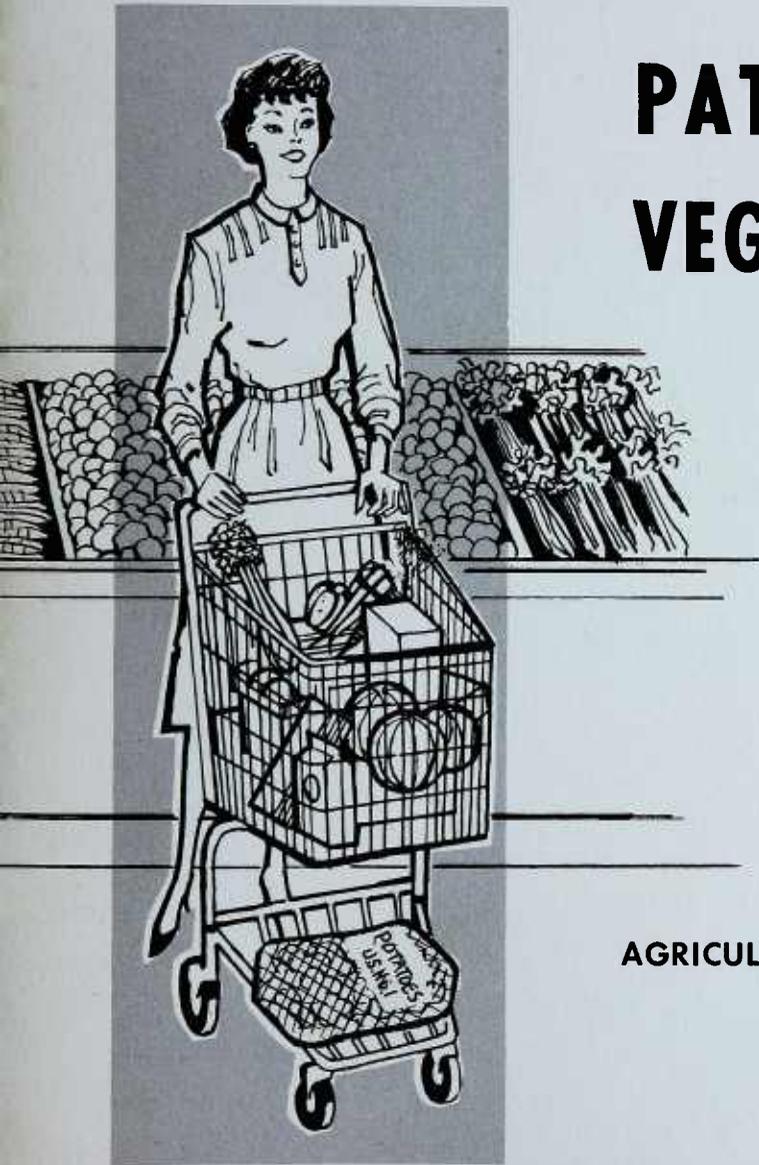


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# CONSUMPTION TRENDS AND PATTERNS FOR VEGETABLES . . .



- POTATOES
- SWEET POTATOES
- DRY BEANS  
AND PEAS

AGRICULTURE HANDBOOK NO. 215

Economic and Statistical Analysis Division  
Economic Research Service  
U. S. DEPARTMENT OF AGRICULTURE

## PREFACE

This handbook is the second in a series on consumption trends and patterns for the major food groups. It is based largely on published research findings on consumption trends and variations in consumption among population groups. The handbook is intended as a nontechnical reference for Extension personnel, market researchers in the food industries, and others concerned with food consumption. Reference tables, notes on data, and literature references are provided as aids to the researcher.

Gertrude Gronbech had primary responsibility for drafting this report. Helen M. Eklund assisted in designing the charts and tables. Marguerite C. Burk, Thomas J. Lanahan, Jr., and Will M. Simmons gave technical assistance.

Data in this handbook apply to 48 States; comparable data for Alaska and Hawaii are not available.

The first handbook in the series is Meat Consumption Trends and Patterns, Agriculture Handbook No. 187, July 1961.



Growth Through Agricultural Progress

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CONSUMPTION TRENDS AND PATTERNS FOR VEGETABLES, POTATOES,  
SWEETPOTATOES, AND DRY BEANS AND PEAS

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SUMMARY

Vegetable consumption per capita is about 15 percent greater today than 50 years ago. Consumption increased moderately from the mid-1920's to a peak in World War II. Since that time, use of processed vegetables has continued to increase, but the increase has been offset by a decline in use of commercial fresh vegetables. The continuing decrease in use of home-produced vegetables resulted, in recent years, in some decline in the overall total. Per capita consumption of potatoes, sweetpotatoes, and dry beans and peas is much less than 50 years ago. But increased use of processed items has halted the decline in consumption of potatoes, and it has slowed the downward trend in use of sweetpotatoes.

In general, larger quantities of vegetables per person are consumed by urban households than by rural households, though the difference has been reduced as commercial supplies have become more widely available in rural areas. High income groups tend to use more than lower income groups.

The West consumes the largest quantity of vegetables per person, followed by the Northeast, the North Central Region, and the South. The much higher proportion of low income families in the South, particularly in urban areas, than in other regions results in the low overall rate of consumption there.

In contrast to vegetable use, urban households consume less potatoes and dry beans and peas per person than those in rural areas. North Central households consume the most potatoes, those in the South the most sweetpotatoes and dry beans and peas.

Per capita consumption of vegetables and potatoes probably will not change much in the decade ahead, but some further shift to processed forms is expected. Recent developments in processing emphasize various dehydrating techniques, some combined with freezing. Use of sweetpotatoes and of dry beans and peas may show some further decline. With little change expected in use per capita, expansion in aggregate consumption of all these commodity groups during the next decade will roughly approximate the projected 20 to 25 percent rate of growth in population.

## TRENDS IN CONSUMPTION

Compared with fifty years ago, consumption per capita is greater for vegetables but less for potatoes, sweetpotatoes, and dry beans and peas. 1/ Home production has declined. Commercial supplies have expanded and become less seasonal, and a marked shift in consumption from fresh to processed forms has taken place.

### Vegetables 2/

Per capita consumption of vegetables, commercial plus home-produced, is around 15 percent larger than it was half a century ago. Consumption showed an upward trend from the mid-1920's to the end of World War II, then declined. In recent years use has averaged about 260 pounds per capita per year, farm weight equivalent (fig. 1). 3/

Changes in total quantity consumed per capita have been less striking than changes in source (purchased or home-produced) and in form (fresh or processed). Over the last 50 years per capita consumption of commercially produced vegetables has about doubled, but a large part of the increase has been offset by a reduction in home-produced vegetables. Most of the increase in commercial vegetables occurred in the processed component. Following World War II, per capita consumption of commercial fresh vegetables as well as of home garden vegetables declined.

### Home-Produced

During the last few decades U. S. consumers have become less and less dependent on home-produced vegetables as market supplies have increased in quantity and become more widely available. With the spread of urbanization, fewer families have gardens. In some rural areas specialized farming and off-the-farm employment also discourage family gardens.

The most rapid decline in home production per capita has occurred since World War II. Consumption of home-produced vegetables, which 40 years ago amounted to almost half of total vegetable consumption, is now probably a fifth to a fourth of the total.

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1/ Farm weight of fresh items and equivalent farm weight of processed items are used throughout this report; cleaned basis is used for dry beans and peas. This section is based on time-series data, discussed in the appendix. The National Food Situation (7) and the Vegetable Situation (8) regularly report current consumption data, and latest revisions appear in annual supplements to Agr. Handb. 62 Consumption of Food in the United States, 1909-52 (3).

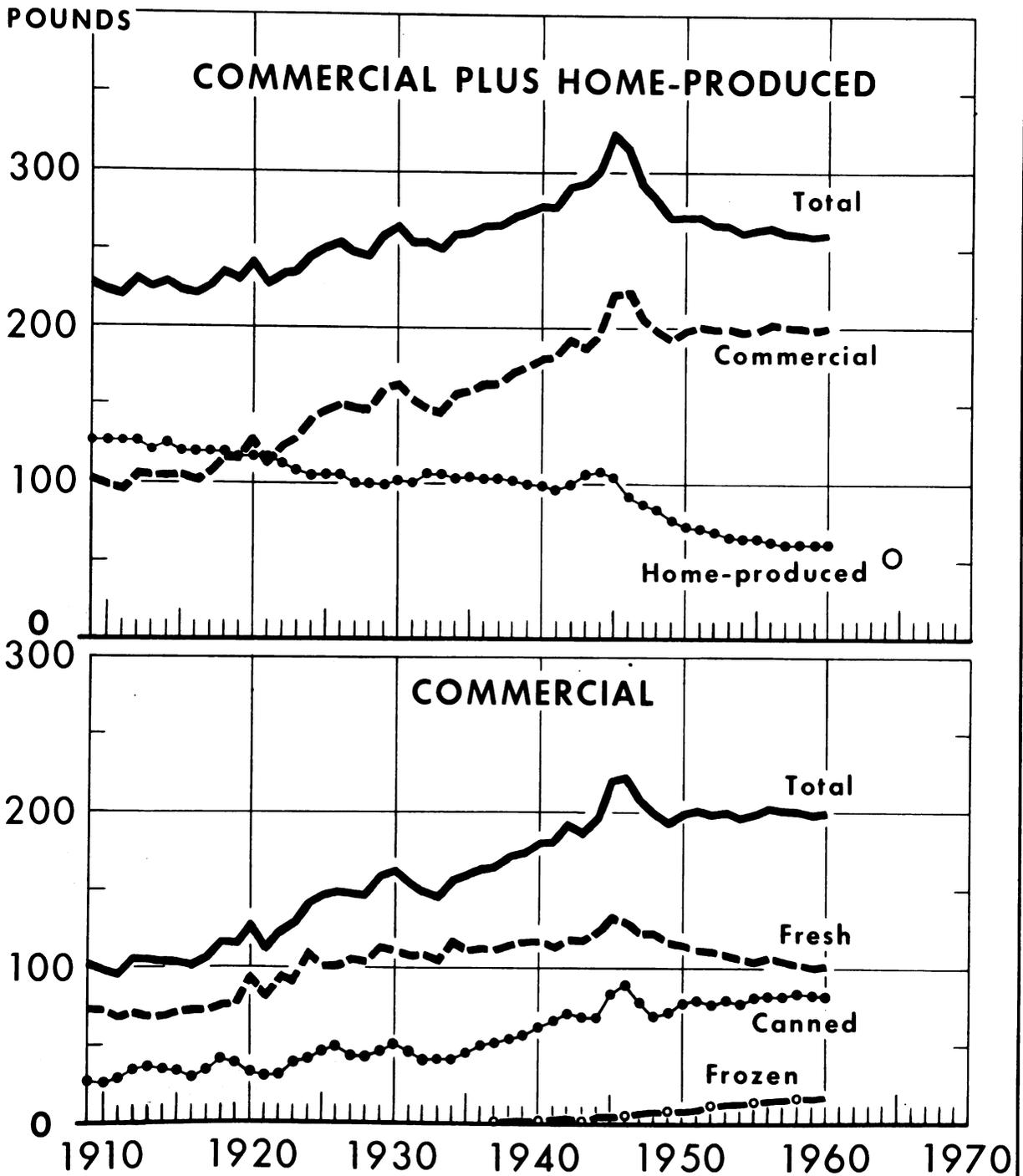
Underlined numbers in parenthesis refer to citations in Literature Cited and Related References.

2/ Excluding melons as well as potatoes, sweetpotatoes, dry beans and peas.

3/ Based on data in table 1.

# VEGETABLES CONSUMED PER CAPITA \*

Farm Weight Equivalent



\* CIVILIAN CONSUMPTION. EXCLUDES MELONS, POTATOES, SWEET POTATOES, DRY BEANS AND DRY PEAS.  
○ APPROXIMATION.

Figure 1

## Commercial

Although consumption per capita of total commercial vegetables--fresh plus processed, farm weight equivalent--is almost a sixth above the 1937-39 average, it is below the peak levels at the end of World War II. <sup>4/</sup> Use has remained steady during the past decade or so, the fairly consistent increase of processed vegetables balancing a decline in commercial fresh vegetables.

Fresh.-- Per capita consumption of commercial fresh vegetables increased through World War II and then declined to the level of the mid-1920's. However, the postwar decline in home production was somewhat greater, and commercial fresh vegetables now account for about two-thirds of total fresh vegetable consumption.

Processed.-- Per capita consumption of commercially processed vegetables has increased steadily. On a farm weight equivalent basis, it is now about equal to consumption of commercial fresh vegetables. Expansion in processed vegetables has included both canned and frozen vegetables as well as vegetable soups, baby foods, other vegetable products, and, more recently, frozen prepared foods with vegetables as an ingredient. Although consumption of frozen vegetables has risen sharply since the end of the 1930's, canned vegetables even now comprise four-fifths of processed vegetable consumption.

### Postwar Trends for Commercial Vegetables <sup>5/</sup>

For the last 10 to 12 years, annual consumption of commercial vegetables has remained remarkably stable at around 200 pounds per capita, farm weight equivalent (fig. 2). <sup>6/</sup> Declines for some items have offset increases for others (fig. 3). <sup>7/</sup> Use of cabbage and spinach, along with several less important items, declined. Increases occurred in per capita use of lima beans, broccoli, sweet corn, cucumbers, and tomatoes.

Shift From Fresh to Processed.-- Striking changes in the form in which the consumer buys vegetables have occurred since the 1920's (fig. 3), the trend being in the direction of increased purchases of the processed items. Consumption of processed vegetables increased about a fourth--from 79 pounds per capita, farm weight equivalent, in 1947-49 to 97 pounds in 1957-59. <sup>8/</sup> Of this increase, a little over half was accounted for by canned items, and a little less than half by frozen. The percentage increase in frozen vegetables during the postwar period was especially sharp.

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<sup>4/</sup> The high levels of apparent consumption at the end of World War II probably were due largely to relative shortages in other food items, and to restocking of canned items at retail and by households.

<sup>5/</sup> From an article by Will M. Simmons (59).

<sup>6/</sup> Based on data in table 1.

<sup>7/</sup> From Agricultural Outlook Charts 1961 (13, p. 42).

<sup>8/</sup> All weights are farm weight equivalent. See footnote 1.

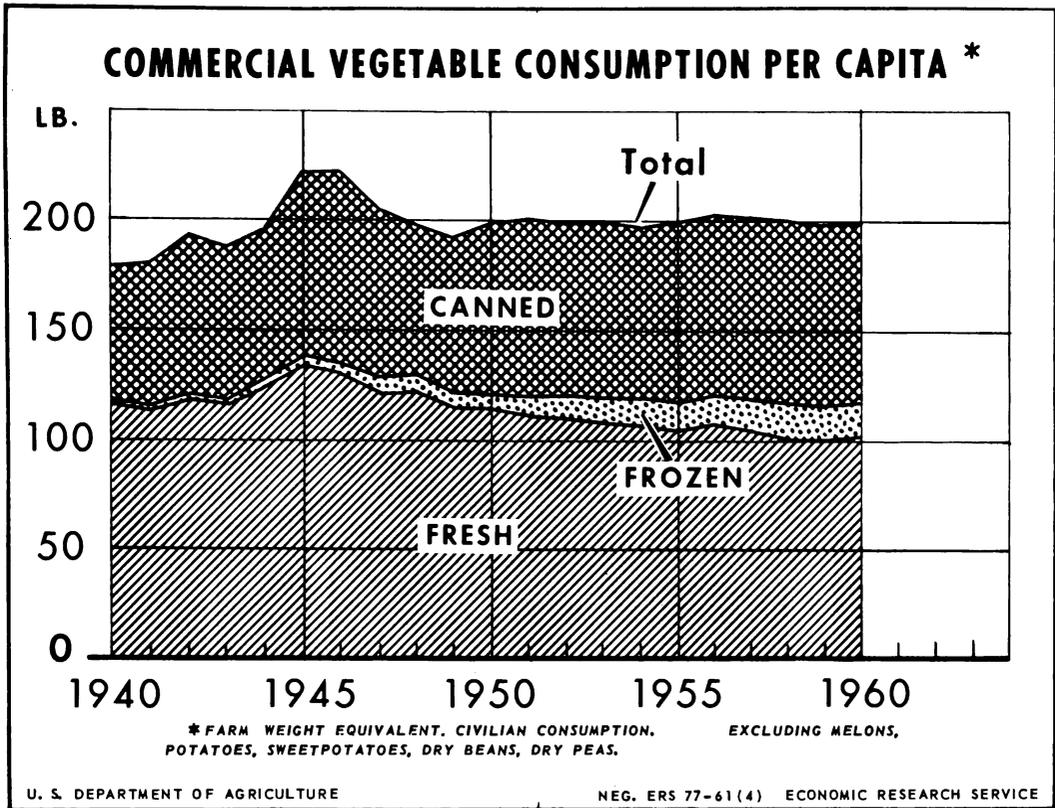


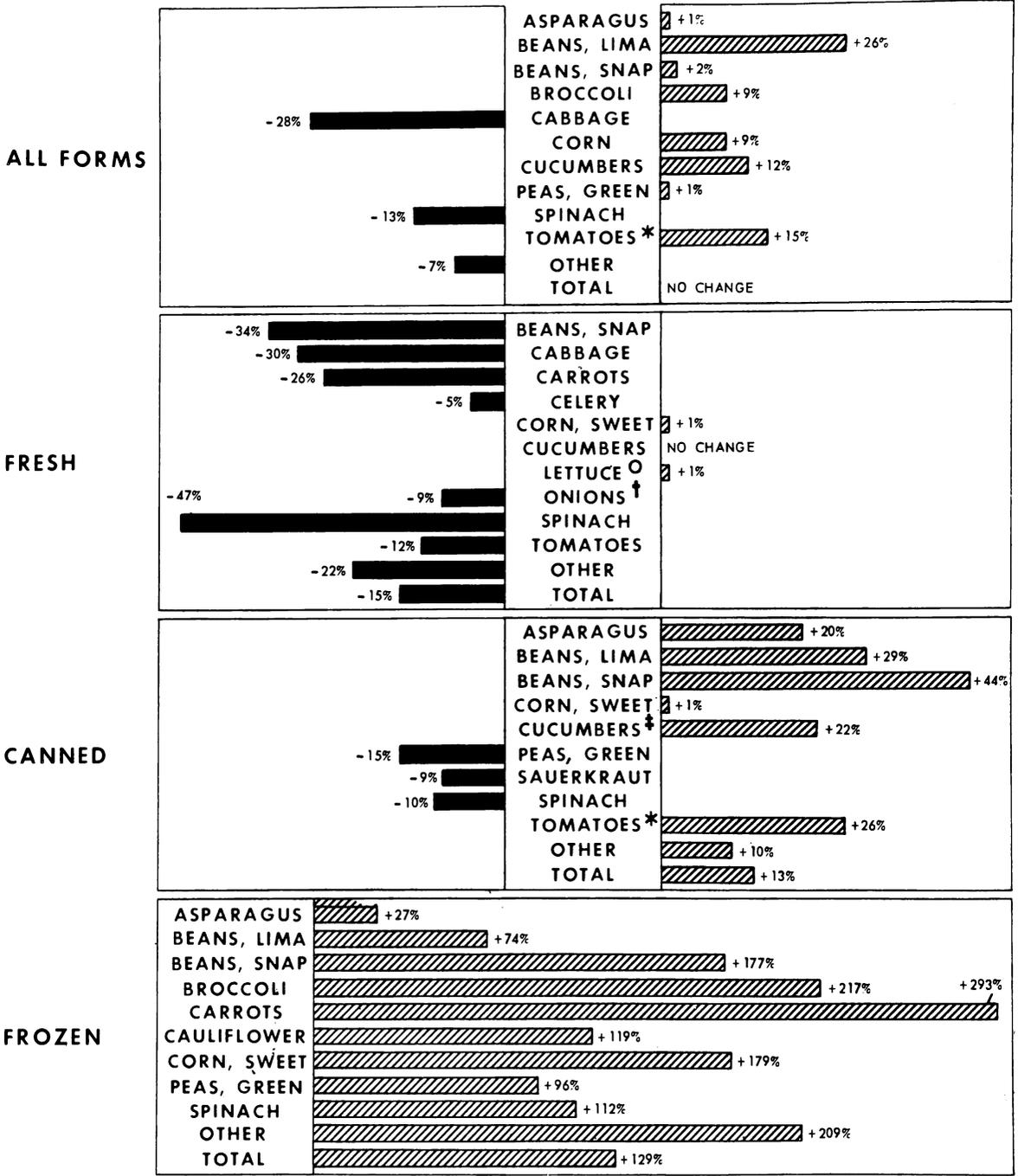
Figure 2

Consumption of commercial fresh vegetables per capita declined 15 per cent--from about 120 pounds in the immediate postwar years to 102 pounds in 1957-59. Nevertheless, fresh items still make up about half of total annual consumption of commercially grown vegetables. Some salad items such as lettuce and celery, used principally in the fresh form, have maintained their position or declined only slightly. But for many items used in both fresh and processed forms, the fresh has lost considerable ground. The rapid growth in the use of frozen vegetables has played a large part in the decline for fresh. Frozen items retain many of the desirable characteristics of the fresh, are easy to prepare, and are widely available throughout the year at relatively stable prices. On the average, each person now eats 15 pounds of frozen vegetables, farm weight equivalent, compared with almost 7 pounds in 1947-49. Consumption of canned vegetables increased substantially in the same period--from 73 pounds per person to 82 pounds.

A closer look at 10 principal vegetables used in both fresh and processed forms points up the growing importance of processed. <sup>9/</sup> While consumption of these items in all forms combined increased slightly, from 123 pounds per capita

<sup>9/</sup> Asparagus, lima beans, snap beans, broccoli, cabbage, corn, cucumbers, green peas, spinach, and tomatoes; see table 2.

# COMMERCIAL VEGETABLES: CHANGES IN PER CAPITA CONSUMPTION FROM 1947-49 TO 1957-59<sup>Δ</sup>



<sup>Δ</sup> FARM WEIGHT EQUIVALENT. CIVILIAN CONSUMPTION. EXCLUDES MELONS, POTATOES, SWEETPOTATOES, AND DRY BEANS, DRY PEAS.  
 \* TOMATOES AND TOMATO PRODUCTS.    ○ LETTUCE AND ESCAROLE.    † ONIONS AND SHALLOTS.    ‡ CUCUMBER PICKLES.

Figure 3

in 1947-49 to 128 pounds in 1957-59, the fresh component declined from 50 to 40 pounds. Consumption of these products in canned form, however, increased from 67 to 77 pounds per capita, and use of the frozen more than doubled--from a total of 5.5 to 11.9 pounds. On a relative basis, use of canned vegetables increased from 55 percent of the total of the 10 major items in 1947-49 to 60 percent in 1957-59, while for the frozen the increase was from less than 5 to a little over 9 percent of the total. If we exclude the vegetables not available in frozen form--cabbage, cucumbers, and tomatoes--frozen vegetable consumption per person increased from 11 to 23 percent of the total.

Only 2 of the 10 vegetables (sweet corn and cucumbers) escaped a decline in per capita consumption in fresh form. Even for these, most of the overall increase was in processed products. Consumption of canned corn gained only slightly, but that of frozen was up sharply. There also was a substantial increase for cucumber pickles. Asparagus consumption showed little change in total, increases for canned and frozen offsetting a decline for fresh. The substantial decline for fresh snap beans was more than offset by sharp increases in use of both canned and frozen forms. Almost a 50-percent reduction in fresh broccoli occurred during the postwar years, but this was more than offset by a tripling of consumption of the frozen product. Fresh green peas declined sharply and canned were down materially, but these decreases were a little more than counterbalanced by increased use of the frozen product--from 2.3 to 4.5 pounds per capita. There was a gain of about 15 percent in total per capita consumption of commercial tomatoes despite a decline in use of fresh. Use of canned tomatoes and tomato products increased about a fourth, with very sharp increases for tomato juice, catsup, and sauce.

Factors Affecting Shift to Processed Vegetables.-- Postwar changes in consumption in favor of the processed products, particularly the frozen, reflect the combined effects of several major socio-economic changes. These include the continued shift of the population from farms to urban areas and the accompanying decline in production of food for own use; increasing consumer incomes; increasing variety and availability of processed vegetables throughout the country and throughout the year; much more stable prices for the processed than for the corresponding fresh commodity; more uniform quality of the processed products; and convenience in use.

Improved processing technology has resulted in more and better quality processed products than ever before. Through the use of large, more efficient plants and labor-saving equipment, packers have been able to market processed items competitively with the fresh. The shift toward more frozen vegetables also has been materially influenced by the uptrend in average income during the postwar period. Data from the 1955 Household Food Consumption Survey indicate that, on the average, use of frozen vegetables per person is much larger among higher than among lower income groups.

Better transportation facilities--both rail and truck--and more acceptable specifications for trading permit wider, more flexible distribution of these higher quality processed products throughout the year.

Convenience in use also has contributed considerably to expansion in consumption of commercially processed vegetables. Demand for convenience reflects the desire for foods which permit fast, easy meal preparation.

### Seasonality of Fresh Vegetables 10/

During the past 20 years, expansion of winter and early spring supplies of commercial fresh vegetables from 4 of the southernmost states--Florida, California, Texas, and Arizona--has been important in making consumption of fresh vegetables less seasonal than formerly. Winter harvest has increased twice as fast as annual output. Winter accounts for a fifth of annual consumption of commercial fresh vegetables; spring and summer each for a little over a fourth; and fall, a fourth.

Other factors also are important in this fairly even consumption of commercial fresh vegetables from one season to the next. Heavier supplies of some vegetables in a particular season tend to offset lighter supplies of others. Also, development of early and late varieties has put many vegetables on the market over a longer period of time than formerly. Due to improved methods and facilities for handling and transporting fresh vegetables under better moisture and temperature conditions, and to a faster, more flexible, and more widespread distribution system, market supplies of even the most perishable vegetables have become less and less limited by local growing conditions. This makes a larger variety and quantity of better quality fresh vegetables available than formerly during more months of the year in all parts of the United States.

Supplies of salad vegetables--those primarily served raw--show a seasonal variation similar to other vegetables. Production of both is lightest in winter and heaviest in spring and summer. However, the greater availability throughout the year has been particularly important for salad vegetables, which are not available in processed form.

Most fresh vegetables are in fairly adequate supply during the spring and summer. But asparagus, broccoli, turnips and rutabagas, and a number of leafy greens are somewhat less abundant during the summer than in other seasons.

In early fall most fresh vegetables usually are still plentiful. By late fall, cooler weather curtails production of snap beans, sweet corn, green onions, cucumbers, green peppers, and tomatoes.

During winter nearly all tender vegetables--such as asparagus, green beans, sweet corn, squash, cucumbers, peppers, and tomatoes--are in relatively light supply. But for most hardy vegetables--broccoli, cabbage, carrots, cauliflower, celery, escarole, turnips and rutabagas, spinach and other cooking greens--a fourth or more of the annual volume is available.

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10/ Based largely on an article by Will M. Simmons (60).



A fairly even flow of potatoes appears to be moving into consumption channels throughout the year, but there is considerable seasonal variation in the marketing and consumption of sweetpotatoes. About 40 percent of the crop is marketed during the fall, only 15 to 20 percent in the spring. Fall marketings are heavy, partly because sweetpotatoes, which are harvested mostly in the fall, are rather perishable and difficult to store. Another factor is a sharply higher demand for sweetpotatoes during the holiday season--Thanksgiving through New Year's Day.

### Dry Beans and Peas

Use of dry edible beans and dry field peas together amount to about 8 pounds per capita annually, with consumption of peas only a small part of the total. Per capita consumption, though fluctuating, increased from 1920 to 1940, but has since declined (fig. 5). <sup>12/</sup> Home production of beans and peas, which was an estimated 50 percent of the total consumption 50 years ago, is now only about 5 percent.

A sizable proportion of both beans and peas is commercially canned, peas mostly in soups, and beans largely in pork and beans, baked beans, and soups.

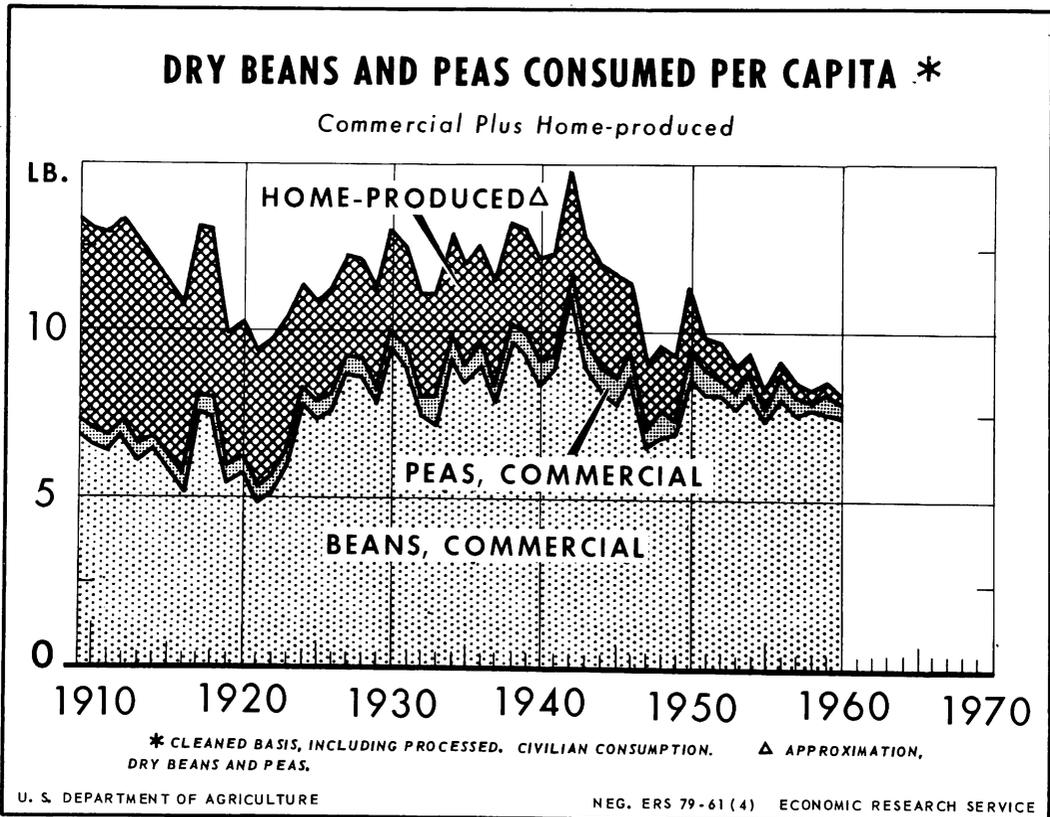


Figure 5

<sup>12/</sup> Data given in table 3.

## VARIATIONS IN CONSUMPTION AMONG POPULATION GROUPS

This section deals mostly with variations among population groups in use of vegetables, potatoes, sweetpotatoes, and dry beans and peas, based on cross-section data from the 1955 Household Food Consumption Survey. <sup>13/</sup> Since households in the survey represented 94 percent of total civilian population, data on variations in use at home may in general be typical for total civilian consumption. The section concludes with a brief discussion of food consumption outside households.

### Timing of the 1955 Survey

The 1955 survey covered food used at home in the spring, thus avoiding seasonal extremes in the use of many foods. <sup>14/</sup> In general, commercial quantities, both fresh and processed, were in average supply in the spring of 1955, and consumer incomes were rising as they have been in most years since World War II. Thus, from the standpoint of the supply and demand situation, spring 1955 was fairly typical of recent years.

### Distribution of the Population

In the 1955 survey, households were grouped by region--Northeast, North Central, South, and West; by degree of urbanization--urban, rural nonfarm, and farm (fig. 6) <sup>15/</sup>; and by family money income level. <sup>16/</sup>

Since average consumption varies among population groups, the urban character of the population has considerable influence on national consumption. In each region the urban population outnumbers the rural nonfarm population, and the farm population is much the smallest of the three categories. The Northeast and the West are the most highly urbanized. The sparsely settled West, which included only 11 percent of the household population in the 1955 survey, has much less weight on national averages than the other regions. In the distribution of population among income groups, the South differs the most of any region from the others. It has a disproportionately large share of low-income families, particularly in urban areas.

National rural averages, particularly for low-income groups, are heavily weighted by averages for the South. Almost half the farm population lived in the South in the spring of 1955. A little over a third lived in the North Central Region, and only a sixth in the Northeast and West combined. The South also included two-fifths of the rural nonfarm population.

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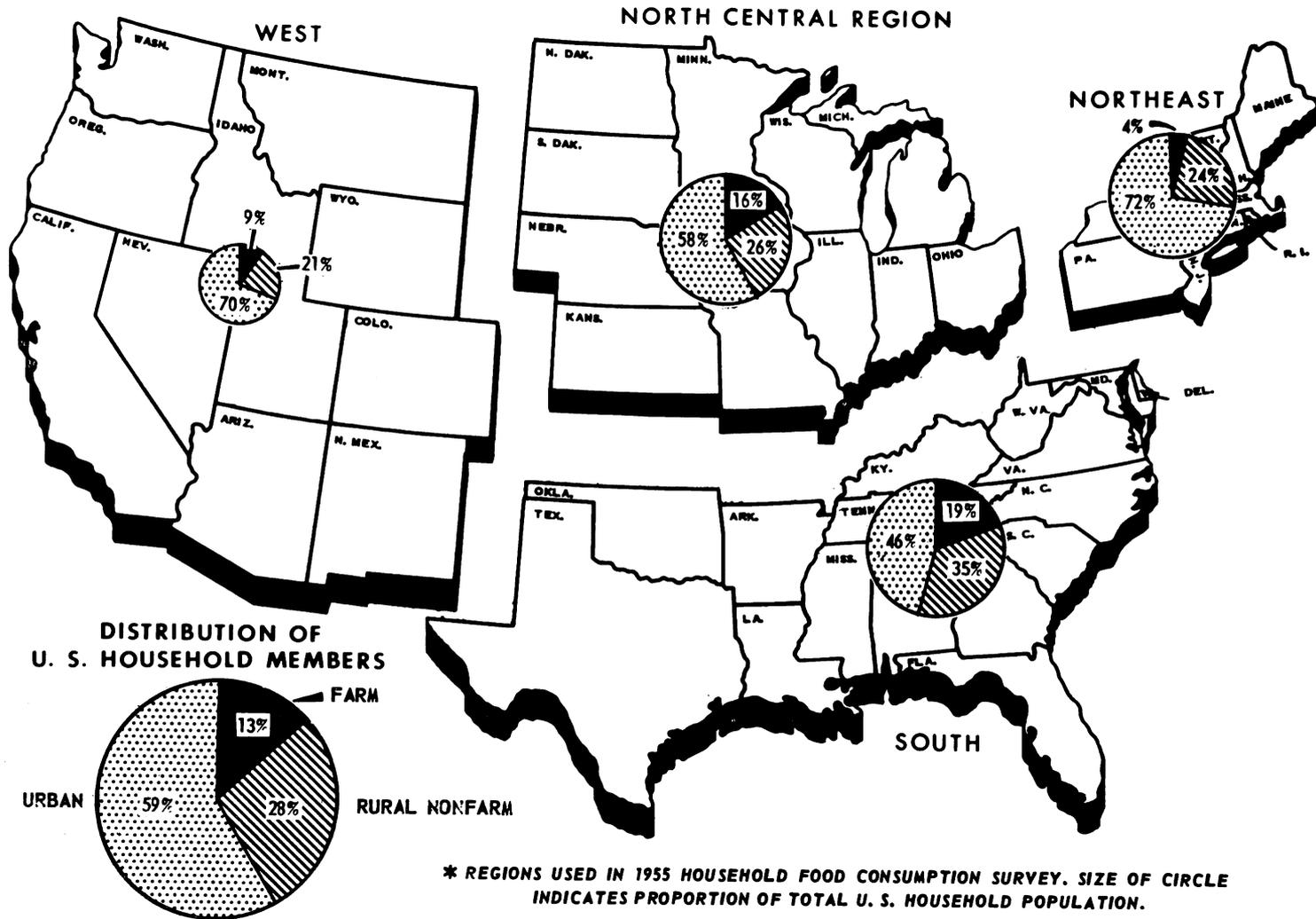
<sup>13/</sup> From articles in the National Food Situation (36) and in the Vegetable Situation (41, 42). Survey data from the 1955 Household Food Consumption Survey Reports (23) used in this section are discussed in the Appendix.

<sup>14/</sup> See appendix.

<sup>15/</sup> Based on table 8.

<sup>16/</sup> Tables 9 and 10.

# DISTRIBUTION OF HOUSEHOLD POPULATION, SPRING 1955\*



\* REGIONS USED IN 1955 HOUSEHOLD FOOD CONSUMPTION SURVEY. SIZE OF CIRCLE INDICATES PROPORTION OF TOTAL U. S. HOUSEHOLD POPULATION.

Figure 6

## Vegetables 17/

On the whole, urban households use a larger quantity of vegetables per person than do rural households, and high-income households more than those with lower incomes. 18/ Variations in average use among income groups are less for farm than for nonfarm households. Variations among regions are less for urban than for rural households. Use of processed vegetables per person differs more among population groups than use of fresh vegetables.

Regional Variation.- Households in the West, in the spring of 1955, used the largest quantity of vegetables per person, followed by the Northeast and the North Central Region. This was generally true for both urban and rural areas at similar money-income levels. Use in the South was relatively high except in the lower income groups. However, because of its higher proportion of low-income families, particularly in urban areas, average use in the South was as a whole slightly less per person than for the North Central Region.

Variation Among Urbanization and Income Groups.- Urban households in the spring of 1955 used a larger quantity of vegetables per person than rural households except in the West, where rural nonfarm households used more than urban households. In other regions, use of vegetables in rural nonfarm and farm households averaged about the same.

High-income urban households used a larger quantity of vegetables per person than those with lower incomes (fig. 7). 19/ Variation in use among income groups was greatest in the South, where average consumption in both urban and rural areas was relatively low in income groups below \$2,000, and relatively high in all others.

### By Form--Fresh and Processed 20/

In each of the four regions, both urban and rural households used a larger quantity of fresh than of processed vegetables in the spring of 1955. 21/ Many vegetables typically are bought mostly in the fresh form, some exclusively in that form. For some other vegetables, the processed forms, such as sauerkraut, pickles, and tomato products, are substantially different, and are not closely competitive at retail with the fresh forms.

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17/ Farm weight equivalent; see footnote 1. Excludes melons as well as potatoes, sweetpotatoes, and dry beans and peas.

18/ Averages per person are calculated from published household data from the 1955 Survey using average household sizes, table 3, Survey Reports 1-5 (23). See appendix.

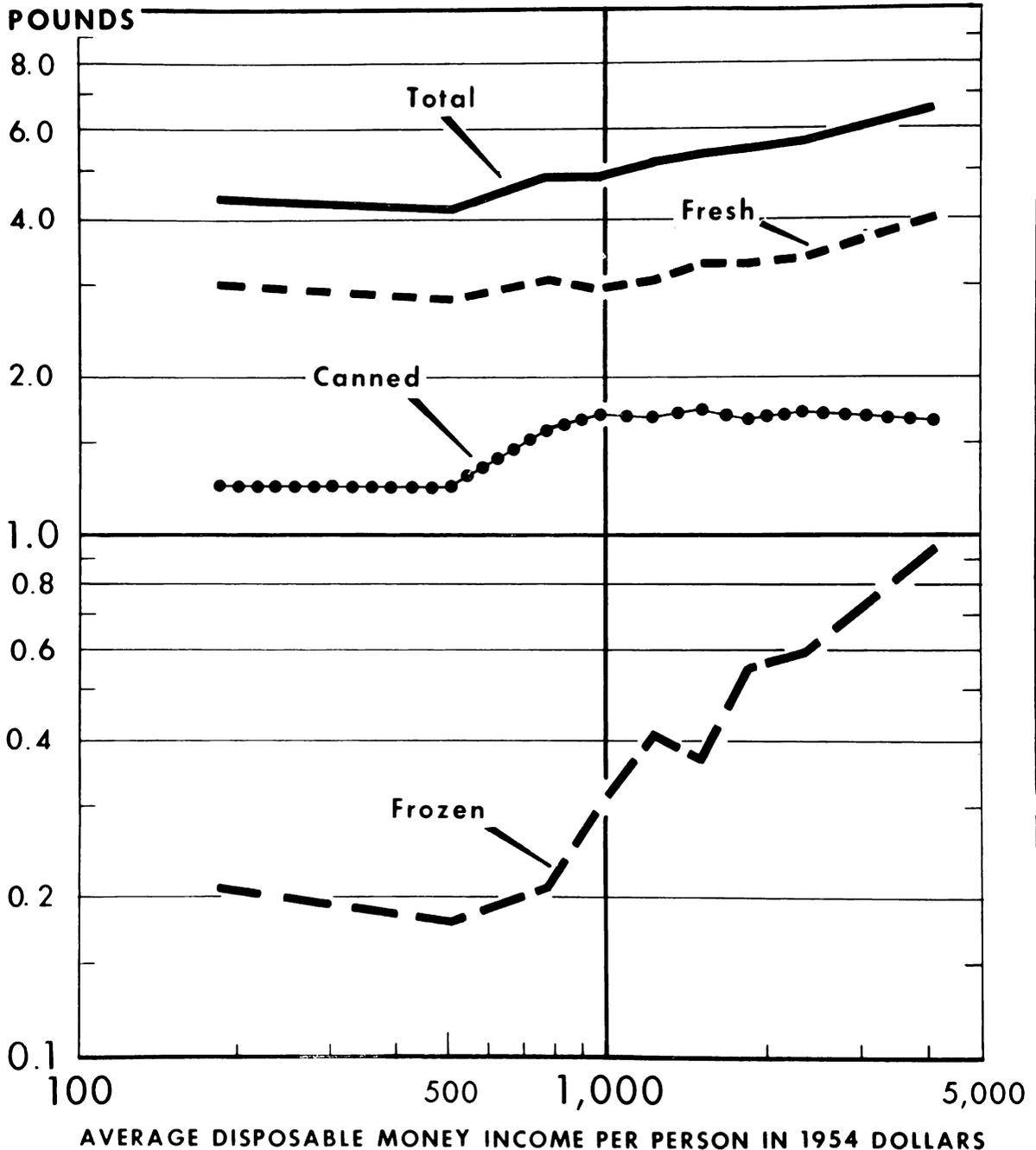
19/ Based on table 5.

20/ Processed vegetables include only those commercially canned or frozen; fresh vegetables, those brought into the kitchen in fresh form, include home-canned and home-frozen vegetables.

21/ Table 4.

# VEGETABLES CONSUMED IN URBAN HOUSEHOLDS GROUPED BY INCOME \*

Per Person in a Week, Spring 1955



\* FARM WEIGHT EQUIVALENT. EXCLUDES MELONS, POTATOES, SWEETPOTATOES, DRY BEANS, DRY PEAS. INCOME PER PERSON IN HOUSEHOLDS GROUPED BY FAMILY INCOME.

Figure 7

Fresh vegetables (commercial plus home-produced) made up 64 percent of the total quantity of vegetables used in U. S. households; however, there was considerable variation among population groups. Fresh vegetables accounted for a larger proportion of the total in the South than in the other regions. Except in the West, fresh vegetables were relatively more important in rural than in urban areas. In farm households fresh vegetable use ranged from 83 percent of the total in the South, 79 percent in the Northeast, and 74 percent in the North Central Region, to only 57 percent in the West.

With fresh vegetables accounting for 64 percent of total use, canned made up another 30 percent, and frozen, the remaining 6 percent. Considering only purchased vegetables, 7 percent were frozen and 35 percent canned.

Fresh 22/.- Both urban and farm households separately used more fresh vegetables per person than did rural nonfarm households in the spring of 1955 except in the West, where average use was low in farm households.

Households in the South and in the West used larger quantities of fresh vegetables per person than those in the Northeast, while North Central households used least of all (fig. 8).23/ Variation among regions was less in urban

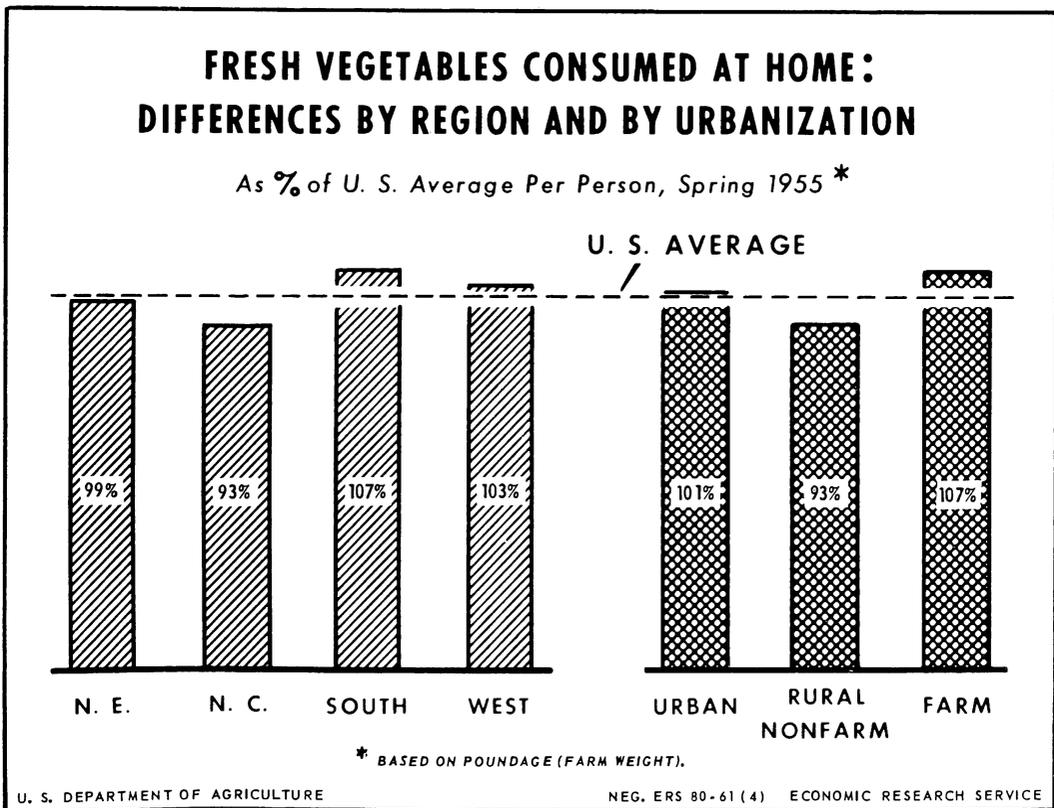


Figure 8

22/ See footnote 20.

23/ Based on table 4.

than in rural areas. In similar urbanization-income groups, variations among regions in use of fresh, though greater, followed much the same pattern as for total vegetable use; an exception was the relatively lower rate of consumption of fresh in western farm households. In general, households in the South, except in the lowest income groups, used more fresh vegetables than did the households in the other regions.

Variations among income groups in the quantity of fresh vegetables used per person was least in farm households; these had more home production. Variations among income groups was greatest in urban households, for they depended more on purchased vegetables.

Although the South used a larger quantity of fresh vegetables per person, the retail value averaged less in that region than in the others. This indicates that less expensive kinds of fresh vegetables were used in the South and/or prices were lower. A larger part of the vegetables were locally produced, less transportation cost was involved, and purchases probably included less packaging and other services.

Canned 24/.- Farm households in the survey used a much smaller quantity of canned vegetables per person than did rural nonfarm households (fig. 9). 25/ Rural nonfarm in turn used less than urban households except in the West, where use of canned vegetables was very high in rural areas.

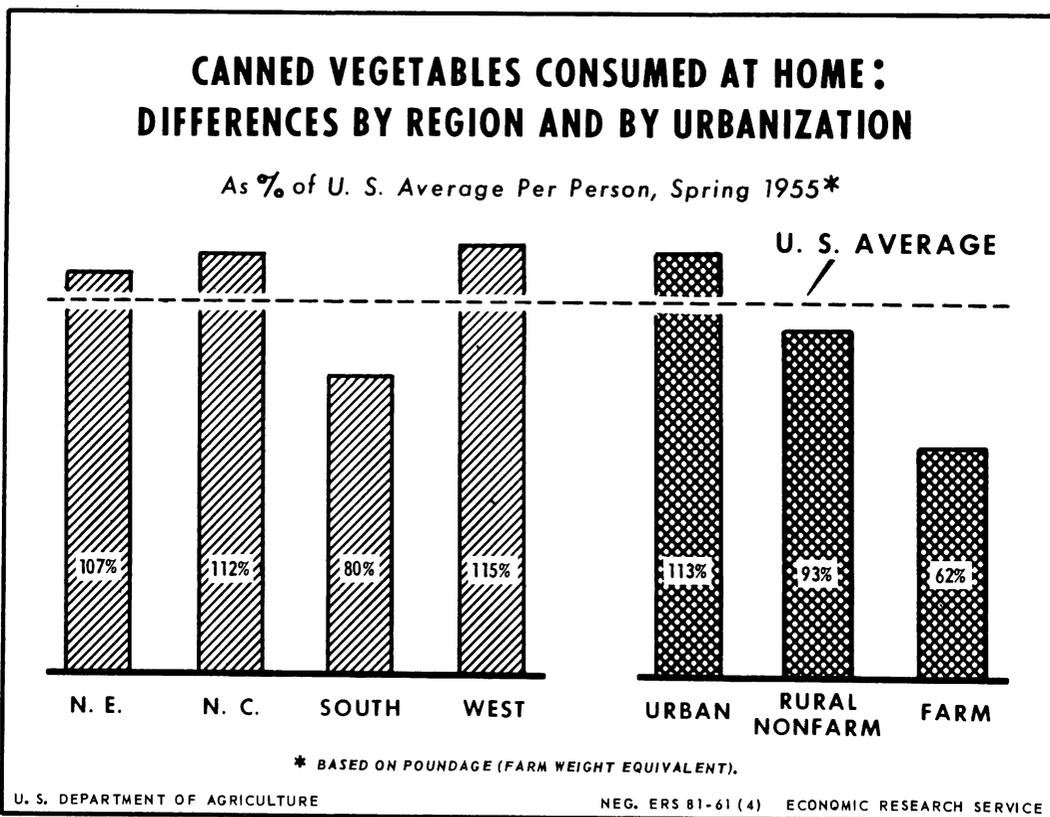


Figure 9

24/ See footnote 20.

25/ Based on table 4.

The large quantities of canned vegetables used in rural households in the West and the large proportion of urban households there resulted in a high regional average. In North Central households, use was high in both urban and rural areas. Although the Northeast averaged less than the North Central Region in both urban and rural areas, the regional average for the Northeast was relatively high because of its large proportion of urban households.

The South was the only region in which households in both urban and rural areas used less than the corresponding U. S. averages. Furthermore, since use is lower in rural than in urban areas, and since the South has a higher proportion of rural population, use averaged much less in the South than in other regions.

Use of canned vegetables at successively higher income levels increased less above the middle income range than did use of fresh vegetables.

Younger households, as measured by the age of the homemaker, used more canned vegetables per person than older households. 26/

Frozen 27/.- Use of frozen vegetables, which is only a small part of total vegetable use, varied more among regional, urbanization, and income groups than the use of fresh or of canned. Urban households used more frozen vegetables per person than did rural households, rural nonfarm more than farm, and use increased at successively higher income levels.

Households in the West and in the Northeast, in both urban and rural areas, used a larger quantity of frozen vegetables per person than did those in the other two regions. The North Central Region ranked third, and the South, with a high proportion of low-income families, ranked last. From region to region, variation in use was less in urban than in rural areas.

The supply situation with regard to frozen and fresh vegetables may have a bearing on these differences. Fresh vegetables are less available in some rural areas of the West, and more available in the South than in other regions. Furthermore, frozen vegetables may be less available in rural retail outlets in the North Central Region than in the densely populated Northeast, where rural households benefit by being close to urban markets.

#### Purchased Vegetables

Households depended on the market for about 85 percent of the vegetables they used in the spring of 1955. Of the fresh vegetables, 78 percent were bought.

There was considerable variation among population groups in the quantity of vegetables bought per person--greater than the variation in total quantity used. For example, urban households used larger quantities of vegetables than did rural households and bought 95 percent of the quantities used, while rural

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26/ Survey Report 14 (23).

27/ See footnote 20.

nonfarm households bought 78 percent and farm households, 50 percent. For the regions as a whole, the West and the Northeast used larger quantities per person than the other two regions, and were more dependent on the market.

**Total.**- Compared with U. S. household purchases per person, the West purchased 20 percent and the Northeast 11 percent more than the national average; the North Central Region about the same as the U. S. average; and the South, 16 percent less. From region to region, variation was less for urban than for rural households. Western households purchased more than those in the South because the West used larger quantities of processed vegetables and, even for fresh vegetables, depended more on the market. In the West, gardening is limited to arid regions and to specialized farms that are typical of the West. At the time of the survey, gardens were more advanced in the South than in the other regions; low-income families, more numerous in the South, bought less in addition to what they raised than did the higher income households.

**Fresh.**- Considering only fresh vegetable purchases, variations among regions in the quantity purchased per person (fig. 10) 28/ were similar to variations for total quantities purchased, fresh plus processed. Relative to

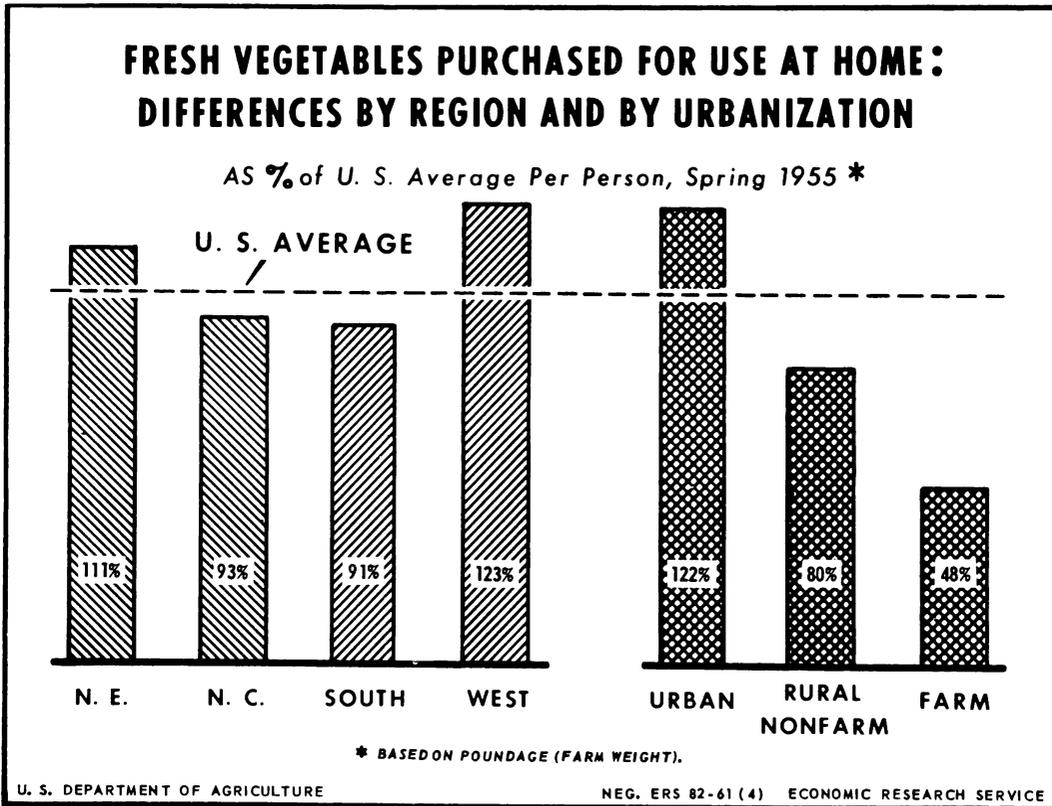


Figure 10

28/ Based on table 4, Survey Reports 1-5 (23).

the U. S. average, however, purchases of fresh vegetables were a little higher in the South, and a little lower in the North Central Region, than were total purchases. In the South, locally grown fresh vegetables were available in greater abundance and variety than in other regions, while in the North Central Region, households bought more canned vegetables.

### Home Production

From urban to rural areas, and from rural nonfarm to farm households, there is a marked increase in the proportion of households having gardens, and in the average quantity of home-produced vegetables used per person. Variations among income groups are of less importance. According to the 1955 survey, about a third of the households in the United States did some vegetable gardening in 1954--a sixth of the urban did, and half of the rural nonfarm, but about 9 in 10 of the farm households. 29/

Estimated retail value of vegetables raised for home use in 1954 ranged from \$91 in farm to \$8 in urban households. The average was highest in the South and in the North Central Region--these have the largest proportion of rural households--and lowest in the West, a region which has a small proportion of rural households, a smaller proportion of rural families that have gardens than any other region, and a lower rate of home production per family garden. On a quantity basis, home production in the South exceeded that in other regions, even more than on a value basis.

Only two-thirds of the quantity of vegetables supplied from home gardens was used in season. Almost a fourth was canned. The remainder was frozen or stored without processing. More tomatoes were used, both fresh and for canning, than any other vegetable.

The degree of popularity of vegetables varied among home gardeners. Tomatoes, snap beans, and onions were the three vegetables most commonly raised for fresh use both by urban and rural households. Home garden tomatoes were reported by 14 percent of urban respondents, almost 50 percent of rural nonfarm, and 75 percent of farm households.

Sweet corn, cabbage, and peas were each raised in three out of five farm gardens; radishes, cucumbers, carrots, beets, and dark green leafy vegetables, in half of the gardens. Mustard greens, collards, and okra are grown mainly in the South. Other dark green leafy vegetables, yellow squash, and lima beans are also more common in the South than in the other regions, while carrots are less common. Compared with farm households in the other regions, those in the Northeast raised the largest variety of vegetables.

Emphasis on individual vegetables for fresh use was quite different in home gardens from that in commercial fresh marketing. By weight, tomatoes amounted to only a tenth of fresh vegetables sold in 1954 but accounted for a

third of home-produced vegetables. Fresh sweet corn was also a smaller part of commercial fresh sales than of home production. Lettuce and cabbage, however, were a larger part of commercial than of home garden production.

Farm households in successively older age groups, measured by age of homemaker, depended on home production for a larger share of the fresh vegetables used. 30/

### Potatoes 31/

In each region, household use of potatoes, fresh plus processed, is larger per person in rural than in urban areas. Farm households use more than rural nonfarm households, except in the South.

The quantity of potatoes used per person in the spring of 1955 was a fifth smaller in the South than the U. S. average, and a fifth larger in the North Central Region (fig. 11). 32/ The Northeast ranked second and the West third.

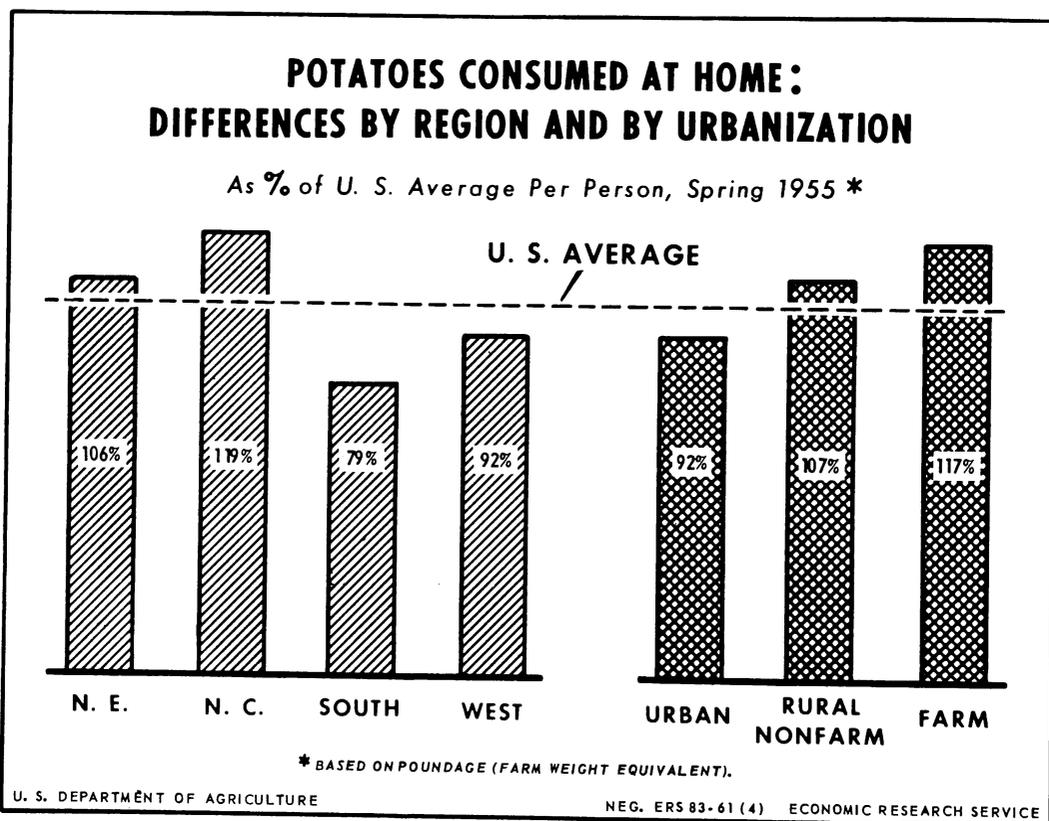


Figure 11

30/ Survey Report 14 (23).

31/ Farm weight. See footnote 1.

32/ Based on table 6.

At successively higher income levels, the quantity of potatoes used per person in urban households tended to increase among the lower income groups, level off, and then decrease among the upper income groups. However, in the South, where consumption was relatively low at all income levels, use did not tend to decrease at the upper income levels. The South was the only region in which use in urban households in the \$8,000 and over income group averaged more per person than those with less than \$4,000. Variation among income groups was least in the North Central Region.

Use of processed potatoes varied more among population groups than did total use. The quantity of processed items used per person was greater in urban than in farm households. Use increased at successively higher income levels. Younger households, as measured by age of homemaker, used a larger quantity of potato chips than older households. Among the regions, the North Central averaged the largest quantity used per person. Average use in the South was only half as large as the national average. Southern farm households used an insignificant quantity, and even urban households in the South used much less than those in the other regions.

Use of home-produced potatoes in farm households in 1954 was greater per person in the Northeast and the South than in the North Central Region, but much lower in the West. In nonfarm households, home production was larger in the South than in the other regions. Because of smaller purchases, however, overall potato consumption in the South was lower than in the other regions.

#### Sweetpotatoes 33/

Consumers in the South use a much larger quantity of sweetpotatoes per person than do those in other regions. 34/ Among the lower and middle-income groups, the quantity used per person in the spring of 1955 tended to increase at successively higher income levels, but use tended to decline at the upper end of the income range. Excluding canned sweetpotatoes, use per person averaged more in households with less than \$4,000 income than in those with incomes of \$4,000 and more.

Home production of sweetpotatoes was important only in the South.

#### Dry Beans and Peas 35/

Use of dry beans and peas -- low cost, high energy protein foods -- varies widely among population groups. Both dry beans and peas were used by a larger proportion of households in the South than in the other regions in the spring of 1955. The South also ranked first in the quantity used per person. In the use of beans, the West ranked second. Urban groups in the West used a relatively large quantity of beans per person.

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33/ Farm weight. See footnote 1.

34/ Table 6.

35/ Includes canned baked and other mature beans; table 6.

Rural areas used a larger quantity of dry beans and peas per person than did urban areas.

At successively higher income levels smaller quantities of dry beans and peas were used. In general, this applied among urban, rural nonfarm, and farm households in each region.

### Consumption Outside Households 36/

Canned vegetables constituted a much greater proportion of vegetable consumption in mass feeding outlets than in households, according to a study of commercial eating places and national surveys of inplant food services and of lunches served in schools. Other comparisons with household food consumption are also made.

#### Commercial Eating Places

No comprehensive survey has been made of commercial eating houses, the largest sector of the nonhousehold market. A 1950 Minnesota study of eating places in a large and in a small city showed that eating places in the large city spent more of their food dollar for vegetables and potatoes than those in the small city. 37/ Of total expenditures for vegetables, about half went for canned vegetables in the large city, and about two-thirds in the small city. The proportion varied among types of eating places. In the large city it was lowest at lunch counters, greater in food services in department stores, cafeterias, and eating places serving the more expensive meals.

#### Inplant Food Services 38/

A nationwide survey of inplant food services in manufacturing plants with at least 250 employees was made in January-February 1956. Inplant food services in this study spent 7 cents of their food dollar for vegetables and dry beans and peas, 39/ while urban households in the spring of 1955 spent 10 cents for these items. Seasonal availability--winter versus spring--may account for some of this difference, but there also seem to be other factors. Some plants with lunch counter service, canteen, or mobile cart service offered little or no choice of vegetables and often no green vegetables except lettuce,

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36/ Includes food in purchased meals and snacks away from home by the household population and all food for those living outside households. The non-household market comprises about a fifth of the food sold to the civilian population, but the proportion for individual foods is not known. See "Significance of Current Development in Food Statistics" (47, pp. 7-8).

37/ Eating Places as Marketers of Food Products (29, pp. 63, 65).

38/ Buying Practices and Food Use of Employee Food Services in Manufacturing Plants (27, pp. 15-16) and Expenditures for Processed Foods by Employee Food Services in Manufacturing Plants (28, pp. 19-21).

39/ Potatoes and sweetpotatoes not included.

and cabbage in cole slaw. There also was some indication that, even when vegetables were offered, employees might not select them as often as when served at home.

Inplant services, on the average, spent relatively much less for fresh vegetables and more for canned vegetables than did urban households. However, in the West, inplant services spent as much for fresh as for canned vegetables.

Potatoes and sweetpotatoes claimed about 2 cents of the food dollar in both the inplant food services and urban households. Potato chips were fairly important in inplant food services; chips were most important in small plants, where they amounted to 35 percent of the money spent by food services for potatoes and sweetpotatoes. Only inplant services in the South used sweetpotatoes to any appreciable extent. More of both fresh and canned were used in the South than in the other regions. Establishments in the North Central Region were a poor second in use of sweetpotatoes.

#### Lunches Served in Schools 40/

A national survey of food served in schools covered the 1957-58 school year. Schools used about as much of their food dollar (9 cents) for vegetables and dry beans and peas as did urban households; however, schools spent relatively more for canned and less for fresh vegetables than urban households. Of the total amount spent for these items, schools spent 66 percent for canned, 26 percent for fresh vegetables, and the rest for dried and frozen items.

Potatoes and sweetpotatoes claimed a little more of the food dollar in schools (2.3 cents) than in urban households, where the food dollar covers all three meals plus snacks, not just lunches.

Except for frozen items, the value per person of vegetables, potatoes, and sweetpotatoes used was greater in rural than in urban schools. The latter used larger quantities of frozen vegetables.

An expansion of the school market for vegetables may come from three sources. First, the proportion of schools serving lunches, 60 percent in 1958, may increase. Second, pupil participation in the schools serving lunches may increase--only about half of those in such schools participated in 1958. Third, the rapid growth in school enrollment is expected to result in a fourth more pupils by 1970.

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40/ "The Market for Vegetables, Potatoes, and Sweetpotatoes in Public Schools" (51). For more detail on individual vegetables, see The Market for Food in Public Schools (24).

## REGIONAL SHARES OF THE U. S. MARKET

Household expenditures for use at home provide a basis for estimating the share of the aggregate U. S. market for vegetables, potatoes, sweetpotatoes, and dry beans and peas for each region. This section compares the share of the market for these items for each region, with its share of the population and of the market for all food (fig. 12).<sup>41/</sup> How regional shares of the quantities purchased differ from the regional distribution of commercial production is also indicated (fig. 13).<sup>42/</sup>

The share of the U. S. market for food for a region, in terms of value, depends, in the first place, on its share of the population, and secondly, on how much the region differs from other regions in quantity used per person, proportion of the quantity used that is purchased, and average prices paid. Variations among regions in average prices paid may reflect variations in the general price level in an area, the proportion of the more and less expensive kinds and forms bought, the services included with purchases, location in relation to producing areas and transit routes, or other price influencing factors.

Because of price differences, regional shares of purchases in terms of value differ from shares measured in terms of quantity. In general, prices are lower in the South. This is in part due to greater use of local supplies which involves less expense for transportation and other services. Less processing is another factor -- for example, use of fresh rather than canned vegetables and sweetpotatoes, and of dry rather than canned beans and peas.

### Vegetables <sup>43/</sup>

In the spring of 1955, the Northeast and the North Central regions constituted the largest markets for vegetables -- each about 30 percent of the U. S. total -- followed by the South and the West. However, relative to population, the West ranked first and the Northeast second. The share of the market in the South was only three-fourths as large as its proportion of the U. S. population. Several factors contributed to the relatively small market in the

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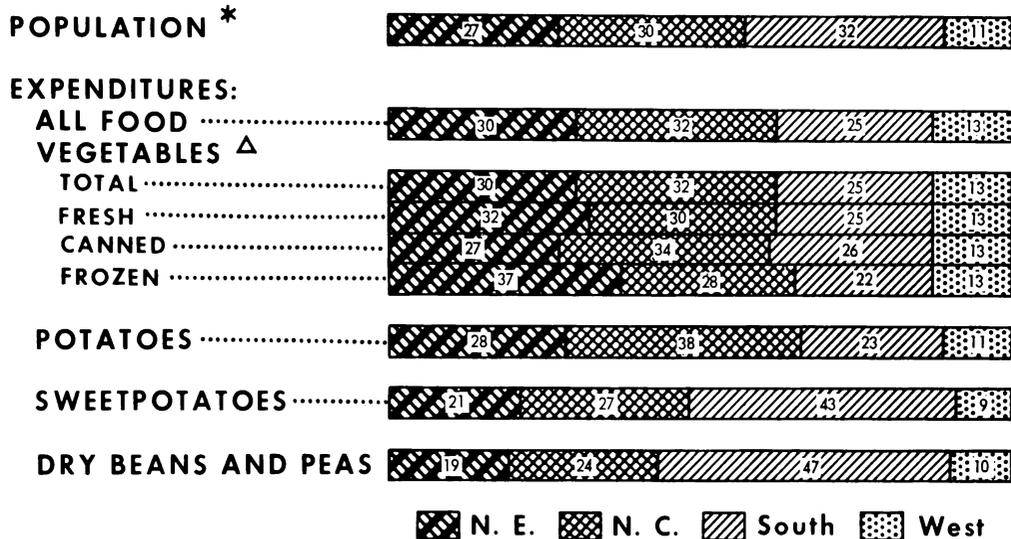
<sup>41/</sup> Since housekeeping households represent about 94 percent of the civilian population, it seems reasonable to generalize from regional shares of the household market. Average household expenditures for an item in each region and in the United States, spring 1955, given in Survey Reports 1-5 (23), weighted by the proportion of households in each region, table 8, give the regional distribution of the household market for the item. Regional shares in spring are probably fairly typical of annual shares. Population distribution is based on members of housekeeping families, table 8.

<sup>42/</sup> Quantities purchased, from Survey Reports 1-5 (23); commercial production, from Crop Reporting Board (9, 11, 12). Production data are for more recent years than the survey data, but regional shares of quantities purchased have probably changed little since the time of the survey.

<sup>43/</sup> Excluding melons, as well as potatoes, sweetpotatoes, and dry beans and peas.

## REGIONAL SHARES OF HOUSEHOLD EXPENDITURES FOR VEGETABLE ITEMS

As % of U. S. Total, Spring 1955



\* BASED ON HOUSEKEEPING FAMILIES.     Δ EXCLUDES MFLONS.

U. S. DEPARTMENT OF AGRICULTURE

ERS 84-61 (4) ECONOMIC RESEARCH SERVICE

Figure 12

South. With more persons per household and a larger proportion of low-income families and of rural families, the South used less per person than the other regions; purchased a smaller proportion of the total quantity used; and paid less per pound. However, the South claimed as large a share of the vegetable purchases as of the total food market. Furthermore, use of home-produced vegetables was more important in the South than in the other regions. 44/

Of the four regions, in the spring of 1955 the West was the best market for food, relative to size of population, and it had as large a share of the market for vegetables in each form (fresh, canned, frozen) as for all food. The Northeast, also an excellent market for food, had an even larger share of the market for fresh vegetables and a much larger share for frozen vegetables than for all food, but a smaller share for canned vegetables. Another good market for food, the North Central Region, was not as good a market for vegetables except for canned. The South, the only region that shared less of the total food market than its proportion of population, had about the same share of the market for fresh and canned vegetables as for food in general, but a smaller share of the frozen vegetable market.



### Potatoes

The North Central Region is by far the largest market for potatoes, followed by the Northeast, the South, and the West (fig. 12). The South, with 32 percent of the household population in the 1955 survey, comprised only 23 percent of the potato market; it was the only region that had a share of the market less than its proportion of U. S. population.

Only the North Central Region has a larger share of the market for potatoes than for vegetables or for all food.

Regional distribution of commercial potato production is somewhat different from that of the market for potatoes for food. The West has expanded its production rapidly, and in recent years has produced about 45 percent of the total commercial potato crop (fig. 13). The Northeast, with about 30 percent of the total, is the second most important producing area. Production in the North Central Region has been about a sixth of the total in recent years.

### Sweetpotatoes

Though the South had only a third of the population in the 1955 survey, and an even smaller share of the market for total food, vegetables, and potatoes, it accounted for a little over two-fifths of the market for sweetpotatoes (fig. 12). Each of the other regions was a poor market for sweetpotatoes compared with its purchases of vegetables, potatoes, and total food.

Production is concentrated in a few states--about 80 percent of it in the South (fig. 13).

### Dry Beans and Peas

About half of the total market for dry beans and peas is in the South (fig. 12). In the 1955 survey the North Central Region and the Northeast ranked second and third in share of the market, but each had a small share of the market relative to their shares of population. The share of the market for the West was smaller than its share of the vegetable or total food market. However, relative to population, it was a better market for dry beans than either the Northeast or the North Central Region.

The West accounts for two-thirds of the total U. S. production of dry beans and peas (fig. 13).

## IMPLICATIONS FOR FUTURE CONSUMPTION

Consumption trends for vegetables, potatoes, sweetpotatoes, and dry beans and peas have reflected a variety of changing circumstances. These include decline in farm population; long-run increases in purchasing power; decline in production for home use; ever widening availability of these products at retail, in both densely and sparsely populated areas; development of processed products for quick, easy food preparation; and increasing similarity in consumption patterns of farm and nonfarm households. These forces will continue to exert an influence, but their effect may be less in the future than in the past.

Both increasing availability at retail of fresh and processed items at competitive prices, and the appeal of new processed products as they reach the market, will influence future levels and patterns of consumption. Increases in variety and in the relative importance of processed items are expected to occur. But it is likely that the total quantity consumed per capita has reached a level that will change little during the next few years. Aggregate consumption, however, will expand along with the expected 20 to 25 percent growth in population during the next decade.

### Vegetables 45/

Despite rising incomes and continued decline in home production, per capita consumption of total commercial vegetables, fresh plus processed, has not increased during the last decade. Even though changes in use in various population groups are likely, per capita consumption for the country as a whole will probably change little.

### Past Changes in Urban and Rural Areas

Although urban households used more vegetables per person than rural households did both in 1942 and 1955, survey data indicate that the difference between the two was less in 1955. 46/ In the interim between 1942 and 1955, average use increased in rural households, but it changed little in urban households. Wider availability at retail in rural areas made a difference in consumption patterns through increased use of vegetables among rural families. Of particular note was the greater use in farm households of commercially canned vegetables in 1955. In rural nonfarm households, a shift of population up the income scale probably was a major cause for increased use of vegetables per person between 1942 and 1955.

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45/ Excluding melons, as well as potatoes, sweetpotatoes, and dry beans and peas.

46/ Data for spring 1942 derived from Family Food Consumption in the United States, Spring 1942. (15). For problems involved in comparing 1942 and 1955 data, see the appendix.

Availability  
At Retail

Consumption trends and differences in consumption among population groups reflect availability as well as demand or preference. While home production declined and commercial production expanded, use of commercial vegetables increased more in urban than in rural areas. More widespread availability will tend to lessen difference in use among population groups.

Ease of transporting canned vegetables and of storing them both at wholesale and at retail has made them widely and readily available. Ease of storage at home as well as easy preparation for serving adds to their popularity, even though consumers often prefer some items in the fresh or frozen form because of color, flavor, and texture.

Among population groups, availability of frozen vegetables varies more than does that of canned vegetables. Compared with canned or fresh vegetables, the need for refrigeration from packer to retailer and in the home puts frozen vegetables at a disadvantage. Less of the frozen is available in areas of scattered population than in more densely populated areas, and less generally is available in neighborhood grocery stores than in supermarkets.

Because of perishability and the need for special handling, the relatively high cost for fresh vegetables is a handicap to some retail outlets in maintaining supplies. A small retailer frequently will offer less choice than a larger one. Where population is widely scattered, fresh vegetables cannot be supplied as easily as canned, or even frozen vegetables, because fresh items must be delivered to retail stores more frequently than are those that are processed. Rural nonfarm households use less fresh vegetables than urban households because fresh items on the market are less available to these households.

Expected Changes in  
Consumption

On the basis of observable trends, fresh vegetable consumption per capita is expected to decline slightly over the next decade, consumption of canned to increase slightly, and frozen to increase substantially. In balance, however, overall vegetable consumption per capita, farm weight equivalent, is not expected to change a great deal. It is likely, however, that some changes will take place among various population groups.

As commercial vegetables become more widely available in rural areas, rural households will tend to increase their use of total vegetables more in line with the larger quantities used per person in urban households. However, in both urban and rural areas, vegetables will be competing for the food dollar with growing supplies of other foods, including many prepared ready-to-serve items.

Further increase in the per capita consumption of canned vegetables probably will not be large because canned vegetables will be meeting more competition from fresh and frozen vegetables. But since the quantity of canned vegetables used, and also of all forms combined, is less per person in rural than in urban areas, some increase is likely in rural, particularly farm, households. In the South, and in rural nonfarm households generally, where use of canned vegetables tends to increase at successively higher income levels, an increase in real incomes might tend to raise consumption. Younger homemakers are also giving a boost to canned vegetable consumption.

Per capita consumption of frozen vegetables, which is only a small part of total vegetable consumption, is likely to continue to increase. An increase in real incomes should raise consumption, for use of frozen vegetables per person increases at successively higher income levels. New and improved products, stepped-up promotion, and continued expansion of refrigeration facilities in marketing channels and in homes should raise the general level of consumption. The frozen vegetable industry increasingly emphasizes the importance of keeping frozen vegetables at a temperature of 0° Fahrenheit or below. <sup>47/</sup> For many frozen vegetables, the proportion of families buying them, and the average quantities that these families buy, can be expected to increase. <sup>48/</sup> In rural households, where total vegetable consumption averages less per person than in urban households, a higher level of use for frozen vegetables might raise the total.

Fresh vegetable consumption per capita has been declining since World War II. Because use of fresh vegetables increases less at successively higher income levels than does use of frozen vegetables, and as most of the increase is at the upper end of the income scale, the expected increase in real incomes is likely to have less effect on the use of fresh than of frozen vegetables. It probably will have less effect in farm than in urban households; a higher proportion of the fresh vegetables used is purchased in urban households. Extension of recent improved marketing practices is increasing the availability at retail of fresh vegetables of good quality at competitive prices. This might result in maintaining or raising the general level of use of fresh vegetables among some population groups, particularly among the rural nonfarm population, whose use of fresh vegetables per person now is less than the quantities consumed by either the urban or the farm population. The decrease in use of commercial fresh vegetables per capita during a decade of rising incomes, and continued decline in home production in the same period, reflect largely the greater competition from processed vegetables and other foods. For all population groups combined, per capita consumption of fresh vegetables is likely to decline further, both home-produced and commercial.

New product possibilities emphasize various dehydrating techniques. Dehydrofreezing and foam-mat drying have been developed at the U. S. Department of Agriculture's Western Laboratory. To date, dehydrofrozen vegetables are not available in family size packages. However, they are being successfully used for

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<sup>47/</sup> See Protect Frozen Foods From Temperature Damage (88).

<sup>48/</sup> See Family Purchases of Selected Frozen Fruits and Vegetables (56).

pimentos for processed cheese, and vegetables for soup making, and later are likely to be put up in retail packages. In dehydrofreezing, vegetables are dried to about 50 percent of their original weight, then frozen and held frozen. The process effects savings in freezing, packing, storage, and shipping costs. Quality of the cooked product is reported to be about the same as that of the regular frozen product.

In the foam-mat process, juices or purees are beaten to a foam, usually with the aid of emulsifiers, and dried in an airstream. While potential usefulness of foam-mat drying for vegetable juices cannot be assessed until further work, now under way, is completed, the process appears to have some cost-saving advantages over several commercial drying methods now available.

Freeze-drying of vegetables is now in the advanced developmental stage, as a result of work by a number of food firms and the Army. In this process, food is frozen, then dehydrated under vacuum. Properly sealed, these freeze-dried foods can be stored at room temperature for long periods of time. They apparently do not become toughened or shriveled, and when rehydrated, largely regain their original flavor and texture. Though the process results in obvious saving in transportation, storage, and packaging costs compared with fresh, frozen, and canned, it is still not known whether it will save enough to offset the higher cost of processing.

Prospects appear good for perfection and commercial adoption of an instantizing process which shortens drastically the cooking time for dehydrated vegetables. Development work is underway at the Eastern Laboratory of the U. S. Department of Agriculture.

### Potatoes

Per capita consumption of potatoes decreased fairly consistently from 1910 until the early 1950's. According to 1942 and 1955 survey data, decreases during the intervening years occurred in each urbanization group and, in general, took place at all income levels. Since nonfarm households use smaller quantities per person than farm households, the shift in population off the farms also tended to lower consumption. Expected increases in real income are likely to have little overall effect on consumption per person.

Increased consumption of processed potatoes in recent years has halted, at least temporarily, the downward trend in total potato consumption per capita. Since use of processed potatoes per person increases at successively higher income levels and with greater degree of urbanization, both the expected increase in real incomes and the continued shift of population off farms will tend to raise consumption of processed potatoes. The popularity of processed potatoes, particularly with younger homemakers, is stimulating the shift to processed forms. Any overall increase in consumption of processed items, however, is expected to be largely offset by a decline in fresh use.

The instantizing process discussed in connection with vegetables also holds promise for use with dehydrated potatoes.

### Sweetpotatoes

Consumption of sweetpotatoes per capita has been declining for several decades. Use is more regional and more seasonal than that for potatoes. Canning has expanded, and more recently marketed items such as frozen candied sweetpotatoes are likewise extending the use of sweetpotatoes. Also, sweetpotato chips, and sweetpotato flakes which reconstitute into mashed sweetpotatoes, have recently been developed. Increased use of processed sweetpotatoes is likely to slow, and may halt or even reverse, the downward trend in consumption.

### Dry Beans and Peas

Consumption of dry beans and peas per capita has declined some since World War II. Use is greater in rural than in urban areas, and greater in low than in high-income households. Thus, further increases in real incomes and in degree of urbanization might be expected to result in some decline in use per person. However, improved processed products may tend to offset these influences.

Table 1.--Vegetables: Consumption per capita, by source and form, 1909-60 <sup>1/</sup>

Year	Total	Home- produced <sup>2/</sup>	Commercial <sup>3/</sup>			
			Total	Fresh	Canned <sup>4/</sup>	Frozen <sup>5/</sup>
			Pounds	Pounds	Pounds	Pounds
1909	228	(126)	102	(74)	27.5	---
1910	225	(126)	99	(73)	26.1	---
1911	222	(126)	96	(68)	28.1	---
1912	232	(126)	106	(72)	33.7	---
1913	227	(121)	106	(70)	35.6	---
1914	230	(125)	105	(70)	34.6	---
1915	224	(120)	104	(72)	32.4	---
1916	222	(120)	102	(73)	29.0	---
1917	227	(120)	107	(73)	34.0	---
1918	237	(120)	117	(77)	40.1	---
1919	231	(116)	115.0	76.6	38.4	---
1920	244	(116)	127.8	95.0	32.8	---
1921	228	(116)	112.4	82.2	30.2	---
1922	235	(112)	123.3	92.8	30.5	---
1923	236	(108)	128.4	90.1	38.3	---
1924	247	(105)	142.1	100.9	41.2	---
1925	252	(105)	147.1	101.3	45.8	---
1926	255	(105)	149.9	100.6	49.3	---
1927	248	(100)	148.5	106.0	42.5	---
1928	247	(100)	147.0	104.2	42.8	---
1929	259	( 99)	159.7	112.6	47.1	---
1930	265	(102)	162.7	111.9	50.8	---
1931	255	(101)	154.2	108.3	45.9	---
1932	255	(106)	148.9	108.8	40.1	---
1933	251	(106)	145.2	104.5	40.7	---
1934	260	(103)	156.8	115.2	41.6	---
1935	262	(104)	158.2	111.2	47.0	---
1936	266	(103)	162.7	112.5	50.2	---
1937	267	(103)	164.3	111.0	52.3	1.0
1938	272	(102)	170.1	114.5	54.6	1.0
1939	275	(100)	174.6	116.6	56.8	1.2
1940	279	( 99)	179.9	116.9	61.6	1.4
1941	277	( 96)	180.5	113.5	65.4	1.6
1942	292	( 99)	192.7	118.3	71.8	2.6
1943	293	(106)	186.6	116.4	68.5	1.7
1944	302	(107)	195.2	123.5	67.9	3.8
1945	326	(104)	221.6	133.8	83.4	4.4
1946	316	( 92)	223.8	129.9	89.2	4.7
1947	293	( 87)	206.0	122.4	77.5	6.1
1948	283	( 83)	199.5	123.0	69.5	7.0
1949	270	( 77)	193.3	115.8	70.7	6.8
1950	272	( 73)	198.8	114.6	76.8	7.4
1951	272	( 71)	200.6	111.6	79.7	9.3
1952	267	( 68)	199.2	111.0	76.9	11.3
1953	265	( 65)	199.7	108.3	79.6	11.8
1954	261	( 64)	196.6	107.3	76.8	12.5
1955	263	( 64)	198.6	104.6	80.5	13.5
1956	265	( 62)	202.5	106.9	81.5	14.1
1957	261	( 60)	200.5	104.6	81.4	14.5
1958	260	( 60)	200.2	102.1	82.7	15.4
1959	259	( 60)	198.7	100.4	82.6	15.7
1960 <sup>6/</sup>	262	( 60)	201.5	101.9	83.7	15.9

<sup>1/</sup> Excludes melons, potatoes, sweetpotatoes, dry beans and peas. Civilian consumption only, beginning 1941. Data in parentheses are approximations. <sup>2/</sup> Rough approximation of consumption of vegetables from home gardens. From table 36, Supplement for 1956 and latest annual supplement to Agr. Handb. 62, Consumption of Food in the United States 1909-52 (3). <sup>3/</sup> From Agr. Handb. 62 supplements (3). Beginning with 1919, data from table 21; prior to 1919, approximations for fresh vegetables from table 34 and data for canned vegetables from table 18, both converted to farm weight equivalent. <sup>4/</sup> Excludes quantities used for soup and baby food. <sup>5/</sup> Includes some quantities used in manufacture of soups and other products. <sup>6/</sup> Preliminary.

Table 2.--Commercially produced vegetables: Changes in per capita consumption, by form, 1947-49 to 1957-59 1/

(Farm weight equivalent)

Vegetable and form	1947-49 average	1957-59 average	Change, 1947-49 to 1957-59	Vegetable and form	1947-49 average	1957-59 average	Change, 1947-49 to 1957-59
	Pounds	Pounds	Percent		Pounds	Pounds	Percent
All vegetables <u>1/</u>				10 selected items <u>2/</u> -Continued			
Fresh	120.4	102.1	-15	Cabbage			
Canned	72.6	82.3	13	Fresh	16.1	11.2	-30
Frozen	6.6	15.2	130	Canned <u>4/</u>	2.39	2.18	-9
Total	199.6	199.6	0	Total	18.49	13.38	-28
10 selected items <u>2/</u>				Corn <u>5/</u>			
Total, 10 items				Fresh	8.0	8.1	1
Fresh	49.9	39.6	-21	Canned	13.25	13.35	1
Canned	67.41	76.61	14	Frozen	.98	2.73	179
Frozen	5.54	11.93	115	Total	22.23	24.19	9
Total	122.86	128.14	4	Cucumbers			
Asparagus				Fresh	2.6	2.6	0
Fresh	1.0	.8	-20	Canned <u>6/</u>	3.24	3.96	22
Canned	.86	1.03	20	Total	5.84	6.56	12
Frozen	.26	.33	27	Peas, green <u>3/</u>			
Total	2.12	2.15	1	Fresh	.9	.3	-67
Beans, lima <u>3/</u>				Canned	9.52	8.07	-15
Fresh	.6	.3	-50	Frozen	2.31	4.53	96
Canned	.51	.66	29	Total	12.74	12.90	1
Frozen	.92	1.60	74	Spinach			
Total	2.03	2.56	26	Fresh	1.9	1.0	-47
Beans, snap				Canned	.98	.88	-10
Fresh	4.1	2.7	-34	Frozen	.49	1.04	112
Canned	2.09	3.02	44	Total	3.37	2.92	-13
Frozen	.35	.97	177	Tomatoes			
Total	6.54	6.69	2	Fresh	13.8	12.1	-12
Broccoli				Canned <u>7/</u>	34.57	43.46	26
Fresh	.9	.5	-45	Total	48.37	55.56	15
Frozen	.23	.73	217				
Total	1.13	1.23	9				

1/ Excludes melons, potatoes, sweetpotatoes, and dry beans and peas. Data for processed vegetables exclude quantities consumed in commercially produced soups and baby foods. Civilian consumption. 2/ Those items shown separately in this table. Data for canned vegetables exclude quantities in vegetable mixtures such as peas and carrots, and succotash. 3/ "In pod" basis. 4/ Sauerkraut, canned and bulk. 5/ "On cob" basis. 6/ Pickles, canned and bulk. 7/ Including canned whole tomatoes and tomato products other than soup.

Table 3.--Potatoes, sweetpotatoes, and dry beans and peas: Consumption per capita, 1909-60 <sup>1/</sup>

Year	(Farm weight equivalent)										
	Potatoes			Sweetpotatoes			Dry edible beans and dry field peas				
	Total	Commercial plus farm home-produced <sup>2/</sup>	Nonfarm home-produced <sup>3/</sup>	Total	Commercial plus farm home-produced <sup>4/</sup>	Nonfarm home-produced <sup>3/</sup>	Total	Commercial <sup>5/</sup>			Home-produced
		Lb.	Lb.		Lb.	Lb.		Lb.	Lb.	Beans	
1909	201	187	(14)	27.7	26.2	(1.5)	13	6.8	(0.5)	(6)	
1910	211	198	(13)	27.7	26.2	(1.5)	13	6.5	(.5)	(6)	
1911	170	157	(13)	25.4	24.0	(1.4)	13	6.3	(.5)	(6)	
1912	192	179	(13)	25.4	24.0	(1.4)	13	6.8	(.5)	(6)	
1913	201	189	(12)	24.9	23.6	(1.3)	13	6.1	(.5)	(6)	
1914	169	157	(12)	23.4	22.1	(1.3)	12	6.4	(.5)	(5)	
1915	196	185	(11)	26.5	25.3	(1.2)	11	5.8	(.5)	(5)	
1916	154	143	(11)	25.7	24.5	(1.2)	11	5.1	(.5)	(5)	
1917	156	146	(10)	29.4	27.9	(1.5)	13	7.5	(.5)	(5)	
1918	184	174	(10)	28.2	26.7	(1.5)	13	7.4	(.5)	(5)	
1919	162	152	(10)	30.6	29.3	(1.3)	10	5.4	(.5)	(4)	
1920	149	140	(9)	30.8	29.5	(1.3)	10	5.7	(.5)	(4)	
1921	165	156	(9)	28.6	27.5	(1.1)	9	4.8	(.5)	(4)	
1922	151	143	(8)	30.3	29.2	(1.1)	10	5.1	(.5)	(4)	
1923	182	174	(8)	26.1	25.1	(1.0)	10	5.9	(.5)	(4)	
1924	161	154	(7)	18.9	17.9	(1.0)	11	7.8	(.5)	(3)	
1925	164	157	(7)	19.0	18.0	(1.0)	11	7.3	(.5)	(3)	
1926	135	128	(7)	22.3	21.3	(1.0)	11	7.6	(.5)	(3)	
1927	147	141	(6)	26.1	25.2	(.9)	12	8.7	(.5)	(3)	
1928	153	147	(6)	21.8	20.9	(.9)	12	8.6	.5	(3)	
1929	165	159	(6)	23.4	22.6	(.8)	11	7.8	.4	(3)	
1930	138	132	(6)	19.2	18.4	(.8)	13	9.5	.5	(3)	
1931	142	136	(6)	21.5	20.7	(.8)	13	8.8	.7	(3)	
1932	141	134	(7)	28.6	27.8	(.8)	11	7.4	.6	(3)	
1933	139	132	(7)	24.9	24.1	(.8)	11	7.1	.9	(3)	
1934	142	135	(7)	25.4	24.5	(.9)	13	9.1	.8	(3)	
1935	149	142	(7)	26.4	25.7	(.7)	12	8.4	.5	(3)	
1936	137	130	(7)	20.5	19.9	(.6)	13	9.0	.6	(3)	
1937	133	126	(7)	22.3	21.7	(.6)	11	7.8	.6	(3)	
1938	136	129	(7)	22.1	21.5	(.6)	13	9.6	.6	(3)	
1939	129	122	(7)	20.4	19.8	(.6)	13	9.3	.7	(3)	
1940	130	123	(7)	17.0	16.4	(.6)	12	8.4	.7	(3)	
1941	135	128	(7)	19.4	18.8	(.6)	12	8.8	.5	(3)	
1942	133	127	(6)	21.2	20.7	(.5)	15	11.1	.6	(3)	
1943	132	125	(7)	22.2	21.7	(.5)	13	8.9	.8	(3)	
1944	144	136	(8)	20.8	20.1	(.7)	12	8.1	.8	(3)	
1945	128	122	(6)	19.5	18.7	(.8)	12	7.8	.8	(3)	
1946	129	123	(6)	18.7	17.9	(.8)	11	8.7	.7	(2)	
1947	132	127	(5)	15.8	15.0	(.8)	9	6.5	.5	(2)	
1948	111	106	(5)	12.5	11.8	(.7)	10	6.8	.8	(2)	
1949	116	111	(5)	12.9	12.3	(.6)	9	6.9	.4	(2)	
1950	111	107	(4)	13.4	12.9	(.5)	11	8.6	.8	(2)	
1951	118	114	(4)	9.0	8.5	(.5)	10	8.1	.7	(1)	
1952	106	102	(4)	8.7	8.2	(.5)	10	8.1	.5	(1)	
1953	111	107	(4)	9.3	8.8	(.5)	8.9	7.6	.6	(.7)	
1954	111	107	(4)	9.2	8.7	(.5)	9.4	8.2	.6	(.6)	
1955	112	108	(4)	9.6	9.1	(.5)	8.2	7.3	.4	(.5)	
1956	106	102	(4)	9.0	8.5	(.5)	8.7	8.0	.7	(.4)	
1957	113	110	(3)	8.5	8.1	(.4)	8.4	7.5	.6	(.3)	
1958	106	103	(3)	8.3	7.9	(.4)	8.2	7.7	.2	(.3)	
1959	109	106	(3)	8.7	8.3	(.4)	8.4	7.6	.5	(.3)	
1960 <sup>6/</sup>	113	110	(3)	7.7	7.3	(.4)	7.9	7.3	.3	(.3)	

<sup>1/</sup> Civilian consumption only beginning 1941. Calendar year basis except for dry field peas for which crop year begins approximately in September of year indicated. Data in parentheses are rough approximations. <sup>2/</sup> Includes quantities used for mixtures, flour, dehydration, chips, shoestring potatoes, and quantities frozen and canned. From tables 18, 20, 21, and 22 of Supplement for 1956 and latest annual supplement to Agr. Handb. <sup>3/</sup> Excludes farm-garden output. <sup>4/</sup> From tables 18 and 22 of Agr. Handb. <sup>5/</sup> Cleaned basis. From tables 35 and 36 of Agr. Handb. <sup>6/</sup> Preliminary.

Table 4.--Vegetables: Quantity used at home per person, all households, by urbanization and region, in a week, spring 1955 <sup>1/</sup>

(Farm weight equivalent)

Urbanization and region	Total		Fresh <sup>2/</sup>		Commercially processed	
	All sources	Purchased	All sources	Purchased	Canned	Frozen
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
All urbanizations	5.02	4.26	3.23	2.47	1.47	0.32
Northeast	5.20	4.76	3.19	2.75	1.58	.43
North Central	4.94	4.23	3.00	2.29	1.64	.30
South	4.82	3.62	3.44	2.24	1.17	.21
West	5.44	5.16	3.32	3.04	1.69	.43
Urban	5.34	5.09	3.27	3.02	1.66	.41
Northeast	5.45	5.33	3.27	3.15	1.72	.46
North Central	5.36	5.10	3.09	2.83	1.86	.41
South	5.12	4.67	3.41	2.96	1.39	.32
West	5.41	5.24	3.38	3.21	1.55	.48
Rural nonfarm	4.61	3.56	3.02	1.97	1.36	.23
Northeast	4.49	3.51	2.85	1.87	1.27	.37
North Central	4.36	3.44	2.70	1.78	1.48	.18
South	4.61	3.34	3.27	2.00	1.18	.16
West	5.76	5.37	3.29	2.90	2.10	.37
Farm	4.47	2.19	3.47	1.19	.91	.09
Northeast	4.63	2.33	3.68	1.38	.72	.23
North Central	4.19	2.29	3.11	1.21	.99	.09
South	4.58	1.78	3.79	.99	.74	.05
West	4.89	4.16	2.80	2.07	1.91	.18

<sup>1/</sup> Derived from 1955 Household Food Consumption Survey, Reports No. 1-5 (23). Excludes melons, potatoes, sweetpotatoes, and dry beans and peas; also, vegetables in catsup and other tomato sauces, pickles, relishes, soups and food mixtures, canned baked and other mature beans. Average quantities used per person were adjusted to farm weight equivalent using the following factors (pounds of farm weight in a pound product weight): Fresh tomatoes, 1.333; other fresh vegetables, 1.177; canned whole tomatoes, 1.892; canned tomato puree and paste, 4.200; tomato and other vegetable juices, 1.666; other canned vegetables, 1.554; frozen vegetables, 2.288. Factors are ratios of farm to retail weight of 1955 annual per capita consumption (3).

<sup>2/</sup> Includes items in fresh form when first brought into household but in other forms at time of consumption in spring 1955--e.g., home-canned or home-frozen vegetables.

Table 5.--Vegetables: Quantity used at home per person, urban households, by region and income, in a week, spring 1955 1/

(Farm weight equivalent)									
Region, household size, 1954 money income after income taxes (dollars)	Total	Fresh 2/	Commercially processed		Region, household size, 1954 money income after income taxes (dollars)	Total	Fresh 2/	Commercially processed	
			Canned	Frozen				Canned	Frozen
	Pounds	Pounds	Pounds	Pounds		Pounds	Pounds	Pounds	Pounds
United States									
Households of 2 or more persons 3/					South				
Under 1,000	5.29	3.22	1.66	0.41	Households of 2 or more persons 3/	5.03	3.32	1.39	0.32
1-2,000	4.44	3.00	1.23	.21	Under 1,000	3.83	2.74	1.07	.02
2-3,000	4.22	2.82	1.22	.18	1-2,000	4.02	2.72	1.19	.11
3-4,000	4.88	3.09	1.58	.21	2-3,000	4.57	2.99	1.33	.25
4-5,000	4.92	2.94	1.68	.30	3-4,000	4.47	2.93	1.36	.18
5-6,000	5.14	3.06	1.67	.41	4-5,000	5.62	3.62	1.43	.57
6-8,000	5.38	3.30	1.71	.37	5-6,000	5.65	3.88	1.43	.34
8-10,000	5.50	3.30	1.65	.55	6-8,000	6.13	3.90	1.68	.55
10,000 and over	5.70	3.40	1.71	.59	8-10,000	5.43	3.25	1.52	.66
Northeast	6.60	4.01	1.65	.94	10,000 and over	7.91	5.22	1.84	.85
Households of 2 or more persons 3/					West				
Under 1,000 4/	5.39	3.24	1.69	.46	Households of 2 or more persons 3/	5.33	3.33	1.52	.48
1-2,000	---	---	---	---	Under 1,000 4/	---	---	---	---
2-3,000	3.78	2.51	1.05	.23	1-2,000	5.57	3.93	.97	.67
3-4,000	5.06	2.99	1.91	.16	2-3,000	5.13	3.22	1.61	.30
4-5,000	5.22	3.11	1.72	.39	3-4,000	4.57	2.66	1.57	.34
5-6,000	5.45	3.11	1.86	.48	4-5,000	4.97	3.15	1.41	.41
6-8,000	5.72	3.56	1.70	.46	5-6,000	5.14	3.03	1.84	.27
8-10,000	5.34	3.40	1.39	.55	6-8,000	5.84	3.77	1.50	.57
10,000 and over	5.21	3.17	1.49	.55	8-10,000	6.07	3.91	1.29	.87
North Central Region	5.83	3.62	1.32	.89	10,000 and over	6.60	3.98	1.73	.89
Households of 2 or more persons 3/									
Under 1,000 4/	5.33	3.06	1.86	.41					
1-2,000	---	---	---	---					
2-3,000	4.87	3.10	1.67	.09					
3-4,000	5.05	3.27	1.67	.11					
4-5,000	5.15	2.81	2.04	.30					
5-6,000	4.75	2.72	1.78	.25					
6-8,000	4.92	2.83	1.75	.34					
8-10,000	5.20	2.81	1.84	.55					
10,000 and over	6.14	3.50	2.11	.53					
	6.74	3.99	1.74	1.01					

1/ Derived from 1955 Household Food Consumption Survey, Reports No. 1-5 (23). Excludes melons, potatoes, sweetpotatoes, and dry beans and peas; also, vegetables in catsup and other tomato sauces, pickles, relishes, soups, and food mixtures and canned baked and other mature beans. Average quantities used per person were adjusted to farm weight equivalent using the following factors (pounds of farm weight in a pound product weight): Fresh tomatoes, 1.333; other fresh vegetables, 1.177; canned whole tomatoes, 1.892; canned tomato puree and paste, 4.200; tomato and other vegetable juices, 1.666; other canned vegetables, 1.554; frozen vegetables, 2.288. Factors are ratios of farm to retail weight of 1955 annual per capita consumption (3). 2/ Includes items in fresh form when first brought into household but in other forms at time of consumption in spring 1955--e.g. home-canned or home-frozen vegetables. 3/ Includes some households not reporting income. 4/ Insufficient data.

Table 6.--Potatoes, sweetpotatoes, dry beans and peas: Quantity used at home per person, all households, by urbanization and region, in a week, spring 1955 1/

(Farm weight equivalent)					
Urbanization and region	Potatoes			Sweet- potatoes	Dry beans and peas <u>3/</u>
	Total	Fresh	Other <u>2/</u>		
	Pounds	Pounds	Pounds	Pounds	Pounds
All urbanizations	2.06	1.88	0.18	0.09	0.15
Northeast	2.18	1.99	.19	.06	.08
North Central	2.46	2.20	.26	.07	.10
South	1.62	1.54	.08	.12	.26
West	1.89	1.71	.18	.06	.15
Urban	1.90	1.69	.21	.09	.11
Northeast	1.97	1.78	.19	.08	.07
North Central	2.27	1.94	.33	.09	.08
South	1.46	1.34	.12	.14	.19
West	1.66	1.48	.18	.07	.14
Rural nonfarm	2.21	2.07	.14	.08	.20
Northeast	2.54	2.33	.21	.05	.10
North Central	2.61	2.35	.26	.04	.11
South	1.77	1.73	.04	.11	.32
West	2.31	2.10	.21	.05	.18
Farm	2.40	2.32	.08	.08	.22
Northeast	3.47	3.33	.14	.07	.10
North Central	3.12	2.96	.16	.04	.13
South	1.61	1.61	---	.11	.32
West	2.62	2.46	.16	.02	.17

1/ Derived from 1955 Household Food Consumption Survey, Reports No. 1-5 (23). Average quantities used per person were adjusted to a farm weight equivalent by application of following factors (pounds of farm weight in a pound product weight): Fresh potatoes, 1.075; frozen potato products, 2.4; potato chips, sticks, 4.0; fresh sweetpotatoes, 1.155; canned sweetpotatoes, 1.114; canned baked beans, 0.31 and dry beans and peas, 1.0 (3). 2/ Includes potato chips, and sticks, frozen potato products, but excludes potato salad. 3/ Includes canned, baked and other mature beans.

Table 7.--Potatoes: Quantity used at home per person, urban households, by region and income, in a week, spring 1955 1/

(Farm weight equivalent)					
Income after taxes, 1954 (dollars)	United	Northeast	North	South	West
	States		Central		
	Pounds	Pounds	Pounds	Pounds	Pounds
Households of 2 or more persons <u>2/</u>	1.89	1.96	2.27	1.43	1.71
Under 1,000	1.52	<u>3/</u>	<u>3/</u>	1.07	<u>3/</u>
1-2,000	1.53	1.66	2.11	1.29	1.70
2-3,000	1.73	2.04	2.20	1.33	1.72
3-4,000	2.02	2.27	2.45	1.41	1.83
4-5,000	2.01	1.92	2.38	1.67	1.62
5-6,000	1.97	1.81	2.11	1.65	1.60
6-8,000	2.06	1.91	2.38	1.64	1.76
8-10,000	1.78	1.64	2.25	1.52	1.27
10,000 and over	1.84	1.98	1.83	1.68	1.88

1/ Derived from 1955 Household Food Consumption Survey, Reports No. 1-5 (23). Average quantities used per person were adjusted to a fresh equivalent basis by application of the following factors (pounds of fresh weight in a pound product weight): Fresh potatoes, 1.075; frozen potato products, 2.4; and potato chips and sticks, 4.0 (3). 2/ Includes some households not reporting their income. 3/ Insufficient data.

Table 8.--Distribution of households and of members of housekeeping families,  
by region and urbanization, spring 1955 1/

Urbanization	Proportion of households					Proportion of members of housekeeping families <u>2/</u>				
	United States	North-east	North Central Region	South	West	United States	North-east	North Central Region	South	West
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Relative importance of region in United States total										
All urbanizations	100.0	27.7	30.4	30.3	11.6	100.0	27.0	30.1	32.1	10.8
Urban	100.0	32.6	29.5	24.5	13.4	100.0	32.6	29.7	24.8	12.9
Rural nonfarm	100.0	23.8	29.6	37.6	9.0	100.0	23.4	27.9	40.5	8.2
Farm	100.0	9.6	37.6	45.3	7.5	100.0	9.2	36.3	47.2	7.3
Relative importance of urbanization group in area total										
All urbanizations	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Urban	62.2	73.1	60.3	50.3	72.1	59.2	71.4	58.5	45.8	70.3
Rural nonfarm	26.8	23.1	26.1	33.2	20.9	27.9	24.2	25.9	35.2	21.0
Farm	11.0	3.8	13.6	16.5	7.0	12.9	4.4	15.6	19.0	8.7

1/ Derived from 1955 Household Food Consumption Survey. Based on tables 1 and 2, Survey Reports 1-5 (23).

2/ Based on number and size of the primary economic families. For further explanation, see glossary of the 1955 Household Food Consumption Survey Reports 1-5 (23).

Table 9.--Distribution of households and of members of housekeeping families, in region and urbanization, by income, spring 1955 1/

Urbanization, household size, 1954 income after income taxes (dollars)	Proportion of households in area					Proportion of members of housekeeping families 2/				
	United States	North- east	North Central Region	South	West	United States	North- east	North Central Region	South	West
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
All urbanizations	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
One-person households	8.1	7.8	7.8	8.1	9.7	2.4	2.3	2.3	2.2	3.0
Households of two or more persons - total	91.9	92.2	92.2	91.9	90.3	97.6	97.7	97.7	97.8	97.0
Under 1,000	5.4	2.2	3.4	11.6	1.7	5.1	1.9	2.8	11.2	1.4
1-2,000	8.4	4.8	6.5	14.9	5.5	8.2	4.3	5.3	15.3	4.7
2-3,000	10.8	8.7	8.6	15.2	9.5	11.2	8.4	8.6	17.0	8.7
3-4,000	15.3	16.0	13.4	16.5	15.0	16.8	17.6	14.5	18.4	16.8
4-5,000	15.9	18.2	18.0	11.2	17.1	17.5	20.2	20.1	12.0	19.5
5-6,000	9.6	11.9	10.4	5.9	11.8	10.8	13.2	11.5	6.8	14.6
6-8,000	10.0	11.4	12.8	6.1	9.7	10.9	12.7	14.5	6.3	10.4
8-10,000	3.3	3.3	4.5	1.9	4.4	3.8	4.2	5.0	2.0	4.7
10,000 and over	3.8	3.3	5.5	1.4	6.5	4.2	3.7	6.6	1.3	7.4
Not classified	9.4	12.4	9.1	7.2	9.1	9.1	11.5	8.8	7.5	8.8
Urban	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
One person households	9.1	8.7	7.9	10.4	10.8	2.8	2.7	2.4	3.1	3.5
Households of two or more persons - total	90.9	91.3	92.1	89.6	89.2	97.2	97.3	97.6	96.9	96.5
Under 1,000	2.0	1.2	1.2	4.5	1.6	1.6	.8	.9	3.9	1.1
1-2,000	5.9	3.8	3.7	12.4	3.7	5.4	3.5	2.9	12.2	2.7
2-3,000	9.4	7.7	6.8	15.7	7.9	9.5	7.1	6.6	17.2	7.6
3-4,000	15.0	15.9	12.6	17.8	12.4	16.5	17.4	12.9	20.9	14.3
4-5,000	17.2	18.9	19.2	12.5	17.4	19.3	21.3	21.3	13.7	20.2
5-6,000	10.6	11.4	11.6	7.2	12.7	11.8	12.5	12.4	8.7	14.4
6-8,000	12.0	11.6	15.5	8.6	11.1	13.3	12.9	17.6	9.1	12.0
8-10,000	4.1	3.8	5.4	2.7	4.7	4.8	4.9	5.8	3.3	5.1
10,000 and over	5.0	3.9	7.4	1.9	8.2	5.9	4.4	9.1	1.9	9.7
Not classified	9.7	13.1	8.7	6.3	9.5	9.1	12.5	8.1	6.0	9.4
Rural nonfarm	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
One person households	7.9	5.8	10.2	7.4	7.3	2.2	1.7	3.1	1.9	2.3
Households of two or more persons - total	92.1	94.2	89.8	92.6	92.7	97.8	98.3	96.9	98.1	97.7
Under 1,000	7.5	4.1	4.7	13.7	0	6.3	3.6	3.4	11.0	0
1-2,000	10.7	6.5	8.8	15.3	9.1	10.3	5.4	6.8	15.9	9.0
2-3,000	12.7	11.0	10.0	15.3	15.4	13.9	11.4	9.9	18.3	12.4
3-4,000	17.6	16.2	16.3	18.3	23.6	19.8	17.8	19.5	20.2	24.6
4-5,000	15.5	17.5	17.7	12.0	17.3	16.9	18.9	20.5	13.0	18.4
5-6,000	9.2	14.4	9.4	5.4	10.0	10.9	16.3	11.2	6.3	16.9
6-8,000	7.7	11.7	9.7	3.9	6.4	8.3	12.9	11.0	4.1	6.5
8-10,000	2.0	2.1	3.0	1.1	2.7	2.3	2.3	3.9	1.1	2.8
10,000 and over	1.9	1.4	3.3	1.1	1.8	2.1	1.9	3.9	1.1	1.7
Not classified	7.3	9.3	6.9	6.5	6.4	7.0	7.8	6.8	7.1	5.4
Farm	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
One person households	2.8	2.1	2.7	2.8	5.3	.7	.5	.7	.7	1.4
Households of two or more persons - total	97.2	97.9	97.3	97.2	94.7	99.3	99.5	99.3	99.3	98.6
Under 1,000	19.1	10.4	11.1	29.3	8.0	18.5	9.6	9.1	29.3	6.7
1-2,000	17.4	13.4	14.1	22.0	12.0	16.4	11.5	11.8	21.7	10.7
2-3,000	13.5	15.0	14.1	13.4	8.7	13.5	13.6	14.0	13.9	8.3
3-4,000	11.4	16.6	11.8	9.0	16.6	11.7	18.4	11.7	9.3	18.4
4-5,000	9.4	9.3	13.6	5.1	14.0	10.2	10.0	14.7	6.0	15.7
5-6,000	5.0	5.7	6.9	2.7	8.7	5.9	6.8	8.8	2.7	10.6
6-8,000	4.9	6.2	6.8	2.9	6.0	5.9	8.1	8.3	3.4	7.0
8-10,000	1.9	1.6	2.9	.8	4.7	2.4	2.3	4.0	.7	6.1
10,000 and over	1.1	2.1	1.4	.4	2.7	1.2	1.6	1.7	.4	2.7
Not classified	13.5	17.6	14.6	11.6	13.3	13.6	17.6	15.2	11.9	12.4

1/ Derived from 1955 Household Food Consumption Survey. Data for some income groups are combined in the reports based on the survey because of sampling limitations. Based on tables 1 and 2, Survey Reports 1-5 (23).  
 2/ Based on number and size of primary economic families. For further explanation, see glossary of Survey Reports 1-5 (23).

Table 10.--Distribution of members of housekeeping families of 2 or more persons in first quarter 1942 and spring 1955, by urbanization and income <sup>1/</sup>

Family income in dollars <sup>2/</sup>	In first quarter 1942 (income at annual rate)				In spring 1955 (1954 income)			
	United States	Urban	Rural nonfarm	Farm	United States	Urban	Rural nonfarm	Farm
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
All	100.0	57.9	21.9	20.2	100.0	58.9	28.6	12.5
	In current dollars				In current dollars			
Under 500	16.2	2.9	18.2	52.1	5.7	1.8	6.9	21.6
500-1,000	12.6	8.9	19.3	15.8				
1,000-1,500	13.1	11.0	21.4	10.4	9.2	6.1	11.4	19.1
1,500-2,000	13.5	14.6	15.6	7.8				
2,000-2,500	21.9	16.5	16.0	7.4	12.7	10.8	15.3	15.8
2,500-3,000								
3,000-4,000	15.7	22.6	8.0	4.0	19.0	18.8	21.8	13.6
4,000-5,000					19.7	21.9	18.6	12.0
5,000-6,000	7.0	8.4	1.5	2.5	12.2	13.4	12.0	6.9
6,000-7,000					12.4	15.1	9.1	6.9
7,000-7,500								
7,500-8,000	4.3	5.4	2.6	2.8				
8,000-10,000					4.8	6.7	2.3	1.3
10,000 and over	2.3							
	In 1954 dollars				In spring 1942 dollars			
Under 500	18	5	21	55	6	2	7	20
500-1,000					6	3	7	15
1,000-1,500	15	10	25	17	9	7	12	15
1,500-2,000					13	13	15	12
2,000-2,500	16	15	21	11	33	17	18	11
2,500-3,000								
3,000-4,000	16	20	15	6	17	20	14	10
4,000-5,000	11	15	8	4	8	10	7	4
5,000-6,000	7	10	4	3	3	4	1	2
6,000-7,000	8	12	3	2	2	2	1	1
7,000-7,500								
7,500-8,000								
8,000-10,000	4	6	2	1.5	1.5	2	1	1
10,000 and over	5	7	1	.5	1.5	2	1	3/

<sup>1/</sup> Distribution of family members in current dollars for first quarter 1942 derived from data in Bur. Labor Statis. Bul. 822 Family Spending and Saving in Wartime (16) and for spring 1955 from 1955 Survey Report 1, Food Consumption of Households in the United States (23). Distributions in terms of dollars of other period derived by graphic adjustment of cumulative curve of income-size distribution for change in price level, measured by change in Consumer Price Index. <sup>2/</sup> Net money income in first quarter 1942 at annual rate; disposable money income in 1954. <sup>3/</sup> Negligible.

Table 11.--Population: Total and number eating out of civilian food supplies, United States, 1909-60 <sup>1/</sup>

Year	Total, including Armed Forces overseas		Year	Total, including Armed Forces overseas		Number eating out of civilian supplies <sup>2/</sup>	
	January 1	July 1		January 1	July 1	January 1	July 1
	Millions	Millions		Millions	Millions	Millions	Millions
1909	---	90.5	:: 1935	126.9	127.2	---	---
			:: 1936	127.7	128.1	---	---
1910	91.5	92.4	:: 1937	128.5	128.8	---	---
1911	93.2	93.9	:: 1938	129.4	129.8	---	---
1912	94.7	95.3	:: 1939	130.4	130.9	---	---
1913	96.4	97.2	::				
1914	98.2	99.1	:: 1940	131.5	132.1	---	---
			:: 1941	132.8	133.4	132.0	131.8
1915	99.9	100.5	:: 1942	134.2	134.9	132.3	131.5
1916	101.3	102.0	:: 1943	135.9	136.7	129.8	128.9
1917	102.7	103.4	:: 1944	137.7	138.4	128.8	128.6
1918	104.0	104.6	::				
1919	104.8	105.1	:: 1945	139.2	139.9	128.7	129.1
			:: 1946	140.7	141.4	134.5	138.4
1920	105.7	106.5	:: 1947	142.8	144.1	140.9	142.6
1921	107.6	108.5	:: 1948	145.5	146.6	144.1	145.2
1922	109.4	110.1	:: 1949	148.0	149.2	146.4	147.6
1923	111.1	112.0	::				
1924	113.1	114.1	:: 1950	150.6	151.7	149.0	150.2
			:: 1951	153.1	154.4	150.7	151.1
1925	115.0	115.8	:: 1952	155.8	157.0	152.3	153.4
1926	116.7	117.4	:: 1953	158.4	159.6	154.9	156.0
1927	118.3	119.0	:: 1954	161.1	162.4	157.7	159.1
1928	119.8	120.5	::				
1929	121.2	121.8	:: 1955	164.0	165.3	160.7	162.3
			:: 1956	166.8	168.2	163.9	165.3
1930	122.5	123.1	:: 1957	169.8	171.2	167.0	168.4
1931	123.6	124.0	:: 1958	172.7	174.1	170.1	171.4
1932	124.5	124.8	:: 1959	175.7	177.0	173.1	174.5
1933	125.2	125.6	::				
1934	126.0	126.4	:: 1960	178.6	179.8	176.1	177.4

<sup>1/</sup> Estimates of the Bureau of the Census. <sup>2/</sup> Census civilian population series beginning July 1, 1946. For the period January 1, 1941 through January 1, 1946, estimates computed from data supplied by several Federal agencies to allow for members of the Armed Forces eating out of civilian supplies; these adjustments originally made by OPA.

**NOTE:** Population series for July 1, the midpoint of the calendar year, is used in computing annual per capita consumption for items in this handbook (tables 1-3) except dry field peas, data for which are for the crop year beginning in September of the year indicated and for which January 1 population of the following year is used.

Data on military use were not available prior to 1941, but beginning in 1941 have been deducted and per capita consumption derived using the series "number eating out of civilian supplies."

## NOTES ON DATA

Two general types of nationwide food consumption data are included in this handbook on consumption of vegetables, potatoes, sweetpotatoes, and dry beans and peas. 49/ One is the annual time series of U. S. civilian consumption and the other is composed of cross-section data from surveys of household food consumption, mainly the 1955 survey, with some comparison of the 1955 and the 1942 survey data.

### Time-Series Data 50/

Time-series food consumption data are series of annual aggregates or per capita averages extending over a period of years. The consumption estimates are calculated by adding production, imports, and beginning stocks, and subtracting ending stocks, exports, and military takings, to determine supplies disappearing into civilian distribution channels. The time series show the trend in annual consumption over a period of years for the population as a whole, but not variations in consumption among population groups. For this purpose, cross-section data are used.

The population series used in estimating time series of food consumption per capita is shown in table 11.

### Commercial Fresh Vegetables

Official U. S. Department of Agriculture estimates of total production of vegetables for the fresh market have included in recent years both the output of areas shipping to more or less distant markets and the output of most of the important growing areas near large cities. The per capita civilian consumption series, farm weight, are derived from these data, with adjustments for items going to processors, production not harvested, stocks of cabbage and onions on farms and in commercial storage in producing areas, military takings, and foreign trade.

Approximate retail weights are derived from farm weights, using average waste and loss factors assembled from sources in the trade and industry. As additional information is gradually assembled, better factors for deriving retail weights can be developed.

### Processed Vegetables

Estimates of consumption of processed vegetables, net weight, are based largely on information from trade associations, supplemented in some cases by data from the Crop Reporting Board on quantities used for processing. The

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49/ Two guides dealing with research in food consumption, although not specifically concerned with individual food groups, can be useful for research on consumption of items in this handbook (46, 49).

50/ See Major Statistical Series of the U. S. Department of Agriculture--How They Are Constructed and Used, Vol. 5 (14, pp. 21, 46).

extent of reporting of stocks in the hands of packers and distributors has varied over the years, but the series for consumption data have been kept internally consistent. In the canned vegetable data in table 1, quantities used for soup and baby food are excluded. The frozen vegetable data include some quantities frozen when harvested and later used in manufacture of soups and other prepared food products.

To derive estimates of total vegetable consumption, processed vegetable data are converted to farm weight equivalents for addition to the farm weight of commercial fresh vegetables. Conversion factors used are those in Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products (89).

### Home-Produced Vegetables

Approximations of farm garden output were developed with the advice of several home management supervisors of the Farmers' Home Administration with long experience in advising on and recording output of farm gardens in their States. For nonfarm gardens, rough approximations were developed by using weekly data from household food consumption surveys, information from wartime victory garden surveys on proportion of households having gardens, and population data. Benchmarks for the series on home garden vegetable consumption take into account the 1954 annual data from the 1955 Household Food Consumption Survey. 51/

### Potatoes, Sweetpotatoes, Dry Beans and Peas

The series for potatoes, sweetpotatoes, and dry beans and peas differ from vegetables in that farm home production is included with commercial production data in those States where commercial production is estimated. Rough approximations of other production for home use are made on the basis of meager information. Data include quantities used in processed products.

### Publication of Data

Each issue of the National Food Situation (7) carries current data for the per capita consumption series in terms of primary distribution weight--farm weight of fresh items, and net processed weight of processed items. The fall Outlook Issue of the Vegetable Situation (8) also includes per capita consumption data. Agriculture Handbook 62 Consumption of Food in the United States, 1909-52 (3) and its annual supplements include, in addition, a series on retail weight of fresh items.

### Survey Data

Surveys of household food consumption provide one type of cross-section data. They show the variations in consumption among subgroups of the population at one point in time. Thus, generalizations from the survey data can best be

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51/ Survey Report 12, Food Production for Home Use by Households in the United States--by Region (23).

made for those time periods in which the demand and supply situation is similar to the situation existing at the time of the survey.

Major surveys were made in 1936, 1942 (15), 1948 (19), 1952 (21) and 1955 (23). The spring 1942 survey covered housekeeping households subdivided by urbanization and income. The 1948 survey included only urban households of two or more members. A report on the 1948 survey, Food Consumption of Urban Families in the United States (19, p. 89), provides, for broad food groups, data by income classes for two areas: (1) the North and West and (2) the South. The same report, page 105, includes a special tabulation of urban data from the 1942 survey.

Household food consumption survey reports generally contain, for food groups and individual items, data on average quantities used at home in a week. Quantities from all sources, and for some items, quantities purchased, in terms of average pounds and retail value are shown, together with the percentage of households using the items. The reports also include average household sizes computed by totaling the weekly number of meals served in households in each group and dividing by 21 (39, pp. 87-88). Average household sizes are used to compute consumption averages per person. Average family size based on number of family members is also included.

#### The 1955 Survey 52/

For the 1955 survey, the U. S. was divided into 4 regions, 3 urbanization categories, 1-person households and households of 2 or more, and income groups for households of 2 or more persons. 53/ Urbanization groupings were based on definitions used in the 1954 Census of Agriculture. Urban households were those in cities and towns of at least 2,500 persons or in fringe areas around cities of 50,000 population or more. Rural households were divided into farm households, which had a farm operator, and rural nonfarm households.

Income groupings in the survey were based on family money income in 1954 after income taxes. Income per person (fig. 7) was derived by dividing average income per family by average family size, table 2, Survey Report 1 (23).

The survey included housekeeping households only, that is, those in which at least one person had 10 or more meals at home during the seven days preceding the interview. The survey did not include quantities of food in meals purchased away from home or food for the population living in nonhousekeeping households or such places as institutions, hotels, and rooming houses.

The survey covered food consumption in spring. For vegetables, 54/ spring probably is as representative of annual consumption as any other single season for the broad grouping of items in this report. Processed vegetable consumption in spring is somewhat between the peak consumption of winter

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52/ For a more technical discussion, see article by Burk and Lanahan (39).

53/ Figure 6; tables 8-10.

54/ In this report the term vegetables excludes melons as well as potatoes, sweetpotatoes, dry beans and peas.

and the low point of summer. Although consumption of commercial fresh vegetables is a little larger in spring than the annual rate, <sup>55/</sup> home-produced vegetables are less abundant then than later in the year. For some individual vegetables, however, spring is not typical of annual consumption. Extreme examples illustrate this--it is the low season for fresh cauliflower and Brussels sprouts, the high season for fresh asparagus.

Spring probably is also fairly representative of regional differences in the relative importance of fresh and commercially processed vegetables. Fresh vegetables grown locally, available during a greater part of the year in the South than in the other regions, are also more abundant there in the spring.

For potatoes there appears to be relatively little seasonal variation in the quantity moving into consumption channels, but for sweetpotatoes the spring consumption rate is only three-fifths as large as the annual rate.

Quantities reported by the households are published in the survey reports (23) in retail weight of fresh and product weight of processed items. To add the two in comparable units, data for both were converted to farm weight equivalents. Conversion factors are given in tables 4, 5, 6 and 7. The factors are the ratio of the farm to the retail weight for the 1955 annual per capita consumption (3).

In the survey data, some items made from vegetables or potatoes, or including either as an ingredient, are classified as miscellaneous. Quantities used in their preparation are not included with the vegetable and potato data. Examples are catsup and other tomato sauces, pickles, relishes, soups (except canned baby soup), food mixtures, and such items as purchased potato salad and cole slaw.

In using survey data, it should be kept in mind that the degree of reliability is less for progressively smaller groups of households and for items normally used in small quantities or relatively infrequently.

#### Comparing 1955 With Earlier Surveys 56/

A comparison of consumption reported in the 1955 survey in urban and rural areas, and in various income groups, with consumption in these population groups at the time of the earlier surveys helps to explain changes in national consumption.

In the household food consumption surveys of 1942 and 1948, home-canned and home-frozen foods were combined with commercially processed items. The classification was changed for the 1955 household survey so that processed items would include only commercial quantities. Vegetables brought into the household in fresh form, regardless of form at the time of consumption, were

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<sup>55/</sup> See discussion of seasonality in section I.

<sup>56/</sup> See article by Lanahan (36).

classified as fresh except the quantities canned as vegetable juice, mainly tomatoes. Consequently, data on use of fresh vegetables in the 1955 survey include home-canned and home-frozen vegetables.

This change in classification necessitates adjustments in the vegetable figures in the early surveys for comparison with data from the 1955 survey. The change is significant mainly for the rural areas, especially farm households, where home canning and freezing of vegetables are more important.

The 1942 survey covered consumption during April and May, while the period for the 1955 survey was April through June. The addition of June to the survey period may have meant a little greater use of fresh and a smaller use of commercially canned vegetables in 1955 than would have been the case if the survey months had included only April and May. Also, because of better sorting in production areas and improved hauling practices, it is likely that purchased fresh vegetables reported in the two surveys differed in amount of trimming.

Table 10 shows the distribution of members of housekeeping families into family income groups of comparable purchasing power for the 1942 and 1955 surveys. Such distributions are useful in calculating the change in average consumption of a food group that may be attributed largely to improved real incomes between the two time periods. The procedure involves (1) weighting average consumption per person in each income group in the 1955 survey by the percentage distribution of the family members among income groups in each of the two surveys in terms of the same (1954) dollars, and (2) noting, for the calculated average consumption, the difference between the two time periods. To extend this comparison to all urbanization groups combined, the calculated average consumption for each urbanization group, for both 1942 and 1955, is weighted by the 1955 percentage distribution of family members among the urbanization groups.

In addition to any change in consumption attributed to improved real incomes between the time of the two surveys, there may also have been changes in the level and pattern of consumption among various income groups. The actual change measured by the two surveys compared with the calculated change due to improved real incomes indicates whether there has been a change in level or pattern of consumption, and, if so, whether it has been in the same direction as any change attributed to improved real incomes.

The distribution of the population among urbanization groups in the two surveys is also shown in table 10. The greatest net shift in population from the 1942 to the 1955 survey was from farm to rural nonfarm. For those items for which there is a difference in consumption between farm and rural nonfarm households, this shift in population tended to affect consumption rates. The difference in use per person between farm and rural nonfarm households in the 1955 survey was proportionately greater for potatoes than for vegetables, and it was greater for processed than for fresh items. <sup>57/</sup> To the extent that people left the farm for better incomes, the shift in degree of urbanization involved also a shift to higher income groups.

LITERATURE CITED AND RELATED REFERENCES

NOTE: Because of a reorganization of agricultural economics services in the U. S. Department of Agriculture, which became effective April 3, 1961, some of the publications formerly issued by Agricultural Marketing Service are now available from Statistical Reporting Service or from Economic Research Service.

A. Statistical Sources

I. Time-series data

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- (4) \_\_\_\_\_. Farm-Retail Spreads for Food Products. U. S. Dept. Agr. Misc. Pub. 741, 165 pp., illus., Nov. 1957. Supplement for 1956-60, 40 pp., Jan. 1961.
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