILK | 4400 | 5065 | 5199 | 5359 | 5639 | 5900 | 6159 | 6432 | 6740 | 7006 | 7605 | 4.54 |
| TOTAL EGGS | 2812 | 3524 | 3571 | 3633 | 3687 | 3788 | 3906 | 4038 | 4156 | 4393 | 4709 | 3.10 |
| WOOL GREASY | 78 | 79 | 80 | 79 | 81 | 82 | 82 | 81 | 81 | 82 | 87 | .68 |
| FISHERY PRODUCTS 1/ | | | | | | | | | | | | |
| FRESHWATER + DIADROMOUS | 1174 | 1113 | 1149 | 1165 | 1298 | 1299 | 1342 | 1342 | 1364 | 1297 | 1281 | 1.86 |
| MARINE FISH | 3012 | 4078 | 4252 | 4759 | 4818 | 5136 | 5322 | 5489 | 5573 | 5522 | 5653 | 3.69 |
| CRUST+ MOLLUS+ CEPHALOP | 512 | 616 | 670 | 711 | 828 | 887 | 952 | 986 | 1069 | 1114 | 1124 | 7.28 |
| AQUATIC MAMMALS | | | | | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 29.72 |
| AQUATIC ANIMALS | | 51 | 16 | 17 | 59 | 22 | 17 | 16 | 13 | 15 | 15 | -10.29 |
| AQUATIC PLANTS | 501 | 532 | 828 | 978 | 833 | 899 | 997 | 943 | 1397 | 1568 | 1570 | 10.49 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 12688 | 15389 | 15739 | 16133 | 16725 | 18340 | 19145 | 19993 | 20768 | 21717 | 21717 | 4.46 |
| SAWLOGS NONCONIFEROUS | 8439 | 9726 | 10024 | 10160 | 10531 | 11702 | 12088 | 12999 | 13546 | 14108 | 14108 | 4.87 |
| PULPWOOD+PARTICLES | 1492 | 2550 | 2680 | 2810 | 2930 | 4000 | 4291 | 4476 | 4671 | 4876 | 4876 | 8.79 |
| FUELWOOD | 132549 | 187491 | 190885 | 195262 | 198541 | 202753 | 207186 | 211490 | 215913 | 220451 | 222122 | 1.99 |
| SAWNWOOD CONIFEROUS | 7406 | 9664 | 10004 | 10354 | 10604 | 11074 | 11166 | 11697 | 12256 | 12814 | 12814 | 3.34 |
| SAWNWOOD NONCONIFEROUS | 4862 | 6143 | 6351 | 6571 | 6753 | 6734 | 6739 | 7039 | 7354 | 7685 | 7685 | 2.48 |
| WOOD-BASED PANELS | 377 | 1026 | 1130 | 1570 | 1573 | 1327 | 1339 | 1508 | 1518 | 1892 | 1892 | 5.50 |
| PULP FOR PAPER | 2572 | 3487 | 3604 | 3722 | 3837 | 4693 | 5025 | 5279 | 5665 | 6010 | 6010 | 7.29 |
| PAPER+PAPERBOARD | 2987 | 4290 | 4536 | 4817 | 5027 | 6127 | 6638 | 7010 | 7308 | 7792 | 7792 | 7.75 |

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 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1975 | 1976 | 1977 | 1978 | 1979 | CHANGE 1978 TO 1979 | 1975 | 1976 | 1977 | 1978 | 1979 | CHANGE 1978 TO 1979 |
| | 1969-71=100 | | | | | PERCENT | 1969-71=100 | | | | | PERCENT |
| **FOOD PRODUCTION** | | | | | | | | | | | | |
| WORLD | 114 | 116 | 119 | 124 | 125 | .81 | 104 | 104 | 104 | 107 | 106 | - .93 |
| DEVELOPED COUNTRIES | 112 | 113 | 116 | 121 | 121 | | 107 | 108 | 110 | 113 | 112 | - .88 |
| WESTERN EUROPE | 110 | 108 | 112 | 116 | 120 | 3.45 | 107 | 105 | 108 | 112 | 115 | 2.68 |
| EUROPEAN ECON COMMUNITY | 107 | 105 | 109 | 114 | 119 | 4.39 | 105 | 102 | 106 | 111 | 115 | 3.60 |
| BELGIUM-LUXEMBOURG | 104 | 101 | 106 | 106 | 113 | 6.60 | 103 | 99 | 104 | 104 | 111 | 6.73 |
| DENMARK | 100 | 97 | 109 | 109 | 114 | 4.59 | 98 | 94 | 105 | 105 | 110 | 4.76 |
| FRANCE | 108 | 107 | 108 | 114 | 122 | 7.02 | 104 | 102 | 103 | 109 | 116 | 6.42 |
| GERMANY FED.REP. OF | 102 | 100 | 106 | 113 | 113 | | 100 | 99 | 105 | 112 | 112 | |
| GREECE | 126 | 125 | 122 | 129 | 126 | - 2.33 | 123 | 120 | 116 | 121 | 118 | - 2.48 |
| IRELAND | 136 | 115 | 133 | 135 | 130 | - 3.70 | 128 | 108 | 123 | 124 | 118 | - 4.84 |
| ITALY | 107 | 105 | 106 | 110 | 116 | 5.45 | 103 | 100 | 101 | 104 | 110 | 5.77 |
| NETHERLANDS | 122 | 119 | 124 | 131 | 137 | 4.58 | 116 | 113 | 116 | 123 | 127 | 3.25 |
| UNITED KINGDOM | 106 | 102 | 113 | 116 | 120 | 3.45 | 106 | 102 | 113 | 115 | 119 | 3.48 |
| OTHER WESTERN EUROPE | 117 | 119 | 118 | 123 | 123 | | 112 | 114 | 112 | 116 | 115 | - .86 |
| AUSTRIA | 109 | 108 | 107 | 109 | 110 | .92 | 107 | 107 | 106 | 107 | 109 | 1.87 |
| FINLAND | 109 | 119 | 105 | 108 | 112 | 3.70 | 106 | 116 | 102 | 105 | 108 | 2.86 |
| ICELAND | 128 | 124 | 120 | 132 | 133 | .76 | 120 | 114 | 110 | 119 | 119 | |
| MALTA | 98 | 114 | 127 | 132 | 131 | - .76 | 97 | 113 | 124 | 129 | 126 | - 2.33 |
| NORWAY | 105 | 107 | 119 | 126 | 119 | - 5.56 | 101 | 103 | 114 | 120 | 113 | - 5.83 |
| PORTUGAL | 99 | 93 | 80 | 80 | 87 | 8.75 | 95 | 86 | 75 | 75 | 80 | 6.67 |
| SPAIN | 126 | 129 | 128 | 141 | 135 | - 4.26 | 120 | 121 | 120 | 130 | 123 | - 5.38 |
| SWEDEN | 108 | 114 | 116 | 120 | 119 | - .83 | 106 | 112 | 113 | 117 | 116 | - .85 |
| SWITZERLAND | 108 | 114 | 114 | 114 | 122 | 7.02 | 105 | 112 | 113 | 113 | 120 | 6.19 |
| YUGOSLAVIA | 117 | 123 | 127 | 122 | 126 | 3.28 | 112 | 116 | 119 | 113 | 116 | 2.65 |
| USSR AND EASTERN EUROPE | 112 | 115 | 117 | 125 | 118 | - 5.60 | 107 | 110 | 110 | 117 | 109 | - 6.84 |
| EASTERN EUROPE | 118 | 117 | 121 | 125 | 124 | - .80 | 114 | 113 | 115 | 118 | 117 | - .85 |
| ALBANIA | 111 | 123 | 127 | 129 | 133 | 3.10 | 99 | 106 | 107 | 106 | 107 | .94 |
| BULGARIA | 102 | 115 | 111 | 116 | 124 | 6.90 | 100 | 111 | 107 | 112 | 119 | 6.25 |
| CZECHOSLOVAKIA | 115 | 115 | 124 | 128 | 118 | - 7.81 | 112 | 111 | 118 | 122 | 112 | - 8.20 |
| GERMAN DEMOCRATIC REP. | 119 | 114 | 120 | 121 | 122 | .83 | 120 | 115 | 122 | 124 | 125 | .81 |
| HUNGARY | 128 | 117 | 129 | 131 | 130 | - .76 | 125 | 114 | 125 | 127 | 126 | - .79 |
| POLAND | 115 | 110 | 109 | 116 | 114 | - 1.72 | 110 | 104 | 102 | 107 | 105 | - 1.87 |
| ROMANIA | 127 | 158 | 154 | 157 | 161 | 2.55 | 121 | 149 | 144 | 145 | 148 | 2.07 |
| USSR | 108 | 114 | 115 | 125 | 115 | - 8.00 | 103 | 108 | 108 | 116 | 106 | - 8.62 |
| NORTH AMERICA DEVELOPED | 114 | 118 | 122 | 121 | 126 | 4.13 | 109 | 112 | 115 | 113 | 117 | 3.54 |
| CANADA | 108 | 120 | 120 | 124 | 117 | - 5.65 | 101 | 111 | 110 | 113 | 105 | - 7.08 |
| UNITED STATES | 114 | 118 | 122 | 121 | 127 | 4.96 | 110 | 112 | 116 | 113 | 118 | 4.42 |
| OCEANIA DEVELOPED | 120 | 128 | 124 | 142 | 136 | - 4.23 | 110 | 116 | 112 | 126 | 120 | - 4.76 |
| AUSTRALIA | 123 | 130 | 127 | 151 | 145 | - 3.97 | 113 | 117 | 113 | 133 | 127 | - 4.51 |
| NEW ZEALAND | 111 | 122 | 118 | 118 | 113 | - 4.24 | 101 | 111 | 107 | 107 | 103 | - 3.74 |
| DEVELOPING COUNTRIES | 116 | 120 | 122 | 128 | 130 | 1.56 | 104 | 105 | 105 | 107 | 106 | - .93 |
| AFRICA DEVELOPING | 108 | 111 | 109 | 113 | 115 | 1.77 | 94 | 94 | 89 | 91 | 89 | - 2.20 |
| NORTH WESTERN AFRICA | 109 | 117 | 101 | 115 | 114 | .88 | 96 | 100 | 83 | 90 | 88 | - 2.22 |
| ALGERIA | 102 | 112 | 91 | 98 | 99 | 1.02 | 89 | 94 | 74 | 77 | 75 | - 2.60 |
| MOROCCO | 97 | 111 | 93 | 111 | 110 | - .90 | 85 | 94 | 76 | 88 | 85 | - 3.41 |
| TUNISIA | 154 | 143 | 142 | 147 | 152 | 3.40 | 141 | 128 | 124 | 125 | 126 | .80 |
| WESTERN AFRICA | 107 | 108 | 108 | 114 | 118 | 3.51 | 93 | 91 | 87 | 90 | 90 | |
| BENIN | 103 | 114 | 114 | 127 | 125 | - 1.57 | 89 | 96 | 93 | 101 | 97 | - 3.96 |
| GAMBIA | 111 | 113 | 104 | 90 | 108 | 20.00 | 95 | 94 | 84 | 71 | 83 | 16.90 |
| GHANA | 108 | 96 | 95 | 98 | 105 | 7.14 | 93 | 81 | 77 | 77 | 80 | 3.90 |
| GUINEA | 106 | 108 | 103 | 107 | 103 | - 3.74 | 95 | 93 | 87 | 88 | 82 | - 6.82 |
| IVORY COAST | 130 | 128 | 136 | 143 | 150 | 4.90 | 103 | 98 | 100 | 102 | 103 | .98 |
| LIBERIA | 120 | 126 | 129 | 132 | 134 | 1.52 | 102 | 103 | 103 | 101 | 100 | - .99 |
| MALI | 102 | 105 | 103 | 113 | 107 | - 5.31 | 90 | 91 | 87 | 93 | 85 | - 8.60 |
| MAURITANIA | 78 | 83 | 86 | 89 | 94 | 5.62 | 68 | 71 | 71 | 72 | 74 | 2.78 |
| NIGER | 78 | 104 | 107 | 113 | 114 | .88 | 68 | 88 | 88 | 90 | 89 | - 1.11 |
| NIGERIA | 106 | 109 | 109 | 114 | 119 | 4.39 | 91 | 90 | 88 | 89 | 90 | 1.12 |
| SENEGAL | 139 | 125 | 89 | 134 | 100 | - 25.37 | 119 | 104 | 72 | 106 | 78 | - 26.42 |
| SIERRA LEONE | 110 | 110 | 114 | 115 | 108 | - 6.09 | 97 | 95 | 96 | 94 | 86 | - 8.51 |
| TOGO | 92 | 94 | 88 | 105 | 100 | - 4.76 | 80 | 79 | 72 | 83 | 77 | - 7.23 |
| UPPER VOLTA | 115 | 107 | 109 | 120 | 122 | 1.67 | 102 | 93 | 92 | 99 | 98 | - 1.01 |
| CENTRAL AFRICA | 110 | 111 | 113 | 112 | 115 | 2.68 | 98 | 96 | 95 | 92 | 92 | |
| ANGOLA | 100 | 103 | 103 | 102 | 101 | - .98 | 89 | 90 | 88 | 85 | 82 | - 3.53 |
| CAMEROON | 124 | 122 | 126 | 130 | 134 | 3.08 | 112 | 108 | 109 | 110 | 110 | |
| CENTRAL AFRICAN REP | 113 | 112 | 117 | 121 | 124 | 2.48 | 102 | 99 | 101 | 102 | 102 | |
| CHAD | 99 | 104 | 106 | 110 | 107 | - 2.73 | 89 | 91 | 91 | 93 | 88 | - 5.38 |
| CONGO | 99 | 100 | 100 | 97 | 99 | 2.06 | 88 | 86 | 85 | 79 | 79 | |
| GABON | 90 | 89 | 92 | 103 | 108 | 4.85 | 87 | 84 | 87 | 96 | 99 | 3.13 |
| ZAIRE | 110 | 111 | 112 | 108 | 112 | 3.70 | 97 | 95 | 93 | 87 | 88 | 1.15 |
| EASTERN AFRICA | 107 | 111 | 113 | 114 | 113 | - .88 | 93 | 94 | 93 | 91 | 88 | - 3.30 |
| BURUNDI | 113 | 119 | 121 | 125 | 126 | .80 | 104 | 106 | 106 | 106 | 104 | - 1.89 |
| ETHIOPIA | 101 | 102 | 102 | 101 | 105 | 3.96 | 89 | 88 | 86 | 83 | 84 | 1.20 |
| KENYA | 117 | 121 | 127 | 125 | 125 | | 97 | 97 | 98 | 93 | 89 | - 4.30 |
| MADAGASCAR | 112 | 115 | 114 | 112 | 120 | 7.14 | 99 | 99 | 96 | 92 | 96 | 4.35 |
| MALAWI | 109 | 118 | 124 | 133 | 127 | - 4.51 | 93 | 98 | 100 | 104 | 96 | - 7.69 |
| MAURITIUS | 85 | 119 | 113 | 117 | 119 | 1.71 | 78 | 107 | 99 | 101 | 101 | |

ANNEX TABLE 2. INDICES OF FOOD PRODUCTION

| | TOTAL | | | | | | PER CAPUT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1975 | 1976 | 1977 | 1978 | 1979 | CHANGE 1978 TO 1979 | 1975 | 1976 | 1977 | 1978 | 1979 | CHANGE 1978 TO 1979 |
| | | | 1969-71=100 | | | PERCENT | | | 1969-71=100 | | | PERCENT |
| FOOD PRODUCTION | | | | | | | | | | | | |
| MOZAMBIQUE | 97 | 96 | 96 | 95 | 95 | | 86 | 83 | 81 | 78 | 75 | - 3.85 |
| RWANDA | 118 | 124 | 130 | 137 | 141 | 2.92 | 102 | 105 | 106 | 109 | 108 | - .92 |
| SOMALIA | 103 | 102 | 104 | 108 | 104 | - 3.70 | 91 | 87 | 87 | 87 | 82 | - 5.75 |
| TANZANIA | 104 | 113 | 117 | 117 | 115 | - 1.71 | 90 | 95 | 95 | 92 | 88 | - 4.35 |
| UGANDA | 105 | 109 | 109 | 117 | 117 | | 90 | 92 | 88 | 92 | 89 | - 3.26 |
| ZAMBIA | 125 | 135 | 130 | 129 | 121 | - 6.20 | 108 | 113 | 105 | 101 | 92 | - 8.91 |
| ZIMBABWE | 128 | 130 | 131 | 131 | 108 | - 17.56 | 109 | 107 | 104 | 101 | 80 | - 20.79 |
| SOUTHERN AFRICA | 105 | 111 | 107 | 110 | 114 | 3.64 | 93 | 95 | 90 | 90 | 91 | 1.11 |
| BOTSWANA | 105 | 122 | 113 | 98 | 115 | 17.35 | 93 | 105 | 95 | 80 | 91 | 13.75 |
| LESOTHO | 97 | 92 | 116 | 129 | 117 | - 9.30 | 87 | 80 | 99 | 107 | 95 | - 11.21 |
| SWAZILAND | 118 | 127 | 123 | 134 | 144 | 7.46 | 105 | 110 | 104 | 110 | 114 | 3.64 |
| SOUTH AFRICA | 117 | 116 | 123 | 131 | 129 | - 1.53 | 103 | 99 | 103 | 106 | 101 | - 4.72 |
| LATIN AMERICA | 117 | 123 | 127 | 132 | 137 | 3.79 | 102 | 105 | 106 | 107 | 108 | .93 |
| CENTRAL AMERICA | 117 | 120 | 129 | 138 | 141 | 2.17 | 100 | 99 | 103 | 107 | 105 | - 1.87 |
| COSTA RICA | 130 | 127 | 131 | 134 | 139 | 3.73 | 114 | 109 | 110 | 110 | 112 | 1.82 |
| EL SALVADOR | 132 | 132 | 137 | 162 | 168 | 3.70 | 114 | 111 | 112 | 128 | 129 | .78 |
| GUATEMALA | 119 | 130 | 136 | 135 | 147 | 8.89 | 102 | 108 | 110 | 105 | 111 | 5.71 |
| HONDURAS | 84 | 98 | 106 | 111 | 106 | - 4.50 | 72 | 80 | 84 | 85 | 78 | - 8.24 |
| MEXICO | 118 | 120 | 130 | 139 | 142 | 2.16 | 100 | 99 | 103 | 107 | 105 | - 1.87 |
| NICARAGUA | 119 | 125 | 132 | 143 | 144 | .70 | 101 | 103 | 105 | 110 | 107 | - 2.73 |
| PANAMA | 117 | 117 | 125 | 130 | 124 | - 4.62 | 102 | 100 | 104 | 105 | 98 | - 6.67 |
| CARIBBEAN | 100 | 104 | 108 | 117 | 118 | .85 | 90 | 92 | 94 | 100 | 99 | - 1.00 |
| BARBADOS | 74 | 78 | 84 | 79 | 81 | 2.53 | 72 | 76 | 81 | 75 | 77 | 2.67 |
| CUBA | 95 | 98 | 104 | 116 | 124 | 6.90 | 87 | 89 | 93 | 102 | 107 | 4.90 |
| DOMINICAN REPUBLIC | 109 | 116 | 118 | 127 | 117 | - 7.87 | 95 | 98 | 97 | 101 | 91 | - 9.90 |
| HAITI | 105 | 107 | 110 | 119 | 116 | - 2.52 | 94 | 93 | 94 | 99 | 94 | - 5.05 |
| JAMAICA | 103 | 108 | 106 | 116 | 114 | - 1.72 | 95 | 97 | 94 | 102 | 98 | - 3.92 |
| SOUTH AMERICA | 119 | 127 | 129 | 133 | 139 | 4.51 | 105 | 109 | 108 | 108 | 110 | 1.85 |
| ARGENTINA | 111 | 120 | 120 | 135 | 141 | 4.44 | 104 | 111 | 110 | 122 | 126 | 3.28 |
| BOLIVIA | 131 | 138 | 128 | 136 | 142 | 4.41 | 115 | 118 | 107 | 110 | 112 | 1.82 |
| BRAZIL | 129 | 142 | 145 | 138 | 146 | 5.80 | 112 | 120 | 119 | 110 | 113 | 2.73 |
| CHILE | 107 | 104 | 113 | 103 | 108 | 4.85 | 98 | 94 | 100 | 90 | 93 | 3.33 |
| COLOMBIA | 123 | 131 | 132 | 147 | 154 | 4.76 | 110 | 114 | 113 | 122 | 124 | 1.64 |
| ECUADOR | 119 | 121 | 130 | 128 | 130 | 1.56 | 103 | 101 | 106 | 101 | 100 | - .99 |
| GUYANA | 107 | 104 | 112 | 119 | 118 | - .84 | 96 | 91 | 96 | 100 | 97 | - 3.00 |
| PARAGUAY | 113 | 122 | 137 | 133 | 145 | 9.02 | 98 | 103 | 112 | 106 | 112 | 5.66 |
| PERU | 109 | 111 | 111 | 108 | 110 | 1.85 | 95 | 95 | 92 | 87 | 86 | - 1.15 |
| URUGUAY | 103 | 117 | 98 | 98 | 93 | - 5.10 | 102 | 116 | 97 | 96 | 90 | - 6.25 |
| VENEZUELA | 119 | 112 | 122 | 130 | 135 | 3.85 | 100 | 92 | 97 | 99 | 100 | 1.01 |
| NEAR EAST DEVELOPING | 121 | 128 | 126 | 132 | 131 | - .76 | 106 | 109 | 104 | 106 | 103 | - 2.83 |
| NEAR EAST IN AFRICA | 115 | 116 | 116 | 123 | 122 | - .81 | 103 | 101 | 98 | 101 | 98 | - 2.97 |
| EGYPT | 110 | 113 | 108 | 117 | 117 | | 99 | 99 | 93 | 97 | 95 | - 2.06 |
| LIBYA | 173 | 183 | 144 | 194 | 196 | 1.03 | 140 | 142 | 108 | 139 | 135 | - 2.88 |
| SUDAN | 122 | 117 | 130 | 130 | 125 | - 3.85 | 107 | 100 | 108 | 106 | 98 | - 7.55 |
| NEAR EAST IN ASIA | 122 | 131 | 128 | 134 | 133 | - .75 | 106 | 111 | 105 | 107 | 103 | - 3.74 |
| AFGHANISTAN | 117 | 124 | 113 | 120 | 111 | - 7.50 | 103 | 107 | 94 | 98 | 88 | - 10.20 |
| CYPRUS | 87 | 90 | 99 | 98 | 102 | 4.08 | 84 | 86 | 95 | 95 | 98 | 3.16 |
| IRAN | 128 | 141 | 135 | 140 | 137 | - 2.14 | 111 | 118 | 110 | 111 | 105 | - 5.41 |
| IRAQ | 92 | 116 | 109 | 112 | 127 | 13.39 | 78 | 95 | 86 | 86 | 94 | 9.30 |
| JORDAN | 90 | 110 | 116 | 131 | 101 | - 22.90 | 76 | 90 | 92 | 101 | 75 | - 25.74 |
| LEBANON | 108 | 93 | 95 | 114 | 110 | - 3.51 | 95 | 80 | 80 | 93 | 88 | - 5.38 |
| SAUDI ARABIA | 149 | 142 | 159 | 155 | 132 | - 14.84 | 129 | 120 | 130 | 122 | 102 | - 16.39 |
| SYRIA | 160 | 186 | 175 | 209 | 178 | - 14.83 | 136 | 153 | 140 | 161 | 133 | - 17.39 |
| TURKEY | 122 | 129 | 129 | 134 | 137 | 2.24 | 107 | 111 | 108 | 110 | 109 | - .91 |
| YEMEN ARAB REPUBLIC | 123 | 116 | 108 | 108 | 112 | 3.70 | 113 | 104 | 95 | 92 | 94 | 2.17 |
| YEMEN DEMOCRATIC | 128 | 129 | 127 | 122 | 127 | 4.10 | 116 | 114 | 109 | 102 | 104 | 1.96 |
| ISRAEL | 123 | 133 | 138 | 139 | 141 | 1.44 | 106 | 112 | 113 | 111 | 110 | - .90 |
| FAR EAST DEVELOPING | 115 | 116 | 124 | 128 | 125 | - 2.34 | 102 | 100 | 105 | 106 | 100 | - 5.66 |
| SOUTH ASIA | 113 | 111 | 120 | 123 | 118 | - 4.07 | 101 | 96 | 102 | 102 | 95 | - 6.86 |
| BANGLADESH | 109 | 103 | 111 | 114 | 116 | 1.75 | 97 | 89 | 94 | 93 | 92 | - 1.08 |
| INDIA | 113 | 110 | 120 | 124 | 115 | - 7.26 | 101 | 96 | 102 | 103 | 93 | - 9.71 |
| NEPAL | 111 | 110 | 105 | 109 | 113 | 3.67 | 99 | 96 | 90 | 91 | 93 | 2.20 |
| PAKISTAN | 115 | 121 | 127 | 128 | 133 | 3.91 | 99 | 101 | 103 | 100 | 101 | 1.00 |
| SRI LANKA | 118 | 124 | 127 | 137 | 135 | - 1.46 | 109 | 112 | 113 | 119 | 116 | - 2.52 |
| EAST SOUTH-EAST ASIA | 122 | 128 | 135 | 142 | 143 | .70 | 107 | 110 | 113 | 116 | 115 | - .86 |
| BURMA | 106 | 109 | 113 | 119 | 120 | .84 | 94 | 94 | 95 | 98 | 97 | - 1.02 |
| INDONESIA | 116 | 114 | 123 | 125 | 130 | 4.00 | 102 | 98 | 104 | 103 | 105 | 1.94 |
| KOREA REP | 127 | 140 | 155 | 161 | 163 | 1.24 | 115 | 125 | 135 | 138 | 137 | - .72 |
| LAO | 112 | 111 | 113 | 113 | 118 | 4.42 | 100 | 98 | 97 | 94 | 97 | 3.19 |
| MALAYSIA | 125 | 131 | 134 | 130 | 152 | 16.92 | 110 | 111 | 111 | 105 | 120 | 14.29 |
| PHILIPPINES | 127 | 138 | 141 | 145 | 143 | - 1.38 | 110 | 116 | 115 | 114 | 110 | - 3.51 |
| THAILAND | 133 | 140 | 142 | 175 | 161 | - 8.00 | 115 | 118 | 116 | 139 | 124 | - 10.79 |
| JAPAN | 110 | 101 | 108 | 108 | 109 | .93 | 102 | 93 | 99 | 98 | 98 | |
| ASIAN CENT PLANNED ECON | 118 | 122 | 122 | 129 | 137 | 6.20 | 109 | 111 | 109 | 114 | 119 | 4.39 |
| CHINA | 119 | 123 | 122 | 129 | 137 | 6.20 | 110 | 111 | 109 | 114 | 120 | 5.26 |
| KAMPUCHEA,DEMOCRATIC | 67 | 71 | 72 | 61 | 40 | - 34.43 | 59 | 61 | 60 | 50 | 32 | - 36.00 |
| KOREA DPR | 138 | 150 | 160 | 161 | 169 | 4.97 | 121 | 128 | 134 | 131 | 134 | 2.29 |
| MONGOLIA | 132 | 122 | 111 | 116 | 121 | 4.31 | 114 | 103 | 90 | 92 | 93 | 1.09 |
| VIET NAM | 109 | 119 | 120 | 125 | 132 | 5.60 | 98 | 105 | 103 | 105 | 108 | 2.86 |

ANNEX TABLE 3. INDICES OF AGRICULTURAL PRODUCTION

| | TOTAL | | | | | | PER CAPUT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1975 | 1976 | 1977 | 1978 | 1979 | CHANGE 1978 TO 1979 | 1975 | 1976 | 1977 | 1978 | 1979 | CHANGE 1978 TO 1979 |
| | 1969-71=100 | | | | | PERCENT | 1969-71=100 | | | | | PERCENT |
| AGRICULTURAL PRODUCTION | | | | | | | | | | | | |
| WORLD | 113 | 115 | 118 | 123 | 124 | .81 | 103 | 103 | 104 | 106 | 105 | - .94 |
| DEVELOPED COUNTRIES | 111 | 113 | 116 | 120 | 120 | | 107 | 107 | 109 | 112 | 112 | |
| WESTERN EUROPE | 110 | 109 | 112 | 116 | 120 | 3.45 | 107 | 105 | 108 | 112 | 115 | 2.68 |
| EUROPEAN ECON COMMUNITY | 108 | 105 | 109 | 114 | 119 | 4.39 | 105 | 102 | 106 | 111 | 115 | 3.60 |
| BELGIUM-LUXEMBOURG | 104 | 101 | 106 | 106 | 113 | 6.60 | 103 | 99 | 104 | 104 | 111 | 6.73 |
| DENMARK | 100 | 97 | 109 | 109 | 114 | 4.59 | 98 | 94 | 105 | 105 | 110 | 4.76 |
| FRANCE | 108 | 107 | 108 | 114 | 122 | 7.02 | 104 | 103 | 103 | 109 | 116 | 6.42 |
| GERMANY FED.REP. OF | 102 | 100 | 106 | 113 | 113 | | 100 | 99 | 105 | 112 | 112 | |
| GREECE | 126 | 126 | 122 | 129 | 125 | - 3.10 | 122 | 121 | 116 | 121 | 116 | - 4.13 |
| IRELAND | 135 | 115 | 133 | 135 | 130 | - 3.70 | 128 | 108 | 123 | 123 | 118 | - 4.07 |
| ITALY | 108 | 105 | 107 | 111 | 117 | 5.41 | 104 | 100 | 101 | 105 | 110 | 4.76 |
| NETHERLANDS | 123 | 120 | 124 | 132 | 138 | 4.55 | 117 | 114 | 117 | 123 | 128 | 4.07 |
| UNITED KINGDOM | 107 | 103 | 113 | 116 | 120 | 3.45 | 106 | 102 | 113 | 115 | 119 | 3.48 |
| OTHER WESTERN EUROPE | 117 | 119 | 118 | 123 | 122 | - .81 | 112 | 114 | 112 | 116 | 114 | - 1.72 |
| AUSTRIA | 109 | 108 | 107 | 109 | 110 | .92 | 107 | 107 | 106 | 108 | 109 | .93 |
| FINLAND | 109 | 119 | 105 | 108 | 112 | 3.70 | 107 | 117 | 102 | 105 | 108 | 2.86 |
| ICELAND | 126 | 122 | 119 | 130 | 132 | 1.54 | 118 | 113 | 109 | 118 | 118 | |
| MALTA | 98 | 114 | 126 | 132 | 131 | - .76 | 97 | 113 | 124 | 129 | 126 | - 2.33 |
| NORWAY | 105 | 107 | 119 | 125 | 119 | - 4.80 | 101 | 103 | 114 | 120 | 113 | - 5.83 |
| PORTUGAL | 99 | 93 | 80 | 81 | 87 | 7.41 | 95 | 87 | 76 | 75 | 81 | 8.00 |
| SPAIN | 126 | 128 | 128 | 139 | 134 | - 3.60 | 120 | 120 | 119 | 129 | 123 | - 4.65 |
| SWEDEN | 109 | 114 | 116 | 120 | 119 | - .83 | 106 | 112 | 113 | 117 | 116 | - .85 |
| SWITZERLAND | 108 | 114 | 114 | 114 | 122 | 7.02 | 105 | 112 | 113 | 113 | 120 | 6.19 |
| YUGOSLAVIA | 117 | 124 | 127 | 122 | 126 | 3.28 | 112 | 117 | 119 | 113 | 116 | 2.65 |
| USSR AND EASTERN EUROPE | 112 | 115 | 117 | 124 | 118 | - 4.84 | 107 | 110 | 110 | 116 | 109 | - 6.03 |
| EASTERN EUROPE | 118 | 117 | 120 | 124 | 123 | - .81 | 114 | 113 | 114 | 118 | 116 | - 1.69 |
| ALBANIA | 112 | 121 | 125 | 128 | 132 | 3.13 | 99 | 105 | 105 | 105 | 106 | .95 |
| BULGARIA | 107 | 117 | 110 | 116 | 125 | 7.76 | 104 | 114 | 106 | 112 | 120 | 7.14 |
| CZECHOSLOVAKIA | 115 | 114 | 123 | 128 | 118 | - 7.81 | 112 | 110 | 118 | 121 | 111 | - 8.26 |
| GERMAN DEMOCRATIC REP. | 119 | 114 | 120 | 122 | 122 | | 120 | 116 | 122 | 124 | 125 | .81 |
| HUNGARY | 127 | 117 | 129 | 131 | 129 | - 1.53 | 125 | 114 | 125 | 126 | 125 | - .79 |
| POLAND | 115 | 110 | 108 | 115 | 113 | - 1.74 | 110 | 104 | 101 | 107 | 105 | - 1.87 |
| ROMANIA | 127 | 158 | 154 | 156 | 161 | 3.21 | 121 | 149 | 144 | 145 | 147 | 1.38 |
| USSR | 109 | 114 | 115 | 124 | 115 | - 7.26 | 104 | 108 | 108 | 116 | 106 | - 8.62 |
| NORTH AMERICA DEVELOPED | 113 | 117 | 122 | 120 | 125 | 4.17 | 108 | 111 | 115 | 112 | 116 | 3.57 |
| CANADA | 107 | 117 | 119 | 123 | 115 | - 6.50 | 100 | 109 | 109 | 111 | 104 | - 6.31 |
| UNITED STATES | 113 | 117 | 122 | 120 | 126 | 5.00 | 109 | 111 | 115 | 112 | 117 | 4.46 |
| OCEANIA DEVELOPED | 113 | 119 | 115 | 129 | 125 | - 3.10 | 104 | 108 | 103 | 114 | 110 | - 3.51 |
| AUSTRALIA | 115 | 119 | 116 | 134 | 130 | - 2.99 | 106 | 108 | 104 | 118 | 114 | - 3.39 |
| NEW ZEALAND | 107 | 117 | 113 | 114 | 111 | - 2.63 | 98 | 107 | 103 | 103 | 101 | - 1.94 |
| DEVELOPING COUNTRIES | 115 | 118 | 121 | 127 | 129 | 1.57 | 103 | 103 | 104 | 106 | 106 | |
| AFRICA DEVELOPING | 108 | 110 | 108 | 112 | 114 | 1.79 | 94 | 93 | 89 | 89 | 89 | |
| NORTH WESTERN AFRICA | 109 | 117 | 101 | 113 | 114 | .88 | 96 | 100 | 83 | 90 | 88 | - 2.22 |
| ALGERIA | 102 | 112 | 91 | 99 | 100 | 1.01 | 89 | 94 | 74 | 77 | 76 | - 1.30 |
| MOROCCO | 98 | 112 | 92 | 110 | 110 | | 86 | 95 | 76 | 88 | 84 | - 4.55 |
| TUNISIA | 153 | 142 | 142 | 147 | 152 | 3.40 | 140 | 127 | 124 | 125 | 126 | .80 |
| WESTERN AFRICA | 108 | 109 | 108 | 113 | 117 | 3.54 | 93 | 91 | 88 | 89 | 89 | |
| BENIN | 102 | 113 | 112 | 125 | 123 | - 1.60 | 89 | 95 | 92 | 99 | 95 | - 4.04 |
| GAMBIA | 111 | 113 | 104 | 90 | 108 | 20.00 | 95 | 94 | 84 | 71 | 83 | 16.90 |
| GHANA | 108 | 96 | 95 | 98 | 105 | 7.14 | 94 | 81 | 77 | 77 | 80 | 3.90 |
| GUINEA | 105 | 106 | 101 | 105 | 101 | - 3.81 | 94 | 91 | 85 | 86 | 81 | - 5.81 |
| IVORY COAST | 126 | 129 | 133 | 130 | 143 | 10.00 | 100 | 98 | 98 | 93 | 99 | 6.45 |
| LIBERIA | 115 | 117 | 121 | 124 | 127 | 2.42 | 98 | 96 | 96 | 95 | 94 | - 1.05 |
| MALI | 105 | 110 | 107 | 118 | 112 | - 5.08 | 93 | 95 | 90 | 96 | 89 | - 7.29 |
| MAURITANIA | 78 | 83 | 86 | 89 | 94 | 5.62 | 68 | 71 | 71 | 72 | 74 | 2.78 |
| NIGER | 79 | 104 | 106 | 112 | 114 | 1.79 | 69 | 88 | 87 | 90 | 88 | - 2.22 |
| NIGERIA | 106 | 108 | 109 | 113 | 119 | 5.31 | 91 | 90 | 88 | 88 | 90 | 2.27 |
| SENEGAL | 140 | 126 | 90 | 134 | 102 | - 23.88 | 120 | 105 | 73 | 107 | 78 | - 27.10 |
| SIERRA LEONE | 110 | 110 | 115 | 115 | 111 | - 3.48 | 97 | 95 | 96 | 94 | 88 | - 6.38 |
| TOGO | 92 | 93 | 88 | 103 | 99 | - 3.88 | 80 | 79 | 72 | 82 | 76 | - 7.32 |
| UPPER VOLTA | 115 | 108 | 111 | 120 | 124 | 3.33 | 102 | 94 | 94 | 99 | 100 | 1.01 |
| CENTRAL AFRICA | 108 | 106 | 107 | 107 | 110 | 2.80 | 96 | 91 | 91 | 88 | 88 | |
| ANGOLA | 91 | 79 | 78 | 75 | 76 | 1.33 | 82 | 69 | 67 | 63 | 62 | - 1.59 |
| CAMEROON | 121 | 118 | 123 | 128 | 133 | 3.91 | 109 | 104 | 106 | 108 | 109 | .93 |
| CENTRAL AFRICAN REP | 112 | 112 | 115 | 119 | 124 | 4.20 | 101 | 99 | 99 | 101 | 103 | 1.98 |
| CHAD | 105 | 106 | 107 | 112 | 108 | - 3.57 | 94 | 94 | 92 | 94 | 88 | - 6.38 |
| CONGO | 99 | 100 | 100 | 97 | 99 | 2.06 | 88 | 86 | 85 | 80 | 79 | - 1.25 |
| GABON | 90 | 88 | 92 | 103 | 107 | 3.88 | 86 | 84 | 86 | 95 | 99 | 4.21 |
| ZAIRE | 110 | 111 | 112 | 107 | 112 | 4.67 | 96 | 95 | 93 | 87 | 88 | 1.15 |
| EASTERN AFRICA | 107 | 111 | 112 | 113 | 113 | | 93 | 94 | 92 | 90 | 87 | - 3.33 |
| BURUNDI | 111 | 118 | 120 | 124 | 126 | 1.61 | 103 | 106 | 105 | 106 | 104 | - 1.89 |
| ETHIOPIA | 101 | 102 | 102 | 102 | 106 | 3.92 | 89 | 88 | 86 | 84 | 85 | 1.19 |
| KENYA | 119 | 126 | 139 | 136 | 135 | - .74 | 99 | 101 | 107 | 101 | 96 | - 4.95 |
| MADAGASCAR | 113 | 115 | 113 | 112 | 118 | 5.36 | 100 | 100 | 96 | 92 | 94 | 2.17 |
| MALAWI | 114 | 123 | 133 | 141 | 137 | - 2.84 | 98 | 103 | 108 | 111 | 104 | - 6.31 |
| MAURITIUS | 86 | 119 | 113 | 117 | 119 | 1.71 | 79 | 107 | 100 | 101 | 101 | |

ANNEX TABLE 3. INDICES OF AGRICULTURAL PRODUCTION

| | TOTAL | | | | | | PER CAPUT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1975 | 1976 | 1977 | 1978 | 1979 | CHANGE 1978 TO 1979 | 1975 | 1976 | 1977 | 1978 | 1979 | CHANGE 1978 TO 1979 |
| | 1969-71=100 | | | | | PERCENT | 1969-71=100 | | | | | PERCENT |
| AGRICULTURAL PRODUCTION | | | | | | | | | | | | |
| MOZAMBIQUE | 92 | 91 | 93 | 92 | 91 | - 1.09 | 82 | 79 | 78 | 75 | 73 | - 2.67 |
| RWANDA | 120 | 127 | 130 | 136 | 142 | 4.41 | 104 | 107 | 106 | 108 | 109 | .93 |
| SOMALIA | 103 | 102 | 104 | 108 | 104 | - 3.70 | 91 | 87 | 87 | 87 | 82 | - 5.75 |
| TANZANIA | 104 | 112 | 113 | 112 | 111 | - .89 | 90 | 94 | 92 | 89 | 85 | - 4.49 |
| UGANDA | 98 | 95 | 95 | 98 | 96 | - 2.04 | 84 | 80 | 78 | 78 | 73 | - 6.41 |
| ZAMBIA | 125 | 133 | 129 | 127 | 120 | - 5.51 | 108 | 112 | 105 | 100 | 92 | - 8.00 |
| ZIMBABWE | 132 | 133 | 128 | 128 | 122 | - 4.69 | 112 | 110 | 102 | 99 | 91 | - 8.08 |
| SOUTHERN AFRICA | 105 | 110 | 108 | 111 | 114 | 2.70 | 93 | 95 | 91 | 91 | 91 | |
| BOTSWANA | 105 | 122 | 113 | 98 | 115 | 17.35 | 93 | 105 | 95 | 80 | 91 | 13.75 |
| LESOTHO | 91 | 86 | 108 | 120 | 109 | - 9.17 | 81 | 75 | 92 | 99 | 88 | - 11.11 |
| SWAZILAND | 124 | 133 | 131 | 144 | 153 | 6.25 | 110 | 115 | 110 | 118 | 122 | 3.39 |
| SOUTH AFRICA | 115 | 114 | 122 | 129 | 127 | - 1.55 | 101 | 97 | 101 | 105 | 100 | - 4.76 |
| LATIN AMERICA | 115 | 119 | 125 | 130 | 135 | 3.85 | 101 | 101 | 104 | 105 | 106 | .95 |
| CENTRAL AMERICA | 116 | 118 | 127 | 135 | 138 | 2.22 | 99 | 97 | 102 | 105 | 103 | - 1.90 |
| COSTA RICA | 123 | 121 | 127 | 131 | 135 | 3.05 | 109 | 104 | 107 | 107 | 108 | .93 |
| EL SALVADOR | 128 | 121 | 122 | 135 | 143 | 5.93 | 111 | 101 | 100 | 107 | 110 | 2.80 |
| GUATEMALA | 124 | 129 | 136 | 137 | 148 | 8.03 | 106 | 107 | 110 | 107 | 113 | 5.61 |
| HONDURAS | 89 | 100 | 109 | 120 | 117 | - 2.50 | 76 | 83 | 87 | 92 | 87 | - 5.43 |
| MEXICO | 115 | 117 | 127 | 136 | 138 | 1.47 | 98 | 96 | 101 | 104 | 103 | - .96 |
| NICARAGUA | 127 | 130 | 137 | 148 | 143 | - 3.38 | 108 | 107 | 109 | 114 | 106 | - 7.02 |
| PANAMA | 116 | 117 | 125 | 130 | 124 | - 4.62 | 102 | 100 | 104 | 105 | 98 | - 6.67 |
| CARIBBEAN | 101 | 105 | 109 | 118 | 118 | | 91 | 93 | 94 | 101 | 99 | - 1.98 |
| BARBADOS | 74 | 78 | 84 | 79 | 81 | 2.53 | 72 | 76 | 81 | 75 | 77 | 2.67 |
| CUBA | 96 | 99 | 105 | 116 | 123 | 6.03 | 88 | 90 | 94 | 102 | 107 | 4.90 |
| DOMINICAN REPUBLIC | 112 | 119 | 123 | 133 | 120 | - 9.77 | 96 | 100 | 101 | 106 | 93 | - 12.26 |
| HAITI | 106 | 105 | 109 | 117 | 115 | - 1.71 | 94 | 92 | 93 | 97 | 94 | - 3.09 |
| JAMAICA | 103 | 108 | 105 | 116 | 114 | - 1.72 | 94 | 97 | 93 | 102 | 98 | - 3.92 |
| SOUTH AMERICA | 117 | 121 | 126 | 130 | 136 | 4.62 | 103 | 104 | 106 | 106 | 108 | 1.89 |
| ARGENTINA | 111 | 120 | 121 | 134 | 140 | 4.48 | 104 | 110 | 110 | 121 | 124 | 2.48 |
| BOLIVIA | 134 | 139 | 132 | 139 | 146 | 5.04 | 118 | 119 | 109 | 113 | 115 | 1.77 |
| BRAZIL | 124 | 125 | 135 | 131 | 139 | 6.11 | 107 | 106 | 110 | 105 | 107 | 1.90 |
| CHILE | 106 | 103 | 112 | 103 | 107 | 3.88 | 98 | 93 | 100 | 89 | 92 | 3.37 |
| COLOMBIA | 121 | 127 | 130 | 142 | 151 | 6.34 | 108 | 111 | 111 | 118 | 122 | 3.39 |
| ECUADOR | 119 | 123 | 131 | 128 | 132 | 3.13 | 103 | 103 | 107 | 101 | 101 | |
| GUYANA | 107 | 104 | 112 | 119 | 118 | - .84 | 96 | 91 | 96 | 100 | 97 | - 3.00 |
| PARAGUAY | 117 | 128 | 145 | 139 | 149 | 7.19 | 102 | 108 | 119 | 111 | 115 | 3.60 |
| PERU | 106 | 108 | 108 | 108 | 111 | 2.78 | 92 | 92 | 89 | 87 | 87 | |
| URUGUAY | 98 | 112 | 96 | 96 | 93 | - 3.13 | 97 | 111 | 94 | 94 | 91 | - 3.19 |
| VENEZUELA | 120 | 110 | 121 | 128 | 134 | 4.69 | 101 | 90 | 96 | 98 | 99 | 1.02 |
| NEAR EAST DEVELOPING | 118 | 125 | 123 | 129 | 128 | - .78 | 104 | 107 | 102 | 104 | 100 | - 3.85 |
| NEAR EAST IN AFRICA | 109 | 107 | 107 | 116 | 114 | - 1.72 | 97 | 93 | 91 | 96 | 92 | - 4.17 |
| EGYPT | 103 | 106 | 103 | 111 | 113 | 1.80 | 93 | 93 | 88 | 92 | 92 | |
| LIBYA | 171 | 181 | 144 | 192 | 194 | 1.04 | 139 | 141 | 108 | 138 | 134 | - 2.90 |
| SUDAN | 117 | 102 | 113 | 122 | 109 | - 10.66 | 103 | 88 | 95 | 99 | 86 | - 13.13 |
| NEAR EAST IN ASIA | 121 | 130 | 128 | 133 | 132 | - .75 | 105 | 110 | 105 | 106 | 102 | - 3.77 |
| AFGHANISTAN | 118 | 125 | 114 | 121 | 112 | - 7.44 | 104 | 107 | 95 | 98 | 88 | - 10.20 |
| CYPRUS | 86 | 89 | 98 | 98 | 102 | 4.08 | 84 | 86 | 95 | 94 | 98 | 4.26 |
| IRAN | 126 | 138 | 133 | 137 | 133 | - 2.92 | 109 | 116 | 108 | 109 | 102 | - 6.42 |
| IRAQ | 91 | 114 | 107 | 111 | 126 | 13.51 | 77 | 94 | 85 | 85 | 93 | 9.41 |
| JORDAN | 91 | 111 | 117 | 132 | 102 | - 22.73 | 78 | 91 | 93 | 102 | 76 | - 25.49 |
| LEBANON | 104 | 92 | 92 | 109 | 107 | - 1.83 | 92 | 79 | 78 | 90 | 85 | - 5.56 |
| SAUDI ARABIA | 148 | 142 | 158 | 154 | 132 | - 14.29 | 128 | 119 | 129 | 122 | 101 | - 17.21 |
| SYRIA | 148 | 171 | 162 | 189 | 163 | - 13.76 | 126 | 140 | 129 | 145 | 121 | - 16.55 |
| TURKEY | 121 | 130 | 130 | 134 | 136 | 1.49 | 107 | 112 | 109 | 110 | 109 | - .91 |
| YEMEN ARAB REPUBLIC | 124 | 116 | 108 | 108 | 112 | 3.70 | 114 | 104 | 95 | 92 | 94 | 2.17 |
| YEMEN DEMOCRATIC | 125 | 123 | 123 | 119 | 124 | 4.20 | 113 | 109 | 106 | 100 | 101 | 1.00 |
| ISRAEL | 125 | 134 | 140 | 144 | 145 | .69 | 108 | 113 | 115 | 115 | 113 | - 1.74 |
| FAR EAST DEVELOPING / | 115 | 115 | 123 | 128 | 124 | - 3.13 | 102 | 99 | 104 | 105 | 100 | - 4.76 |
| SOUTH ASIA | 112 | 110 | 119 | 123 | 118 | - 4.07 | 99 | 95 | 101 | 101 | 95 | - 5.94 |
| BANGLADESH | 106 | 101 | 110 | 114 | 116 | 1.75 | 95 | 88 | 93 | 94 | 92 | - 2.13 |
| INDIA | 113 | 110 | 120 | 124 | 116 | - 6.45 | 100 | 96 | 102 | 103 | 94 | - 8.74 |
| NEPAL | 110 | 109 | 105 | 109 | 113 | 3.67 | 98 | 95 | 90 | 91 | 92 | 1.10 |
| PAKISTAN | 112 | 116 | 123 | 123 | 131 | 6.50 | 96 | 97 | 100 | 96 | 99 | 3.13 |
| SRI LANKA | 108 | 110 | 113 | 119 | 120 | .84 | 99 | 100 | 100 | 104 | 103 | - .96 |
| EAST SOUTH-EAST ASIA | 122 | 127 | 133 | 140 | 142 | 1.43 | 107 | 109 | 112 | 114 | 113 | - .88 |
| BURMA | 106 | 108 | 113 | 120 | 121 | .83 | 94 | 93 | 95 | 99 | 97 | - 2.02 |
| INDONESIA | 116 | 115 | 121 | 123 | 128 | 4.07 | 103 | 99 | 102 | 102 | 103 | .98 |
| KOREA REP | 129 | 142 | 156 | 162 | 163 | .62 | 117 | 126 | 136 | 139 | 137 | - 1.44 |
| LAO | 111 | 111 | 113 | 112 | 118 | 5.36 | 99 | 97 | 96 | 94 | 96 | 2.13 |
| MALAYSIA | 122 | 130 | 131 | 128 | 143 | 11.72 | 107 | 110 | 108 | 104 | 112 | 7.69 |
| PHILIPPINES | 128 | 139 | 142 | 146 | 145 | - .68 | 111 | 116 | 115 | 115 | 111 | - 3.48 |
| THAILAND | 129 | 135 | 137 | 167 | 156 | - 6.59 | 111 | 113 | 112 | 133 | 120 | - 9.77 |
| JAPAN | 109 | 100 | 107 | 107 | 108 | .93 | 102 | 93 | 98 | 97 | 97 | |
| ASIAN CENT PLANNED ECON | 118 | 122 | 122 | 129 | 136 | 5.43 | 109 | 111 | 109 | 113 | 118 | 4.42 |
| CHINA | 119 | 122 | 121 | 129 | 137 | 6.20 | 110 | 111 | 109 | 114 | 119 | 4.39 |
| KAMPUCHEA, DEMOCRATIC | 67 | 72 | 71 | 61 | 41 | - 32.79 | 58 | 61 | 60 | 51 | 33 | - 35.29 |
| KOREA DPR | 137 | 148 | 158 | 159 | 167 | 5.03 | 120 | 127 | 132 | 130 | 133 | 2.31 |
| MONGOLIA | 129 | 120 | 109 | 114 | 119 | 4.39 | 111 | 100 | 89 | 91 | 92 | 1.10 |
| VIET NAM | 109 | 119 | 121 | 126 | 133 | 5.56 | 98 | 105 | 104 | 106 | 109 | 2.83 |

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

| | AVERAGE 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ....THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| WORLD | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 51358 | 57144 | 58527 | 64954 | 81565 | 65291 | 73738 | 69023 | 74464 | 84840 | 81895 | 3.79 |
| RICE MILLED | 7628 | 8666 | 8663 | 8559 | 8420 | 8295 | 7717 | 8991 | 10850 | 9837 | 11887 | 3.10 |
| BARLEY | 6915 | 10609 | 11130 | 13989 | 12445 | 11693 | 12606 | 13957 | 13109 | 14596 | 14096 | 2.80 |
| MAIZE | 20476 | 29432 | 30966 | 37397 | 48052 | 49603 | 51405 | 62232 | 57487 | 68626 | 76861 | 10.97 |
| MILLET | 229 | 178 | 267 | 167 | 226 | 215 | 206 | 303 | 271 | 309 | 301 | 5.62 |
| SORGHUM | 3560 | 6209 | 6223 | 6169 | 9050 | 10768 | 10155 | 11161 | 11921 | 10999 | 11141 | 8.27 |
| POTATOES | 3294 | 3782 | 3263 | 5131 | 3913 | 3877 | 3895 | 4377 | 4695 | 4011 | 4523 | 1.81 |
| SUGAR,TOTAL (RAW EQUIV.) | 18630 | 21344 | 21344 | 22091 | 23122 | 23245 | 21776 | 23121 | 28916 | 26318 | 26924 | 2.85 |
| PULSES | 1523 | 1779 | 1781 | 1932 | 2009 | 1642 | 1779 | 1905 | 2004 | 2077 | 2295 | 2.13 |
| SOYBEANS | 5520 | 12622 | 12332 | 13788 | 15622 | 17232 | 16459 | 19757 | 20004 | 24054 | 25471 | 8.54 |
| SOYBEAN OIL | 623 | 1120 | 1333 | 1103 | 1053 | 1546 | 1365 | 1836 | 2104 | 2607 | 2949 | 11.65 |
| GROUNDNUTS SHELLED BASIS | 1395 | 995 | 867 | 910 | 958 | 839 | 902 | 1018 | 860 | 762 | 776 | - 1.90 |
| GROUNDNUT OIL | 375 | 429 | 359 | 524 | 498 | 368 | 394 | 550 | 579 | 436 | 478 | 1.94 |
| COPRA | 1548 | 916 | 1067 | 1355 | 1043 | 527 | 1086 | 1147 | 941 | 677 | 431 | - 6.32 |
| COCONUT OIL | 440 | 617 | 714 | 867 | 737 | 667 | 1043 | 1374 | 1096 | 1329 | 1137 | 8.42 |
| PALM NUTS KERNELS | 689 | 458 | 491 | 397 | 303 | 360 | 309 | 391 | 283 | 180 | 162 | -10.04 |
| PALM OIL | 611 | 906 | 1162 | 1382 | 1514 | 1684 | 2005 | 2114 | 2176 | 2114 | 2295 | 10.18 |
| OILSEED CAKE AND MEAL | 6931 | 11194 | 11890 | 12853 | 14347 | 14610 | 14294 | 18368 | 18652 | 21700 | 22321 | 8.20 |
| BANANAS | 4267 | 5805 | 6525 | 6749 | 6786 | 6626 | 6371 | 6347 | 6668 | 7149 | 7141 | 1.34 |
| ORANGES+TANGER+CLEMEN | 3260 | 4378 | 4238 | 4626 | 5027 | 4948 | 5168 | 5195 | 5390 | 5200 | 5096 | 2.27 |
| LEMONS AND LIMES | 533 | 725 | 756 | 733 | 788 | 827 | 808 | 958 | 892 | 979 | 915 | 3.36 |
| COFFEE GREEN+ROASTED | 2876 | 3280 | 3260 | 3575 | 3803 | 3409 | 3561 | 3655 | 2931 | 3391 | 3819 | .35 |
| COCOA BEANS | 1096 | 1134 | 1188 | 1250 | 1109 | 1195 | 1149 | 1146 | 962 | 1076 | 943 | - 2.16 |
| TEA | 626 | 751 | 769 | 766 | 801 | 810 | 822 | 861 | 909 | 876 | 900 | 2.22 |
| COTTON LINT | 3729 | 3975 | 4072 | 4108 | 4717 | 3791 | 3994 | 4014 | 3892 | 4387 | 4312 | .33 |
| JUTE AND SIMILAR FIBRES | 1048 | 872 | 810 | 800 | 905 | 903 | 556 | 627 | 591 | 495 | 553 | - 6.22 |
| TOBACCO UNMANUFACTURED | 931 | 1004 | 1031 | 1214 | 1241 | 1389 | 1271 | 1323 | 1287 | 1427 | 1413 | 3.54 |
| NATURAL RUBBER | 2304 | 2853 | 2892 | 2852 | 3361 | 3198 | 3008 | 3248 | 3302 | 3325 | 3409 | 1.93 |
| WOOL GREASY | 1231 | 1261 | 1146 | 1204 | 1119 | 834 | 852 | 1010 | 1099 | 887 | 934 | - 3.13 |
| BOVINE CATTLE 1/ | 5120 | 6895 | 6917 | 7754 | 6860 | 6020 | 6790 | 6909 | 6622 | 7585 | 7250 | .25 |
| SHEEP AND GOATS 1/ | 8150 | 10001 | 10353 | 10992 | 10767 | 10385 | 11709 | 10532 | 12500 | 14973 | 15118 | 4.33 |
| PIGS 1/ | 2894 | 4628 | 5381 | 6096 | 5928 | 6071 | 6428 | 6941 | 6952 | 7963 | 8490 | 5.86 |
| TOTAL MEAT | 3100 | 4602 | 4738 | 5354 | 5649 | 5164 | 5467 | 6211 | 6745 | 7070 | 7704 | 5.57 |
| MILK DRY | 153 | 229 | 286 | 293 | 381 | 358 | 376 | 442 | 571 | 584 | 661 | 11.78 |
| TOTAL EGGS IN SHELL | 428 | 413 | 431 | 437 | 461 | 514 | 562 | 524 | 582 | 615 | 682 | 5.54 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 1462 | 2275 | 2321 | 2491 | 2848 | 2787 | 2966 | 3034 | 3466 | 3914 | 3833 | 6.42 |
| FISH CURED | 573 | 566 | 532 | 557 | 531 | 466 | 450 | 461 | 448 | 448 | 475 | - 2.60 |
| SHELLFISH | 269 | 474 | 560 | 694 | 717 | 719 | 773 | 883 | 827 | 947 | 986 | 7.44 |
| FISH CANNED AND PREPARED | 521 | 613 | 607 | 677 | 739 | 747 | 721 | 829 | 789 | 827 | 841 | 3.76 |
| SHELLFISH CANNED+PREPAR | 51 | 77 | 77 | 91 | 93 | 89 | 88 | 95 | 99 | 112 | 101 | 3.42 |
| FISH BODY AND LIVER OIL | 665 | 637 | 709 | 749 | 550 | 558 | 597 | 575 | 578 | 692 | 675 | - .45 |
| FISH MEAL | 1950 | 3009 | 3033 | 3008 | 1631 | 1951 | 2188 | 2114 | 2039 | 2105 | 2305 | - 3.58 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 8480 | 24380 | 21618 | 25489 | 28761 | 26206 | 23866 | 28379 | 28626 | 29394 | 30906 | 2.91 |
| SAWLOGS NONCONIFEROUS | 17570 | 38741 | 40691 | 42812 | 52395 | 45001 | 36379 | 45334 | 46707 | 48092 | 47384 | 1.69 |
| PULPWOOD+PARTICLE | 14110 | 26594 | 24110 | 23071 | 29208 | 32989 | 31854 | 33739 | 34709 | 32211 | 35845 | 4.43 |
| FUELWOOD | 2724 | 2774 | 2277 | 1824 | 2201 | 2671 | 2316 | 1985 | 2329 | 1700 | 1909 | - 2.77 |
| SAWNWOOD CONIFEROUS | 40883 | 49348 | 51669 | 57094 | 60913 | 51823 | 43251 | 56282 | 61776 | 65810 | 68909 | 2.87 |
| SAWNWOOD NONCONIFEROUS | 4778 | 7170 | 7219 | 8382 | 10597 | 8928 | 7964 | 11562 | 11108 | 11766 | 12707 | 6.33 |
| WOOD-BASED PANELS | 4740 | 9436 | 10673 | 12452 | 14530 | 12873 | 12337 | 14241 | 14591 | 15898 | 16279 | 5.21 |
| PULP FOR PAPER | 9653 | 15116 | 13197 | 14755 | 16811 | 17392 | 13695 | 15481 | 15575 | 17424 | 18120 | 2.06 |
| PAPER AND PAPERBOARD | 14238 | 23366 | 23526 | 25317 | 27549 | 29964 | 22869 | 27128 | 28297 | 30098 | 32977 | 3.12 |
| WESTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 4855 | 9392 | 7130 | 10140 | 12714 | 12393 | 14406 | 14494 | 12850 | 13737 | 16070 | 6.99 |
| RICE MILLED | 269 | 507 | 556 | 517 | 386 | 605 | 613 | 659 | 738 | 839 | 873 | 7.01 |
| BARLEY | 2461 | 4387 | 3780 | 5311 | 5586 | 5966 | 5686 | 5075 | 4408 | 8634 | 7199 | 5.59 |
| MAIZE | 1111 | 3883 | 5300 | 4593 | 5613 | 6012 | 5666 | 5876 | 4458 | 4869 | 5050 | 1.04 |
| MILLET | 4 | 4 | 10 | 4 | 9 | 7 | 14 | 11 | 12 | 11 | 11 | 11.00 |
| SORGHUM | 65 | 181 | 136 | 196 | 276 | 712 | 737 | 771 | 385 | 263 | 309 | 10.15 |
| POTATOES | 1835 | 2220 | 2138 | 2763 | 2485 | 2358 | 2579 | 2337 | 2708 | 2798 | 3001 | 2.70 |
| SUGAR,TOTAL (RAW EQUIV.) | 1465 | 1980 | 2025 | 2817 | 2827 | 2638 | 2249 | 2932 | 3924 | 4448 | 4628 | 9.35 |
| PULSES | 194 | 259 | 256 | 291 | 288 | 253 | 323 | 226 | 301 | 353 | 447 | 4.26 |
| SOYBEANS | 2 | 19 | 17 | 269 | 113 | 16 | 111 | 189 | 120 | 237 | 353 | 30.94 |
| SOYBEAN OIL | 85 | 384 | 445 | 395 | 470 | 720 | 719 | 744 | 767 | 1099 | 1208 | 13.79 |
| GROUNDNUTS SHELLED BASIS | 14 | 16 | 14 | 17 | 17 | 17 | 13 | 24 | 21 | 28 | 14 | 3.49 |
| GROUNDNUT OIL | 37 | 34 | 31 | 32 | 54 | 51 | 74 | 49 | 44 | 44 | 64 | 6.24 |
| COPRA | 3 | 1 | 1 | 7 | 6 | | 1 | 17 | 3 | 4 | 1 | 7.77 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | THOUSAND METRIC TONS | | | | | | PERCENT |
| COCONUT OIL | 47 | 52 | 79 | 143 | 117 | 78 | 203 | 269 | 163 | 120 | 62 | 5.27 |
| PALM NUTS KERNELS | | | 2 | 1 | 1 | 5 | 1 | 1 | 1 | 1 | 2 | 3.11 |
| PALM OIL | 19 | 30 | 55 | 77 | 80 | 68 | 86 | 98 | 111 | 96 | 92 | 10.71 |
| OILSEED CAKE AND MEAL | 970 | 1567 | 1793 | 2150 | 2710 | 2875 | 2258 | 2630 | 2519 | 3438 | 3954 | 8.43 |
| BANANAS | 117 | 45 | 41 | 30 | 23 | 27 | 35 | 25 | 31 | 41 | 43 | .14 |
| ORANGES+TANGER+CLEMEN | 1316 | 1815 | 1514 | 1838 | 1943 | 1933 | 1999 | 2056 | 2113 | 1884 | 1906 | 1.75 |
| LEMONS AND LIMES | 356 | 475 | 470 | 424 | 384 | 444 | 461 | 525 | 464 | 505 | 483 | 1.26 |
| COFFEE GREEN+ROASTED | 15 | 38 | 38 | 47 | 62 | 76 | 86 | 92 | 78 | 102 | 125 | 13.88 |
| COCOA BEANS | 6 | 4 | 4 | 2 | 3 | 6 | 11 | 15 | 30 | 34 | 32 | 38.07 |
| TEA | 18 | 41 | 53 | 47 | 58 | 61 | 43 | 46 | 60 | 50 | 46 | .46 |
| COTTON LINT | 78 | 98 | 99 | 74 | 101 | 79 | 65 | 89 | 70 | 71 | 60 | - 4.63 |
| JUTE AND SIMILAR FIBRES | 33 | 39 | 38 | 29 | 28 | 25 | 21 | 18 | 17 | 19 | 16 | - 9.57 |
| TOBACCO UNMANUFACTURED | 106 | 119 | 122 | 148 | 141 | 196 | 177 | 179 | 156 | 223 | 234 | 7.00 |
| NATURAL RUBBER | 62 | 19 | 19 | 24 | 30 | 40 | 29 | 32 | 27 | 21 | 21 | 1.09 |
| WOOL GREASY | 68 | 59 | 55 | 66 | 55 | 43 | 55 | 64 | 57 | 60 | 65 | 1.00 |
| BOVINE CATTLE 1/ | 1730 | 2601 | 2736 | 3094 | 2566 | 2312 | 3416 | 3121 | 2979 | 3322 | 3292 | 2.62 |
| SHEEP AND GOATS 1/ | 1182 | 629 | 718 | 790 | 619 | 575 | 1152 | 1183 | 1318 | 1732 | 1422 | 12.01 |
| PIGS 1/ | 600 | 2348 | 2175 | 2445 | 2552 | 2576 | 2596 | 3112 | 3106 | 3423 | 4004 | 6.10 |
| TOTAL MEAT | 880 | 1556 | 1812 | 1823 | 1933 | 2215 | 2434 | 2394 | 2653 | 2824 | 3174 | 7.63 |
| MILK DRY | 120 | 183 | 223 | 221 | 289 | 272 | 285 | 334 | 432 | 450 | 514 | 11.55 |
| TOTAL EGGS IN SHELL | 233 | 229 | 224 | 237 | 262 | 308 | 345 | 335 | 349 | 382 | 444 | 7.86 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 818 | 1099 | 1036 | 1061 | 1095 | 1017 | 1054 | 1116 | 1153 | 1379 | 1657 | 3.84 |
| FISH CURED | 349 | 339 | 314 | 349 | 328 | 283 | 278 | 288 | 269 | 261 | 284 | - 2.74 |
| SHELLFISH | 106 | 150 | 186 | 243 | 196 | 225 | 250 | 274 | 232 | 263 | 262 | 5.18 |
| FISH CANNED AND PREPARED | 197 | 188 | 177 | 198 | 235 | 226 | 207 | 244 | 241 | 261 | 262 | 4.16 |
| SHELLFISH CANNED+PREPAR | 9 | 19 | 21 | 26 | 28 | 24 | 27 | 33 | 32 | 36 | 38 | 7.25 |
| FISH BODY AND LIVER OIL | 221 | 172 | 149 | 196 | 271 | 196 | 249 | 330 | 339 | 269 | 300 | 8.05 |
| FISH MEAL | 367 | 606 | 724 | 840 | 797 | 803 | 864 | 948 | 1020 | 882 | 949 | 4.33 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 1108 | 1463 | 1354 | 1380 | 2236 | 2784 | 1704 | 2428 | 2590 | 1899 | 2397 | 6.06 |
| SAWLOGS NONCONIFEROUS | 963 | 1354 | 1474 | 1549 | 1850 | 1943 | 1665 | 1833 | 2074 | 2017 | 2050 | 4.46 |
| PULPWOOD+PARTICLE | 4554 | 8287 | 7755 | 6089 | 7114 | 7929 | 8630 | 8166 | 7488 | 6719 | 8306 | .33 |
| FUELWOOD | 1584 | 1268 | 814 | 752 | 1021 | 1169 | 1068 | 850 | 1075 | 591 | 782 | - 3.24 |
| SAWNWOOD CONIFEROUS | 14029 | 16213 | 16529 | 17929 | 20295 | 17248 | 12640 | 17061 | 16554 | 18051 | 20346 | .87 |
| SAWNWOOD NONCONIFEROUS | 1044 | 1504 | 1522 | 1766 | 2274 | 1858 | 1607 | 2801 | 2494 | 2756 | 2863 | 7.65 |
| WOOD-BASED PANELS | 2502 | 4237 | 4621 | 5270 | 6337 | 5854 | 5171 | 6151 | 6194 | 6709 | 7394 | 5.10 |
| PULP FOR PAPER | 5598 | 7156 | 5842 | 6639 | 8054 | 7454 | 5198 | 5697 | 5573 | 6731 | 6823 | - 1.03 |
| PAPER AND PAPERBOARD | 6056 | 10735 | 10847 | 12032 | 13708 | 14964 | 10655 | 13098 | 13753 | 15662 | 17394 | 4.40 |
| USSR AND EASTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 4201 | 6827 | 9277 | 5899 | 7037 | 8307 | 5262 | 4139 | 5438 | 3984 | 5311 | - 6.24 |
| RICE MILLED | 30 | 10 | 17 | 92 | 90 | 149 | 16 | 11 | 11 | 13 | 20 | - 8.27 |
| BARLEY | 1123 | 878 | 947 | 847 | 570 | 1158 | 1040 | 943 | 1725 | 218 | 234 | - 9.89 |
| MAIZE | 1762 | 1116 | 884 | 946 | 1570 | 1727 | 983 | 1536 | 1318 | 1509 | 1159 | 3.14 |
| POTATOES | 719 | 631 | 344 | 1510 | 534 | 648 | 490 | 442 | 682 | 360 | 650 | - 2.55 |
| SUGAR,TOTAL (RAW EQUIV.) | 2469 | 2114 | 1706 | 962 | 819 | 787 | 438 | 573 | 808 | 946 | 718 | - 9.45 |
| PULSES | 199 | 157 | 249 | 127 | 118 | 115 | 119 | 112 | 117 | 134 | 141 | - 3.43 |
| SOYBEANS | | 1 | 50 | 10 | 34 | 31 | 11 | 10 | 32 | 6 | 30 | 13.12 |
| SOYBEAN OIL | | | 3 | 3 | 6 | 8 | 2 | 12 | 13 | 7 | 8 | 37.85 |
| GROUNDNUTS SHELLED BASIS | 2 | 2 | 3 | 1 | | 1 | | | | | | -94.34 |
| GROUNDNUT OIL | 1 | | | | | | | | | | | |
| OILSEED CAKE AND MEAL | 254 | 84 | 88 | 79 | 75 | 47 | 49 | 13 | 59 | 51 | 4 | -20.73 |
| BANANAS | | 3 | | | | | | | | | | -81.70 |
| ORANGES+TANGER+CLEMEN | 3 | 2 | | | | | | | | | | -98.47 |
| COCOA BEANS | 2 | | | | | | | | | | | -73.59 |
| TEA | 8 | 10 | 11 | 12 | 13 | 14 | 17 | 15 | 22 | 17 | 17 | 7.55 |
| COTTON LINT | 386 | 528 | 571 | 662 | 734 | 740 | 801 | 880 | 976 | 859 | 794 | 5.66 |
| JUTE AND SIMILAR FIBRES | 1 | 6 | 2 | 2 | 3 | | | | | | | -83.07 |
| TOBACCO UNMANUFACTURED | 101 | 94 | 92 | 88 | 97 | 100 | 102 | 101 | 99 | 89 | 102 | .73 |
| NATURAL RUBBER | 24 | | | | | | | | | | | -78.13 |
| WOOL GREASY | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | - 2.78 |
| BOVINE CATTLE 1/ | 217 | 735 | 818 | 817 | 783 | 630 | 686 | 498 | 540 | 544 | 666 | - 4.21 |
| SHEEP AND GOATS 1/ | 708 | 2948 | 3128 | 3183 | 3168 | 2875 | 3457 | 3025 | 3504 | 3800 | 4830 | 3.91 |
| PIGS 1/ | 702 | 179 | 571 | 787 | 412 | 628 | 944 | 720 | 720 | 1158 | 1152 | 15.21 |
| TOTAL MEAT | 292 | 329 | 374 | 395 | 433 | 530 | 627 | 547 | 639 | 613 | 707 | 8.61 |
| TOTAL EGGS IN SHELL | 101 | 98 | 114 | 108 | 103 | 111 | 121 | 101 | 120 | 114 | 106 | .74 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 80 | 319 | 351 | 345 | 379 | 494 | 606 | 607 | 540 | 569 | 564 | 7.79 |
| FISH CURED | 37 | 22 | 17 | 16 | 15 | 13 | 19 | 12 | 11 | 15 | 21 | - 1.83 |
| SHELLFISH | 1 | 5 | 5 | 4 | 7 | 3 | 1 | 1 | 1 | 2 | 2 | -15.83 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | THOUSAND METRIC TONS | | | | | | | PERCENT |
| FISH CANNED AND PREPARED | 22 | 30 | 28 | 29 | 31 | 32 | 45 | 47 | 48 | 40 | 38 | 5.46 |
| SHELLFISH CANNED+PREPAR | 4 | 4 | 4 | 3 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | -12.22 |
| FISH BODY AND LIVER OIL | 32 | 35 | 15 | 17 | 6 | 6 | 4 | 2 | 1 | 1 | 1 | -33.65 |
| FISH MEAL | 5 | 14 | 12 | 18 | 13 | 11 | 19 | 18 | 14 | 21 | 20 | 4.74 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 3131 | 7572 | 7383 | 7982 | 10195 | 9829 | 8884 | 9534 | 9919 | 9868 | 8156 | 2.13 |
| SAWLOGS NONCONIFEROUS | 70 | 288 | 275 | 290 | 334 | 397 | 354 | 201 | 315 | 296 | 305 | - .11 |
| PULPWOOD+PARTICLE | 5366 | 9334 | 8437 | 8021 | 11019 | 12480 | 12146 | 12401 | 12155 | 11388 | 11727 | 4.06 |
| FUELWOOD | 391 | 282 | 212 | 221 | 239 | 308 | 235 | 92 | 119 | 133 | 123 | - 9.77 |
| SAWNWOOD CONIFEROUS | 9464 | 11006 | 10764 | 11059 | 11085 | 9865 | 10362 | 11009 | 10592 | 10739 | 10096 | - .59 |
| SAWNWOOD NONCONIFEROUS | 686 | 936 | 948 | 827 | 825 | 767 | 749 | 714 | 702 | 715 | 558 | - 4.67 |
| WOOD-BASED PANELS | 519 | 1113 | 1108 | 1248 | 1476 | 1458 | 1589 | 1705 | 1793 | 1774 | 1842 | 6.35 |
| PULP FOR PAPER | 348 | 554 | 569 | 672 | 691 | 684 | 673 | 854 | 856 | 926 | 827 | 5.51 |
| PAPER AND PAPERBOARD | 340 | 1079 | 1107 | 1180 | 1264 | 1304 | 1095 | 1480 | 1616 | 1621 | 1574 | 4.93 |
| NORTH AMERICA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 31865 | 30585 | 31171 | 37245 | 51359 | 36738 | 43589 | 38974 | 40736 | 50841 | 47174 | 4.41 |
| RICE MILLED | 1193 | 1741 | 1479 | 2037 | 1630 | 1726 | 2139 | 2107 | 2288 | 2279 | 2301 | 4.40 |
| BARLEY | 1993 | 4146 | 5161 | 5749 | 5168 | 3547 | 4068 | 5432 | 4343 | 4249 | 4654 | - .87 |
| MAIZE | 11365 | 14412 | 12918 | 22409 | 33215 | 29875 | 33526 | 44692 | 40580 | 50550 | 59414 | 17.26 |
| SORGHUM | 2864 | 3772 | 2849 | 3858 | 5629 | 5722 | 5848 | 5797 | 6139 | 5184 | 5950 | 6.72 |
| POTATOES | 274 | 321 | 254 | 300 | 313 | 356 | 369 | 857 | 503 | 282 | 289 | 3.34 |
| SUGAR,TOTAL (RAW EQUIV.) | 24 | 16 | 13 | 20 | 71 | 105 | 291 | 122 | 166 | 149 | 135 | 34.84 |
| PULSES | 269 | 403 | 340 | 359 | 416 | 339 | 390 | 400 | 374 | 390 | 470 | 1.57 |
| SOYBEANS | 5000 | 11868 | 11555 | 12034 | 13250 | 13953 | 12506 | 15361 | 16234 | 20793 | 20952 | 6.93 |
| SOYBEAN OIL | 507 | 696 | 823 | 618 | 439 | 766 | 355 | 506 | 768 | 916 | 1110 | 3.51 |
| GROUNDNUTS SHELLED BASIS | 33 | 51 | 109 | 192 | 189 | 255 | 241 | 130 | 302 | 381 | 356 | 17.97 |
| GROUNDNUT OIL | 14 | 15 | 39 | 28 | 47 | 21 | 12 | 48 | 45 | 40 | 5 | - 4.33 |
| COCONUT OIL | 3 | 5 | 10 | 6 | 11 | 5 | 8 | 26 | 17 | 9 | 5 | 5.24 |
| OILSEED CAKE AND MEAL | 1615 | 3968 | 4435 | 4012 | 4971 | 5215 | 4030 | 5162 | 4554 | 6961 | 6636 | 5.14 |
| BANANAS | 50 | 191 | 180 | 188 | 188 | 195 | 187 | 201 | 199 | 201 | 197 | .91 |
| ORANGES+TANGER+CLEMEN | 196 | 266 | 257 | 303 | 292 | 328 | 481 | 461 | 410 | 356 | 318 | 4.45 |
| LEMONS AND LIMES | 95 | 128 | 137 | 157 | 201 | 202 | 183 | 225 | 236 | 237 | 173 | 5.51 |
| COFFEE GREEN+ROASTED | 36 | 28 | 25 | 34 | 72 | 85 | 55 | 69 | 106 | 58 | 78 | 13.05 |
| COCOA BEANS | 7 | 6 | 5 | 4 | 9 | 23 | 9 | 10 | 14 | 9 | 9 | 7.89 |
| TEA | 1 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 5 | 5 | 5.95 |
| COTTON LINT | 1075 | 677 | 936 | 701 | 1246 | 1172 | 871 | 748 | 973 | 1279 | 1448 | 5.50 |
| JUTE AND SIMILAR FIBRES | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | | - 2.11 |
| TOBACCO UNMANUFACTURED | 245 | 264 | 249 | 314 | 313 | 335 | 293 | 293 | 314 | 364 | 299 | 2.12 |
| NATURAL RUBBER | 26 | 16 | 25 | 21 | 27 | 26 | 29 | 29 | 25 | 20 | 21 | 1.29 |
| WOOL GREASY | 2 | 1 | 1 | 1 | 1 | | 1 | | | | | -10.11 |
| BOVINE CATTLE 1/ | 459 | 335 | 338 | 405 | 699 | 360 | 421 | 684 | 651 | 592 | 436 | 5.44 |
| SHEEP AND GOATS 1/ | 43 | 140 | 220 | 174 | 214 | 293 | 344 | 250 | 214 | 153 | 135 | - .70 |
| PIGS 1/ | 19 | 114 | 106 | 101 | 107 | 213 | 47 | 56 | 54 | 201 | 145 | - .01 |
| TOTAL MEAT | 265 | 319 | 341 | 369 | 444 | 406 | 472 | 693 | 700 | 722 | 776 | 11.50 |
| MILK DRY | 18 | 6 | 11 | 18 | 23 | 21 | 17 | 17 | 16 | 7 | 5 | - 4.44 |
| TOTAL EGGS IN SHELL | 10 | 15 | 11 | 11 | 18 | 21 | 22 | 22 | 38 | 39 | 43 | 16.38 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 167 | 211 | 225 | 234 | 264 | 200 | 236 | 250 | 352 | 383 | 413 | 7.42 |
| FISH CURED | 54 | 53 | 58 | 52 | 49 | 49 | 47 | 62 | 65 | 65 | 64 | 2.71 |
| SHELLFISH | 22 | 36 | 38 | 36 | 47 | 39 | 42 | 48 | 71 | 119 | 133 | 15.04 |
| FISH CANNED AND PREPARED | 32 | 32 | 33 | 43 | 52 | 39 | 36 | 46 | 51 | 63 | 64 | 6.99 |
| SHELLFISH CANNED+PREPAR | 6 | 9 | 10 | 9 | 10 | 8 | 8 | 9 | 9 | 11 | 10 | .38 |
| FISH BODY AND LIVER OIL | 79 | 93 | 118 | 95 | 121 | 101 | 93 | 91 | 60 | 110 | 101 | - 1.89 |
| FISH MEAL | 50 | 77 | 72 | 42 | 63 | 85 | 35 | 63 | 61 | 81 | 40 | - 2.41 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 3786 | 13391 | 10854 | 14104 | 14248 | 12118 | 12196 | 14842 | 14362 | 15565 | 17693 | 3.23 |
| SAWLOGS NONCONIFEROUS | 388 | 368 | 339 | 497 | 567 | 622 | 328 | 470 | 481 | 522 | 603 | 3.76 |
| PULPWOOD+PARTICLE | 3876 | 7777 | 6473 | 6768 | 7837 | 8402 | 6867 | 8337 | 8710 | 8216 | 9591 | 2.95 |
| FUELWOOD | 24 | 102 | 84 | 91 | 112 | 110 | 206 | 162 | 200 | 170 | 170 | 9.69 |
| SAWNWOOD CONIFEROUS | 15851 | 20057 | 22023 | 25705 | 27339 | 22944 | 18553 | 26379 | 32305 | 34492 | 35408 | 5.66 |
| SAWNWOOD NONCONIFEROUS | 633 | 674 | 787 | 1006 | 1072 | 705 | 807 | 814 | 847 | 1341 | 1082 | 3.98 |
| WOOD-BASED PANELS | 493 | 884 | 979 | 1225 | 1558 | 1518 | 1507 | 1567 | 1500 | 1781 | 1634 | 6.73 |
| PULP FOR PAPER | 3481 | 6823 | 6125 | 6628 | 7185 | 8076 | 6672 | 7664 | 7722 | 8132 | 8478 | 2.89 |
| PAPER AND PAPERBOARD | 7346 | 10495 | 10573 | 10981 | 11255 | 12255 | 9726 | 10935 | 11232 | 11124 | 12237 | .93 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | THOUSAND METRIC TONS | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| OCEANIA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 6083 | 7376 | 9484 | 8712 | 5659 | 5326 | 8201 | 7875 | 8196 | 11134 | 6931 | 1.02 |
| RICE MILLED | 59 | 121 | 102 | 181 | 158 | 137 | 174 | 218 | 255 | 277 | 241 | 10.24 |
| BARLEY | 498 | 631 | 1123 | 1828 | 844 | 808 | 1760 | 2022 | 2157 | 1375 | 1757 | 9.42 |
| MAIZE | 2 | 1 | 22 | 38 | 19 | 3 | 1 | 88 | 79 | 32 | 75 | 37.35 |
| MILLET | 10 | 14 | 27 | 40 | 25 | 31 | 21 | 20 | 23 | 15 | 18 | - 3.35 |
| SORGHUM | 16 | 54 | 517 | 993 | 736 | 748 | 856 | 815 | 829 | 385 | 516 | 11.41 |
| POTATOES | 16 | 30 | 22 | 16 | 21 | 16 | 21 | 25 | 29 | 20 | 18 | - 1.12 |
| SUGAR,TOTAL (RAW EQUIV.) | 1052 | 1389 | 1574 | 2012 | 2087 | 1784 | 1999 | 2002 | 2558 | 2481 | 2303 | 5.56 |
| PULSES | 20 | 37 | 46 | 37 | 44 | 42 | 36 | 32 | 40 | 36 | 44 | - .64 |
| SOYBEANS | | | | | 1 | 2 | 4 | 32 | | | | 27.57 |
| GROUNDNUTS SHELLED BASIS | | | 1 | 1 | 7 | 7 | 2 | 2 | 4 | 2 | 2 | 22.70 |
| OILSEED CAKE AND MEAL | 2 | 2 | 1 | 2 | 1 | | 1 | 3 | 2 | 1 | | -15.34 |
| ORANGES+TANGER+CLEMEN | 17 | 21 | 26 | 34 | 32 | 24 | 15 | 18 | 11 | 22 | 25 | - 4.51 |
| LEMONS AND LIMES | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | | - 2.13 |
| COCOA BEANS | | | | 1 | 1 | 1 | | | | | | 10.69 |
| TEA | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | - 7.90 |
| COTTON LINT | | 12 | 7 | 2 | 22 | 3 | 8 | 16 | 6 | 10 | 24 | 7.79 |
| TOBACCO UNMANUFACTURED | | 1 | 1 | | | | | | | 1 | | - 5.61 |
| WOOL GREASY | 820 | 941 | 863 | 905 | 859 | 634 | 588 | 750 | 826 | 630 | 706 | - 3.41 |
| BOVINE CATTLE 1/ | 9 | 3 | 4 | 7 | 17 | 34 | 13 | 33 | 45 | 71 | 107 | 45.73 |
| SHEEP AND GOATS 1/ | 247 | 566 | 788 | 891 | 1145 | 1159 | 1456 | 1847 | 3409 | 4143 | 3898 | 25.41 |
| PIGS 1/ | | 1 | 2 | 2 | 1 | 1 | 1 | 1 | | 1 | 1 | -11.47 |
| TOTAL MEAT | 857 | 1211 | 1202 | 1367 | 1542 | 1208 | 1183 | 1446 | 1643 | 1667 | 1815 | 4.11 |
| MILK DRY | 12 | 35 | 41 | 37 | 48 | 51 | 56 | 53 | 100 | 109 | 127 | 15.43 |
| TOTAL EGGS IN SHELL | 3 | 3 | 3 | 4 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | -11.59 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 4 | 8 | 10 | 14 | 14 | 13 | 12 | 19 | 28 | 32 | 32 | 16.31 |
| SHELLFISH | 6 | 14 | 16 | 18 | 17 | 16 | 16 | 14 | 17 | 20 | 19 | 2.37 |
| FISH CANNED AND PREPARED | | | 1 | | 2 | | 1 | | | | | -11.32 |
| SHELLFISH CANNED+PREPAR | | 2 | 3 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | - 3.22 |
| FISH BODY AND LIVER OIL | 7 | 4 | 6 | 6 | 8 | 8 | 4 | 8 | 6 | 5 | 5 | - .68 |
| FISH MEAL | 1 | | | | | | | | | | | -68.94 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 321 | 1809 | 1797 | 1844 | 1916 | 1302 | 534 | 958 | 1027 | 936 | 1235 | - 8.08 |
| SAWLOGS NONCONIFEROUS | 19 | 11 | 13 | 14 | 9 | 12 | 3 | 1 | 3 | 2 | 1 | -28.12 |
| PULPWOOD+PARTICLE | | 185 | 565 | 1047 | 2199 | 2931 | 3061 | 3866 | 5326 | 5074 | 5407 | 40.09 |
| FUELWOOD | 2 | | | | | | 6 | | | | | 21.20 |
| SAWNWOOD CONIFEROUS | 81 | 259 | 301 | 266 | 248 | 245 | 160 | 232 | 295 | 367 | 509 | 4.56 |
| SAWNWOOD NONCONIFEROUS | 41 | 40 | 28 | 27 | 54 | 51 | 32 | 23 | 31 | 30 | 41 | - .96 |
| WOOD-BASED PANELS | 22 | 68 | 87 | 75 | 93 | 52 | 61 | 28 | 32 | 52 | 104 | - 4.46 |
| PULP FOR PAPER | 64 | 98 | 100 | 114 | 142 | 232 | 335 | 375 | 452 | 435 | 468 | 23.28 |
| PAPER AND PAPERBOARD | 98 | 186 | 189 | 202 | 189 | 214 | 204 | 269 | 302 | 332 | 359 | 8.13 |
| AFRICA DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 218 | 138 | 66 | 77 | 76 | 41 | 25 | 18 | 16 | 31 | 16 | -20.41 |
| RICE MILLED | 56 | 88 | 58 | 52 | 43 | 29 | 17 | 55 | 45 | 11 | 9 | -18.02 |
| BARLEY | 147 | 236 | 12 | | 65 | 2 | 7 | 15 | 16 | 15 | 1 | -14.70 |
| MAIZE | 403 | 274 | 347 | 541 | 507 | 476 | 361 | 324 | 141 | 503 | 544 | .26 |
| MILLET | 47 | 73 | 73 | 10 | 29 | 59 | 9 | 79 | 11 | 30 | 67 | - 3.07 |
| SORGHUM | 9 | 5 | 2 | 5 | 5 | 7 | 8 | 2 | | | 52 | - 5.69 |
| POTATOES | 144 | 119 | 119 | 124 | 104 | 83 | 94 | 89 | 81 | 59 | 46 | - 9.27 |
| SUGAR,TOTAL (RAW EQUIV.) | 1166 | 1475 | 1258 | 1441 | 1571 | 1445 | 1096 | 1379 | 1486 | 1381 | 1522 | .26 |
| PULSES | 314 | 405 | 299 | 461 | 461 | 344 | 320 | 412 | 308 | 164 | 153 | - 8.91 |
| SOYBEANS | 18 | 12 | 6 | 2 | 1 | 1 | 2 | 2 | 1 | | | -95.66 |
| GROUNDNUTS SHELLED BASIS | 1050 | 617 | 389 | 356 | 371 | 183 | 162 | 277 | 187 | 74 | 89 | -18.26 |
| GROUNDNUT OIL | 214 | 276 | 151 | 318 | 239 | 155 | 224 | 284 | 255 | 102 | 155 | - 4.83 |
| COPRA | 85 | 74 | 69 | 59 | 69 | 62 | 45 | 61 | 56 | 34 | 33 | - 7.68 |
| COCONUT OIL | 12 | 16 | 13 | 11 | 17 | 18 | 9 | 11 | 6 | 12 | 15 | - 3.79 |
| PALM NUTS KERNELS | 626 | 382 | 414 | 334 | 254 | 319 | 270 | 353 | 243 | 152 | 127 | -10.15 |
| PALM OIL | 317 | 178 | 125 | 151 | 135 | 199 | 207 | 153 | 117 | 102 | 65 | - 6.62 |
| OILSEED CAKE AND MEAL | 582 | 806 | 655 | 909 | 724 | 617 | 669 | 772 | 691 | 465 | 625 | - 3.45 |
| BANANAS | 446 | 394 | 395 | 462 | 438 | 465 | 354 | 320 | 311 | 348 | 321 | - 3.52 |
| ORANGES+TANGER+CLEMEN | 659 | 808 | 732 | 788 | 905 | 719 | 580 | 659 | 735 | 871 | 726 | - .77 |
| LEMONS AND LIMES | 12 | 6 | 5 | 5 | 6 | 3 | 1 | 1 | 1 | 2 | 2 | -17.28 |
| COFFEE GREEN+ROASTED | 785 | 1010 | 930 | 1082 | 1186 | 1176 | 1096 | 1144 | 877 | 904 | 1004 | - .90 |
| COCOA BEANS | 884 | 866 | 916 | 977 | 889 | 865 | 807 | 860 | 681 | 768 | 613 | - 3.76 |
| TEA | 58 | 109 | 107 | 135 | 139 | 135 | 130 | 145 | 160 | 172 | 166 | 5.00 |
| COTTON LINT | 265 | 449 | 398 | 379 | 401 | 292 | 271 | 330 | 276 | 273 | 306 | - 4.93 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | THOUSAND METRIC TONS | | | | | | | PERCENT |
| JUTE AND SIMILAR FIBRES | 3 | 3 | 1 | 2 | 1 | | | | | | | -98.63 |
| TOBACCO UNMANUFACTURED | 128 | 84 | 98 | 114 | 131 | 131 | 132 | 148 | 127 | 126 | 162 | 5.36 |
| NATURAL RUBBER | 156 | 201 | 200 | 195 | 198 | 203 | 184 | 159 | 163 | 154 | 149 | - 3.67 |
| WOOL GREASY | 6 | 7 | 4 | 5 | 5 | 6 | 4 | 3 | 4 | 3 | 3 | - 7.54 |
| BOVINE CATTLE 1/ | 1138 | 1267 | 1297 | 1511 | 1407 | 1267 | 974 | 1068 | 978 | 1036 | 965 | - 4.32 |
| SHEEP AND GOATS 1/ | 2831 | 3208 | 3089 | 3677 | 3311 | 3149 | 3394 | 2434 | 2613 | 3269 | 2933 | - 1.78 |
| PIGS 1/ | 17 | 23 | 24 | 22 | 17 | 13 | 13 | 13 | 17 | 16 | 16 | - 4.99 |
| TOTAL MEAT | 52 | 64 | 72 | 75 | 95 | 86 | 72 | 77 | 65 | 49 | 62 | - 2.69 |
| MILK DRY | | 1 | 1 | 2 | 3 | 1 | | 1 | | 2 | 2 | - 6.89 |
| TOTAL EGGS IN SHELL | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | -14.31 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 25 | 32 | 42 | 63 | 107 | 106 | 76 | 75 | 95 | 96 | 95 | 10.26 |
| FISH CURED | 58 | 67 | 64 | 62 | 50 | 42 | 46 | 39 | 39 | 38 | 38 | - 6.84 |
| SHELLFISH | 3 | 12 | 14 | 19 | 23 | 29 | 39 | 44 | 40 | 49 | 45 | 17.27 |
| FISH CANNED AND PREPARED | 53 | 60 | 69 | 61 | 83 | 80 | 59 | 76 | 69 | 61 | 76 | .78 |
| FISH BODY AND LIVER OIL | 9 | 17 | 13 | 25 | 31 | 18 | 12 | 7 | 6 | 6 | 7 | -13.91 |
| FISH MEAL | 65 | 93 | 80 | 150 | 142 | 95 | 83 | 43 | 18 | 38 | 32 | -16.21 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | | | 65 | 13 | 14 | 14 | 15 | 11 | 2 | 2 | 2 | - 5.83 |
| SAWLOGS NONCONIFEROUS | 5204 | 6832 | 6794 | 7368 | 8791 | 6840 | 5188 | 6231 | 6105 | 6096 | 6536 | - 2.04 |
| PULPWOOD+PARTICLE | 1 | 3 | 1 | 1 | 2 | 69 | 70 | 127 | 100 | 100 | 100 | 82.41 |
| FUELWOOD | 236 | 340 | 349 | 66 | 170 | 161 | 56 | 1 | 5 | 5 | 5 | -45.27 |
| SAWNWOOD CONIFEROUS | 31 | 96 | 99 | 73 | 103 | 107 | 98 | 100 | 106 | 98 | 98 | 1.13 |
| SAWNWOOD NONCONIFEROUS | 636 | 744 | 642 | 707 | 880 | 815 | 665 | 735 | 694 | 693 | 679 | - .68 |
| WOOD-BASED PANELS | 178 | 299 | 283 | 337 | 340 | 327 | 200 | 180 | 239 | 236 | 248 | - 4.18 |
| PULP FOR PAPER | 93 | 191 | 195 | 204 | 217 | 235 | 170 | 195 | 161 | 177 | 192 | - 1.51 |
| PAPER AND PAPERBOARD | 33 | 23 | 16 | 17 | 18 | 30 | 21 | 23 | 21 | 21 | 21 | 1.75 |
| **LATIN AMERICA** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 3549 | 2466 | 1182 | 1812 | 3142 | 1871 | 2054 | 3337 | 6093 | 1814 | 4433 | 9.26 |
| RICE MILLED | 271 | 400 | 431 | 192 | 310 | 347 | 419 | 507 | 1018 | 805 | 649 | 12.04 |
| BARLEY | 240 | 98 | 86 | 111 | 161 | 110 | 28 | 59 | 130 | 18 | 75 | - 9.75 |
| MAIZE | 3302 | 6782 | 7764 | 3645 | 4113 | 6666 | 5088 | 4560 | 6860 | 5928 | 5987 | .12 |
| MILLET | 145 | 60 | 129 | 81 | 118 | 78 | 94 | 124 | 172 | 195 | 139 | 9.23 |
| SORGHUM | 413 | 2026 | 2315 | 635 | 2108 | 3169 | 2180 | 3499 | 4313 | 4725 | 3923 | 14.03 |
| POTATOES | 27 | 83 | 37 | 36 | 11 | 21 | 49 | 95 | 106 | 60 | 42 | 6.14 |
| SUGAR,TOTAL (RAW EQUIV.) | 8878 | 11647 | 10709 | 10900 | 11998 | 12131 | 11101 | 10562 | 13021 | 12611 | 12793 | 1.47 |
| PULSES | 91 | 87 | 97 | 163 | 166 | 175 | 232 | 315 | 424 | 437 | 393 | 20.77 |
| SOYBEANS | 57 | 291 | 225 | 1079 | 1841 | 2831 | 3435 | 3934 | 3441 | 2841 | 3798 | 34.69 |
| SOYBEAN OIL | | 4 | 7 | 60 | 116 | 42 | 285 | 562 | 544 | 570 | 608 | 76.37 |
| GROUNDNUTS SHELLED BASIS | 21 | 57 | 41 | 60 | 56 | 52 | 59 | 24 | 53 | 55 | 106 | 2.81 |
| GROUNDNUT OIL | 48 | 74 | 102 | 114 | 124 | 101 | 38 | 140 | 181 | 155 | 179 | 7.87 |
| COPRA | 19 | 4 | 3 | 2 | 1 | 2 | 2 | 2 | | | | -84.96 |
| COCONUT OIL | 3 | 5 | 9 | 11 | 9 | 5 | 5 | 5 | 5 | 10 | 7 | - .61 |
| PALM NUTS KERNELS | 2 | 4 | 1 | 5 | 6 | 5 | 4 | 2 | 3 | 9 | 4 | 5.84 |
| PALM OIL | 3 | 4 | 6 | 3 | 6 | 6 | 3 | 5 | 3 | 4 | 5 | - 1.58 |
| OILSEED CAKE AND MEAL | 1434 | 2179 | 2378 | 2634 | 2816 | 3095 | 4237 | 5717 | 7192 | 7494 | 7272 | 17.31 |
| BANANAS | 3386 | 4750 | 5195 | 5329 | 5345 | 5055 | 4779 | 4838 | 5231 | 5614 | 5512 | .87 |
| ORANGES+TANGER+CLEMEN | 202 | 148 | 177 | 216 | 218 | 210 | 190 | 180 | 222 | 274 | 304 | 5.63 |
| LEMONS AND LIMES | 6 | 2 | 3 | 8 | 11 | 14 | 22 | 24 | 29 | 49 | 74 | 45.55 |
| COFFEE GREEN+ROASTED | 1865 | 1951 | 2035 | 2165 | 2232 | 1826 | 2053 | 2036 | 1547 | 1939 | 2218 | - .62 |
| COCOA BEANS | 176 | 226 | 226 | 226 | 174 | 255 | 270 | 209 | 187 | 211 | 230 | - .41 |
| TEA | 10 | 23 | 28 | 24 | 25 | 30 | 23 | 32 | 34 | 40 | 34 | 4.92 |
| COTTON LINT | 934 | 923 | 682 | 861 | 829 | 663 | 806 | 609 | 689 | 898 | 767 | - .96 |
| JUTE AND SIMILAR FIBRES | 5 | 3 | 7 | 4 | 4 | 3 | 1 | 1 | | | | -38.87 |
| TOBACCO UNMANUFACTURED | 127 | 150 | 160 | 184 | 186 | 244 | 244 | 255 | 238 | 271 | 290 | 7.45 |
| NATURAL RUBBER | 11 | 12 | 10 | 9 | 8 | 5 | 6 | 6 | 5 | 5 | 4 | -10.15 |
| WOOL GREASY | 166 | 129 | 113 | 78 | 81 | 64 | 108 | 93 | 107 | 106 | 84 | - 1.04 |
| BOVINE CATTLE 1/ | 1120 | 1469 | 1280 | 1487 | 1026 | 1037 | 962 | 1103 | 1093 | 1729 | 1464 | .41 |
| SHEEP AND GOATS 1/ | 98 | 214 | 152 | 81 | 48 | 65 | 93 | 84 | 110 | 125 | 106 | - 2.47 |
| PIGS 1/ | 62 | 29 | 27 | 42 | 32 | 33 | 42 | 65 | 31 | 24 | 17 | - 2.78 |
| TOTAL MEAT | 669 | 941 | 740 | 1038 | 890 | 504 | 450 | 770 | 788 | 900 | 829 | - 1.03 |
| MILK DRY | | 2 | 6 | 12 | 15 | 9 | 14 | 34 | 18 | 10 | 6 | 11.21 |
| TOTAL EGGS IN SHELL | 6 | 4 | 4 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | - 7.40 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 31 | 56 | 60 | 64 | 107 | 131 | 146 | 196 | 297 | 363 | 176 | 21.83 |
| FISH CURED | 1 | 2 | 2 | 3 | 7 | 9 | 5 | 3 | 9 | 6 | 3 | 11.34 |
| SHELLFISH | 62 | 88 | 91 | 98 | 94 | 90 | 94 | 99 | 94 | 95 | 103 | 1.08 |
| FISH CANNED AND PREPARED | 19 | 9 | 16 | 21 | 20 | 20 | 16 | 28 | 47 | 72 | 72 | 22.93 |
| SHELLFISH CANNED+PREPAR | 4 | 4 | 3 | 2 | 1 | 1 | 3 | 3 | 5 | 3 | 2 | 2.97 |
| FISH BODY AND LIVER OIL | 143 | 218 | 308 | 318 | 10 | 93 | 148 | 39 | 46 | 68 | 59 | -15.33 |
| FISH MEAL | 1221 | 2011 | 1957 | 1711 | 402 | 749 | 909 | 842 | 733 | 842 | 1011 | - 8.09 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ....THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 36 | 10 | 8 | 9 | 14 | 9 | 15 | 23 | 167 | 689 | 968 | 72.57 |
| SAWLOGS NONCONIFEROUS | 418 | 362 | 302 | 217 | 524 | 202 | 55 | 86 | 49 | 69 | 90 | -20.10 |
| PULPWOOD+PARTICLE | 313 | 380 | 373 | 382 | 284 | 183 | 107 | 115 | 100 | 100 | 100 | -17.28 |
| FUELWOOD | 47 | 13 | 18 | 5 | 10 | 7 | 13 | 21 | 20 | 9 | 9 | 1.33 |
| SAWNWOOD CONIFEROUS | 1271 | 1523 | 1724 | 1718 | 1530 | 1132 | 1135 | 1051 | 1428 | 1403 | 1694 | - 1.52 |
| SAWNWOOD NONCONIFEROUS | 273 | 585 | 552 | 622 | 872 | 837 | 592 | 631 | 706 | 485 | 475 | - 2.08 |
| WOOD-BASED PANELS | 74 | 167 | 219 | 266 | 295 | 265 | 252 | 325 | 384 | 470 | 464 | 10.59 |
| PULP FOR PAPER | 42 | 158 | 150 | 267 | 300 | 318 | 332 | 382 | 443 | 715 | 1024 | 20.73 |
| PAPER AND PAPERBOARD | 40 | 130 | 115 | 110 | 186 | 213 | 146 | 199 | 221 | 267 | 322 | 11.07 |
| NEAR EAST DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 187 | 44 | 31 | 626 | 606 | 29 | 15 | 27 | 641 | 2119 | 752 | 31.46 |
| RICE MILLED | 358 | 681 | 546 | 493 | 326 | 151 | 115 | 241 | 242 | 174 | 122 | -15.72 |
| BARLEY | 451 | 226 | 17 | 142 | 17 | 7 | 12 | 366 | 283 | 49 | 85 | 7.40 |
| MAIZE | 4 | 2 | 3 | 7 | 3 | 2 | 3 | 15 | 37 | 40 | 100 | 52.06 |
| MILLET | 15 | 4 | 3 | 7 | 9 | 4 | 4 | 6 | 3 | | | -32.60 |
| SORGHUM | 84 | 3 | 37 | 61 | 104 | 98 | 48 | 75 | 104 | 43 | 60 | 20.12 |
| POTATOES | 193 | 294 | 254 | 284 | 326 | 299 | 184 | 354 | 437 | 282 | 305 | 1.82 |
| SUGAR,TOTAL (RAW EQUIV.) | 238 | 144 | 163 | 160 | 55 | 59 | 58 | 47 | 80 | 52 | 32 | -14.26 |
| PULSES | 148 | 103 | 122 | 143 | 170 | 105 | 100 | 113 | 168 | 242 | 313 | 9.09 |
| SOYBEANS | 2 | | | | | | | | | | | -98.32 |
| SOYBEAN OIL | | | | | | | | 1 | | | | -92.36 |
| GROUNDNUTS SHELLED BASIS | 140 | 90 | 143 | 136 | 160 | 140 | 218 | 296 | 162 | 112 | 68 | - .64 |
| COCONUT OIL | | | | | | | | | 1 | | | -78.50 |
| OILSEED CAKE AND MEAL | 498 | 704 | 581 | 751 | 545 | 401 | 452 | 367 | 250 | 250 | 211 | -13.19 |
| BANANAS | 18 | 14 | 14 | 16 | 10 | 6 | 10 | 8 | 3 | 4 | 3 | -16.98 |
| ORANGES+TANGER+CLEMEN | 188 | 448 | 600 | 527 | 766 | 680 | 709 | 703 | 746 | 643 | 671 | 3.48 |
| LEMONS AND LIMES | 43 | 88 | 114 | 108 | 152 | 129 | 109 | 147 | 120 | 130 | 137 | 3.19 |
| COFFEE GREEN+ROASTED | 10 | 7 | 7 | 10 | 8 | 6 | 4 | 3 | 4 | 4 | 4 | -10.03 |
| TEA | 2 | 18 | 23 | 19 | 26 | 19 | 4 | 8 | 7 | 7 | 10 | -13.63 |
| COTTON LINT | 766 | 1089 | 1101 | 1049 | 1097 | 706 | 856 | 1027 | 741 | 802 | 698 | - 4.71 |
| JUTE AND SIMILAR FIBRES | | | 1 | | | | | | | | | -94.44 |
| TOBACCO UNMANUFACTURED | 75 | 87 | 94 | 137 | 120 | 123 | 75 | 86 | 69 | 83 | 79 | - 4.01 |
| WOOL GREASY | 16 | 12 | 14 | 21 | 25 | 10 | 8 | 5 | 9 | 9 | 8 | - 9.17 |
| BOVINE CATTLE 1/ | 167 | 155 | 134 | 92 | 52 | 77 | 18 | 11 | 15 | 9 | 21 | -26.93 |
| SHEEP AND GOATS 1/ | 1489 | 1233 | 1146 | 932 | 987 | 980 | 720 | 721 | 600 | 1204 | 1265 | - 1.73 |
| TOTAL MEAT | | 6 | 8 | 13 | 30 | 22 | 14 | 9 | 11 | 12 | 10 | 1.59 |
| TOTAL EGGS IN SHELL | 3 | 15 | 19 | 21 | 15 | 17 | 12 | 1 | 3 | 6 | 9 | -17.07 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 11 | 11 | 8 | 14 | 20 | 18 | 6 | 4 | 3 | 2 | 3 | -18.43 |
| FISH CURED | 15 | 20 | 23 | 21 | 17 | 20 | 12 | 10 | 11 | 11 | 12 | - 8.63 |
| SHELLFISH | 3 | 4 | 7 | 13 | 16 | 12 | 7 | 10 | 9 | 8 | 9 | 3.29 |
| FISH CANNED AND PREPARED | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 4.07 |
| FISH BODY AND LIVER OIL | | | | 1 | 1 | | | 1 | 2 | 1 | | -19.79 |
| FISH MEAL | 1 | | | | | 1 | | | | | | - .49 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 2 | 4 | 17 | 14 | 7 | 5 | 4 | 3 | | 1 | 1 | -28.21 |
| SAWLOGS NONCONIFEROUS | 23 | 23 | 20 | 22 | 24 | 8 | 17 | 10 | 9 | 5 | 5 | -16.65 |
| FUELWOOD | 4 | 32 | 23 | 33 | 31 | 20 | 21 | 22 | 31 | 22 | 20 | - 3.71 |
| SAWNWOOD CONIFEROUS | 1 | 30 | 57 | 37 | 37 | 61 | 49 | 60 | 66 | 57 | 101 | 9.59 |
| SAWNWOOD NONCONIFEROUS | 14 | 18 | 22 | 28 | 23 | 21 | 1 | 1 | 1 | 1 | 1 | -40.82 |
| WOOD-BASED PANELS | 5 | 25 | 14 | 26 | 32 | 31 | 27 | 29 | 40 | 40 | 39 | 8.16 |
| PULP FOR PAPER | | | | | | 5 | 4 | 2 | | | | 73.89 |
| PAPER AND PAPERBOARD | | 3 | 4 | 3 | 10 | 22 | 9 | 10 | 11 | 10 | 16 | 17.28 |
| FAR EAST DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 140 | 274 | 135 | 342 | 555 | 145 | 115 | 83 | 264 | 954 | 982 | 11.49 |
| RICE MILLED | 3945 | 2540 | 2911 | 3175 | 2189 | 2006 | 1877 | 3595 | 4777 | 3190 | 5143 | 6.54 |
| BARLEY | | 6 | 5 | 1 | 19 | 95 | | 32 | 39 | 13 | 43 | 27.52 |
| MAIZE | 807 | 1716 | 2140 | 1952 | 1630 | 2554 | 2243 | 2485 | 1759 | 2154 | 2138 | 1.61 |
| MILLET | 3 | 5 | 2 | 1 | 4 | 2 | 1 | 1 | 8 | 1 | 1 | -11.88 |
| SORGHUM | 14 | 88 | 141 | 134 | 135 | 189 | 213 | 182 | 138 | 164 | 169 | 5.03 |
| POTATOES | 29 | 21 | 32 | 35 | 40 | 35 | 47 | 96 | 73 | 56 | 81 | 14.68 |
| SUGAR,TOTAL (RAW EQUIV.) | 1701 | 1610 | 2216 | 1837 | 2000 | 2581 | 2915 | 3804 | 4510 | 2812 | 3207 | 9.13 |
| PULSES | 216 | 225 | 233 | 216 | 219 | 167 | 170 | 189 | 176 | 238 | 258 | - .05 |
| SOYBEANS | 18 | 20 | 18 | 20 | 59 | 18 | 32 | 38 | 47 | 30 | 26 | 5.87 |
| SOYBEAN OIL | 2 | 8 | 22 | 9 | 8 | 7 | 4 | 2 | 4 | 6 | 6 | -11.01 |
| GROUNDNUTS SHELLED BASIS | 47 | 65 | 60 | 50 | 62 | 109 | 93 | 182 | 69 | 24 | 28 | - 5.41 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ...THOUSAND METRIC TONS... | | | ..... | ..... | ..... | ..... | PERCENT |
| GROUNDNUT OIL | 44 | 8 | 8 | 6 | 10 | 7 | 9 | 10 | 5 | 5 | 18 | 2.28 |
| COPRA | 1231 | 657 | 790 | 1109 | 800 | 285 | 834 | 878 | 683 | 445 | 192 | - 9.32 |
| COCONUT OIL | 330 | 487 | 548 | 642 | 525 | 508 | 760 | 1004 | 845 | 1112 | 973 | 9.46 |
| PALM NUTS KERNELS | 59 | 73 | 73 | 57 | 42 | 29 | 33 | 33 | 30 | 12 | 23 | -14.96 |
| PALM OIL | 271 | 694 | 977 | 1147 | 1284 | 1400 | 1690 | 1827 | 1911 | 1873 | 2090 | 11.71 |
| OILSEED CAKE AND MEAL | 1455 | 1670 | 1735 | 1986 | 2174 | 1977 | 2018 | 3185 | 2803 | 2413 | 2960 | 6.47 |
| BANANAS | 35 | 138 | 302 | 461 | 503 | 705 | 872 | 946 | 738 | 832 | 929 | 18.78 |
| ORANGES+TANGER+CLEMEN | 16 | 28 | 29 | 33 | 41 | 39 | 137 | 86 | 113 | 65 | 92 | 17.14 |
| LEMONS AND LIMES | | | | | | | | | | | 1 | 46.77 |
| COFFEE GREEN+ROASTED | 156 | 216 | 198 | 204 | 206 | 203 | 225 | 261 | 265 | 337 | 335 | 6.13 |
| COCOA BEANS | 3 | 4 | 5 | 7 | 10 | 14 | 15 | 18 | 18 | 24 | 27 | 22.89 |
| TEA | 474 | 430 | 462 | 451 | 457 | 455 | 507 | 513 | 499 | 459 | 477 | .52 |
| COTTON LINT | 215 | 153 | 237 | 341 | 246 | 96 | 244 | 218 | 56 | 128 | 134 | - 8.10 |
| JUTE AND SIMILAR FIBRES | 999 | 815 | 756 | 759 | 866 | 872 | 532 | 614 | 565 | 465 | 520 | - 6.14 |
| TOBACCO UNMANUFACTURED | 118 | 167 | 173 | 182 | 197 | 211 | 198 | 210 | 232 | 216 | 195 | 2.64 |
| NATURAL RUBBER | 1907 | 2561 | 2597 | 2566 | 3052 | 2869 | 2738 | 2967 | 3027 | 3079 | 3174 | 2.34 |
| WOOL GREASY | 22 | 2 | 3 | 2 | 2 | 3 | 1 | 2 | | 1 | | -24.32 |
| BOVINE CATTLE 1/ | 100 | 146 | 134 | 148 | 123 | 114 | 74 | 73 | 102 | 88 | 64 | - 8.23 |
| SHEEP AND GOATS 1/ | 68 | 28 | 31 | 47 | 20 | 28 | 28 | 80 | 215 | 70 | 67 | 16.62 |
| PIGS 1/ | 150 | 11 | 15 | 7 | 13 | 5 | 10 | 22 | 7 | 11 | 16 | 2.26 |
| TOTAL MEAT | 4 | 7 | 7 | 15 | 19 | 26 | 33 | 44 | 60 | 68 | 71 | 32.68 |
| MILK DRY | 1 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 7 | 9 | 17.68 |
| TOTAL EGGS IN SHELL | 13 | 7 | 7 | 7 | 4 | 3 | 5 | 6 | 10 | 6 | 6 | .84 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 76 | 197 | 217 | 229 | 302 | 285 | 417 | 286 | 541 | 555 | 497 | 12.47 |
| FISH CURED | 41 | 54 | 42 | 42 | 54 | 36 | 32 | 30 | 29 | 33 | 35 | - 5.40 |
| SHELLFISH | 43 | 107 | 135 | 172 | 218 | 212 | 228 | 290 | 294 | 311 | 320 | 12.41 |
| FISH CANNED AND PREPARED | 6 | 6 | 6 | 7 | 11 | 17 | 18 | 25 | 36 | 47 | 41 | 28.59 |
| SHELLFISH CANNED+PREPAR | 10 | 15 | 13 | 20 | 23 | 26 | 27 | 21 | 26 | 37 | 25 | 7.99 |
| FISH BODY AND LIVER OIL | | | | | | 1 | 1 | 1 | 1 | 2 | 1 | 34.12 |
| FISH MEAL | 14 | 45 | 44 | 65 | 78 | 63 | 57 | 84 | 112 | 139 | 136 | 13.48 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS NONCONIFEROUS | 10361 | 29032 | 30775 | 32177 | 39605 | 34096 | 28167 | 35816 | 36996 | 38411 | 37071 | 2.43 |
| PULPWOOD+PARTICLE | | 629 | 506 | 763 | 754 | 986 | 906 | 585 | 715 | 500 | 500 | - 1.99 |
| FUELWOOD | 434 | 729 | 770 | 653 | 616 | 892 | 706 | 810 | 832 | 722 | 752 | .99 |
| SAWNWOOD CONIFEROUS | 9 | 7 | 8 | 109 | 188 | 117 | 134 | 251 | 258 | 425 | 479 | 54.18 |
| SAWNWOOD NONCONIFEROUS | 1176 | 2518 | 2506 | 3120 | 4352 | 3657 | 3298 | 5554 | 5366 | 5449 | 6706 | 11.25 |
| WOOD-BASED PANELS | 317 | 1583 | 2029 | 2573 | 3076 | 2424 | 2512 | 3110 | 3194 | 3354 | 3072 | 6.66 |
| PULP FOR PAPER | | 8 | 3 | 4 | 14 | 9 | 2 | 3 | 2 | 2 | 2 | -13.46 |
| PAPER AND PAPERBOARD | 26 | 58 | 59 | 99 | 196 | 115 | 106 | 175 | 136 | 153 | 146 | 10.28 |
| ASIAN CENT PLANNED ECON | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR, WHEAT EQUIV. | 169 | 8 | 5 | 5 | 12 | 5 | 4 | 4 | 6 | 7 | 7 | - .26 |
| RICE MILLED | 1447 | 1980 | 1648 | 1637 | 2743 | 2832 | 2336 | 1597 | 1455 | 2163 | 1920 | - .47 |
| BARLEY | | 1 | | | 16 | | 6 | 2 | | 1 | 1 | - 2.49 |
| MAIZE | 244 | 45 | 120 | 110 | 65 | 130 | 315 | 430 | 356 | 240 | 242 | 21.66 |
| MILLET | 4 | 17 | 23 | 24 | 33 | 30 | 56 | 52 | 37 | 30 | 44 | 9.11 |
| POTATOES | 20 | 44 | 47 | 52 | 54 | 49 | 50 | 55 | 53 | 62 | 67 | 3.48 |
| SUGAR, TOTAL (RAW EQUIV.) | 999 | 500 | 655 | 655 | 646 | 614 | 512 | 548 | 645 | 423 | 430 | - 3.08 |
| PULSES | 74 | 94 | 132 | 128 | 115 | 86 | 83 | 100 | 84 | 72 | 68 | - 5.76 |
| SOYBEANS | 423 | 411 | 461 | 373 | 321 | 375 | 355 | 190 | 122 | 146 | 305 | -10.32 |
| SOYBEAN OIL | 2 | 3 | 2 | | | | | | 2 | 6 | 4 | 28.87 |
| GROUNDNUTS SHELLED BASIS | 26 | 20 | 25 | 41 | 36 | 29 | 39 | 46 | 28 | 32 | 44 | 4.96 |
| GROUNDNUT OIL | 5 | 8 | 12 | 15 | 13 | 16 | 15 | 11 | 5 | 12 | 22 | 1.69 |
| COPRA | | | | | 1 | | | | | | | -41.68 |
| COCONUT OIL | 1 | | | | | | | | | | | -94.62 |
| PALM NUTS KERNELS | 2 | | | | | | | | | | | |
| PALM OIL | | | | | | 1 | | | | | | -49.71 |
| OILSEED CAKE AND MEAL | 21 | 35 | 43 | 28 | 44 | 31 | 29 | 28 | 21 | 19 | 25 | - 6.81 |
| BANANAS | 168 | 241 | 372 | 245 | 270 | 165 | 127 | 103 | 148 | 108 | 128 | -11.42 |
| ORANGES+TANGER+CLEMEN | 41 | 75 | 87 | 90 | 83 | 74 | 79 | 56 | 80 | 79 | 80 | - 1.04 |
| COFFEE GREEN+ROASTED | 1 | 3 | 3 | 4 | 6 | 6 | 4 | 12 | 4 | 5 | 5 | 7.06 |
| TEA | 49 | 64 | 78 | 72 | 74 | 84 | 87 | 90 | 112 | 115 | 134 | 7.76 |
| COTTON LINT | 6 | 22 | 22 | 22 | 22 | 22 | 43 | 65 | 71 | 33 | 22 | 7.84 |
| JUTE AND SIMILAR FIBRES | 4 | 4 | 4 | 2 | 2 | 1 | 1 | 3 | 7 | 9 | 16 | 16.52 |
| TOBACCO UNMANUFACTURED | 17 | 24 | 28 | 32 | 43 | 41 | 43 | 43 | 45 | 45 | 47 | 7.05 |
| NATURAL RUBBER | 112 | 38 | 33 | 32 | 40 | 49 | 17 | 49 | 50 | 41 | 35 | 1.42 |
| WOOL GREASY | 20 | 25 | 22 | 22 | 23 | 22 | 24 | 25 | 21 | 22 | 23 | - .38 |
| BOVINE CATTLE 1/ | 155 | 160 | 157 | 171 | 162 | 166 | 204 | 195 | 196 | 172 | 212 | 2.84 |
| SHEEP AND GOATS 1/ | 1337 | 958 | 1042 | 1186 | 1220 | 1225 | 1030 | 873 | 482 | 443 | 460 | -10.48 |
| PIGS 1/ | 1345 | 1923 | 2460 | 2689 | 2794 | 2601 | 2775 | 2953 | 3016 | 3129 | 3135 | 4.26 |
| TOTAL MEAT | 43 | 115 | 118 | 185 | 192 | 141 | 153 | 190 | 137 | 175 | 201 | 3.93 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ...THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| TOTAL EGGS IN SHELL | 33 | 38 | 45 | 41 | 47 | 46 | 46 | 44 | 44 | 53 | 60 | 3.39 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 19 | 159 | 163 | 176 | 193 | 153 | 182 | 186 | 221 | 242 | 122 | .94 |
| FISH CURED | 5 | 4 | 6 | 4 | 5 | 4 | 5 | 6 | 5 | 6 | 6 | 3.64 |
| SHELLFISH | 5 | 26 | 33 | 45 | 50 | 56 | 56 | 59 | 44 | 58 | 54 | 6.79 |
| FISH CANNED AND PREPARED | | 1 | 2 | 3 | 6 | 6 | 6 | 11 | 11 | 12 | 12 | 33.95 |
| SHELLFISH CANNED+PREPAR | 1 | 4 | 6 | 8 | 8 | 7 | 7 | 11 | 10 | 9 | 10 | 7.35 |
| FISH MEAL | 1 | 2 | 2 | 3 | 3 | 3 | 1 | | | | | -98.89 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 48 | 100 | 106 | 119 | 98 | 125 | 145 | 96 | 96 | 96 | 96 | - 1.19 |
| SAWLOGS NONCONIFEROUS | 87 | 43 | 12 | 28 | 5 | 3 | 17 | 12 | 12 | 12 | 12 | - 6.59 |
| SAWNWOOD CONIFEROUS | 34 | 72 | 70 | 139 | 53 | 66 | 95 | 103 | 102 | 111 | 111 | 4.95 |
| SAWNWOOD NONCONIFEROUS | 46 | 43 | 111 | 177 | 160 | 118 | 133 | 199 | 154 | 178 | 178 | 10.30 |
| WOOD-BASED PANELS | 159 | 591 | 811 | 953 | 959 | 687 | 770 | 872 | 949 | 1244 | 1244 | 5.93 |
| PULP FOR PAPER | 14 | 43 | 63 | 66 | 26 | 25 | 33 | 31 | 31 | 31 | 31 | - 6.13 |
| PAPER AND PAPERBOARD | 62 | 103 | 113 | 115 | 116 | 107 | 132 | 161 | 161 | 161 | 161 | 5.84 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | US $ PER METRIC TON | | | | | | | PERCENT |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT | 65 | 62 | 68 | 69 | 106 | 171 | 169 | 153 | 125 | 131 | 164 | 11.12 |
| WHEAT FLOUR | 85 | 86 | 91 | 93 | 135 | 210 | 237 | 215 | 191 | 198 | 225 | 12.35 |
| RICE MILLED | 121 | 131 | 119 | 136 | 225 | 400 | 376 | 280 | 280 | 372 | 341 | 13.43 |
| BARLEY | 58 | 53 | 60 | 59 | 94 | 135 | 140 | 138 | 132 | 137 | 145 | 12.92 |
| MAIZE | 55 | 60 | 63 | 63 | 92 | 128 | 136 | 123 | 111 | 117 | 129 | 9.51 |
| POTATOES | 59 | 74 | 62 | 71 | 114 | 111 | 149 | 247 | 198 | 156 | 185 | 14.57 |
| SUGAR CENTRIFUGAL RAW | 116 | 118 | 128 | 147 | 187 | 384 | 521 | 333 | 259 | 297 | 310 | 12.51 |
| SOYBEANS | 101 | 103 | 115 | 126 | 216 | 246 | 225 | 215 | 272 | 249 | 271 | 11.43 |
| SOYBEAN OIL | 259 | 278 | 317 | 288 | 358 | 701 | 695 | 455 | 586 | 617 | 675 | 10.79 |
| GROUNDNUTS SHELLED | 177 | 208 | 230 | 245 | 339 | 511 | 514 | 467 | 610 | 657 | 628 | 14.83 |
| GROUNDNUT OIL | 320 | 340 | 391 | 374 | 444 | 937 | 803 | 717 | 809 | 893 | 867 | 12.44 |
| COPRA | 157 | 185 | 166 | 118 | 210 | 507 | 237 | 183 | 312 | 360 | 550 | 12.15 |
| COCONUT OIL | 262 | 307 | 288 | 207 | 358 | 929 | 418 | 361 | 556 | 624 | 934 | 12.61 |
| PALM NUTS KERNELS | 135 | 150 | 140 | 107 | 179 | 364 | 179 | 160 | 271 | 263 | 357 | 10.06 |
| PALM OIL | 208 | 222 | 225 | 188 | 255 | 530 | 464 | 363 | 521 | 564 | 633 | 14.18 |
| PALM KERNEL OIL | 244 | 308 | 313 | 238 | 342 | 826 | 457 | 402 | 535 | 613 | 876 | 11.56 |
| OLIVE OIL | 602 | 680 | 701 | 806 | 1168 | 1793 | 1860 | 1307 | 1261 | 1341 | 1627 | 9.52 |
| CASTOR BEANS | 114 | 117 | 121 | 158 | 384 | 329 | 207 | 251 | 333 | 330 | 355 | 12.21 |
| CASTOR BEAN OIL | 251 | 265 | 325 | 453 | 967 | 838 | 575 | 557 | 882 | 805 | 795 | 11.21 |
| COTTONSEED | 67 | 65 | 78 | 72 | 100 | 134 | 139 | 147 | 167 | 183 | 171 | 12.94 |
| COTTONSEED OIL | 284 | 302 | 357 | 317 | 355 | 602 | 676 | 554 | 605 | 605 | 684 | 10.00 |
| LINSEED | 126 | 112 | 107 | 121 | 258 | 426 | 336 | 285 | 272 | 216 | 281 | 11.06 |
| LINSEED OIL | 219 | 214 | 206 | 196 | 316 | 900 | 762 | 520 | 500 | 373 | 602 | 12.53 |
| BANANAS | 83 | 86 | 85 | 89 | 94 | 99 | 128 | 138 | 144 | 150 | 160 | 8.45 |
| ORANGES | 122 | 119 | 133 | 137 | 153 | 164 | 202 | 200 | 220 | 265 | 337 | 11.24 |
| APPLES | 139 | 157 | 169 | 186 | 249 | 241 | 317 | 275 | 357 | 412 | 389 | 11.69 |
| RAISINS | 299 | 334 | 300 | 362 | 726 | 907 | 717 | 697 | 969 | 1093 | 1427 | 17.55 |
| DATES | 108 | 109 | 125 | 154 | 166 | 213 | 245 | 241 | 320 | 390 | 430 | 16.52 |
| COFFEE GREEN | 719 | 937 | 832 | 902 | 1137 | 1258 | 1181 | 2287 | 4255 | 3267 | 3171 | 20.18 |
| COCOA BEANS | 455 | 764 | 624 | 567 | 841 | 1327 | 1403 | 1509 | 2912 | 3295 | 3143 | 23.16 |
| TEA | 1124 | 928 | 924 | 988 | 933 | 1098 | 1262 | 1235 | 2148 | 2023 | 1882 | 10.66 |
| COTTON LINT | 628 | 629 | 693 | 774 | 880 | 1296 | 1121 | 1303 | 1552 | 1391 | 1560 | 11.23 |
| JUTE | 223 | 249 | 250 | 279 | 250 | 241 | 281 | 252 | 271 | 342 | 392 | 3.90 |
| JUTE-LIKE FIBRES | 154 | 136 | 166 | 205 | 193 | 169 | 203 | 210 | 250 | 246 | 244 | 5.89 |
| SISAL | 232 | 117 | 115 | 151 | 320 | 716 | 469 | 326 | 372 | 377 | 471 | 16.35 |
| TOBACCO UNMANUFACTURED | 1190 | 1288 | 1280 | 1370 | 1497 | 1753 | 2063 | 2175 | 2361 | 2659 | 2748 | 10.14 |
| NATURAL RUBBER | 559 | 444 | 382 | 336 | 552 | 825 | 556 | 749 | 808 | 919 | 1169 | 12.73 |
| RUBBER NATURAL DRY | 476 | 385 | 325 | 309 | 572 | 712 | 544 | 723 | 794 | 916 | 1181 | 14.61 |
| WOOL GREASY | 1233 | 967 | 808 | 932 | 2057 | 2803 | 1766 | 1800 | 2166 | 2224 | 2473 | 12.13 |
| CATTLE 1/ | 129 | 156 | 173 | 230 | 283 | 263 | 303 | 286 | 304 | 348 | 419 | 9.75 |
| BEEF AND VEAL | 601 | 864 | 1051 | 1262 | 1668 | 1519 | 1720 | 1651 | 1877 | 2154 | 2464 | 10.54 |
| MUTTON AND LAMB | 434 | 529 | 554 | 586 | 872 | 1223 | 1067 | 1004 | 1133 | 1373 | 1583 | 12.75 |
| PIGS 1/ | 39 | 49 | 47 | 57 | 78 | 81 | 90 | 90 | 99 | 104 | 112 | 10.38 |
| BACON HAM OF SWINE | 707 | 865 | 855 | 1027 | 1507 | 1620 | 2021 | 1979 | 1849 | 2220 | 2608 | 13.29 |
| MEAT CHIKENS | 651 | 666 | 663 | 745 | 1046 | 1035 | 1139 | 1184 | 1234 | 1318 | 1374 | 9.07 |
| MEAT PREPARATIONS | 797 | 940 | 1165 | 1254 | 1525 | 1717 | 1505 | 1528 | 1527 | 1761 | 2284 | 7.38 |
| EVAP COND WHOLE COW MILK | 323 | 310 | 362 | 434 | 484 | 561 | 682 | 637 | 658 | 757 | 853 | 11.10 |
| MILK OF COWS SKIMMED DRY | 237 | 314 | 448 | 579 | 659 | 841 | 992 | 812 | 638 | 743 | 840 | 8.64 |
| BUTTER OF COWMILK | 832 | 728 | 978 | 1223 | 991 | 1318 | 1724 | 1671 | 1726 | 2238 | 2267 | 12.60 |
| CHEESE OF WHOLE COWMILK | 729 | 941 | 1076 | 1255 | 1461 | 1713 | 2021 | 1969 | 2146 | 2508 | 2744 | 12.41 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 310 | 403 | 455 | 541 | 665 | 669 | 746 | 877 | 1029 | 1101 | 1214 | 13.07 |
| FISH CURED | 358 | 480 | 575 | 652 | 873 | 1168 | 1253 | 1421 | 1568 | 1627 | 1613 | 15.73 |
| SHELLFISH | 826 | 1172 | 1268 | 1370 | 1763 | 1795 | 2038 | 2463 | 2776 | 3057 | 3304 | 12.99 |
| FISH CANNED AND PREPARED | 664 | 780 | 847 | 957 | 1185 | 1341 | 1329 | 1435 | 1692 | 1984 | 2189 | 11.97 |
| SHELLFISH CANNED+PREPAR | 1192 | 1537 | 1703 | 1718 | 2240 | 2620 | 2861 | 3120 | 3630 | 3699 | 4325 | 12.59 |
| FISH BODY AND LIVER OIL | 160 | 201 | 211 | 158 | 272 | 467 | 338 | 364 | 429 | 433 | 427 | 11.09 |
| FISH MEAL | 109 | 163 | 166 | 166 | 401 | 377 | 243 | 324 | 428 | 416 | 398 | 11.61 |
| FOREST PRODUCTS | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS 2/ | 18 | 24 | 24 | 27 | 46 | 52 | 51 | 52 | 59 | 63 | 83 | 14.39 |
| SAWLOGS NONCONIFEROUS 2/ | 24 | 23 | 23 | 25 | 39 | 49 | 40 | 51 | 54 | 58 | 73 | 13.79 |
| PULPWOOD+PARTICLE 2/ | 11 | 12 | 13 | 14 | 17 | 22 | 25 | 23 | 24 | 25 | 26 | 9.69 |
| FUELWOOD 2/ | 8 | 9 | 9 | 10 | 12 | 19 | 20 | 24 | 22 | 23 | 28 | 14.86 |
| SAWNWOOD CONIFEROUS 2/ | 37 | 44 | 47 | 53 | 74 | 96 | 89 | 93 | 101 | 108 | 123 | 12.14 |
| SAWNWOOD NONCONIF. 2/ | 61 | 65 | 65 | 80 | 105 | 132 | 128 | 133 | 148 | 162 | 198 | 13.00 |
| WOOD-BASED PANELS 2/ | 114 | 122 | 120 | 135 | 169 | 188 | 184 | 199 | 215 | 232 | 273 | 9.29 |
| PULP FOR PAPER | 115 | 142 | 149 | 147 | 175 | 279 | 351 | 336 | 314 | 283 | 332 | 11.60 |
| PAPER AND PAPERBOARD | 163 | 185 | 194 | 204 | 252 | 348 | 415 | 406 | 419 | 448 | 489 | 12.76 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ...THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| WORLD | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 49444 | 54813 | 57171 | 60856 | 76045 | 67429 | 73333 | 72114 | 71378 | 80012 | 84985 | 4.35 |
| RICE MILLED | 7497 | 8887 | 8616 | 8736 | 9008 | 8410 | 7520 | 9102 | 10042 | 10264 | 11412 | 2.51 |
| BARLEY | 7301 | 10683 | 10759 | 13991 | 12097 | 12423 | 12507 | 13671 | 12361 | 14860 | 14238 | 2.83 |
| MAIZE | 19853 | 28947 | 30737 | 37861 | 46841 | 48902 | 51654 | 61671 | 55077 | 68635 | 74752 | 10.80 |
| MILLET | 241 | 273 | 331 | 282 | 402 | 381 | 307 | 351 | 397 | 374 | 272 | 1.16 |
| SORGHUM | 3261 | 5733 | 6440 | 5300 | 7291 | 10187 | 9188 | 10126 | 10278 | 10144 | 10114 | 7.86 |
| POTATOES | 3218 | 3753 | 3191 | 4896 | 3835 | 3932 | 3752 | 4341 | 4760 | 3889 | 4372 | 1.81 |
| SUGAR,TOTAL (RAW EQUIV.) | 18337 | 22336 | 21404 | 21827 | 23268 | 22747 | 22008 | 22735 | 27582 | 25430 | 25654 | 2.16 |
| PULSES | 1437 | 1875 | 1753 | 2066 | 2026 | 1689 | 1869 | 1883 | 2049 | 1998 | 2248 | 1.46 |
| SOYBEANS | 5430 | 12295 | 12701 | 13846 | 14675 | 17503 | 16313 | 19983 | 19621 | 23303 | 26009 | 8.59 |
| SOYBEAN OIL | 642 | 1037 | 1308 | 1113 | 1046 | 1490 | 1374 | 1633 | 2107 | 2452 | 2898 | 11.59 |
| GROUNDNUTS SHELLED BASIS | 1376 | 1052 | 869 | 851 | 962 | 859 | 881 | 1031 | 806 | 805 | 789 | - 1.90 |
| GROUNDNUT OIL | 382 | 435 | 389 | 518 | 538 | 389 | 427 | 516 | 576 | 495 | 485 | 1.95 |
| COPRA | 1504 | 864 | 1063 | 1309 | 1061 | 545 | 1033 | 1200 | 904 | 789 | 450 | - 5.19 |
| COCONUT OIL | 421 | 594 | 671 | 849 | 764 | 625 | 952 | 1415 | 1083 | 1269 | 1234 | 9.20 |
| PALM NUTS KERNELS | 694 | 435 | 493 | 398 | 300 | 353 | 293 | 362 | 311 | 177 | 160 | - 9.81 |
| PALM OIL | 593 | 924 | 1209 | 1372 | 1549 | 1559 | 1882 | 1962 | 2317 | 2032 | 2450 | 10.13 |
| OILSEED CAKE AND MEAL | 7083 | 12109 | 13175 | 14353 | 15399 | 14746 | 14850 | 18367 | 18915 | 21882 | 23551 | 7.19 |
| BANANAS | 4093 | 5622 | 6011 | 6423 | 6387 | 6359 | 6310 | 6370 | 6561 | 6910 | 7004 | 1.86 |
| ORANGES+TANGER+CLEMEN | 3236 | 4338 | 4226 | 4722 | 4951 | 4865 | 4960 | 5068 | 5167 | 4904 | 5023 | 1.77 |
| LEMONS AND LIMES | 526 | 698 | 752 | 733 | 778 | 837 | 821 | 929 | 903 | 950 | 948 | 3.67 |
| COFFEE GREEN+ROASTED | 2893 | 3248 | 3368 | 3459 | 3628 | 3437 | 3636 | 3726 | 3110 | 3426 | 3923 | .87 |
| COCOA BEANS | 1073 | 1111 | 1219 | 1250 | 1171 | 1155 | 1192 | 1156 | 1001 | 1087 | 1030 | - 1.56 |
| TEA | 630 | 742 | 746 | 751 | 757 | 822 | 803 | 844 | 903 | 817 | 892 | 2.15 |
| COTTON LINT | 4106 | 4048 | 3980 | 3960 | 4734 | 4124 | 4001 | 4122 | 3973 | 4344 | 4483 | .67 |
| JUTE AND SIMILAR FIBRES | 957 | 909 | 838 | 795 | 883 | 802 | 553 | 650 | 544 | 534 | 600 | - 5.92 |
| TOBACCO UNMANUFACTURED | 911 | 1020 | 1064 | 1215 | 1240 | 1286 | 1303 | 1301 | 1296 | 1424 | 1389 | 3.27 |
| NATURAL RUBBER | 2299 | 2890 | 2909 | 2952 | 3261 | 3312 | 3109 | 3283 | 3369 | 3372 | 3491 | 2.05 |
| WOOL GREASY | 1191 | 1206 | 1116 | 1200 | 950 | 749 | 847 | 1033 | 869 | 864 | 917 | - 3.28 |
| BOVINE CATTLE 1/ | 5202 | 6968 | 7163 | 7949 | 7092 | 5964 | 6426 | 6656 | 6602 | 7337 | 7190 | - .36 |
| SHEEP AND GOATS 1/ | 8367 | 9909 | 10277 | 11961 | 10911 | 10113 | 11352 | 11005 | 13439 | 15343 | 15045 | 4.52 |
| PIGS 1/ | 2793 | 4412 | 5401 | 5973 | 5779 | 5985 | 6377 | 6760 | 6667 | 7693 | 8039 | 5.58 |
| TOTAL MEAT | 3031 | 4529 | 4788 | 5286 | 5494 | 5046 | 5529 | 6012 | 6610 | 6848 | 7513 | 5.31 |
| MILK DRY | 166 | 249 | 233 | 238 | 233 | 241 | 238 | 311 | 402 | 387 | 394 | 6.97 |
| TOTAL EGGS IN SHELL | 406 | 402 | 424 | 433 | 444 | 504 | 522 | 514 | 575 | 616 | 666 | 5.64 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 1426 | 2072 | 2143 | 2438 | 2770 | 2862 | 2798 | 2909 | 3103 | 3439 | 3687 | 6.14 |
| FISH CURED | 533 | 496 | 495 | 482 | 416 | 380 | 384 | 370 | 348 | 359 | 380 | - 3.92 |
| SHELLFISH | 291 | 499 | 568 | 686 | 716 | 769 | 820 | 944 | 886 | 1039 | 1123 | 8.65 |
| FISH CANNED AND PREPARED | 519 | 622 | 628 | 685 | 736 | 769 | 720 | 835 | 766 | 850 | 865 | 3.69 |
| SHELLFISH CANNED+PREPAR | 61 | 102 | 103 | 115 | 134 | 130 | 129 | 145 | 153 | 156 | 154 | 5.14 |
| FISH BODY AND LIVER OIL | 729 | 695 | 741 | 739 | 631 | 624 | 631 | 612 | 569 | 650 | 696 | - 1.38 |
| FISH MEAL | 1925 | 3012 | 2994 | 3110 | 1715 | 1904 | 2284 | 2191 | 2114 | 2040 | 2323 | - 3.59 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 8997 | 24262 | 21591 | 26420 | 29855 | 26860 | 23935 | 27176 | 28979 | 29589 | 32687 | 3.05 |
| SAWLOGS NONCONIFEROUS | 16797 | 36114 | 33943 | 41834 | 48936 | 44699 | 35466 | 43425 | 45930 | 47419 | 48256 | 2.37 |
| PULPWOOD+PARTICLE | 13904 | 28049 | 23742 | 22659 | 28559 | 33687 | 31249 | 30966 | 35208 | 32769 | 32948 | 3.75 |
| FUELWOOD | 3614 | 2981 | 2963 | 2784 | 3556 | 3677 | 3282 | 2347 | 3661 | 3364 | 3577 | 2.21 |
| SAWNWOOD CONIFEROUS | 40069 | 48978 | 50844 | 56774 | 60801 | 52078 | 42235 | 54045 | 60076 | 64953 | 68505 | 2.75 |
| SAWNWOOD NONCONIFEROUS | 4590 | 6752 | 6741 | 7798 | 10555 | 9556 | 8074 | 10382 | 11213 | 11653 | 13078 | 7.14 |
| WOOD-BASED PANELS | 4698 | 9751 | 10460 | 12783 | 15271 | 13294 | 12155 | 14437 | 14263 | 15596 | 16537 | 4.87 |
| PULP FOR PAPER | 10018 | 15251 | 13237 | 14838 | 16493 | 17348 | 13584 | 15300 | 15533 | 17581 | 18469 | 2.12 |
| PAPER AND PAPERBOARD | 14093 | 23059 | 23853 | 25018 | 26867 | 28833 | 22895 | 26360 | 27467 | 29913 | 31709 | 2.85 |
| WESTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 12787 | 13572 | 13348 | 13491 | 13594 | 12558 | 12460 | 13184 | 12601 | 13382 | 12960 | - .51 |
| RICE MILLED | 584 | 651 | 729 | 764 | 797 | 794 | 797 | 1214 | 1310 | 1469 | 1313 | 9.64 |
| BARLEY | 4378 | 6400 | 6684 | 5694 | 5364 | 6345 | 5477 | 6329 | 6136 | 6567 | 5104 | - .87 |
| MAIZE | 13531 | 17473 | 19599 | 20166 | 22641 | 24324 | 25301 | 26441 | 26733 | 24757 | 24888 | 4.17 |
| MILLET | 87 | 62 | 130 | 108 | 119 | 100 | 105 | 83 | 175 | 188 | 101 | 5.22 |
| SORGHUM | 2086 | 1094 | 1547 | 584 | 1158 | 2808 | 2676 | 2999 | 2153 | 1433 | 1213 | 6.01 |
| POTATOES | 1818 | 2320 | 2049 | 2549 | 2390 | 2235 | 2372 | 3149 | 2999 | 2565 | 2797 | 3.05 |
| SUGAR,TOTAL (RAW EQUIV.) | 4627 | 4486 | 4661 | 4969 | 4950 | 5335 | 5263 | 4608 | 4224 | 3523 | 3413 | - 3.26 |
| PULSES | 686 | 937 | 888 | 1098 | 1103 | 786 | 794 | 828 | 889 | 907 | 1054 | - .43 |
| SOYBEANS | 2934 | 7220 | 7515 | 8323 | 8327 | 11275 | 10524 | 11719 | 11616 | 14201 | 15209 | 8.75 |
| SOYBEAN OIL | 247 | 335 | 469 | 368 | 316 | 545 | 575 | 532 | 502 | 559 | 580 | 5.83 |
| GROUNDNUTS SHELLED BASIS | 1104 | 811 | 633 | 592 | 694 | 614 | 603 | 726 | 559 | 541 | 527 | - 3.08 |
| GROUNDNUT OIL | 288 | 357 | 321 | 435 | 422 | 327 | 338 | 351 | 355 | 325 | 407 | - .17 |
| COPRA | 786 | 450 | 624 | 822 | 630 | 354 | 816 | 961 | 670 | 515 | 294 | - 2.46 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | THOUSAND METRIC TONS | | | | | | | PERCENT |
| COCONUT OIL | 141 | 164 | 208 | 287 | 277 | 177 | 281 | 427 | 333 | 403 | 395 | 9.58 |
| PALM NUTS KERNELS | 618 | 367 | 435 | 350 | 251 | 329 | 260 | 327 | 271 | 153 | 136 | - 9.78 |
| PALM OIL | 417 | 520 | 686 | 693 | 752 | 698 | 797 | 860 | 829 | 793 | 856 | 4.24 |
| OILSEED CAKE AND MEAL | 5867 | 9104 | 9800 | 10383 | 11039 | 9927 | 10099 | 12778 | 12831 | 15379 | 16690 | 6.33 |
| BANANAS | 1802 | 2119 | 2310 | 2554 | 2556 | 2427 | 2329 | 2256 | 2430 | 2528 | 2462 | .80 |
| ORANGES+TANGER+CLEMEN | 2642 | 3223 | 3035 | 3309 | 3459 | 3200 | 3203 | 3176 | 3322 | 3142 | 3223 | |
| LEMONS AND LIMES | 341 | 389 | 398 | 368 | 378 | 386 | 398 | 432 | 408 | 428 | 432 | 1.46 |
| COFFEE GREEN+ROASTED | 1105 | 1496 | 1512 | 1606 | 1674 | 1642 | 1747 | 1810 | 1543 | 1703 | 1953 | 2.04 |
| COCOA BEANS | 554 | 533 | 552 | 602 | 584 | 574 | 564 | 565 | 561 | 590 | 570 | .76 |
| TEA | 292 | 316 | 306 | 289 | 298 | 313 | 289 | 297 | 336 | 250 | 278 | - 1.15 |
| COTTON LINT | 1483 | 1349 | 1262 | 1281 | 1543 | 1145 | 1188 | 1318 | 1135 | 1216 | 1148 | - 1.65 |
| JUTE AND SIMILAR FIBRES | 519 | 468 | 357 | 398 | 353 | 356 | 177 | 232 | 216 | 157 | 182 | -11.02 |
| TOBACCO UNMANUFACTURED | 518 | 582 | 627 | 646 | 681 | 661 | 677 | 695 | 677 | 785 | 742 | 2.50 |
| NATURAL RUBBER | 765 | 901 | 912 | 910 | 947 | 958 | 875 | 941 | 950 | 862 | 925 | - .03 |
| WOOL GREASY | 715 | 630 | 557 | 597 | 423 | 370 | 391 | 528 | 418 | 425 | 443 | - 3.65 |
| BOVINE CATTLE 1/ | 1881 | 3287 | 3530 | 3933 | 3305 | 2691 | 3444 | 3306 | 3175 | 3472 | 3530 | - .18 |
| SHEEP AND GOATS 1/ | 1371 | 2545 | 2461 | 3017 | 2529 | 1968 | 2570 | 2370 | 2354 | 2724 | 2912 | .46 |
| PIGS 1/ | 979 | 2129 | 2371 | 3000 | 2819 | 3009 | 3314 | 3629 | 3284 | 3870 | 4381 | 7.05 |
| TOTAL MEAT | 1922 | 2709 | 2858 | 3350 | 3446 | 2876 | 3105 | 3314 | 3464 | 3764 | 3788 | 3.12 |
| MILK DRY | 72 | 125 | 120 | 118 | 102 | 85 | 92 | 117 | 98 | 116 | 127 | - .31 |
| TOTAL EGGS IN SHELL | 309 | 241 | 246 | 247 | 270 | 318 | 311 | 307 | 327 | 366 | 400 | 5.68 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 712 | 932 | 974 | 1026 | 1143 | 1231 | 1147 | 1132 | 1229 | 1331 | 1425 | 4.21 |
| FISH CURED | 203 | 211 | 222 | 233 | 186 | 181 | 158 | 158 | 164 | 169 | 188 | - 3.19 |
| SHELLFISH | 121 | 177 | 196 | 249 | 245 | 261 | 295 | 335 | 275 | 345 | 357 | 7.44 |
| FISH CANNED AND PREPARED | 257 | 248 | 256 | 283 | 310 | 288 | 275 | 307 | 292 | 285 | 310 | 1.75 |
| SHELLFISH CANNED+PREPAR | 23 | 42 | 46 | 46 | 57 | 56 | 60 | 63 | 68 | 73 | 81 | 7.30 |
| FISH BODY AND LIVER OIL | 595 | 599 | 620 | 665 | 569 | 551 | 558 | 537 | 510 | 592 | 643 | - .71 |
| FISH MEAL | 1275 | 1384 | 1736 | 1855 | 1106 | 1086 | 1204 | 1187 | 1084 | 1076 | 1249 | - 5.55 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 2290 | 2523 | 2252 | 2767 | 4316 | 4756 | 3221 | 4417 | 4890 | 4094 | 4546 | 7.55 |
| SAWLOGS NONCONIFEROUS | 6067 | 7784 | 8184 | 9070 | 10952 | 8928 | 6985 | 8858 | 9426 | 8347 | 8976 | .44 |
| PULPWOOD+PARTICLE | 8728 | 16977 | 14578 | 11882 | 14941 | 18142 | 17907 | 16332 | 15767 | 14309 | 16780 | .87 |
| FUELWOOD | 1775 | 1512 | 1415 | 1166 | 1772 | 2131 | 1979 | 1987 | 1978 | 1701 | 1844 | 3.70 |
| SAWNWOOD CONIFEROUS | 21867 | 24408 | 23558 | 25396 | 28214 | 23709 | 17177 | 23111 | 22096 | 23684 | 27271 | - .35 |
| SAWNWOOD NONCONIFEROUS | 2243 | 3541 | 3426 | 3995 | 5677 | 4033 | 3620 | 5435 | 5521 | 5620 | 6841 | 6.74 |
| WOOD-BASED PANELS | 2717 | 5255 | 5272 | 6137 | 8098 | 6952 | 6099 | 7580 | 7540 | 8462 | 9672 | 5.93 |
| PULP FOR PAPER | 6061 | 9095 | 7218 | 8462 | 9386 | 9683 | 7293 | 8446 | 8281 | 9487 | 10020 | 1.27 |
| PAPER AND PAPERBOARD | 5355 | 9917 | 10278 | 11441 | 12504 | 13522 | 9904 | 12368 | 12676 | 13654 | 15165 | 3.69 |
| USSR AND EASTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 8755 | 6372 | 8745 | 13121 | 20247 | 7448 | 13457 | 13099 | 11996 | 13101 | 16096 | 5.81 |
| RICE MILLED | 485 | 548 | 611 | 503 | 417 | 441 | 543 | 647 | 725 | 706 | 944 | 5.77 |
| BARLEY | 1070 | 2161 | 1319 | 5487 | 3416 | 2368 | 3283 | 4118 | 2225 | 4137 | 4396 | 6.74 |
| MAIZE | 1072 | 1065 | 2506 | 6090 | 7816 | 6927 | 9131 | 17664 | 7493 | 17809 | 20434 | 30.62 |
| POTATOES | 535 | 634 | 385 | 1365 | 584 | 642 | 514 | 368 | 664 | 301 | 463 | - 5.75 |
| SUGAR,TOTAL (RAW EQUIV.) | 2933 | 4339 | 2868 | 2841 | 3578 | 2920 | 3951 | 4606 | 5653 | 4652 | 4921 | 5.62 |
| PULSES | 52 | 54 | 28 | 34 | 32 | 49 | 59 | 39 | 33 | 39 | 50 | 1.50 |
| SOYBEANS | 126 | 179 | 208 | 478 | 914 | 265 | 520 | 2089 | 1544 | 1389 | 2335 | 31.70 |
| SOYBEAN OIL | 70 | 26 | 69 | 87 | 34 | 38 | 31 | 73 | 99 | 65 | 123 | 10.00 |
| GROUNDNUTS SHELLED BASIS | 113 | 57 | 64 | 69 | 52 | 66 | 60 | 54 | 59 | 57 | 49 | - 1.65 |
| GROUNDNUT OIL | 3 | | | 1 | 1 | 4 | 4 | 6 | 1 | | 1 | 5.35 |
| COPRA | 19 | 1 | 3 | 35 | 28 | 29 | 29 | 10 | 20 | 10 | 10 | 15.18 |
| COCONUT OIL | 27 | 36 | 43 | 38 | 24 | 27 | 42 | 95 | 50 | 66 | 57 | 8.72 |
| PALM NUTS KERNELS | 26 | 18 | 9 | 6 | 13 | 3 | 4 | 4 | 11 | 4 | 2 | -15.67 |
| PALM OIL | 5 | 6 | 11 | 13 | 10 | 22 | 17 | 27 | 66 | 52 | 109 | 33.66 |
| OILSEED CAKE AND MEAL | 609 | 1852 | 2159 | 2763 | 3009 | 3404 | 3541 | 3680 | 3731 | 3790 | 4097 | 8.35 |
| BANANAS | 49 | 99 | 116 | 174 | 189 | 198 | 267 | 224 | 281 | 299 | 300 | 12.79 |
| ORANGES+TANGER+CLEMEN | 181 | 480 | 523 | 686 | 680 | 762 | 715 | 693 | 709 | 699 | 698 | 3.43 |
| LEMONS AND LIMES | 139 | 208 | 245 | 253 | 273 | 308 | 310 | 330 | 314 | 327 | 312 | 4.52 |
| COFFEE GREEN+ROASTED | 91 | 168 | 164 | 185 | 171 | 183 | 205 | 199 | 201 | 179 | 201 | 1.99 |
| COCOA BEANS | 111 | 180 | 225 | 239 | 215 | 250 | 280 | 256 | 175 | 202 | 208 | - .73 |
| TEA | 33 | 42 | 57 | 64 | 54 | 69 | 88 | 82 | 80 | 71 | 79 | 6.16 |
| COTTON LINT | 683 | 870 | 804 | 744 | 710 | 748 | 769 | 679 | 720 | 681 | 715 | - 1.91 |
| JUTE AND SIMILAR FIBRES | 82 | 97 | 74 | 88 | 85 | 67 | 83 | 80 | 68 | 70 | 72 | - 2.59 |
| TOBACCO UNMANUFACTURED | 156 | 120 | 129 | 160 | 151 | 142 | 147 | 126 | 132 | 133 | 131 | - .27 |
| NATURAL RUBBER | 446 | 519 | 440 | 450 | 495 | 548 | 473 | 470 | 409 | 453 | 431 | - 1.36 |
| WOOL GREASY | 110 | 139 | 144 | 143 | 148 | 151 | 162 | 162 | 161 | 182 | 188 | 3.24 |
| BOVINE CATTLE 1/ | 130 | 90 | 70 | 61 | 90 | 232 | 506 | 195 | 224 | 84 | 161 | 10.29 |
| SHEEP AND GOATS 1/ | 1786 | 1400 | 1316 | 1601 | 1907 | 1918 | 1520 | 1401 | 1103 | 1243 | 1081 | - 3.42 |
| PIGS 1/ | 232 | 288 | 462 | 145 | 126 | 103 | 185 | 17 | 276 | 457 | 338 | - .55 |
| TOTAL MEAT | 364 | 454 | 535 | 282 | 269 | 600 | 543 | 418 | 750 | 265 | 647 | 2.68 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ...THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| MILK ORY | 12 | 22 | 22 | 30 | 22 | 28 | 23 | 28 | 43 | 29 | 42 | 6.34 |
| TOTAL EGGS IN SHELL | 25 | 43 | 60 | 63 | 51 | 51 | 50 | 37 | 43 | 43 | 47 | - 2.73 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 155 | 185 | 129 | 128 | 120 | 132 | 141 | 159 | 147 | 214 | 232 | 4.47 |
| FISH CURED | 49 | 14 | 31 | 20 | 18 | 18 | 24 | 28 | 18 | 16 | 16 | - .98 |
| FISH CANNED AND PREPARED | 28 | 30 | 31 | 27 | 27 | 26 | 41 | 52 | 41 | 38 | 38 | 4.96 |
| FISH BODY AND LIVER OIL | 69 | 21 | 17 | 21 | 15 | 28 | 34 | 4 | 7 | 4 | 3 | -20.51 |
| FISH MEAL | 157 | 461 | 567 | 453 | 287 | 458 | 498 | 445 | 407 | 393 | 419 | - 1.55 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 423 | 1033 | 1013 | 780 | 1188 | 1248 | 830 | 787 | 885 | 960 | 720 | - 2.77 |
| SAWLOGS NONCONIFEROUS | 197 | 475 | 514 | 480 | 577 | 541 | 588 | 545 | 536 | 410 | 391 | - 1.71 |
| PULPWOOD+PARTICLE | 1188 | 1288 | 1480 | 1397 | 1208 | 1533 | 1722 | 1548 | 1440 | 1345 | 1063 | - .84 |
| FUELWOOD | 620 | 53 | 36 | 33 | 32 | 31 | 32 | 31 | 31 | 27 | 25 | - 5.44 |
| SAWNWOOD CONIFEROUS | 2352 | 3097 | 3299 | 2999 | 2841 | 3438 | 3599 | 2702 | 3157 | 3228 | 2864 | - .43 |
| SAWNWOOD NONCONIFEROUS | 399 | 398 | 385 | 371 | 354 | 441 | 442 | 366 | 363 | 327 | 294 | - 2.33 |
| WOOD-BASED PANELS | 226 | 745 | 740 | 835 | 939 | 1127 | 1248 | 1395 | 1323 | 1137 | 1169 | 6.67 |
| PULP FOR PAPER | 349 | 875 | 894 | 857 | 913 | 869 | 1106 | 1041 | 1029 | 1047 | 999 | 2.36 |
| PAPER AND PAPERBOARD | 420 | 1402 | 1351 | 1440 | 1417 | 1507 | 1713 | 1706 | 1712 | 1710 | 1769 | 3.26 |
| NORTH AMERICA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 113 | 43 | 10 | 3 | 4 | 83 | 17 | 23 | 35 | 1 | 5 | -12.77 |
| RICE MILLED | 57 | 83 | 144 | 94 | 92 | 71 | 74 | 80 | 80 | 82 | 91 | - 2.58 |
| BARLEY | 220 | 232 | 205 | 360 | 181 | 328 | 307 | 195 | 180 | 108 | 157 | - 6.65 |
| MAIZE | 634 | 547 | 249 | 448 | 825 | 1320 | 818 | 838 | 623 | 476 | 849 | 6.06 |
| MILLET | | | | | 1 | | | | 1 | | | -50.89 |
| SORGHUM | | 1 | | | 1 | | | | | 1 | | -53.39 |
| POTATOES | 150 | 189 | 163 | 141 | 175 | 239 | 208 | 213 | 301 | 235 | 242 | 5.60 |
| SUGAR,TOTAL (RAW EQUIV.) | 4541 | 5717 | 5725 | 5656 | 5707 | 6137 | 4485 | 5047 | 6380 | 4833 | 5399 | - 1.07 |
| PULSES | 19 | 19 | 26 | 29 | 32 | 66 | 44 | 34 | 52 | 43 | 39 | 8.10 |
| SOYBEANS | 402 | 442 | 425 | 309 | 232 | 391 | 385 | 422 | 318 | 325 | 351 | - 1.22 |
| SOYBEAN OIL | 12 | 23 | 24 | 17 | 19 | 34 | 23 | 31 | 28 | 35 | 22 | 3.58 |
| GROUNDNUTS SHELLED BASIS | 42 | 49 | 52 | 54 | 60 | 60 | 61 | 62 | 55 | 66 | 63 | 2.51 |
| GROUNDNUT OIL | 6 | 9 | 5 | 7 | 7 | 6 | 7 | 8 | 7 | 6 | 5 | - 1.73 |
| COPRA | 287 | 198 | 190 | 209 | 199 | 27 | | | | | | -86.13 |
| COCONUT OIL | 167 | 282 | 298 | 374 | 280 | 271 | 435 | 603 | 495 | 503 | 527 | 8.50 |
| PALM OIL | 24 | 76 | 116 | 226 | 196 | 217 | 483 | 416 | 282 | 173 | 163 | 8.72 |
| OILSEED CAKE AND MEAL | 276 | 252 | 213 | 238 | 216 | 300 | 301 | 386 | 374 | 426 | 491 | 9.43 |
| BANANAS | 1612 | 2045 | 2125 | 2146 | 2169 | 2268 | 2179 | 2411 | 2410 | 2543 | 2659 | 2.75 |
| ORANGES+TANGER+CLEMEN | 203 | 242 | 241 | 259 | 265 | 259 | 264 | 339 | 380 | 307 | 298 | 3.86 |
| LEMONS AND LIMES | 17 | 19 | 17 | 18 | 19 | 20 | 23 | 24 | 27 | 34 | 35 | 8.27 |
| COFFEE GREEN+ROASTED | 1456 | 1267 | 1398 | 1343 | 1405 | 1246 | 1324 | 1290 | 986 | 1195 | 1277 | - 1.66 |
| COCOA BEANS | 329 | 301 | 338 | 308 | 268 | 238 | 248 | 252 | 186 | 226 | 179 | - 5.99 |
| TEA | 78 | 83 | 103 | 93 | 102 | 105 | 96 | 106 | 117 | 91 | 101 | 1.77 |
| COTTON LINT | 118 | 77 | 90 | 93 | 86 | 72 | 61 | 73 | 53 | 59 | 60 | - 5.10 |
| JUTE AND SIMILAR FIBRES | 73 | 33 | 20 | 16 | 33 | 31 | 23 | 25 | 14 | 17 | 23 | - 3.34 |
| TOBACCO UNMANUFACTURED | 84 | 101 | 87 | 153 | 158 | 163 | 177 | 161 | 179 | 173 | 188 | 7.07 |
| NATURAL RUBBER | 468 | 621 | 685 | 685 | 727 | 759 | 747 | 818 | 903 | 846 | 862 | 3.80 |
| WOOL GREASY | 87 | 50 | 34 | 30 | 18 | 8 | 13 | 17 | 12 | 12 | 11 | -13.83 |
| BOVINE CATTLE 1/ | 974 | 1220 | 1081 | 1260 | 1264 | 716 | 516 | 1183 | 1184 | 1308 | 760 | - 2.25 |
| SHEEP AND GOATS 1/ | 43 | 40 | 43 | 58 | 71 | 33 | 61 | 71 | 52 | 40 | 27 | - 2.31 |
| PIGS 1/ | 4 | 72 | 78 | 90 | 88 | 197 | 30 | 46 | 44 | 204 | 138 | 3.18 |
| TOTAL MEAT | 445 | 711 | 668 | 797 | 785 | 637 | 719 | 862 | 755 | 875 | 913 | 2.62 |
| TOTAL EGGS IN SHELL | 4 | 18 | 7 | 6 | 12 | 15 | 12 | 13 | 19 | 17 | 20 | 8.07 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 331 | 525 | 531 | 728 | 792 | 689 | 611 | 709 | 727 | 800 | 776 | 3.65 |
| FISH CURED | 37 | 38 | 34 | 32 | 33 | 31 | 30 | 37 | 30 | 34 | 31 | - 1.07 |
| SHELLFISH | 102 | 140 | 132 | 149 | 140 | 148 | 139 | 157 | 158 | 146 | 155 | 1.37 |
| FISH CANNED AND PREPARED | 68 | 101 | 87 | 108 | 104 | 131 | 82 | 103 | 78 | 89 | 95 | - 1.52 |
| SHELLFISH CANNED+PREPAR | 18 | 28 | 25 | 31 | 32 | 33 | 27 | 35 | 41 | 38 | 41 | 4.95 |
| FISH BODY AND LIVER OIL | 48 | 31 | 28 | 10 | 11 | 8 | 7 | 11 | 8 | 9 | 9 | -11.47 |
| FISH MEAL | 290 | 228 | 257 | 357 | 63 | 62 | 108 | 128 | 74 | 40 | 82 | -15.29 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 1233 | 1786 | 1787 | 2387 | 1954 | 1737 | 1728 | 2025 | 2174 | 2043 | 2221 | 1.55 |
| SAWLOGS NONCONIFEROUS | 350 | 477 | 415 | 459 | 459 | 492 | 318 | 291 | 294 | 409 | 395 | - 3.46 |
| PULPWOOD+PARTICLE | 3377 | 2552 | 1996 | 2081 | 1863 | 2187 | 1859 | 2039 | 2273 | 2355 | 2218 | .27 |
| FUELWOOD | 90 | 176 | 209 | 187 | 158 | 191 | 209 | 181 | 303 | 352 | 343 | 7.93 |
| SAWNWOOD CONIFEROUS | 11316 | 13859 | 17378 | 21522 | 21750 | 16639 | 14175 | 19583 | 25061 | 28675 | 26916 | 6.10 |
| SAWNWOOD NONCONIFEROUS | 969 | 1008 | 1116 | 1429 | 1732 | 1412 | 963 | 1287 | 1351 | 1431 | 1466 | 2.18 |
| WOOD-BASED PANELS | 1334 | 2723 | 3481 | 4666 | 4147 | 3245 | 3100 | 3645 | 3546 | 3956 | 3560 | .91 |
| PULP FOR PAPER | 2369 | 2979 | 2973 | 3266 | 3531 | 3587 | 2712 | 3270 | 3392 | 3522 | 3783 | 1.84 |
| PAPER AND PAPERBOARD | 5495 | 6557 | 6858 | 7143 | 7546 | 7602 | 6165 | 6982 | 7017 | 8387 | 8351 | 1.87 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ... THOUSAND METRIC TONS ... | | | ..... | ..... | ..... | ..... | PERCENT |
| OCEANIA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 175 | 16 | 80 | 47 | | 50 | 134 | 112 | | | 32 | -27.18 |
| RICE MILLED | 4 | 6 | 5 | 5 | 6 | 7 | 7 | 6 | 9 | 8 | 8 | 5.20 |
| BARLEY | | 14 | 24 | 13 | | 5 | | | | | | -53.82 |
| MAIZE | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 15.84 |
| SORGHUM | | | 1 | | | | | | | | | -39.99 |
| POTATOES | 2 | | | | | 1 | | | | | | 79.35 |
| SUGAR,TOTAL (RAW EQUIV.) | 126 | 139 | 157 | 186 | 171 | 153 | 192 | 174 | 185 | 166 | 172 | 1.55 |
| PULSES | 9 | 14 | 16 | 16 | 12 | 16 | 20 | 13 | 12 | 13 | 12 | - 2.42 |
| SOYBEANS | 2 | 1 | 11 | | | 33 | 16 | 10 | 21 | 15 | | - 8.08 |
| SOYBEAN OIL | 5 | 11 | 9 | 4 | 6 | 10 | 18 | 38 | 33 | 30 | 28 | 22.40 |
| GROUNDNUTS SHELLED BASIS | 5 | 11 | 5 | 6 | 5 | 6 | 4 | 8 | 5 | 12 | 4 | - 1.54 |
| GROUNDNUT OIL | 9 | 8 | 6 | 5 | 3 | 4 | 4 | 2 | 4 | 2 | 2 | -13.01 |
| COPRA | 36 | 33 | 35 | 26 | 24 | 20 | 12 | 10 | 11 | 5 | 6 | -19.58 |
| COCONUT OIL | | 1 | 2 | 8 | 9 | 13 | 11 | 18 | 20 | 18 | 19 | 32.89 |
| PALM OIL | 3 | 5 | 7 | 8 | 7 | 14 | 16 | 17 | 23 | 23 | 27 | 20.36 |
| OILSEED CAKE AND MEAL | 5 | 30 | 30 | 24 | 12 | 21 | 15 | 3 | 6 | 30 | 7 | -13.15 |
| BANANAS | 30 | 24 | 22 | 24 | 33 | 37 | 43 | 29 | 35 | 38 | 35 | 5.44 |
| ORANGES+TANGER+CLEMEN | 14 | 14 | 15 | 16 | 18 | 18 | 18 | 15 | 17 | 18 | 14 | 1.05 |
| COFFEE GREEN+ROASTED | 15 | 28 | 30 | 29 | 29 | 32 | 35 | 32 | 34 | 26 | 35 | 1.46 |
| COCOA BEANS | 15 | 20 | 17 | 18 | 21 | 21 | 25 | 16 | 20 | 17 | 15 | - 1.79 |
| TEA | 37 | 35 | 34 | 37 | 36 | 34 | 35 | 33 | 35 | 30 | 30 | - 1.53 |
| COTTON LINT | 21 | 5 | 7 | 9 | 4 | 9 | 4 | 4 | 5 | 4 | 2 | - 8.90 |
| JUTE AND SIMILAR FIBRES | 9 | 12 | 13 | 19 | 16 | 26 | 17 | 14 | 12 | 11 | 12 | - 2.78 |
| TOBACCO UNMANUFACTURED | 16 | 17 | 17 | 15 | 14 | 17 | 17 | 17 | 13 | 16 | 13 | - 1.57 |
| NATURAL RUBBER | 41 | 52 | 47 | 52 | 55 | 74 | 53 | 61 | 55 | 52 | 52 | .62 |
| WOOL GREASY | 2 | 2 | 4 | 4 | 5 | 6 | 1 | 1 | 1 | 1 | 1 | -23.13 |
| BOVINE CATTLE 1/ | | 1 | 2 | 3 | 3 | 3 | 1 | 1 | 2 | 1 | 1 | - 4.07 |
| SHEEP AND GOATS 1/ | | 2 | 2 | 1 | 1 | | | | | 1 | 1 | - 9.58 |
| TOTAL MEAT | 1 | 1 | 1 | 1 | 2 | 4 | 2 | 2 | 2 | 1 | 3 | 13.84 |
| MILK DRY | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 9.85 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 14 | 22 | 29 | 22 | 18 | 22 | 19 | 19 | 21 | 21 | 22 | - 1.51 |
| FISH CURED | 5 | 4 | 4 | 4 | 3 | 6 | 4 | 4 | 5 | 3 | 3 | - 1.39 |
| SHELLFISH | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 3 | 2 | 2 | 12.08 |
| FISH CANNED AND PREPARED | 13 | 13 | 14 | 15 | 25 | 27 | 23 | 19 | 25 | 26 | 26 | 7.60 |
| SHELLFISH CANNED+PREPAR | 1 | 3 | 3 | 3 | 4 | 6 | 5 | 6 | 7 | 6 | 7 | 13.18 |
| FISH BODY AND LIVER OIL | 4 | 4 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -18.00 |
| FISH MEAL | 8 | 27 | 32 | 27 | 14 | 14 | 24 | 13 | 8 | 3 | 3 | -23.16 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 7 | 4 | 4 | 5 | 1 | 3 | | 5 | 2 | 2 | | -31.92 |
| SAWLOGS NONCONIFEROUS | 145 | 127 | 93 | 95 | 101 | 106 | 41 | 46 | 26 | 17 | 11 | -23.22 |
| FUELWOOD | 1 | 1 | 1 | 1 | 1 | 1 | 9 | 4 | 1 | 1 | 1 | 3.27 |
| SAWNWOOD CONIFEROUS | 620 | 654 | 675 | 672 | 793 | 886 | 637 | 693 | 754 | 638 | 682 | - .11 |
| SAWNWOOD NONCONIFEROUS | 207 | 278 | 273 | 254 | 338 | 449 | 282 | 346 | 445 | 311 | 304 | 2.52 |
| WOOD-BASED PANELS | 26 | 65 | 73 | 73 | 92 | 131 | 123 | 137 | 121 | 89 | 99 | 5.41 |
| PULP FOR PAPER | 203 | 323 | 298 | 242 | 315 | 352 | 302 | 234 | 277 | 238 | 280 | - 1.94 |
| PAPER AND PAPERBOARD | 428 | 508 | 531 | 492 | 563 | 678 | 683 | 470 | 651 | 584 | 671 | 2.48 |
| AFRICA DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 1795 | 2872 | 3574 | 3740 | 4000 | 4733 | 5221 | 5254 | 6393 | 7400 | 7302 | 10.91 |
| RICE MILLED | 576 | 698 | 854 | 806 | 981 | 1007 | 586 | 867 | 1574 | 2002 | 1706 | 10.48 |
| BARLEY | 144 | 25 | 30 | 78 | 108 | 115 | 173 | 68 | 219 | 647 | 307 | 33.97 |
| MAIZE | 243 | 384 | 610 | 480 | 472 | 830 | 856 | 669 | 873 | 1116 | 1048 | 11.07 |
| MILLET | 95 | 167 | 169 | 132 | 195 | 163 | 136 | 172 | 159 | 122 | 101 | - 3.83 |
| SORGHUM | 42 | 61 | 42 | 40 | 74 | 179 | 28 | 72 | 45 | 99 | 59 | 2.65 |
| POTATOES | 234 | 164 | 147 | 131 | 192 | 208 | 188 | 149 | 220 | 234 | 265 | 5.82 |
| SUGAR,TOTAL (RAW EQUIV.) | 1210 | 1302 | 1383 | 1405 | 1432 | 1344 | 1330 | 1487 | 1893 | 2145 | 2020 | 5.36 |
| PULSES | 76 | 70 | 72 | 82 | 82 | 58 | 94 | 80 | 97 | 89 | 97 | 3.49 |
| SOYBEANS | 10 | 4 | | 1 | 13 | 10 | 9 | 16 | 50 | 22 | 11 | 46.66 |
| SOYBEAN OIL | 55 | 87 | 132 | 97 | 88 | 143 | 150 | 124 | 256 | 290 | 349 | 15.63 |
| GROUNDNUTS SHELLED BASIS | 24 | 27 | 16 | 20 | 24 | 10 | 18 | 16 | 12 | 16 | 23 | - 2.75 |
| GROUNDNUT OIL | 15 | 17 | 11 | 24 | 40 | 8 | 8 | 29 | 23 | 12 | 14 | - 1.33 |
| COPRA | 4 | 3 | 7 | 5 | 6 | 2 | 3 | 3 | 6 | 5 | 3 | - 1.95 |
| COCONUT OIL | 12 | 14 | 16 | 17 | 14 | 13 | 8 | 17 | 19 | 10 | 9 | - 4.12 |
| PALM NUTS KERNELS | 11 | 1 | 1 | | | | 1 | | | | | -92.59 |
| PALM OIL | 11 | 19 | 29 | 27 | 41 | 38 | 29 | 66 | 83 | 92 | 96 | 19.67 |
| OILSEED CAKE AND MEAL | 16 | 52 | 55 | 54 | 36 | 51 | 56 | 54 | 101 | 105 | 118 | 10.47 |
| BANANAS | 38 | 38 | 37 | 56 | 59 | 47 | 41 | 56 | 51 | 34 | 42 | - .19 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | THOUSAND METRIC TONS | | | | | | PERCENT |
| ORANGES+TANGER+CLEMEN | 9 | 11 | 9 | 11 | 10 | 10 | 12 | 10 | 11 | 11 | 11 | .86 |
| LEMONS AND LIMES | 1 | | | | 1 | 1 | | 1 | 1 | | | 1.93 |
| COFFEE GREEN+ROASTED | 46 | 39 | 30 | 35 | 36 | 50 | 56 | 59 | 58 | 85 | 85 | 11.84 |
| COCOA BEANS | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 3 | 1 | 1 | - 2.61 |
| TEA | 34 | 40 | 39 | 40 | 35 | 42 | 43 | 41 | 41 | 51 | 62 | 3.97 |
| COTTON LINT | 16 | 31 | 28 | 33 | 41 | 50 | 54 | 46 | 50 | 48 | 52 | 6.84 |
| JUTE AND SIMILAR FIBRES | 20 | 42 | 59 | 58 | 74 | 94 | 76 | 56 | 72 | 71 | 74 | 4.03 |
| TOBACCO UNMANUFACTURED | 32 | 34 | 35 | 41 | 45 | 57 | 52 | 45 | 48 | 61 | 65 | 6.55 |
| NATURAL RUBBER | 7 | 18 | 17 | 18 | 20 | 23 | 19 | 21 | 25 | 26 | 26 | 5.14 |
| WOOL GREASY | | 1 | 1 | 1 | | 1 | 1 | 2 | 3 | 3 | 3 | 20.46 |
| BOVINE CATTLE 1/ | 858 | 952 | 991 | 983 | 899 | 756 | 628 | 618 | 688 | 759 | 708 | - 4.51 |
| SHEEP AND GOATS 1/ | 1757 | 1398 | 1498 | 1395 | 1263 | 1252 | 1215 | 1066 | 1171 | 1158 | 1265 | - 2.46 |
| PIGS 1/ | 10 | 5 | 1 | 7 | 2 | | | | | | | -85.11 |
| TOTAL MEAT | 52 | 45 | 48 | 51 | 41 | 45 | 56 | 84 | 135 | 151 | 152 | 17.19 |
| MILK DRY | 3 | 7 | 11 | 8 | 14 | 23 | 17 | 19 | 20 | 18 | 18 | 11.04 |
| TOTAL EGGS IN SHELL | 4 | 1 | 2 | 2 | 3 | 4 | 8 | 13 | 21 | 44 | 47 | 55.90 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 66 | 113 | 155 | 195 | 233 | 312 | 304 | 284 | 275 | 338 | 399 | 12.29 |
| FISH CURED | 94 | 72 | 65 | 55 | 52 | 43 | 49 | 55 | 45 | 43 | 48 | - 4.38 |
| SHELLFISH | 2 | 5 | 2 | 3 | 4 | 3 | 11 | 14 | 14 | 13 | 13 | 23.28 |
| FISH CANNED AND PREPARED | 33 | 55 | 51 | 57 | 67 | 65 | 63 | 90 | 86 | 129 | 124 | 10.71 |
| FISH BODY AND LIVER OIL | 1 | 2 | 2 | 2 | 3 | 4 | 1 | 2 | 2 | 2 | 2 | - 5.19 |
| FISH MEAL | 7 | 11 | 11 | 13 | 9 | 14 | 8 | 11 | 18 | 21 | 18 | 7.30 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 7 | 36 | 6 | 20 | 8 | 17 | 38 | 43 | 31 | 32 | 21 | 9.22 |
| SAWLOGS NONCONIFEROUS | 94 | 226 | 216 | 191 | 215 | 306 | 150 | 166 | 236 | 196 | 207 | - 1.14 |
| PULPWOOD+PARTICLE | | 5 | 14 | 5 | | | | | | | | -97.05 |
| FUELWOOD | 46 | 94 | 72 | 74 | 31 | 5 | 26 | | | | | -98.82 |
| SAWNWOOD CONIFEROUS | 479 | 886 | 909 | 621 | 603 | 760 | 772 | 833 | 894 | 772 | 857 | .68 |
| SAWNWOOD NONCONIFEROUS | 122 | 157 | 124 | 132 | 115 | 218 | 153 | 154 | 156 | 190 | 184 | 3.55 |
| WOOD-BASED PANELS | 80 | 141 | 179 | 129 | 138 | 198 | 182 | 192 | 190 | 190 | 199 | 3.91 |
| PULP FOR PAPER | 20 | 47 | 34 | 34 | 56 | 76 | 204 | 78 | 254 | 252 | 250 | 28.27 |
| PAPER AND PAPERBOARD | 226 | 420 | 459 | 406 | 502 | 584 | 459 | 479 | 513 | 497 | 526 | 2.07 |
| LATIN AMERICA | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR, WHEAT EQUIV. | 5026 | 5652 | 6276 | 6925 | 8357 | 8610 | 7132 | 8977 | 8259 | 10298 | 10908 | 6.44 |
| RICE MILLED | 416 | 384 | 472 | 415 | 390 | 620 | 564 | 484 | 427 | 387 | 1211 | 6.02 |
| BARLEY | 129 | 162 | 137 | 116 | 186 | 319 | 258 | 175 | 174 | 318 | 234 | 6.80 |
| MAIZE | 465 | 1417 | 667 | 797 | 2333 | 2582 | 3897 | 2436 | 3594 | 4674 | 4350 | 21.25 |
| SORGHUM | 71 | 219 | 377 | 615 | 450 | 1048 | 1348 | 564 | 1316 | 1520 | 1911 | 22.89 |
| POTATOES | 210 | 218 | 182 | 468 | 249 | 207 | 196 | 192 | 200 | 195 | 231 | - 2.43 |
| SUGAR, TOTAL (RAW EQUIV.) | 304 | 187 | 286 | 363 | 438 | 256 | 114 | 224 | 654 | 854 | 750 | 13.10 |
| PULSES | 163 | 234 | 212 | 220 | 252 | 274 | 307 | 297 | 398 | 289 | 296 | 4.89 |
| SOYBEANS | 50 | 191 | 193 | 134 | 184 | 590 | 127 | 444 | 623 | 965 | 912 | 22.98 |
| SOYBEAN OIL | 54 | 112 | 100 | 109 | 149 | 233 | 138 | 233 | 251 | 335 | 399 | 16.33 |
| GROUNDNUTS SHELLED BASIS | 3 | 5 | 6 | 10 | 6 | 13 | 54 | 39 | 8 | 13 | 8 | 9.58 |
| GROUNDNUT OIL | 15 | 15 | 15 | 16 | 33 | 12 | 41 | 65 | 136 | 84 | 22 | 19.59 |
| COPRA | 78 | 2 | 12 | 1 | | 1 | 21 | 1 | | | | -42.11 |
| COCONUT OIL | 10 | 19 | 13 | 19 | 33 | 26 | 40 | 89 | 26 | 35 | 30 | 10.15 |
| PALM NUTS KERNELS | | 1 | 1 | | | 2 | 2 | 2 | 1 | | | -93.32 |
| PALM OIL | 6 | 3 | 10 | 9 | 23 | 9 | 3 | 16 | 16 | 6 | 12 | 6.14 |
| OILSEED CAKE AND MEAL | 93 | 176 | 310 | 224 | 257 | 310 | 283 | 316 | 406 | 532 | 559 | 11.30 |
| BANANAS | 261 | 322 | 274 | 242 | 237 | 286 | 234 | 194 | 227 | 284 | 311 | - .72 |
| ORANGES+TANGER+CLEMEN | 19 | 13 | 14 | 14 | 19 | 18 | 17 | 19 | 22 | 24 | 23 | 7.11 |
| LEMONS AND LIMES | 3 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | - 9.97 |
| COFFEE GREEN+ROASTED | 46 | 46 | 50 | 53 | 56 | 82 | 52 | 63 | 45 | 45 | 92 | 2.93 |
| COCOA BEANS | 20 | 26 | 29 | 20 | 16 | 20 | 15 | 8 | 4 | 1 | 3 | -26.65 |
| TEA | 9 | 13 | 12 | 12 | 12 | 18 | 10 | 13 | 14 | 14 | 18 | 2.93 |
| COTTON LINT | 68 | 74 | 85 | 83 | 87 | 67 | 67 | 66 | 84 | 71 | 86 | - .43 |
| JUTE AND SIMILAR FIBRES | 14 | 25 | 11 | 13 | 32 | 52 | 42 | 27 | 11 | 8 | 11 | - 6.25 |
| TOBACCO UNMANUFACTURED | 15 | 14 | 13 | 11 | 14 | 23 | 16 | 19 | 19 | 16 | 16 | 3.34 |
| NATURAL RUBBER | 84 | 102 | 117 | 138 | 139 | 167 | 144 | 165 | 169 | 194 | 189 | 6.54 |
| WOOL GREASY | 14 | 14 | 18 | 14 | 5 | 4 | 6 | 8 | 7 | 7 | 9 | - 7.17 |
| BOVINE CATTLE 1/ | 608 | 545 | 597 | 664 | 590 | 633 | 578 | 627 | 578 | 782 | 1073 | 4.58 |
| SHEEP AND GOATS 1/ | 142 | 140 | 180 | 137 | 64 | 226 | 316 | 41 | 55 | 54 | 85 | -10.61 |
| PIGS 1/ | 67 | 33 | 38 | 48 | 38 | 42 | 48 | 59 | 36 | 33 | 32 | - .74 |
| TOTAL MEAT | 64 | 121 | 138 | 151 | 126 | 232 | 158 | 177 | 193 | 347 | 356 | 11.53 |
| MILK DRY | 54 | 41 | 24 | 32 | 41 | 44 | 46 | 63 | 153 | 119 | 101 | 18.80 |
| TOTAL EGGS IN SHELL | 8 | 8 | 7 | 7 | 6 | 6 | 6 | 9 | 14 | 12 | 16 | 9.19 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | THOUSAND METRIC TONS | | | | | | | PERCENT |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 12 | 37 | 41 | 40 | 58 | 69 | 126 | 97 | 92 | 95 | 121 | 14.92 |
| FISH CURED | 72 | 91 | 77 | 73 | 75 | 59 | 69 | 58 | 58 | 60 | 61 | - 4.24 |
| SHELLFISH | 1 | 9 | 6 | 4 | 7 | 9 | 5 | 3 | 4 | 4 | 5 | - 6.73 |
| FISH CANNED AND PREPARED | 21 | 31 | 36 | 42 | 35 | 39 | 43 | 46 | 53 | 59 | 60 | 7.08 |
| SHELLFISH CANNED+PREPAR | | | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | - 3.53 |
| FISH BODY AND LIVER OIL | 9 | 25 | 55 | 29 | 19 | 23 | 20 | 44 | 27 | 28 | 29 | - .86 |
| FISH MEAL | 57 | 162 | 224 | 187 | 44 | 61 | 143 | 75 | 69 | 105 | 115 | - 6.39 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 26 | 65 | 19 | 16 | 25 | 27 | 7 | 11 | 9 | 5 | 6 | -20.36 |
| SAWLOGS NONCONIFEROUS | 273 | 224 | 224 | 179 | 134 | 145 | 157 | 68 | 59 | 105 | 75 | -12.86 |
| FUELWOOD | 41 | 5 | 9 | 12 | 19 | 27 | 9 | 6 | 5 | 3 | 3 | -11.63 |
| SAWNWOOD CONIFEROUS | 1212 | 1569 | 1631 | 1499 | 1460 | 1230 | 1229 | 1409 | 1395 | 1551 | 2155 | 1.25 |
| SAWNWOOD NONCONIFEROUS | 88 | 148 | 186 | 181 | 195 | 677 | 733 | 374 | 474 | 591 | 542 | 17.53 |
| WOOD-BASED PANELS | 56 | 119 | 165 | 150 | 142 | 181 | 165 | 156 | 170 | 222 | 234 | 5.58 |
| PULP FOR PAPER | 426 | 607 | 559 | 637 | 622 | 774 | 501 | 518 | 420 | 509 | 570 | - 2.57 |
| PAPER AND PAPERBOARD | 927 | 1906 | 1721 | 1806 | 1746 | 2060 | 1630 | 1720 | 2062 | 1758 | 1828 | .10 |
| NEAR EAST DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 3855 | 4806 | 7724 | 4707 | 5385 | 8658 | 8673 | 7750 | 9112 | 11277 | 11055 | 9.21 |
| RICE MILLED | 371 | 521 | 700 | 575 | 498 | 934 | 932 | 1098 | 1470 | 1752 | 2011 | 16.81 |
| BARLEY | 144 | 469 | 926 | 297 | 594 | 530 | 473 | 465 | 1025 | 1004 | 1333 | 9.72 |
| MAIZE | 315 | 260 | 317 | 460 | 423 | 803 | 807 | 1025 | 1508 | 1933 | 2139 | 27.60 |
| MILLET | 16 | | 3 | 2 | 3 | 30 | 3 | 10 | 6 | 4 | 2 | 14.07 |
| SORGHUM | 3 | | 9 | 3 | 5 | 4 | 77 | 197 | 186 | 350 | 100 | 99.60 |
| POTATOES | 108 | 104 | 145 | 122 | 113 | 165 | 155 | 150 | 250 | 223 | 216 | 8.83 |
| SUGAR,TOTAL (RAW EQUIV. | 1317 | 1081 | 1309 | 1214 | 1680 | 1774 | 2084 | 1757 | 2217 | 3057 | 2743 | 11.27 |
| PULSES | 90 | 103 | 89 | 151 | 109 | 127 | 241 | 233 | 193 | 185 | 233 | 10.59 |
| SOYBEANS | | 9 | 7 | 14 | 28 | 62 | 28 | 29 | 63 | 136 | 171 | 39.64 |
| SOYBEAN OIL | 78 | 146 | 188 | 181 | 108 | 232 | 270 | 335 | 232 | 374 | 365 | 11.43 |
| GROUNDNUTS SHELLED BASIS | 24 | 8 | 15 | 9 | 7 | 8 | 10 | 9 | 17 | 16 | 16 | 7.40 |
| GROUNDNUT OIL | 5 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | - 6.94 |
| COPRA | 4 | | | 1 | | | 8 | 7 | | | | -76.13 |
| COCONUT OIL | 5 | 9 | 9 | 8 | 5 | 8 | 22 | 31 | 8 | 11 | 10 | 5.74 |
| PALM NUTS KERNELS | | | | | | | 1 | | | | | -94.25 |
| PALM OIL | 36 | 102 | 85 | 91 | 89 | 78 | 137 | 73 | 146 | 131 | 146 | 5.35 |
| OILSEED CAKE AND MEAL | 30 | 82 | 116 | 136 | 88 | 117 | 100 | 232 | 359 | 451 | 360 | 20.30 |
| BANANAS | 36 | 66 | 83 | 112 | 135 | 177 | 254 | 306 | 253 | 321 | 334 | 20.67 |
| ORANGES+TANGER+CLEMEN | 81 | 195 | 219 | 229 | 284 | 403 | 496 | 586 | 457 | 422 | 492 | 12.06 |
| LEMONS AND LIMES | 16 | 25 | 27 | 13 | 14 | 27 | 24 | 49 | 47 | 38 | 61 | 13.25 |
| COFFEE GREEN+ROASTED | 39 | 48 | 55 | 59 | 54 | 56 | 49 | 48 | 52 | 47 | 45 | - 1.60 |
| COCOA BEANS | 3 | 3 | 3 | 3 | 2 | 2 | 4 | 4 | 2 | 3 | 1 | - 5.08 |
| TEA | 88 | 129 | 105 | 122 | 113 | 143 | 130 | 157 | 157 | 196 | 199 | 6.51 |
| COTTON LINT | 12 | 6 | 8 | 8 | 12 | 12 | 26 | 8 | 38 | 21 | 57 | 22.56 |
| JUTE AND SIMILAR FIBRES | 27 | 30 | 20 | 18 | 27 | 31 | 31 | 40 | 31 | 29 | 45 | 6.12 |
| TOBACCO UNMANUFACTURED | 21 | 24 | 25 | 28 | 29 | 32 | 44 | 44 | 44 | 51 | 52 | 10.04 |
| NATURAL RUBBER | 20 | 41 | 51 | 52 | 49 | 57 | 51 | 50 | 49 | 51 | 36 | - .92 |
| WOOL GREASY | 12 | 21 | 18 | 29 | 20 | 23 | 26 | 27 | 32 | 18 | 16 | - .42 |
| BOVINE CATTLE 1/ | 210 | 177 | 167 | 187 | 156 | 152 | 161 | 159 | 240 | 353 | 374 | 8.43 |
| SHEEP AND GOATS 1/ | 2739 | 3810 | 4135 | 5072 | 4455 | 4126 | 5074 | 5483 | 8149 | 9636 | 9186 | 10.88 |
| PIGS 1/ | | 1 | | | 1 | | 2 | | | | | -90.66 |
| TOTAL MEAT | 22 | 68 | 65 | 76 | 90 | 139 | 246 | 327 | 461 | 518 | 628 | 33.83 |
| TOTAL EGGS IN SHELL | 9 | 37 | 46 | 54 | 43 | 54 | 75 | 74 | 84 | 64 | 57 | 6.44 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 8 | 20 | 22 | 22 | 23 | 30 | 41 | 60 | 53 | 72 | 64 | 17.49 |
| FISH CURED | 4 | 3 | 3 | 5 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 1.67 |
| SHELLFISH | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7.47 |
| FISH CANNED AND PREPARED | 10 | 15 | 14 | 16 | 23 | 27 | 34 | 44 | 42 | 55 | 54 | 18.63 |
| FISH BODY AND LIVER OIL | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 1 | 2.78 |
| FISH MEAL | 1 | 5 | 7 | 13 | 12 | 28 | 27 | 51 | 42 | 75 | 63 | 34.77 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 30 | 120 | 76 | 154 | 152 | 88 | 206 | 146 | 165 | 145 | 151 | 4.73 |
| SAWLOGS NONCONIFEROUS | 60 | 32 | 65 | 43 | 47 | 50 | 86 | 108 | 100 | 82 | 71 | 10.28 |
| PULPWOOD+PARTICLE | 41 | 41 | 17 | | 29 | 26 | 8 | 9 | 14 | 36 | 36 | 12.01 |
| FUELWOOD | 200 | 322 | 213 | 154 | 344 | 172 | 172 | 173 | 112 | 120 | 127 | - 9.75 |
| SAWNWOOD CONIFEROUS | 916 | 1219 | 1201 | 1638 | 1589 | 1685 | 1634 | 2071 | 2877 | 2331 | 2371 | 8.99 |
| SAWNWOOD NONCONIFEROUS | 83 | 96 | 114 | 103 | 80 | 351 | 381 | 434 | 649 | 691 | 553 | 29.52 |
| WOOD-BASED PANELS | 70 | 123 | 135 | 233 | 331 | 419 | 465 | 557 | 631 | 697 | 702 | 22.74 |
| PULP FOR PAPER | 40 | 60 | 96 | 63 | 70 | 64 | 136 | 162 | 123 | 116 | 98 | 7.74 |
| PAPER AND PAPERBOARD | 282 | 468 | 614 | 531 | 480 | 513 | 640 | 552 | 667 | 709 | 650 | 3.53 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ...THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| FAR EAST DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 7927 | 8662 | 7139 | 6684 | 10943 | 11517 | 14846 | 13527 | 7508 | 8010 | 9000 | 1.60 |
| RICE MILLED | 4166 | 4459 | 4121 | 4411 | 4596 | 3042 | 3007 | 3672 | 3919 | 3490 | 3435 | - 2.86 |
| BARLEY | 152 | 32 | 77 | 349 | 494 | 497 | 539 | 8 | 327 | 106 | 106 | .22 |
| MAIZE | 441 | 740 | 940 | 1174 | 1337 | 1250 | 1428 | 1971 | 2662 | 3345 | 4223 | 19.91 |
| SORGHUM | 12 | 33 | 2 | | 1188 | 727 | 204 | 398 | 21 | 11 | 140 | 33.71 |
| POTATOES | 134 | 91 | 95 | 90 | 96 | 100 | 93 | 100 | 107 | 115 | 134 | 3.57 |
| SUGAR,TOTAL (RAW EQUIV.) | 903 | 1338 | 1388 | 1122 | 1451 | 1097 | 1123 | 1119 | 1434 | 1888 | 1974 | 3.78 |
| PULSES | 167 | 168 | 144 | 191 | 127 | 100 | 98 | 90 | 91 | 158 | 197 | - 1.60 |
| SOYBEANS | 67 | 136 | 149 | 146 | 168 | 135 | 153 | 433 | 370 | 487 | 727 | 20.67 |
| SOYBEAN OIL | 100 | 252 | 269 | 184 | 178 | 184 | 87 | 194 | 527 | 585 | 850 | 13.67 |
| GROUNDNUTS SHELLED BASIS | 44 | 24 | 20 | 23 | 22 | 24 | 18 | 43 | 23 | 28 | 35 | 4.84 |
| GROUNDNUT OIL | 38 | 24 | 25 | 25 | 27 | 24 | 23 | 48 | 44 | 61 | 31 | 8.41 |
| COPRA | 178 | 44 | 64 | 79 | 34 | 19 | 55 | 96 | 99 | 164 | 81 | 11.13 |
| COCONUT OIL | 34 | 36 | 41 | 36 | 58 | 41 | 34 | 52 | 74 | 164 | 103 | 14.58 |
| PALM NUTS KERNELS | 13 | 12 | 8 | 20 | 19 | 4 | 4 | 5 | 5 | 5 | 3 | -15.75 |
| PALM OIL | 75 | 150 | 224 | 240 | 315 | 358 | 277 | 324 | 691 | 613 | 853 | 18.34 |
| OILSEED CAKE AND MEAL | 100 | 187 | 200 | 233 | 151 | 272 | 334 | 439 | 621 | 705 | 836 | 20.40 |
| BANANAS | 40 | 53 | 45 | 46 | 55 | 50 | 56 | 45 | 48 | 57 | 69 | 2.30 |
| ORANGES+TANGER+CLEMEN | 83 | 151 | 158 | 179 | 193 | 170 | 208 | 199 | 214 | 220 | 200 | 3.74 |
| LEMONS AND LIMES | | | | | | | | | | 4 | 6 | 48.59 |
| COFFEE GREEN+ROASTED | 60 | 50 | 37 | 25 | 45 | 34 | 31 | 42 | 32 | 21 | 29 | - 4.74 |
| COCOA BEANS | 5 | 6 | 8 | 12 | 11 | 9 | 9 | 9 | 8 | 12 | 17 | 5.97 |
| TEA | 32 | 44 | 49 | 49 | 54 | 52 | 64 | 70 | 81 | 77 | 85 | 7.85 |
| COTTON LINT | 428 | 569 | 600 | 538 | 672 | 577 | 736 | 792 | 845 | 859 | 823 | 5.50 |
| JUTE AND SIMILAR FIBRES | 94 | 46 | 146 | 96 | 112 | 71 | 80 | 123 | 67 | 107 | 109 | 2.49 |
| TOBACCO UNMANUFACTURED | 38 | 65 | 59 | 60 | 51 | 74 | 55 | 61 | 71 | 64 | 70 | 1.40 |
| NATURAL RUBBER | 112 | 89 | 91 | 92 | 114 | 125 | 123 | 140 | 160 | 193 | 230 | 10.93 |
| WOOL GREASY | 7 | 24 | 20 | 21 | 14 | 16 | 26 | 27 | 32 | 30 | 39 | 7.30 |
| BOVINE CATTLE 1/ | 207 | 295 | 274 | 328 | 303 | 286 | 286 | 282 | 299 | 329 | 335 | 1.04 |
| SHEEP AND GOATS 1/ | 307 | 321 | 334 | 352 | 244 | 224 | 253 | 296 | 273 | 254 | 236 | - 3.15 |
| PIGS 1/ | 1500 | 1882 | 2447 | 2680 | 2700 | 2629 | 2796 | 3004 | 3023 | 3122 | 3144 | 4.53 |
| TOTAL MEAT | 47 | 97 | 97 | 100 | 109 | 125 | 149 | 173 | 212 | 276 | 291 | 14.56 |
| MILK DRY | 25 | 54 | 55 | 49 | 52 | 57 | 56 | 76 | 78 | 90 | 86 | 7.00 |
| TOTAL EGGS IN SHELL | 47 | 51 | 55 | 52 | 56 | 54 | 58 | 57 | 64 | 68 | 76 | 3.91 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | 92 | 117 | 119 | 121 | 140 | 132 | 148 | 156 | 162 | 189 | 219 | 6.72 |
| FISH CURED | 59 | 56 | 52 | 55 | 42 | 32 | 32 | 21 | 19 | 22 | 21 | -12.65 |
| SHELLFISH | 36 | 38 | 48 | 61 | 68 | 80 | 69 | 89 | 95 | 103 | 110 | 11.27 |
| FISH CANNED AND PREPARED | 69 | 86 | 94 | 86 | 91 | 97 | 114 | 112 | 83 | 83 | 76 | - .76 |
| SHELLFISH CANNED+PREPAR | 18 | 20 | 15 | 18 | 17 | 15 | 14 | 16 | 15 | 14 | 9 | - 5.19 |
| FISH BODY AND LIVER OIL | 2 | 10 | 8 | 5 | 6 | 2 | 2 | 7 | 3 | 4 | 4 | - 9.06 |
| FISH MEAL | 45 | 78 | 78 | 86 | 53 | 60 | 99 | 84 | 90 | 95 | 114 | 4.28 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 124 | 293 | 435 | 373 | 827 | 773 | 460 | 758 | 1202 | 2426 | 2118 | 23.57 |
| SAWLOGS NONCONIFEROUS | 1288 | 5156 | 5736 | 5854 | 5981 | 5132 | 5758 | 6911 | 7851 | 8401 | 8611 | 5.80 |
| FUELWOOD | 808 | 432 | 429 | 421 | 407 | 450 | 473 | 462 | 546 | 489 | 561 | 3.07 |
| SAWNWOOD CONIFEROUS | 24 | 13 | 36 | 38 | 41 | 65 | 179 | 220 | 228 | 235 | 242 | 39.36 |
| SAWNWOOD NONCONIFEROUS | 195 | 469 | 480 | 662 | 1207 | 1108 | 981 | 1464 | 1741 | 1843 | 2292 | 19.21 |
| WOOD-BASED PANELS | 135 | 184 | 233 | 262 | 347 | 339 | 392 | 471 | 495 | 574 | 615 | 13.86 |
| PULP FOR PAPER | 203 | 315 | 341 | 502 | 470 | 470 | 287 | 428 | 554 | 695 | 754 | 7.90 |
| PAPER AND PAPERBOARD | 634 | 1211 | 1361 | 1271 | 1418 | 1312 | 1126 | 1461 | 1498 | 1813 | 1948 | 4.36 |
| ASIAN CENT PLANNED ECON | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | | | | | | | | | | | | |
| WHEAT+FLOUR,WHEAT EQUIV. | 5326 | 6909 | 4934 | 6564 | 7710 | 7956 | 5146 | 3776 | 9288 | 10313 | 10938 | 5.26 |
| RICE MILLED | 340 | 1274 | 719 | 948 | 963 | 1241 | 737 | 784 | 214 | 45 | 353 | -21.29 |
| BARLEY | 451 | 244 | 327 | 452 | 279 | 321 | 174 | 333 | 265 | 336 | 699 | 4.27 |
| MAIZE | 288 | 731 | 732 | 2090 | 3079 | 2797 | 1679 | 1950 | 2092 | 3598 | 5134 | 17.64 |
| MILLET | 11 | | | | | | | | | | | |
| SORGHUM | 5 | 4 | 29 | 5 | 41 | 73 | 152 | 255 | 394 | 473 | 517 | 72.82 |
| POTATOES | 2 | | | | | | | | | | | -98.31 |
| SUGAR,TOTAL (RAW EQUIV.) | 881 | 1152 | 1127 | 1184 | 1281 | 678 | 712 | 1002 | 1974 | 1726 | 1302 | 3.67 |
| PULSES | 19 | 29 | 25 | 40 | 40 | 32 | 33 | 39 | 49 | 68 | 77 | 10.65 |
| SOYBEANS | 148 | 513 | 525 | 712 | 799 | 1181 | 854 | 829 | 985 | 1094 | 1677 | 9.88 |
| SOYBEAN OIL | 4 | 21 | 32 | 44 | 123 | 34 | 52 | 47 | 179 | 167 | 156 | 23.04 |
| GROUNDNUTS SHELLED BASIS | 3 | | 5 | 5 | 4 | 4 | | | | 2 | | - .52 |
| GROUNDNUT OIL | 1 | | | | | | | | | | | -91.40 |
| COPRA | 14 | 4 | 4 | 4 | 4 | 4 | | | | | | -92.77 |
| COCONUT OIL | 17 | 22 | 30 | 38 | 20 | 20 | 44 | 33 | 18 | 20 | 27 | - 1.67 |
| OILSEED CAKE AND MEAL | | 2 | 3 | 5 | 6 | 5 | 1 | 29 | 40 | 55 | 50 | 47.99 |

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 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ..... | ..... | ..... | ..... | ....THOUSAND METRIC TONS... | ..... | ..... | ..... | ..... | ..... | ..... | PERCENT |
| BANANAS | | | | | 15 | 4 | 10 | 15 | | | | .56 |
| COFFEE GREEN+ROASTED | 1 | | | | | | | | | 1 | | 9.18 |
| COCOA BEANS | 5 | 1 | 1 | 2 | 8 | 6 | 8 | 7 | 7 | 8 | 10 | 31.36 |
| TEA | 6 | 4 | 4 | 4 | 6 | 7 | 6 | 5 | 5 | 6 | 5 | 3.79 |
| COTTON LINT | 544 | 267 | 305 | 327 | 676 | 616 | 386 | 437 | 376 | 656 | 792 | 8.91 |
| JUTE AND SIMILAR FIBRES | 40 | 52 | 63 | 27 | 97 | 14 | 12 | 20 | 26 | 42 | 47 | - 5.19 |
| TOBACCO UNMANUFACTURED | 6 | 13 | 15 | 24 | 20 | 23 | 11 | 13 | 15 | 23 | 26 | 3.11 |
| NATURAL RUBBER | 128 | 210 | 194 | 219 | 301 | 235 | 274 | 271 | 295 | 277 | 311 | 4.55 |
| WOOL GREASY | 13 | 20 | 20 | 25 | 23 | 18 | 17 | 21 | 20 | 25 | 44 | 4.42 |
| BOVINE CATTLE 1/ | 1 | | | 1 | 1 | 4 | 8 | 1 | | | | -96.49 |
| SHEEP AND GOATS 1/ | | 4 | 4 | 4 | 5 | 6 | 6 | | | | | -98.39 |
| PIGS 1/ | | | | 1 | 1 | 3 | | 2 | 1 | 4 | 4 | 35.47 |
| TOTAL MEAT | 1 | | 1 | 2 | 2 | 2 | 29 | 10 | 4 | 11 | 18 | 57.06 |
| FISHERY PRODUCTS | | | | | | | | | | | | |
| FISH FRESH FROZEN | | 1 | 1 | | 1 | 8 | 4 | 4 | 6 | 6 | | 17.26 |
| SHELLFISH | 1 | 1 | 1 | 1 | | 3 | 4 | 4 | 4 | 4 | 4 | 26.71 |
| FISH CANNED AND PREPARED | | 3 | 3 | 11 | 3 | 4 | 2 | 4 | 4 | 3 | 3 | - 1.96 |
| FISH MEAL | 2 | 35 | 45 | 48 | 33 | 40 | 95 | 129 | 124 | 136 | 147 | 20.22 |
| FOREST PRODUCTS 2/ | | | | | | | | | | | | |
| SAWLOGS CONIFEROUS | 561 | 2 | 2 | 122 | 492 | 610 | 196 | 200 | 200 | 200 | 200 | 59.44 |
| SAWLOGS NONCONIFEROUS | 484 | 1564 | 2252 | 4000 | 3990 | 3801 | 3887 | 4183 | 5977 | 7224 | 7224 | 15.73 |
| PULPWOOD+PARTICLE | | 7 | 7 | 7 | 7 | 7 | 88 | 199 | 199 | 199 | 199 | 64.92 |
| SAWNWOOD CONIFEROUS | | 1 | 16 | 2 | | | 21 | 29 | 29 | 29 | 29 | 47.46 |
| SAWNWOOD NONCONIFEROUS | 2 | 10 | 10 | 8 | 9 | 27 | 23 | 30 | 38 | 56 | 56 | 26.78 |
| WOOD-BASED PANELS | 4 | 1 | 2 | 5 | 1 | 1 | 3 | 12 | 13 | 24 | 24 | 40.25 |
| PULP FOR PAPER | 107 | 99 | 224 | 56 | 57 | 66 | 32 | 50 | 50 | 50 | 50 | -10.56 |
| PAPER AND PAPERBOARD | 57 | 157 | 227 | 105 | 60 | 82 | 67 | 87 | 87 | 87 | 87 | - 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 7. INDICES OF VALUE OF EXPORTS OF AGRICULTURAL, FISHERY AND FOREST PRODUCTS

| | 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1969-71=100 | | | | | | PERCENT |
| WORLD | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 75 | 101 | 108 | 128 | 189 | 236 | 245 | 257 | 294 | 326 | 378 | 16.17 |
| FOOD | 70 | 100 | 111 | 131 | 195 | 256 | 276 | 269 | 291 | 336 | 393 | 16.43 |
| FEED | 58 | 102 | 113 | 131 | 281 | 261 | 220 | 317 | 400 | 418 | 490 | 19.25 |
| RAW MATERIALS | 101 | 100 | 100 | 116 | 169 | 199 | 167 | 195 | 227 | 239 | 272 | 12.01 |
| BEVERAGES | 75 | 108 | 103 | 125 | 165 | 167 | 175 | 270 | 388 | 373 | 420 | 18.80 |
| FISHERY PRODUCTS | 55 | 101 | 115 | 139 | 187 | 202 | 215 | 268 | 321 | 382 | 416 | 17.40 |
| FOREST PRODUCTS | 57 | 102 | 106 | 125 | 181 | 237 | 211 | 253 | 272 | 303 | 371 | 15.48 |
| DEVELOPED COUNTRIES | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 71 | 100 | 112 | 134 | 207 | 254 | 268 | 272 | 297 | 347 | 414 | 16.75 |
| FOOD | 67 | 100 | 114 | 136 | 209 | 260 | 286 | 283 | 299 | 355 | 424 | 16.99 |
| FEED | 46 | 100 | 116 | 130 | 291 | 295 | 207 | 274 | 320 | 394 | 462 | 17.28 |
| RAW MATERIALS | 108 | 101 | 100 | 116 | 179 | 221 | 181 | 203 | 257 | 265 | 307 | 13.56 |
| BEVERAGES | 51 | 98 | 118 | 159 | 219 | 229 | 252 | 289 | 373 | 423 | 542 | 19.59 |
| FISHERY PRODUCTS | 60 | 100 | 113 | 139 | 193 | 206 | 205 | 253 | 296 | 359 | 409 | 16.61 |
| FOREST PRODUCTS | 58 | 103 | 106 | 124 | 174 | 236 | 213 | 251 | 270 | 301 | 362 | 15.31 |
| WESTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 57 | 99 | 114 | 143 | 203 | 239 | 274 | 281 | 316 | 387 | 467 | 18.20 |
| FOOD | 54 | 98 | 115 | 141 | 199 | 238 | 279 | 281 | 313 | 384 | 459 | 18.15 |
| FEED | 53 | 100 | 120 | 153 | 370 | 380 | 268 | 341 | 420 | 504 | 631 | 20.73 |
| RAW MATERIALS | 117 | 103 | 98 | 123 | 176 | 219 | 203 | 236 | 233 | 298 | 352 | 14.85 |
| BEVERAGES | 50 | 98 | 121 | 165 | 230 | 231 | 257 | 294 | 362 | 440 | 565 | 19.63 |
| FISHERY PRODUCTS | 59 | 100 | 116 | 142 | 202 | 222 | 220 | 273 | 324 | 369 | 429 | 17.23 |
| FOREST PRODUCTS | 61 | 103 | 107 | 125 | 184 | 259 | 222 | 263 | 279 | 321 | 411 | 16.41 |
| USSR AND EASTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 72 | 94 | 105 | 114 | 150 | 193 | 190 | 186 | 225 | 214 | 255 | 11.52 |
| FOOD | 70 | 93 | 105 | 109 | 149 | 194 | 183 | 172 | 204 | 195 | 240 | 10.43 |
| FEED | 154 | 49 | 73 | 59 | 95 | 115 | 115 | 264 | 263 | 229 | 203 | 20.91 |
| RAW MATERIALS | 89 | 100 | 106 | 128 | 151 | 192 | 210 | 229 | 298 | 273 | 287 | 14.04 |
| BEVERAGES | 44 | 95 | 111 | 135 | 159 | 187 | 224 | 218 | 257 | 269 | 345 | 14.37 |
| FISHERY PRODUCTS | 50 | 103 | 106 | 119 | 151 | 189 | 240 | 244 | 233 | 269 | 333 | 14.34 |
| FOREST PRODUCTS | 60 | 103 | 106 | 118 | 165 | 222 | 224 | 239 | 268 | 275 | 300 | 13.93 |
| NORTH AMERICA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 84 | 103 | 115 | 134 | 250 | 318 | 315 | 323 | 329 | 400 | 470 | 18.23 |
| FOOD | 83 | 105 | 115 | 138 | 265 | 337 | 351 | 352 | 339 | 419 | 495 | 18.78 |
| FEED | 38 | 102 | 117 | 123 | 271 | 270 | 185 | 254 | 282 | 363 | 413 | 15.72 |
| RAW MATERIALS | 103 | 96 | 115 | 122 | 173 | 242 | 195 | 207 | 273 | 312 | 354 | 15.01 |
| BEVERAGES | 93 | 109 | 99 | 130 | 265 | 376 | 285 | 515 | 1168 | 786 | 990 | 33.00 |
| FISHERY PRODUCTS | 54 | 98 | 111 | 131 | 206 | 182 | 196 | 257 | 335 | 496 | 577 | 21.30 |
| FOREST PRODUCTS | 55 | 103 | 104 | 124 | 165 | 211 | 197 | 241 | 260 | 287 | 326 | 14.43 |
| OCEANIA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 88 | 103 | 104 | 127 | 187 | 223 | 218 | 226 | 253 | 246 | 297 | 12.58 |
| FOOD | 73 | 101 | 116 | 145 | 179 | 223 | 259 | 254 | 262 | 271 | 322 | 13.25 |
| FEED | 61 | 121 | 92 | 112 | 235 | 274 | 205 | 219 | 499 | 476 | 505 | 20.91 |
| RAW MATERIALS | 115 | 107 | 83 | 96 | 201 | 221 | 142 | 174 | 234 | 198 | 250 | 11.06 |
| BEVERAGES | 83 | 92 | 115 | 147 | 151 | 204 | 228 | 234 | 222 | 239 | 258 | 11.45 |
| FISHERY PRODUCTS | 29 | 89 | 124 | 160 | 185 | 176 | 184 | 208 | 284 | 324 | 327 | 14.06 |
| FOREST PRODUCTS | 41 | 98 | 118 | 145 | 227 | 294 | 272 | 303 | 363 | 394 | 559 | 19.57 |

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

| | 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1969-71= 100 | | | | | | PERCENT |
| **DEVELOPING COUNTRIES** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 82 | 103 | 102 | 118 | 162 | 209 | 210 | 235 | 289 | 294 | 323 | 15.16 |
| FOOD | 76 | 101 | 104 | 119 | 164 | 247 | 254 | 236 | 272 | 294 | 326 | 15.01 |
| FEED | 75 | 106 | 108 | 133 | 267 | 213 | 238 | 377 | 514 | 463 | 529 | 21.70 |
| RAW MATERIALS | 94 | 100 | 101 | 116 | 160 | 177 | 154 | 186 | 196 | 213 | 236 | 10.11 |
| BEVERAGES | 83 | 111 | 98 | 114 | 146 | 145 | 149 | 263 | 393 | 356 | 378 | 18.62 |
| FISHERY PRODUCTS | 44 | 104 | 119 | 139 | 176 | 194 | 237 | 301 | 377 | 434 | 433 | 18.99 |
| FOREST PRODUCTS | 45 | 98 | 110 | 134 | 236 | 242 | 192 | 266 | 291 | 321 | 443 | 16.42 |
| **AFRICA DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 83 | 107 | 97 | 112 | 145 | 185 | 170 | 207 | 274 | 267 | 272 | 13.53 |
| FOOD | 82 | 105 | 96 | 110 | 135 | 194 | 181 | 185 | 227 | 261 | 242 | 12.21 |
| FEED | 72 | 112 | 88 | 126 | 179 | 147 | 132 | 174 | 215 | 132 | 197 | 6.61 |
| RAW MATERIALS | 106 | 104 | 105 | 112 | 153 | 191 | 148 | 180 | 184 | 182 | 223 | 8.48 |
| BEVERAGES | 72 | 112 | 96 | 115 | 158 | 157 | 161 | 268 | 414 | 329 | 359 | 17.82 |
| FISHERY PRODUCTS | 67 | 98 | 110 | 144 | 231 | 251 | 246 | 259 | 270 | 319 | 342 | 14.38 |
| FOREST PRODUCTS | 68 | 99 | 95 | 120 | 216 | 232 | 167 | 221 | 229 | 244 | 261 | 11.73 |
| **LATIN AMERICA** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 77 | 105 | 102 | 122 | 173 | 216 | 232 | 260 | 322 | 334 | 370 | 16.91 |
| FOOD | 67 | 104 | 107 | 126 | 179 | 262 | 287 | 252 | 293 | 311 | 359 | 15.63 |
| FEED | 62 | 101 | 119 | 146 | 326 | 247 | 329 | 541 | 787 | 738 | 825 | 28.91 |
| RAW MATERIALS | 107 | 98 | 89 | 110 | 150 | 168 | 158 | 181 | 213 | 250 | 250 | 12.52 |
| BEVERAGES | 83 | 113 | 97 | 116 | 153 | 139 | 141 | 287 | 387 | 379 | 402 | 19.13 |
| FISHERY PRODUCTS | 46 | 106 | 116 | 112 | 97 | 132 | 134 | 178 | 191 | 245 | 247 | 11.09 |
| FOREST PRODUCTS | 46 | 98 | 106 | 119 | 176 | 233 | 205 | 205 | 233 | 275 | 423 | 15.32 |
| **NEAR EAST DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 73 | 99 | 107 | 123 | 163 | 179 | 160 | 195 | 204 | 212 | 213 | 9.28 |
| FOOD | 70 | 94 | 98 | 127 | 173 | 184 | 176 | 215 | 255 | 291 | 297 | 14.31 |
| FEED | 72 | 110 | 94 | 124 | 140 | 117 | 91 | 78 | 72 | 61 | 52 | - 8.41 |
| RAW MATERIALS | 75 | 101 | 114 | 120 | 158 | 178 | 154 | 189 | 176 | 168 | 165 | 5.89 |
| BEVERAGES | 55 | 111 | 101 | 133 | 179 | 182 | 121 | 159 | 232 | 226 | 264 | 9.82 |
| FISHERY PRODUCTS | 50 | 96 | 122 | 154 | 229 | 202 | 210 | 234 | 260 | 252 | 254 | 10.56 |
| FOREST PRODUCTS | 37 | 105 | 107 | 141 | 211 | 319 | 212 | 254 | 293 | 245 | 406 | 14.11 |
| **FAR EAST DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 100 | 100 | 104 | 112 | 147 | 222 | 217 | 242 | 298 | 287 | 346 | 16.11 |
| FOOD | 97 | 98 | 112 | 113 | 150 | 295 | 293 | 293 | 324 | 313 | 389 | 17.69 |
| FEED | 101 | 111 | 108 | 118 | 274 | 239 | 203 | 342 | 404 | 309 | 416 | 17.00 |
| RAW MATERIALS | 100 | 100 | 94 | 114 | 157 | 172 | 147 | 185 | 196 | 230 | 289 | 12.11 |
| BEVERAGES | 107 | 105 | 102 | 104 | 103 | 122 | 147 | 193 | 374 | 311 | 323 | 17.34 |
| FISHERY PRODUCTS | 38 | 96 | 118 | 170 | 288 | 309 | 448 | 573 | 843 | 908 | 995 | 31.97 |
| FOREST PRODUCTS | 36 | 98 | 116 | 135 | 278 | 265 | 206 | 322 | 356 | 380 | 580 | 19.47 |
| **ASIAN CENT PLANNED ECON** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 74 | 93 | 105 | 126 | 192 | 251 | 248 | 214 | 215 | 266 | 282 | 12.53 |
| FOOD | 76 | 93 | 103 | 119 | 182 | 269 | 270 | 211 | 202 | 259 | 268 | 12.25 |
| FEED | 99 | 81 | 112 | 97 | 193 | 151 | 170 | 243 | 214 | 158 | 202 | 9.78 |
| RAW MATERIALS | 69 | 90 | 108 | 153 | 242 | 195 | 180 | 223 | 241 | 264 | 304 | 12.31 |
| BEVERAGES | 75 | 95 | 116 | 138 | 155 | 192 | 184 | 219 | 306 | 385 | 412 | 17.48 |
| FISHERY PRODUCTS | 4 | 125 | 153 | 236 | 378 | 240 | 482 | 634 | 790 | 882 | 503 | 22.20 |
| FOREST PRODUCTS | 28 | 94 | 125 | 188 | 209 | 167 | 169 | 225 | 250 | 328 | 328 | 12.65 |

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

| | 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1969-71=100 | | | | | | PERCENT |
| WORLD | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 81 | 102 | 104 | 112 | 121 | 115 | 116 | 126 | 130 | 138 | 146 | 3.76 |
| FOOD | 79 | 102 | 105 | 114 | 124 | 119 | 121 | 132 | 139 | 148 | 156 | 4.60 |
| FEED | 62 | 103 | 108 | 114 | 130 | 133 | 128 | 168 | 173 | 199 | 202 | 8.30 |
| RAW MATERIALS | 94 | 101 | 100 | 107 | 112 | 99 | 97 | 103 | 103 | 109 | 109 | .50 |
| BEVERAGES | 83 | 101 | 100 | 110 | 118 | 108 | 114 | 118 | 106 | 112 | 127 | 1.66 |
| FISHERY PRODUCTS | 74 | 101 | 105 | 114 | 114 | 111 | 117 | 127 | 132 | 145 | 147 | 4.17 |
| FOREST PRODUCTS | 64 | 102 | 102 | 112 | 125 | 122 | 101 | 120 | 124 | 133 | 141 | 3.06 |
| DEVELOPED COUNTRIES | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 76 | 101 | 107 | 116 | 130 | 125 | 128 | 137 | 143 | 156 | 167 | 5.22 |
| FOOD | 74 | 102 | 107 | 117 | 131 | 126 | 131 | 140 | 146 | 161 | 172 | 5.55 |
| FEED | 51 | 101 | 112 | 112 | 137 | 143 | 116 | 145 | 136 | 186 | 190 | 6.36 |
| RAW MATERIALS | 99 | 100 | 103 | 109 | 117 | 110 | 101 | 108 | 116 | 120 | 124 | 1.83 |
| BEVERAGES | 60 | 98 | 117 | 138 | 140 | 146 | 160 | 169 | 173 | 165 | 207 | 6.84 |
| FISHERY PRODUCTS | 80 | 100 | 102 | 111 | 116 | 109 | 113 | 123 | 125 | 138 | 146 | 3.91 |
| FOREST PRODUCTS | 66 | 102 | 101 | 110 | 122 | 122 | 99 | 118 | 123 | 131 | 139 | 2.99 |
| WESTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 65 | 101 | 107 | 117 | 128 | 133 | 137 | 144 | 147 | 160 | 178 | 5.89 |
| FOOD | 63 | 101 | 106 | 114 | 126 | 131 | 135 | 141 | 146 | 159 | 175 | 5.86 |
| FEED | 59 | 101 | 115 | 137 | 173 | 189 | 156 | 179 | 176 | 232 | 263 | 9.31 |
| RAW MATERIALS | 105 | 102 | 99 | 112 | 111 | 121 | 118 | 125 | 111 | 133 | 140 | 3.20 |
| BEVERAGES | 60 | 98 | 120 | 144 | 143 | 144 | 162 | 173 | 168 | 165 | 209 | 6.57 |
| FISHERY PRODUCTS | 80 | 101 | 102 | 112 | 114 | 107 | 113 | 126 | 128 | 133 | 142 | 3.67 |
| FOREST PRODUCTS | 69 | 102 | 100 | 110 | 129 | 128 | 95 | 116 | 118 | 133 | 145 | 3.01 |
| USSR AND EASTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 74 | 93 | 100 | 96 | 100 | 109 | 103 | 99 | 111 | 99 | 105 | 1.01 |
| FOOD | 73 | 92 | 99 | 90 | 93 | 104 | 94 | 86 | 97 | 87 | 95 | - .35 |
| FEED | 191 | 53 | 70 | 54 | 64 | 83 | 86 | 144 | 133 | 123 | 105 | 10.90 |
| RAW MATERIALS | 83 | 101 | 105 | 115 | 124 | 124 | 133 | 141 | 153 | 136 | 130 | 3.68 |
| BEVERAGES | 46 | 97 | 109 | 114 | 111 | 129 | 136 | 135 | 155 | 140 | 165 | 5.42 |
| FISHERY PRODUCTS | 64 | 103 | 101 | 101 | 97 | 111 | 141 | 135 | 119 | 113 | 115 | 2.35 |
| FOREST PRODUCTS | 66 | 103 | 101 | 104 | 115 | 111 | 108 | 118 | 121 | 122 | 114 | 1.86 |
| NORTH AMERICA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 90 | 106 | 109 | 124 | 154 | 138 | 141 | 156 | 163 | 194 | 199 | 6.98 |
| FOOD | 88 | 108 | 109 | 129 | 160 | 139 | 150 | 169 | 173 | 205 | 213 | 7.70 |
| FEED | 42 | 102 | 113 | 104 | 129 | 131 | 103 | 134 | 122 | 177 | 170 | 5.23 |
| RAW MATERIALS | 139 | 97 | 110 | 111 | 132 | 133 | 107 | 103 | 122 | 143 | 142 | 2.94 |
| BEVERAGES | 105 | 105 | 95 | 120 | 216 | 258 | 211 | 252 | 374 | 317 | 394 | 17.27 |
| FISHERY PRODUCTS | 75 | 95 | 103 | 104 | 126 | 98 | 102 | 115 | 149 | 190 | 187 | 7.51 |
| FOREST PRODUCTS | 64 | 103 | 101 | 111 | 117 | 119 | 99 | 117 | 124 | 130 | 137 | 2.89 |
| OCEANIA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 80 | 102 | 106 | 115 | 113 | 93 | 97 | 115 | 127 | 125 | 126 | 2.23 |
| FOOD | 77 | 101 | 112 | 121 | 120 | 104 | 111 | 128 | 142 | 148 | 144 | 3.82 |
| FEED | 70 | 133 | 78 | 113 | 144 | 94 | 117 | 179 | 209 | 202 | 222 | 9.65 |
| RAW MATERIALS | 87 | 104 | 97 | 104 | 99 | 72 | 72 | 92 | 99 | 81 | 92 | - 1.70 |
| BEVERAGES | 97 | 91 | 108 | 124 | 111 | 128 | 133 | 136 | 120 | 117 | 121 | 2.21 |
| FISHERY PRODUCTS | 44 | 96 | 117 | 128 | 121 | 112 | 113 | 107 | 132 | 141 | 145 | 2.96 |
| FOREST PRODUCTS | 42 | 101 | 111 | 123 | 151 | 162 | 158 | 191 | 237 | 240 | 274 | 11.76 |

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

| | 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1969-71=100 | | | | | | PERCENT |
| **DEVELOPING COUNTRIES** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 88 | 102 | 100 | 107 | 110 | 101 | 102 | 113 | 113 | 115 | 117 | 1.57 |
| FOOD | 87 | 102 | 101 | 109 | 110 | 106 | 103 | 118 | 126 | 122 | 125 | 2.49 |
| FEED | 78 | 105 | 103 | 116 | 119 | 117 | 140 | 193 | 214 | 207 | 211 | 10.09 |
| RAW MATERIALS | 89 | 101 | 97 | 104 | 106 | 88 | 92 | 97 | 89 | 98 | 93 | - 1.01 |
| BEVERAGES | 88 | 100 | 97 | 105 | 112 | 100 | 104 | 107 | 90 | 101 | 110 | .17 |
| FISHERY PRODUCTS | 59 | 102 | 111 | 121 | 111 | 118 | 129 | 137 | 157 | 170 | 157 | 5.53 |
| FOREST PRODUCTS | 47 | 99 | 110 | 123 | 149 | 122 | 113 | 135 | 139 | 151 | 162 | 4.26 |
| **AFRICA DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 95 | 104 | 96 | 109 | 110 | 103 | 93 | 99 | 85 | 84 | 84 | - 2.70 |
| FOOD | 101 | 102 | 97 | 112 | 105 | 99 | 87 | 93 | 82 | 81 | 75 | - 3.62 |
| FEED | 78 | 110 | 84 | 116 | 96 | 84 | 87 | 109 | 98 | 65 | 85 | - 2.72 |
| RAW MATERIALS | 93 | 107 | 103 | 103 | 110 | 96 | 91 | 98 | 86 | 85 | 97 | - 2.12 |
| BEVERAGES | 83 | 107 | 91 | 106 | 121 | 114 | 105 | 109 | 89 | 91 | 97 | - 1.30 |
| FISHERY PRODUCTS | 75 | 99 | 108 | 127 | 155 | 152 | 137 | 141 | 131 | 141 | 145 | 3.12 |
| FOREST PRODUCTS | 75 | 99 | 95 | 103 | 121 | 103 | 79 | 91 | 89 | 89 | 94 | - 1.67 |
| **LATIN AMERICA** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 84 | 103 | 98 | 104 | 107 | 100 | 104 | 114 | 122 | 129 | 131 | 3.15 |
| FOOD | 77 | 107 | 99 | 104 | 109 | 108 | 103 | 119 | 140 | 138 | 139 | 3.94 |
| FEED | 69 | 103 | 113 | 121 | 129 | 140 | 190 | 261 | 325 | 337 | 328 | 16.67 |
| RAW MATERIALS | 100 | 100 | 84 | 90 | 87 | 77 | 89 | 79 | 85 | 105 | 91 | .17 |
| BEVERAGES | 91 | 96 | 101 | 107 | 110 | 91 | 102 | 102 | 78 | 98 | 111 | - .36 |
| FISHERY PRODUCTS | 68 | 102 | 107 | 104 | 59 | 72 | 79 | 79 | 88 | 99 | 91 | - .87 |
| FOREST PRODUCTS | 61 | 98 | 104 | 117 | 136 | 117 | 101 | 113 | 141 | 169 | 207 | 6.48 |
| **NEAR EAST DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 79 | 102 | 104 | 111 | 114 | 85 | 85 | 102 | 93 | 106 | 95 | - 1.04 |
| FOOD | 83 | 94 | 99 | 114 | 122 | 100 | 90 | 110 | 126 | 151 | 136 | 3.93 |
| FEED | 73 | 109 | 89 | 108 | 76 | 58 | 60 | 49 | 34 | 36 | 26 | -14.73 |
| RAW MATERIALS | 77 | 106 | 108 | 109 | 111 | 76 | 84 | 101 | 74 | 81 | 71 | - 4.58 |
| BEVERAGES | 51 | 102 | 116 | 126 | 138 | 101 | 53 | 63 | 76 | 66 | 81 | - 6.76 |
| FISHERY PRODUCTS | 85 | 94 | 112 | 158 | 190 | 193 | 88 | 70 | 64 | 58 | 60 | - 9.76 |
| FOREST PRODUCTS | 52 | 106 | 111 | 115 | 123 | 124 | 101 | 99 | 116 | 102 | 135 | .47 |
| **FAR EAST DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 99 | 99 | 106 | 111 | 109 | 106 | 112 | 134 | 136 | 125 | 136 | 3.52 |
| FOOD | 105 | 98 | 115 | 120 | 110 | 111 | 123 | 160 | 170 | 147 | 165 | 5.85 |
| FEED | 99 | 106 | 105 | 112 | 138 | 122 | 119 | 189 | 166 | 133 | 159 | 5.09 |
| RAW MATERIALS | 92 | 97 | 99 | 106 | 113 | 102 | 97 | 103 | 95 | 98 | 101 | - .35 |
| BEVERAGES | 94 | 102 | 97 | 96 | 97 | 97 | 108 | 112 | 111 | 112 | 115 | 2.05 |
| FISHERY PRODUCTS | 54 | 102 | 114 | 142 | 191 | 187 | 233 | 275 | 370 | 387 | 359 | 17.05 |
| FOREST PRODUCTS | 32 | 102 | 115 | 129 | 171 | 134 | 126 | 157 | 158 | 166 | 171 | 4.91 |
| **ASIAN CENT PLANNED ECON** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 77 | 95 | 101 | 112 | 127 | 116 | 111 | 110 | 105 | 115 | 116 | 1.16 |
| FOOD | 79 | 96 | 102 | 106 | 124 | 117 | 110 | 98 | 90 | 101 | 104 | - .56 |
| FEED | 84 | 84 | 109 | 80 | 96 | 71 | 78 | 109 | 89 | 73 | 87 | - .89 |
| RAW MATERIALS | 71 | 93 | 95 | 140 | 141 | 112 | 113 | 147 | 147 | 154 | 143 | 4.73 |
| BEVERAGES | 71 | 98 | 118 | 111 | 116 | 129 | 131 | 144 | 169 | 174 | 198 | 7.42 |
| FISHERY PRODUCTS | 4 | 128 | 148 | 148 | 171 | 143 | 110 | 117 | 114 | 136 | 140 | - 1.50 |
| FOREST PRODUCTS | 38 | 94 | 122 | 155 | 131 | 108 | 128 | 142 | 146 | 176 | 176 | 5.17 |

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

| | 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1969-71=100 | | | | | | PERCENT |
| WORLD | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 75 | 101 | 109 | 126 | 182 | 233 | 250 | 259 | 294 | 328 | 384 | 16.43 |
| FOOD | 69 | 100 | 111 | 130 | 187 | 254 | 285 | 274 | 293 | 342 | 403 | 16.89 |
| FEED | 57 | 102 | 115 | 132 | 265 | 248 | 212 | 284 | 361 | 371 | 442 | 17.41 |
| RAW MATERIALS | 99 | 101 | 99 | 114 | 166 | 197 | 169 | 198 | 222 | 242 | 277 | 12.23 |
| BEVERAGES | 75 | 106 | 107 | 122 | 159 | 167 | 183 | 258 | 395 | 378 | 421 | 18.97 |
| FISHERY PRODUCTS | 54 | 100 | 114 | 139 | 184 | 208 | 210 | 263 | 305 | 368 | 446 | 17.54 |
| FOREST PRODUCTS | 56 | 102 | 107 | 122 | 178 | 235 | 206 | 246 | 273 | 303 | 381 | 15.67 |
| DEVELOPED COUNTRIES | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 74 | 101 | 108 | 127 | 181 | 217 | 234 | 249 | 282 | 309 | 361 | 15.55 |
| FOOD | 67 | 100 | 112 | 132 | 186 | 234 | 267 | 264 | 277 | 318 | 377 | 15.75 |
| FEED | 57 | 102 | 114 | 132 | 269 | 246 | 209 | 279 | 346 | 352 | 424 | 16.70 |
| RAW MATERIALS | 104 | 102 | 97 | 113 | 163 | 189 | 161 | 187 | 205 | 221 | 251 | 10.92 |
| BEVERAGES | 75 | 106 | 108 | 123 | 162 | 168 | 183 | 261 | 401 | 379 | 423 | 18.98 |
| FISHERY PRODUCTS | 53 | 100 | 114 | 141 | 188 | 210 | 209 | 264 | 308 | 368 | 451 | 17.55 |
| FOREST PRODUCTS | 56 | 102 | 106 | 123 | 180 | 233 | 202 | 243 | 266 | 297 | 379 | 15.40 |
| WESTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 76 | 100 | 109 | 128 | 180 | 210 | 222 | 235 | 275 | 307 | 352 | 15.13 |
| FOOD | 69 | 98 | 113 | 133 | 183 | 222 | 247 | 240 | 268 | 312 | 359 | 15.11 |
| FEED | 61 | 101 | 113 | 127 | 248 | 219 | 188 | 260 | 315 | 334 | 406 | 16.10 |
| RAW MATERIALS | 110 | 100 | 95 | 112 | 157 | 180 | 151 | 184 | 199 | 220 | 245 | 10.93 |
| BEVERAGES | 73 | 108 | 106 | 126 | 171 | 175 | 189 | 263 | 413 | 389 | 447 | 19.35 |
| FISHERY PRODUCTS | 59 | 101 | 112 | 128 | 175 | 199 | 195 | 224 | 260 | 318 | 381 | 15.32 |
| FOREST PRODUCTS | 59 | 104 | 105 | 122 | 178 | 248 | 207 | 254 | 274 | 296 | 386 | 15.65 |
| USSR AND EASTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 79 | 106 | 109 | 133 | 195 | 235 | 324 | 350 | 352 | 384 | 483 | 19.51 |
| FOOD | 82 | 107 | 112 | 145 | 218 | 253 | 423 | 462 | 418 | 487 | 634 | 23.15 |
| FEED | 34 | 104 | 122 | 170 | 370 | 395 | 350 | 391 | 501 | 467 | 551 | 19.83 |
| RAW MATERIALS | 94 | 108 | 101 | 106 | 150 | 200 | 180 | 176 | 204 | 203 | 241 | 10.02 |
| BEVERAGES | 43 | 100 | 111 | 131 | 140 | 176 | 215 | 258 | 376 | 340 | 367 | 17.67 |
| FISHERY PRODUCTS | 66 | 101 | 122 | 117 | 150 | 204 | 207 | 231 | 233 | 232 | 241 | 10.91 |
| FOREST PRODUCTS | 49 | 102 | 110 | 116 | 145 | 200 | 265 | 239 | 249 | 263 | 270 | 13.20 |
| NORTH AMERICA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 75 | 104 | 104 | 116 | 156 | 195 | 181 | 208 | 244 | 263 | 297 | 13.19 |
| FOOD | 61 | 104 | 105 | 120 | 158 | 216 | 193 | 189 | 196 | 221 | 259 | 10.38 |
| FEED | 72 | 110 | 99 | 118 | 214 | 200 | 194 | 265 | 303 | 332 | 398 | 16.62 |
| RAW MATERIALS | 129 | 99 | 85 | 99 | 146 | 188 | 166 | 220 | 230 | 250 | 308 | 15.02 |
| BEVERAGES | 88 | 106 | 110 | 116 | 153 | 149 | 158 | 248 | 363 | 368 | 383 | 17.94 |
| FISHERY PRODUCTS | 53 | 101 | 110 | 152 | 170 | 186 | 172 | 235 | 260 | 277 | 334 | 13.44 |
| FOREST PRODUCTS | 66 | 92 | 108 | 134 | 164 | 179 | 171 | 212 | 245 | 309 | 332 | 14.71 |
| OCEANIA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 90 | 103 | 104 | 112 | 129 | 224 | 240 | 214 | 272 | 311 | 296 | 15.09 |
| FOOD | 78 | 106 | 109 | 118 | 137 | 265 | 342 | 270 | 307 | 365 | 354 | 17.34 |
| FEED | 17 | 107 | 115 | 88 | 58 | 186 | 111 | 29 | 51 | 225 | 52 | - 4.22 |
| RAW MATERIALS | 111 | 105 | 95 | 99 | 124 | 223 | 155 | 175 | 179 | 202 | 204 | 9.44 |
| BEVERAGES | 89 | 94 | 108 | 118 | 129 | 154 | 188 | 184 | 355 | 378 | 342 | 17.90 |
| FISHERY PRODUCTS | 53 | 94 | 122 | 124 | 164 | 246 | 223 | 212 | 273 | 305 | 310 | 14.10 |
| FOREST PRODUCTS | 72 | 99 | 113 | 102 | 146 | 228 | 230 | 205 | 260 | 250 | 302 | 13.78 |

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

| | 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1969-71=100 | | | | | | PERCENT |
| DEVELOPING COUNTRIES | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 75 | 100 | 110 | 121 | 186 | 300 | 316 | 298 | 345 | 410 | 479 | 19.95 |
| FOOD | 76 | 101 | 110 | 122 | 192 | 322 | 346 | 310 | 349 | 422 | 495 | 20.29 |
| FEED | 46 | 92 | 135 | 129 | 203 | 280 | 259 | 369 | 603 | 678 | 750 | 27.13 |
| RAW MATERIALS | 73 | 97 | 111 | 121 | 179 | 240 | 214 | 255 | 310 | 351 | 411 | 17.57 |
| BEVERAGES | 78 | 102 | 100 | 106 | 126 | 159 | 181 | 231 | 336 | 361 | 402 | 19.25 |
| FISHERY PRODUCTS | 62 | 102 | 115 | 125 | 155 | 193 | 222 | 257 | 285 | 367 | 407 | 17.32 |
| FOREST PRODUCTS | 51 | 101 | 113 | 116 | 163 | 251 | 232 | 269 | 326 | 348 | 400 | 17.67 |
| AFRICA DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 78 | 100 | 114 | 129 | 178 | 289 | 348 | 310 | 388 | 462 | 487 | 20.96 |
| FOOD | 78 | 99 | 117 | 131 | 186 | 307 | 371 | 319 | 389 | 477 | 501 | 21.17 |
| FEED | 31 | 101 | 124 | 118 | 148 | 220 | 219 | 258 | 499 | 554 | 688 | 24.85 |
| RAW MATERIALS | 61 | 101 | 114 | 141 | 178 | 299 | 301 | 294 | 360 | 395 | 458 | 18.86 |
| BEVERAGES | 94 | 108 | 92 | 102 | 119 | 151 | 211 | 255 | 393 | 384 | 388 | 20.58 |
| FISHERY PRODUCTS | 92 | 108 | 117 | 131 | 158 | 214 | 264 | 341 | 333 | 447 | 505 | 20.27 |
| FOREST PRODUCTS | 52 | 104 | 114 | 103 | 148 | 291 | 267 | 276 | 306 | 302 | 323 | 15.83 |
| LATIN AMERICA | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 75 | 99 | 108 | 124 | 188 | 301 | 277 | 275 | 300 | 370 | 464 | 18.49 |
| FOOD | 75 | 99 | 107 | 126 | 195 | 317 | 300 | 288 | 307 | 388 | 474 | 18.98 |
| FEED | 45 | 77 | 153 | 125 | 270 | 291 | 249 | 296 | 446 | 541 | 595 | 22.68 |
| RAW MATERIALS | 84 | 97 | 110 | 112 | 144 | 232 | 166 | 193 | 232 | 260 | 331 | 13.75 |
| BEVERAGES | 65 | 103 | 104 | 120 | 153 | 194 | 168 | 237 | 300 | 275 | 569 | 18.45 |
| FISHERY PRODUCTS | 48 | 102 | 116 | 107 | 121 | 151 | 176 | 159 | 188 | 231 | 257 | 10.81 |
| FOREST PRODUCTS | 54 | 104 | 105 | 110 | 129 | 223 | 187 | 204 | 226 | 215 | 235 | 10.96 |
| NEAR EAST DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 69 | 93 | 128 | 129 | 177 | 402 | 496 | 439 | 514 | 652 | 715 | 27.13 |
| FOOD | 67 | 92 | 134 | 130 | 184 | 444 | 552 | 471 | 532 | 680 | 773 | 27.90 |
| FEED | 28 | 98 | 147 | 148 | 183 | 329 | 241 | 514 | 869 | 1025 | 883 | 31.37 |
| RAW MATERIALS | 80 | 98 | 106 | 129 | 152 | 253 | 322 | 330 | 423 | 472 | 431 | 21.62 |
| BEVERAGES | 86 | 102 | 99 | 123 | 135 | 189 | 203 | 258 | 398 | 532 | 454 | 22.21 |
| FISHERY PRODUCTS | 58 | 103 | 121 | 140 | 198 | 356 | 395 | 550 | 704 | 1089 | 1041 | 33.31 |
| FOREST PRODUCTS | 60 | 98 | 116 | 137 | 176 | 293 | 386 | 427 | 582 | 583 | 526 | 24.83 |
| FAR EAST DEVELOPING | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 77 | 100 | 104 | 104 | 171 | 226 | 262 | 261 | 269 | 293 | 347 | 16.09 |
| FOOD | 81 | 101 | 102 | 104 | 183 | 246 | 287 | 267 | 254 | 290 | 349 | 15.82 |
| FEED | 61 | 102 | 116 | 124 | 161 | 265 | 271 | 361 | 609 | 598 | 782 | 27.60 |
| RAW MATERIALS | 69 | 97 | 111 | 111 | 139 | 176 | 197 | 250 | 312 | 306 | 339 | 16.64 |
| BEVERAGES | 60 | 97 | 104 | 72 | 93 | 99 | 128 | 172 | 234 | 207 | 239 | 13.52 |
| FISHERY PRODUCTS | 66 | 99 | 114 | 133 | 177 | 195 | 212 | 251 | 282 | 347 | 407 | 16.65 |
| FOREST PRODUCTS | 43 | 99 | 115 | 112 | 192 | 240 | 203 | 267 | 318 | 392 | 562 | 20.12 |
| ASIAN CENT PLANNED ECON | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 78 | 110 | 100 | 137 | 247 | 375 | 259 | 243 | 356 | 418 | 542 | 19.01 |
| FOOD | 78 | 116 | 96 | 138 | 232 | 388 | 277 | 233 | 375 | 407 | 525 | 13.76 |
| FEED | 11 | 92 | 93 | 154 | 174 | 193 | 446 | 776 | 1120 | 1531 | 1585 | 44.27 |
| RAW MATERIALS | 75 | 94 | 111 | 136 | 290 | 345 | 213 | 269 | 304 | 443 | 585 | 19.55 |
| BEVERAGES | 147 | 99 | 100 | 116 | 149 | 190 | 126 | 107 | 164 | 179 | 167 | 5.68 |
| FISHERY PRODUCTS | 8 | 82 | 107 | 165 | 223 | 232 | 404 | 501 | 586 | 735 | 746 | 29.52 |
| FOREST PRODUCTS | 51 | 91 | 139 | 150 | 232 | 308 | 218 | 293 | 408 | 490 | 490 | 19.45 |

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

| | 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1969-71=100 | | | | | | PERCENT |
| WORLD | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 81 | 101 | 104 | 112 | 120 | 115 | 117 | 126 | 127 | 136 | 145 | 3.66 |
| FOOD | 78 | 102 | 105 | 114 | 123 | 120 | 122 | 132 | 136 | 146 | 155 | 4.45 |
| FEED | 61 | 102 | 110 | 119 | 128 | 122 | 121 | 151 | 155 | 177 | 188 | 6.66 |
| RAW MATERIALS | 94 | 101 | 100 | 106 | 110 | 101 | 99 | 105 | 102 | 108 | 110 | .58 |
| BEVERAGES | 84 | 101 | 102 | 108 | 114 | 109 | 116 | 118 | 109 | 114 | 127 | 1.87 |
| FISHERY PRODUCTS | 72 | 100 | 105 | 116 | 116 | 118 | 120 | 129 | 132 | 144 | 155 | 4.42 |
| FOREST PRODUCTS | 62 | 102 | 102 | 112 | 125 | 123 | 100 | 118 | 124 | 133 | 141 | 3.01 |
| DEVELOPED COUNTRIES | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 81 | 101 | 104 | 113 | 119 | 111 | 114 | 124 | 120 | 125 | 133 | 2.59 |
| FOOD | 77 | 101 | 105 | 115 | 123 | 115 | 119 | 131 | 128 | 133 | 142 | 3.38 |
| FEED | 62 | 102 | 109 | 119 | 130 | 122 | 120 | 149 | 149 | 169 | 181 | 6.09 |
| RAW MATERIALS | 96 | 102 | 99 | 105 | 105 | 95 | 94 | 99 | 94 | 98 | 98 | - .71 |
| BEVERAGES | 84 | 101 | 103 | 109 | 115 | 108 | 117 | 118 | 107 | 112 | 126 | 1.61 |
| FISHERY PRODUCTS | 71 | 100 | 104 | 117 | 117 | 117 | 118 | 128 | 132 | 142 | 153 | 4.26 |
| FOREST PRODUCTS | 64 | 102 | 101 | 112 | 126 | 122 | 98 | 116 | 120 | 130 | 137 | 2.64 |
| WESTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 82 | 100 | 103 | 110 | 113 | 108 | 111 | 119 | 117 | 123 | 127 | 2.38 |
| FOOD | 79 | 99 | 105 | 112 | 114 | 112 | 115 | 122 | 122 | 127 | 131 | 2.77 |
| FEED | 66 | 101 | 108 | 114 | 122 | 110 | 109 | 140 | 138 | 163 | 175 | 5.73 |
| RAW MATERIALS | 100 | 100 | 97 | 101 | 101 | 89 | 88 | 98 | 91 | 96 | 95 | - .70 |
| BEVERAGES | 83 | 104 | 100 | 110 | 118 | 111 | 120 | 120 | 111 | 115 | 131 | 1.98 |
| FISHERY PRODUCTS | 77 | 99 | 103 | 111 | 104 | 104 | 107 | 113 | 115 | 124 | 135 | 2.79 |
| FOREST PRODUCTS | 68 | 103 | 99 | 109 | 126 | 121 | 94 | 117 | 117 | 125 | 140 | 2.62 |
| USSR AND EASTERN EUROPE | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 84 | 106 | 108 | 127 | 143 | 123 | 144 | 158 | 144 | 153 | 178 | 5.09 |
| FOOD | 92 | 106 | 112 | 142 | 174 | 130 | 163 | 195 | 170 | 187 | 227 | 7.48 |
| FEED | 36 | 103 | 119 | 152 | 165 | 192 | 200 | 209 | 209 | 214 | 230 | 8.64 |
| RAW MATERIALS | 93 | 107 | 102 | 102 | 101 | 104 | 106 | 97 | 97 | 100 | 103 | - .50 |
| BEVERAGES | 38 | 99 | 106 | 114 | 101 | 113 | 131 | 126 | 121 | 111 | 121 | 1.98 |
| FISHERY PRODUCTS | 78 | 106 | 108 | 94 | 75 | 96 | 113 | 113 | 99 | 108 | 114 | 1.41 |
| FOREST PRODUCTS | 50 | 104 | 105 | 104 | 108 | 115 | 129 | 123 | 122 | 121 | 118 | 2.10 |
| NORTH AMERICA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 86 | 101 | 102 | 109 | 113 | 107 | 103 | 115 | 111 | 117 | 120 | 1.60 |
| FOOD | 76 | 103 | 102 | 110 | 113 | 108 | 99 | 115 | 113 | 113 | 114 | 1.05 |
| FEED | 87 | 108 | 98 | 104 | 100 | 104 | 109 | 133 | 131 | 157 | 167 | 5.78 |
| RAW MATERIALS | 108 | 98 | 94 | 107 | 106 | 105 | 106 | 112 | 117 | 112 | 117 | 2.11 |
| BEVERAGES | 100 | 96 | 108 | 108 | 117 | 107 | 111 | 115 | 103 | 126 | 133 | 2.31 |
| FISHERY PRODUCTS | 75 | 104 | 98 | 122 | 118 | 117 | 103 | 120 | 119 | 120 | 122 | 1.62 |
| FOREST PRODUCTS | 74 | 95 | 105 | 121 | 123 | 112 | 94 | 113 | 121 | 139 | 136 | 2.93 |
| OCEANIA DEVELOPED | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 89 | 102 | 102 | 106 | 104 | 126 | 123 | 114 | 114 | 112 | 107 | 1.04 |
| FOOD | 88 | 104 | 103 | 106 | 109 | 138 | 150 | 124 | 132 | 131 | 123 | 2.93 |
| FEED | 20 | 108 | 115 | 88 | 40 | 83 | 63 | 18 | 25 | 110 | 30 | -11.85 |
| RAW MATERIALS | 98 | 101 | 100 | 107 | 97 | 124 | 95 | 107 | 90 | 95 | 83 | - 1.78 |
| BEVERAGES | 81 | 99 | 102 | 107 | 107 | 111 | 119 | 113 | 123 | 103 | 115 | 1.43 |
| FISHERY PRODUCTS | 70 | 94 | 111 | 101 | 96 | 124 | 116 | 117 | 139 | 131 | 133 | 3.96 |
| FOREST PRODUCTS | 82 | 102 | 104 | 100 | 118 | 146 | 128 | 107 | 129 | 113 | 127 | 2.08 |

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

| | 1961-65 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | ANNUAL RATE OF CHANGE 1970-79 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1969-71=100 | | | | | | PERCENT |
| **DEVELOPING COUNTRIES** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 81 | 102 | 105 | 108 | 124 | 132 | 130 | 138 | 159 | 182 | 195 | 7.49 |
| FOOD | 79 | 103 | 106 | 109 | 124 | 134 | 133 | 140 | 163 | 188 | 201 | 7.80 |
| FEED | 49 | 94 | 127 | 122 | 104 | 135 | 150 | 196 | 265 | 319 | 329 | 15.38 |
| RAW MATERIALS | 88 | 98 | 106 | 108 | 133 | 129 | 127 | 135 | 141 | 161 | 174 | 5.90 |
| BEVERAGES | 88 | 102 | 94 | 97 | 99 | 110 | 108 | 122 | 128 | 132 | 142 | 4.55 |
| FISHERY PRODUCTS | 77 | 99 | 107 | 110 | 104 | 112 | 124 | 127 | 123 | 141 | 148 | 4.21 |
| FOREST PRODUCTS | 55 | 101 | 109 | 110 | 116 | 126 | 115 | 126 | 145 | 154 | 162 | 5.10 |
| **AFRICA DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 82 | 101 | 110 | 112 | 116 | 129 | 129 | 135 | 173 | 196 | 194 | 7.90 |
| FOOD | 79 | 101 | 112 | 114 | 119 | 131 | 128 | 135 | 178 | 208 | 204 | 8.36 |
| FEED | 35 | 105 | 118 | 114 | 77 | 98 | 89 | 112 | 183 | 206 | 240 | 9.34 |
| RAW MATERIALS | 64 | 101 | 109 | 122 | 128 | 159 | 163 | 147 | 161 | 174 | 185 | 6.60 |
| BEVERAGES | 113 | 102 | 91 | 92 | 87 | 99 | 118 | 128 | 142 | 122 | 129 | 4.76 |
| FISHERY PRODUCTS | 98 | 107 | 109 | 126 | 137 | 157 | 152 | 191 | 186 | 222 | 240 | 9.62 |
| FOREST PRODUCTS | 57 | 105 | 112 | 92 | 108 | 139 | 118 | 116 | 133 | 128 | 135 | 3.13 |
| **LATIN AMERICA** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 79 | 100 | 104 | 110 | 123 | 145 | 129 | 138 | 156 | 187 | 202 | 7.81 |
| FOOD | 80 | 101 | 103 | 111 | 126 | 149 | 135 | 143 | 163 | 199 | 212 | 8.52 |
| FEED | 48 | 84 | 144 | 112 | 118 | 142 | 137 | 148 | 184 | 241 | 257 | 10.71 |
| RAW MATERIALS | 79 | 97 | 110 | 108 | 109 | 121 | 102 | 109 | 117 | 123 | 132 | 2.32 |
| BEVERAGES | 76 | 96 | 98 | 106 | 111 | 139 | 101 | 124 | 114 | 126 | 178 | 4.77 |
| FISHERY PRODUCTS | 59 | 98 | 106 | 94 | 78 | 80 | 98 | 83 | 84 | 93 | 97 | - .71 |
| FOREST PRODUCTS | 59 | 106 | 100 | 103 | 99 | 119 | 99 | 98 | 104 | 102 | 112 | .28 |
| **NEAR EAST DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 70 | 97 | 121 | 110 | 111 | 152 | 178 | 188 | 221 | 257 | 269 | 12.67 |
| FOOD | 70 | 95 | 125 | 109 | 113 | 157 | 187 | 196 | 234 | 274 | 289 | 13.68 |
| FEED | 31 | 99 | 142 | 138 | 108 | 154 | 123 | 253 | 385 | 507 | 439 | 19.77 |
| RAW MATERIALS | 74 | 99 | 105 | 125 | 108 | 136 | 176 | 173 | 176 | 179 | 180 | 7.87 |
| BEVERAGES | 76 | 106 | 94 | 107 | 99 | 119 | 109 | 128 | 133 | 164 | 156 | 5.70 |
| FISHERY PRODUCTS | 67 | 104 | 110 | 126 | 159 | 204 | 242 | 342 | 319 | 435 | 400 | 19.11 |
| FOREST PRODUCTS | 63 | 96 | 110 | 120 | 121 | 135 | 152 | 165 | 205 | 199 | 192 | 8.93 |
| **FAR EAST DEVELOPING** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 83 | 102 | 101 | 98 | 119 | 107 | 121 | 130 | 129 | 137 | 150 | 4.57 |
| FOOD | 88 | 103 | 100 | 99 | 122 | 109 | 121 | 129 | 123 | 132 | 148 | 4.06 |
| FEED | 62 | 99 | 111 | 123 | 97 | 130 | 164 | 212 | 279 | 313 | 353 | 16.62 |
| RAW MATERIALS | 71 | 97 | 105 | 96 | 109 | 100 | 119 | 131 | 141 | 146 | 147 | 5.41 |
| BEVERAGES | 72 | 97 | 100 | 95 | 112 | 102 | 119 | 133 | 147 | 135 | 148 | 5.45 |
| FISHERY PRODUCTS | 93 | 99 | 106 | 110 | 105 | 104 | 112 | 110 | 103 | 111 | 114 | .90 |
| FOREST PRODUCTS | 44 | 97 | 111 | 112 | 131 | 121 | 112 | 140 | 158 | 189 | 202 | 7.65 |
| **ASIAN CENT PLANNED ECON** | | | | | | | | | | | | |
| AGRICULTURAL PRODUCTS | 90 | 112 | 95 | 124 | 161 | 155 | 113 | 112 | 150 | 183 | 216 | 6.28 |
| FOOD | 74 | 118 | 91 | 126 | 148 | 149 | 107 | 101 | 155 | 177 | 209 | 5.84 |
| FEED | 13 | 96 | 91 | 130 | 57 | 65 | 174 | 191 | 226 | 326 | 317 | 17.82 |
| RAW MATERIALS | 134 | 98 | 105 | 120 | 198 | 173 | 127 | 142 | 139 | 199 | 235 | 7.40 |
| BEVERAGES | 153 | 91 | 96 | 111 | 153 | 178 | 136 | 111 | 122 | 131 | 127 | 2.71 |
| FISHERY PRODUCTS | 14 | 81 | 103 | 129 | 68 | 119 | 193 | 225 | 241 | 280 | 276 | 16.52 |
| FOREST PRODUCTS | 86 | 87 | 141 | 152 | 174 | 185 | 146 | 163 | 215 | 254 | 254 | 9.56 |

ANNEX TABLE 11. THE IMPORTANCE OF AGRICULTURE IN THE ECONOMY

| Region and country | Agricultural GDP as % total GDP 1978 | Agricultural population as % total population 1979 | Agricultural exports as % total exports 1979 | Agricultural imports as % total imports 1979 | Share of total merchandise imports financed by agricultural exports,% 1979 |
|---|---|---|---|---|---|
| AFRICA | | | | | |
| Algeria | 7 | 51 | 1 | 19 | 1 |
| Angola | ... | 58 | 22 | 19 | 32 |
| Benin | 38 | 46 | 87 | 35 | 14 |
| Burundi | 50 | 83 | 96 | 23 | 71 |
| Cameroon | 32 | 81 | 65 | 10 | 58 |
| Central African Republic | 38 | 88 | 71 | 35 | 89 |
| Chad | 52 | 84 | 89 | 16 | 76 |
| Congo | 12 | 35 | 49 | 20 | 24 |
| Ethiopia | 52 | 80 | 85 | 9 | 62 |
| Gabon | 6 | 77 | 9 | 20 | 21 |
| Gambia | 58 | 78 | 69 | 20 | 28 |
| Ghana | 38 | 51 | 69 | 12 | 52 |
| Guinea | 32 | 81 | 9 | 12 | 10 |
| Ivory Coast | 25 | 80 | 84 | 16 | 85 |
| Kenya | 31 | 78 | 63 | 8 | 38 |
| Liberia | 28 | 70 | 32 | 21 | 33 |
| Madagascar | 39 | 84 | 78 | 18 | 68 |
| Malawi | 44 | 84 | 95 | 6 | 54 |
| Mali | 38 | 87 | 76 | 16 | 52 |
| Mauritania | 25 | 83 | 36 | 31 | 20 |
| Mauritius | 24 | 29 | 76 | 28 | 51 |
| Morocco | 16 | 52 | 35 | 24 | 15 |
| Mozambique | ... | 65 | 92 | 30 | 64 |
| Niger | 43 | 88 | 28 | 21 | 14 |
| Nigeria | 34 | 54 | 6 | 12 | 5 |
| Rwanda | 44 | 90 | 90 | 9 | 74 |
| Senegal | 29 | 75 | 43 | 30 | 35 |
| Sierra Leone | 40 | 66 | 48 | 22 | 28 |
| Somalia | 17 | 80 | 81 | 47 | 36 |
| Tanzania | 46 | 82 | 75 | 6 | 32 |
| Togo | 28 | 68 | 29 | 14 | 16 |
| Tunisia | 16 | 41 | 13 | 18 | 8 |
| Uganda | 75 | 81 | 65 | 14 | 204 |
| Upper Volta | 40 | 82 | 89 | 26 | 30 |
| Zaire | 25 | 75 | 22 | 23 | 25 |
| Zambia | 16 | 67 | 1 | 13 | 1 |
| Zimbabwe | 20 | 59 | 27 | 4 | 33 |
| FAR EAST | | | | | |
| Bangladesh | 52 | 84 | 41 | 28 | 16 |
| Burma | 46 | 52 | 70 | 11 | 80 |
| India | 35 | 64 | 39 | 18 | 30 |
| Indonesia | 31 | 60 | 22 | 20 | 47 |
| Kampuchea | 41 | 74 | 41 | 6 | 8 |
| Korea Dem. Rep. | ... | 47 | ... | ... | ... |
| Korea, Rep. of | 22 | 40 | 12 | 18 | 9 |
| Lao People's Dem. Rep. | ... | 74 | 60 | 32 | 13 |
| Malaysia | 29 | 49 | 67 | 20 | 84 |
| Nepal | 62 | 93 | 66 | 17 | 30 |
| Pakistan | 29 | 54 | 35 | 26 | 16 |
| Philippines | 27 | 47 | 58 | 11 | 42 |
| Sri Lanka | 34 | 54 | 77 | 22 | 47 |
| Thailand | 27 | 76 | 73 | 10 | 55 |
| Viet Nam, Socialist Rep. of | ... | 71 | 17 | 39 | 8 |
| LATIN AMERICA | | | | | |
| Argentina | 13 | 13 | 72 | 9 | 87 |
| Bolivia | 16 | 50 | 19 | 13 | 16 |
| Brazil | 9 | 39 | 47 | 14 | 36 |
| Chile | 10 | 19 | 29 | 23 | 27 |
| Colombia | 28 | 28 | 86 | 23 | 119 |
| Costa Rica | 20 | 36 | 73 | 12 | 55 |
| Cuba | ... | 24 | 75 | 18 | 71 |
| Dominican Republic | 19 | 57 | 61 | 24 | 50 |
| Ecuador | 20 | 45 | 59 | 11 | 54 |
| El Salvador | 27 | 51 | 82 | 14 | 76 |
| Guatemala | ... | 55 | 86 | 11 | 73 |
| Guyana | 21 | 22 | 48 | 20 | 45 |
| Haiti | 41 | 67 | 57 | 39 | 34 |
| Honduras | 32 | 63 | 97 | 27 | 83 |
| Jamaica | 9 | 21 | 16 | 28 | 14 |
| Mexico | 10 | 37 | 26 | 12 | 19 |
| Nicaragua | 25 | 44 | 90 | 11 | 97 |
| Panama | 17 | 35 | 64 | 14 | 19 |
| Paraguay | 32 | 49 | 88 | 28 | 62 |
| Peru | 12 | 38 | 44 | 18 | 37 |
| Suriname | 12 | 18 | 17 | 11 | 17 |
| Trinidad and Tobago | 3 | 16 | 4 | 13 | 4 |
| Uruguay | 10 | 12 | 39 | 10 | 26 |
| Venezuela | 6 | 19 | 1 | 13 | 1 |

ANNEX TABLE 11. THE IMPORTANCE OF AGRICULTURE IN THE ECONOMY (concluded)

| Region and country | Agricultural GDP as % total GDP 1978 | Agricultural population as % total population 1979 | Agricultural exports as % total exports 1979 | Agricultural imports as % total imports 1979 | Share of total merchandise imports financed by agricultural exports, % 1979 |
|---|---|---|---|---|---|
| NEAR EAST | | | | | |
| Afghanistan | 53 | 78 | 49 | 43 | 65 |
| Cyprus | 11 | 35 | 37 | 19 | 17 |
| Egypt | 30 | 51 | 33 | 55 | 16 |
| Iran | 9 | 39 | 2 | 17 | 3 |
| Iraq | 8 | 41 | - | 31 | 1 |
| Jordan | 10 | 27 | 21 | 23 | 4 |
| Lebanon | ... | 11 | 33 | 22 | 10 |
| Libya | 2 | 17 | - | 19 | - |
| Saudi Arabia | 17 | 61 | - | 16 | - |
| Sudan | 43 | 77 | 95 | 19 | 46 |
| Syria | 20 | 48 | 18 | 16 | 9 |
| Turkey | 25 | 56 | 64 | 4 | 29 |
| Yemen Arab Republic | 44 | 75 | 66 | 20 | 1 |
| Yemen, People's Dem. Rep. of | ... | 59 | 10 | 29 | 4 |
| WESTERN EUROPE | | | | | |
| Austria | 5 | 10 | 12 | 10 | 9 |
| Belgium - Luxembourg | 2 | 3 | 11 | 15 | 10 |
| Denmark | ... | 7 | 39 | 18 | 31 |
| Finland | 8 | 14 | 45 | 11 | 44 |
| France | 5 | 9 | 17 | 16 | 15 |
| Germany Fed. Rep. of | 3 | 4 | 6 | 18 | 7 |
| Greece | 15 | 38 | 34 | 14 | 14 |
| Iceland | ... | 12 | 77 | 15 | 73 |
| Ireland | 17 | 21 | 39 | 16 | 29 |
| Italy | 8 | 12 | 9 | 22 | 8 |
| Malta | 4 | 5 | 9 | 23 | 5 |
| Netherlands | 5 | 6 | 26 | 20 | 25 |
| Norway | 5 | 8 | 15 | 11 | 15 |
| Portugal | 13 | 27 | 19 | 23 | 10 |
| Spain | 9 | 18 | 22 | 19 | 15 |
| Sweden | 4 | 5 | 18 | 10 | 17 |
| Switzerland | ... | 5 | 5 | 13 | 5 |
| United Kingdom | 2 | 2 | 8 | 21 | 8 |
| Yugoslavia | 13 | 39 | 19 | 14 | 10 |
| NORTH AMERICA | | | | | |
| Canada | 25 | 5 | 27 | 9 | 28 |
| United States | 3 | 2 | 23 | 13 | 20 |
| OCEANIA DEVELOPED | | | | | |
| Australia | 5 | 6 | 44 | 9 | 46 |
| New Zealand | 10 | 9 | 75 | 8 | 79 |
| OTHER DEVELOPED COUNTRIES | | | | | |
| Israel | 6 | 7 | 16 | 14 | 10 |
| Japan | 5 | 12 | 2 | 26 | 2 |
| South Africa | 8 | 29 | 28 | 11 | 32 |

Note: The list of 90 developing countries is the same as that used for FAO's provisional report "Agriculture: Toward 2000". This list covers 98% of the total population in 1975 of developing countries, excluding China.

ANNEX TABLE 12. RESOURCES AND THEIR USE IN AGRICULTURE

| Region and country | Arable land as % total land 1978 | Irrigated land as % arable land 1978 | Forest land as % total land 1978 | Agricultural population per ha arable land 1978 | Agricultural labour force as % agric.population 1979 | Agricultural GFCF 1/ $ per ha arable land 1978 | Agricultural GFCF 1/ $ per caput agric. labour force 1978 | Fertilizer use per ha arable land kg/ha 1978 | Nos. tractors per 00 ha arable land 1978 | Official commitments to agriculture $ per caput 1978 |
|---|---|---|---|---|---|---|---|---|---|---|
| AFRICA | | | | | | | | | | |
| Algeria | 3 | 4 | 2 | 1.2 | 22 | ... | ... | 215 | 0.7 | - |
| Angola | 1 | ... | 58 | 2.2 | 26 | ... | ... | 164 | 0.5 | 0.2 |
| Benin | 5 | 1 | 19 | 2.8 | 46 | ... | ... | 52 | - | 3.0 |
| Burundi | 50 | - | 3 | 2.8 | 48 | 0.1 2/ | 0.1 2/ | 9 | - | 1.3 |
| Cameroon | 16 | - | 64 | 0.9 | 47 | ... | ... | 52 | - | 16.1 |
| Central African Republic | 5 | ... | 12 | 0.6 | 54 | ... | ... | 5 | - | 0.9 |
| Chad | 2 | - | 13 | 1.4 | 38 | ... | ... | 36 | - | 7.2 |
| Congo | 2 | - | 4 | 0.8 | 35 | ... | ... | ... | 0.1 | 4.7 |
| Ethiopia | 12 | - | 8 | 1.8 | 41 | 2.5 3/ | 3.3 3/ | 21 | - | 1.2 |
| Gabon | 2 | ... | 78 | 0.9 | 48 | 30.1 | 67.5 | 7 | 0.3 | 9.8 |
| Gambia | 26 | 10 | 6 | 1.7 | 49 | ... | ... | 162 | - | 1.0 |
| Ghana | 12 | 1 | 11 | 2.1 | 37 | ... | ... | 70 | 0.1 | 1.1 |
| Guinea | 17 | - | 4 | 0.9 | 45 | ... | ... | 2 | - | 3.1 |
| Ivory Coast | 12 | 1 | 16 | 1.6 | 50 | ... | ... | 115 | 0.1 | 7.4 |
| Kenya | 4 | 2 | 3 | 5.2 | 38 | 2.9 | 1.4 | 225 | 0.3 | 13.7 |
| Liberia | 4 | - | 26 | 3.3 | 37 | ... | ... | 112 | 0.1 | 25.4 |
| Madagascar | 5 | 15 | 21 | 2.4 | 49 | ... | ... | 33 | 0.1 | 2.8 |
| Malawi | 24 | - | 25 | 2.2 | 45 | ... | ... | 114 | - | 10.2 |
| Mali | 2 | 5 | 4 | 2.7 | 54 | ... | ... | 83 | - | 6.6 |
| Mauritania | - | 4 | 15 | 6.6 | 31 | ... | ... | 103 | 0.1 | 9.6 |
| Mauritius | 58 | 14 | 31 | 2.6 | 35 | 236.4 3/ | 263.5 3/ | 2,701 | 0.3 | 0.6 |
| Morocco | 18 | 6 | 12 | 1.3 | 26 | ... | ... | 236 | 0.3 | 6.5 |
| Mozambique | 4 | 2 | 25 | 2.1 | 38 | ... | ... | 62 | 0.2 | 0.5 |
| Niger | 2 | 1 | 9 | 1.4 | 31 | ... | ... | 5 | - | 2.6 |
| Nigeria | 26 | - | 34 | 1.7 | 38 | ... | ... | 30 | - | 0.4 |
| Rwanda | 38 | - | 11 | 4.2 | 52 | ... | ... | 3 | - | 2.5 |
| Senegal | 12 | 5 | 28 | 1.7 | 42 | ... | ... | 132 | - | 7.7 |
| Sierra Leone | 8 | 1 | 4 | 3.9 | 38 | ... | ... | 57 | - | 0.4 |
| Somalia | 2 | 15 | 14 | 2.6 | 39 | ... | ... | 36 | 0.1 | 7.3 |
| Tanzania | 6 | 1 | 35 | 2.7 | 41 | ... | ... | 64 | 0.1 | 7.0 |
| Togo | 26 | - | 6 | 1.3 | 41 | ... | ... | 11 | - | 5.7 |
| Tunisia | 28 | 3 | 3 | 0.6 | 24 | 32.4 | 234.0 | 125 | 0.7 | 22.8 |
| Uganda | 28 | - | 14 | 1.8 | 41 | ... | ... | 1 | - | - |
| Upper Volta | 21 | - | 13 | 1.0 | 53 | ... | ... | 18 | - | 10.0 |
| Zaire | 3 | - | 53 | 3.2 | 42 | ... | ... | 15 | - | 1.3 |
| Zambia | 7 | - | 50 | 0.7 | 37 | ... | ... | 141 | 0.1 | 12.1 |
| Zimbabwe | 6 | 2 | 61 | 1.7 | 33 | 19.0 | 34.3 | 427 | 0.8 | ... |
| FAR EAST | | | | | | | | | | |
| Bangladesh | 68 | 16 | 16 | 7.7 | 34 | .. | .. | 414 | - | 2.2 |
| Burma | 15 | 10 | 49 | 1.8 | 40 | ... | ... 2/ | 85 | 0.1 | 3.6 |
| India | 57 | 21 | 22 | 2.5 | 38 | 22.8 2/ | 23.4 2/ | 267 | 0.2 | 1.2 |
| Indonesia | 9 | 32 | 67 | 5.4 | 34 | ... | ... | 449 | 0.1 | 3.7 |
| Kampuchea | 17 | 3 | 76 | 2.2 | 39 | ... | .. | ... | - | - |
| Korea, Dem. Republic of | 18 | 45 | 74 | 3.7 | 45 | ... | ... | 3,454 | 1.3 | ... |
| Korea, Republic of | 23 | 50 | 67 | 6.8 | 38 | 537.7 | 211.0 | 3,919 | 0.1 | 8.5 |
| Lao, People's Dem. Rep. of | 4 | 9 | 65 | 3.1 | 48 | ... | ... | ... | - | 7.0 |
| Malaysia | 20 | 5 | 66 | 1.0 | 35 | ... | ... | 571 | 0.1 | 9.2 |
| Nepal | 17 | 9 | 32 | 5.4 | 48 | ... | ... | 101 | - | 5.3 |
| Pakistan | 26 | 70 | 4 | 2.1 | 23 | 18.1 | 31.3 | 441 | 0.2 | 4.4 |
| Philippines | 27 | 14 | 44 | 2.8 | 35 | ... | ... | 385 | 0.2 | 13.3 |
| Sri Lanka | 33 | 25 | 37 | 3.6 | 35 | ... | ... | 625 | 0.9 | 7.8 |
| Thailand | 34 | 15 | 42 | 2.0 | 45 | 33.8 | 38.1 | 165 | 2.1 | 2.3 |
| Viet Nam, Socialist Rep. of | 18 | 25 | 38 | 6.1 | 46 | ... | ... | 773 | 0.4 | 2.2 |
| LATIN AMERICA | | | | | | | | | | |
| Argentina | 13 | 4 | 22 | 0.1 | 38 | ... | ... | 25 | 0.6 | 9.2 |
| Bolivia | 3 | 4 | 52 | 0.8 | 33 | ... | ... | 13 | - | 14.0 |
| Brazil | 5 | 3 | 60 | 1.2 | 31 | ... | ... | 791 | 0.7 | 1.9 |
| Chile | 8 | 23 | 28 | 0.4 | 32 | ... | ... | 218 | 0.4 | 1.3 |
| Colombia | 5 | 5 | 74 | 1.3 | 30 | ... | ... | 487 | 0.5 | 0.3 |
| Costa Rica | 10 | 5 | 49 | 1.6 | 33 | 68.4 2/ | 133.5 2/ | 1,630 | 1.2 | 2.5 |
| Cuba | 28 | 23 | 18 | 0.8 | 30 | ... | ... | 1,387 | 2.1 | 0.1 |
| Dominican Republic | 25 | 11 | 23 | 2.6 | 26 | ... | ... | 505 | 0.2 | 1.5 |
| Ecuador | 9 | 20 | 53 | 1.3 | 32 | ... | ... | 269 | 0.2 | 6.8 |
| El Salvador | 33 | 7 | 13 | 3.5 | 31 | ... | ... | 1,640 | 0.5 | 0.5 |
| Guatemala | 17 | 4 | 54 | 2.1 | 30 | 49.3 | 75.8 | 553 | 0.2 | 1.1 |
| Guyana | 2 | 32 | 92 | 0.5 | 32 | ... | ... | 449 | 0.9 | 167.6 |
| Haiti | 32 | 8 | 7 | 4.3 | 50 | ... | ... | 41 | - | 1.6 |
| Honduras | 16 | 4 | 63 | 1.2 | 29 | ... | ... | 133 | 0.2 | 4.9 |
| Jamaica | 24 | 12 | 45 | 1.8 | 34 | ... | ... | 897 | 1.0 | 19.0 |
| Mexico | 12 | 22 | 37 | 1.1 | 29 | ... | ... | 459 | 0.7 | 6.1 |
| Nicaragua | 13 | 5 | 53 | 0.7 | 30 | ... | ... | 321 | 0.1 | 8.0 |
| Panama | 7 | 5 | 55 | 1.2 | 34 | ... | ... | 406 | 0.7 | 19.2 |
| Paraguay | 6 | 5 | 51 | 1.2 | 32 | ... | ... | 24 | 0.3 | 16.9 |
| Peru | 3 | 34 | 58 | 2.0 | 28 | ... | ... | 374 | 0.4 | 1.3 |
| Suriname | - | 68 | 88 | 1.5 | 25 | ... | ... | 830 | 2.8 | 304.4 |
| Trinidad and Tobago | 31 | 13 | 44 | 1.2 | 37 | 63.3 3/ | 149.2 3/ | 544 | 1.4 | - |
| Uruguay | 11 | 3 | 3 | 0.2 | 39 | ... | ... | 304 | 1.5 | - |
| Venezuela | 6 | 7 | 54 | 0.5 | 30 | 75.8 | 497.3 | 367 | 0.6 | - |

ANNEX TABLE 12. RESOURCES AND THEIR USE IN AGRICULTURE (concluded)

| Region and country | Arable land as % total land 1978 | Irrigated land as % arable land 1978 | Forest land as % total land 1978 | Agricultural population per ha arable land 1978 | Agricultural labour force as % agric. population 1979 | Agricultural GFCF 1/ $ per ha arable land 1978 | Agricultural GFCF 1/ $ per caput agric. labour force 1978 | Fertilizer use per ha arable land kg/ha 1978 | Nos. tractors per 00 ha arable land 1978 | Official commitments to agriculture $ per caput 1978 |
|---|---|---|---|---|---|---|---|---|---|---|
| NEAR EAST | | | | | | | | | | |
| Afghanistan | 12 | 32 | 3 | 2.0 | 34 | ... | ... | 90 | - | 3.6 |
| Cyprus | 47 | 22 | 18 | 0.5 | 44 | 73.8 | 325.5 | 444 | 2.4 | - |
| Egypt | 3 | 100 | - | 7.2 | 28 | ... | ... | 2,048 | 0.8 | 1.6 |
| Iran | 10 | 37 | 1 | 0.9 | 29 | 62.7 3/ | 251.1 3/ | 180 | 0.3 | - |
| Iraq | 12 | 31 | 3 | 0.9 | 25 | ... | ... | 109 | 0.4 | - |
| Jordan | 14 | 6 | 1 | 0.6 | 24 | ... | ... | 59 | 0.3 | 25.2 |
| Lebanon | 34 | 24 | 7 | 1.0 | 26 | ... | ... | 905 | 0.9 | - |
| Libya | 1 | 5 | - | 2.0 | 25 | 243.7 | 4,882.0 | 144 | 0.5 | - |
| Saudi Arabia | 1 | 36 | 1 | 4.4 | 26 | ... | ... | 131 | 0.1 | - |
| Sudan | 3 | 21 | 39 | 1.8 | 31 | ... | ... | 16 | 0.1 | 4.5 |
| Syria | 30 | 9 | 2 | 0.7 | 26 | 44.8 | 249.1 | 176 | 0.4 | 12.3 |
| Turkey | 90 | 8 | 26 | 1.0 | 42 | ... | ... | 518 | 1.3 | 4.1 |
| Yemen Arab Republic | 8 | 15 | 8 | 2.7 | 28 | ... | ... | 36 | 0.1 | 2.7 |
| Yemen, People's Dem. Rep. of | 1 | 24 | 7 | 4.0 | 26 | ... | ... | 45 | 0.5 | 14.3 |
| WESTERN EUROPE | | | | | | | | | | |
| Austria | 20 | - | 39 | 0.5 | 44 | ... | ... | 2,308 | 1.9 | - |
| Belgium - Luxembourg | 27 | - | 21 | 0.4 | 39 | 549.5 | 3,626.7 | 5,296 | 12.3 | - |
| Denmark | 63 | 13 | 12 | 0.1 | 48 | ... | ... | 2,587 | 7.2 | - |
| Finland | 8 | 2 | 77 | 0.3 | 46 | 286.5 2/ | 2,071.7 2/ | 1,942 | 8.3 | - |
| France | 35 | 4 | 27 | 0.3 | 43 | 185.3 3/ | 1,549.4 3/ | 2,973 | 7.5 | - |
| Germany, Federal Rep. of | 32 | 2 | 30 | 0.3 | 47 | 284.4 | 1,649.6 | 4,286 | 18.2 | - |
| Greece | 29 | 24 | 20 | 0.9 | 42 | 104.8 | 264.2 | 1,464 | 3.1 | 5.3 |
| Iceland | - | ... | 1 | 3.6 | 43 | 9,325.0 3/ | 6,216.7 3/ | 38,425 | 153.7 | - |
| Ireland | 14 | ... | 4 | 0.7 | 38 | 121.4 | 435.0 | 6,814 | 13.2 | - |
| Italy | 42 | 23 | 22 | 0.6 | 37 | 242.6 | 1,082.8 | 1,805 | 7.7 | - |
| Malta | 44 | 7 | 3 | 1.3 | 35 | 185.7 | 433.3 | 523 | 3.0 | 13.1 |
| Netherlands | 25 | 31 | 9 | 0.9 | 38 | 2,074.9 2/ | 5,736.1 2/ | 7,433 | 19.6 | - |
| Norway | 3 | 1 | 27 | 0.4 | 38 | 1,082.7 | 6,712.3 | 3,098 | 15.0 | - |
| Portugal | 39 | 18 | 40 | 0.8 | 39 | 34.9 3/ | 118.1 3/ | 695 | 1.7 | 12.5 |
| Spain | 41 | 14 | 31 | 0.3 | 36 | ... | ... | 787 | 2.2 | - |
| Sweden | 7 | 2 | 64 | 0.2 | 39 | 281.2 | 4,131.4 | 1,746 | 6.3 | - |
| Switzerland | 10 | 6 | 26 | 0.9 | 42 | ... | ... | 4,462 | 22.0 | - |
| United Kingdom | 10 | 2 | 8 | 0.2 | 46 | 260.0 | 3,256.2 | 2,961 | 6.9 | - |
| Yugoslavia | 31 | 2 | 36 | 1.10 | 46 | ... | ... | 1,079 | 4.3 | 6.2 |
| NORTH AMERICA | | | | | | | | | | |
| Canada | 5 | 1 | 35 | 0.03 | 42 | 72.9 | 5,791.6 | 409 | 1.5 | - |
| United States | 21 | 9 | 32 | 0.03 | 45 | 72.5 | 5,963.9 | 1,061 | 2.3 | - |
| OCEANIA DEVELOPED | | | | | | | | | | |
| Australia | 6 | 3 | 14 | 0.02 | 43 | ... | ... | 277 | 0.8 | - |
| New Zealand | 2 | 40 | 26 | 0.7 | 40 | 643.3 2/ | 2,334.7 2/ | 12,850 | 21.0 | - |
| OTHER DEVELOPED COUNTRIES | | | | | | | | | | |
| Israel | 20 | 52 | 6 | 0.7 | 36 | 424.9 | 1,772.7 | 2,041 | 5.9 | 4.0 |
| Japan | 13 | 66 | 67 | 2.8 | 52 | 2,156.2 3/ | 1,374.1 3/ | 4,496 | 21.2 | - |
| South Africa | 12 | 7 | 4 | 0.5 | 37 | 45.5 | 225.5 | 627 | 1.2 | - |

1/ GFCF = Gross fixed capital formation. - 2/ 1977. - 3/ 1976.

Note: The list of 90 developing countries is the same as that used for FAO's provisional report "Agriculture: Toward 2000". This list covers 98% of the total population in 1975 of developing countries, excluding China.

ANNEX TABLE 13. MEASURES OF OUTPUT AND PRODUCTIVITY IN AGRICULTURE

| Region and country | Agricultural GDP $ per caput agric. population 1978 | Agricultural GDP growth rate 1970-77 % | Index of food production per caput 1969-71=100 1977-79 | Index of total agric. production per caput 1969-71=100 1977-79 | Per caput dietary energy supplies as % of requirements 1977 | Index of value of agric. exports 1969-71=100 1978-79 |
|---|---|---|---|---|---|---|
| AFRICA | | | | | | |
| Algeria | 644 | 0.2 | 75 | 76 | 99 | 78 |
| Angola | ... | ... | 85 | 64 | 91 | 137 |
| Benin | 324 | 0.6 | 97 | 95 | 98 | 95 |
| Burundi | 180 | 1.2 | 105 | 105 | 97 | 501 |
| Cameroon | 407 | 3.5 | 110 | 108 | 105 | 400 |
| Central African Republic | - | 2.3 | 102 | 101 | 99 | 185 |
| Chad | - | -1.3 | 91 | 91 | 74 | 253 |
| Congo | ... | ... | 81 | 81 | 103 | 223 |
| Ethiopia | 133 | 0.7 | 84 | 85 | 75 | 294 |
| Gabon | 775 | ... | 94 | 93 | 104 | 443 |
| Gambia | ... | ... | 78 | 79 | 97 | 215 |
| Ghana | 1,403 | -1.8 | 78 | 78 | 86 | 328 |
| Guinea | ... | ... | 86 | 84 | 84 | 118 |
| Ivory Coast | 623 | 4.0 | 102 | 96 | 111 | 561 |
| Kenya | 390 | 2.8 | 93 | 103 | 90 | 405 |
| Liberia | 97 | 5.6 | 101 | 95 | 104 | 307 |
| Madagascar | 236 | -0.3 | 95 | 94 | 109 | 253 |
| Malawi | - | 4.3 | 100 | 107 | 96 | 368 |
| Mali | - | 1.6 | 108 | 92 | 90 | 282 |
| Mauritania | 342 | -2.3 | 72 | 72 | 85 | 147 |
| Mauritius | 156 | -5.4 | 100 | 101 | 114 | 375 |
| Morocco | 858 | -0.6 | 83 | 83 | 105 | 185 |
| Mozambique | ... | ... | 78 | 75 | 81 | 122 |
| Niger | - | -2.1 | 89 | 88 | 91 | 60 |
| Nigeria | 768 | -1.5 | 89 | 88 | 98 | 166 |
| Rwanda | 178 | 7.0 | 108 | 108 | 98 | 840 |
| Senegal | - | 6.8 | 85 | 86 | 95 | 236 |
| Sierra Leone | 322 | 2.6 | 92 | 93 | 93 | 407 |
| Somalia | ... | -9.8 | 85 | 85 | 96 | 348 |
| Tanzania | 347 | 3.4 | 92 | 88 | 89 | 229 |
| Togo | 230 | 1.3 | 78 | 77 | 90 | 257 |
| Tunisia | 1,515 | 6.3 | 125 | 125 | 112 | 315 |
| Uganda | 513 | 1.4 | 90 | 76 | 91 | 187 |
| Upper Volta | - | -3.4 | 97 | 98 | 79 | 246 |
| Zaire | 139 | 1.7 | 90 | 89 | 104 | 312 |
| Zambia | 297 | 2.1 | 100 | 99 | 87 | 136 |
| Zimbabwe | 313 | ... | 95 | 97 | 108 | 306 |
| FAR EAST | | | | | | |
| Bangladesh | 213 | 1.0 | 93 | 93 | 86 | 97 |
| Burma | 274 | 3.1 | 96 | 97 | 102 | 159 |
| India | 251 | 1.9 | 99 | 100 | 91 | 296 |
| Indonesia | 521 | 4.1 | 104 | 102 | 98 | 438 |
| Kampuchea | - | ... | 48 | 48 | 87 | 71 |
| Korea, Dem. Republic of | ... | ... | 133 | 132 | 121 | 695 |
| Korea, Republic of | 1,860 | 4.4 | 137 | 137 | 118 | 485 |
| Lao, People's Dem. Rep. of | ... | ... | 96 | 95 | 87 | - |
| Malaysia | - | 5.4 | 112 | 108 | 117 | ... |
| Nepal | 145 | 1.3 | 91 | 91 | 91 | 107 |
| Pakistan | 494 | 1.7 | 101 | 98 | 99 | 219 |
| Philippines | 802 | 4.8 | 113 | 114 | 97 | 318 |
| Sri Lanka | 332 | 1.6 | 116 | 102 | 93 | 214 |
| Thailand | 382 | 4.8 | 126 | 121 | 87 | 433 |
| Viet Nam, Socialist Rep. of | ... | ... | 105 | 106 | 92 | 374 |
| LATIN AMERICA | | | | | | |
| Argentina | - | 2.7 | 119 | 118 | 126 | 357 |
| Bolivia | 630 | 4.1 | 110 | 112 | 89 | 601 |
| Brazil | 1,202 | 5.8 | 114 | 108 | 107 | 323 |
| Chile | 2,230 | 2.2 | 94 | 94 | 109 | 704 |
| Colombia | 2,876 | 4.7 | 120 | 117 | 100 | 462 |
| Costa Rica | 1,998 | 2.5 | 111 | 108 | 114 | 351 |
| Cuba | - | ... | 115 | 101 | 114 | 405 |
| Dominican Republic | 1,068 | 3.2 | 97 | 100 | 93 | 307 |
| Ecuador | 1,400 | 5.4 | 102 | 103 | 92 | 422 |
| El Salvador | 1,160 | 2.6 | 123 | 105 | 89 | 464 |
| Guatemala | - | 5.6 | 109 | 110 | 98 | 470 |
| Guyana | 1,516 | -1.3 | 98 | 98 | 110 | 244 |
| Haiti | 98 | 2.4 | 96 | 95 | 93 | 309 |
| Honduras | 779 | -0.1 | 83 | 89 | 89 | 383 |
| Jamaica | 1,799 | 1.2 | 98 | 98 | 119 | 167 |
| Mexico | 255 | 1.0 | 105 | 103 | 114 | 244 |
| Nicaragua | 1,554 | 5.4 | 108 | 110 | 109 | 420 |
| Panama | 1,647 | 1.9 | 102 | 102 | 101 | 159 |
| Paraguay | 1,781 | 6.1 | 110 | 115 | 122 | 516 |
| Peru | 862 | 0.7 | 88 | 94 | 97 | 215 |
| Suriname | 4,018 | 5.6 | 124 | 124 | 101 | 497 |
| Trinidad and Tobago | 1,555 | -0.1 | 90 | 89 | 111 | 163 |
| Uruguay | 3,488 | 0.2 | 94 | 93 | 114 | 192 |
| Venezuela | 3,037 | 3.5 | 99 | 98 | 103 | 262 |

ANNEX TABLE 13. MEASURES OF OUTPUT AND PRODUCTIVITY IN AGRICULTURE (concluded)

| Region and country | Agricultural GDP $ per caput agric. population 1978 | Agricultural GDP growth rate 1970-77 % | Index of food production per caput 1969-71=100 1977-79 | Index of total agric. production per caput 1969-71=100 1977-79 | Per caput dietary energy supplies as % of requirements 1977 | Index of value of agric. exports 1969-71=100 1978-79 |
|---|---|---|---|---|---|---|
| NEAR EAST | | | | | | |
| Afghanistan | 332 | 3.5 | 93 | 94 | 78 | 382 |
| Cyprus | 1,537 | -6.2 | 96 | 96 | 127 | 231 |
| Egypt | 813 | 3.6 | 95 | 91 | 108 | 104 |
| Iran | 1,308 | 5.2 | 108 | 106 | 138 | 256 |
| Iraq | - | -1.5 | 89 | 87 | 89 | 142 |
| Jordan | 697 | ... | 89 | 90 | 86 | 552 |
| Lebanon | - | ... | 87 | 84 | 101 | 305 |
| Libya | 3,167 | ... | 128 | 127 | 126 | - |
| Saudi Arabia | 515 | 3.7 | 118 | 117 | 108 | 741 |
| Sudan | - | 6.2 | 104 | 93 | 97 | 189 |
| Syria | 1,532 | 7.0 | 144 | 132 | 108 | 187 |
| Turkey | 1,212 | 3.9 | 109 | 109 | 115 | 306 |
| Yemen Arab Republic | - | 6.8 | 93 | 94 | 91 | 543 |
| Yemen, People's Dem. Rep. of | ... | ... | 105 | 102 | 81 | 113 |
| WESTERN EUROPE | | | | | | |
| Austria | 7,866 | 2.0 | 107 | 107 | 134 | 391 |
| Belgium - Luxembourg | 17,874 | - 0.5 | 106 | 106 | 136 | 466 |
| Denmark | - | ... | 107 | 106 | 127 | 342 |
| Finland | 7,938 | -2.0 | 105 | 105 | 114 | 258 |
| France | 7,882 | - 0.4 | 109 | 109 | 136 | 421 |
| Germany, Federal Rep. of | 13,125 | 1.4 | 109 | 110 | 127 | 653 |
| Greece | 3,100 | 2.2 | 118 | 118 | 136 | 313 |
| Iceland | - | ... | 116 | 115 | 110 | 516 |
| Ireland | - | ... | 122 | 121 | 141 | 453 |
| Italy | 5,327 | 0.8 | 105 | 105 | 136 | 387 |
| Malta | 4,917 | ... | 126 | 126 | 129 | 216 |
| Netherlands | 12,982 | 3.3 | 122 | 123 | 124 | 417 |
| Norway | 16,821 | 2.4 | 116 | 116 | 118 | 343 |
| Portugal | 2,041 | - 1.8 | 77 | 77 | 139 | 239 |
| Spain | 4,220 | 1.9 | 124 | 123 | 128 | 379 |
| Sweden | 16,219 | -0.5 | 115 | 115 | 120 | 249 |
| Switzerland | - | ... | 115 | 115 | 130 | 275 |
| United Kingdom | 12,763 | 0.6 | 116 | 115 | 132 | 728 |
| Yugoslavia | 1,560 | 3.3 | 116 | 116 | 136 | 195 |
| NORTH AMERICA | | | | | | |
| Canada | 14,164 | 1.3 | 109 | 108 | 127 | 301 |
| United States | 26,750 | 0.8 | 116 | 115 | 135 | 464 |
| OCEANIA DEVELOPED | | | | | | |
| Australia | 13,024 | 4.2 | 125 | 112 | 129 | 279 |
| New Zealand | 11,935 | ... | 106 | 102 | 127 | 256 |
| OTHER DEVELOPED COUNTRIES | | | | | | |
| Israel | 6,948 | ... | 112 | 115 | 122 | 308 |
| Japan | 6,388 | 3.0 | 98 | 97 | 126 | 75 |
| South Africa | 1,085 | ... | 103 | 102 | 119 | 282 |

Note: The list of 90 developing countries is the same as that used for FAO's provisional report "Agriculture: Toward 2000". This list covers 98% of the total population in 1975 of developing countries, excluding China.

ANNEX TABLE 14. CARRY-OVER STOCKS OF SELECTED AGRICULTURAL PRODUCTS

| Product / Country | Date | Crop year ending in | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 a/ | 1981 b/ |
| | | million metric tons | | | | | | | | | |
| CEREALS | | | | | | | | | | | |
| Developed countries | | 154.4 | 119.5 | 119.3 | 109.1 | 99.1 | 144.6 | 145.1 | 176.0 | 153.5 | 114.0 |
| Canada | | 22.1 | 15.8 | 16.3 | 13.7 | 12.4 | 18.3 | 19.5 | 22.0 | 14.0 | 12.0 |
| United States | | 73.8 | 48.1 | 31.3 | 27.5 | 36.6 | 61.6 | 74.1 | 72.7 | 77.2 | 46.0 |
| Australia | | 2.6 | 0.7 | 2.4 | 2.0 | 3.0 | 2.4 | 1.2 | 5.8 | 5.6 | 2.0 |
| EEC | | 13.9 | 12.9 | 14.6 | 18.8 | 13.8 | 14.1 | 13.7 | 17.4 | 15.7 | 17.0 |
| Japan | | 6.0 | 4.3 | 5.3 | 3.7 | 5.5 | 5.8 | 8.1 | 9.1 | 9.6 | 9.0 |
| U.S.S.R. | | 21.0 | 23.0 | 37.0 | 27.0 | 13.0 | 24.0 | 10.0 | 30.0 | 16.0 | 12.0 |
| Developing countries | | 56.7 | 46.4 | 60.2 | 68.7 | 86.3 | 97.3 | 92.0 | 97.9 | 96.0 | 96.0 |
| Far East | | 44.5 | 37.1 | 49.2 | 55.5 | 70.1 | 76.5 | 72.3 | 79.9 | 79.4 | 79.0 |
| Bangladesh | | 0.9 | 0.8 | 0.7 | 0.2 | 0.8 | 0.4 | 0.6 | 0.2 | 0.8 | 1.0 |
| China | | 24.9 | 23.3 | 32.3 | 35.7 | 39.3 | 43.0 | 39.0 | 46.0 | 50.0 | 48.0 |
| India | | 9.6 | 4.7 | 5.9 | 2.3 | 10.0 | 15.5 | 14.6 | 14.9 | 10.9 | 10.0 |
| Pakistan | | 0.9 | 1.3 | 1.2 | 0.9 | 1.0 | 0.6 | 0.6 | 0.7 | 1.0 | 1.0 |
| Near East | | 4.6 | 4.0 | 3.4 | 5.6 | 7.5 | 9.9 | 9.0 | 8.1 | 7.7 | 8.0 |
| Turkey | | 2.1 | 1.0 | 0.3 | 0.5 | 2.0 | 3.6 | 3.5 | 1.4 | 0.9 | 2.0 |
| Africa | | 1.7 | 2.1 | 1.8 | 2.3 | 2.3 | 2.9 | 3.3 | 3.0 | 2.3 | 2.0 |
| Latin America | | 6.0 | 3.2 | 5.8 | 5.3 | 6.4 | 8.0 | 7.4 | 6.9 | 6.6 | 7.0 |
| Argentina | | 1.4 | 0.5 | 1.8 | 1.0 | 1.9 | 2.0 | 1.2 | 1.5 | 1.0 | 1.0 |
| Brazil | | 2.2 | 0.8 | 1.3 | 1.1 | 1.2 | 2.1 | 2.1 | 0.8 | 1.5 | 2.0 |
| World Total | | 211.1 | 165.8 | 179.5 | 177.8 | 185.4 | 241.9 | 237.1 | 273.9 | 249.5 | 210.0 |
| of which: | | | | | | | | | | | |
| Wheat | | 88.1 | 67.4 | 67.4 | 77.8 | 75.3 | 113.6 | 97.3 | 117.2 | 99.7 | 87.0 |
| Rice (milled basis) | | 30.0 | 24.1 | 28.8 | 29.0 | 36.6 | 36.8 | 39.0 | 43.5 | 42.2 | 45.0 |
| Coarse grains | | 93.1 | 74.4 | 72.9 | 73.5 | 73.0 | 91.5 | 100.8 | 113.2 | 107.6 | 78.0 |
| SUGAR (raw value) | | | | | | | | | | | |
| World total | 1 Sept. | 16.9 | 16.1 | 16.0 | 17.5 | 20.5 | 24.8 | 30.3 | 31.4 | 26.0 | 23.1 |
| COFFEE | | | | | | | | | | | |
| Exporting countries c/ | | 3.26 | 2.59 | 2.88 | 2.91 | 1.58 | 1.85 | 1.92 | 1.84 | 1.80 | ... |
| | | thousand metric tons | | | | | | | | | |
| DRIED SKIM MILK | | | | | | | | | | | |
| United States | 31 Dec. | 16 | 27 | 153 | 226 | 225 | 126 | 240 | 216 | 250 | ... |
| E.E.C. | 31 Dec. | 177 | 290 | 461 | 1,201 | 1,096 | 942 | 709 | 253 | 226 | ... |
| Total of above | | 193 | 317 | 614 | 1,427 | 1,321 | 1,068 | 749 | 469 | 486 | ... |

a/ Estimate. - b/ Forecast. - c/ Excludes privately held stocks in Brazil.

ANNEX TABLE 15. ANNUAL CHANGES IN CONSUMER PRICES: ALL ITEMS AND FOOD

| Region and country | All items | | | | | | Food | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1960 to 1965 | 1965 to 1970 | 1970 to 1975 | 1976 to 1977 | 1977 to 1978 | 1978 to 1979 | 1960 to 1965 | 1965 to 1970 | 1970 to 1975 | 1976 to 1977 | 1977 to 1978 | 1978 to 1979 |
| | Percent per year | | | | | | | | | | | |
| Developed countries | | | | | | | | | | | | |
| WESTERN COUNTRIES | | | | | | | | | | | | |
| Austria | 3.9 | 3.3[a] | 7.4 | 5.5 | 3.6 | 3.6 | 4.4 | 2.1[a] | 6.7 | 6.3 | 3.6 | 2.6 |
| Belgium | 2.5 | 3.5 | 8.3 | 7.1 | 4.5 | 4.5 | 2.9 | 3.5 | 7.5 | 6.1 | 1.4 | 0.5 |
| Denmark | 5.5 | 7.5[b] | 9.5 | 11.1 | 10.0 | 9.6 | 4.2 | 7.5[b] | 10.7 | 11.6 | 9.7 | ... |
| Finland | 5.3 | 4.6 | 2.0 | 12.6 | 7.6 | 7.3 | 5.9 | 5.2 | 12.4 | 18.6 | 4.0 | 3.3 |
| France | 3.8 | 4.3 | 8.8 | 9.1 | 9.1 | 10.5 | 4.3 | 3.8 | 9.6 | 11.7 | 9.7 | 8.3 |
| Germany, Fed. Rep. of | 2.8 | 2.4 | 6.2 | 4.2 | 2.2 | 4.1 | 2.6 | 1.3 | 5.6 | 4.9 | 1.4 | 1.7 |
| Greece | 1.6 | 2.5 | 13.1 | 12.1 | 13.1 | 19.0 | 2.5 | 2.6 | 14.7 | 14.0 | 17.1 | 18.8 |
| Iceland | 11.0 | 12.8 | 24.8 | 30.0 | 44.9 | 44.1 | 15.2 | 13.3 | 28.3 | 33.8 | 43.9 | 33.0 |
| Ireland | 4.2 | 5.3 | 13.0 | 13.7 | 7.6 | 13.2 | 3.9 | 4.3 | 14.3 | 16.4 | 10.0 | 14.8 |
| Italy | 4.9 | 3.0 | 11.4 | 18.4 | 12.1 | 14.8 | 4.6 | 2.2 | 11.6 | 19.3 | 13.1 | 13.2 |
| Netherlands | 3.5 | 4.8 | 8.6 | 6.7 | 4.1 | 4.3 | 4.0 | 4.3 | 6.9 | 6.7 | ... | 2.1 |
| Norway | 4.1 | 5.0 | 8.3 | 9.1 | 8.1 | 4.8 | 4.5 | 5.3 | 8.3 | 8.3 | 5.5 | 4.3 |
| Portugal | 2.6 | 6.4 | 15.3 | 23.9 | 14.0 | 24.2 | 2.8 | 5.2 | 16.3 | 30.1 | 16.2 | 28.0 |
| Spain | 7.0 | 5.1 | 12.0 | 24.5 | 19.7 | 15.7 | 7.7 | 3.7 | 12.1 | 23.6 | 19.2 | 10.2 |
| Sweden | 3.6 | 4.5 | 7.8 | 11.4 | 10.0 | 7.2 | 5.3 | 4.5 | 7.9 | 14.6 | 9.6 | 5.3 |
| Switzerland | 3.2 | 3.4 | 7.9 | 1.3 | 1.1 | 3.6 | 2.9 | 0.9 | 7.3 | 1.4 | 4.0 | 3.7 |
| United Kingdom | 3.6 | 4.6 | 12.3 | 15.9 | 8.3 | 13.4 | 3.6 | 4.6 | 15.1 | 19.0 | 7.1 | 12.0 |
| Yugoslavia | 13.6 | 10.5 | 19.3 | 15.8 | 15.1 | 19.4 | 17.3 | 9.0 | 19.1 | 20.2 | 17.1 | 17.4 |
| NORTH AMERICA | | | | | | | | | | | | |
| Canada | 1.6 | 3.8 | 7.4 | 8.0 | 8.9 | 9.2 | 2.2 | 3.4 | 11.1 | 8.4 | 15.5 | 13.2 |
| United States | 1.3 | 4.2 | 6.7 | 6.5 | 7.6 | 11.5 | 1.4 | 4.0 | 9.5 | 6.3 | 7.3 | 10.9 |
| OCEANIA | | | | | | | | | | | | |
| Australia | 1.8 | 3.1 | 10.2 | 12.3 | 7.9 | 9.1 | 2.0 | 2.1 | 9.8 | 11.6 | 9.5 | 14.0 |
| New Zealand | 2.7 | 4.1 | 9.8 | 14.3 | 11.9 | 13.7 | 2.4 | 4.1 | 9.4 | 17.1 | 7.3 | 17.3 |
| OTHER DEVELOPED COUNTRIES | | | | | | | | | | | | |
| Israel | 7.1 | 4.0 | 23.9 | 34.6 | 50.5 | 83.4 | 5.6 | 3.1 | 25.1 | 41.9 | 46.3 | 78.3 |
| Japan | 6.0 | 5.4 | 12.0 | 2.1 | 3.8 | 3.6 | 7.2 | 6.1 | 13.0 | 6.7 | 3.5 | 2.2 |
| South Africa | 2.1 | 3.4 | 9.3 | 11.2 | 10.9 | 13.2 | 2.6 | 3.0 | 11.7 | 10.3 | 12.9 | 15.7 |
| Developing countries | | | | | | | | | | | | |
| LATIN AMERICA | | | | | | | | | | | | |
| Argentina | 23.0 | 19.4 | 59.5 | 176.0 | 175.0 | 159.5 | 23.0 | 18.3 | 58.0 | ... | 163.2 | 169.0 |
| Bolivia | 5.1 | 5.9 | 23.7 | 8.1 | 10.4 | 19.7 | 2.1 | 7.8 | 27.2 | 8.2 | 10.0 | 18.6 |
| Brazil | 60.0 | 28.0 | 23.5[c] | 40.5 | 38.3 | 50.2 | 60.0 | 26.0 | 25.9[c] | 39.1 | 40.6 | 56.9 |
| Chile | 27.0 | 26.0 | 225.4 | 92.9 | 40.1 | 33.4 | 30.0 | 26.0 | 245.5 | 175.5 | 34.6 | 31.0 |
| Colombia | 12.4 | 10.1 | 19.5 | 30.0 | 17.4 | 24.2 | 13.4 | 9.2 | 24.0 | 36.3 | 13.4 | 23.5 |
| Costa Rica | 2.3 | 2.5 | 13.7 | 4.2 | 6.0 | 9.2 | 2.2 | 3.8 | 3.7 | 4.0 | 10.2 | 12.6 |
| Dominican Republic | 2.7 | 1.0 | 11.1 | 12.8 | 3.5 | 9.2 | 2.5 | 0.1 | 13.3 | 9.3 | -3.1 | 14.5 |
| Ecuador | 4.0 | 4.6 | 13.7 | 13.0 | 11.6 | 10.3 | 4.9 | 6.0 | 18.4 | 15.7 | 10.3 | 10.0 |
| El Salvador | 0.2 | 1.1 | 8.4 | 11.8 | 13.5 | ... | 1.1 | 2.2 | 8.8 | 8.7 | 10.7 | ... |
| Guatemala | 0.1 | 1.5 | 2.9 | 12.6 | 8.1 | 11.4 | 0.1 | 1.7 | 3.3 | 11.2 | ... | 10.2 |
| Guyana | 1.9 | 1.5 | 8.2 | 8.2 | 15.2 | 17.8 | 2.3 | 2.8 | 12.2 | 8.5 | 17.2 | 18.9 |
| Haiti | 3.7 | 1.7 | 13.7 | 6.9 | -3.8 | 13.0 | 4.1 | 1.8 | 15.5 | 7.8 | -7.0 | 15.6 |
| Honduras | 2.7 | 1.6 | 6.5 | 8.4 | 6.1 | 9.0 | 3.2 | 1.8 | 8.0 | 10.9 | 6.6 | 7.6 |
| Jamaica | 2.9 | 4.3 | 14.9 | 11.2 | 34.9 | 29.1 | 2.4 | 4.7 | 17.2 | 9.4 | 36.7 | 33.2 |
| Mexico | 1.9[d] | 3.5 | 12.4 | 29.1 | 17.3 | 18.1 | 1.6[d] | 3.8 | 13.9 | 28.6 | 16.5 | 18.2 |
| Panama | 1.1[d] | 1.6 | 7.8 | 8.6 | 3.8 | 7.9 | 1.4[d] | 1.7 | 9.9 | 5.8 | 6.1 | 10.2 |
| Paraguay | ... | 1.2[e] | 12.6 | 9.4 | 10.6 | 28.2 | ... | 0.3 | 15.4 | 11.3 | 13.0 | 29.4 |
| Peru | 9.4 | 7.8[e] | 12.1 | 38.1 | 57.8 | 67.6 | 10.5 | 7.1[e] | 13.9 | 40.3 | 59.7 | 74.2 |
| Puerto Rico | 2.2 | 3.2 | 8.8 | 4.4 | 4.9 | 6.5 | 3.0 | 4.1 | 12.6 | 5.5 | 5.9 | 7.2 |
| Trinidad and Tobago | 2.2[f] | 3.8 | 13.7 | 11.8 | 10.2 | 14.7 | 2.1[f] | 3.7 | 17.1 | 6.9 | 9.1 | 13.8 |
| Uruguay | 16.2[f] | 60.0 | 73.4 | 58.1 | 44.6 | 66.8 | 13.1[f] | 60.0 | 76.0 | 64.0 | 44.5 | 70.9 |
| Venezuela | 1.7 | 1.6 | 5.5 | 7.7 | 7.0 | 12.3 | 1.7 | 0.9 | 8.5 | 12.4 | 9.2 | 16.7 |

See notes at end of table

ANNEX TABLE 15. 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 | 1976 to 1977 | 1977 to 1978 | 1978 to 1979 | 1960 to 1965 | 1965 to 1970 | 1970 to 1975 | 1976 to 1977 | 1977 to 1978 | 1978 to 1979 |
| | Percent per year | | | | | | | | | | | |
| **FAR EAST** | | | | | | | | | | | | |
| Bangladesh | ... | 4.0[b] | 39.0[g] | 10.3 | 13.2 | 12.7 | ... | 3.2[b] | 42.0[g] | 10.1 | 13.5 | 12.7 |
| Burma | ... | 6.4[b] | 17.8 | -3.8 | -6.4 | 5.7 | ... | 2.9[b] | 21.0 | -3.0 | -7.9 | 5.6 |
| Dem. Kampuchea | 4.3 | 4.5 | 100.9 | ... | ... | ... | 2.7 | 6.7 | 112.8 | ... | ... | ... |
| India | 6.1 | 8.9[h] | 13.2 | 8.4 | 2.5 | 6.4 | 6.5 | 9.8[h] | 14.2 | 9.9 | 0.9 | 4.6 |
| Indonesia | ... | 100.0 | 21.3 | 11.1 | 8.3 | ... | ... | 100.0 | 25.2 | 10.7 | 7.8 | ... |
| Korea, Rep. of | 15.4 | 12.3 | 14.3 | 10.2 | 14.4 | 18.3 | 18.3 | 12.5 | 16.8 | 11.6 | 16.6 | 13.8 |
| Lao, People's Dem. Rep. | 38.0 | 6.0[b] | 35.2 | ... | ... | ... | 39.0 | 4.0[b] | 40.9 | ... | ... | ... |
| Malaysia (peninsular) | 0.5 | 0.4[b] | 6.7 | 4.7 | 4.9 | 3.6 | 0.6 | 0.4[b] | 10.4 | 5.5 | 4.9 | 2.3 |
| Nepal | ... | 6.2 | 10.3 | 7.3 | 5.3 | 4.3 | ... | 7.2 | 9.8 | 9.9 | 5.4 | 5.7 |
| Pakistan | 2.6 | 5.6 | 15.2 | 10.1 | 6.7 | 9.4 | 3.8 | 6.0 | 16.6 | 11.3 | 5.6 | 7.1 |
| Philippines | 4.8 | 3.6[a] | 18.7 | 9.9 | 7.3 | 16.5 | 6.8 | 5.2[a] | 20.1 | 9.6 | 6.3 | 15.1 |
| Sri Lanka | 1.7 | 4.2 | 8.0 | 1.2 | 12.1 | 10.8 | 1.3 | 4.9 | 9.1 | 0.6 | 16.9 | 10.8 |
| Thailand | 1.5 | 2.5 | 9.8 | 8.5 | 8.7 | 10.3 | 2.0 | 4.2 | 11.9 | 11.5 | 8.5 | 9.2 |
| **NEAR EAST** | | | | | | | | | | | | |
| Cyprus | 0.3 | 2.9[a] | 8.0 | ... | 7.4 | 9.5 | 0.2 | 3.2[a] | 10.2 | ... | 5.7 | 6.7 |
| Egypt | 3.2 | 3.2[a] | 5.8 | 12.7 | 11.1 | 9.2 | 6.5 | 6.2[a] | 8.6 | 14.3 | 9.6 | 4.0 |
| Iran | 2.0 | 1.4 | 9.6 | 27.2 | 11.8[i] | ...[i] | 3.1 | 0.9 | 10.0 | 18.8 | 8.1[i] | ...[i] |
| Iraq | ... | 3.5[b] | 11.3 | 7.7 | 4.5 | 8.6[j] | ... | 3.1[b] | 18.1 | 12.9 | 5.6 | 11.9[j] |
| Jordan | ... | 2.8[b] | 6.0 | 31.2 | 7.0 | 14.2 | ... | 3.1[b] | 9.2 | 44.1 | 3.6 | 19.4 |
| Lebanon | ... | 1.8[e] | 4.5 | ... | ... | ... | ... | 2.0[e] | -3.5 | ... | ... | ... |
| Libya | ... | 6.1[a] | 16.4 | 6.2 | 29.5 | ... | ... | 8.3[a] | 15.9 | 12.1 | 11.7 | ... |
| Sudan | 3.3 | 3.4[a] | 11.6 | 16.8 | 19.8 | 30.8 | 4.2 | 2.8[a] | 12.0 | 18.8 | 26.4 | 31.8 |
| Syria | 1.3 | 4.2 | 16.7 | ... | 5.0 | 4.4 | 1.3[d] | 4.7 | 18.2 | ... | 5.1 | 5.7 |
| Turkey | 3.6 | 7.1[k] | 6.2 | 28.4 | 49.5 | 56.5 | 4.8 | 8.7[k] | 7.7 | 30.6 | 44.7 | 51.3 |
| **AFRICA** | | | | | | | | | | | | |
| Algeria | ... | ...[k] | 5.1 | 11.9 | 17.2 | 13.8[j] | ... | ... | 7.2 | 15.3 | 19.2 | 17.3[j] |
| Cameroon | ... | 3.3[k] | 10.2 | 14.6 | 12.6 | 6.6 | ... | 4.6[k] | 11.5 | 23.5 | 11.5 | 4.8 |
| Ethiopia | ...[d] | 3.0[e] | 3.7 | 16.7 | 14.3 | 16.0 | ...[d] | 3.5[e] | 2.7 | 16.8 | 17.1 | 18.0[l] |
| Gabon | 4.4[d] | 3.0 | 11.4 | 13.8 | 10.8 | 8.0 | 3.3[d] | 2.1 | 2.7 | ... | ... | 9.6[l] |
| Gambia | ... | ... | 10.5 | 12.4 | 8.8 | 6.1 | ... | ... | 12.8 | 12.5 | 6.3 | 5.8 |
| Ghana | 11.8 | 3.7 | 17.4 | 80.6 | ... | 62.7 | 14.0 | 2.1 | 20.3 | 114.1 | ... | 73.5 |
| Ivory Coast | 2.6 | 4.9 | 8.2 | 27.4 | 13.0 | 16.7 | 2.8 | 5.9 | 9.3 | 40.0 | 11.3 | 22.0 |
| Kenya | 2.0 | 1.7 | 13.9[c] | 10.3 | 10.3 | 7.2 | 1.9 | 2.0 | 14.7[c] | 11.8 | 12.2 | 5.6 |
| Liberia | ... | 4.4 | 12.1 | 6.2 | 7.3 | 11.4 | ... | 3.4 | 13.7 | 9.9 | 11.3 | 11.6 |
| Madagascar | ... | 2.3 | 9.7 | 3.0 | 6.5 | 14.0 | ... | 2.2 | 12.0 | 1.4 | 7.7 | 14.5 |
| Malawi | ...[d] | 2.0[b] | 8.9 | 4.2 | 8.7 | 11.3 | ...[d] | 3.4[b] | 10.7 | 1.7 | 6.4 | 13.9 |
| Mauritius | 1.0[d] | 3.0 | 13.1 | 9.2 | 8.5 | 14.5 | 0.6[d] | 3.0 | 14.7 | 18.6 | 6.7 | 14.4 |
| Morocco | 4.0 | 0.6 | 5.4[e] | 12.6 | 9.8 | 8.3 | 4.6 | 0.1 | 7.2[e] | 13.8 | 8.4 | 6.4 |
| Mozambique | 1.9[m] | 3.7 | 10.5 | ... | ... | ...[n] | 0.7[m] | 4.7 | 11.1 | ... | ... | ...[n] |
| Niger | ... | 3.8 | 7.9 | 23.3 | 10.1 | 6.7[n] | ... | 4.4 | 10.6 | 26.7 | 7.0 | 2.9[n] |
| Nigeria | 3.2 | 5.6 | 11.5 | 13.8 | 24.3 | 11.1 | 2.0 | 8.8 | 13.1 | 21.1 | 25.6 | 7.1 |
| Senegal | ... | ... | 13.0 | 11.3 | 3.9 | 9.5 | ... | ... | 16.5 | 13.8 | 3.4 | 8.3 |
| Sierra Leone | 3.9[p] | 4.3 | 8.4 | 8.3 | 10.9 | 21.3 | 0.6[p] | 4.8 | 11.0 | 7.3 | 8.2 | 23.5 |
| Somalia | 7.4 | 2.5[k] | 7.5 | 10.6 | 12.0 | ... | 7.5 | 2.8[k] | 9.1 | 13.2 | 14.1 | ... |
| Swaziland | ... | 2.7[b] | 9.3 | 16.5 | 8.5 | 16.4 | ... | 2.5[b] | 9.8 | 18.9 | 8.3 | 14.0 |
| Tanzania | 1.2 | 3.7 | 13.1 | 11.6 | 11.5 | 13.6 | 1.2 | 2.5 | 17.7 | 13.9 | 15.4 | 12.3 |
| Togo | ... | 2.1[e] | 8.9 | 21.3 | 1.3 | 6.9[i] | ... | 2.6[e] | 9.7 | 27.3 | -8.0 | 6.1[i] |
| Tunisia | 4.5 | 2.9 | 4.8 | 6.7 | ... | 7.7 | 4.8 | 3.1 | 5.2 | 5.0 | ... | 9.3 |
| Uganda | 5.4 | 4.0 | 23.4 | ... | ... | ... | 7.3 | 3.5 | 24.3 | ... | ... | ... |
| Zaire | 15.6[m] | 23.0 | 18.6 | 65.4 | 58.4 | 107.9[n] | 19.0[m] | 22.0 | 21.2 | 70.3 | 64.9 | 105.8[n] |
| Zambia | 2.4 | 8.7[h] | 7.1 | 19.8 | 16.4 | 9.8 | 2.4 | 8.8[h] | 7.4 | 18.2 | 17.0 | 8.9 |

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/ January - September. - k/ 1968-70. - l/ January - June. - m/ 1963-65. - n/ January - May. - p/ 1961-65.

Source: International Labour Office, Bulletin of Labour Statistics, Geneva, third chapter, 1980.

ANNEX TABLE 16. 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 | 1978 | |
| | % of requirements | | | | | Kilocalories per caput per day |
| AFRICA | | | | | | |
| Algeria | 77 | 79 | 85 | 93 | 98 | 2 400 |
| Cameroon | 89 | 93 | 97 | 104 | 107 | 2 320 |
| Central African Republic | 90 | 96 | 101 | 96 | 96 | 2 260 |
| Ethiopia | 86 | 87 | 80 | 78 | 74 | 2 330 |
| Ghana | 92 | 97 | 95 | 89 | 88 | 2 300 |
| Ivory Coast | 111 | 119 | 106 | 107 | 112 | 2 310 |
| Kenya | 96 | 96 | 96 | 92 | 90 | 2 320 |
| Madagascar | 103 | 106 | 106 | 109 | 104 | 2 270 |
| Malawi | 90 | 99 | 101 | 96 | 95 | 2 320 |
| Morocco | 96 | 103 | 108 | 108 | 107 | 2 420 |
| Nigeria | 93 | 94 | 93 | 94 | 100 | 2 360 |
| Sierra Leone | 95 | 94 | 91 | 90 | 93 | 2 300 |
| Tanzania | 89 | 87 | 89 | 92 | 88 | 2 320 |
| Uganda | 93 | 97 | 93 | 84 | 85 | 2 330 |
| Upper Volta | 85 | 83 | 78 | 84 | 86 | 2 370 |
| Zaire | 99 | 100 | 102 | 102 | 94 | 2 220 |
| ASIAN CENTRALLY PLANNED COUNTRIES | | | | | | |
| China | 90 | 90 | 94 | 100 | 103 | 2 360 |
| Mongolia | 100 | 96 | 100 | 104 | 109 | 2 430 |
| Viet Nam, Socialist Rep. of | 97 | 101 | 100 | 97 | 94 | 2 160 |
| FAR EAST | | | | | | |
| Bangladesh | 90 | 87 | 85 | 84 | 82 | 2 210 |
| Hong Kong | 113 | 118 | 117 | 117 | 123 | 2 290 |
| India | 83 | 90 | 88 | 85 | 92 | 2 210 |
| Indonesia | 86 | 91 | 96 | 98 | 101 | 2 160 |
| Korea, Republic of | 103 | 112 | 114 | 116 | 120 | 2 350 |
| Malaysia | 108 | 120 | 114 | 117 | 119 | 2 240 |
| Pakistan | 88 | 96 | 96 | 98 | 97 | 2 310 |
| Philippines | 84 | 88 | 89 | 94 | 101 | 2 260 |
| LATIN AMERICA | | | | | | |
| Argentina | 114 | 127 | 124 | 127 | 128 | 2 650 |
| Bolivia | 80 | 83 | 83 | 86 | 89 | 2 390 |
| Brazil | 104 | 105 | 103 | 105 | 106 | 2 390 |
| Colombia | 88 | 90 | 94 | 97 | 101 | 2 320 |
| Guatemala | 89 | 94 | 93 | 92 | 94 | 2 190 |
| Honduras | 92 | 94 | 91 | 92 | 97 | 2 260 |
| Mexico | 116 | 116 | 118 | 119 | 120 | 2 330 |
| Paraguay | 114 | 120 | 117 | 121 | 126 | 2 310 |
| Uruguay | 107 | 111 | 109 | 110 | 111 | 2 670 |
| Venezuela | 91 | 95 | 94 | 101 | 105 | 2 470 |
| NEAR EAST | | | | | | |
| Egypt | 101 | 101 | 104 | 112 | 115 | 2 510 |
| Iran | 89 | 91 | 104 | 122 | 127 | 2 410 |
| Saudi Arabia | 86 | 88 | 83 | 87 | 97 | 2 420 |
| Sudan | 81 | 88 | 88 | 94 | 99 | 2 350 |
| Turkey | 111 | 115 | 112 | 116 | 117 | 2 520 |
| Yemen Arab Republic | 89 | 86 | 86 | 93 | 96 | 2 420 |

Source: FAO food balance sheets.

ANNEX TABLE 17. - 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 | | |
| | 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 | ... |
| Kenya | 3.5 | 4.3 | 1979-83 PS | 6.3 | 3.8 | 4.7 | 3.6 | 9.0 | 5.8 | 4.1 | 20.6 | ... | ... | 18.7 | ... | 16.0 |
| Lesotho | 1.9 | ... | 1976-80 C | 7.9 | 2.1 | 6.5 | 2.3 | ... | 22.0 | ... | 13.5 d/ | ... | ... | 32.6 | 5.0 | ... |
| Liberia | 2.3 | 2.8 | 1976-80 C | 6.8 | 3.3 | ... | ... | ... | 13.0 | ... | 9.0 d/ | ... | 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 | ... | ... | ... | ... | 32.0 |
| Morocco | 3.2 | 4.3 | 1978-80 C | 4.9 | 4.1 e/ | 4.1 | 3.6 | ... | 6.6 | 4.7 | 24.0 | 26.3 | 16.2 f/ | 18.0 | 57.0 g/ | ... |
| 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 | ... | ... | ... | ... | ... | ... | ... | ... |
| 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 | 5.6 h/ | ... | 4.1 | 4.0 i/ | ... | 11.0 | ... | 29.2 | 84.5 | 25.0 | 27.0 | ... | 56.0 |
| Fiji | 2.1 | ... | 1976-80 C | 7.0 h/ | 3.0 | 4.6 | 13.4 i/ | 6.0 | 8.3 | 8.6 | 22.7 j/ | 54.0 | ... | 21.8 | 16.8 | ... |
| Korea, Rep. of | 2.0 | 4.5 | 1977-81 C | 9.0 h/ | 3.1 | 4.0 | 3.3 | ... | 16.0 | ... | 25.4 j/ | ... | 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 | 1976-80 C/AS | 7.7 h/ | 2.9 | 7.4 | 6.8 | 9.2 | ... | 17.9 | 28.0 j/ | 70.0 | 9.6 | 10.1 | ... | 31.0 |
| Chile | 1.8 | 0.9 | 1975-80 AS | 6.6 h/ | 4.0 n/ | 4.8 n/ | 7.5 | ... | .. | 11.8 | 13.0 j/ | 47.0 | ... | ... | ... | ... |
| Dominican Republic | 2.6 | ... | 1980-82 AS | ... | ... | 5.4 | ... | ... | ... | 6.9 | ... | ... | ... | ... | ... | ... |
| El Salvador | 3.2 | 3.2 | 1978-82 C/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 | ... | ... | ... | ... | ... | ... | ... | 16.0 h/ | ... | ... | 30.0 | ... | ... |
| Haiti | 1.5 | 2.6 | 1976-81 C/AS | 5.0 | ... | 3.0 | 4.7 | ... | 9.3 | 8.0 | 19.9 | 67.0 | 15.0 | 18.8 | 29.0 | 50.0 |
| Jamaica | 1.5 | ... | 1978-82 C | 3.2 | ... | 7.0 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Panama | 2.9 | 4.1 | 1976-80 PS | 7.0 | 2.5 | 5.7 | 3.7 | 14.0 p/ | 7.2 | 9.5 | 16.0 d/ | 54.4 | 4.9 | 7.0 | ... | 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 | 10.0 | 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 | ... | 6.5 | ... | ... | 11.0 | 11.0 | 22.0 | 58.0 | 26.0 | 30.0 | ... | 52.0 |
| Syrian Arab Republic | 3.3 | 4.9 | 1976-80 C | 12.0 | 4.9 | 9.0 q/ | 9.7 | ... | 7.0 | ... | 29.0 | 83.0 | 3.5 | 4.3 | 20.0 | ... |
| Yemen Arab Republic | 3.0 | 4.5 | 1976-80 C | 8.2 | 1.7 | 5.5 q/ | 5.2 | 31.0 | 12.3 | ... | 47.0 | 48.3 | 14.2 | 12.7 | 56.7 | 41.2 |

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. - n/ Employment in agriculture only. - p/ 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.

ANNEX TABLE 18. ANNUAL SHARES OF AGRICULTURE "BROAD" DEFINITION IN TOTAL OFFICIAL COMMITMENTS MADE TO ALL SECTORS BY MULTILATERAL AND BILATERAL SOURCES, 1973-1979

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 1/ |
|---|---|---|---|---|---|---|---|
| | ..... % ..... | | | | | | |
| Concessional and non-concessional commitments | | | | | | | |
| Multilateral Agencies 2/ | 26 | 32 | 38 | 32 | 36 | 37 | 37 |
| World Bank 3/ | 27 | 33 | 40 | 31 | 39 | 42 | 37 |
| Regional Development Bank 3/ | 19 | 28 | 37 | 36 | 35 | 23 | 33 |
| OPEC Multilateral 3/ | - | 41 | 8 | 25 | 13 | 29 | 6 |
| Bilateral sources | 6 | 9 | 7 | 7 | 10 | 9 | ... |
| DAC/EEC | 6 | 10 | 8 | 8 | 11 | 11 | 12 |
| OPEC Bilateral | 5 | 3 | 6 | 5 | 6 | 3 | ... |
| All sources (multilateral + bilateral) | 12 | 15 | 14 | 14 | 17 | 17 | ... |
| Concessional commitments only (ODA) | | | | | | | |
| Multilateral Agencies 2/ | 34 | 45 | 43 | 46 | 44 | 49 | 49 |
| World Bank 3/ | 33 | 46 | 43 | 44 | 54 | 52 | 52 |
| Regional Development Bank 3/ | 31 | 48 | 46 | 54 | 50 | 47 | 53 |
| OPEC Multilateral 3/ | - | 33 | 21 | 29 | 11 | 27 | 6 |
| Bilateral sources | 9 | 12 | 10 | 9 | 14 | 13 | 17 |
| DAC/EEC | 9 | 14 | 13 | 11 | 16 | 16 | 18 |
| OPEC Bilateral | 4 | 4 | 5 | 5 | 7 | 3 | 10 |
| All sources (multilateral + bilateral) | 13 | 16 | 14 | 15 | 18 | 19 | 22 |

1/ Preliminary. - 2/ Including UNDP, CGIAR, FAO/TCP (from 1977) and IFAD (from 1978). - 3/ Excluding commitments to CGIAR.

Source: FAO and OECD.

ANNEX TABLE 19. PERCENTAGE DISTRIBUTION OF OFFICIAL COMMITMENTS TO AGRICULTURE "BROAD" DEFINITION BY MULTILATERAL AND BILATERAL SOURCES, 1973-1979

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 1/ |
|---|---|---|---|---|---|---|---|
| | % | | | | | | |
| Concessional and non-concessional commitments | | | | | | | |
| Multilateral Agencies | 55 | 52 | 58 | 57 | 57 | 58 | 52 |
| World Bank 2/ | 41 | 37 | 41 | 37 | 38 | 44 | 35 |
| Regional Development Bank 2/ | 9 | 11 | 13 | 14 | 14 | 10 | 12 |
| OPEC Multilateral 2/ | - | 1 | - | 2 | 2 | 1 | - |
| Others 3/ | 5 | 3 | 4 | 4 | 3 | 3 | 5 |
| Bilateral sources | 45 | 48 | 42 | 43 | 43 | 42 | 48 |
| DAC/EEC | 42 | 44 | 31 | 36 | 38 | 40 | 44 |
| OPEC Bilateral | 3 | 4 | 11 | 7 | 5 | 2 | 4 |
| All sources | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Concessional commitments only (ODA) | | | | | | | |
| Multilateral Agencies | 46 | 37 | 38 | 47 | 36 | 41 | 37 |
| World Bank 2/ | 31 | 22 | 21 | 23 | 19 | 26 | 18 |
| Regional Development Bank 2/ | 8 | 10 | 10 | 15 | 11 | 8 | 11 |
| OPEC Multilateral 2/ | - | 1 | 1 | 3 | 2 | 2 | 1 |
| Others 3/ | 7 | 4 | 6 | 6 | 4 | 5 | 7 |
| Bilateral sources | 54 | 63 | 62 | 53 | 64 | 59 | 63 |
| DAC/EEC | 52 | 59 | 50 | 47 | 56 | 55 | 59 |
| OPEC Bilateral | 2 | 4 | 12 | 6 | 8 | 4 | 4 |
| All sources | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

1/ Preliminary. - 2/ Excluding commitments to CGIAR. - 3/ Including UNDP, CGIAR, FAO/TCP (from 1977) and IFAD (from 1978).

ANNEX TABLE 20. PERCENTAGE DISTRIBUTION OF OFFICIAL COMMITMENTS TO AGRICULTURE (EXCLUDING TECHNICAL ASSISTANCE GRANTS) BY PURPOSE, 1973-1979

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 1/ |
|---|---|---|---|---|---|---|---|
| | % | | | | | | |
| Land and water development 2/ | 19 | 21 | 21 | 19 | 25 | 26 | 18 |
| Agricultural services | 12 | 6 | 7 | 7 | 12 | 12 | 10 |
| Supply of inputs | 10 | 12 | 7 | 7 | 4 | 5 | 3 |
| Crop production | 10 | 5 | 4 | 10 | 5 | 8 | 7 |
| Livestock | 8 | 5 | 3 | 5 | 3 | 4 | 3 |
| Fisheries 3/ | 2 | 3 | 2 | 2 | 3 | 3 | 3 |
| Research, extension, training | - | - | 3 | 3 | 4 | 4 | 3 |
| Agriculture, unallocated | 18 | 10 | 11 | 13 | 11 | 12 | 17 |
| TOTAL NARROW DEFINITION | 79 | 62 | 58 | 66 | 67 | 74 | 64 |
| Rural Development/infrastructure | 7 | 13 | 16 | 16 | 16 | 15 | 16 |
| Manufacturing of inputs 4/ | 4 | 16 | 23 | 7 | 5 | 4 | 11 |
| Agro-industries | 9 | 3 | 2 | 10 | 9 | 5 | 6 |
| Forestry | 1 | 5 | 1 | 1 | 2 | 2 | 3 |
| Regional development | - | 1 | - | - | 1 | - | - |
| TOTAL BROAD DEFINITION | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

1/ Preliminary. - 2/ Including river development. - 3/ Including inputs such as fishing trawlers, fishing gear. - 4/ Mostly fertilizers.

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Director-General
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