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TRAINING IN THE PREPARATION OF FOOD BALANCE SHEETS

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FOOD BALANCE SHEETS

HISTORY, SOURCES, CONCEPTS AND DEFINITIONS

The paper presents briefly the historical background of food balance sheets, their nature and uses and discusses conceptual problems related to their preparation and accuracy. The main part of the paper describes concepts and definitions used in food balance sheets regarding commodity coverage and the various supply/utilization elements. Finally, various versions of presenting food balance sheets are shown and briefly discussed.

I. HISTORY AND DEVELOPMENT OF FOOD BALANCE SHEETS

Food balance sheets present a comprehensive picture of the pattern of a country's food supply during a specified reference period. The first attempts at preparing food balance sheets date back to World War I. Food balance sheets were the major source of data when, in 1936, at the request of the League of Nations Mixed Committee on the Problem of Nutrition, and its Sub-Committee on Nutritional Statistics, a systematic international comparison of food consumption data was prepared.

During World War II, the interest in food balance sheets increased considerably. The Inter-Allied Committee on Postwar Requirements used them in 1942/43 in their studies of post-war requirements in European countries and an even more detailed technique was developed and employed by a joint committee of experts from Canada, the United States of America and the United Kingdom in the report "Food Consumption Levels in the United States, Canada and the United Kingdom". During these years, food balance sheets were also constructed in Germany for the country itself as well as for the occupied countries. In the work of the International Emergency Food Council which dealt with problems of food allocation and distribution in the period of worldwide food shortages after the war, food balance sheets played an important role. .

From the outset, the Food and Agriculture Organization of the United Nations (FAO) has given considerable importance to furthering the development of food balance sheets, reflecting their usefulness in analyzing the food situation at the level of individual countries. The technique has been extensively employed in FAO's "World Food Surveys". The "Handbook for the Preparation of Food Balance Sheets" was published in 1949. Since then, food balance sheets have been prepared and published by FAO on a regular basis.

Both official and unofficial data available in the Statistics Division and other units in FAO have been used to construct the food balance sheets and missing data have been estimated on the basis of surveys and other information as well as technical expertise available in FAO.

II. FOOD BALANCE SHEETS - What they are and how to use them

To restate, a food balance sheet presents a comprehensive picture of the pattern of a country's food supply during a specified reference period. The food balance sheet shows for each food item - i.e., each primary commodity and a number of processed commodities potentially available for human consumption - the sources of supply and its utilization. The total quantity of foodstuffs produced in a country added to the total quantity imported and adjusted to any change in stocks that may have occurred since the beginning of the reference period gives the supply available during that period. On the utilization side a distinction is made between the quantities exported, fed to livestock, used for seed, processed for food use and non-food uses, lost during storage and transportation, and food supplies available for human consumption. The per caput supply of each such food item available for human consumption is then obtained by dividing the respective quantity by the related data on the population actually partaking of it. Data on per caput food supplies are expressed in terms of quantity and - by applying appropriate food composition factors for all primary and processed products - also in terms of caloric value, protein and fat.

Annual food balance sheets tabulated regularly over a period of years will show the trends in the overall national food supply, disclose changes that may have taken place in the types of food consumed, i.e., the pattern of the diet, and reveal the extent to which the food supply of the country as a whole is adequate in relation to nutritional requirements.

By bringing together the larger part of the food and agricultural data in each country, food balance sheets are useful in making a detailed examination and appraisal of the food and agricultural situation in a country. A comparison of the quantities of food available for human consumption with those imported will indicate the extent to which a country depends upon imports (import dependency ratio) to feed itself. The amount of food crops used for feeding livestock in relation to total crop production indicates the degree to which primary food resources are used to produce animal feed which is useful information for analyzing livestock policies or patterns of agriculture. Data on per caput food supplies are an important element for projecting food demand, together with such other elements as income elasticity coefficients, projections of private consumption expenditure and population.

At the same time, food balance sheets do not give any indication of the differences that may exist in the diet consumed by different population groups, e.g.,

people of different socio-economic groups, ecological zones or geographical areas within a country. Neither do they provide information on seasonal variations in the total food supply. To obtain a complete picture, food consumption surveys showing the distribution of the national food supply at various times of the year and among different groups of the population should be conducted. In fact, the two sets of data are complementary. There are commodities for which a production estimate could best be based on estimated consumption as obtained from food consumption surveys. On the other hand, there are commodities for which production, trade and utilization statistics could give a better nationwide consumption estimate than the data derived from food consumption surveys.

III. SOURCES FOR THE PREPARATION OF FOOD BALANCE SHEETS

Ideally, the basic data required for the preparation of food balance sheets should be obtained from the same source. This implies that, firstly, the country should have a comprehensive statistical system which is recording all current information relating to each component of the food balance sheet (starting from producers to consumers). Secondly, concepts of the information adopted should be those of the food balance sheet concepts. Thirdly, the information available should be consistent, at least with respect to measurement unit and time reference period. In practice, however, such an ideal statistical system does not exist. Even in the few, mainly developed, countries which possess uncommonly sophisticated reporting procedures, the available data do not always meet either the second or third condition. Therefore, in practice, the basic data are necessarily based on a large variety of sources. The main sources commonly used are discussed below.

Production and trade data are part of the ongoing national official statistics. They are based either on direct enquiries or records, or are estimated by Government agencies. Information on stock changes is available from marketing authorities and factories or from farmer stock surveys. Information on industrial uses are obtained from industrial/manufacturing censuses/surveys. Feed and seeding rates are obtained from cost of production surveys or are estimated by the Government agencies concerned. Waste in industrial processing is also obtained from manufacturing surveys.

Since the basic data are obtained from different sources, they are subject to inconsistency. Their concepts are not likely to be the same as the food balance sheet concepts, since they were not primarily planned for that purpose. The time reference period may not be consistent throughout, or there may be some time lag among the available data. Furthermore, the data are often either incomplete or unreliable. Clearly, directly incorporating such data into the food balance sheet framework is almost impossible. Adjustments to the basic data and estimation/imputation of the missing data are necessary in order to maintain a certain degree of consistency, completeness and

reliability of the resulting food balance sheets. In some cases, the exercise has to be based also on other external sources. Some practical issues of using the basic data usually encountered are discussed below.

IV. CONCEPTUAL PROBLEMS RELATED TO THE PREPARATION OF FOOD BALANCE SHEETS

A conceptual problem frequently arises with respect to coverage/representativeness of the basic data. Production statistics are mostly confined to only commercialized major food crops. Non-commercial or subsistence production (i.e., home produce and food from hunting, fishing and gathering by the households for their own consumption) are usually not included. This might be an appreciable part of total production in some countries. Manufacturing surveys may cover only a certain size of industrial establishments. Information on commercial stocks may be available from official or marketing authorities, factories, wholesalers and retailers, but inventories of catering establishments, institutions and households may not be available. Information on waste in industrial processing may be available, but waste during storage, transportation or on quantities intentionally discarded for the purpose of price control or epidemic disease control may not be available. In these cases, even though the basic data are reliable, some adjustments are required to adapt the basic data to food balance sheets concepts/coverage.

The incompleteness and inaccuracy of the basic data tend to be the major problems. Production statistics may not be available for all commodities needed. Even where the statistics are available, they are not always reliable. This may be due to the fact that crop patterns and utilization of some crops in developing countries are sometimes rather complicated, making it difficult to estimate the production. For example, the production of some crops (e.g., cassava and plantains) are not completely harvested; some is either left as a reserve from which to draw if the need arises or even allowed to rot. Moreover, major food crops may not be grown in pure stands but mixed-planted in fields of bewildering complexity. The reliability of official production data may also be questionable. This is because farmers frequently equate production with tax collection and, in some cases, because reliable information on pre-harvest foodgrain losses caused by pests and diseases are not usually available. Hence, the estimates of yield are likely to be inaccurate; if so, it follows that production statistics derived from the harvested area and the estimated yield may be subjected to a biased estimation.

Import and export data may be accurate in the majority of countries, but in some countries there may be significant amounts of trade across national boundaries that go unrecorded. Moreover, import and export transactions may not receive equal attention from the custom's administration because taxes or quantitative controls are generally concentrated more on import items than export. As a consequence, the reliability of export data may also be questionable.

The availability of basic data on the feed, seed and industrial/manufacture use components are rather limited. The cost of production surveys and manufacturing surveys, which are the appropriate sources of data, has not been conducted regularly in most developing countries. Even where the surveys are conducted, their coverage is usually limited (e.g., cost of production surveys cover only a few major crops or do not cover livestock commodities, etc.). Moreover, information on stock changes and waste are often nearly non-existent or, at best, only fractional in its coverage, e.g., commercial stocks of some commodities may occasionally be available from official sources or marketing authorities.

The estimate of the total population is also a part of the set of ongoing official statistics. The per caput figure of each food commodity is obtained by dividing the food available for human consumption figure by the total population partaking of it during the reference period, i.e., refers to de facto population. However, for many countries, this figure may also be subject to either incomplete or unreliable data. The total population estimates may refer to resident population only, i.e., refers to de jure population. Thus, non-resident population, such as illegal immigrants, tourists, refugees, foreign diplomatic personnel and their dependents, foreign armed forces, etc., are not included. This omission may constitute a considerable part in some countries. This, therefore, would understate the total partaker population.

There are also problems related to the time-reference period to be used in preparing food balance sheets. Several twelve-month periods, such as July/June, October/September, April/March, have been proposed and were indeed also applied. However, none of these periods covered satisfactorily and uniformly the production of all agricultural commodities, their trade and domestic utilization. It can be assumed that there is no single twelve-month period which is fully suitable for recording supply and utilization for all products. It was therefore felt that although the calendar year time-reference period (January-December) might not be a completely satisfactory solution, its advantage would appear to outweigh its disadvantages. The application of a calendar year time-reference period during which the bulk of the harvest takes place also helps in linking the agricultural statistics with those of the industrial and other sectors of the economy.

V. ACCURACY OF FOOD BALANCE SHEETS

The accuracy of food balance sheets, which are in essence derived statistics, is, of course, dependent on the reliability of the underlying basic statistics of population, supply and utilization of foods and of their nutritive value. These vary a great deal both in terms of coverage as well as in accuracy. In fact, there are many gaps particularly in the statistics of utilization for non-food purposes, such as feed, seed and manufacture, as well as in those of farm, commercial and even government stocks. To overcome the

former difficulty, estimates can be prepared while the effect of the absence of statistics on stocks is considered to be reduced by preparing the food balance sheets as an average for a three-year period. But even the production and trade statistics on which the accuracy of food balance sheets depends most are, in many cases, subject to improvement through the organization of appropriate statistical field surveys. Furthermore, there are very few surveys on which to base sound figures for waste. In some cases, these estimates are subject to significant margins of error. Typically, assumptions about waste are based on expert opinion obtained in a country. Identification of major gaps in the available data might also stimulate the improvement of national statistics at the source.

The available statistics being what they are, considerable use has to be made in preparing food balance sheets of evaluation techniques provided by consistency checks. Internal consistency checks are inherent in the accounting technique of the food balance sheet itself. Even more important are external consistency checks based on related supplementary information, such as the results of surveys conducted in various parts of the world, as well as relevant technical, nutritional and economic expertise.

Food balance sheets, while often far from satisfactory in the proper statistical sense, do provide an approximate picture of the overall food situation in a country and can be useful for economic and nutritional studies, for preparing development plans and for formulating related projects.

VI. CONCEPTS AND DEFINITIONS USED IN FOOD BALANCE SHEETS

1. Commodity Coverage

As already indicated, all potentially edible commodities should, in principle, be taken into account in preparing food balance sheets regardless of whether they are actually eaten or used for non-food purposes. The definition of a complete list of potentially edible commodities presents virtually insurmountable difficulties - both conceptual and statistical. For practical purposes, therefore, a pragmatic list of commodities will have to be adopted and should be generally confined to primary commodities - except for sugar, oils and fats and beverages. Whenever possible, trade in processed commodities should be expressed in the primary commodity equivalent. The following list of commodities and their classification into major food groups is proposed for food balance sheet purposes. It should, however, be adjusted according to the availability of commodities in a given country.

LIST OF COMMODITIES CLASSIFIED BY MAJOR FOOD GROUPS

CEREALS

Wheat
Maize
Millet

Rice (paddy)
Rye
Sorghum

Barley
Oats
Cereals, other

STARCHY ROOTS

Potatoes
Roots, other

Sweet potatoes

Cassava

SUGAR

Sugar cane
Sugar (raw equiv.)

Sugar beet
Honey

Sugar, non-centrifugal

PULSES

Beans

Peas

Pulses, other

TREE NUTS

Cashewnuts

Chestnuts

Walnuts

OIL CROPS

Soybeans
Sesameseed
Oilcrops, other

Groundnuts
Palm kernels

Sunflower seed
Coconuts (incl.copra)
Olives

VEGETABLES

Tomatoes

Onions

Vegetables, other

FRUIT

Oranges & Mandarines
Citrus, other
Apples (excl. cider)
Grapes (excl. wine)

Lemons & Limes
Bananas
Pineapples
Fruit, other

Grapefruit
Plantains
Dates

STIMULANTS

Coffee

Cocoa beans

Tea

SPICES

Pepper
Spices, other

Pimento

Clove

ALCOHOLIC BEVERAGES

Wine
Beverages, alcoholic

Barley beer

Beverages, fermented

MEAT

Bovine meat

Mutton/goat meat

Pig meat

Poultry meat

Other meat

Offals

MILK

Cow milk

Sheep milk

Goat milk

EGGS

Hen eggs

Eggs, other

FISH AND SEAFOOD

Freshwater fish
Molluscs

Marine fish

Crustaceans

VEGETABLE OILS

Soybean oil
Rape & mustard oil
Palm oil
Olive oil

Groundnut oil
Cottonseed oil
Copra oil
Oilcrops oil, other

Sunflowerseed oil
Palm kernel oil
Sesameseed oil

ANIMAL FATS

Butter, ghee

Cream

Fats, animal, raw

MISCELLANEOUS

Under each item, primary as well as derived commodities, up to the first stage of processing, are considered as appropriate, e.g., wheat, wheat flour (instead of bread), or milk, butter, ghee, skim milk, cheese (from whole milk and skim milk), dried and condensed milk (from whole milk or skim milk).

2. Supply and Utilization Elements

2.1 Production. For primary commodities, production should relate to the total domestic production whether inside or outside the agricultural sector, i.e., including non-commercial production and production in kitchen gardens. Unless otherwise indicated, production is reported at the farm level for primary crop and livestock items (i.e., excluding harvesting losses for crops) and in terms of live weight (i.e., the actual ex-water weight of the catch at the time of capture) for primary fish items. Production of processed commodities relates to the total output of the commodity at the manufacture level (i.e., it comprises output from domestic and imported raw materials of originating products). Reporting units are chosen accordingly, e.g., cereals are reported in terms of grain or paddy rice. As a general rule, all data on meat are expressed in terms of carcass weight. Usually the data on production relate to that which takes place during the reference period. In the absence of information on changes in stocks, however, production of certain crops may relate to the harvest of the year preceding the consumption period if harvesting takes place late in the year. In such instances, the production of a given year is largely moving into consumption in the subsequent year. In the sample Form II of the food balance sheet, located at the end of this document, a distinction is made between "output" and "input". The production of primary as well as of derived products is reported under "output". For derived commodities, the amounts of the originating commodity that are required for obtaining the output of the derived product are indicated under "input", and are expressed in terms of the originating commodity.

2.2 Changes in Stocks. In principle, this comprises changes in stocks occurring during the reference period at all levels from production to the retail stage, i.e., it comprises changes in government stocks, in stocks with manufacturers, importers, exporters, other wholesale and retail merchants, transport and storage enterprises, and in stocks on farms. In practice, though, the information available often relates only to stocks held by governments, and even this is not available for a number of countries and important commodities. It is for this reason that food balance sheets are usually prepared as an average for several years as this is believed to reduce the degree of inaccuracy contributed by the absence of information on stocks. Net increases in stocks are generally indicated by the + sign and net decreases by the - sign. In the absence of information on opening and closing stocks, changes in stocks also are used for shifting production from the calendar year in which it is harvested to the year in which it enters domestic utilization or is exported.

2.3 Gross Imports. In principle, this covers all movements of the commodity in question into the country as well as of commodities derived therefrom and not separately included in the food balance sheet. It, therefore, includes commercial trade, food aid granted on specific terms, donated quantities, and estimates of unrecorded trade. As a general rule, figures are reported in terms of net weight, i.e., excluding the weight of the container.

2.4 Supply. There are various possible ways to define "supply" and, in fact, various concepts are in use. The elements involved are production, imports, exports and changes in stocks (increases or decreases). There is no doubt that production, imports, and decreases in stocks are genuine supply elements. Exports and increases in stocks might, however, be considered to be utilization elements. Accordingly, the following possibilities exist for defining "supply".

- (a) Production + imports + decrease in stocks = total supply.
- (b) Production + imports + changes in stocks (decrease or increase) = supply available for export and domestic utilization.
- (c) Production + imports - exports + changes in stocks (decrease or increase) = supply for domestic utilization.

Over the years, FAO has used all of the three concepts of "supply". In recent years concept (c) has been adopted when preparing and publishing food balance sheets in order to identify the quantity of the commodity in question which is available for utilization within the country.

2.5 Gross Exports. In principle, this covers all movements of the commodity in question out of the country during the reference period. The conditions specified for gross imports, under 2.3 above, apply also to exports by analogy. A number of commodities are processed into food and feed items. Therefore, there is a need to identify the components of the processed material exported in order to arrive at a correct picture of supplies of food and feed in a given time-reference period.

2.6 Feed. This comprises amounts of the commodity in question and of edible commodities derived therefrom not shown separately in the food balance sheet (e.g., dried cassava, but excluding by-products, such as bran and oilcakes) that are fed to livestock during the reference period, whether domestically produced or imported.

2.7 Seed. In principle, this comprises all amounts of the commodity in question used during the reference period for reproductive purposes, such as seed, sugar cane planted, eggs for hatching and fish for bait, whether domestically produced or imported. Whenever official data are not available, seed figures can be estimated either as a percentage of supply, (e.g., eggs for hatching) or by multiplying a seed rate with

the area under the crop of the subsequent year. In those cases where part of the crop is harvested green (e.g., cereals for direct feed or silage, green peas, green beans) an adjustment must be made for this area.

2.8 Manufacture. A distinction can be made between manufacture for food and manufacture for non-food use. The amounts of the commodity in question used during the reference period for manufacture of processed commodities for which separate entries are provided in the food balance sheet either in the same or in another food group (e.g., sugar, fats and oils, alcoholic beverages) are shown under the column Manufacture for Food. Quantities of the commodity in question used for manufacture for non-food purposes, e.g., oil for soap, are shown under the element Manufacture for Non-Food Use. The processed products do not always appear in the same food group. While oilseeds are shown under the aggregate Oilcrops, the respective oil is shown under the Vegetable Oils group; similarly, skim milk is in the Milk group, while butter is shown under the aggregate Animal Fats. Barley, maize, millet and sorghum are in the Cereals group, while beer made from these cereals is shown under the Alcoholic Beverages group. The same principle applies for grapes and wine.

2.9 Waste. This comprises the amounts of the commodity in question and of the commodities derived therefrom not further pursued in the food balance sheets, lost through waste at all stages between the level at which production is recorded and the household, i.e., waste during storage and transportation. Losses occurring during the pre-harvest and harvesting stages are excluded (see note on "Production").

Post-harvest losses in most countries are substantial owing to the fact that most of the grain production is retained on the farm so as to provide sufficient quantities to last from one harvest to the next. Farm storage facilities in many countries tend to be primitive and inadequately protected from the natural competitors of man for food. Losses become even more serious in countries where the agricultural products reach the consumers in urban areas after passing through several marketing stages. In fact, one of the major causes of food waste in some countries is the lack of adequate marketing systems and organization. Much food remains unsold because of the imbalances of supply and demand. This is particularly true of perishable foods, such as fresh fruit and vegetables. Post-harvest losses of fruit and vegetables of between 25 and 40% occur in many countries, mainly as a result of untimely harvesting and improper packing and/or transport.

Technical losses occurring during the transformation of the primary commodities into processed products are taken into account in the assessment of respective extraction/conversion rates.

The waste of both edible and inedible parts of the commodity occurring in the household, e.g., in the kitchen, also is excluded.

2.10 Food. This comprises the amounts of the commodity in question and of any commodities derived therefrom not further pursued in the food balance sheet that are available for human consumption during the reference period. The element food of maize for example comprises the amount of maize, maize meal and any other products derived therefrom, like cornflakes, available for human consumption.

The food element for vegetables comprises the amount of fresh vegetables, canned vegetables, and any other products derived therefrom. But the element food of milk relates to the amounts of milk available for human consumption as milk during the reference period, but not as butter, cheese or any other milk product provided for separately in the food balance sheet.

It is important to note that the quantities of food available for human consumption, as estimated in the food balance sheet, reflect only the quantities reaching the consumer. The amount of food actually consumed may be lower than the quantity shown in the food balance sheet depending on the degree of losses of edible food and nutrients in the household, e.g., during storage, in preparation and cooking (which affect vitamins and minerals to a greater extent than they do calories, protein and fat), as plate-waste, or quantities fed to domestic animals and pets, or thrown away.

2.11 Per Caput Supply. Under this heading are provided estimates of per caput food supplies available for human consumption during the reference period in terms of quantity, caloric value, and protein and fat content. Per caput food supplies in terms of quantity are given both in kilograms per year and grams per day, calorie supplies are expressed in kilo-calories (calories) per day, while supplies of protein and fat are provided in grams per day.

Per caput supplies in terms of quantity are derived from the total supplies available for human consumption by dividing the quantities of the food element by the total population actually partaking of the food supplies during the reference period, i.e., the present in-area (*de facto*) population within the present geographical boundaries of the country in question at the mid-point of the reference period. Accordingly, nationals living abroad during the reference period are excluded but foreigners living in the country are included. Adjustments should be made wherever possible for part-time presence or absence, such as temporary migrants and tourists, and for special population groups not partaking of the national food supply such as aborigines living under subsistence conditions (if it has not been possible to include subsistence production in the food balance sheets) and refugees supported by special schemes (if it has not been possible to include the amounts provided by such schemes under imports).

The per caput supply figures in the food balance sheets represent only the average supply available for the population as a whole and do not necessarily indicate what is actually consumed by individuals. Even if the per caput food supply is taken as an approximation of per caput consumption, it is important to bear in mind that there could be considerable variation in both levels and patterns of consumption between individuals.

For the purpose of calculating the caloric value and the protein and fat content of the per caput food supplies, the choice of the appropriate food composition factors is very important. For example, the choice of the food composition factors for wheat flour depends, among other factors, on the water content, variety, and the degree of milling involved. The choice of the corresponding factors for cheese depends on whether the cheese is derived from whole milk, partly whole milk, or skim milk, as well as whether the cheese has been made from the milk of cows, sheep, goats, buffaloes, or camels, and lastly on whether the cheese is hard, semi-soft or soft. The nutritive factors can be obtained directly from the national food composition tables. These tables give the nutritional composition of food per 100 grams of edible portion.

As the quantity data of the food balance sheets are on an "as purchased" basis it is necessary that the nutritive composition in term of edible portion is converted into this basis as well. The conversion is made by applying waste/refuse factors to the nutritive composition in term of edible portion. The resulting per caput total nutritive values are usually expressed on a daily basis. In the absence of food composition tables prepared by appropriate national institutions, use can be made of FAO's Food Composition Tables - Minerals and Vitamins - for International Use.

For calories, protein and fat, a grand total and its breakdown into components of vegetable and animal origin is shown at the beginning or the end of the food balance sheet.

VII. FORMATS OF FOOD BALANCE SHEETS

Various formats which have been developed over the years still exist and can be used for the preparation and presentation of food balance sheets. The three "Sample Forms for Food Balance Sheets" that are shown in the Appendix have different headings for various columns which need some further explanations.

FORMAT I

Available supply represents the concept of supply available for domestic utilization.

Food (gross) is simply the balance of the available supply after feed, seed, manufacture and waste have been deducted. It represents the quantities directly available to consumers before the application of extraction rates, if this is necessary.

Extraction rate applies chiefly to cereals and is used to effect a conversion of grains to flour and of paddy rice to milled rice. This column is also used to show the extraction of raw sugar from cane and sugar beets and of oil from oilseeds and so on. In addition to reflecting the input/output ratio between originating/parent commodity and processed commodity, the extraction rate also determines the choice of the appropriate food composition factors.

Food (net) represents the actual quantities of food directly available for human consumption after the application of extraction rates to the corresponding figures in the Food (gross) column.

Columns 18-20 show the food composition factors which have been applied when converting the quantities of daily per caput food supplies into energy, protein and fat content.

FORMAT II

The headings in this second format correspond to the description of the various elements in the foregoing section on "Supply and Utilization Elements".

FORMAT III

This third format may be used when presenting a food balance sheet in standardized form.

Processed Trade (E-I) shows exports minus imports of processed commodities expressed in their primary/parent commodity equivalent and where "E" denotes exports and "I" denotes imports.

Stock changes indicate increases (+), or decreases (-), in stocks.

Food Manufacture shows amounts of the commodity in question used to manufacture processed commodities which are part of a separate food group (e.g., fats and oils, beverages).

Other uses comprises quantities used for the manufacture of non-food products, e.g., oil for soap. In order not to distort the picture of the national food pattern, quantities mainly consumed by tourists may be included here.

Food. In many cases, commodities are not consumed in the primary form in which they are presented in the standardized food balance sheets, e.g., cereals enter the household mainly in processed form, such as flour, meal, husked or milled rice. To take this fact into account, the caloric value and the protein and fat content shown against primary commodities in the standardized food balance sheet should be derived by applying the appropriate food composition factors to the quantities of the processed commodities and not by multiplying the quantities shown in the food balance sheet with the food composition factors relating to primary commodities.

Format III

Food Balance Sheet

Country

Information available as of:.....

Population.....

Year.....

Commodity	Domestic supply						Domestic utilization						Per caput supply				
	Production	Imports	Change in stocks	Exports	Processed trade (E-I)	Total	Feed	Seed	Food manu- facture	Other uses	Waste	Food	Kilo- grams/ year	Per day			
	1000 metric tons													Grams	Calo- ries (No)	Prot. (Gr)	Fat (Gr)

Format IV

Food Balance Sheet

Country.....

Year.....

Population thousand

thousand metric tons

Commodity	Supply					Domestic utilization						Food supply per caput				
	Production	Change in stocks	Imports	Exports	Available supply	Feed	Seed	Food Manu- facture	Other uses	Waste	Food	Kg/ year	Grams/ day	Calories / day Number	Protein/ day Grams	Fat/ day Grams
	1	2	3	4	5	6	7	8	9	10	12	13	14	15	16	17

