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REVIEW OF FOOD BALANCE SHEETS IN YUGOSLAVIA

<u>Supporting paper submitted by Federal Statistical Office, Yugoslavia</u>**

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Rewiew of Food Balance Sheets in Yugoslavia

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Summary: Statistical data on food consumtion in Yugoslavia are obtained through system of Food Balance Sheets . As a framework to prepare Food Balance Sheets serve two schemes, in fact, two sets of tables. Food Balance Sheet data show for each food product quantities, structures and qualities of food consumtion as well as trends of it. In Yugoslavia the main source in food consumtion is of a crop origin (cereals, potatoes, beans etc.) A biological high valuable food of animal origin (meat, fish, eggs) provides ¼ joules and 1/3 proteins. An avarage Yugoslav inhabitant takes annually (in primary or processed form) about 180 kg of cereals, 40 kg of potatoes, 46 kg of fruits and grapes, 57 kg of meat and 100 l of milk. In last decade the quantity and quality of food consumtion is decreasing.

Introduction

In Yugoslavia Food Balance Sheets are composed from available statistical data and estimates, according to FAO methodology and recommendations. They are processed in the Federal Statistical Office for 53 basic food prodacts and groups of products only for the territorial level of Yugoslavia as a whole. The Food Balance Sheets have been calculated since 1959, and present series of data exist for the teritory of ex Yugoslavia from 1952 to 1990, and for todays Yugoslavia from 1990 to 1998. The procedure of compilation of Food Balance Sheets for 1999 is in procedure.

Data derived from Food Balance Sheets are often used to establish:
-quantities and structure of food consumption, features of every single product and importance of individual articles to population nutrition,
-quality of food consumtion concerning the source of joules and proteins origin (crop or animal origin),
-general surplus or shortage in nutritious ingredients of food and
-trends in food consumtion
Data on food consumption from Food Balance Sheets are published in Statistical Yearbook of Yugoslavia every year.

Construction and Presentation of Food Balance Sheets

The construction of Food Balance Sheets is, in fact, the computation of human consumption of each food product. The Food Balance Sheets are constructed by integrating data through two main phases, annually for calendar year. In the first phase "gross quantities " of products wich are used in human nutrition, regardless whether they will be consumed as food are computed. To establish "gross quantities" used as human food one has to subtract from the summ of opening stocks, production and

import the summ of export, seed, feed, usage input for processing, waste and closing stocks. The scheme 1 is done in following manner:

Scheme 1-Calculation of "gross quantities"

Year	Opening stocks	Pro-duc-tion	Im-port	Che-cking (1+2+3)	Ex-port	Feed	Seed	Input for proce ssing	Waste	Quan tities gross	Clo-sing stocks
	1	2	3	4	5	6	7	8	9	10	11

In the second phase " net quantities " of human food consumption are expressed as totals and per caput quantities in kilograms, joules, proteins and fats. Data from the first phase, from the first scheme are taken over and comprised in the scheme 2 of the second phase. The second scheme also includes data on available resources of products and change in stocks (these two items are calculated on the base of data from scheme 1) as well as the calculation of " net quantities " (multiplying "gross quatities " by percentage
of extraction rate). The outlook of the scheme 2 follows:

Scheme 2. Calculation of " net quantities"

Year	Produ ction	Chang es in stocks (+ or -)	External trade		Availa ble quanti ties (1+2+3-4)	Uses of available quantities			
			Import	Export		Feed	Seed	Input for proce-ssing	Waste
	1	2	3	4	5	6	7	8	9

Scheme 2. (continue)

Uses of available quantities			Per caput consumption			
Feed				Per day		
Gross	% of ex-traction rate	Net	kg. per year	joules	Proteins gr. .	Fats gr.
10	11	12	13	14	15	16

Food Balance Sheets are composed according the same rules for all products. In fact, they consist of 12 components: production, changes in stocks, export, import, available quantities, animal feed, seed, gross human food, extraction rates and net human food.The basic principle for calculation of balances is that each component is given in equivalent of raw product, respectively in quantities of primary agricultural product. Processed food either the result of industrial or domestic processing, has to be calculated in raw substance accordingly to adequate conversion rates (processed food from grapes, milk, meat etc.)

Statistical data which are the main source for determining Food Balance Sheets components are obtained throught different statistical methods starting from subjective estimates (a system of estimates for crop production) over sampling methods (for livestock production) and finishing with data derived from accounting and other records. Data on stocks and uses of commodities for food and nonfood usages are estimates. Quantities used as animal feed are determined accordingly to coeficients for calculations of consumed feed for producing live weight of livestock. Quantities used as seed are determined accordingly to sown area. Certainly it can be said that data for component of Food Balance Sheets "waste" are of minimum realibility. The level of waste can vary very much from year to year (the minimum for cereals, the maximum for vegetables and fruits). Extraction rates which are used for converting some products from gross to net quantities are the same in all years (although they have to vary but insignificantly). The great impact on the accuracy of balances have reliability of data on production. Data on export and import are of satisfactory punctuality. Other balance sheets components (seed, feed, processing, waste) have less impact on the reliability of data.The absolute data magnitude of these componens comparing with data magnitude of production is relatively small and consequently the impact on human food consumption data is very small. These components do not exist practically for certain number of products.

3.Food Consumption Characteristics in Yugoslavia

Many factors have an impact on food consumption quantity and quality.Development and structure of agricultural production as well as good or bad agricultural year and available money, natural conditions, cultural level etc. are included in these factors. For instance, low income of Yugoslav population has an influences to the share of expences for food in personal consumtion and it is 40%.

Table 1. Annual consumption of basic products in Yugoslavia (kg per caput)

| | Ex Yugoslavia | | | | | Yugoslavia | | | | | |
| | | | | | | | | Ø | | | |
	1939	1959	1969	1979	1989	1990	1998	1990 to 1998	1990 to 1992	1993 to 1995	1996 to 1998
Cereals	204	189	179	176	167	198	180	189	197	189	181
Vegetables	48	50	61	85	75	102	128	109	103	99	124
Potatoes	46	69	63	60	47	35	41	36	33	33	41
Beans	4.8	8.7	8.8	8.1	6.6	7.9	7.0	7.0	7.8	6.5	6.6
Fruits, grapes	45	69	66	60	47	37	37	36	38	32	39
Meat	22	26	33	57	59	69	57	57	62	53	57
Fish	1.0	1.3	2.3	2.3	3.8	1.4	2.7	1.8	1.6	1.5	2.3
Milk, lit.	46	80	75	101	100	99	105	98	97	94	102
Eggs, units	75	72	110	187	184	166	182	153	154	143	163
Fats	6.9	10.8	15.2	20.9	24.8	26.3	19.2	22.0	26.1	20.4	19.5
Sugar	5.2	14.1	24.8	30.9	39.3	42.6	24.0	32.8	41.6	29.9	27.0

An avarage Yugoslav inhabitant uses cereals a lot, and consumption is relatively stable. Low income of population and relatively low prices of bread have an influence on the high consumption of cereals. In some years domestic production does not provide enough cereals for food and cereals are imported. From year to year the consumtion of vegetables has variations as a result of unstable production. Unstable prices with great differences between the regions production and consumtion have an impact on such flow of vegetable consumtion, too. It is characteristic that consumption of beans is stable and high. The consumtion of fruits is low in Yugoslavia. A significant part of fruit and grape production is processd to alcoholic beverages (abot 60 %). In Yugoslavia beside continental European fruits are consumed significant quantities of citruses from import. Consumtion of citrus fruits has risen from 0.1 kg in 1952 to 7.3 kg in 1998. Consumtion of meat has shown the trend of growth up to 1990, and after that period oscillations and decline. Consumption of fresh milk shows the trend of growth with oscillations. Oscillations in consumtion of fresh milk are result of diminished production in some years and unstable market as well as disproportion of prices of raw milk and processed milk products. About 30 % to 40 % of raw milk is processed to cheese, butter, etc. Consumption of fats and sugar have the trend of growth up to 1990 and after 1990 the trend of decrease. The lowest consumption of all products, one should keep in mind, in the last decade, was in the period 1993 to1995 (period of a huge inflation in Yugoslavia).

The basic characteristic of Yugoslav food consumtion, that is more expressed after 1990 (from that year calculations were done for the FR Yugoslavia) is predominant participation of carbohydrate products which give a lot of joules. Products of animal origin and so called protective food have modest consumtion. Such structure of food consumption is the consequence of very low income of population and of great part of rural population .

Table 2. Consumtion of joules, proteins, fats and carbohydrates, daily per caput

	Joules		Proteins		Fats, grammes	Carbohy-drates, grammes
	total	% of ani-mal origin	grammes	% of ani-mal origin		
1990	17242	27.3	115.4	36.1	143.1	579
1992	16207	25.3	108.4	32.5	134.o	579
1994	15117	24.4	106.6	32.1	121.1	541
1996	14686	25.2	104.9	34.4	120.3	522
1998	15324	29.5	107.4	35.2	122.0	461
Ø 1990 to 1998	15550	25.9	107.6	33.8	127.2	541

In Yugoslavia total value of food expressed in joules from 1990 is declining. The same casis is with consumed proteins and fats and carbohydrates.The consumption trendfood of animal origin is declining, too.

3. Conclusion

Food Balance Sheets as a method of statistical research are appllied in Yugoslav statistics for presenting the general level of food consumption and changes in it.

Balances are constructed by integrating data through two types of tables for each food item, for 53 products, respectively groups of products. Compilation of Balances is based on avalable statistical data and estimates.The correctness of balances most depends on the punctuality of data on production.

Data derived from Balances are often used to establish quantities and structures by typeof consumed food. They show that the main sources of consumed nutrztious ingridiens in population nutrition in Yugoslavia are products of vegetable origin (cereals, beans, etc.). Biologically highly valuable food of animal origin (meat, milk, eggs, fish) provide about ¼ joules and 1/3 of total proteins consumed.

Changes in food structures after 1990 show a negative trends, respectively declining of meat, milk and eggs consumption and increasing of cereal consumption.

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