

# TRANSITION SACRIFICES - SUGAR CHANNEL IN ROMANIA, A “LOST BATTLE” ?

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## 1. SUPPLY

### 1.1. Domestic production

Sugar beet as a crop cultivated in Romania has gone through a lot of transformations in the recent years of the transition period. As a general trend, one can notice the decreasing trend of the areas under sugar beet, as well as of average yields per hectare.

As it is crop that requires special weather conditions as well as a special care from the part of producers, sugar beet should be cultivated on the basis of a special national strategy, with financial support from the state. Otherwise, mostly private farmers would not be interested in cultivating it, which is the case in Romania at present.

The area cultivated with sugar beet until 1989 gradually increased, to reach 275.5 thousand ha in 1985 that was the largest area under sugar beet. After 1989, the trend was quite opposite; the areas that were formerly cultivated with sugar beet were replaced by other crops, that were more reliable and with lower costs for producers. The area under sugar beet (table 1.1.) gradually decreased year by year; this decrease can be also explained by the fundamental changes that were produced in the production patterns in agriculture through the application of Land Law no. 18/1991.

Table 1.1

#### Land areas cultivated with sugar beet by ownership forms

-thou. ha-

Specification	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
-private sector	217.9	145.9	176.8	158.6	80.1	100.3	112.2	114.5	113.0	101.1	58.6	43.9
-state sector	38.0	16.8	24.8	21.3	17.1	29.7	21.0	21.4	15.8	13.0	6.0	2.1
<b>Total</b>	<b>255.9</b>	<b>162.7</b>	<b>201.6</b>	<b>179.9</b>	<b>97.2</b>	<b>130.0</b>	<b>133.2</b>	<b>135.9</b>	<b>128.8</b>	<b>114.1</b>	<b>64.6</b>	<b>46.0</b>

Source: Calculations based on the data from “Evolution of Agrifood Sector in Romania”, yearly report 1997, MAF, IEA, Bucharest, 1998; newspaper collection “Adevarul” – 2000; ASAS – IEA, ASRO – INS.

The average yields per hectare do not significantly vary from one zone to another; however, there are significant differences as regards productivity between different farm cropping structures. On the whole, the average yields were quite low, about 20 t/ha and sugar content in roots 9-13% compared to the European average, i.e. 15%.

As regards total sugar beet production, oscillations were found from one year to another (table 1.2) with a minimum in 2000 (616.0 thou. tons) and a maximum in 1991 (4,702 thou. tons).

Table 1.2

**Sugar beet average yields and total productions by ownership forms**

Year	Average yield (kg/ha)			Total production (thou. Tons)		
	Private sect.	State sect.	Total	Privatr sect.	State sect.	Total
1989	26207	25297	26465	5710,4	960,7	6671,1
1990	20248	19244	20149	2954,2	323,5	3277,7
1991	23467	22357	23330	4147,3	555,4	4702,7
1992	15622	19685	16098	2477,4	419,3	2896,7
1993	17314	22784	18276	1386,8	389,5	1776,3
1994	20491	23872	21264	2054,3	709,5	2763,8
1995	19138	24138	19928	2147,3	507,3	2654,6
1996	20072	25712	20960	2298,3	549,9	2848,2
1997	20995	24012	21166	2372,0	353,5	2725,5
1998	19354	20290	20045	2016,8	344,6	2361,8
1999	21729	23390	21881	1273,7	141,2	1414,9
2000	13200	16980	13380	579,9	36,1	616,0

Source: Processing of data from ASRO – INS, ASAS – IEA.

If in the year 1989 there were 33 processing units in sugar industry, with a nominal processing capacity of 83 thousand tons sugar beet/24 hours, in the year 2000 the effective processing capacity reached only 15 thousand tons/24 hours and was operated in only 6 sugar processing units (see table 1.3).

Table 1.3

**Situation of sugar processing factories**

1990	6 did not operate	27 operate
1991	1 did not operate	32 operate
1992	4 did not operate	29 operate
1993	7 did not operate	26 operate
1994	6 did not operate	27 operate
1995	7 did not operate	26 operate
1996	11 did not operate	22 operate
1997	14 did not operate	19 operate
1998	20 did not operate	13 operate
1999	19 did not operate	14 operate
2000	27 did not operate	6 operate

Source: Calculations based on the data from “Evolution of Agrifood Sector in Romania”, yearly report 1997, MAF, IEA, Bucharest, 1998; newspaper collection “Adevarul” – 2000; ASAS – IEA, ASRO – INS.

Under these conditions, only a decreasing trend was experienced by sugar production (table 1.4).

Table 1.4

**Sugar production evolution (thou.tons)**

SPECIFICATION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
From sugar beet	311	366	338	250	130	191	207	244	205	185	100	49
From raw sugar	405	172	10	40	55	40	59	152	38	136	175	121
<b>TOTAL</b>	<b>716</b>	<b>538</b>	<b>348</b>	<b>290</b>	<b>185</b>	<b>231</b>	<b>266</b>	<b>396</b>	<b>243</b>	<b>321</b>	<b>275</b>	<b>170</b>

Source: Processing of data from ASRO – INS, ASAS – IEA, \*provisional data.

Since 1990, sugar supply was covered by imports, as domestic production covered up to 50% the consumption needs.

It is quite interesting to present the evolution of sugar beet production per capita as well as of sugar production per capita in the last two decades (table 1.5).

Table 1.5

**Average production per capita (kg)**

SPECIFICATION	1980	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Sugar beet	238.6	270.4	292.5	140.9	202.8	127.3	78.1	121.6	117.0	126.0	120.9	104.9	62.9	27.4
Sugar from sugar beet	9.05	12.01	13.43	15.77	14.58	10.97	5.71	8.40	9.13	10.79	9.09	8.22	4.44	2.18

Source: Processing of data from INS, ASAS – IEA.

## 1.2. Foreign trade

In order to cover the domestic sugar consumption, Romania imports raw sugar (from sugar cane and sugar beet) in order to process it. In recent years, raw sugar imports totaled over 200,000 tons/year.

The raw sugar is processed in the sugar beet processing units, in special production lines. There are no special refineries in Romania for processing the raw sugar from sugar cane.

For comparison, we can argue that the other Central and East-European countries also import sugar (except for Hungary, that is sugar exporter); however, imports are for reaching a normal consumption level for the population and not for covering the minimum consumption needs.

The balance of Romanian sugar trade in the period 1989–2000 is presented in table 1.6.

Table 1.6

**Sugar trade balance (thou. tons)**

YEARS	IMPORTS	EXPORTS	BALANCE
1989	243.4	173.9	-69.5
1990	293.9	4.1	-289.8
1991	235.4	0.2	-235.2
1992	302.1	0.2	-301.9
1993	217.5	5.3	-212.2
1994	218.1	0.0	-218.1
1995	254.5	0.3	-254.2
1996	280.7	22.1	-258.6
1997	134.4	12.6	-121.8
1998	178.6	11.0	-167.6
1999	324.3	0.6	-323.7
2000*	266.4	4.8	-261.6

Source: Processing of data from:

- Costea, M, 1997, Restructuring project for the privatization and development of S.C. Fabrica de zahar S.A. Bod, Brasov county, INCE – IEA, Bucharest
- ASRO – INS
- ASAS – IEA
- \* until 31.07.2000

It must be mentioned that both raw sugar and refined sugar were included in imports.

Raw sugar comes to Romania in all the four quarters of the year; smaller amounts come in the last quarter, as the processing units are busy processing the domestic production (harvest).

Raw sugar is mainly imported from Cuba, Brazil, Thailand and Moldova (where the raw sugar from Odessa transits through).

In conclusion, we can say that Romania's status as sugar importing country will be maintained in the near future, under the background of a continuous decrease of areas under sugar beets and of closing down may sugar production and processing capacities.

### 1.3. Balance by product and food availability

The data from the National Institute for Statistics in the last years indicate not only a decrease of average and total sugar consumption in Romania, but also a decrease of resources available for sugar industry.

Table 1.7

#### Sugar and sugar based products resources (thou. tons)

SPECIFICATION	1996	1997	1998	1999
Rafined sugar imports	117.1	90.7	150.3	112.6
Production to be used	524.7	339.4	363.6	335.0

Source: Processing of data from INS

It can be noticed that only in 1996 the threshold of 500 thousand tons utilizable sugar was exceeded, which also resulted in the increase of average consumption per capita to about 23 kg/year. In the other years, the data indicate that the quantity of 363.6 thousand tons utilizable sugar was not exceeded; this, in correlation with population's purchasing power diminution, led to a drastic decrease of consumption to 20 kg/year/inhabitant (which is half of the sugar consumption in countries as Hungary or the Czech Republic).

As regards utilizations, these were divided between export and domestic consumption. As exports were very low, mainly procured resources went to domestic consumption. A centralization of sugar uses in Romania in the last years of the 9-th decade is presented in Table 1.8.

Table 1.8

#### Uses of sugar and sugar – based products

- thou. tons -

SPECIFICATION	1996	1997	1998	1999
Total uses	641.9	430.1	513.9	447.5
Availabilities for domestic consumption	619.8	417.5	502.9	438.1
Availabilities for human consumption	560.3	449.4	461.7	468.5

Source: Processing of data from INS.

The data in this table also support the above – mentioned statements as regards the decrease as sugar quantities on the domestic market.

The difference between the total utilizations and the availabilities for the domestic consumption represents Romania’s sugar exports. There are also differences between the availabilities for domestic consumption and the availabilities for human consumption, these representing the losses throughout the year and the stock variations.

A more careful analysis of data from table indicates that in the years 1997 and 1999, the availabilities for human consumption were larger than the availabilities for domestic consumption. These situations are explained by the fact that in the respective years human consumption was larger than the current existing resources and for its completion stocks were used hence stocks decreased by 31,970 tons in 1997 and 43,841 tons in 1999.

## 2. DEMAND AND CONSUMPTION

### 2.1 Average and total consumption

Yearly sugar demand in Romania, in normal conditions, ranges from 500 to 700 thousand tons, which represents 22 kg/inhabitant, 30 kg/inhabitant, respectively.

Sugar is a first necessity product; although the yearly demand is quite stable, it slowly increases with the population and the structure modifications produced in the food diet.

Population’s incomes can influence sugar demand, but not so strongly that total consumption might decrease under a certain limit. Even though sugar price on the market is high, buyers with modest incomes also make efforts to buy this product, as sugar is a food product of absolute necessity for humans.

Sugar consumptions evolution over time ranged from 19.9 to 28 kg/year/inhabitant (table 2.1); this is a very low consumption compared to other European countries: United Kingdom - 41 kg, Austria - 38 kg, France – 33 kg, Germany – 33 kg, Greece – 35 kg, Hungary – 38 kg, Czech Republic – 39 kg, Slovakia – 37 kg, Slovenia – 35 kg (average consumptions).

Table 2.1

**Consumption of sugar and sugar-based products in Romania**

SPECIFICATION	1980	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Average consumption kg/year/inhabitant	28.2	24.7	27.2	26.4	24.4	23.7	24.5	23.5	24.8	19.9	20.5	20.9	19.1
Total consumption (thou.tons)	626.1	571.8	631.2	612.1	556.0	539.3	556.9	533.0	560.7	448.7	461.3	470.2	420.0

Source: Processing of data from INS.

Consumption for home uses sums up to 70% of total (this percentage also includes the payment in sugar of sugar beet produces); the remaining 30% represents industrial and collective consumption.

In Romania, this consumption structure is quite reverse compared to that from Western countries, where industrial consumption has the largest share. Sugar consumption is likely to increase due to the increase of sugar-based products, beverages,

tinned fruit consumption, to the detriment of refined sugar consumption. This prognosis is the result of the surveys conducted by specialists in order to determine food expenses.

Industrial sugar consumption was down after 1990 (for example in 1995 it decreased by 17% compared to 1990, summing up 25,800 tons), as the food industry units ceased or reduced their activity.

The amount of sugar used as payments to farmers increased from 16,000 tons in 1990 to 75,900 tons in 1995; this reflects an attempt to attract farmers in cultivating sugar beets.

Part of this sugar is used by farmers for self-consumption while the other part is used (sold) by these in order to buy goods or services.

With no large-scale alternative of sweeteners with a high share on market, it results that the recent decline of sugar consumption was clearly caused by economic reasons.

A revigoration of Romanian economy that should also include sugar industry will also determine a change in sugar consumption.

Food consumption can be expressed by other indicators, i.e. synthetic indicators (net average daily food consumption expressed in g/day/capita) and derived indicators (average daily food consumption expressed in calories/capita, average food consumption expressed in grams of proteins/capita, average daily food consumption expressed in grams of carbohydrates/capita, a average daily food consumption expressed in grams of fat/capita. The yearly sugar consumption expressed by these indicators is presented in table 2.2.

Table 2.2

**Consumption of sugar and sugar-based products in Romania**

<b>INDICATORS</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>
<b>SYNETIC</b>				
Net daily average food consumption expressed in - G/day/capita	67.89	54.58	56.3	57.5
<b>DERIVED</b>				
Average daily food consumption expressed in				
- No. of calories/capita	278.01	223.64	230.5	234.6
- G of proteins/capita	0.002	0.001	-	-
- G of carbohydrates/capita	67.73	54.49	56.16	57.15

Source: Processing of data from INS.

As it can be noticed, in 1996 a significant quantitative decline took place, that is closely correlated to the diminution of sugar amounts consumed in Romania. This quantitative decline also reveals the qualitative diminution of food consumption in recent years; the nutrients and calories needed are generally covered from food items with low energy value which may result in serious disequilibria in human body.

In fact, food consumption had large variations in the last two decades due to the commercial policies pursued by the government. If before 1990, consumption experienced a slight decrease that placed Romania on the last position among Central and East-European countries, immediately after the political changes produced in 1989, consumption of main agrifood products significantly increased as long as prices were state controlled.

As consumer subsidies were removed, the consumption of agrifood products decreased again; at present, consumption is high only in cereals, potatoes and other food items rich in fats and oils, this represents quite an alarming signal, making the Romanian nutrition standards be under the modern European and American standards, which proves that Romanians' diet lacks balance and is quite unhealthy.

## 2.2. Consumption by household and residence types

The evolution of sugar consumption by categories of households is presented in table 2.3.

Table 2.3

### Sugar average monthly consumption by types of households (kg/month/capita)

HOUSEHOLDS OF	EMPLOYEES	EMPLOYERS	PEASANTS	UNEMPLOYED	PENSIONERS
1985	1.1	-	0.8	-	1.1
1989	1.0	-	0.7	-	1.0
1990	1.0	-	0.8	-	1.2
1991	1.0	-	0.8	-	1.1
1992	0.9	-	0.9	-	1.2
1993	1.0	-	0.9	-	1.5
1994*	1.1	-	0.9	-	1.5
1995	1.0	1.2	0.8	0.8	1.1
1996	0.9	1.1	0.7	0.8	1.0
1997	0.9	1.0	0.7	0.8	1.0
1998	0.9	1.0	0.8	0.8	1.0
1999	0.9	1.0	0.7	0.8	1.0

Source: Population's incomes, expenditures and consumption – 1991-2000 collection, INS

\*Data for the period 01.01 – 30.09.1994.

The monthly average sugar consumption was maintained around 1 kg, higher or lower according to household type and year. Thus, the consumption in households of employees ranged from 0.9 to 1.1 kg/month, in employees households from 1.0 to 1.2 kg/month, in peasants households from 0.7 to 0.9 kg/month, while consumption in pensioners households from 1.0 to 1.5 kg/month.

The general trend in all households is sugar consumption diminution, except for the households of unemployed who had a steady consumption and pensioners who increased their consumption in the first part of the decade, after which a consumption decrease followed.

Consumption decrease originates from the diminution of population's purchasing power. The data presented by the National Institute for Statistics indicate that, if in early 1990's one could buy 244 kg refined/granulated sugar with a net monthly average wage (October 1990), 307 kg refined granulate sugar (October 1991) and 402 kg (January 1992), then ever increasing sugar amounts, in the recent years, thought purchasing power diminution, the purchased amounts also decreased, ranging from 150 to 200 kg.

Compared to other European countries, Romania had a lower position even in early 1990's, when the purchased sugar amounts were larger then they are at present. With a net monthly average wage in 1989, in France one could buy 939 kg sugar, in Hungary 372 kg, while in 1990 in Austria 1,387 kg sugar and in Germany 1,832 kg. The sugar amounts that could be bought in Romania in the same period were comparable only to those from the Czech Republic in 1990 (297 kg) and in Poland (209 kg).

Consumption by household types is different: employees, employees and pensioners have a higher consumption (over 1.0 kg/month), while peasants and unemployed consume less sugar (less than 1.0 kg/month). These differences can be explained by the larger incomes in the households of employees and employers, the larger sugar consumption need in the case of pensioners, the low incomes of peasants and unemployed and the substitution of sugar with other sweeteners in the case of peasant households.

Table 2.4

**Monthly average consumption of sugar by rural/urban areas (kg/month/inhabitant)**

		Households of employees	Households of employers	Households of peasants	Households of unemployed	Households of pensioners
<b>1998</b>	<b>Urban</b>	0.95	0.97	0.97	0.85	1.10
	<b>Rural</b>	0.88	1.03	0.77	0.74	0.94
<b>1999</b>	<b>Urban</b>	0.95	0.97	0.91	0.87	1.08
	<b>Rural</b>	0.88	0.93	0.73	0.78	0.97

Source: Population's incomes, expenditures and consumption, no. 1/1999, no. 1/2000, INS

Generally sugar consumption is higher in urban areas than in rural areas. The urban consumption is larger either due to higher incomes or because substitutes are frequently used in rural areas. The largest differences were found in peasant households (0.20 kg/month/inhabitant in 1998 and 0.18 kg/month/inhabitant in 1999) and in pensioners households (0.16 kg/month/inhabitant in 1998 and 0.11 kg/month/inhabitant in 1999).

In the two investigated years no large consumption differences were found for the same household type from each area except for the households of employees from the rural area, whose consumption decreased by 10%.

The highest sugar consumption in the urban area was found in pensioners households, both in 1998 and in 1999. The urban consumption in 1998 ranged from 0.85 kg/month/inhabitant in the case of unemployed and 1.10 kg/month/inhabitant for pensioners, i.e. pensioners consumed by 29.4% more than the unemployed. In the year 1999 these variations ranged from 0.73 kg/month/inhabitant in peasants households to 0.97 kg/month/inhabitant in pensioners' households, i.e. a 32.9% difference.

In conclusion, the households of unemployed had the lowest consumption both in the urban and the rural areas, while the highest consumption is found in the households of pensioners.

### 2.3. Qualitative elements and other remarks

The application of a standard technology for sugar beet according to the crop management rules results in an average yields of 35 tons/ha in zones suitable for sugar beet cultivation. Considering the parameters of such a technology, the necessary production factors for one hectare cultivated with sugar beet could be established. Thus, the necessary amount of monogerm seed is 5-8 kg, while plurigerm seed is 8-12.5 kg per hectare.

By the correct application of technologies of crop rotation and mostly of chemical and organic fertilizers by sugar beet formers – at the respective moment and under technical conditions imposed by soil, weather, humidity etc – an increase of yields per hectare and of sugar content in roots would be obtained. The increase of sugar beet



production and sugar extraction rate are the two basic indicators necessary for the estimations and calculations concerning domestic production.

The raw materials/quality, is below the level of that in the countries with an advanced sugar industry both as regards sugar contents and the purity of extracted juice. In this respect, it must be mentioned that we are among the few countries that have not differentiated raw material according to sugar content, this implying an adequate equipment, fast and efficient means of determining sugar content in sugar beet. In this respect, quality seed varieties should be provided, that ensure both high yields per hectare and the increase of sugar content in roots, of sugar yields per cultivated hectare implicitly.

Sugar extraction rate from sugar beet per hectare is an indicator that shows not only sugar content in sugar beet in the cultivated area, but also the efficiency of processing unit in each region as regards juice extraction from sugar beet that is to be processed. In the Romania, this indicator had values ranging from 1.21 tons/ha in 1989, to 2.25 tons/ha in 1990 and 1.33 tons/ha in 1993. Table 2.5 presents these values in the period 1989-2000 together with the extraction rate per weight unit.

Table 2.5

**Sugar extraction rate per hectare**

INDICATOR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999*	2000*
Per unit of area (t/ha)	1.21	2.25	1.68	1.39	1.33	1.47	1.55	1.79	1.59	1.57	1.73	0.98
Per weight unit (%)	9.50	10.80	9.80	10.80	10.50	9.00	10.20	10.30	10.40	10.30	10.40	-

Source: processing of data from the National Institute for Statistics; \* - provisional data

As regards sugar extraction rate from sugar beet per weight unit it is worth mentioning the slight increase from 9.5% in 1989 to 10.4% in 1997; however, these are low values compared to those from other European countries. Table 2.6 presents the extraction rate per weight unit in the four zones into which the sugar factories from Romania have been classified.

Table 2.6

**Sugar extraction rate per weight unit (%)**

Year	Zone			
	V	C	S	E
1989	9.6	10.5	7.8	10.5
1990	10.6	11.8	10.0	11.2
1991	9.8	9.9	9.7	10.1
1992	10.4	11.0	10.3	11.2
1993	9.2	10.7	9.8	11.9
1994	9.2	10.2	7.4	10.0
1995	10.3	10.8	9.2	10.3
1996	10.4	11.9	9.7	10.8
1997	10.8	11.2	8.4	10.6

Source: - processing of data from "Strategy of sugar industry in Romania", Sugar Employers' Organisation from Romania, MAFF, Bucharest, February 1998;  
 - calculation by M. Costea, Institute of Agricultural Economics.

The average level in Romania (about 10%) is much below the level reached in countries as Austria (18.23%), Germany (16.99%), Sweden (17.12%), Great Britain (16.70%), Spain (15.75%), Italy (14.03%) or even Greece (13.90%)<sup>1</sup>.

The sugar extraction rate from sugar per hectare, which is quite low in our country – under 2 tons/ha except for 1990 when 2.25 tons/ha were reached, has the following values in other countries: Poland 4-5 tons/ha, France 9-11 tons/ha, Switzerland 9-10 tons/ha, Great Britain 8-9 tons/ha, Austria 7-9 tons/ha, Greece 6-8 tons/ha, USA 10-12 tons/ha<sup>2</sup>.

By comparing the results obtained in sugar industry in Romania with those from other European countries, one can easily notice that the domestic indicators had quite low values both before 1989 and at present. The main analysed indicators are:

- total sugar beet production;
- average yield/hectare;
- sugar extraction rate from sugar beet per weight unit;
- sugar extraction rate from sugar beet per unit of area;
- sugar production etc.

As regards its quality, the sugar obtained from the Romanian factories is different from that obtained in the developed countries under the following aspects:

- minimum contents of saccharose;
- colour expressed in ICUMSA units;
- humidity;
- aspect of sugar crystals (powder);
- granulation (size of sugar crystals).

Although in some factories the necessary equipment exists in order to obtain a competitive product, in the generation of factories built up after 1980 this is not possible, as the equipment of boiling – crystallisation department is designed to operate with schemes for two or three products.

This measure in designing and building these factories was taken out of energy saving reasons (both electric power and thermal energy per product unit). In these factories, the sugar refinery should be reshaped in order to improve sugar quality increase the competitiveness as regards product quality and building it in line with the product on the world market.

At national level, as sugar demand is much higher than supply, practically there is no competition among factories. Sugar produced in Romania competes against the imported sugar, given its high production costs, resulting from:

- low sugar beet yields/hectare due to low fertilizer amounts applied, lack of treatments against foliary diseases and pests;
- lower technological quality of sugar beet determined by the following parameters, low contents of sugar, low purity of juice, low mechanical resistance at unloading the product from transport means;
- lack of potash from fertilization components;

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<sup>1</sup> Strategy of sugar industry in Romania, Sugar Employers' Organization from Romania, MAFF, Bucharest, February 1998

<sup>2</sup> Team of authors, Sugar beets and sugar situation and perspective, no. 1/6 october 1996, ASAS-IEA, Bucharest; Team of authors, Strategy of sugar industry in Romania, Sugar Employers' Organisation from Romania, MAFF, Bucharest, February 1998

- high consumption of raw material and energy;
- inadequate system of collecting sugar beet from farmers;
- obsolete technological equipment, with high energy consumption; losses that exceed the acceptable limit;
- no regular supply of sugar beets, so processing it at full capacity is not possible;
- low levels of labour productivity;
- high rates of interest for the credits taken by factories that are used for crops establishment as well as for repairing the technological equipment.

In this respect, for the product to be competitive, the following should be modernized and reshaped: the whole raw material – finished product flow as well as the energy system, as it is known that the share of energy costs is higher than 33%.

The effects of all specialist in agriculture – both of farmers and of those from sugar factories in charge of raw material – should be focused upon the consistent application, under optimum conditions, of all factors and technologies in order to obtain a quality sugar beet crop. In this respect, our country has the necessary agricultural, soil and weather conditions as well as technological and mecanization means for increasing the quality of raw material that is to be processed. Sugar industry lacks raw material, both in quantitative and qualitative terms, as the sugar concentration obtained so far was extremely low. From this point of view, we lag for behind Western-European countries.

This is the reason why the main attention should be rather focused upon the technological and quality aspects in sugar beet cultivation than upon its quantity based upon a scenario that envisages the increase of areas under sugar beets.

### **3. CONCLUSIONS OF STUDY**

The general conclusion that can be drawn from this presentation is that sugar industry in Romania clearly reflects the decline of industry in the countries with transition economies. The difficulties these economies are confronted with are reflected in the decline of those industries that are not able to adjust rapidly to market economy requirements. For Romania, sugar industry is the most illustrative example of the decline in a subsector of food industry; this subsector has a strategic importance, as sugar as strategic food item has also many implications upon population's food security.

Thus, in agriculture, sugar beet as a crop has almost disappeared, hence the massive investments made in '70s and '80s in new performant varieties or irrigation system have now become useless. This situation can be also found in sugar industry where the investments in sugar factories, that amounted to a total processing capacity of 83,000 t. sugar beet/day at country level in 1989 were mostly lost.

At present Romania has the status of a sugar importer country although the natural potential exist for producing the whole necessary sugar amount so as to cover the domestic consumption.

The preferences for white sugar or raw sugar imports were also the results of high production costs (for producing sugar on the basis of domestic sugar beet production).

In these conditions and in the absence of state support or incentives, farmers almost ceased to cultivate sugar beet to be processed by sugar factories specially built up in certain zones for collecting sugar beets from farmers on contract basis. The attempts

made in certain factories to process raw sugar from imports through revamping and utilization of functional premises and equipment have not succeeded in filling in the gaps left by the lack of domestic raw materials.

In the transition years, Romania reached the counterperformance of decreasing its area under sugar beets by more than 80%, as a consequence, sugar beet production also declined by almost 80%, while sugar production by more than 60%. To these are added the low values of certain indicators taken into consideration when assessing product quality; extraction rate per unit of area (less than 2 tons/ha) and the extraction rate per weight unit (about 10%). All the European countries have higher values than these.

Under the background of general poverty of population, of a decreasing purchasing power, the average sugar consumption is also down both in urban and rural areas and for all types of households. Here too, as regards average consumption of sugar and sugar – based products in sugar equivalent, we lag behind most of the European countries, with slightly over 20 kg/year/inhabitant.

The perspectives are not good either, so that for the short term Romania will continue to be a sugar importer country in order to provide a normal consumption for its population.

For this product revigoration, new investments would be necessary, both in agriculture and in food industry, as well as special support policies from the state. This support should be oriented mainly towards farmers, through subsidies and advantageous credits, as well as towards the industrial sector, where factory revamping and modernization is needed, as well as the adequate sizing of factories or even their merging and location in other places. The attracted investment sources, both domestic and foreign, should cover the lack of state financial flows necessary to support all sectors of strategic importance. All these measures will be successful only if the efforts of all players (involved factors) will be focus upon the same direction. The question being raised is whether these efforts are worth supporting or it is easier and more efficient to maintain our importing country status, under the conditions in which sugar supply is larger on the world market. The approximate economic-financial calculations indicate that in order to bring the product sugar, from domestic production, into the consumer's basket, under normal sugar beet production conditions, with sugar extraction rates similar to those in other European countries, one fifth (1/5) of the Ministry of Agriculture, Food and Forest budget would be necessary, at the level of year 2001. Under these conditions, the answer to the above question is quite obvious.

The brief conclusions of the study are the following:

- 1) The lack of a clear government policy for the support of sugar beet farmers and for fostering investments in sugar industry resulted in almost total disappearance of sugar beet as a crop and strong deterioration of fixed capital accumulations in industry, prior to 1990;
- 2) The lack of domestic performance, the high processing costs and the low yields in this industry resulted in massive sugar imports; thus, in less than 10 years, Romania became a net importer, that has influences upon Romanians' food security; hence at present, Romanians consume less sugar than the inhabitants of other European countries, being at the inferior limit of the necessary nutritional needs.

A possible solution for Romanian sugar industry would be:

- establishment of special, modern intensive sugar beet farms, on small areas, that can provide the necessary production for state reserve stocks and for population's immediate needs;
- farmers' reorientation towards more profitable crops;
- reorientation of most sugar factories towards other products;
- re-equipment and revamping of factories that are effectively operating;
- requalification of staff from sugar industry;
- allocation by the government of the sums necessary to additional sugar import, on the basis of comparative advantages.