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THE FOOD WE EAT
FOREWORD

Civilization reaches upward from the shoulders of agriculture. It began when one man consistently could grow more food and fiber than he needed himself. Thus, he helped to feed and clothe another who could become a craftsman or perform other services.

Ours was an agrarian nation when George Washington said: "... with reference either to individual or national welfare agriculture is of primary importance."

Ours was an industrial nation when Theodore Roosevelt declared: "The man who actually tills the soil is the man who is the foundation of our whole structure ..."

Today when one American farmworker feeds 39 people, and civilization is reaching for the planets, President Johnson has said: "The bounty of the earth is the foundation of our economy. Progress in every aspect of our Nation's life depends upon the abundant harvest of our farms."

In no other country, and at no other time in our history, has agriculture provided so well for so many people as it does in the United States today. Agriculture is as vital as ever to the economy, well-being, and strength of the United States. American agriculture also helps to undergird the free world.

The total investment in American agriculture is $238 billion—half of the market value of all corporation stocks on the New York Stock Exchange, or two-thirds of the value of current assets of all corporations in the United States. Some of the $238 billion investment in agriculture is owned by urban people who have inherited or bought farm property.

Agriculture is our biggest industry. It employs 5.6 million workers.

Agriculture creates millions of nonfarm jobs. It takes about 1.4 million people to supply farmers, and another 10-11 million to store, transport, process, and merchandise the products of American agriculture.
THE FOOD WE EAT

The supermarket, the corner grocery, the restaurant, and our own kitchens usually are hundreds—sometimes thousands—of miles from the sources of our great variety of abundant, wholesome foods.

Many foods reach our kitchens in new and appealing forms—as "ready mixes," as concentrated and dehydrated products, and as "heat-and-serve" dishes.

We have grown from a nation in which 1 of every 4 workers had to produce food, to a nation in which 1 U.S. farmworker is efficiently producing food for 39. Thus the technological explosion in agriculture has freed most of us from the labor of earning our daily bread by tilling the soil.

To get food from the 1 producer to the 39 consumers (including the farmer), we have created a vast, efficient system of marketing—storing, transporting, processing, wholesaling, and retailing.

Ours is a very high level of living. Our children are taller, healthier than we were at the same age. They have a longer life expectancy. One important reason is that modern farm production and marketing give us a basic foundation for good health—nutritious, wholesome food in adequate amounts for a balanced diet.

We're eating better

We're eating more beef and pork, more poultry, and more dairy products than we did 15-20 years ago.

In 1965, as compared with the average for 1947-49, each of us ate—

167 pounds of meat instead of 149,
43 pounds of poultry instead of 22; and
9 pounds of cheese instead of 7.

In 1964, we got 69 percent of our protein from animal products. In 1909-13, we got 52 percent from animal products and 48 percent from cereal products, dry beans, peas, nuts, and other foods.

Animal proteins are more costly foods. The reason is obvious:
The animal is a "processor," converting grain and forage into meat, milk, or eggs. The most efficient converter of grain and other feed into flesh—the broiler chick—requires $2\frac{1}{2}$ pounds of feed to produce 1 pound of gain.

Millions of people in some nations can't afford a diet high in animal proteins; they eat the cereals instead of feeding them to animals. Cereals constitute two-thirds of the diet of the peoples of Japan and India. Red meat and dairy products represent about 2 percent of the Japanese diet and about 4 percent of the Indian diet.

We buy more processed foods

When we buy prepared or partly prepared food, we pay for factory, labor, management, and other costs, in addition to prices the farmer received for his crops.

We are, of course, buying convenience—freedom from kitchen chores. We also are buying food with less waste, that needs less trimming, sorting, or washing.

We now pay about $6 billion a year more than we did in 1940 for the convenience of having some of the work of food preparation transferred from the kitchen to the restaurant or factory, and for more transportation, packaging and processing. Meals eaten away from home now account for $1 out of every $5 spent for food.

We pay for packages and containers

Of every $20 we spend for groceries, we pay from $1.50 to $2 for the packaging that helps to keep the food in good condition and attracts our attention.

Packaging costs vary greatly. Sometimes the package may cost as much as the food itself. The trend is toward smaller packages to meet the food needs for one meal, and thus reduce waste.
We have seasonal foods the year around

We expect and enjoy fresh vegetables and fruits all year.

Modern refrigeration and transportation ended our seasonal eating habits and provided balanced diets the year around.

The cost of shipping an average-size head of lettuce from California to New York City adds about 5 cents to its selling price. Growers received an average of slightly more than 9 cents a head for lettuce in 1965.

Even so, we spend less of our incomes for food

Many people of the world spend up to half their disposable income for food; we spend less than a fifth—18.1 percent in 1966. We have more income left for the products of industry, for housing, for medical care, education, and recreation.

If we had bought in 1965 the same kinds and quantities of food we ate in 1935-39, we would have spent only 13 percent of our 1965 income.

Our incomes have gone up more than the price of food. Greater buying power enables us to take advantage of the abundant food, including the animal products, provided by an efficient, modern agriculture.

We buy food and service

Food costs have risen less since 1947-49 than most other consumer items in the cost-of-living index.

For all items other than food, the increase to August, 1966 was 42 percent. The cost of transportation increased 60 percent; housing, 42 percent; rent, 52 percent; medical care, 86 percent.

But for all food (including that served in restaurants), the increase was 37 percent.

The "market basket" of farm-grown food cost consumers 24 percent more in 1966 than it did in 1947-49. But the farmer received almost none of the increase. Marketing costs had risen
44 percent, accounting for most of the rise in the cost to consumers.

We work fewer hours for it

One hour’s work in a factory buys more food today than it did 20 or 30 years ago. Pay for one hour’s factory labor would buy:

- 2.4 pounds of round steak in 1966; 2.5 pounds in 1945; 1.5 pounds in 1935, or
- 2.7 pounds of bacon in 1966; 2.5 pounds in 1945; 1.3 pounds in 1935, or
- 9.6 quarts of milk in 1966; 6.5 quarts in 1945; 4.6 quarts in 1935, or
- 3.2 dozen oranges in 1966; 2.1 dozen in 1945; 1.7 dozen in 1935.

There’s more than food in the grocery basket

When we buy groceries in today’s supermarket, we also usually buy household supplies, cigarettes, toilet articles, and other non-food items. We may even buy clothing. A study by home economists at Purdue University showed that nonfoods made up an average of almost 20 percent of consumers’ purchases in markets in Lafayette and Indianapolis, Indiana.

The farmer receives 40 cents of our food dollar

The farmer’s share of our food dollar in 1966 was 40 cents. It was 39 cents in 1935, and 53 cents in the war year 1945.

As a general rule, the farmer’s share of our food dollar declines as the amount of food processing increases.

The wheat grower’s share of our dollar spent for white flour is 42 cents. When the flour is mixed with other ingredients and baked as white bread, the farmer’s share for his wheat drops to 14 cents.

The corn grower receives 10 cents of the dollar for cornflakes. When we buy potatoes, the farmer receives 30 cents of our dollar. When we buy frozen French fries, he gets 16 cents.

The farmer’s share of our dollar spent for animal products includes: Choice grade beef, 58 cents; Choice grade lamb, 52 cents; retail pork cuts, 60 cents; home delivery fluid milk, 43 cents; ready-
to-cook frying chickens, 50 cents; eggs, 68 cents.

Oranges are one of the exceptions to the general rule of the farmer's share dropping with increased processing. The grove owner receives 27 cents of the dollar we spend for fresh oranges, and 37 cents when we buy frozen orange juice concentrate.

And only 4 cents for a loaf of bread

The wheat used in baking a 23-cent loaf of bread costs 3.2 cents. Other farm products used in the bread add 0.8 cent to its cost.

In 1966, when the retail price of a 1-pound loaf of white bread averaged 22.8 cents—

The farmer received 3.2 cents for his wheat and 0.8 cent for the milk, shortening, and other farm products in the bread; the baker-wholesaler 12.4 cents; and the retailer 3.9 cents. The other 2.5 cents went for milling, transportation, storage, handling, and other processing.

He has less income than most of us

The average income per capita of the farm population in 1965 was $1,664—$1,112 from farming plus $552 from nonfarm sources.

The per capita disposable personal income of the farm population was $1,563; of the nonfarm population, $2,466.

Hired agricultural workers received 95 cents an hour in 1965. Income for 1 hour of factory work averaged $2.61. Hourly earnings of food marketing employees (those in food processing, wholesale trade, and retail food stores) averaged $2.30.

Even though he's more efficient

One hour of farm labor produces 6 times as much food and other crops as it did in 1919-21.

Crop production is 80 percent higher per acre. Output per breeding animal is 95 percent greater.

That's the farmer's record of efficiency, but the consumer has often benefited more than the farmer.
Farmers have been caught in a price-cost squeeze.

Since 1947-49, the average of prices farmers received for all livestock has increased 1 percent, while prices he pays have risen 33 percent.

Thus, while farmers continued their production efficiency at an unmatched and unprecedented rate, his net income has increased at a slower pace.

Comparing the averages for 1965 with those for 1951-55:

- New Jersey egg producers doubled net production per farm while net farm income went up 67 percent.
- Northeastern dairy farmers raised production per farm 47 percent; they earned 14 percent more.
- Wheat producers in the Pacific Northwest stepped up production per farm 29 percent. Their net income rose only 8 percent.
- Cotton producers in the Southern Piedmont raised production per farm 61 percent while their net income increased 37 percent.

**More efficient marketing too**

Though much more food is marketed, because of greater efficiency the number of full-time workers marketing food was about the same in 1965 as in 1955. The hourly labor cost for food marketing was up 46 percent, but the labor cost per pound or per can, or other unit, had risen only 14 percent.

This increased efficiency in marketing has slowed the rise in farm food costs. But the biggest reason for the fact that food has gone up less than most other consumer items is the farmer's efficiency, and the lower prices he has received.

An example is the broiler industry—highly efficient both on farm and in marketing.

Research developed a faster growing broiler and a more efficient diet for it. Farmers improved production methods. Many specialized the year around in growing broilers. Processors used assembly-line methods. Cut-up chicken of a uniform high quality became a large-volume seller in supermarkets rather than a specialty item.

Between 1952 and 1965, when prices of most food products increased, the retail price of frying chickens dropped an average of 19 cents a pound. The poultry producer contributed all of this decline in retail price. He received 19 cents per pound less for his broilers in 1965 than he did in 1952.
Food for freedom

The ability of our farmers to produce food in abundance works for world peace. American food and American food production know-how are shared with the emerging nations of the world. In the past decade we have shared over 150 million tons of food and have helped people in 115 countries.

We have been generous—we will continue to be—but the problem of world hunger cannot be solved by food aid alone. Populations are growing rapidly, in part because death rates are lower. Successful public health measures have saved the lives of millions. Now the techniques of production must be shared and used to help the food-short developing nations sharply increase their food production.

President Johnson, in his 1966 message to Congress on Food for Freedom, proposed that our Nation lead the world in a war against hunger. "There can be only victors in this war," he said. "Since every nation will share in that victory, every nation should share in its costs. I urge all who can to help us."

Our efficiency is proof that our system works

In Russia, one agricultural worker produces for five or six people. More than 40 percent of the total labor force of the Soviet Union works in agriculture and forestry.

If our farmers were no more efficient than those of the Soviet Union, 20 to 25 million Americans who now work in manufacturing, construction, mining, the trades, transportation, and other nonfarm business, would have to produce our food, clothing, and forest products.

In turn, our industrial workers have helped to increase agricultural efficiency with modern machinery, agricultural chemicals, and other supplies used for farm production.

Marketing is a mammoth job

Getting food from farm to market is a mammoth job.
Fresh fruits and vegetables shipped each year into New York City would fill a train reaching from Texas to New York.
More fresh fruits and vegetables were shipped into New York City in 1965 from California (30,000 carlots) and from Florida (26,000 carlots) than from New York State (10,000 carlots).
A carlot is used as a unit of measurement, whether produce arrives by train, truck, boat, or plane.

Marketing is far more than the transportation and distribution of food. It includes food processing and food services of many kinds. Almost 5 million workers assemble, process, and distribute farmfood products. In 1965, consumers spent $77.6 billion for food products that originated on U.S. farms. Of this total, the farmers got $25.5 billion; the remaining $52.1 billion went for marketing services.

Some specially processed and pre-cooked foods add to the food bill; but they save homemakers many hours in the kitchen. And the homemaker today has an almost bewildering variety of food products to choose from. More than 8,000 different food items can be purchased at some supermarkets.

The shopper may well decide to choose—as so many do—the prepared or convenience foods, even though they may cost a few cents more. The difference in cost between these and home-prepared counterparts may pay the cook who prefers to do it all herself very little for her efforts. Here are a few examples of differences in cost per serving in January 1967:

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<tr>
<th>COST PER SERVING</th>
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<tr>
<td>Serving size</td>
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<td>(ounces)</td>
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<tr>
<td>Beef dinner</td>
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<td>Turkey dinner</td>
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<tr>
<td>Pizza</td>
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<td>Hash brown potatoes</td>
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<td>Apple pie</td>
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Eating out also adds to the food bill. In 1966, restaurant meals were 23 percent higher than in 1957-59; grocery store prices of food were up 13 percent over the same period.

**Wherever we live**

We depend on farms and ranches of other States, regardless of where we live in the United States.

Some foods used daily throughout the country can be grown in only a few States—citrus fruit, for example. Others can be pro-
duced in all regions, although farmers, like industry, tend to specialize in production that is to their best advantage. This regional specialization depends not only on climate, topography, and soil, but also on prices and transportation costs.

A few States are so densely populated that they do not have enough land to grow enough food for their people.

Farms in the 9 Northeastern States contain only one-half of an acre of crop and pasture land for each of the 47.5 million people living there, as compared with the national per capita average of 5 acres.

The North Central States produce 63 percent of the Nation's meat animals and eat only 33 percent; 35 percent of poultry and eggs and eat 30 percent; 44 percent of the dairy products but eat 34 percent. But the people in the North Central States look to other regions for much of their vegetables, melons, fruits and nuts.

The 16 Southern States produce more poultry and eggs, and more fruits and nuts than their people eat. But they depend on other States for a part of their meat and dairy products. Production of vegetables and melons just about balances consumption.

Only the 11 Western States can be considered almost self-sufficient. Their production of meat animals, poultry and eggs, and dairy products is equal to or slightly above consumption, but they use much livestock feed grown elsewhere.

Our food is safe and wholesome

We can buy food with confidence, knowing that it is the safest, cleanest, and most wholesome food in the world.

Food safety begins with farmers and ranchers, who use the latest knowledge acquired by research to protect crops and livestock from pests and diseases that could impair food.

Food safety continues from the farm through marketing into our grocery.

Our meat and poultry inspection systems are models for the world.

For more than a half century, the U.S. Department of Agriculture has been responsible for the wholesomeness, safety, and proper identification of red meats in interstate and foreign commerce.

Some 85 percent of all commercially slaughtered meat animals
are inspected under veterinary medical supervision.

Nearly 26 billion pounds of red meat were inspected and certified as wholesome in 1965. This included 15 billion pounds of beef, 9 billion pounds of pork, 576 million pounds of lamb and mutton, and 572 million pounds of veal.

But inspectors condemn and destroy nearly a million pounds of meat and meat products each working day because of disease, spoilage, or contamination.

Evidences of contagious diseases are referred to Federal and State veterinarians to aid in disease prevention on farms and ranches.

Seven billion pounds of poultry (ready-to-cook weight) were certified as wholesome by USDA inspectors in 1965, some 75 percent of poultry sold off farms.

Many foods are graded. Quality grades were first established for wholesale trading, and later extended to many retail foods, because the consumer wants to be sure she gets what she pays for.

Grading enables us to know the quality, as well as the wholesomeness, of the food we buy. Some products are graded for size. You’ve seen the "Grade A Large" label or stamp on cartons of eggs. Twenty-five percent of the eggs marketed are graded.

More than half the butter production is graded, but less than a quarter of it carries the USDA grade label. The Inspection Service uses the U.S. Grade Standards as a basis for inspection of about 40 percent of the canned fruits and vegetables and about 80 percent of all frozen fruits and vegetables.

Thousands of processing plants that prepare our food have USDA inspectors present to supervise every operation to see that the product is wholesome and unadulterated. This is known as "continuous" inspection.

It's farm fresh and nutritive

"Vacuum cooling" and "hydrocooling" mean better food at the fresh fruit and vegetable counters in the supermarket—crisp lettuce, celery, cabbage, and spinach, sweet corn that’s truly sweet, and garden-fresh green peas, tree-ripened peaches.

These and many other vegetables and fruits reach us with more of the farm freshness because of modern marketing, handling, and transportation methods.

Vacuum cooling of lettuce is an example.

For more than 30 years, a carload of California-grown lettuce shipped to eastern markets consisted of about 20,000 pounds of lettuce and 40,000 pounds of ice. The cost of ice and its transportation was included in the price we paid for lettuce.

Then in 1948 came vacuum cooling. Crated lettuce was placed
in a steel tank equipped with a steam vacuum pump and a condenser. Water on the lettuce evaporated at a temperature of about 32° when a partial vacuum was created. A half carload of lettuce could be cooled in 20 or 30 minutes to 35° from field temperatures of 65° to 70°. The cooled lettuce could be shipped with icebunker refrigeration and air-circulating fans as far as icepacked lettuce.

More than 90 percent of the shipments of lettuce from Western States now are vacuum cooled. The lower costs of packing, refrigeration, and freight more than offset the cost of vacuum cooling. The method now is used to cool many other vegetables, including sweet corn.

Sweet corn loses sweetness so fast at 80° that in a few hours it no longer tastes fresh. Research showed that it will have acceptable quality for several days if it is cooled to 40°. At 32°, it will hold quality even longer.

Hydrocooling (dipping the product in ice water) is widely used for peaches. Peaches can be shipped to distant markets now with less decay on the trip.

The conditions that keep fruits and vegetables fresh and attractive usually help them retain their nutritive value. Spinach may lose as much as half of its vitamin C, as well as its desirable appearance, in 3 days at ordinary room temperature. At 34° it loses considerably less vitamin C.

Millions of dollars are shaved from our food bill through improved handling and marketing which also help to get wholesome, nutritious food to us. Hydrocooling and the use of multiwalled bags reduced the shipping costs of Texas carrots by $1 million a year. When research showed that California grapes shipped out of storage needed less refrigeration than they were getting, the saving amounted to $780,000 a year. Tomatoes also were getting too much refrigeration. Reduced refrigeration and improved shipping containers for tomatoes are saving $1 million annually.

There's more of farm freshness in our processed fruits, too.

Remember the pleasant aroma of jellies and preserves being prepared? You smelled this aroma because some of the volatile flavors were being boiled away. USDA has perfected a new process that preserves the delicate fruit flavors and aromas. In this process, the fruit juices are never boiled—only heated for a few seconds.

**It's the kind of food we want**

Remember when—

We wanted a small turkey to fit an apartment oven, or to feed a small family? And all we could find was a hen weighing 10 to 15 pounds, or a tom weighing 16 to 30 pounds? It took researchers about 10 years to perfect a small, meaty turkey.
The hens weigh 5 to 9 pounds, the toms 9 to 15 pounds.

We now buy 12 million small turkeys a year. Large families, hotels, restaurants, and other institutional users still want the large turkeys. They buy about 93 million of them a year.

In 1965, we ate more than 7 pounds of turkey per person—3 times as much as we ate in 1935-39.

Many varieties of vegetables and fruits going to market today were unknown a few years ago. Newer and better varieties are on the way to give us the flavor, color, texture, and other qualities we want.

Our demand for "fresh qualities" in frozen fruits and vegetables and in fruit juices is being met by researchers, farmers, and those who market and process food.

We like a richly colored grape juice. A new grape provides an intensely red juice for blending with less colorful grape juice.

The "tangerine season" normally begins after Christmas, when present varieties ripen with marketable sweetness. We are now able to buy tangerines in October and November. Three newly developed tangerine hybrids mature fruit in autumn.

If we prefer the flavor of freestone peaches to cling peaches, we can buy canned freestone peaches now. For years, the freestones lacked the food canning qualities of the clings. Then freestone varieties were developed for canning.

A new variety of raspberry, selected for its freezing quality, retains its vivid red color and fresh fruit taste after thawing. Varieties of potatoes have been developed that do not get green skins under supermarket lights.

New varieties have qualities other than "good eating." They yield well, resist diseases, and are good "shippers."

New forms of food

Frozen concentrated orange juice is a classic example of a food in a new form that has helped both producer and consumer.

Research on frozen citrus concentrates began in 1943. Commercial production was started in 1945-46. We liked the product so well that frozen concentrated orange juice became a new and multi-million-dollar market for grove owners.

This process also gave us many other frozen juice concentrates—tangerine, grapefruit, lemon, lime, pineapple, grape, apple, and tomato.

We consumers determine the kinds and qualities of foods developed by farmers and the food industry for the Nation’s grocery
shelves. We do this when we buy or refuse to buy the products offered.

Frozen peas are an example. From 1946 through 1949, frozen peas were not widely accepted by consumers. We didn’t like the “off-flavor” they had. USDA researchers in 1949 discovered how to prevent the “off-flavor.” Today frozen peas are favored over fresh by many shoppers.

We can expect more new forms of food through research being conducted at the present time.

Abundant, wholesome food for the future

If our population reaches 245 million by 1980 (as is predicted), farmers and ranchers must produce—

• 10 billion pounds more red meat.
• 20 billion pounds more milk.
• 17 million tons more fruits and vegetables.
• 12 billion more eggs.

These increases will be necessary if our diets change at the same rate as in recent years.

To produce needed additional quantities of these and other foods, another 100 million acres of cropland would be required if yields in 1980 were the same as in 1964.

Rising productivity and efficiency on farms and ranches will make it possible to feed 245 million people in 1980 from about the same total acreage used now. Further, today’s farmers increasingly are applying the soil and water conservation measures needed to protect land for maximum safe use in 1980—and far beyond that date.

Other Sources of Information

Many publications and periodic reports of the U. S. Department of Agriculture provided information contained in this background report. Among them are the following:


The following publications are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402:


Agricultural Statistics 1965, Price $1.75 (paper cover).

Food Costs, Miscellaneous Publication 865 (Revised September 1966) Price 10 cents.

