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DETERMINING FOOD RESOURCES
FOR SURVIVAL PLANNING
PURPOSES

Prepared for

SURVIVAL PROJECTS OFFICE
FEDERAL CIVIL DEFENSE ADMINISTRATION



By

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DETERMINING FOOD RESOURCES FOR SURVIVAL
PLANNING PURPOSES

INTRODUCTION

A very significant part of any survival plan developed pursuant to arrangements between the Federal Civil Defense Administration and States and their political subdivisions deals with the determination of normally available food resources and their utilization under emergency conditions.

A prerequisite to the development of an operational plan for management of the food supply is the quantitative determination of the food resources likely to be available for emergency use. This includes not only inventories of food but capacities of facilities for production, processing and distribution as well. This manual, prepared by the U. S. Department of Agriculture at the request of the Federal Civil Defense Administration, is intended to provide assistance in this first major step; it will provide a basis on which planning can proceed uniformly in the areas where survival planning is in progress. Also, it is hoped that by providing suggested sources of data and points of contact for additional data the time and money cost of survival planning can be reduced.

Although the guidelines and procedures contained herein will be helpful in assembling data for specified reception areas there are fewer problems in assessing food and food facility resources on a statewide basis because of the greater availability of data on a State total basis.

In surveying resources, data should be assembled not only for the planned reception area but for the target city or cities involved, since it cannot be presumed in advance that an attack would destroy such city or cities with all of their resources. Metropolitan area and State maps, with significant facilities plotted thereon, would be extremely valuable in an emergency in evaluating available supplies of food. Similar mapping for reception areas is also desirable, with supplementing tabulations of resources developed for ready use in emergency operations.

In tabulating food resources, it is not essential that data be accurate to the last decimal place. There are many other instances where only rough estimates can be made (e. g. number of survivors). Therefore, it is scarcely worthwhile to seek highly refined data on food when reasonably accurate estimates can be obtained at significantly less expense.

There are several fields in which the Department of Agriculture is seeking to obtain, through national surveys, data which can be incorporated into food resources summaries at a later date. In these fields, particularly the retail inventory and home food inventory fields, rough estimates can be incorporated in the preliminary tabulations. Refinement or revision can come later when the results of the national surveys are known.

Some States and reception areas will be found to be important producing, processing or storage areas for food products which are normally distributed over a much wider area. Such foods which are interstate in character should be tabulated separately since they are not likely to be available for the exclusive use of people in the particular State or reception area. It should be kept in mind that available food will not be for the exclusive use of the surviving civilian population. The military will require significant quantities and it may be that the U. S. will need to share its food with friendly nations.

A. DEFINITIONS AND TABULATION GUIDELINES

Abbreviations and terms

AMS - Agricultural Marketing Service, USDA

CCC - Commodity Credit Corporation, USDA

Crop Reporting Board - of AMS, USDA

CSS - Commodity Stabilization Service, USDA

FCDA - Federal Civil Defense Administration

State Agricultural Statistician - of the Agricultural Estimates Division, AMS, USDA

USDA - United States Department of Agriculture, Washington 25, D. C.

A-1 Food resources

Food resources include all food stocks existing in a designated metropolitan area, reception area or State, with the exception of those which are owned by the Armed Services and the CCC. (This does not mean that CCC stocks will not be available, at least in part, in an emergency. It does mean that such stocks will be utilized by USDA in an emergency in such manner as to recognize the needs of various deficit areas). Food stocks include food in the homes, retail stores, wholesale warehouses, public storages, away-from-home eating places, schools and other public institutions, processing plants, food

manufacturers' distribution warehouses, freezer locker plants, country assembly points, and on the farms. In addition to food stocks on hand, the monthly rate of food production on farms for milk, livestock, eggs and other foods in current production should be included. Include also production estimates for seasonally or annually produced foods and the season in which the food is available.

It should be noted that portions of food stocks available in many States or localities are normally distributed in other States or localities, just as many of the requirements of particular areas are met by shipments from other producing areas. (See parallel application to resource facilities in A-2). Since it must be recognized that supplies available in some areas will be needed following an emergency to meet deficits in other areas, food resource inventories should separate those wholesale, processor and terminal warehouse stocks which are normally distributed elsewhere from those locally distributed.

A-2 Food facility resources

Food facility resources include food processing facilities, food warehouses, wholesale and retail establishments, away-from-home eating places and schools, and other public institutions. It must be recognized, however, that with exception of retail establishments, some of these facilities may normally serve an area considerably wider than the immediate metropolitan area or reception area. Therefore, they should not be assumed to be resources exclusively available to such area. It is suggested that total capacity of such facilities be recorded, but that only the percentage of such capacity normally utilized within the area be considered as a resource for the immediate metropolitan or reception area.

A-3 Food groupings

For tabulation purposes, the basic groupings listed below are suggested. Although not strictly interchangeable, items within the groupings are sufficiently similar for survival planning purposes. Data accumulated in several different studies may be combined more easily for State, regional or national summaries if listings are made in the order indicated.

- a. Protein foods - meats, fish, poultry, eggs, cheese, cottage cheese, dry beans, and peas.
- b. Cereals - wheat, rye, corn, oats, barley, and their products.

- c. Milk (all forms), cream and ice cream.
- d. Food fats and oils - butter, margarine, lard, shortening, salad and cooking oils, salad dressing.
- e. Fruits and vegetables - fresh, canned, frozen and dried.
- f. Sweeteners - sugar, sirup, molasses, honey and fruit spreads.
- g. Coffee.
- h. Specialty foods - tea, cocoa, spices, and seasonings.
- i. Tobacco.

It may be easier to obtain data in considerably greater detail than indicated in these summary groupings and to group the data at a later time. Those sections of the summary which cover the production and processing of major commodities probably should be relatively detailed. Coffee is treated as a separate item because of its importance to morale. Milk and closely related products are grouped together because of their importance in the feeding of children.

A-4 Quantities

Quantities should be tabulated on the basis of the units commonly used for the various commodities. Generally speaking, these will be in terms of pounds, gallons, bushels, lugs, etc., and can be converted to standard units. The FCDA Survival Projects Office has been supplied with copies of USDA's publication, "Conversion Factors and Weights and Measures for Agricultural Commodities and their Products".

These quantities (for groupings somewhat as suggested in Item A-3) subsequently should be converted into man-days of food supply by: (a) ascertaining the approximate caloric value of the foods found to be available; and (b) dividing by 3000 to obtain the approximate number of days of food available per person (hereafter called "man-days of food").

It should be noted that the 3000 calorie per capita allowance used in these calculations is slightly below the U. S. per capita food consumption figure of 3200 calories per day. It is also somewhat above the caloric level which could be tolerated for short periods of time

in a serious emergency situation during which supplies may have to be stretched. However, subsequent conversion to a 2500 or 2000 calorie basis could readily be accomplished, if necessary.

B. INITIAL CONSULTATIONS

Before undertaking the tabulation of food resources, it is desirable to consult with leaders in the food trades in the target and reception areas, with State Agricultural Statisticians, State Departments of Agriculture, and food marketing specialists of the State Agricultural Extension Service at the Land Grant Colleges. These sources of information can be expected to have a variety of basic data and be able to suggest shortcuts that will supply statistics sufficiently accurate for survival planning purposes. The USDA publication "Agricultural Statistics" for the latest year is a source for considerable food data by States.

C. FOOD STOCK CATEGORIES

For ease in collecting and tabulating data or estimates of food resources it is suggested that such data be organized in accordance with the food stock categories indicated in this section. It is especially important that care be taken to avoid duplicate counting of stocks since there is considerable over-lapping among these food stock categories. By conducting the inventory on the basis of location of stocks rather than ownership, much of this problem can be eliminated. It is also important to insure that no important food resources are omitted because of a storage location failing to fit precisely into one of these categories.

C-1 Home food supplies

USDA, in cooperation with the Bureau of the Census, is undertaking a survey to obtain estimates for use in survival planning. Since it may be sometime before results of that survey will be available, rough estimates for inclusion in the initial survival plan may be desirable. In arriving at such a rough estimate, it is important that consideration be given to the composition of the area being studied, i. e., farm, rural nonfarm or urban. As a basis for rough estimates for initial survival planning use, there are set forth below suggested levels of inventory for the various categories of homes.

<u>Type of Dwelling</u>	<u>Assumed Per-Person Food Supply (Number of days)</u>
Urban-Apartment	4
Urban-House	7
Suburban House	10
Rural Nonfarm House	15
Farm House	25

It must be emphasized that the foregoing are merely suggested levels and must not be regarded as reliable. More reliable data can be used when they become available.

C-2 Retail grocers and away-from-home eating places

The Bureau of the Census is also conducting for the USDA, a study of food inventories in retail stores and away-from-home eating places. The collection of data has been completed. As soon as tabulation and analysis have been completed, data will be made available for survival planning purposes.

C-3 Schools and other public institutions

This category would include schools, colleges, universities, hospitals, mental hospitals, and churches. Data concerning food supplies of most tax-supported institutions (which include most large institutions) may be obtainable from the responsible State agency. Public health officials should be able to provide a list of other institutions and may be able to provide guidance with respect to the best method of obtaining data on their food resources.

C-4 Wholesalers

The Bureau of the Census and USDA have jointly estimated the number of man-days of food inventories by counties and larger cities, in wholesaler and auxiliary warehouses (chain store warehouses and processors' branch houses). These estimates have been provided the Survival Projects Office, FCDA. Although the estimates are quite rough, they will suffice for survival planning purposes.

C-5 Refrigerated warehouses

The Agricultural Estimates Division, AMS, USDA, collects monthly data on stocks of various foodstuffs and percentages of space occupied in public and certain nonpublic refrigerated warehouses

where food products are generally stored for 30 days or more. In addition, data are collected biennially on plant capacity of cooler and freezer storage space and related facts. While these data are available chiefly in the form of U. S. and regional totals, and, to a limited extent, State totals, arrangements could be made, on a reimbursable basis, to have the Division tabulate data on warehouse food stocks on a total basis, in terms of man-days supply, for specified areas. Since data are obtained from the warehouseman on a confidential basis, it is not possible to furnish data in such detail as to reveal individual plant information.

C-6 Dry storage warehouses

State Agricultural Statisticians collect and publish State data periodically on certain farm products used for food, particularly food grains, held in commercial dry storage facilities. The Statisticians may be able to provide, on a reimbursable basis, summary totals of stocks held, by groups of counties, provided the area covered is sufficiently large as to avoid revealing individual plant information. The Statisticians cannot reveal lists of reporting firms or data with respect to individual firms. If more detailed data are desired, the Statistician may be able to advise as to sources from which names and locations of warehouses can be obtained.

C-7 Frozen food locker plants

In some reception areas the frozen food locker plants are sources of significant quantities of food. There are approximately 10,000 such plants in the United States. A large portion of these are in the relatively nonvulnerable areas. The Survival Projects Office, FCDA, has been supplied:

- (1) A list, for each State, of locker plants indicating name, county and town;
- (2) an estimate of the gross refrigerated space in locker plants, by States;
- (3) estimates of 1954 livestock slaughter in locker plants by species by States, (actual volume of slaughtering done, not maximum or optimum capacity for slaughter); and
- (4) a publication entitled "1955 Survey - Frozen Food Locker Plants", showing, among other things, by States, estimated number of plants and average number of lockers rented.

Data on or estimates of food stored in lockers are unavailable because locker operators do not regularly have access to information as to the quantity of food stored in a particular patron's locker.

C-8 Food processors

Information concerning processors' resources of specific food commodities varies widely from commodity to commodity. Principal sources of data are the USDA, State Departments of Agriculture, State Bureaus of Markets, the Bureau of the Census and trade publications.

Since much of the data are available mostly on a national or regional basis and to a lesser extent on a State basis it will often be necessary to consult with the suggested source concerning the possibility of supplying the data needed for particular areas. Published data, of course, are available without charge but other data in some instances may be supplied only for a fee.

Where reasonably current data are not available they will have to be developed by survival projects by applying recent trends to available data or by adjusting data to fit more closely the area for which they are being estimated.

C-8-a Meats: Data for evaluating the meat processor resources fall into two main groups: (1) meat stocks of slaughterers and processors and (2) meat production rates. Insofar as possible the data should be collected by types of meats - beef, veal (or beef and veal), pork, lamb and mutton, and specialty meat products.

(1) Meat stocks of slaughterers and processors: The major slaughterers' and meat processors' stocks are included in the refrigerated warehouse data (see Item C-5). Stocks of meat processors' branch distribution houses are included in the stock data of food wholesalers described in Item C-4. Not included in these data are quantities of meat in plants of the smaller local slaughterers and meat processors who store for less than 30 days. The latter quantities in toto are not sufficiently significant to justify separate tabulation by survival planning projects.

(2) Meat production rates: Data on commercial livestock slaughter, by States where slaughtered, may be used to estimate meat production. Data by States and by months on total live weight of cattle, calves, hogs, sheep and lambs slaughtered in commercial plants are published by the Crop Reporting Board, under the title of "Commercial Livestock Slaughter". To convert total live weight to meat the following dressing yield percentages are suggested: Cattle 54.5%, calves 55.5%, sheep and lambs 47.5%, and hogs 76.0% (includes lard). (For numbers slaughtered on farms, see C-11). State Agricultural

Statisticians may be able to suggest sources of information or provide assistance in reducing these data to a smaller area basis.

C-8-b Dairy products: Stocks of butter, cheese and other dairy products held in cold storage at the processing plant or in commercial cold storage are included in data described in Item C-5. These data, however, do not include stocks in dry storage warehouses (principally evaporated, condensed, and dried milk).

Each year the Crop Reporting Board publishes the "Production of Manufactured Dairy Products Report". This report provides production data by States and by months for the major manufactured dairy products - butter, American cheese, other major varieties of cheese, cottage cheese, condensed and evaporated milk, dry milk products, ice cream, sherbert, ice milk, mellorine and ice cream mix.

The "Fluid Milk and Cream Report" published monthly by AMS, provides average daily receipts data and average daily sales of milk, milk products and cream in about 30 Federal Order Markets.

State Agricultural Statisticians may, in some instances, be able to provide certain data for areas within States.

The 1954 Census of Manufactures provides certain data on fluid milk and dairy product processing plants.

C-8-c Poultry: The only data available on stocks of poultry products are those described in Item C-5.

The 1954 Census of Manufactures provides additional data on poultry processing, egg collecting and egg products plants, live poultry assembly points, hatcheries, etc.

C-8-d Fish and fish products: In coastal areas (ocean, gulf and Great Lakes), there may be important fish ports sufficiently distant from the target city to constitute a valuable resource. Data should be available on normal catches by season, the capacity of the fishing fleet, warehousing and processing facilities. Refrigerated fish stocks are included in the data described in C-5.

Other sources of data are reports of the Fish and Wildlife Service, U. S. Department of the Interior, Market News Offices of the Service and leaders in the industry.

C-8-e Food fats and oils: Vegetable oil crushing facilities tend to be located in or near the producing areas. Refining facilities tend to be large installations and are generally in or near the large metropolitan centers.

Production and mill stocks of crude cottonseed oil and soybean oil, by States, are available monthly in "Facts for Industry" published by the Bureau of the Census, U. S. Department of Commerce, Washington 25, D. C. Data for other crude oils or for refined fats and oils are not available by States or smaller areas. Trade groups, however, may be able to provide some additional information.

C-8-f Sweeteners: Sugar deliveries by refiners, beet processors and others into each State, by months, are published in "Sugar Reports", available from the Sugar Division, CSS. Sugar stocks and production data by States are not available.

Data on honey production and stocks in processors' hands, by States are published semi-annually by the Crop Reporting Board.

Maple, sorgo, and sugarcane sirup production data by States appear in the Annual Crop Report of the Crop Reporting Board.

C-8-g Grains: Published information on stocks of grains, in all positions, by States, is available in quarterly reports of the Crop Reporting Board. The 1954 Census of Manufactures will also provide additional data on grain processing facilities.

C-8-h Fruits and vegetables

(1) Fresh: Due to the perishability of most fresh fruits and vegetables they are moved into consumption as rapidly as possible and stocks are therefore relatively small except for potatoes, cabbage, apples and a few other items which can be stored. Quantities stored in refrigerated warehouses are included in the refrigerated warehouse statistics. (See Item C-5)

Data on unloads of fruits and vegetables for selected cities may be obtained from "Carlot Unloads of Certain Fruits and Vegetables in 100 U. S. and five Canadian Cities", published by the Fruit and Vegetable Division, AMS. Qualifications in the use of these data are (1) data are limited to the 100 cities, and (2) movement by truck is reported for only some of these cities.

(2) Canned: In a few States, the State or regional canners associations may be able to provide estimates of stocks within

States. In major processing States pack data are generally available from these sources. Reports of the National Canners Association also are a source for State data on stocks and packs in many instances.

(3) Frozen: Stocks of frozen fruits and vegetables are in the refrigerated warehouses discussed in Item C-5 and require no separate tabulation. Pack data may be obtainable in major processing States from State or regional processors associations.

C-8-i Coffee, tea and tobacco: No data are readily available by States.

C-9 Assembly points

Many agricultural commodities are assembled at points in or near the producing area on their way to market. Public stockyards, auction markets, egg assembly points, milk collecting stations, and similar gathering points are examples. Substantial quantities of food are in such assembly areas at all times.

The availability of data on actual quantities of food in assembly points varies widely from commodity to commodity. Grain elevator data are included in that in Item C-6. Receipts and movements of many other food commodities, published daily by the Market News Services of USDA are generally readily available in the commodity sections of newspapers. Summarizations for longer periods usually can be obtained from the local Market News Office of USDA.

C-10 Food stocks on farms (Excluding stocks in farm homes)

The Agricultural Estimates Division, AMS, issues a quarterly report on the quantity by States, of major grains held on farms. The only other food holdings data, by States, available from the same source are the total stocks of potatoes held by growers and local dealers as of the first of each month from December through March.

C-11 Farm food production

Currently available data, together with past production records, may be sufficient to provide reliable guidelines. During the respective crop seasons, the Crop Reporting Board issues monthly forecasts or estimates of total production by States, for

most crops, eggs, and monthly production of milk for 35 States. State data are available on the number of chickens and turkeys raised, January 1 inventory of major species and classes of livestock and poultry, and on meat-animal production. The State Agricultural Statistician also may have some county estimates for prior years on specific crops and livestock items. In the absence of these data, the 1954 Census of Agriculture figures may be useful.

Some appraisal should be made of feed crops and feed supplies because of their significance in assuring expected flow of food resources from livestock sources (milk and other dairy products, eggs, poultry meat, red meats). Proper evaluation of the feed situation in an area would require an elaborate analysis. A reasonable approximation can be obtained, however, by discussing with agricultural leaders and feed dealers the estimated time that average stocks of feed on hand in the area may be expected to last without further shipments. Seasonal variations in feed stock levels should be included in the inquiry as well as important variations in the time specialized types of feed would last.

C-12 Food in transit

Food in transit to a specific area varies widely, both in composition and volume. No official data are available on these quantities except for a one percent sample of waybills maintained by the Interstate Commerce Commission. Estimates of these quantities by industry leaders and transportation experts will be adequate for survival planning.

