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# THE UNITED STATES FOOD SYSTEM OF THE 1970's

by

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Discusses the present public and private world food policies and their effect on the U.S. food system and how the changing structure in the U.S. will interplay with the world's food system.

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## The Setting

This paper is being written at a time when population projections remain on target, reserves are at all time lows, when droughts in the United States and excessive moisture in Europe and Asia have reduced food and feed grain production prospects, and shortages of fuel, fertilizer, and credit have added to the cost pressures of producing food, and increased costs of transportation, storage packaging and processing have made food one of the most important contributors to a world wide inflationary economy. These trends are also affecting the market structure of agribusiness, the technology of new foods and new feeds, the use of new fuels, and the development of new public policies and social responsibilities. The world is also in a situation that finds a small minority of commercial producers producing a vast majority of the world's food, while a vast majority of subsistence producers can barely produce enough for themselves and their families. Similarly, a small minority of commercial consumers buy most of the traded food supplies, while the vast majority of subsistent consumers need food, but cannot afford to buy it. In addition, many countries have begun major poultry, beef and dairy production and processing operations only to find these projects are under tremendous cost-price squeezes

due to high grain and oilseed protein prices and consumer resistance to the resulting high prices for meat, poultry, milk and butter products.

## From Price Supports and Surpluses to New Government Policies

Adding further to the confused and chaotic world food situation is the revolution that has occurred in farm and food policies all over the world. A case in point is the United States. Since World War II, our national policy has been one of high price supports to maintain producer incomes and encourage the development of a modern, efficient U.S. agriculture. The by-products of that program were subsidized storage facilities for the surpluses that developed, differential export payments for the U.S. exporter to be a competitor in the world grain market, and concessional sales to developing countries partially for humanitarian and nutritional reasons and partially as an outlet for our surpluses. In recent years under both Democratic and Republican leadership we have moved our food policy away from high price supports towards a market economy. As we moved in this direction, we did so under the assumption that we had to be more competitive in world markets and that we could no longer be the umbrella under which other exporting nations developed their pricing policies. This gradual change in our policy became a dramatic one when poor crops coupled with an increase in commercial demand due to rising world incomes and increased population resulted in the selling off of both our surpluses and our reserves. Without U.S. reserves, which in reality were world reserves, a 3% decline in grain production world wide

resulted in a 250% increase in cereal and feed grain prices.

Now that we are no longer insulated from the private and public pricing of the rest of the world; now that our producers and consumers don't have the luxury of either an alternative governmental market or governmental supply; we are in search of new policies and new institutions and arrangements to lessen the risk of changing procurement and marketing values to the participants in the food system and creating shock absorbers in the form of a food reserve system to provide relief to consumers in times of extreme shortages and protection to the producer in times of extreme gluts. Most U.S. proposals include a provision that such reserves should not be placed on the market at price levels below two to three times the producer's cost of production. In addition, developing countries can no longer take U.S. surpluses for granted as part of their food reserve systems and the U.S., in turn, can no longer consider its commodity, production, processing or procurement procedures from developing countries to be on the same terms and conditions as before.

#### New Public and Private Policies Called For

Just as the United States has had to begin to rethink its food policy, so has every other nation and region of the world. Similarly, the world food conference that will take place in Rome in November of 1974 is concerned with providing a global framework against which public and private policies can be made recognizing the interdependent and inter-related nature of our world food economy. The tentative agenda for that meeting is an excellent beginning for developing mutual understanding of the problem. The agenda is as follows:

\* The present food situation and dimensions and causes of hunger and malnutrition in the world:

\* The magnitude of the food problem in the future and possible approaches to a solution:

\* Measures for increasing food production and consumption in developing countries:

\* Strengthening world food security through coordinated stockholding, emergency relief, and food aid: and

\* International trade and international agricultural adjustment.

The purpose of this paper is not to repeat the statistical material that has been set forth so well in many papers describing the fact that over 70% of the world's population lives in less advanced countries, earns only 21% of the world's income and produces about 42% of the world's food, while its population is expanding more rapidly than the developed world and is more dependent on agribusiness as the mainstay of its economy. Rather this paper is an attempt to find how this setting will affect the U.S. food system in the last six years of the 1970s; and, in turn, how the changing structure in the United States will interplay with the world's food system.

The national food priorities for most countries are quite similar, they consist of the following:

1. Improve the nutrition of the population by providing a variety of foods on a low-cost basis.
2. Improve producer incomes as an incentive to expand an efficient food system.
3. Improve the efficiency and productivity of the food system.
4. Better utilize underemployed human resources.
5. Provide special subsidies to low income consumers and producers.
6. Land reform programs.
7. Develop export markets.
8. Provide for crop diversification.
9. Move toward more self-sufficiency.

10. Improve balance of payments.
11. Have access to or develop critical farm supplies such as fertilizer, seed, pesticides and credit.
12. Make certain that the system provides for active and equitable participation of producers through support of special laws for cooperative, etc.
13. Develop and train our human resources for agribusiness.
14. Relate food system to the needs of the general economy.
15. Improve and develop a fair market and futures market pricing system.

Given the above priorities, it is quite obvious that from World War II to 1972, with the exception of the Korean War and the crop disruptions of 1966, that commodity prices were at such low "market" levels that most governments had to resort to price supports and/or export subsidies in order to provide their producers a minimum income. That is not to say that the food was not needed but that those countries and people that needed it most did not have the funds to pay for it. Even with P.L. 480 shipments of over \$25 billion, the United States built up surpluses based on the price support levels used in the country. Today beef supplies and surpluses are being built up in Europe on an intervention price arrangement. On the other hand, for most commodity producers the "world market" for their products is above practically every nation's price support program. To the rice farmers in Asia, the sugar farmers in Latin America, and the corn, wheat and soybean farmers in North America, and the fruit and vegetable growers throughout the world, we are in a new food environment. In the United States, for example, in Table 1 one notes that the U.S. gross farm income has increased from \$61 billion in 1971 to \$97 billion in 1973, U.S. farm input costs have increased from \$48 billion to \$65 billion during the same period, and net farm income has increased from \$13 billion to \$32 billion. Because of increased costs, 1974 net income has been projected to decrease to \$31 billion. Because of recent freezes and further

crop damage, net farm income in fiscal 1974 may decrease below \$31 billion. Farmers have had a step-shift in margins in the United States, for the grain, oilseed, cotton, and sugar producers but not for poultry, livestock, and dairy producers who are dependent on the new high-cost levels for feed grain and protein. Although the average cost of raising soybeans and corn per acre has risen appreciably based on Land Grant College Studies - at \$167 per acre cost for corn and \$143 per acre for soybeans (including high interest rates and increased land values) - these farmers are netting a 20%-30% return on investment in their farming operations. This compares with an average of 3% plus a return for their labor in the pre-1973 period. (This 3% did not include a 6% appreciation in land values.) There was an old saying in the United States that most farmers are poor all their lives but die rich because of land appreciation. Today most commercial grain producers are in the best economic position that farmers have ever been in the history of the United States. In 1973, with farm income at \$32 billion in the United States -- the farmers, for the first time in reportable surveys, had a disposable income higher than the nonfarm population. In 1973 it was 112.9% of non-farm income and 81.3% in 1972. Large-scale grain farmers have not only made money on the three-fold increase in price levels, but also have learned to use the futures market to maximize their margin spreads.

On the other hand food processors and retailers who had to rely on private and governmental surpluses of commodities (in some commodities they were paid by the government for storing supplies that they would eventually use) have had to develop procurement programs, joint ventures, backward integration, long-term contracts, etc, to protect the valuable product lines and markets they have developed. In addition, consumers who have had relatively stable world commodity prices have seen food costs go up over 30% in a two-year period.

The impact of the dramatic change in the world food economy on various country's food policies has been as follows:

1. An acknowledgement that some kind of reserve policy for each country and for the world must be established. Such a reserve must not interfere with the incentives for producers to continue to produce even with a high cost input structure.

2. That consumers who are adversely affected by temporary shortages must be protected on the upside with special subsidies on basic commodities or special food stamp programs and that producers in turn must have some supportive help during cost-price squeezes or temporary production gluts.

3. That in the long run a healthy world market economy not plagued by inflation or economic depression is needed for the development of a profitable, adaptable world food economy.

4. That new types of coordination in each commodity system must be developed to take the place of a patchwork of price support programs, international commodity agreements that really cannot exist very far apart from the real economic forces of supply and demand. These new types of coordination include more effective use of futures markets, contractual integration, cooperative-corporate joint ventures, private and public joint ventures, licensing arrangements, international commodity group assistance, subcontracting, licensing, tax programs related to market potentials, bartering arrangements, all taking place against a world wide monitoring system with some type of minimum assurance for access to regular supply sources and assurances for continued market opportunities and feedback as to changes in supply and market situations.

5. The development of export-oriented food processing industries that in addition to the coordinating machinery listed above also meet the quality, health, packaging, and delivery standards

demanded of the world market and have men and women with enough managerial skills to develop and expand these industries.

6. It is apparent that high yielding varieties of basic food and feed require a "packaged" production approach that simultaneously provides fertilizer, irrigation, pesticides, herbicides, and mechanical aids for production, all of which in turn require investment funds, gas, feed stocks for fertilizers, and fuel for irrigation pumps and farm machinery. At the same time the increased production of the high yielding varieties requires an improved storage, transportation and distribution system. The importance of a packaged approach was emphasized in a Tennessee Valley Authority report released in 1973 which indicated that the greatest impact of fertilizer alone may have already been achieved; future increases in agricultural productivity will depend to a greater extent on the contribution of all inputs. The TVA report projects fertilizer demand will increase from 68 million metric tons in 1971 to 105 million metric tons in 1980 - nitrogen composing 51 million tons,  $P_2O_5$ , 29 million tons, and  $K_2O$ , 25 million tons. Consumption of nitrogen doubled from 1965 to 1971 with an over-all 11.6% growth rate. The developed regions had a growth rate of 10% per year, the developing regions averaged 14%.<sup>1/</sup> In spite of the increase of fertilizer usage in developing countries, they still lag behind developed countries. The tremendous increase in fertilizer prices as well as the increase in natural gas, feed stock prices and fuel for irrigation pumps has more than offset increased prices in export crops such as sugar, coffee and cocoa beans. The \$9 billion investment in developing countries in 1973 has been more than offset by the \$14 billion increase in fertilizer and fuel price increases projected for 1974. The energy crisis also makes it more difficult for developed countries to have the funds available to support development programs by their governments, the World Bank, etc. Therefore, scientists and agribusiness leaders are placed in the position of trying to develop new sources of energy (atomic, coal, solid waste, etc.) and at

the same time develop creative ways of providing current investment to maintain both increased production and cover increasing costs. The World Bank has estimated that agricultural investment needed to maintain the green revolution has averaged about 9% of agricultural GNP. The \$9 billion per year of the past will average out \$15 billion in the 1970s and over \$20 billion per year given current fertilizer and fuel prices. In essence the package requirements for increased productivity and the higher cost structure of most commodities must be taken into consideration as coordinating arrangements are developed by private and public producer and processor groups.

7. The producer must have a major role in the future of the world's food economy and imaginative arrangements that build on the mutuality of interest of producers, processors, distributors and consumers is an important aspect of any program that will take the place of outmoded and ineffective price support programs. In addition, these arrangements must take into account the needs of the small farmers and poorer consumers who have been outside of the commercial world food economy but nevertheless comprise a majority of the world's population. These arrangements must be helpful in bringing such underprivileged producers and consumers into the world agribusiness economy. This means that transfer payments between producers and processors must take into account both the economic realities of the commodity system in which these participants are involved as well as the social, economic and political requirements of those only partially related to the systems.

8. The impact of the change in U.S. policy and the loss of U.S. grain reserves is currently being felt in the following ways:

(a) More volatile U.S. world cereal and feed grain prices. Such volatility exists at very high price levels.

(b) Tremendous cost pressures on the beef, poultry, egg, and dairy industries has led to a more rapid search for low-cost feed and low-cost protein substitutes, as well as a restructuring of the feed lot industry.

(c) High cost feed grains is leading to the use of recycled manure as part of the feed and utilization of methane gas from the manure as a source of fuel in feed operations.

(d) Inventory profit increases have temporarily been reflected in increased earnings at both the processor and retail level (similarly rapid decreases in price levels have led to sharp inventory losses to these same operators, e.g., cheese).

(e) Raw material shortages and high prices have enabled assemblers, elevator operators, processors, and retailers to widen margins to take advantage of the shortage and to attempt to protect themselves against volatile price changes.

(f) The U.S. and Oceania are under tremendous pressure to satisfy growing international demands without at the same time hurting their domestic economies with high food prices during an inflationary and at the same time recessionary economic period (see Table 2).

(g) U.S. trade balances are most affected by U.S. agribusiness (see Table 3).

(h) Most of the customers for food in the world are those countries that can pay for the food (see Tables 4-7).

(i) Most of the world grain production is in the hands of a few countries, who in times of either shortage or surplus must find a way of working together that is mutually advantageous to them and socially desirable from the world's economic point of view.

(j) High food prices have encouraged much needed work in nutrition.

From Table 9 it is apparent that in recent years we have had a major change in the structure of U.S. agribusiness that in turn has been caused by international population and income increases that have recently outstripped world production and would appear to continue to place pressure on U.S. agribusiness productive capabilities. We have moved from a U.S. and world agribusiness dominated by a U.S. price-support program and resultant surpluses that caused prices to move in a narrow range around the price support level (see Table 10) to a situation where poor U.S. and world crop conditions coupled with an increase in commercial demand resulted in a selling off of both our surpluses and our reserves. A 3% decline in world grain production resulted in a 250% increase in most commodity prices (see Table 11). This increase in price levels is beginning to be capitalized in land. In addition, the cost of money, fertilizer, fuel, pesticides, seed, feed and machinery is beginning also to show up in increased production costs. All of these trends are summarized in Table 9.

From 1967 to 1973 all farm expenses increased from \$38 billion to \$65 billion. The significance here is the opportunity of farm input suppliers to supply much needed inputs and the tremendous cash requirements that producers now have in U.S. agribusiness. Such businesses that are in initial short fall areas may get special financial incentives - these would include the fertilizer industry.

Also from Table 9 it is obvious that U.S. net farm income (on the average) has increased substantially from \$12 billion in 1967 to \$32 billion. Even more meaningful is the increase from 1971 of \$13 billion to \$17.5 billion in 1972 to \$32.2 billion in 1973 as shown in Table 9A. This same figure indicates the growth of those farms with \$100,000 of gross farm income or more increasing from 58,000 farms out of 2,909,000 farms in 1971 to 109,000 farms out of 2,844,000 in 1973. The net income of these farms increased over five-fold

during the same time period from \$2 billion to \$11.2 billion. These same types of farms represented over 45% of gross farm income in 1973. As indicated previously, the income of farms in general tend to be capitalized in land values as indicated in Figure 1. At the same time the very success of cereal and feed grain farmers has placed cost pressure on the livestock, hog, poultry and dairy farmers. The former government surpluses enabled these producers to have an assured supply of low-cost feed. With this situation no longer applicable, a restructuring of all of these feed-based industries is occurring. Many small inefficient producers are reducing their herds and flocks or leaving the industry altogether. A new cost and profit structure will develop recognizing a high cost feed industry. Similarly, supply and demand of orchard crops is not a smooth development and a temporary over-expansion of such crops as grapes and especially wine grapes leads to wide variations in grower returns - especially when this expansion takes place without a corresponding increase in processing capacity.

The significance of these trends is as follows:

(1) Land Values to Increase. With no acreage restrictions in the United States there is no safety valve of additional production. Although technology will eventually increase yields, a full capacity operation of farm land may adversely affect yields. Similarly, with 10 years of above-average weather, it is possible that adverse weather conditions will be more probable. Even with domestic and international recessionary economic activity, world population growth (Figure 2) and the difficulty and cost for adding world arable land (Figure 3) will continue to place pressure on U.S. land resources. Therefore the high cost of raw material is strong.

(2) Lack of Price Support Program Means Volatile Prices and New Forms of Coordination. Most U.S. policy makers favor a reserve system that has an

intervention of supplies at 2 to 3 times the cost of production of a crop. This means that when temporary gluts occur they will not be thrown back into the market unless unusual shortages and huge price increases occur. Therefore, processors and retailers who once assumed government surpluses would last forever have now recognized they must work on procurement arrangements with producers. Similarly, producers are desirous of having a market arrangement to take the place of the old price-support agreements. Thus valuations of agribusiness firms must be related to a balancing of the input-output spreads of each segment of agribusiness. Furthermore, the unique agronomic and livestock cycle factors that affect each commodity system must be taken into consideration in evaluating the growth and pressures on different parts of U.S. agribusiness.

(3) Increase in Farm Land Values Require More Investment and a New Firm Attitude. A typical commercial U.S. farmer with one section of land requires a half million dollars of fixed investment and working capital over \$100,000 to be in farming today. These commercial farmers are at a crossroad. They will either be related to the whole food system through contractual or vertical integration, cooperative-corporate joint ventures, etc., or they will set themselves apart from it through collective bargaining. I hope that from the consumers' point of view and the efficiency of the food system we encourage the producer to remain an important part of the system through vertical coordination. If not, government controls will be instituted and a public utility approach to agribusiness will be developed.

(4) Processing and Retailing Opportunities. Just as there are excellent opportunities in land-based agribusiness loans, so are there challenges in the nonland based agribusiness. Returning to Table 9, we note that U.S. food processors' purchases of U.S. and imported farm produced goods has increased from \$40 billion in 1967

to \$77 billion in 1973. The assembly, processing and distribution of these products has had a valued added increase from \$54 billion in 1967 to \$67 billion in 1973. At the same time, the hotel, restaurant and institutional segment of the food market has increased from 21% in 1967 to 30% of consumer food expenditures.

The significance of the growth of nonland based agribusiness is as follows:

(1) Widening Margins but May be Shortlived. Just as there has been a widening of margins at the farm level, the assembly, grain elevator, processors and retailers have been able to widen their margins partly as a protection against price volatility and partly as a result of short-term inventory profits. In the long run, shortages of raw materials may add to the pressures on processors and retailers and a change in the market structure will also add to competitive pressures on these segments of agribusiness.

Retailer and Processor. For the retailer and processor the emphasis is no longer only on new products and new markets but, rather also on effective coordination between quantity and quality procurement and marketing. No longer can the U.S. government be expected to carry commercial raw material inventories for the U.S. food system. The fact that the future markets now have over \$300 billion of transactions a year is one indication of the new importance of procurement and inventory management to the U.S. food companies. The development of futures markets in developing countries to provide for long-term price guidelines is also occurring, such as those established in Colombia. The recent loss by many firms in the dairy industry because of a dramatic drop in cheese prices is but one indication that the volatility of prices is both up and down. Everything from the sugar in chewing gum to vegetable oils in margarine have changed not only the price levels, but the strategies and organization of major U.S. multinational corporations.



Brand differentiation is not strong enough to protect a company from volatile raw material price changes. In addition, new kinds of arrangements with U.S. and overseas producers are being made to provide joint ventures and profit sharing over longer periods to take into account the agronomic and livestock cycles involved in these industries. Government arrangements are being developed to relate government programs and taxes to the market orientation of the firm and industry.

New forms of competition are being created that will have firms manufacture and distribute bulk items to their own outlets. The products will include meat, potato chips, bread and orange juice, as well as the traditional item of milk.

New forms of cooperative-corporate joint ventures will be established in all agribusiness industries and will be both national and multinational in scope. The farmers will and should have a bigger role to play in the food system by 1980.

Feedlots will turn over more rapidly as grass land cattle are held on grass longer and fed very briefly to finish them.

Pollution and ecology problems will be related to fuel and protein shortages. Waste disposal and animal waste will be turned into protein and into fuel.

Public policies will still be market oriented and an international grain inventory system will be established.

Nutrition will be thought of automatically in describing food and in marketing and promotional activities.

Although a recession is occurring, it will have the least amount of impact on the food economy. It will trigger needed reforms in the meat and poultry sections of the business, both in terms of market structure and buyer-seller arrangements.

The higher food prices will eventually be capitalized into higher U.S. and world land prices. Wider margins at the input, processor and retailer sections will lead to increased competition and local integrated manufacturing-distribution operations.

The consumer will have better access to nutritious kinds of new foods and low-income groups will still need to have special kinds of support because of the new higher cost structure of the food industry.

### Conclusions and Program of Action

In summary, the world food system is demanding a transfer of technology to the developing world and at the same time coordinating mechanisms that make this transfer mutually beneficial from the developing country's perspective and from those who are investing or participating in the agribusiness system of that country. At the same time, the participants no longer have a price support surplus disposal program as the bench mark for evaluating these arrangements. To take its place we need:

1. An international futures market not only to provide a transfer price but as a hedge in protecting the developed and developing country participants.

2. Firms that can barter their products and aid in the distribution of the host country's products.

3. Producer-processor joint ventures that take into account the supply strengths of the producer and the market strengths of the processor.

4. New types of industry-trade associations who view the strength of their industry in a global fashion.

5. Develop new types of government-private partnerships or joint ventures that improve the operations of the food industry

of the host country and the nutrition of its people.

6. Investment and strategic decisions that are made with an understanding of the spreads between inputs and outputs at each level of the agribusiness vertical food structure and the development of new mechanisms that protect those spreads without lessening competition and without injury to the consumer in supplying him a wide variety of food on a low-cost basis.

7. New investment in agribusiness by overseas firms who recognize that our resources are more attractive than those in their environment and who will be competing for both our resources and our market.

8. New interest by the Justice Department and other agencies in the activities of the food system with a recognition of the interdependent requirements of the system.

Table 1. U.S. Gross Farm Income, Purchased Inputs, and Net Farm Income, 1971-1973.

Categories	Year			
	1974 (Est.)	1973	1972	1971
- billions of dollars -				
Gross Farm Income	106	97	70	61
Farm Production Expense	75	65	52	48
Net Farm Income	31	32	18	13

Source: USDA.

Table 2. World Grain Trade Balances by Major Geographic Regions\*

Region	Million Metric Tons				
	1934-48	1960	1966	1972 <sup>1</sup>	1973 <sup>2</sup>
- million metric tons -					
North America	+5****	-39	+60	+88.8**	+91.5***
Latin America	+9	0	+2	-3.4	-2.3
Western Europe	-24	-25	-23	-18.3	-19.9
Eastern Europe (including USSR)	+5	0	-14	-25.6	-11.5
Africa	+1	-2	-3	-0.8	-5.3
Asia	+2	-16	-30	-48.2	-49.3
Oceania (Australia & New Zealand)	+3	+6	+8	+7.3	+8.3

\*Minor imbalances between world imports and exports in a given year may be due to rounding or variations in reporting methods used by various countries.

\*\*The United States accounted for 70.1 million metric tons of this total.

\*\*\*The United States accounted for 74.4 million metric tons of this total.

\*\*\*\*Net Exports (+), Net Imports (-).

<sup>1</sup>Preliminary.

<sup>2</sup>Projected.

Table 3. U.S. Agricultural Trade Balance, Fiscal Years

Item	Year					
	1969	1970	1971	1972	1973	1974
- billion dollars -						
Exports	5.7	6.7	7.8	8.0	12.9	21.3
Imports	<u>4.9</u>	<u>5.6</u>	<u>5.8</u>	<u>6.0</u>	<u>7.3</u>	<u>9.5</u>
Balance	0.8	1.1	2.0	2.0	5.6	11.8
Government-program shipments*	<u>1.0</u>	<u>1.0</u>	<u>1.1</u>	<u>1.1</u>	<u>1.0</u>	<u>.9</u>
Commercial trade balance	-.2	.1	.9	.9	4.6	10.9

\*Includes P.L. 480 and AID programs.

Table 4. International Trade in Wheat - 1972

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- metric tons -			
<u>Largest Exporters</u>		<u>Largest Importers</u>	
U.S.A.	22,612,000	China	5,522,000
Canada	14,463,000	Japan	5,145,000
Australia	8,712,000	U.K.	4,284,000
France	7,034,000	U.S.S.R.	2,450,000*
Argentina	1,814,000	West Germany	2,024,000*
		East Germany	2,000,000
World Total	63,832,000	South Korea	1,938,000
		Brazil	1,804,000
		Egypt	1,686,000
		Indonesia	1,357,000
		Poland	1,350,000
		Czechoslovakia	1,246,000
		India	1,010,000
		Cuba	986,000
		Bangladesh	980,000
		World Total	60,647,000

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Source: FAO Trade Yearbook 1972, FAO, Rome, 1973.

\* Amounts shown are net imports  
 Since U.S.S.R. and West Germany  
 both imported and exported  
 substantial quantities of wheat  
 in 1972.

Table 5. International Trade in Rice (Paddy) - 1972

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- metric tons -			
<u>Largest Exporters</u>		<u>Largest Importers</u>	
Thailand	2,076,000	Indonesia	734,000
U.S.A.	2,036,000	South Korea	732,000
China	750,000	Bangladesh	658,000
Burma	460,000	Philippines	434,000
Egypt	456,000	India	419,000
Italy	338,000	Hong Kong	415,000
Pakistan	300,000	South Vietnam	383,000
Australia	179,000	Singapore	363,000
		Sri Lanka	298,000
World Total	7,554,000	U.S.S.R.	280,000
		Malaysia	254,000
		Cuba	250,000
		Senegal	243,000
		Saudi Arabia	167,000
		West Germany	157,000
		France	132,000
		U.K.	129,000
		World Total	8,225,000
		<u>Other Importers 50,000 - 100,000 Tons</u>	
		Austria	Laos
		Belgium	Mauritius
		Canada	Netherlands
		Chile	Poland
		Czechoslovakia	Reunion
		Ivory Coast	Syria

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Source: FAO Trade Yearbook 1972, FAO, Rome, 1973.

Table 6. International Trade in Maize - 1972.

- metric tons -			
<u>Largest Exporters</u>		<u>Largest Importers</u>	
U.S.A.	22,386,000	Japan	5,790,000
France	3,230,000*	Italy	4,842,000
Argentina	3,039,000	U.K.	3,145,000
South Africa	3,000,000	West Germany	3,119,000*
Thailand	1,719,000	U.S.S.R.	3,040,000*
		Spain	2,383,000
World Total	36,776,000	Netherlands	2,037,000*
		Belgium	1,011,000*
		East Germany	730,000
		China	584,000
		Czechoslovakia	500,000
		World Total	35,517,000

Source: FAO Trade Yearbook 1972, FAO, Rome, 1973.

\*Amount shown is net export since France both exported and imported substantial quantities of maize in 1972.

\*Amounts shown are net imports since West Germany, U.S.S.R., Netherlands, and Belgium both imported and exported substantial quantities of maize in 1972.

Table 7. International Trade in Soybeans - 1972

- metric tons -			
<u>Largest Exporters</u>		<u>Largest Importers</u>	
U.S.A.	11,993,000	Japan	3,396,000
Brazil	1,040,000	West Germany	2,217,000*
		Spain	1,428,000
World Total	13,793,000	Netherlands	1,369,000*
		Italy	819,000
		Denmark	533,000
		France	458,000
		U.K.	539,000
		China	342,000*
		Belgium	337,000
		Israel	330,000
		Canada	267,000*
		Norway	235,000
		U.S.S.R.	226,000
		World Total	13,716,000

Source: FAO Trade Yearbook 1972, FAO, Rome, 1973

\*Amounts shown are net imports since West Germany, Netherlands, China and Canada both imported and exported substantial quantities of soybeans in 1972.

Table 8. Percentage of World Grain Production by Largest Producers, Crop Year 1973-74.

Grain	Largest Producer	Percentage of World Production			
		Largest Producer	Three Largest	Five Largest	Ten Largest
Wheat	U.S.S.R.	29.9%	51.6%	61.9%	76.5%
Corn	United States	45.9	58.7	66.5	81.7
Rice	China	33.5+	61.5	72.4	81.8
Barley	U.S.S.R.	35.5-	49.1	60.8	73.7
Oats	U.S.S.R.	32.4	59.4	72.8	90.7
Sorghum	United States	48.0	79.7	87.0	91.3
Rye	U.S.S.R.	37.0	74.7	79.6	86.2

Source: U.S.D.A., Foreign Agricultural Service

Table 9. Agribusiness Industry Structure.

U.S. Food Agribusiness	Year	
	1967	1973
	- billion of dollars -	
All Farm Inputs	38	65
Farm Net Income	12	32
(Including On-Farm Consumption and Government Subsidies)	7	8
All Farm Marketings	43	89
U.S. Imports	4	9
U.S. Exports	7	21
Net U.S. Food Processor Purchases	40	77
Assembly, Processing and Distribution Value Added	54	67
Total Consumer Food Expenditures	94	144
Percentage Retail	79%	70%
Percentage Institution	21%	30%

Table 9A. Size of Farm by Gross Farm Income.

	0- 5,000	5,000- 10,000	10,000- 20,000	20,000- 40,000	40,000- 100,000	100,000 or more	Total
United States							
	1,544	382	381	356	188	58	2,909
1971	-53%	13.1%	13.1%	12.3%	6.5%	- 2.0%	
1972	50.8%	12.5%	12.8%	14.1%	7.7%	- 2.4%	2,870
1973	43.6%	9.2%	11.7%	19.8%	11.9%	- 3.8%	2,844
- thousands -							
- millions of dollars -							
Gross Farm Income							
1971	4,903	3,788	6,976	12,110	12,983	19,865	60,625
1972	4,884	3,546	6,821	13,899	13,489	25,310	69,949
1973	4,315	2,548	5,942	18,787	22,904	42,478	96,974
Production Expense							
1971	3,291	2,663	4,957	8,746	10,086	17,860	47,603
1972	3,092	2,343	4,556	9,459	11,365	21,613	52,428
1973	2,478	1,502	3,531	11,268	14,695	31,272	64,746
Net Income							
1971	1,612	1,125	2,019	3,364	2,897	2,005	13,022
1972	1,792	1,203	2,265	4,440	4,124	3,697	17,521
1973	1,837	1,046	2,411	7,519	8,209	11,206	32,228



Table 10. Corn Prices and Support Rates, per Bushel, 1961-73.

Year Beginning October 1	Average Farm Prices Received					Average Support Payment to partici- pants	Season Average Price Plus Payment	National Average Loan <sup>2</sup> Rate <sup>2</sup>
	Oct.- Dec.	Jan.- Mar.	Apr.- June	July- Sept.	Season Average			
	- dollars -							
1961	1.00	0.986	1.03	1.04	1.10	-	-	1.20
1962	1.02	1.00	1.12	1.20	1.12	-	-	1.20
1963	1.03	1.12	1.16	1.14	1.11	0.15	1.26	1.07
1964	1.12	1.20	1.25	1.19	1.17	.15	1.32	1.10
1965	1.09	1.19	1.20	1.32	1.16	.17	1.33	1.05
1966	1.28	1.27	1.26	1.15	1.24	.25	1.49	1.00
1967	1.01	1.05	1.07	1.01	1.03	.20	1.23	1.05
1968	1.02	1.03	1.16	1.17	1.03	.24	1.32	1.05
1969	1.09	1.13	1.18	1.30	1.16	.24	1.40	1.05
1970	1.33	1.43	1.41	1.22	1.33	.28	1.61	1.05
1971	1.02	1.09	1.14	1.17	1.03	.19	1.27	1.05
1972 <sup>3</sup>	1.27	1.37	1.67	2.33 <sup>4</sup>	1.00	.32	1.92	1.05
1973	-	-	-	-	-	-	-	1.05

<sup>1</sup> Computed on the basis of total price support payments and the estimated production on participants' farms.

<sup>2</sup> Available to producers participating in the feed grain program.

<sup>3</sup> Preliminary except loan rate.

<sup>4</sup> July-August average.

Table 11. World Grain Production\*

Year	Mil. Metric Tons	Annual Change	U.S. Average Farm Corn Price Selected by Ears	
1961	771			
1962	816	+45		
1963	826	+10		
1964	859	+33		
1965	868	+ 9		
1966	935	+67		
1967	974	+39		
1968	1,005	+31		
1969	1,010	+ 5		
1970	1,016	+ 6		
1971	1,103	+87	Dec. 15, 1971	\$1.08
1972	1,071	-34	Aug. 15, 1973	\$2.68
1973	1,162	+91	July 15, 1974	\$2.91

\* Includes wheat, barley, corn, oats, sorghum and rye.

Rice (milled basis), plus mixed grain in EC and miscellaneous grain in China.  
Production estimates for USSR are adjusted for excess moisture and dockage.

Source: U.S.D.A.

#### Footnote

1/ Estimated World Fertilizer Production Capacity as Related to Future Demand. TVA, 1973.

Figure 1

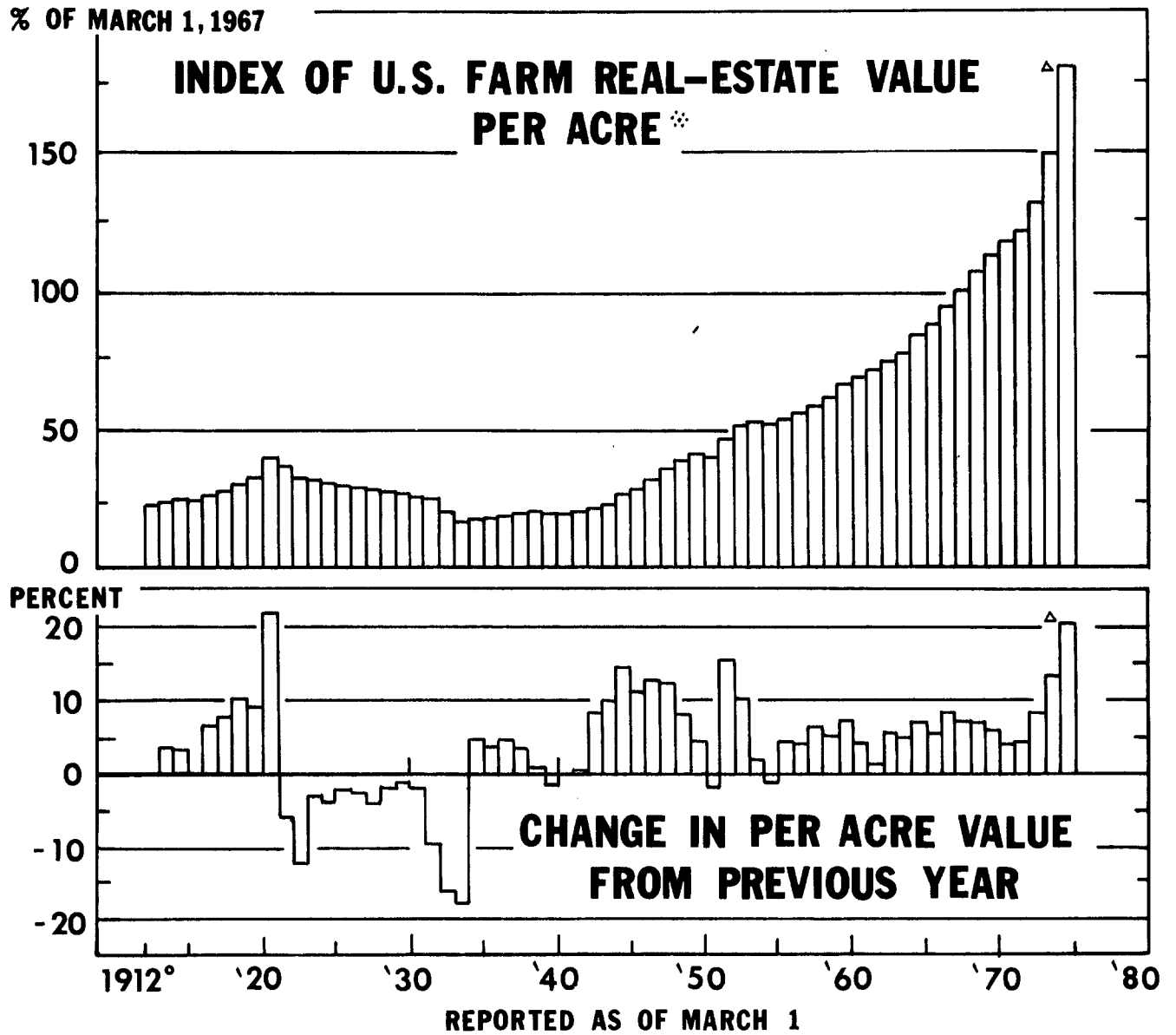


Figure 2

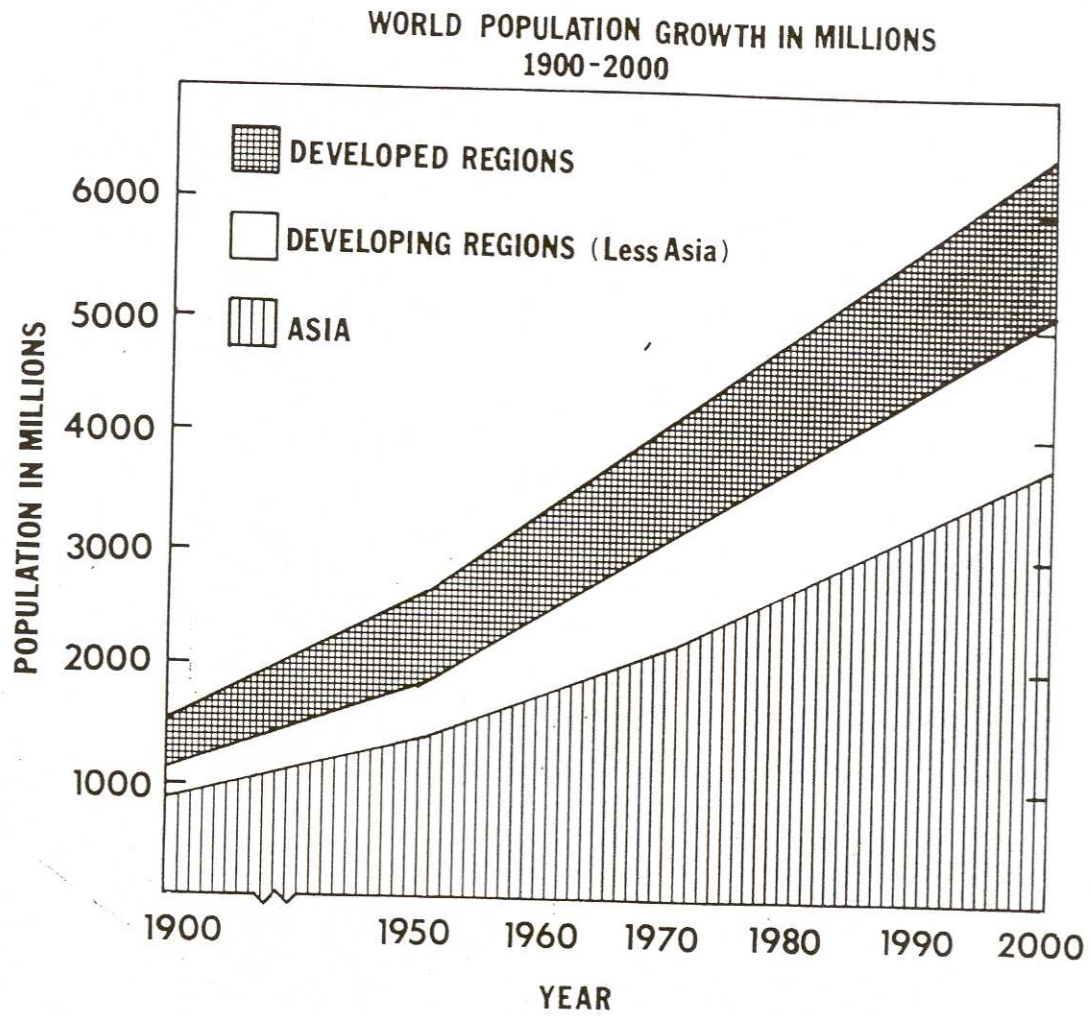


Figure 3

