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in

Sauveur B. (ed.).
L'aviculture en Méditerranée

Montpellier : CIHEAM

Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 7

1990

pages 295-299

Article available on line / Article disponible en ligne à l'adresse :

<http://om.ciheam.org/article.php?IDPDF=CI901604>

To cite this article / Pour citer cet article

Vera Tadic V., Wittmer S., Parasilovac S. **The economics of poultry production in Yugoslavia.** In : Sauveur B. (ed.). *L'aviculture en Méditerranée*. Montpellier : CIHEAM, 1990. p. 295-299 (Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 7)



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The economics of poultry production in Yugoslavia

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I. – Main characteristics of poultry production in Yugoslavia

Poultry production in Yugoslavia depends on many factors but just a few essential ones will be introduced here.

Poultry production in Yugoslavia occurs in two separate sectors : private and public. The private sector consists mainly of small farms where poultry is raised mostly to provide meat and table eggs for self-consumption with surplus products being sold.

In 1986 the share of the private sector in total poultry meat production was estimated to be about 40 % and the production of table eggs 50%.

The public sector consists of modern poultry farms of various capacities and their associated co-operating members, primarily individual farmers or owners of mixed who collaborate with the public sector – the bearer of cooperative production – on contract. This is called socially organized production.

Both public and socially organized production are based on the most recent techniques in poultry production and their results greatly exceed those of the private sector. That is why this is statistically observed separately.

The production of chicken and turkey meat on public farms is organized on the basis of autonomous reproductive units : the production cycle starts with the import of day old chickens of grandparent generation and parent generation (for the turkeys). Grand parent (chicken) and parent (turkey) flocks are thus formed and from them hybrids which are bred for market. Larger reproductive centres incorporate all production phases : rearing of hatching progeny, hatching eggs production, day old chicks production, chicken fattening, feed mills, broiler slaughteries and commercial networks. Table egg production also starts with importing grand parent chickens, breeding the parent flock, hatching eggs production and day old chicks production for commercial pullets and layers respectively.

The producers of poultry meat are usually found in the north and northwest parts of the country, while the producers of table eggs are situated mostly in the southeast and the north.

The concentration level of this production is still unsatisfactory. In Yugoslavia public farms produced 47,9% of the entire poultry meat production in 1986.

The specialization of production has not yet reached a satisfactory level : a lot of smaller farms produce poultry meat and table eggs as well.

II. – Economic conditions and the scope of poultry production

Since 1981 economic conditions in Yugoslavia have been rather hard. The country faces a foreign debt, estimated as high as 20 billion dollars for which 14.3% of the GNP is used for repayment. Inflation is increasing and in 1987 it was projected to be 100% higher. Economic policy forces the exportation of all kinds of products, including poultry products. Because of high prices, most Yugoslavian poultry products are not competitive on the international market. The West European market itself, being the nearest to Yugoslavia for convertible export, protects its own poultry industry through high duties and preferential quotas.

The countries in the Near East are progressively developing their own poultry production. COMECON member countries also have a highly developed bilateral exchange in poultry products. Export is a condition *sine qua non* for further development of the Yugoslav poultry industry but it is not yet ready for more serious business.

The unsatisfactory concentration and specialization of poultry organizations mentioned above limit large export shipments which must guarantee constant deliveries and quality. The insufficient use (only 30-40% of capacity) of five grandparent heavy hybrid centres with an annual capacity of 290,000 grandparents causes relatively high expenses for parent chickens and, indirectly, for fattening ones as well. The decline of living standards has caused a significant increase in poultry meat and egg consumption but further price increases of poultry products together with a further decline in standards of living will reduce the demand for these products.

Prices of broilers are established by the Federal Executive Council and are controlled by the Federal Institute for Prices. But not all raw materials involved in chicken fattening are under their control and this leads to a disparity in prices of a final product and raw materials incorporated in but at the expense of a final product. Poultry meat producers thus demand the right to set their own prices (as is the case with table eggs, turkey, duckling and goose meat).

At the end of 1986 there were some significant changes in the economic system of Yugoslavia. But there are still some doubts about whether the economic policies that should contribute to the stabilization of the economy and to increased efficiency are appropriate and whether the consequences of particular measures have been considered enough.

III. – Economics of poultry organizations

The economics of poultry meat and egg production depends on numerous factors, but most important is general economic policy. Other factors include the choice of production technology, the organization and the productivity of labour, and the extent of the exploitation of the productive factors. That is why we considered it advisable to examine some elements of the economics of poultry organizations in Yugoslavia between 1984 and 1986 which could be directly compared with the results of earlier examinations. We therefore analysed selected indicators of business operations for 54 poultry organizations in 1984, 1985 and 1986 and for all of those listed by the Social Accounting and Auditing Service. In this paper we have used the following indicators:

- X₁ participation of accumulation in an income (%);
- X₂ accumulation in relation to assets (%);
- X₃ accumulation with amortization regarding assets (%);
- X₄ average assets used per labourer (thousand dinars);
- X₅ total income regarding assets wasted (%);
- X₆ total income regarding current assets (n° of turnovers);
- X₇ average number of employees.

The average number of workers employed in poultry organizations in Yugoslavia has changed significantly since 1980 (Table 1).

Although poultry organizations are small on the average according to the number of employees, in 1986 this number was 36.4% higher than in 1980 and it reached on average of 156.3 workers per organization. In the same year the smallest organization had four employees and the largest 642. In this period of six years the highest number of employed workers almost doubled (index 192.2).

Table 2 shows business operation : indicators for 1984 and 1986 (X_1 to X_6).

When analysing the indicators of business operations indicated the important influence of inflation must also be taken into consideration, especially in the last year analysed. Because inflation influences equally both income and expenses however, this makes comparing the results somewhat easier. In particular years some indicators of business operations vary a great deal. In 1984 the highest variation coefficients were related to the annual number of asset turnovers and the participation of accumulation in relation to assets and, in 1985, with the accumulation with amortization in relation to assets and participation of accumulation in an income. In 1986 the number of asset turnovers varied the most. Accumulation and asset turnovers are economic proportions (categories) which vary the most indicating frequent changes in economic conditions, insufficient accumulative and reproductive capability of poultry production and rather slow turnover of assets employed.

Relative changes in the particular indicators of business operations are shown in Table 2.

Between 1984 and 1986 the value of assets available to workers in poultry organizations mostly increased primarily due to inflation but also due to the revalorization of the value of assets. The participation of accumulation in an income increased considerably (51.7%) although it was still low. Accumulation in relation to assets employed and accumulation with amortization increased equally (28.3 and 27.1% respectively). The economy of production increased slightly (6.8%), but the annual number of asset turnovers significantly slowed down (in 1984 it was 7.1 and in 1986 it was 6,1 times).

IV. - The economics of poultry meat and table egg production

The generally good position of poultry production in the economy, which benefitted from a consistent price policy that led to relatively high accumulativity, significantly influenced the economics of chicken fattening and the production of table eggs in Yugoslavia until the middle 1970s. Between 1980 and 1985 the economics of poultry production deteriorated.

The economic results of poultry meat production and those of table egg production are different. Although there are many factors upon which an economy depends, we would like to underline the different system of setting poultry meat and table egg prices as mentioned above. Of course, the various intensity of poultry meat and table egg production in different parts of Yugoslavia must also be taken into consideration, as well as different levels of productivity.

For evaluating the economic production of poultry meat and table eggs we chose seven producers from each different part of Yugoslavia. Their average indicators over a period of three years are shown in Table 3.

The participation of accumulation in an income in both productions increased equally during the three years, but even that participation in the production of table eggs is approximately three and in poultry meat production approximately two tenths of an income.

In relation to the assets employed, the accumulation in poultry meat production tripled ; while in table egg production it increased approximately by one and half.

In the three years considered in both productions the extent of reproduction capability almost equally increased, but it was always higher in table egg production.

The economics of production decreased in poultry meat production and increased in the production of table eggs. The turnover of assets was significantly slowed down in poultry meat production.

It could thus be concluded that production of table eggs achieved better economic results, while in poultry meat production the economics decreased and the turnover of assets significantly slowed down.

When analysing the economics of poultry meat and table egg production, it is necessary to take into consideration the levels and the estimate of prices of basic raw materials needed. We have already indicated the problem of increasing exports because of considerable differences between national and world prices. Although the concentration, specialization and productivity of Yugoslav poultry production is low when compared to Western Europe, there is a significant influence of high prices of raw materials. In 1986, national prices of maize and soyabean were 44% and 65% higher respectively, than those on the stock markets in Chicago. According to data provided by the Poultry Planning Association of Yugoslavia, between December 1986 and June 1987, maize prices increased 61%, soybean 67%, fish meal 40%, electric energy 75%, and oil (naphtha) 11%. Given such increases in raw materials prices, it is hardly possible to decrease prices of a final product by increasing the productivity of labour, the intensity of production or by improving technological results.

Assuming that economic conditions do not change significantly, Yugoslav poultry will not be able to contribute to the decrease of prices of agricultural products and food that is anticipated by the FAO and the OECD.

The market economy in the field of agricultural production is far more complex than in industry and it requires thorough planning and precise formulating of economic conditions suitable for agricultural production.

V. - Conclusion

Poultry production in Yugoslavia is divided between two separate sectors : private and public (organized). The private sector produces poultry meat and table eggs mostly for the needs of its own households. The public sector consists of modern farms organized on the basis of autonomous units. Some private farms produce significant quantities of poultry meat or table eggs for public farms under contract, the so called socially organized production. Until the middle 1970s poultry production in Yugoslavia was a propulsive, highly acuminated form of production. The serious demand for such products within the country and the relatively convenient prices enabled both a strong production economy and high increases in rates, respectively. Since 1980 the economic position of poultry organizations has deteriorated because of the increasing disparity between costs of raw materials and prices of final products.

Since 1985 the influence of inflation on production has been more and more significant. High debts to foreign creditors force the exportation of large amounts of agricultural products, including poultry products. Due to high domestic costs, Yugoslavian poultry products are not very competitive on the convertible market.

Significantly higher costs of domestic raw materials (maize and soyabean) compared to imported ones, affect poultry production and prices.

Due to the decline of living standards in Yugoslavia the demand for poultry products is relatively high, but further price increases will reduce this demand.

Unless the economic system and conditions change, the accumulative and reproductive ability of poultry organizations will be increasingly reduced and the economics of production will become negligible.

Further price increases of poultry products in Yugoslavia contrasts with the expected price decreases of agricultural products and food in Western Europe and the United States and this will significantly reduce the export of these products from Yugoslavia to convertible and other markets.

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Table 1: Average number of employed workers in poultry organisations from 1980 to 1986

	Situation at the end of a month							Index 1986 1980 = 100
	1980	1981	1982	1983	1984	1985	1986	
Average number of employed workers	114.6	126.4	131.0	138.4	140.4	154.3	156.3	136.4
Minimum number of employees	0.0	5.0	4.0	4.0	4.0	4.0	4.0	-
Maximum number of employees	334.0	338.0	482.0	637.0	622.0	618.0	642.0	192.2

Table 2: Particular indicators of business operations of poultry organisations in 1984 and 1986 (n = 54 per year)

	1984				1986				Index 86/84 (1984 = 100)
	\bar{X}_1	mini	Maxi	V	\bar{X}_2	mini	Maxi	V	
x ₁ Participation of accumulation in an income (in %)	12	0.2	43	90	18	1.3	57	77	152
x ₂ Accumulation in relation to assets (in %)	5	0.1	41	163	5	0.1	28	108	128
x ₃ Accumulation with amortization regarding assets (in %)	10	1.0	43	100	12	0.6	51	81	127
x ₄ Average assets used per labourer (in 1,000 dinars)	4932	199	14087	58	12690	768	51032	70	257
x ₅ Total income regarding assets wasted (in %)	114	57	175	14	122	56	236	19	107
x ₆ Total income regarding current assets (number of turnovers)	7	0.8	171	320	6	0.4	64	166	86

\bar{X} = arithmetic mean.

mini = minimum value.

maxi = maximum value.

v = Variation coefficient (in %).

**Table 3: Average indicators of poultry meat and table eggs production
from 1984 to 1986**

		1984	1985	1986	Index 1986 1984 = 100
X1	Participation of accumulation in an income (in %)	9,4 ⁽¹⁾	15,7	19,7	209,6
		13,5 ⁽¹⁾	26,5	28,1	208,1
X2	Accumulation in relation to assets (in %)	2,3	12,0	6,9	300,0
		5,3	7,0	7,9	149,1
X3	Accumulation with amortization regarding assets (in %)	7,8	10,6	11,4	146,1
		10,6	13,3	16,9	159,4
X4	Average assets per labourer (in 1 000 dinars)	119,5	110,4	116,1	97,1
		113,7	108,5	122,2	107,5
X6	Total income regarding current assets (number of turnovers)	3,7	2,9	2,3	62,2
		3,5	4,7	3,89	108,6

⁽¹⁾ Numbers above relate to the production of poultry meat (7 producers) and numbers underneath to the production of table eggs (7 producers)