

# MICHIGAN AGRICULTURE

## AND ITS LINKAGES TO DEVELOPING NATIONS

A GUIDE FOR  
EXTENSION AGENTS  
AND OTHER  
DISCUSSION LEADERS

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# MICHIGAN AGRICULTURE

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## AND ITS LINKAGES TO DEVELOPING NATIONS

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# I. INTRODUCTION

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## **Purpose: To Sharpen Understanding of Trade and Development Issues**

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International events, ranging from Japanese trade policies to Central American political struggles to Soviet grain harvests, clearly affect our everyday lives. Michigan and other American citizens are interested in activities of Federal and State institutions in the international arena, especially as they relate to agriculture and our food system. Yet they often find it difficult to obtain a clear understanding of underlying problems and relationships.

Extension agents and other discussion leaders frequently find themselves in the awkward position of having to explain complex agricultural trade and development issues to their constituents even though they themselves are limited to the same inadequate and often confusing sources of information. This report is intended to help close this gap in the areas of foreign trade and economic development policies.

The treatment of issues presented is insufficient to transform the reader into an authority on trade and development. It is hoped, however, that it will provide enough information to broaden and improve the on-going deliberation of these matters in communities across the state. Progressing through the report, it will become increasingly clear that these are controversial and complicated issues. We do not attempt to offer "the answer" but rather seek to present fundamental concepts and basic facts to help sharpen the understanding of these important questions.

### **Organization of the Report**

In each chapter, a question and discussion format is used to make it easier to address a specific question or concern. The materials are intended to help enlighten discussion and hopefully to stimulate the organization of local study groups

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**Trade and development are controversial and complicated issues.**

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and other policy discussion forums. The materials are also cross-referenced to help indicate the linkages among the various issues.

The discussion of each set of questions is subdivided into three sections. The first of these provides a brief statement indicating the approach to be used in the response. The second is the body of the discussion, where relevant facts and figures are cited and explained. Many of the charts and graphs used are reproduced in large size in the Appendix so they may be removed for reproduction as overheads to be used to accompany oral presentations. In the third section, main points are summarized. A final chapter--Selected References--lists the sources of information used in the compilation of the report. The interested reader will also find suggested additional background reading materials.

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U.S. seeks good relations with nations for humanitarian, political, and economic reasons.

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### **General Background**

In the aftermath of an unpleasant international event (such as the Iranian hostage crisis, terrorism in Beirut, or the civil war in El Salvador), the argument frequently springs forth that the U.S. should pull back from its international involvements and isolate itself from the world community as much as possible. This argument is most frequently directed at our relations with the developing nations since the view is often prevalent that we gain nothing from such involvements.

A more reasoned view recognizes that the United States seeks good relations with all nations for a combination of important humanitarian, political, and economic reasons. We will briefly review these and their interrelationships.

### **Humanitarian Concerns**

Let's turn first to humanitarian reasons for our involvement with developing nations. The peoples of these nations, constituting the vast majority of the world's population, lag far behind people in developed nations in terms of health, material wealth, and other yardsticks. In Table I-1, the major differences between the level of living of the average American and that of the average citizen of a developing nation are revealed. Given such wide disparities, our humanitarian concerns are well justified.

Most Americans cannot forget that the U.S. was founded by refugees from other lands who

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Wide disparities in level of living exist around the world.

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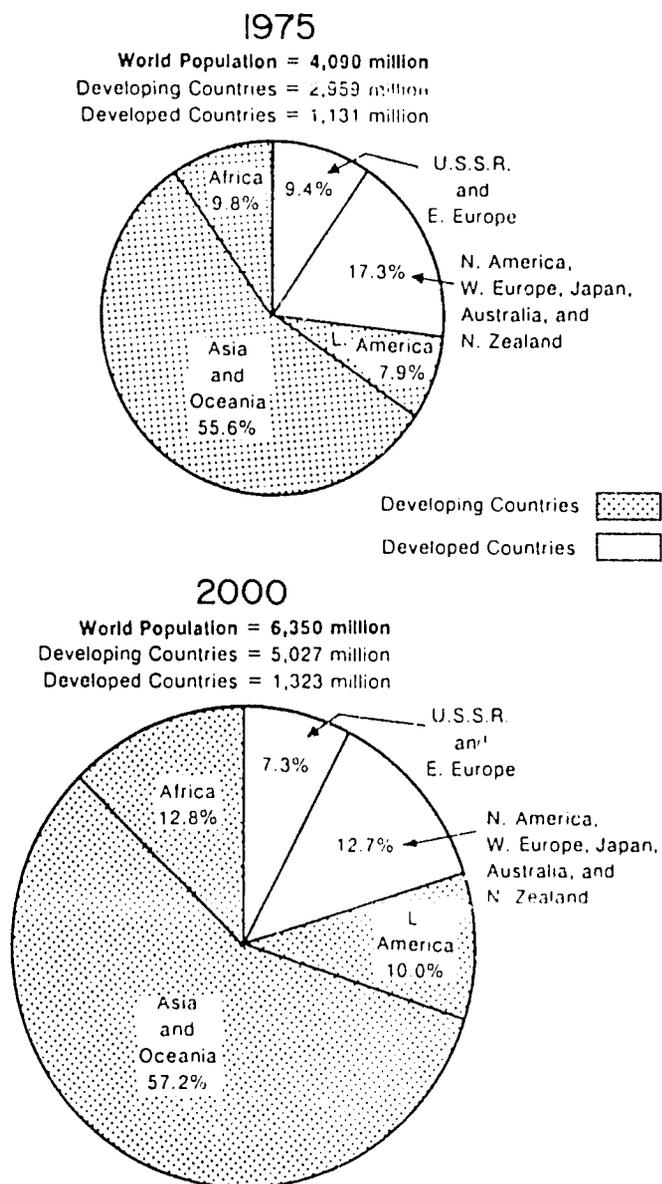
**Table 1-1**  
**Comparative Lifestyle Indicators**

	U.S.	Developing Countries
Income Per Person (\$)	11,360	260
Life Expectancy (at birth)	74	57
Infant Mortality (per thousand)	13	94
Energy Use Per Person (lbs. of coal equivalent)	25,698	926.2

Source: World Development Report, 1982.

Developing countries will continue to feel population pressures as they try "to develop."

**Figure 1-1. World Population, 1975 and 2000**



set off in search of a better life. Although many (but not all) Americans have found that better life, the tradition of lending a helping hand to those who are less fortunate remains strong. We, as a people, are sensitive to the plight of those in the U.S. and throughout the world who live in conditions of hunger and poverty. Their well-being and our well-being are at some level unalterably entwined.

Humanitarian concerns of Americans for the less fortunate are likely to become even more important, as developing country populations grow. As shown in Figure 1-1, world population is expected to reach over 6 billion by the year 2000, with as many as 80 percent of these people living in developing countries. The World Bank has estimated that about 1 billion or approximately 30 percent of the population of all developing countries were living under conditions of absolute poverty in 1980 with barely adequate diets, and incomes which leave little, if anything, for clothing, fuel, shelter, and other necessities.

**National Security and Defense Concerns**

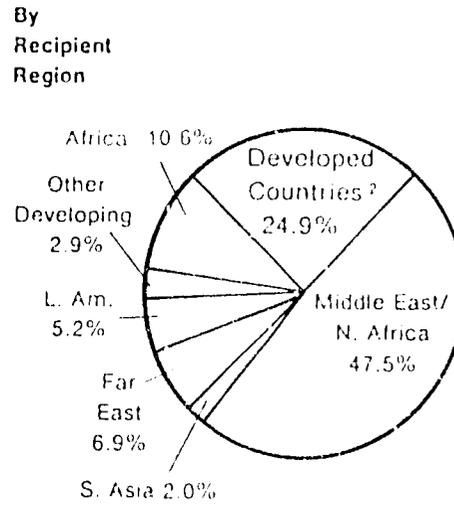
A second major reason for U.S. involvement with other countries is to further our own national defense. The U.S. devotes a sizeable proportion (around 25 percent) of its annual federal budget

Source: ODC, 1982.

I. INTRODUCTION

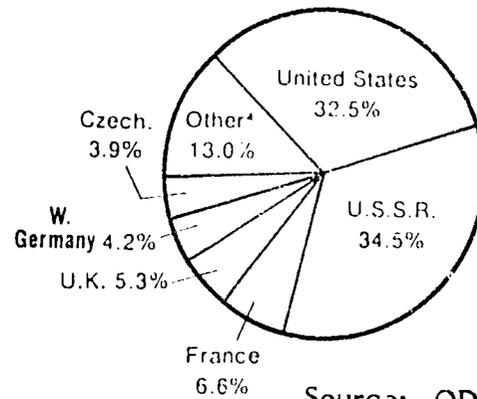
A strong national defense requires good relations internationally.

Figure 1-2. World Arms Transfers in 1978 (in \$ millions of 1977 Constant Dollars and in Percentages)



1978  
Total: \$19,177 million

By Supplying Country



Source: ODC, 1982.

Nearly 3/4 of all arms transfers are to Middle Eastern or developing countries.

to national defense. As a part of our foreign policy, we also give away (and sell) vast quantities of arms in order to help "friendly" nations protect themselves and our own perceived national security interest. As shown in Figure 1-2, in 1978 there were some \$19 billion in world arms transfers (which includes both sales and gifts). Developing countries were major clients for these arms, and the U.S. and the USSR were the major suppliers. In the future, however, many foreign policy experts feel that the major world power nations will experience greater and greater limitations on the utility of military power as a policy instrument.

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**Arms supplies to "friendly nations" are one way the U.S. tries to maintain security. However, hunger and poverty are major destabilizing forces.**

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Hunger and poverty are major destabilizing forces in the modern world. The potential is large for national and international conflict to emerge from such conditions. As a result, it is important to recognize that U.S. trade and development assistance policies can represent another means of fostering a stable and peaceful international environment and of achieving our national security objectives. When other nations prosper and share common interests with the U.S., there is less need to worry about defense investment and other deterrents to the expansion of Soviet influence and control.

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**Trade with developing nations is economically advantageous.**

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#### **Economic Self-Interest Concerns**

The third basic reason for U.S. involvement with other countries is that these relations are economically advantageous. In simple terms, foreign nations are both sources of goods and resources which we consume, and markets for the goods which we produce. In the following chapters, we will emphasize the surprisingly major role which developing countries play on both the import and export sides of our own national economy.

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# II. FOREIGN DEVELOPMENT ASSISTANCE

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- Why do other nations require our assistance?
  - Why does the U.S. give so much to other countries (and get so little in return)?
- 

### Approach

Our discussion begins by briefly outlining the role that foreign assistance can play in the development process. (A more specific discussion of this issue with reference to food aid is given in Chapter III.) Then the performance of the U.S., as compared to other nations in providing development assistance funds, is examined.

### Development Assistance: Why Is It Needed?

Although it is clear that levels of living vary tremendously in different regions of the world, there is no agreement as to what, if anything, can and should be done about this. Some analysts think that improvement of trade relations and access to credit markets (along with changes in domestic policies within the developing nations) are key elements in the development process. Others feel that these avenues are simply not sufficient to help the disadvantaged nations of the world. They suffer from lack of monetary, material, and human resources and are ill-prepared to compete in the world market. This view holds that only direct development assistance in the form of investment capital, technology, and education can provide them with the needed boost.

Although they may need some outside assistance, these nations are not totally dependent upon it. The actual data for total investment activity within a typical developing country can be broken down as shown in Table 2.1. Developing countries themselves provide by far the largest share of internal investment funds. Total foreign involvement (including investments for profit) represents only 20 percent of investment activity. Development assistance funds from both private and public sources account for less than 10 percent of aggregate investments.

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There is no clear agreement on how to best support development.

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Developing countries themselves provide the largest share of investment funds.

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## II. FOREIGN DEVELOPMENT ASSISTANCE

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Table 2-1

### Sources of Investment in a Typical Developing Country

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Domestic Self-Generated Funds	80%
Foreign Private Investment	12%
Foreign Government and Private Assistance	8%

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Source: Morss, 1982.

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The U.S. often exerts profound and unintended influences on the activities of other nations.

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#### Aren't Our Funds Misused?

Many Americans are concerned that our assistance often goes to nations that turn around and take advantage of us. It is essential not to overreact to specific examples (such as Iran) and instead seek a balanced view of this issue. Americans too easily forget that ours is an immensely powerful nation which is frequently regarded by other countries as being overly concerned with its own self-interests. The U.S. often exerts profound and unintended influences on the activities of other nations. Only when Americans recognize the validity of the statement "when the U.S. sneezes, other nations catch pneumonia" may we begin to understand why some other nations are wary in dealing with us.

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One nation helping another "to develop" is a fairly recent concept.

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It is important to realize that the process of one nation helping "to develop" another is a fairly recent phenomenon. Previously, more advanced nations entered the affairs of others as colonizers or conquerors. Participants on both sides of the development process are still experimenting with their roles. Misunderstandings and failures are unfortunate but are to be expected. Overall, successes outweigh failures. Some nations such as South Korea and Taiwan achieved remarkable increases in income in the decade of the 1970s (averaging 7 percent per year). Other developing countries have dramatically improved the health and nutrition of their population even without large increases in income. For example, the per capita income in the U.S. was 42 times that of Sri Lanka and 6 1/2 times that of Costa Rica in 1980. Yet we find that life expectancy of 74 years in the U.S. is nearly equaled by

both Sri Lanka (66 years) and Costa Rica (70 years). India provides a further example where life expectancy went up by 9 years (from 43 to 52 years) between 1960 and 1980 despite limited resources. Improvements are being achieved.

**How Does the U.S. Compare to Other Nations in Development Assistance?**

Contrary to what most Americans believe, the U.S. is not among the most generous of the developed nations. In Table 2-2, it is shown that, although the U.S. is the largest overall donor, in 1980 it ranked 11th out of 17 nations in terms of the amount of government and private contributions per individual citizen. Specifically, in 1980 the average Norwegian contributed the equivalent of \$123.80, the average German \$63.97, and the average American only \$37.88.

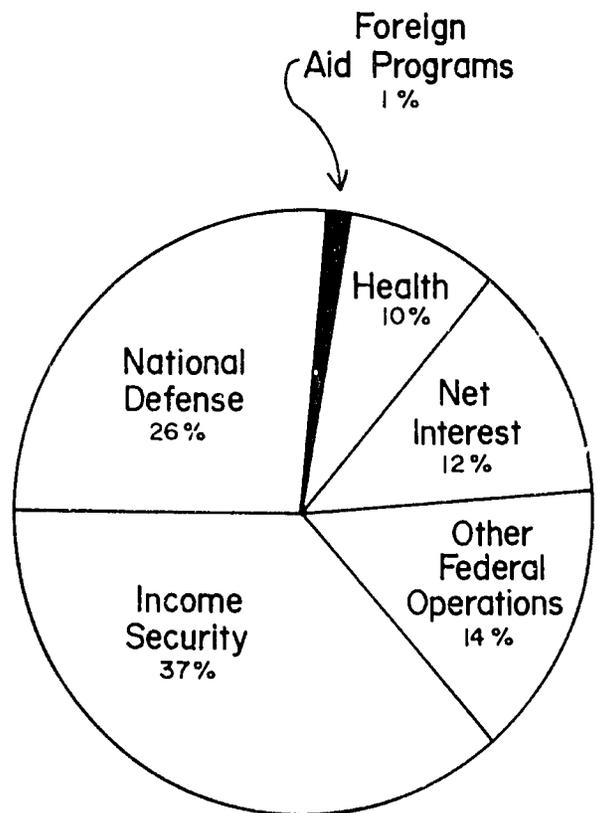
Contributions to development from church groups and other charities amount to less than 10 percent of government development assistance funds. When these two sources of funds are summed, it is clear that our performance lags behind many other nations. We may, in fact, ask ourselves if the U.S. as the largest and richest of the developed nations is doing its fair share.

**Development Assistance as a Competitor for Domestic Funds**

One argument made by some opponents of U.S. development assistance programs is that the resources we "give away" in foreign countries could be better spent domestically. It is a mistake to assume that a cutback in foreign assistance programs would mean that vast sums of money would be available for reallocation to domestic problems. Figure 2-1 shows that this is untrue. Foreign aid programs (which include military as well as development assistance) represent only a little over 1 percent of the national budget. Whether these funds are halved or doubled will have little effect on other activities such as domestic welfare programs. In contrast, our national defense expenditures account for a full 26 percent of the budget. Therefore, in many respects this argument represents a callous attempt to pit one group of poor against another.

Foreign aid programs represent only 1% of the national budget.

Figure 2-1. U.S. Budget Allocations for 1982



Source: OMB, 1983.

Throughout these materials, the numerous benefits that our country reaps from our trade and development activities will be highlighted.

## II. FOREIGN DEVELOPMENT ASSISTANCE

Table 2-2

Government and Private Development  
Assistance in 1980

Countries	Total	Per Person
	(\$ Millions)	(\$)
Norway	506	123.80
Sweden	982	118.09
Netherlands	1,656	117.09
Denmark	481	93.86
France	4,080	75.96
W. Germany	3,938	63.97
Belgium	626	63.55
Australia	697	47.99
Canada	1,138	47.53
Switzerland	299	46.92
<b>United States</b>	<b>8,438</b>	<b>37.88</b>
United Kingdom	1,886	33.71
Japan	3,330	28.51
Austria	198	26.37
Finland	122	25.53
New Zealand	78	24.92
Italy	675	11.83

Source: ODC, 1982.

In looking at the budget figures, we must remind ourselves that our foreign assistance objectives complement our national defense objectives. We pursue foreign assistance to attack underlying development problems and to help maintain a stable and peaceful world community. Development assistance should be seen as a needed complement to our national defense policies rather than competition for scarce funds.

A final misconception about our aid programs is the belief that most of this money is spent overseas. In fact, government figures show that over 80 percent of these development

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U.S. is not the most generous of developed nations—ranks 11th out of 17 nations in per capita contributions.

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assistance funds end up being spent on U.S. goods and services. In 1982, the total amount of goods and services purchased in Michigan by our foreign assistance program exceeded 30 million dollars. This includes agricultural commodities as well as machinery and equipment, and technical knowledge and training services.

### Summary

1. Development assistance, not merely improved trade relations or access to credit, represents a required input into the development process in many nations.
2. Developing nations should not be regarded as being helpless and subservient--they, in fact, provide most of their investment funds from within their own economies.
3. Development assistance is a long-term, complex, and difficult process, and there are many different viewpoints on the subject. In general, it has been successful.
4. The U.S. has been less generous on a per capita basis in giving development assistance than most other Western nations (\$38.00 per year per American vs. \$64.00 per German and \$124.00 per Norwegian).
5. Foreign aid is a relatively minor budget item in the U.S.
6. Development assistance should be seen as providing some of the same benefits as national defense--ensuring a stable and peaceful world community.
7. Most development assistance monies are spent for commodities and services produced in the U.S., thereby helping U.S. businesses and citizens as well as developing countries.

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Development assistance complements our national defense in ensuring a stable and peaceful world. Eighty percent of U.S. foreign aid goes toward the purchase of U.S. goods and services.

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# III. FOOD AID

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- Do our international food aid programs make any sense?
- Are food aid programs simply preventing other nations from pulling themselves up by the bootstraps?
- Are food aid recipients becoming viable producers and consumers in the world community?

### Approach

We will focus on the historical record of U.S. food aid programs. The discussion here should be supplemented with that presented in Chapters VI-VII which detail the extent to which the developing countries are and will continue to be major U.S. trading partners.

### History of Food Aid

The major U.S. food aid program (P.L. 480) was initiated in the 1950s at a time when food surpluses were a major problem in U.S. agriculture. At the time, the disposal of food surpluses overseas was seen as a means of both helping people in other countries as well as developing commercial markets for U.S. agricultural goods. In the 1950s, food aid shipments represented as much as 41 percent of total U.S. agricultural exports. As is detailed in Figure 3-1, the importance of food aid in terms of our overall export of agricultural products has declined dramatically. In the early 1960s, the percentage of food exported in the form of food aid remained as high as 29 percent, and currently food aid represents only 3 to 4 percent of our total agricultural exports. The public's perception that the vast majority of our agricultural exports are given away in developing countries is not correct. The figures presented here indicate that 97 percent of our agricultural exports are in the form of commercial sales.

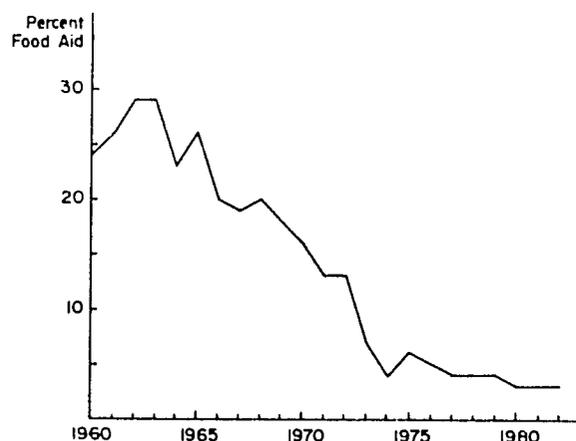
### Criticisms of Food Aid

There are two fundamental criticisms to the use of food aid as a development tool. The first is that our provision of free or low-cost commodities lowers the price of food within developing nations and thereby destroys food production incentives. Michigan farmers know only too well how low food prices dampen incentives to produce. The second criticism is that

In 1950, 41% of all agricultural exports were food aid shipments.

Today, less than 4% of total agricultural exports consist of food aid.

Figure 3-1. Food Aid as a Percentage of U.S. Agricultural Exports, 1960-1968



Source: ODC, 1982; USDA, 1982.

### III. FOOD AID

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Food aid can hurt internal production.

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Food aid is best used to provide a "breathing space" at a critical time in the development process.

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food aid disrupts existing food systems by creating a taste for imported foods. While both criticisms have some validity in specific cases, many analysts believe that food aid, when integrated into a national development policy, will on the whole be beneficial. Food aid also plays a key role in "relief" efforts during crises to prevent starvation and death. The proper use of food aid requires the recognition that poverty, not food, is the central problem which must be overcome. Basically, the role of food aid should be to provide a "breathing space" at a critical time in the development process. Once such a boost has been given, these nations may be better able to re-enter the world market economy as full participants.

Table 3-1 points out the validity of that argument by documenting the growth in our commercial agricultural trade with former food aid recipients. In fact, 7 out of our top 10 commercial clients in 1982 were former food aid recipients.

Table 3-1

Food Aid Recipients as Cash Customers

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Leading Recipients	Food Aid Received FY 1955-80	U.S. Commercial Agricultural Exports FY 1981
	(\$ Million)	(\$ Million)
India	6,040	324
Egypt	2,455	950
Pakistan	2,135	147
Korea	1,972	2,136
Indonesia	1,707	382
South Vietnam	1,464	-
Yugoslavia	1,020	188
Brazil	898	843
Bangladesh	841	75
Israel	717	365
Turkey	674	87

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Source: Foreign Agriculture, July 1982.

**Summary**

1. Food aid currently represents only 4 percent of total U.S. agricultural exports.
2. Food aid when properly integrated into national programs can help in fostering development. It is also helpful during short-run crises.
3. It has greatly assisted in the development of commercial markets for U.S. agricultural products.

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**Today, very little of our exports are given away.**

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# IV. INTERNATIONAL TECHNOLOGIES FOR MICHIGAN AGRICULTURE

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- Why do Michigan scientists invest so much time and effort in helping other countries develop their agricultural potential?
  - What does Michigan gain from this?
- 

#### Approach

The following quote summarizes quite well the main points we are striving to make:

"The productivity of modern agricultural crops cannot be maintained--let alone expanded--without constant infusion of fresh germ plasm. Without these foreign infusions, (North) Americans would have their diets limited to cranberries, blueberries, strawberries, pecans, sunflower seeds, and little else. There is no such thing as a home-grown meal."<sup>1/</sup>

#### Types of Benefits from International Exchanges

International involvement by American scientists benefits not only the citizens of the countries receiving technical assistance but also benefits our own citizens. While Americans may realize that our major crops and livestock breeds originated outside the U.S., they often forget that our agriculture still depends upon international exchanges for advancements and improvements.

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American agriculture depends upon international exchanges for advancements and improvements.

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The U.S. can learn from other nations who have greater or different kinds of success with particular crops than we do. Similarly, there is much we can learn from the Israelis and others about agricultural production under arid conditions.

We also depend upon the availability of imported genetic materials to improve our crops and livestock. In livestock, an excellent example

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<sup>1/</sup> Norman Myers, "The Exhausted Earth," Foreign Policy, No. 42 (Spring 1981), p. 141.

## IV. INTERNATIONAL TECHNOLOGIES FOR MICHIGAN AGRICULTURE

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of this is the introduction of Zebu (Brahma) cattle from India and Pakistan which has increased the heat tolerance of our beef cattle and permitted the tremendous expansion of the livestock industry in the southern U.S. Tomatoes and potatoes have been improved through the introduction of varieties of South American origin, soybeans with Chinese varieties, and sorghum with Ethiopian varieties. According to a recent USDA estimate, genetic improvements account for at least 1 percent of agricultural productivity gains each year, a farm gate value approaching one billion dollars.

### Case Studies: Dry Beans, Wheat, and Tart Cherries

In Michigan, we can point to the recent accomplishments of three MSU scientists in improving the genetic base of our crops. Dr. Wayne Adams, a world renowned dry bean breeder, and his colleagues recently released a series of new varieties (Swan Valley, Neptune, Domino, Black Magic, C-20) that have key features of Central and South American heritage. These varieties outyield previous ones by 15 to 30 percent due to new plant architecture as well as to a number of characteristics such as longer maturity and resistance to stress, air pollution, and disease. Dr. Adams traveled to Colombia, South America in 1973 to give a speech on plant architecture. While there, he identified varieties of dry beans which had characteristics of plant architecture that appeared desirable for solving Michigan problems. He obtained seeds from the plant collection in Colombia and used them in his hybridization program. This represents an excellent example of the successful combination of the diverse pool of germ plasm available in other countries and American technology. As a result, farmers and consumers in many nations benefit.

Dr. Everett Everson's wheat breeding program at MSU relies heavily on germplasm from other countries to provide disease and insect resistance. In fact, plant breeders frequently have to rotate genes for resistance every few years to maintain viable varieties. Specific examples of contributions from other countries in Dr. Everson's wheat research program include the following:

1. Powdery mildew resistance from the Near East.
2. Hessian fly (insect) resistance from European germplasm.
3. Winter hardiness genes were introduced from material from Turkey and Russia.

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### U.S. Agriculture benefits from using foreign genetic material.

- Yield improvements of 15 to 30%.
- 

- 
- Disease and insect resistance.
-

4. Lodging resistance from Mexican material.
5. High yield potential genes from Japan.
6. Spindle streak resistance (virus) was incorporated into the Michigan program with material from Russia and Mexico.
7. Cereal leaf beetle resistance genes were introduced with material from Russia.

Dr. Amy Iezzoni recently collected genetic materials in Eastern Europe needed to improve the tart cherry, another of Michigan's major crops. The current tart cherry industry, which is based upon a single cultivar (Montmorency) imported from France 400 years ago, represents a classic example of genetic vulnerability. Diseases, pests, and most particularly frost threaten Michigan's tart cherry industry: wide year-to-year production variations result. In the past decade, production has ranged from 147,000 tons (1972) to 69,000 tons (1981).

Eastern Europe possesses a tremendous diversity of both wild local varieties and hundreds of scientifically improved cultivars. Dr. Iezzoni believes that her collection effort will advance the breeding programs at MSU by at least 15 years. Among her major goals are the introduction of new cultivars which will bloom later, avoiding damaging frosts and cultivars more suited for mechanical harvesting.

Scientific endeavors, especially in agriculture, cannot be pursued if they are constrained by national borders. Everyone has much to gain when the international scientific community cooperates.

### Summary

1. Michigan (and U.S.) agriculture relies heavily on international inputs.
2. Dry beans, tart cherries, and wheat represent examples of the importance of international exchanges of germ plasm for the continued vitality of Michigan agriculture.

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- Reduced crop vulnerability.
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# V. IMPORTS IN THE U.S. ECONOMY

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- Why do we open our shores to foreign imports and thereby take jobs away from American workers?
  - Wouldn't we be better off if we looked after ourselves first.
- 

### Approach

The importation of foreign-produced goods is a controversial issue in any society. This discussion attempts to present both the costs and the benefits of opening the U.S. economy to imports. In particular, we highlight the trade-offs between short-and long-run objectives, and between the protection of jobs for a specific group of workers versus the generalized benefits shared by the overall population.

### Introduction

Although the natural resource base and productive capacity of the U.S. may be unmatched in the world community, the material wealth of this country could not be maintained if the U.S. chose to isolate itself from other nations. One reason is that about 17 percent of the merchandise produced in the U.S. is sold to other countries. A second reason is that we depend heavily upon imports of various kinds.

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U.S. depends on the world community for critical imports and as a market for exports.

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Imports of specific products have widely varying implications for different groups in the U.S. There are two broad categories of imports. The first includes those goods that "complement" rather than compete with domestic production. The second competes with or supplements U.S. production (depending on how one wishes to phrase it) since it consists of products which are produced in the U.S.

### Complementary Imports

This category of imports complements the resource and skill base of our economy. Many of the natural resources essential for the functioning of our industrial society fit into this category since in the U.S. they are either entirely absent or not available in sufficient quantities. In many instances, developing countries represent our principal suppliers of these key commodities.

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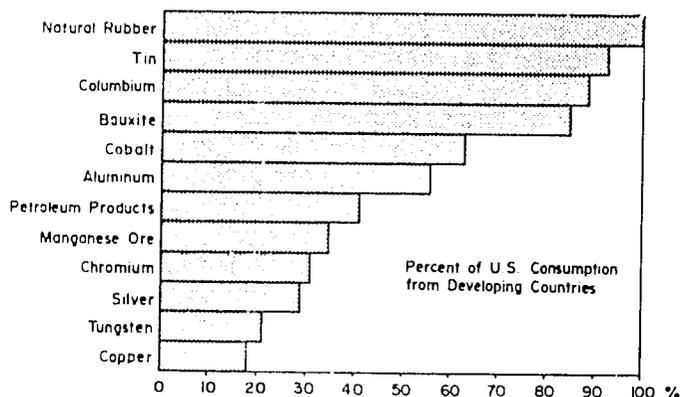
Many key commodities are imported from developing countries.

For example, in 1978, 100 percent of natural rubber, 93 percent of tin, and 41 percent of petroleum products consumed in the U.S. were imported from developing countries. In Figure 5-1, we list some of the major commodities imported from the developing countries. This list indicates the extent the U.S. is dependent upon other nations for its prosperity.

Tropical agricultural crops make up a second major component of complementary goods. Although these crops could potentially be produced in greenhouses, they can be provided much less expensively by nations with more suitable climates. The importation of coffee, cocoa, bananas, and many spices are examples. About 35 percent of all agricultural imports are classified as being complementary or non-competitive.

Production patterns of the U.S. and the developing nations are generally quite complementary in the area of agricultural products. Developing nations are major clients for our products while, at the same time, we receive 62 percent of our agricultural imports from them (Figure 5-2).

**Figure 5-1. U.S. Import Reliance on Developing Countries for Selected Minerals, Metals, and Raw Materials, 1980**



Source: AID; based upon latest data from U.S. Bureau of Mines.

Industrial products, in contrast, cause controversy as to whether these goods should be regarded as complementary imports since the U.S. produces them. Whether it makes sense to import some of these goods and specialize in producing (and perhaps exporting) others is questioned. For example, 15 to 20 years ago, the domestic automobile manufacturers had little interest in producing small cars so the importation of limited quantities of foreign small cars served to fill a gap in the market. Those cars were largely complementary to our production. Currently, the importation of foreign cars is a major political issue. For simplicity's sake, we will place all manufactured products in the following section on supplementary or competitive imports.

### Supplementary/Competitive Imports

This class of imports are goods which are also produced domestically. The decision to import these goods represents a cost to the society since it implies a reduction in the sales of domestic products (and hence a reduction in U.S. jobs). We should not stop at this level of analysis but instead trace through all of the implications of purchasing foreign-made goods. In taking a broader view, the benefits of trade frequently outweigh the costs.

A first benefit derived from imports has to do with the relationship between our imports and our exports. When we import goods, we provide foreign exchange to other countries which in turn finance their purchases of our exports. Thus, while the closing of our borders may retain specific jobs, it will also almost certainly set in motion a chain of events which will result in the loss of jobs in our export sectors.

Secondly, the ability to trade for rather than produce certain goods allows the U.S. to redirect its resources towards more profitable enterprises. There is no reason for the U.S. to produce everything it has the potential to produce. Both sides can benefit when Hong Kong chooses to exchange shirts for microcomputers which we produce.

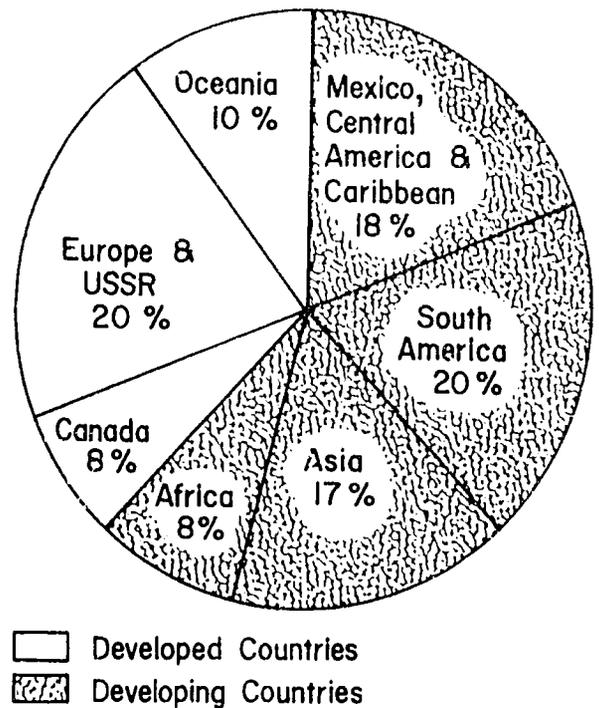
This second benefit, unfortunately, only holds true in the long run. In the short run, the U.S. economy may be faced with severe adjustment problems as workers and resources are driven out of particular industries. Still the argument can be made that it is best to confront these short-run problems head-on rather than mask them through strict import restrictions. Ultimately, the U.S. must maintain an efficient and competitive economy if it is to prosper in the world market and experience has shown that it will generally not do this behind high trade barriers. Manufacturers can ignore the need to invest in new plants and equipment and pass higher costs on to consumers without the fear of losing markets to more efficient foreign producers.

A third reason why imports are important to the U.S. economy is the advantage passed along to consumers. Imported goods increase the quantity and selection of goods available. Imports from developing nations are often less expensive than domestic goods of comparable quality. In 1979, Americans were estimated to have saved more than 2 billion dollars through their purchases of less expensive imports. These savings are particularly important to lower-income Americans. Finally, it should be noted that industries in other sectors in the U.S. economy benefit since a high percentage of the 2 billion dollar savings is redirected to purchases of domestically produced goods.

The costs of imports receive more attention than do the benefits because the costs (lost jobs) are quite concentrated and visible. They

Sixty two percent of our agricultural imports are from developing countries.

Figure 5-2. Sources of U.S. Agricultural Imports



\* Does not sum to 100 due to rounding error.

Source: USDA, 1982.

Imports provide foreign exchange so other nations can purchase our exports.

Trade allows nations to take advantage of any comparative edge.

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Maintaining a free economy can cause short term dislocations but is needed to remain competitive.

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The question of which goods should be traded is often misunderstood.

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What goods should be produced and what ones imported should be guided by the concept of comparative advantage.

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represent one of the few areas in which labor and management in the affected industries can agree. If we would stop to consider our best interests, we might have a far different viewpoint.

### Which Goods Should We Import?

The question of which goods should be traded is often misunderstood. A notion persists that a nation should export goods that it is "better" at producing and import goods for which other nations have the advantage (ignoring for the moment the employment issue).

This view of trade is too restrictive. Often it pays for a nation to import products it could more efficiently produce than its trading partners. To understand why, let us consider a simple example of a dentist who is quite expert at both cleaning and filling teeth. Why does the dentist specialize in filling teeth and hire a dental hygienist to perform the cleaning function? The reason is that, even though the dentist can carry out both tasks more quickly than the hygienist, it is most profitable for him/her to concentrate on the job which yields the greatest income and "buy" the services of hygienist to do the less remunerative task. Similarly, even though the U.S. may be more efficient than Japan in producing both wheat and color televisions, it may still make sense for the U.S. to concentrate on wheat and exchange some of what is produced for televisions.

We call this the "law of comparative advantage" and it has very important implications for the goods exchanged in international trade. It means that countries need not be restricted to exporting goods they are "best" at producing-- they can and should also export goods which they are relatively good at producing and should import (allow others to produce) goods which they are less expert at producing. If we reflect, we can come up with many similar exchanges in our own lives. A case in point is hiring the neighbor's child to mow the lawn even though we know that we could do the job better. We make the exchange in order to devote our time and energy to other (better) uses.

**Summary**

1. In looking at imports, we must be careful to look at both short- and long-run implications as well as at the interest of specific and broader groups of U.S. citizens.
2. An important share of our natural resource and agricultural imports comes from developing countries.
3. The U.S. economy derives a number of benefits from imports:
  - a) Provision of foreign exchange to our trading partners to be used to purchase our exports.
  - b) More efficient resource use.
  - c) Cost savings and hence lower inflation for U.S. consumers.
  - d) Greater variety of goods.
4. Employment adjustment problems must be dealt with if the society is truly going to benefit from trade.

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**Imports benefit consumers with more discretionary purchasing power.**

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# **VI. AGRICULTURAL EXPORTS**

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## ● How dependent is U.S. agriculture on world markets?

### Approach

In this chapter, we explore the increasing integration of the Michigan and U.S. farmer into the world market over the past 20 years. Americans must realize that dependence is a two-edged sword--other nations rely on our exports but our farmers rely just as heavily on the remunerative production opportunities which are created in foreign markets.

### Exports in U.S. Agriculture

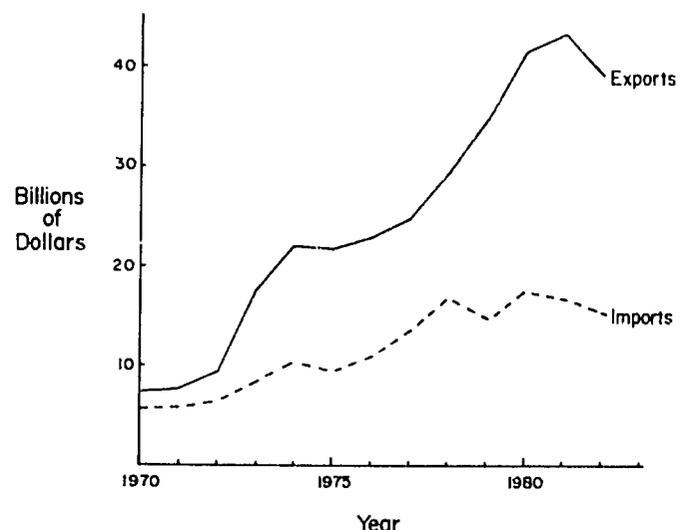
Americans are proud that their agricultural sector is one of the most productive in the world. Productive capacity itself, however, is not sufficient to make our farmers (and our nation) successful. In addition, they require a market to sell what they produce.

Increasingly, that market has been in other countries. In the past two decades, the proportion of total U.S. farm production exported has more than doubled. In dollar terms, as is shown in Figure 6-1, our exports have increased from over 7 billion dollars in 1970 to around 40 billion dollars a year in recent years.<sup>1/</sup> Over the same period, our imports have increased at a slower pace. The result (Figure 6-2) has been the amassing of ever larger trade surpluses in the agricultural sector. We use these surpluses

<sup>1/</sup>Since these are both measured in current dollars and there has been considerable inflation since 1970, there is an obvious overestimate of the change in exports. Roughly speaking, 7 billion dollars of exports in 1970 are equivalent to 20 billion dollars in 1983 (using the U.S. Average Consumer Price Index as an inflator). So when measured in constant 1983 dollar terms, exports have still increased significantly since 1970.

Agricultural exports have nearly tripled since 1970.

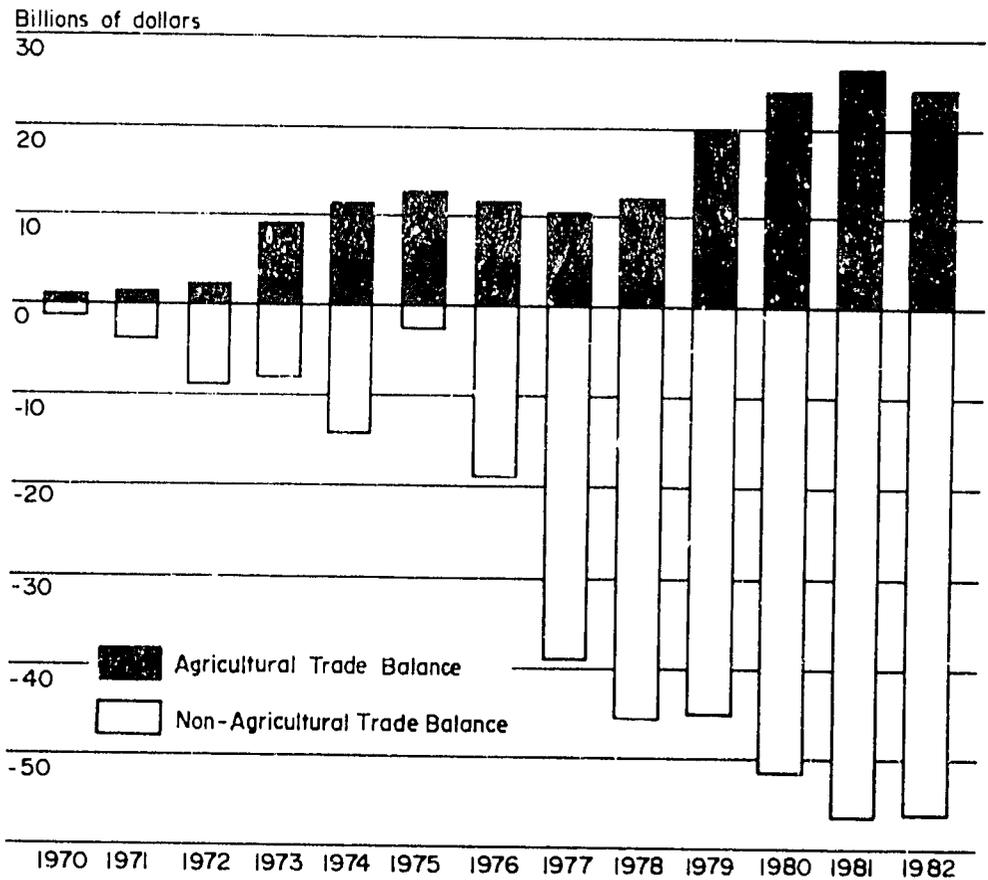
Figure 6-1. U.S. Exports and Imports of Agricultural Products, 1970-1982 (in current dollars)



Source: USDA, 1982.

## VI. AGRICULTURAL EXPORTS

Figure 6-2. U.S. Agricultural and Non-Agricultural Trade Balance, 1970-1982  
(... current dollars)



Source: USDA, 1982.

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The agricultural sector has amassed large trade surpluses.

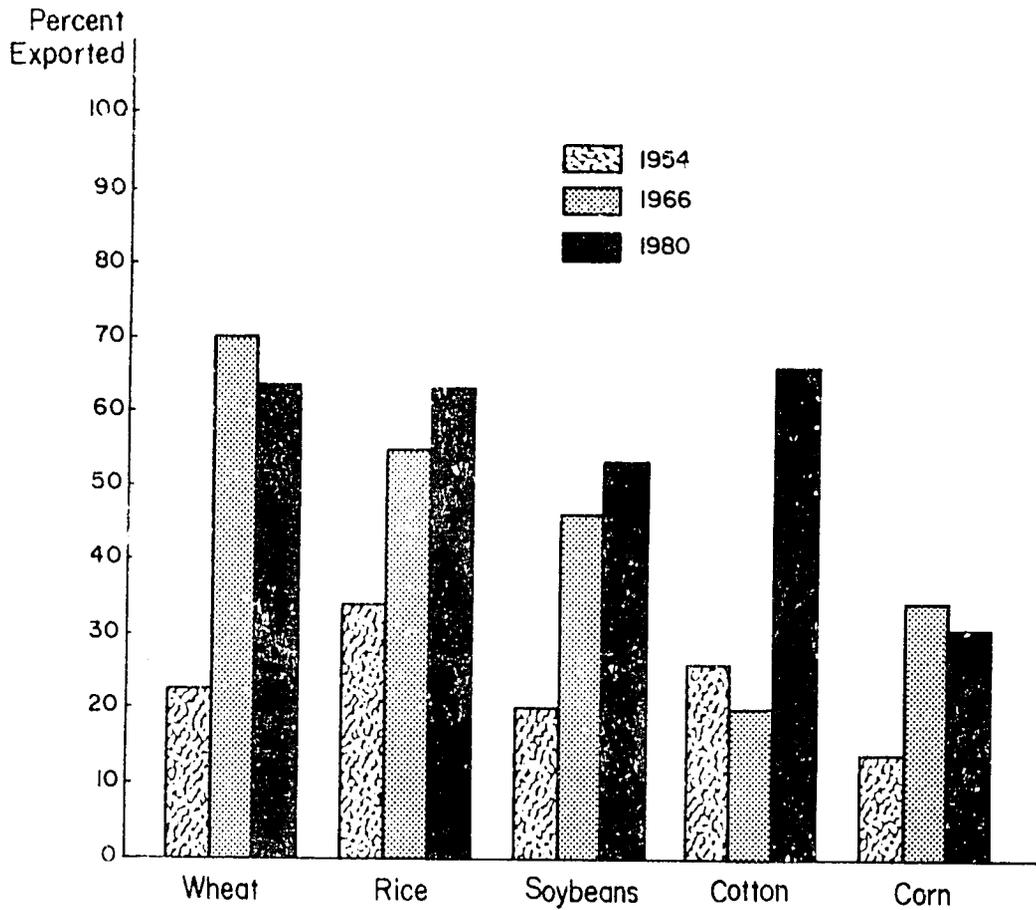
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One dollar of farm exports creates 2 additional dollars of goods and services elsewhere in the U.S. economy.

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Figure 6-3. Percent of Production Exported of Five Major U.S. Crops in 1954, 1966, and 1980



Source: USDA, 1967, 1981a.

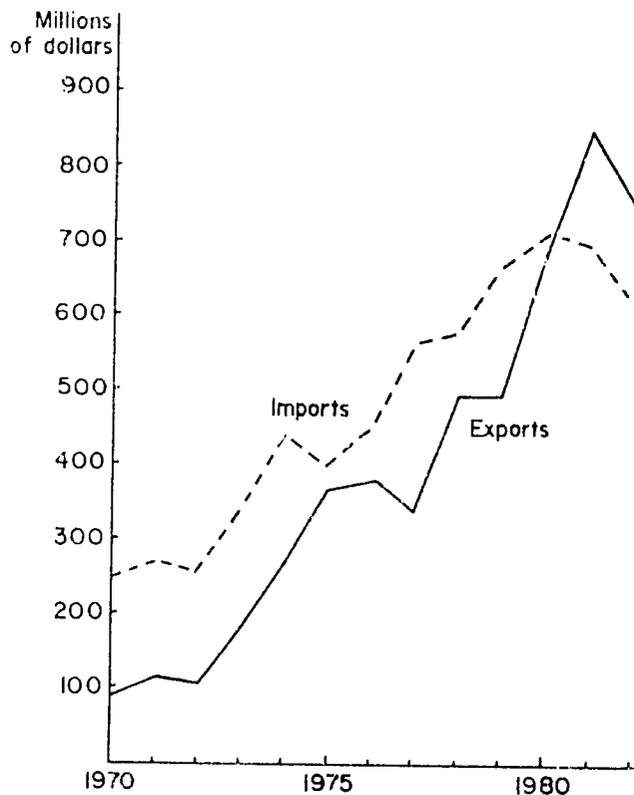
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Agricultural exports are expected to increase in the future—especially feed grains for livestock.

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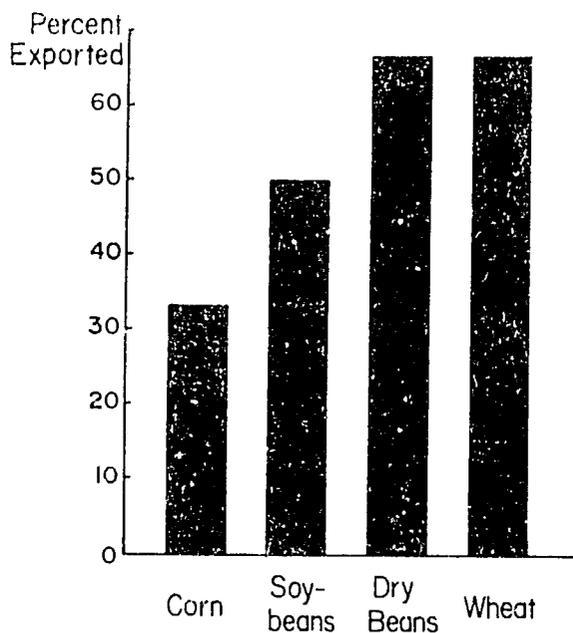
## VI. AGRICULTURAL EXPORTS

Figure 6-4. Michigan Agricultural Exports and Imports, 1970-1982 (in current dollars)



Source: Wu, 1982.

Figure 6-5. Percent of Major Michigan Crops Exported in 1981



Source: MDA, 1982.

(about 20 billion dollars a year) to purchase other goods and resources from foreign producers.

The ability to sell our products in other countries has important employment effects within our economy. Current estimates attribute one million jobs (half on-farm and half off-farm) to agricultural exports. Furthermore, it should be realized that for every dollar of farm exports, two more are created elsewhere in the economy.

The growing U.S. dependence on foreign markets can be seen in Figure 6-3 which highlights the percentage of our major crops exported in 1954, 1966, and 1980. We rely heavily on the availability of foreign markets for all of these goods. Currently, between 30 and 70 percent of these major crops are produced for foreign consumption.

### Exports and Michigan Agriculture

Michigan farmers participate actively in international trade. One out of three acres of agricultural production is devoted to exports. These exports provide between 25 and 30 percent of gross farm receipts.

In Figure 6-4, we document the rapid increase in Michigan's agricultural exports in the past decade. In 1970, agricultural exports were 93.6 million dollars and represented only 38 percent of Michigan's agricultural imports. Over the past two years, exports have attained the levels of 938 million and 752 million dollars and have exceeded agricultural imports by 35 and 22 percent, respectively.

Figure 6-5 shows that between 30 and 70 percent of the major Michigan crops are exported. Michigan farmers have oriented their production to fulfill the demands of these markets. Table 6-1 lists the 12 major foreign clients for Michigan agricultural products. Of special interest here is the emergence of Mexico as well as the developing nations of Asia (China, South Korea, and Taiwan) as important buyers of Michigan products.

### Future of Agricultural Exports

Agricultural exports peaked for both the U.S. (43 billion dollars) and Michigan (938 million dollars) in 1981 and declined somewhat in 1982 (39 billion and 752 million dollars, respectively) as a result of both the worldwide recession and the strength of the U.S. dollar. This points out the disadvantages of being exposed to the

Table 6-1  
Michigan's Major Agricultural Export Countries, 1981  
(\$1,000)

Rank	Countries	Wheat and Products	Feed Grain & Products	Soybeans and Products	Fruit and Products	Vegetables and Products	Animal Products	(\$1,000) Other	TOTAL
1.	Japan	9,577	88,850	20,829	6,332	14,856	12,393	3,216	156,051
2.	Mexico	3,415	36,832	5,643	730	30,120	7,276	3,963	87,979
3.	Canada	14	2,623	2,847	9,790	33,666	4,010	5,120	58,070
4.	Netherlands	1,764	9,404	27,897	1,266	2,551	1,181	6,148	50,211
5.	USSR	10,776	27,438	0	0	1,597	596	157	40,474
6.	West Germany	147	7,006	11,804	1,264	4,744	2,005	1,647	28,617
7.	China (Mainland)	20,418	3,970	2,315	4	0	193	12	26,912
8.	South Korea	5,530	13,315	2,537	158	506	2,776	415	25,237
9.	Taiwan	1,741	12,099	5,431	1,187	1,041	1,196	589	23,284
10.	Italy	2,305	11,317	7,193	253	917	749	525	23,259
11.	United Kingdom	69	7,310	2,112	929	7,063	1,789	1,587	20,859
12.	Poland	816	14,256	2,345	0	0	2,511	119	20,047

Source: MDA, 1982.

vagaries of the international market. The benefits are, however, much greater. In Table 6-2, predictions for future trends in international trade indicate that the U.S. will maintain its market share (except for soybeans) and greatly increase the quantities of wheat and coarse grains exported over the next decade.

Table 6-2

U.S. Exports in Millions of Metric Tons  
for Selected Years  
(World Market Share in Parentheses)

	Actual		Projected
	1969-71	1981-82	1992-93
Wheat	28.1 (53%)	48.3 (59%)	56.0 (53%)
Coarse Grains	44.8 (76%)	58.2 (74%)	94.3 (78%)
Soybeans	18.9 (73%)	31.0 (71%)	33.3 (60%)

Source: MSU Agriculture Model, Fall, 1983.

Developing countries are increasingly significant markets.

In the decade of the 1960s, the phenomenal growth of Michigan and U.S. agricultural exports was fueled primarily by the rising incomes and improved diets in Western Europe and Japan. In the 1970s, the socialist and developing countries represented major growth markets. In both instances, the U.S. benefited from increases in feed grain exports as livestock production and consumption expanded in these countries.

Many Americans do not realize that a significant (35 percent) and growing percentage of our agricultural exports are destined for developing nations. In Chapters VII and VIII, we will examine

### Summary

1. Exports are essential for the well-being of agriculture in the U.S. and Michigan. We depend on the world market.
2. Our export dependence has increased dramatically in the past 20 years.
3. Currently, one million jobs in the U.S. are generated by agricultural exports.
4. In Michigan, one-third of all acreage is for export and 25-30 percent of farm receipts come from exports.
5. Although there may be several years of stagnation in exports in the immediate future due to the effects of the current worldwide recession, the long-run outlook for agricultural exports (especially to developing countries) is bright.

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**U.S. Agriculture depends on foreign markets.**

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# VII. DEVELOPING NATIONS AS TRADING PARTNERS

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- Isn't it true that although developing nations may wish to purchase our products, they will never achieve the financial capabilities of becoming major U.S. trading partners?

**Approach**

Two factors, rising income and population, account for the developing nations being important clients for our agricultural production. This chapter is closely linked to the discussion of U.S. exports (Chapter VI) and the discussion of the dynamics of development and trade (Chapter VIII).

**Are Developing Nations Important Trading Partners of the U.S.?**

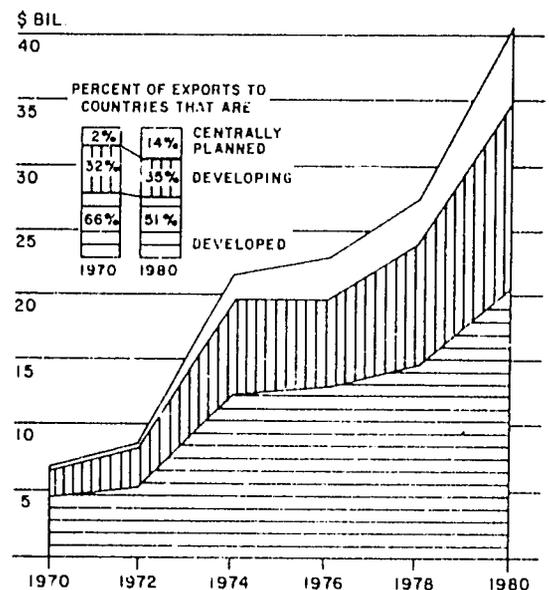
Some observers tend to underestimate the market potential represented by 75 percent of the world's population. But as shown in Figure 7-1, the absolute amount of exports going to developing countries more than tripled during the period 1970-1982 and the percentage of our exports destined for these nations increased from 32 to 35 percent. Both the quantity and the share claimed by these nations is expected to continue to rise.

**Market Potential in Developing Countries**

In order to understand why developing nations rather than developed nations offer such great potential, we must understand certain facts about the nature of the demand for agricultural products. In general, people with low incomes spend a much higher proportion of their income on food while people with high incomes spend relatively less of their income on these goods. This same relationship holds true with respect to increases in incomes--low-income people devote a much higher proportion of any increase in income to basic food and clothing purchases. To illustrate this point, let us consider the following example. A General Motors executive and a parking lot attendant are each given a \$1,000 raise over their previous yearly salary (about \$20 a week extra). Based solely on their starting salaries, we would expect the

The amount of agricultural exports to developing countries tripled from 1970-1982.

**Figure 7-1. The Share of U.S. Farm Exports Going to Developing and Centrally Planned Countries**



## VII. DEVELOPING NATIONS AS TRADING PARTNERS

Figure 7-2. Proportion of Income Spent on Food in Selected Countries (1979)

Source: Mackle, 1983.

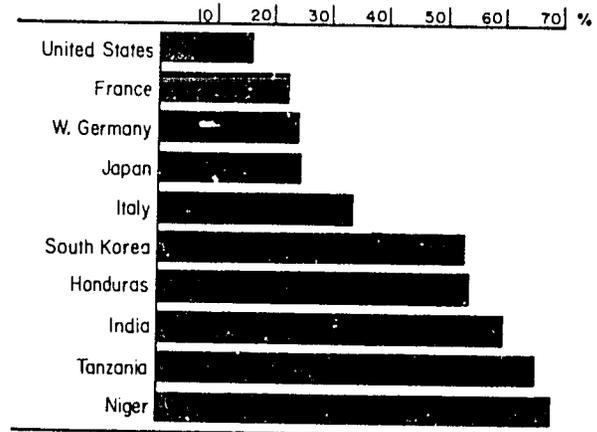
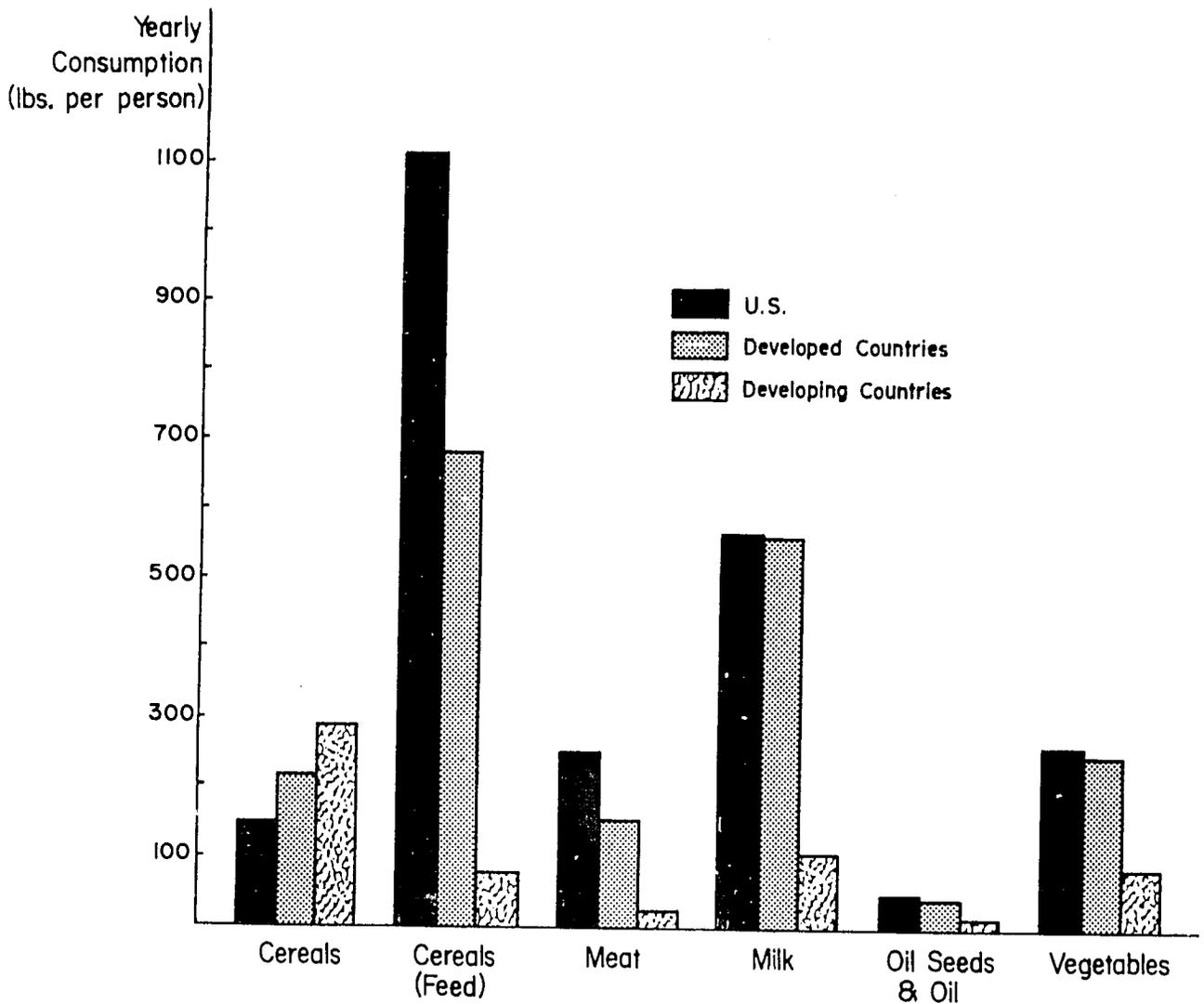


Figure 7-3. Average Per Person Yearly Consumption of Selected Foods in the U.S., Developed Countries, and Developing Countries (1970)



Source: FAO, 1971.

parking lot attendant to devote a higher proportion of the raise towards increasing the quantity and quality of his/her food purchases. The more highly paid executive would probably not spend anything additional on food.

Rich nations are similar to relatively rich people-- they cannot be expected to absorb or consume large, new quantities of agricultural products as incomes of their citizens increase. Most of the new income will instead be devoted to the purchase of TV sets, microcomputers, automobiles, and other such goods.

In contrast, as incomes grow in developing countries, so do food purchases. Demonstrated in Figure 7-2, U.S. consumers choose to devote only 16.4 percent of their income to food purchases. In poorer nations such as India and Niger, consumers spend 60 percent or more of their income on food.

The types of food consumed also change as incomes increase. Figure 7-3 presents average consumption figures for Americans, citizens of developed nations taken as a whole, and citizens of developing nations. Americans on a per person basis consume far more meat and cereals (which go into the production of meat). The diets of the citizens of the developing nations contain a very high proportion of cereals for direct human consumption and lag behind in all other food categories. Although the developing nations probably will not follow exactly the consumption patterns of the richer nations, we would expect their food consumption to increase and diversify, and thus to become more similar to the developed nations as their incomes rise. The U.S., the principal supplier of feed grains, is in an excellent position to profit from this transformation as both developed and developing nations increase their livestock sectors.

Aside from income, the other principal element which drives up food consumption is increased population. Developing countries not only have the greatest current population, but their growth rates are also more than double those of the developed nations. As a result, more than 80 percent of the new consumers in the next two decades will be in these countries.

Data on the growth in volume of agricultural imports over the period 1965-1980 point out the effect of these factors. Agricultural imports

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**Low-income people devote a much higher proportion of any increase in income to basic food and clothing purchases.**

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**As incomes improve, meat is consumed—and more feedstuffs are required to produce animal protein.**

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## VII. DEVELOPING NATIONS AS TRADING PARTNERS

by developed countries increased by 4.7 percent per year (principally an increase in feed grain imports), developing country imports rose by 7.1 percent per year. Table 7-1 shows that while our exports have grown rapidly to other developed nations, they have grown even more rapidly to selected developing nations. It is important to note that all of these developing nations in the past have been major recipients of U.S. foreign assistance. Clearly, our agriculture benefits when their economies develop.

Increased population expands the demands of developing nations for food.

### Future Exports to Developing Nations

Predictions for the next decade (Table 7-2) foresee developing nations playing an increasingly important role in world food markets. For wheat and coarse grains, the volume of developing country imports increases by 37 and 260 percent, respectively, with the market shares also increasing. Soybean imports grow more slowly but eventually should expand rapidly as the livestock sectors in developing countries modernize.

Table 7-1

### U.S. Agricultural Exports to Selected Countries, 1969-1971 and 1979-1981

	1969-71	1979-81	Increase
	(Million Dollars)		(Percent)
<u>Developed Countries</u>			
Japan	1,076	7,061	556
Netherlands	514	3,112	605
W. Germany	505	1,663	329
United Kingdom	418	982	235
France	169	699	414
<u>Developing Countries</u>			
Colombia	20	235	1,075
Brazil	36	661	1,736
Nigeria	15	349	2,226
South Korea	100	1,686	1,586
Taiwan	127	1,150	805

Table 7-2

**Grain Imports in Millions of Metric Tons  
by Developing Countries in Selected Years  
(Market Share in Parentheses)**

	Actual		Projected
	1969-71	1981-82	1992-93
Wheat	25.4 (63%)	39.8 (48%)	62.2 (58%)
Coarse Grains	2.3 (6%)	18.6 (24%)	49.2 (41%)
Soybeans	1.0 (6%)	10.3 (23%)	20.9 (36%)

Source: MSU Agriculture Model, Fall, 1983.

### Summary

1. Developing nations, which contain 75 percent of the world's population, currently purchase 35 percent of our agricultural exports.
2. These nations will seek increased imports as:
  - a) incomes rise and diets change; or
  - b) populations grow.
3. They are our brightest future markets--as poor nations prosper so will our food and agricultural sector.

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**U.S. agriculture benefits when  
the economies of developing  
countries improve.**

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# VIII. THE DYNAMICS OF DEVELOPMENT & TRADE

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- Aren't we spoiling the market for U.S. agricultural products by helping other nations develop their own agriculture (and thereby competing with our products)?
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#### Approach

This is a complex issue because simple facts and figures cannot provide an understanding of the underlying dynamics of economic development. We will examine how the development process progresses and what the implications are for the products the U.S. currently exports.

#### Development Strategies

In responding to this question, it is critical to recognize that in the development process "things are not always as simple as they seem to be." Early in this century, Henry Ford came to the revolutionary conclusion that if he paid his workers more he would be able to create a market for his product and thereby raise his profits. The U.S. agricultural sector faces a somewhat similar opportunity. Helping developing countries grow food appears to be a good strategy to help create markets for American agricultural (as well as industrial) products.

In order to comprehend the logic behind this strategy, we must first understand some fundamental aspects of the development process in these countries. The vast majority of people in the developing nations earn their livelihoods in the agricultural sector. A development strategy which focuses primarily on industrial development generally will not absorb or provide employment for the mass of rural people for a lengthy period of time. While such a strategy may result in an increase in national income, the distribution of that increase will be such that the incomes of the bulk of the population will remain stagnant. In terms of our example in the previous chapter, the automobile executives rather than the parking lot attendants are the initial beneficiaries of the development effort. Since we do not expect these relatively richer people to devote a high percentage of

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"Things are not always as simple as they seem to be."

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Helping developing countries grow food helps create markets for American agriculture and industry.

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this new income to food, total national food consumption does not increase rapidly.

In contrast, a development strategy based upon a balance between industrial and agricultural development will increase productivity in both sectors. Agriculture can in a sense become the "engine of growth" since it generates capital surpluses and releases labor for industrial development and non-agricultural employment. With incomes of both agricultural and non-agricultural workers rising, so will the demand for food. In most cases, domestic increases in production are not sufficient and increased imports are also required. Overall, this balanced strategy sets in motion a dynamic process of development.

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Rising incomes plus population growth can easily combine to outstrip needed increases in domestic supplies and create demands for agricultural imports.

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### Development Strategies and Trade

An important question to consider is why studies show that broadly based programs which result in food production increases also raise the demand for food imports. This occurs because, on the production side, the supply of agricultural goods is limited in the rate that it can increase in the short-to medium-term. On the demand side, the two forces of rising incomes and population growth combine to outstrip the domestic supply and spill-over into a demand for agricultural imports. An additional reason is that at higher income levels a greater demand emerges for non-locally produced status foods such as feed for livestock, rice, and wheat flour. So we find that some of the best customers for American farm products are just those nations most successful in increasing their own agricultural production since they have succeeded in setting the whole development process in motion. Countries with stagnant agricultural production must have minerals or other resources or they will find it difficult to generate sufficient income to raise their imports.

This is certainly not to say that in individual cases American farmers will not lose markets for specific crops in specific countries. Rather the argument is that in the long run and in general it is in the interests of American agriculture to foster agricultural development and economic growth around the world.

**Summary**

1. The type of development a country embarks on profoundly influences the rate at which the demand for food grows.
  - a) Urban industrial growth programs result in a low growth of demand for food, unless nations have minerals or other resources to exploit.
  - b) Broadly-based rural development programs linked to industrial development result in a much more rapid growth in the demand for food.
2. As a result, the American farmers' long-run interests are best served by rapid agricultural development in the developing world because when agriculture grows so usually does the demand for agricultural imports.

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A balanced agricultural and industrial growth strategy can set in motion a dynamic process of development.

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**APPENDIX I.  
REPRODUCTION OF  
FIGURES FOR USE ON  
OVERHEAD PROJECTOR**

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Developing Countries   
 Developed Countries 

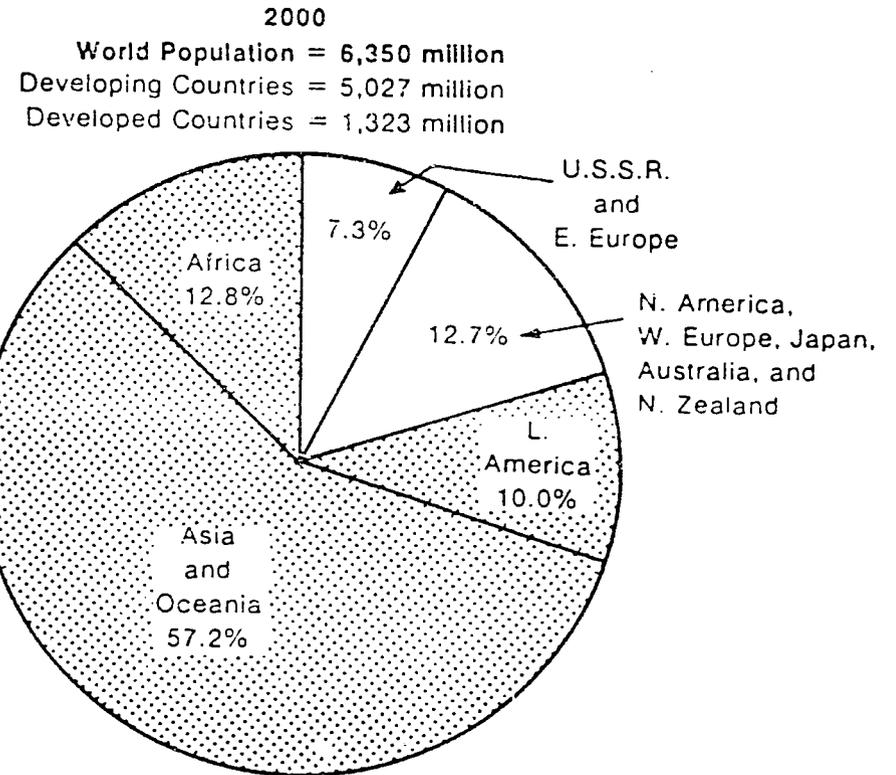
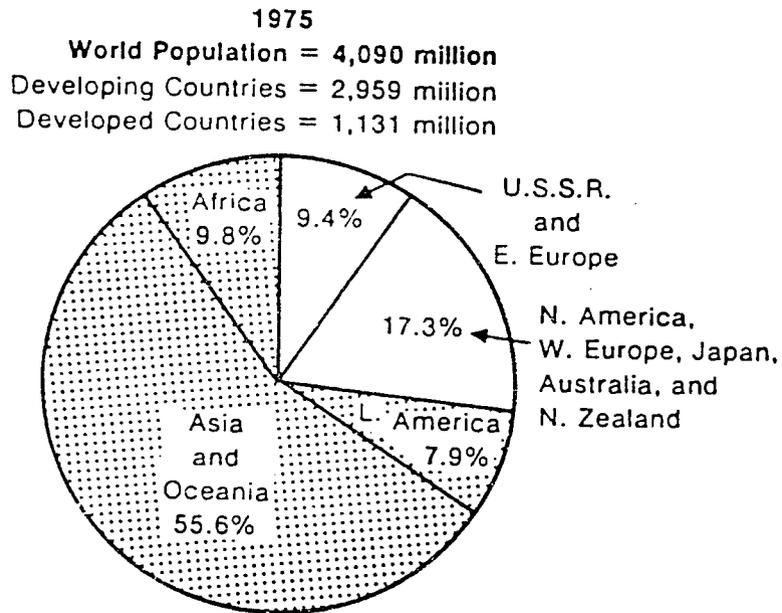


Figure 1.1 World Population, 1975 and 2000.

Source: ODC, 1982.

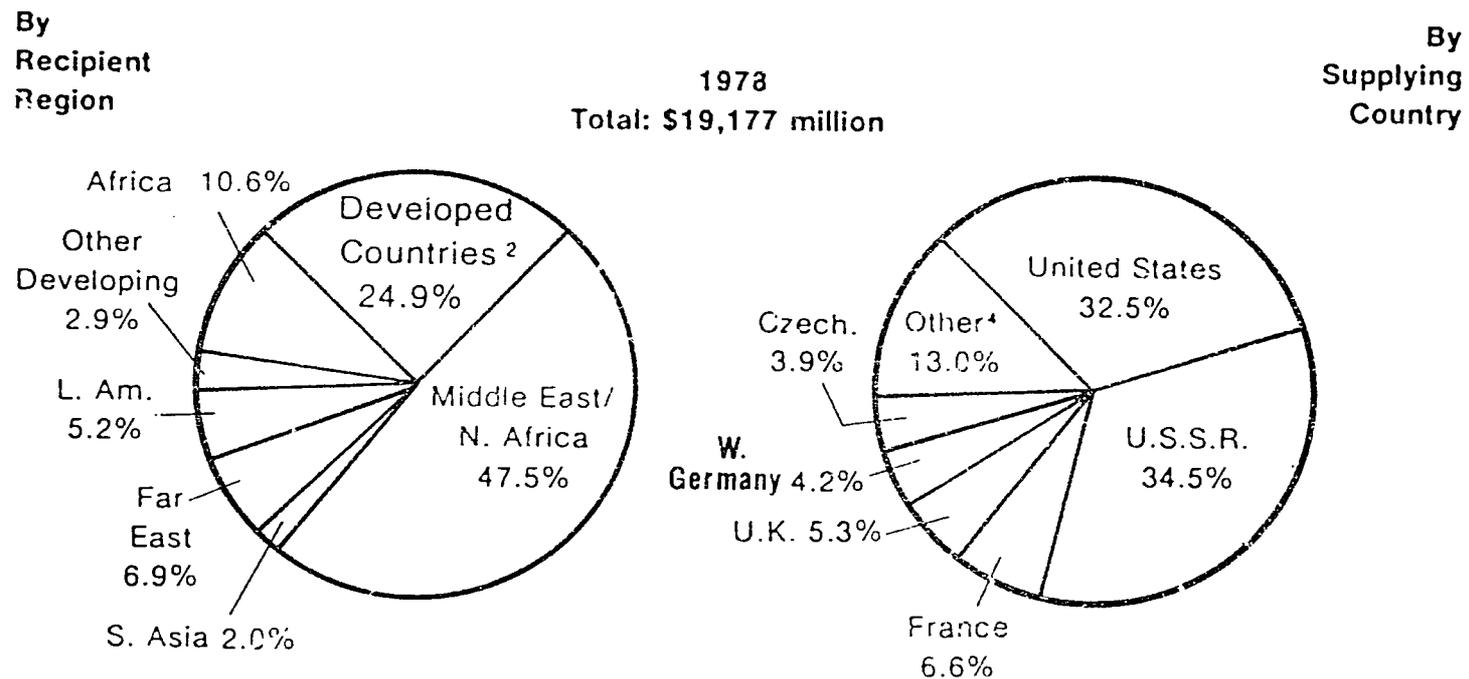
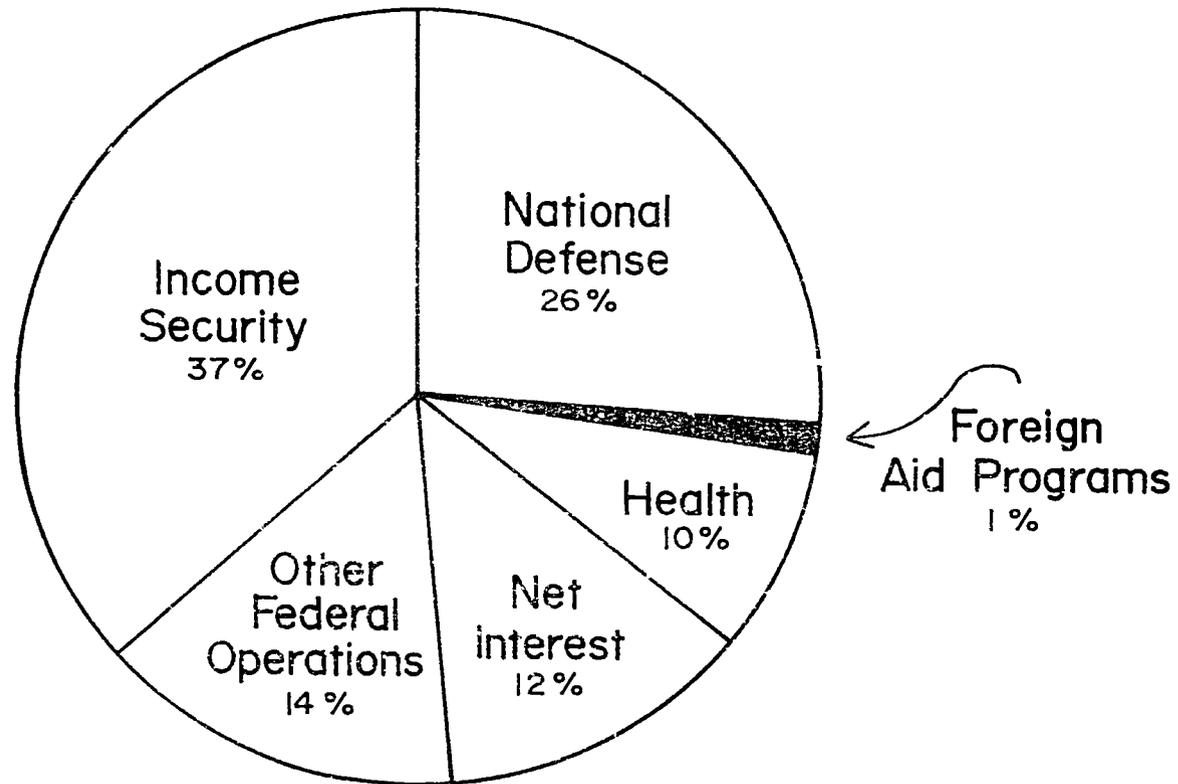


Figure 1.2 World Arms Transfers in 1978 (in \$ millions of 1977 Constant Dollars and in Percentages).

Source: ODC, 1982.



**Figure 2-1. U.S. Budget Allocations for 1982.**

Source: OMB, 1983.

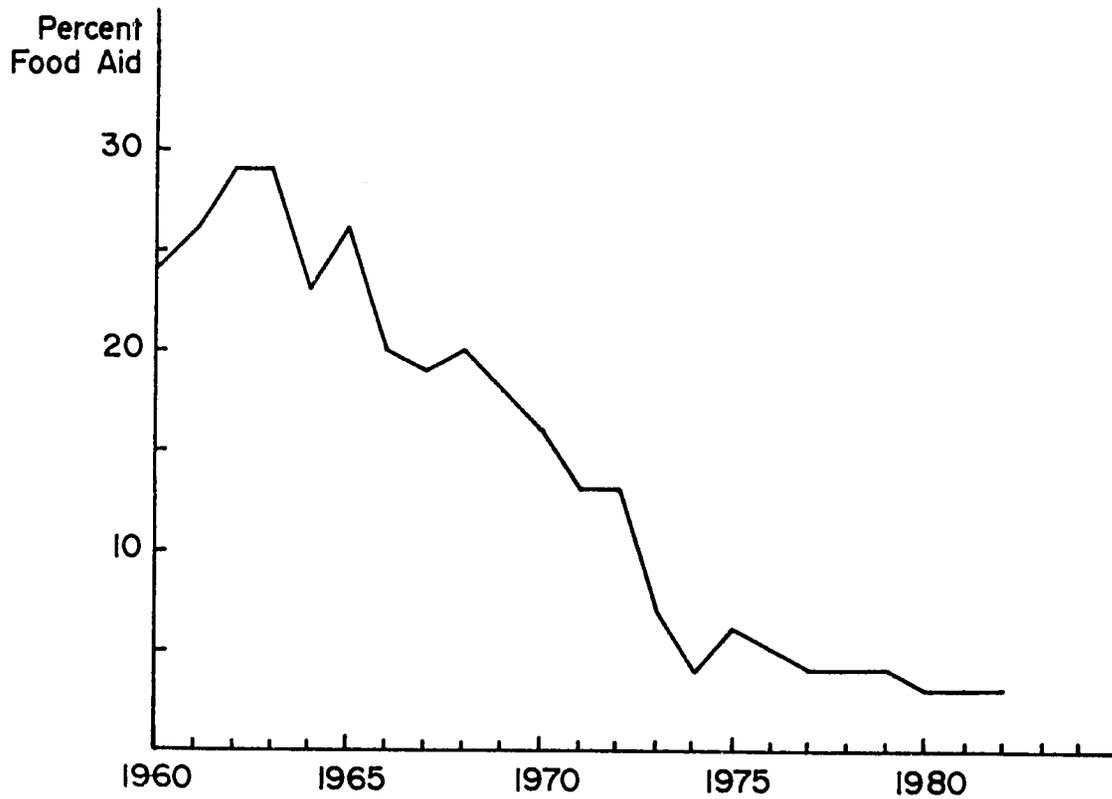


Figure 3-1. Food Aid as a Percentage of U.S. Agricultural Exports, 1960 - 1968.

Source: ODC, 1982; USDA, 1982.

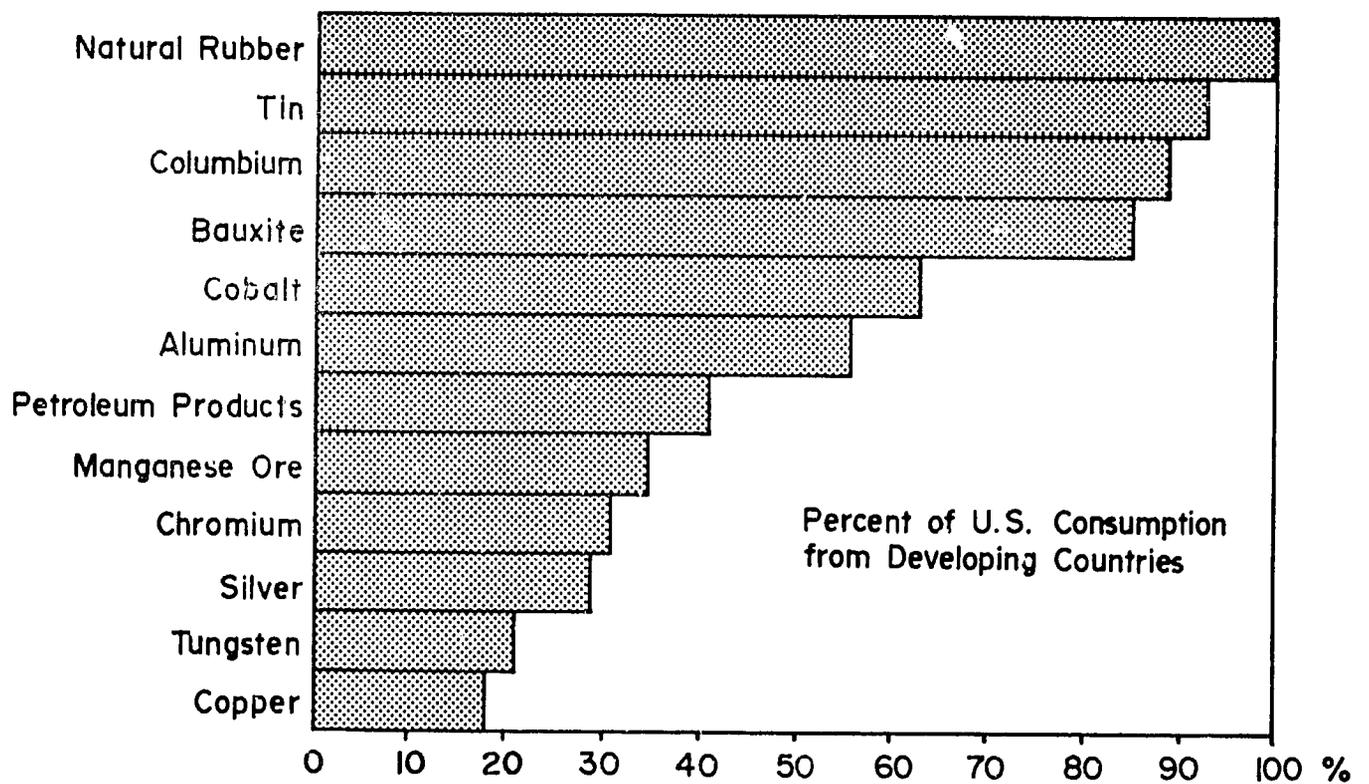


Figure 5-1. U.S. Import Reliance on Developing Countries for Selected Minerals, Metals and Raw Materials, 1980.

Source: AID; based upon latest data from U.S. Bureau of Mines.

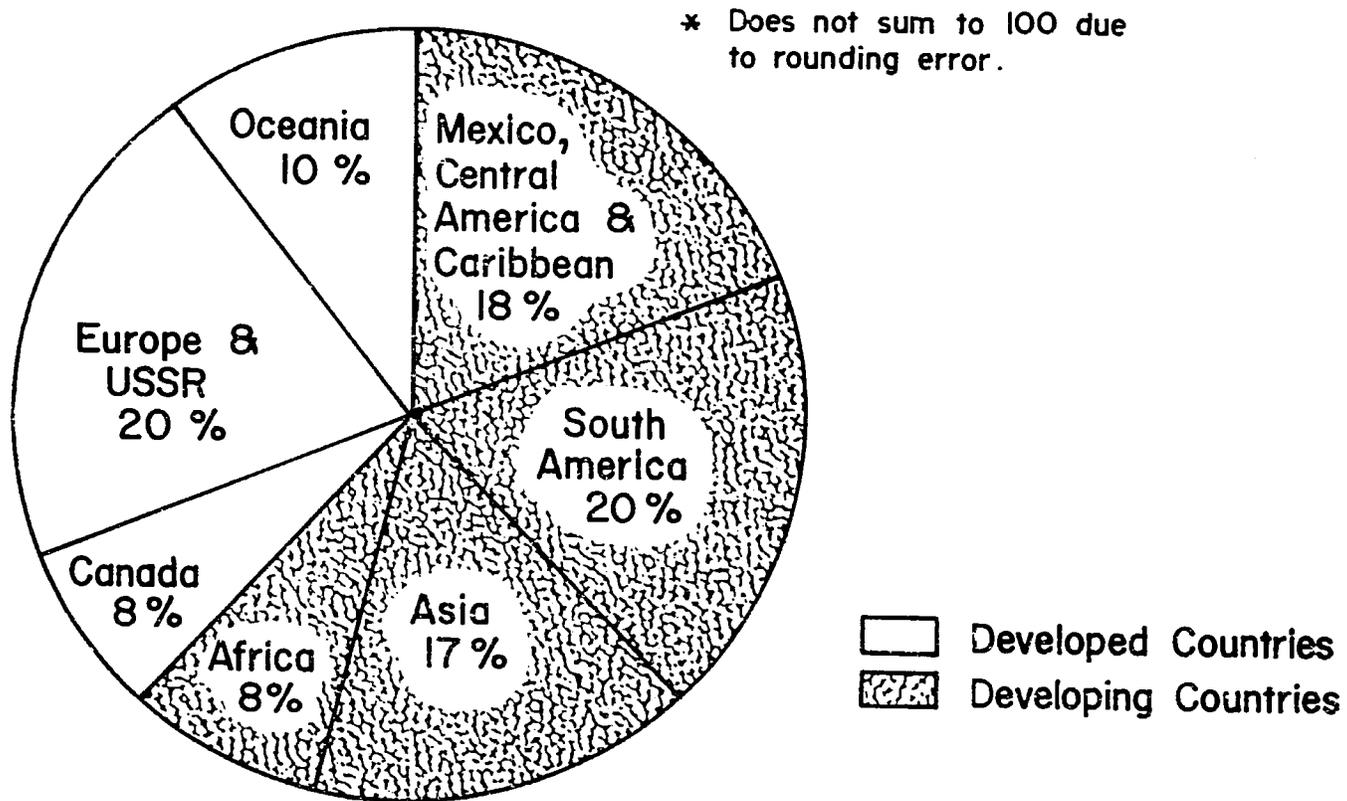


Figure 5-2. Sources of U.S. Agricultural Imports

Source: USDA, 1982.

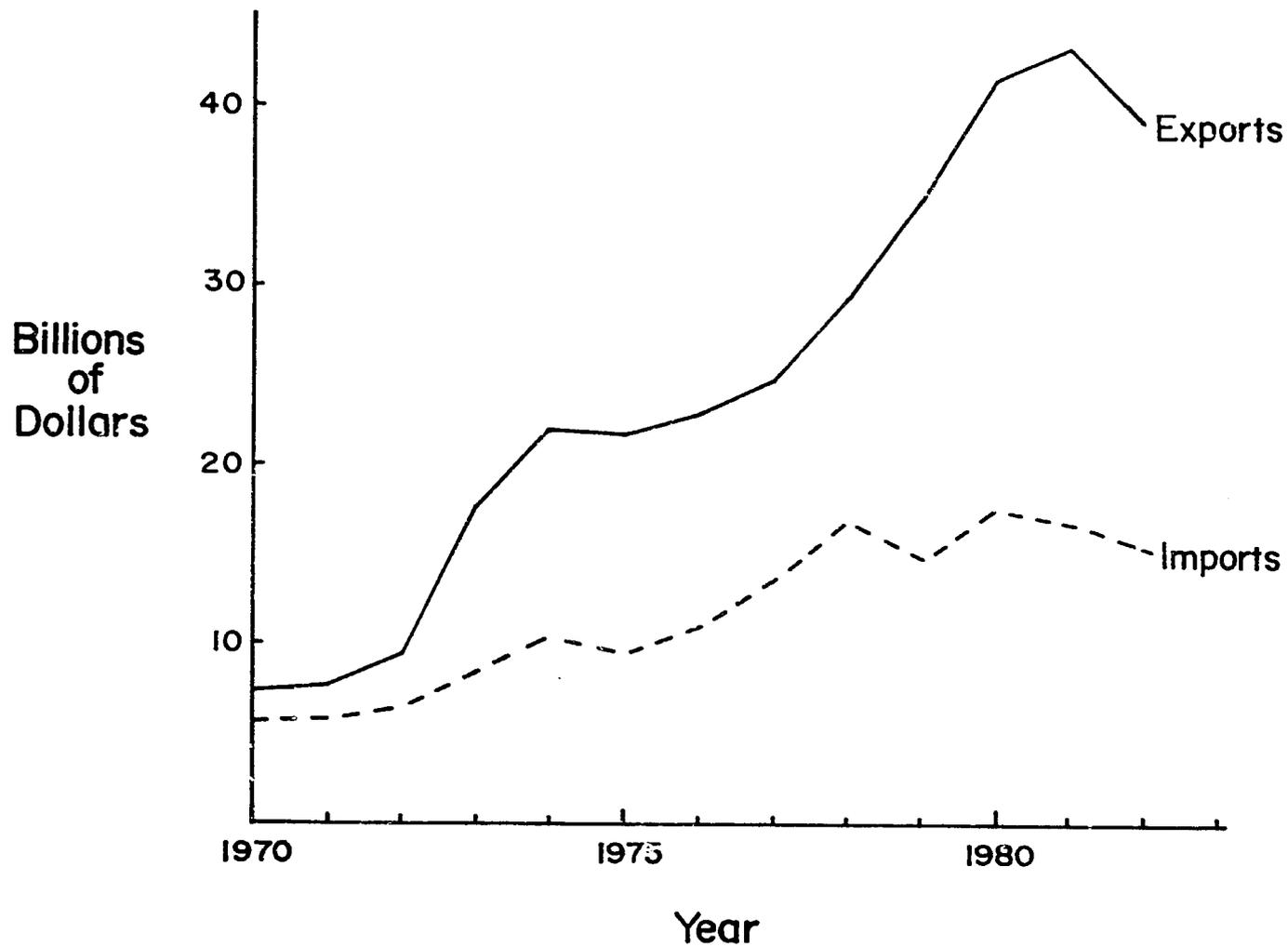


Figure 6-1. U.S. Exports and Imports of Agricultural Products, 1970-1982 (in current dollars).

Source: USDA, 1982

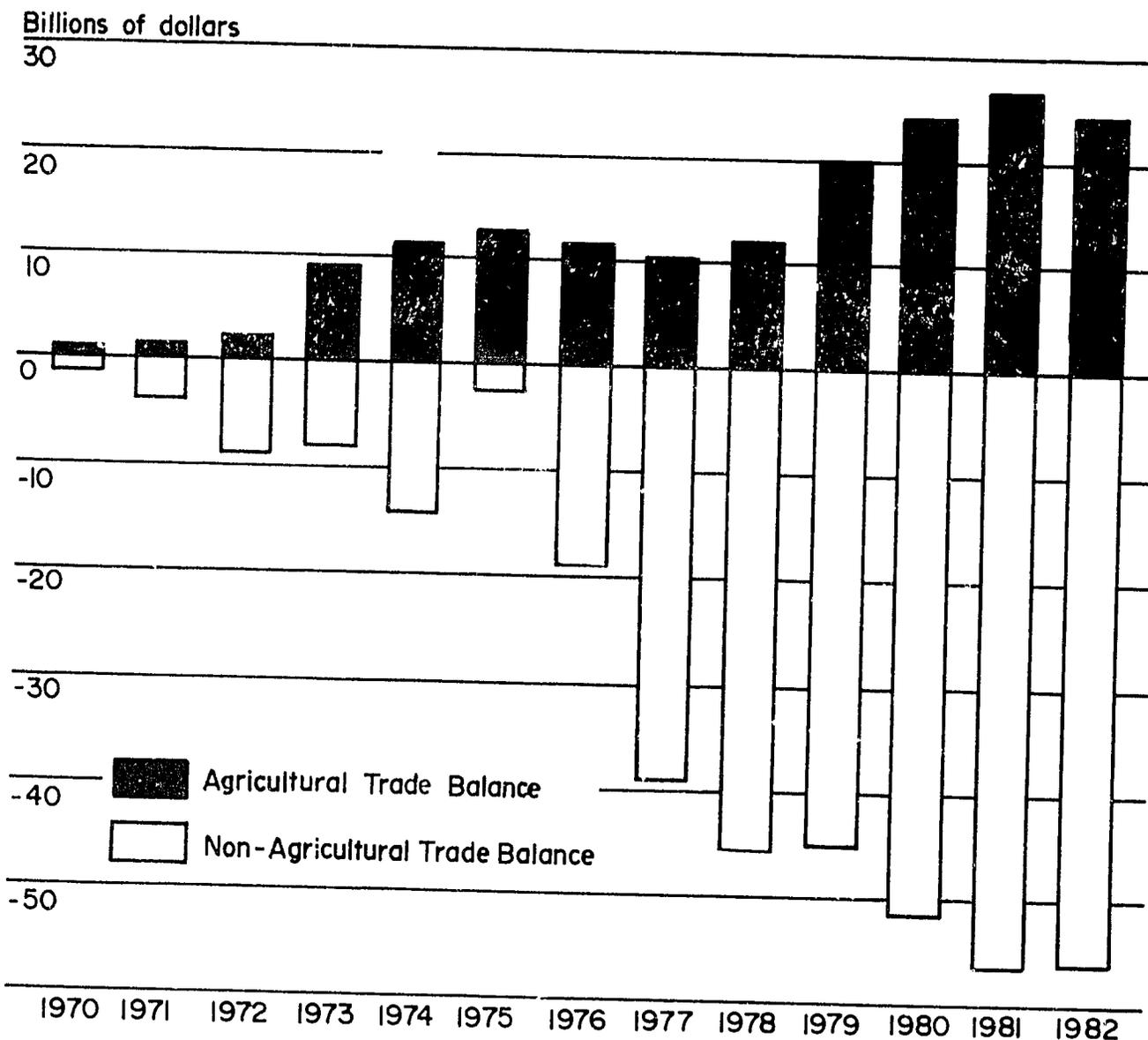


Figure 6-2. U.S. Agricultural and Non-Agricultural Trade Balance, 1970-1982 (in current dollars).

Source: USDA, 1982.

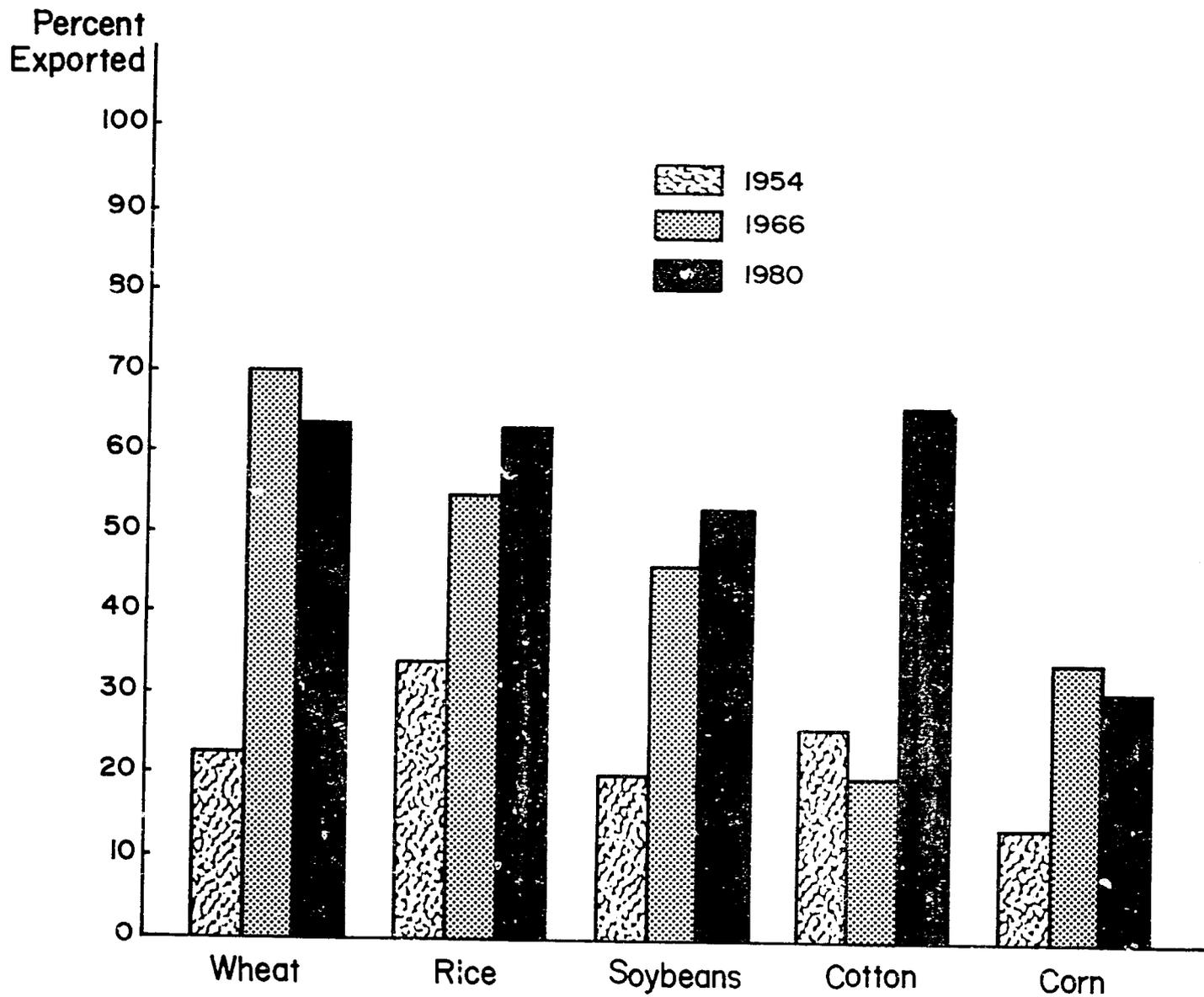


Figure 6-3. Percent of Production Exported of Five Major U.S. Crops in 1954, 1966, 1980.

Source: USDA 1967, 1981a.



Figure 6-4. Michigan Agricultural Exports and Imports, 1970-1982 (in current dollars).

Source: Wu, 1982.

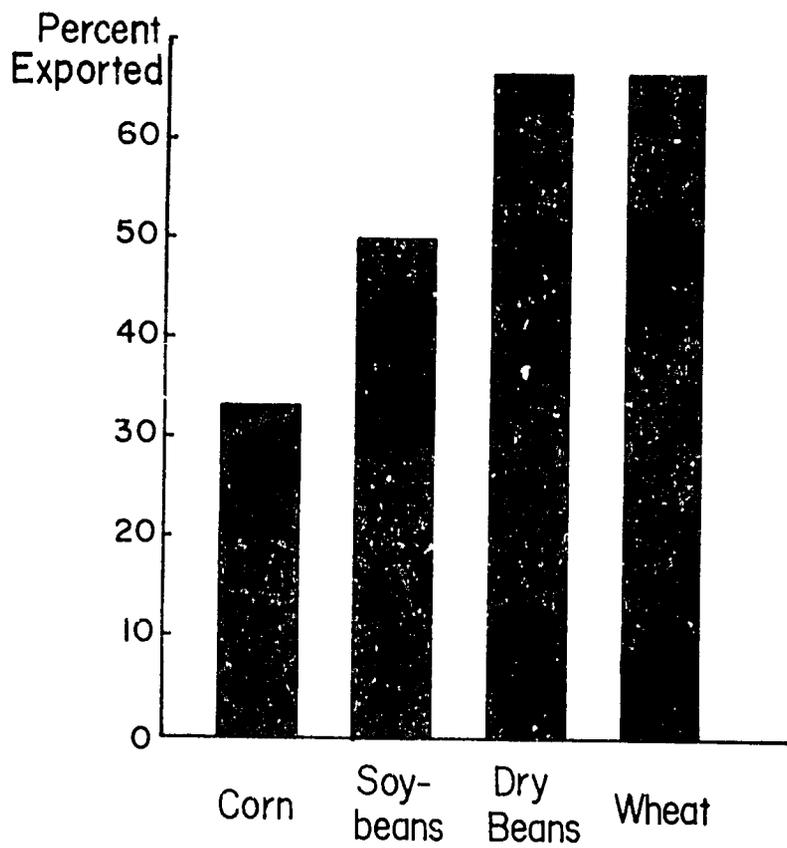


Figure 6-5. Percent of Major Michigan Crops Exported in 1981.

Source: MDA, 1982.

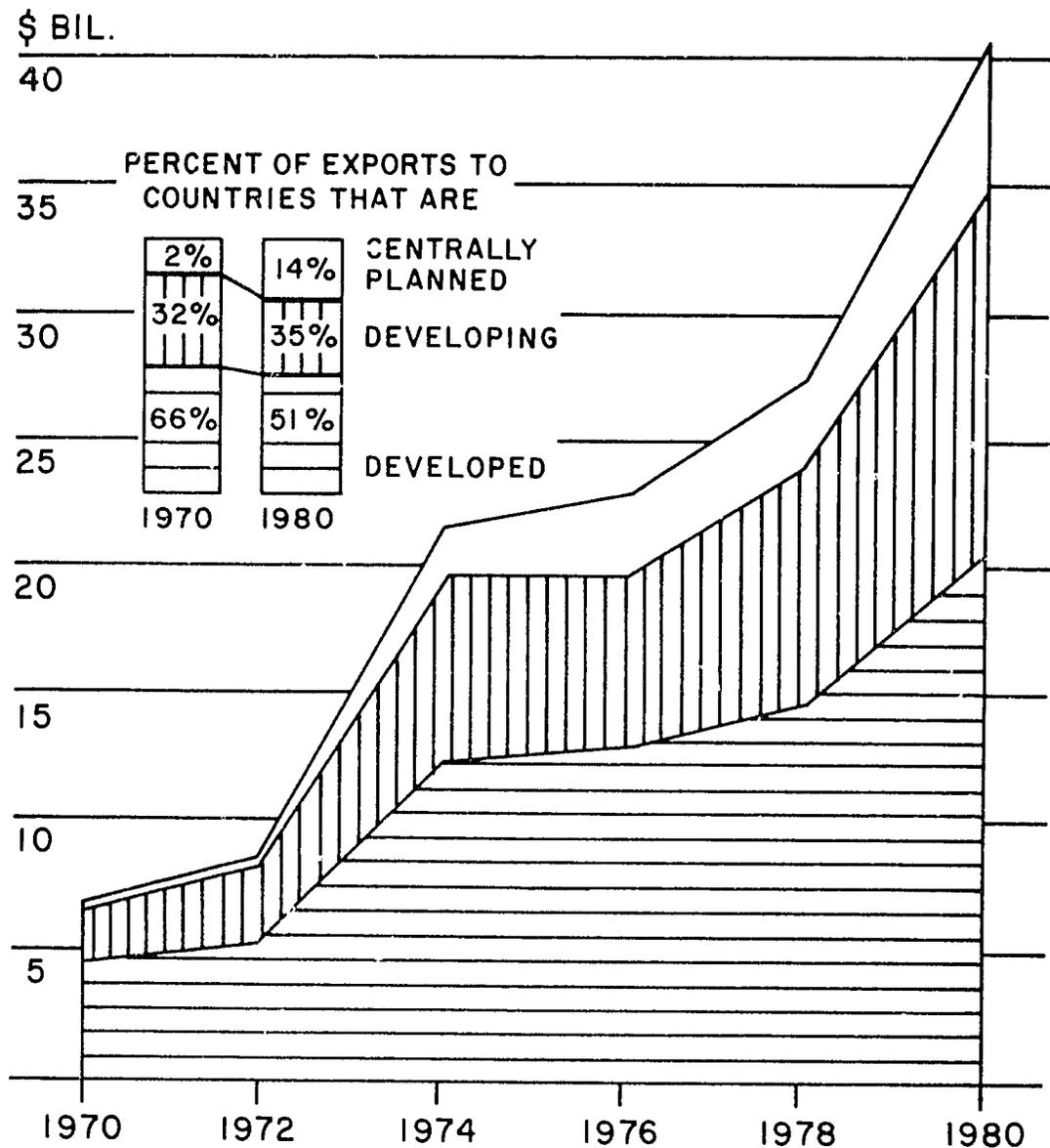


Figure 7-1

The Share of U.S. Farm Exports Going to Developing and Centrally Planned Countries.

Source : USDA , 1982 .

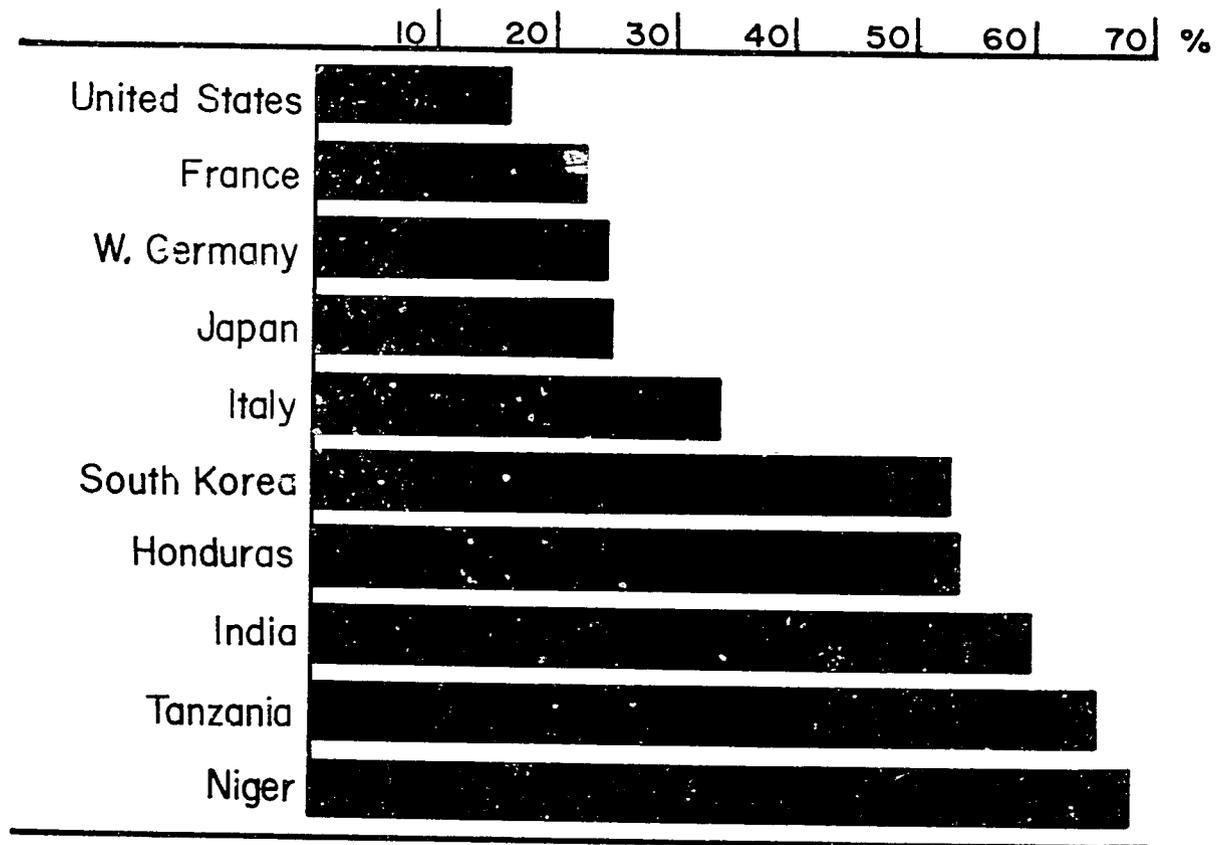


Figure 7-2. Proportion of Income Spent on Food in Selected Countries (1979)<sup>1</sup>

<sup>1</sup>Includes food, beverages, and tobacco

Source: Mackie, 1983.

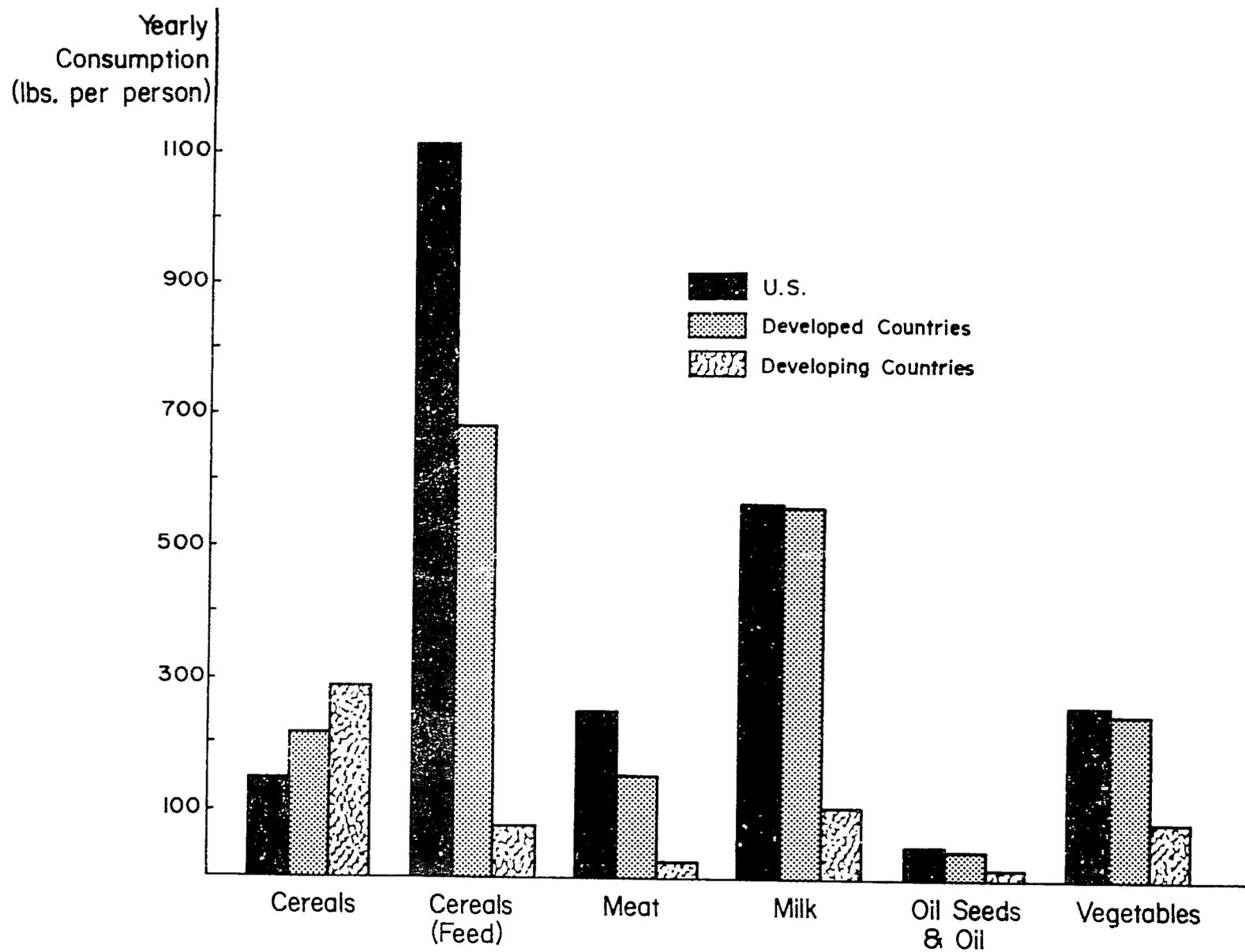


Figure 7-3. Average Per Person Yearly Consumption of Selected Foods in the U.S., Developed Countries, and Developing Countries (1970).

Source : FAO, 1971.