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# The analysis of a productive rice sector for rice cultivation in Romania

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Up to December 1989, there has been two types of land property in Romania:

- 1) the State-owned property represented by the State Agricultural Enterprises (SAE), with State employees;
- 2) co-operatives (collective farms), the State having a significant role in running them and in marketing their products.

After December 1989, from the 10,000 ha of arable land existing in Romania, more than 9,800 ha. were under private property, the land being restored to the old landowners. The remaining land is still State-owned, the ex-SAE is being transformed into shareholder companies.

If, under one type or the other, the situation of other cereals (e.g. wheat, barley, two-row barley corn) did not change at all, that of rice is totally different. Up to December 1989, from the total surface of 70,000 ha appropriate to rice culture, approximately 45,000 ha was State-owned and 25,000 ha owned by collective farms. The yield was around 1.5–5.0 tons/ha, higher yields being obtained specially in the State sector with better equipments and with experts.

Rice is cultivated in the part of Romania corresponding to the northern limit in Europe (45° North parallel) in a typically continental climate but with good water supplies, the rice plantations being situated along the Danube, on normal or salt marsh soils.

## **Yield**

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Appropriate surface:	10,000 ha
Cultivated surface in 1994:	5,000 ha
Average production in 1994:	3,000 kg/ha
Cultivated varieties:	100% domestic (Oltenita, Cristal, Chirnogi, Polizesti 28)
A minimum annual yield of 30,000 ha is expected on a long term basis	

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A crop rotation system with cereals (wheat, barley, two-row barley) and technical crops (soya-beans, sunflower, lucerne can be adopted.

From a total of 70,000 ha appropriate to rice culture, approximately 25,000–30,000 ha of salt marsh soils can be covered only by rice. The remaining 40,000 ha may be totally replaced by the above crops in the crop rotation system.

Regarding the quality of rice, domestic rice is preferred to imported rice in Romania. The varieties preferred are the Japonica types, with low amylase content, which coagulates.

From an environmental point of view, it can be said that in Romania the technologies applied and the agricultural land improvement in rice fields allow:

- a big quantity of alkaline or saline salt is washed into the soil, in depth, allowing other cultivated or spontaneous plants to grow;

- ❑ due to the improvements up the Danube, a great number of fishes which used to lay their roes upstream now lay them on the river side and the small fishes after having grown in the rice basins swim back to the Danube.

So, it can be said that rice in Romania considerably contributes to the preservation of some fish species and actually no pollution phenomena due to permanent crop rotation are known.

To date there are in Romania 13 rich production farms (state owned, shareholder companies) with an appropriate surface of 3,600–5,800 ha.

The production is stocked by the companies or in large silos. Rice production is concentrated in Romania in 4 large areas in the southern part of the country specialised in rice production. Most of the Romanian rice producing companies are specialized in rice production, in the production of rotation crops and in livestock (milk cows and sheep).

The annual rice consumption in Romania represents an average of 75,000–80,000 ha to white processed rice (3-5 kg per capita).

In 1994, approximately 20,000 tons of paddy rice have been produced (10% of the total consumption), the rest being imported entailing a higher currency need. It can be highlighted that uncontrolled imports, the anomalous growth of the price of domestic rice, led Romania to totally depend on imports, in spite of its possibilities to produce locally the amount of rice needed by its population.

The main research objectives are:

- ❑ to obtain new varieties, suitable to mechanical harvesting, efficient and of good quality, to satisfy local needs;
- ❑ to elaborate new technologies, given the actual conditions, which finally lead to production increase and implicitly to price diminution.

Up to now, in order to improve rice culture, the farmers have tried to:

- ❑ persuade the Government to totally subsidise the irrigation water since July 1994;
- ❑ acquire their own rice processing equipment, which led to the almost complete reduction of transportation fees for processing and a considerable growth of the processing efficiency (over 60%);
- ❑ as a further step to import some laser levelling machines which will lead to a rise in production of 20% minimum per ha;
- ❑ to benefit from State subsidies for at least 50% of the fertilisers used for rice cultivation.

Despite all the incoherence of some pricing elements, the measures adopted up to now led to an important increase of rice profitability, the price of domestic rice becoming competitive with that of imported rice.

It is hoped that in 1995, the surface cultivated with rice will be doubled in Romania compared to 1994.

From an economic point of view, it has to be noted that before December 1989 rice growing was subsidised by the State for both types of property, while after this date it was no longer subsidised. In the meantime, before 1989, imports were strictly controlled by the State while afterwards, in the free market conditions, a certain quantity of rice of bad quality were imported at low prices from countries like Thailand, Vietnam and even the USA.

Under these circumstances, even if in 1990 over 30,000 ha were cultivated, the price of Romanian rice increased becoming more expensive than imported rice and leading some production farms near to bankruptcy. A direct contribution to this had been the unreasonable growth of the prices for machinery, equipment, raw materials, fertilizers, etc.

The first to give up the rice cultivation were the private farmers, but this also had an influence on the State sector. Thus the cultivated surface diminished to approximately 5,000 ha. It is to be noted that up to now all the rice was processed in 3 large processing capacities but with a very low processing efficiency (under 50% of white rice) which is another factor contributing to the growth in prices.

**The dynamics of the surface, production and expense elements in a rice production company**

No.	Expense elements	M/U	1991	1992	1993	1994
1.	Surface	ha	1,538	980	813	700
2.	Average production/ha	kg	1,260	1,885	3,296	4,038
3.	Total production from which:	ton	1,938	1,847	2,680	2,908
3.1.	- delivered outside the company			1,938	1,847	
4.	Gross wages	thou. lei	8,196	14,040	30,623	41,664
5.	Social insurance tax (25-30%)	thou. lei	2,050	3,519	8,180	10,990
6.	Unemployment aid (4-5 %)	thou. lei	-	631	1,556	2,082
7.	Materials - total from which:	thou. lei	20,795	46,657	135,030	178,925
7.1.	- seeds		6,484	20,663	42,760	44,335
7.2.	- pesticides		8,960	22,541	68,980	80,745
8.	Sinking fund		1,888	4,193	36,951	7,147
9.	Banking interests		-	-	-	426,710
10.	Third party from which:		29,710	40,157	47,194	258,991
10.1	- irrigation water		27,876	39,698	47,194	258,991
11.	Indirect expenses		-	70,398	38,152	64,657
12.	Other expenses		37,748	54,849	259,425	362,763
13.	Unfinished production at Jan. 1		3,113	1,866	14,308	16,587
14.	Total expenses from which:		103,500	240,310	571,419	1,370,316
14.1.	- main product		103,500	240,310	571,419	1,370,316
15.	Expenses due to the incomes		94,854	218,237	567,758	13,704,316
16.	Expenses/product unit	lei/ha	67,295	245,216	702,852	1,903,217
17.	Cost price	lei/kg	53.40	130.10	213.22	471.22
	lei/US \$ exchange rate, October		180	430	1,010	1,750