

Ursu, Ana

**Conference Paper**

## Rentability of consumed resources in condition of conventional and ecological operation 2017/2018

**Provided in Cooperation with:**

The Research Institute for Agriculture Economy and Rural Development (ICEADR), Bucharest

*Suggested Citation:* Ursu, Ana (2018) : Rentability of consumed resources in condition of conventional and ecological operation 2017/2018, In: Agrarian Economy and Rural Development - Realities and Perspectives for Romania. 9th Edition of the International Symposium, November 2018, Bucharest, The Research Institute for Agricultural Economy and Rural Development (ICEADR), Bucharest, pp. 216-223

This Version is available at:

<https://hdl.handle.net/10419/205111>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

# RENTABILITY OF CONSUMED RESOURCES IN CONDITION OF CONVENTIONAL AND ECOLOGICAL OPERATION 2017/2018

ANA URSU<sup>1</sup>

**Abstract:** *The purpose of the paper is to analyze the profitability of soybean, rice, beet and hemp crops for the production year 2017/2018, given that these crops are subject to reductions in cultivated areas and for their maintenance in crops, in the form of coupled support for conventional crops, and for organic crops - sM 11.2 support for maintaining organic farming practices). The research method used is the qualitative analysis of the absolute and relative indicators of profitability, in the context in which profitability is "an instrument for substantiating the decisions concerning the internal management of economic units, acquiring an essential criterion for assessing the economic efficiency". In principle, the situation of each crop is analyzed analytically on the income and expense indicators, so that the profitability ratios for the analyzed agricultural products are presented in two respects: non-subsidized rate of return and subsidy rate, with an emphasis on highlighting the profitability gaps between the two production systems: conventional and environmentally friendly. It examines the location of each crop in terms of profitability rates and makes some concluding remarks about the two production systems as well as the need to grant subsidies.*

**Key words:** *profitability, consumed resources, conventional system, ecological system, subsidies*

**JEL classification:** *O12, P50, Q18, Q57*

## INTRODUCTION

In this study, we will refer to the main peculiarities to be taken into account in the analysis of the profitability of agricultural products: soya, rice, sugar beet and hemp, for the production year 2017/2018. One of the main features of the profitability analysis is the use of the indicator "gross income per hectare" and the indicator "net income per hectare, indicators that characterize the rationality of consumption. In the profitability analysis, profitability was also determined by means of some relative indicators of income (rates) with different forms of expression: rate of taxable income (%); rate of net income (%); rate of net income + total subsidy (%); rate of net income + coupled support (%); rate of net income + subMeasure 11.2 (%); rate of net income + direct payments (%), etc.

## MATERIAL AND METHOD

The research method used consists of:

- the qualitative analysis of the absolute and relative indicators of profitability, in the context in which profitability is "an instrument for substantiating the decisions concerning the internal management of economic units, acquiring an essential criterion for assessing the economic efficiency". In principle, the situation of each crop on the income and expenditure indicators is analytically analyzed so that the profitability ratios for the analyzed agricultural products are presented in two cases: **case 1** - profitability of agricultural products with subsidies and **case 2** - profitability of agricultural products without subsidies.

- the qualitative analysis of information on agricultural policy measures (Government Emergency Ordinance No. 3/2015 on the approval of payment schemes to be applied in agriculture between 2015-2020 and Order 619/2018 for the approval of the eligibility criteria, the conditions and the implementation of the payment schemes provided for in Article 1 (2) and (3) of Government Emergency Ordinance No 3/2015), i.e direct payment schemes + coupled support;

---

<sup>1</sup> Research Institute for the Economy of Agriculture and Rural Development (ASAS),  
email: ursu.ana@iceadr.ro

## RESULTS AND DISCUSSIONS

### *Soybean*

The *soybean culture* for the two production levels, 3 t/ha (in the conventional system and 1.5 t / ha (in the organic system), has a gross income rate of 2.6% (conventional system) and -29.1% (organic system) (Table No. 1, line 16). When the support schemes are taken into account, the rate of return on culture changes as follows:

Table no. 1: Profitability of soybean culture - conventional system / ecological system

Nr. crt	INDICATORS	U.M	VALUES	
			Soybean CONV 3,0 t/ha	Soybean ECO 1,5 t/ha
1	<b>A. PRODUCTION VALUE</b>	lei	4200	2754.0
2	A <sub>1</sub> . Of which the main production	lei	3960	2574.0
3	<b>B (+) SUBSIDIES</b>	lei	1689.4	2692.1
4	<b>C (=)THE CRUDE PRODUCT</b>	lei	5649.4	5266.1
5	<b>D (-) TOTAL COSTS</b>	lei	4099.9	3812.0
6	D <sub>1</sub> . Of which for the main production	lei	3859.9	3632.0
7	<b>I. VARIABLE COSTS</b>	lei	3802.4	3256.3
8	<b>II. FIXED COSTS</b>	lei	297.5	555.8
9	<b>E. (=) TAXABLE INCOME</b>	lei	100.1	-1058.0
10	(-) Taxes	lei	10.0	-105.8
11	<b>F. (=) NET INCOME</b>	lei	90.1	-952.2
12	F.1 (=) NET INCOME + total subsidy	lei	1779.5	1739.9
13	F.2 (=) NET INCOME + coupled support	lei	972.7	-69.6
14	F.3 (=) NET INCOME + subMeasure 11.2		x	50.4
15	F.4 (=) NET INCOME + direct payments	lei	896.9	-145.4
16	<b>G. RATE OF TAXABLE INCOME (%)</b>	%	<b>2.6</b>	<b>-29.1</b>
17	<b>H. RATE OF NET INCOME (%)</b>	%	<b>2.3</b>	<b>-26.2</b>
18	H.1 RATE OF NET INCOME + total subsidy (%)	%	46.1	47.9
19	H.2 RATE OF NET INCOME + coupled support (%)	%	25.2	-1.9
20	H.3 RATE OF NET INCOME + subMeasure 11.2 (%)	%	x	1.5
21	H.4 RATE OF NET INCOME + direct payments (%)		23.2	-4.0
22	<b>COST OF PRODUCTION</b>	lei/to	1287	2421
23	<b>PREDICTABLE PRICE OF INTERNAL MARKET</b>	lei/to	1320	1716

Source: Own calculations; ADER Project 13.1.2

### *Soybean - conventional system*

#### **Case 1: Profitability of soybean culture: Subsidy option**

- *Rate of net income + total subsidy*: it is estimated a rate of return of 46.1%, the share of total support (1689.4494 lei/ha/367,328 euro/ha) in net income + total subsidies (1779.5 lei/ha) of 94.9% for the production of 3 t/ha. **Option 1**: Total subsidy = 97,2452 euro/ha (SAPS) + 5 euro/ha redistributive payment (RP) + 57,1745 euro/ha greening payment (GP) + 16,0078 euro/ha transitional national aid (TNA) 1 + 191,9 euro/ha coupled support (CS) = 367,3275 euro/ha).
- *Rate of net income + coupled support (SC)*: it is estimated a rate of return of 25.2%, the share of coupled support SC (882.7 lei/ha/191.9 euro/ha) in net income + total subsidies (1779.5 lei/ha) of 49.6% for the production of 3 t/ha. **Option 2**: coupled support (191,9 euro/ha).
- *Rate of net income + direct payments*: it is estimated a rate of return of 23.2%, the share of direct payments (806.6057 lei/ha/175.4275 euro/ha) in net income + total subsidies (1779.5 lei/ha) of 45.3% for the production of 3 t/ha. **Option 3**: direct payments (175,4275 euro/ha = 97,2452 euro/ha SAPS + 5 euro/ha - redistributive payment + 57,1745 euro/ha - greening payment + 16,0078 euro/ha - transitional national aid TNA).

#### **Case 2: Profitability of soybean culture: Option without subsidies**

- *Rate of taxable income*: it is estimated taxable income rate of 2.6% (100.1 lei/ha);
- *Rate of net income*: it is estimated net income rate of 2.3% (90.1 lei/ha).

### **Soybean - ecological system**

#### **Case 1: Soybean crop yield - ecological: subsidy option**

- *Rate of net income + total subsidy*: it is estimated a rate of return of 47.9%, the share of total support (2692.1 lei/ha/585,328 euro/ha) in net income + total subsidies (1739.9 lei/ha) of 154.7% for the production of 1.5 t/ha; **Option 1**: *Total subsidy* = 97,2452 euro/ha SAPS + 5 euro/ha redistributive payment (RP) + 57,1745 euro/ha greening payment (GP)+ 16,0078 transitional national aid (TNA 1) + 191,9 SC euro/ha coupled support (CS) + 218 euro/ha subMeasure (sM 11.2) = 585,3275 euro/ha.
- *Rate of net income + coupled support (SC)*: it is estimated a rate of return of -1.9%, the share of coupled support (882.7 lei/ha/191,9 euro/ha) in net income + total subsidies (1739.9 lei/ha) of 50.7% for the production of 1.5 t/ha; **Option 2**: coupled support (191,9 euro/ha);
- *Rate of net income + subMeasure (sM 11.2)*: it is estimated a rate of return of 1.5%, the share of sM 11.2 (1002.6 lei/ha/218 euro/ha) in net income + total subsidies (1739,9 lei/ha) of 57.6% for the production of 1.5 t/ha; **Option 3**: *subMeasure (sM 11.2)*: (218 euro/ha);
- *Rate of net income + direct payment*: it is estimated a rate of return of -4.0 %, the share of direct payments (806.6057 lei/ha/175,4275 euro/ha) in net income + total subsidies (1739.9 lei/ha) of 46.4% for the production of 1.5 t/ha; **Option 4**: direct payments (175,4275 euro/ha = 97,2452 euro/ha SAPS + 5 euro/ha payment redistributive + 57,1745 euro/ha payment greening + 16,0078 euro/ha transitional national aid (TNA 1));

#### **Case 2: Profitability of soybean culture - ecological: Option without subsidies**

- *Rate of taxable income*: it is estimated taxable income rate of - 29.1% (-1058.0 lei/ha);
- *Rate of net income*: it is estimated net income rate of -26.2% (-952.2 lei/ha)

### **Rice**

The rice crop at the two production levels of 6 t / ha (conventional cultivation) and 4.5 t/ha (organic farming) has gross income rates of -5.7% (in the conventional system) and -10.5% (in the ecological system) (Table 2, line 16). The analysis will be carried out comparatively for the two production levels. In this situation the rates of profitability of the culture are as follows:

Table no. 2: Profitability of rice crop - conventional system/ecological system

Nr. crt	INDICATORS	U.M	VALUES	
			Rice CONV 6,0 t/ha	Rice ECO 4,5 t/ha
1	<b>A. PRODUCTION VALUE</b>	lei	9400	8550.0
2	A <sub>1</sub> . Of which the main production	lei	9000	8550.0
3	<b>B (+) SUBSIDIES</b>	lei	3866	4868.6
4	<b>C (=)THE CRUDE PRODUCT</b>	lei	12866	13418.6
5	<b>D (-) TOTAL COSTS</b>	lei	9942	9552.3
6	D <sub>1</sub> . Of which for the main production	lei	9542	9552.3
7	<b>I. VARIABLE COSTS</b>	lei	9149	8091.3
8	<b>II. FIXED COSTS</b>	lei	793	1461.0
9	<b>E. (=) TAXABLE INCOME</b>	lei	-542	-1002.3
10	(-) Taxes	lei	-54	-100.2
11	<b>F. (=) NET INCOME</b>	lei	-488	-902.1
12	F.1 (=) NET INCOME + total subsidy	lei	3378	3966.5
13	F.2 (=) NET INCOME + coupled support	lei	2572	2157.0
14	F.3 (=) NET INCOME + subMeasure 11.2	lei	X	100.5
15	F.4 (=) NET INCOME + direct payments	lei	319	-95.3
16	<b>G. RATE OF TAXABLE INCOME (%)</b>	%	-5.7	<b>-10.5</b>
17	<b>H. RATE OF NET INCOME (%)</b>	%	-5.1	<b>-9.4</b>
18	H.1 RATE OF NET INCOME + total subsidy (%)	%	35.4	41.5
19	H.2 RATE OF NET INCOME + coupled support (%)	%	27.0	22.6

20	H.3 RATE OF NET INCOME + subMeasure 11.2 (%)	%	X	1.1
21	H.4 RATE OF NET INCOME + direct payments (%)	%	3.3	-1.0
22	<b>COST OF PRODUCTION</b>	lei/to	1590	2123
23	<b>PREDICTABLE PRICE OF INTERNAL MARKET</b>	lei/to	1500	1900

Source: Own calculations; ADER Project 13.1.2

### **Rice - conventional system**

#### **Case 1: Profitability of rice culture: Subsidy option**

- *Rate of net income + total subsidy:* it is estimated a rate of return of 35.4%, the share of total support (3865.9 lei/ha/840.5513 euro/ha) in net income + total subsidies (3378 lei/ha) of 114.4% for the production of 6 t/ha. **Option 1:** Total subsidy = 97,2452 euro/ha SAPS + 5 euro/ha (RP) + 57,1745 euro/ha (GP) + 16,0078 euro/ha (TNA 1) + 665,1238 euro/ha (CS) = 840,5513 euro/ha.
- *Rate of net income + coupled support (CS):* it is estimated a rate of return of 27.0%, the share of coupled support (3059.1 lei/ha/665.1238 euro/ha) in net income + total subsidies (3378 lei/ha) of 90.5% for the production of 6 t/ha. **Option 2:** coupled support (665,1238 euro/ha).
- *Rate of net income + direct payments:* it is estimated a rate of return of 3.3%, the share of direct payments (806.6057 lei/ha/175.4275 euro/ha) in net income + total subsidies (3378 lei/ha) of 23.9% for the production of 6 t/ha. **Option 3:** direct payments (175,4275 euro/ha = 97,2452 euro/ha (SAPS) + 5 euro/ha (PR) + 57,1745 euro/ha (GP) + 16,0078 euro/ha - transitional national aid (TNA 1)).

#### **Case 2: Profitability of rice culture: Option without subsidies**

- o *Rate of taxable income:* it is estimated taxable income rate of -5.7% (-542 lei/ha);
- o *Rate of net income:* it is estimated net income rate of -5.1% (-488 lei/ha).

### **Rice - ecological system**

#### **Case 1: Soybean crop yield - ecological: subsidy option**

- *Rate of net income + total subsidy:* it is estimated a rate of return of 41.5%, the share of total support (4868.6 lei/ha/1058.6 euro/ha) in net income + total subsidies totale (3966.5 lei/ha) of 122.7% for the production of 4,5 t/ha. **Option 1:** 97,2452 euro/ha (SAPS) + 5 euro/ha (RP) + 57,1745 euro/ha (GP) + 16,0078 euro/ha (TNA 1) + 665,1238 euro/ha (CS) + 218 euro/ha subMeasure (sM 11.2) = 1058,6 euro/ha.
- *Rate of net income + coupled support (SC):* it is estimated a rate of return of 22.6%, the share of coupled support (3059.1 lei/ha/665.1238 euro/ha) in net income + total subsidies (3966.5 lei/ha) of 77.1% for the production of 4.5 t/ha. **Option 2:** coupled support (665,1238 euro/ha);
- *Rate of net income + subMeasure (sM 11.2):* it is estimated a rate of return of 1.1%, the share of sM 11.2 (1002.6 lei/ha/218 euro/ha) in net income + total subsidies (3966.5 lei/ha) of 25.3% for the production of 4.5 t/ha; **Option 3:** sM 11.2 (218 euro/ha).
- *Rate of net income + direct payment:* it is estimated a rate of return of -1.0%, the share of direct payments (806.6057 lei/ha/175.4275 euro/ha) in net income + total subsidies (3966.5 lei/ha) of 20.3% for the production of 4.5 t/ha. **Option 4:** direct payments (175,4275 euro/ha = 97,2452 euro/ha SAPS + 5 euro/ha payment redistributive + 57,1745 euro/ha payment greening + 16,0078 euro/ha transitional national aid TNA).

#### **Case 2: Profitability of rice culture - ecological: Option without subsidies**

- o *Rate of taxable income:* it is estimated taxable income rate of -10.5% (-1002.3 lei/ha);
- o *Rate of net income:* it is estimated net income rate of -9.4% (-902.1 lei/ha)

### **Sugar Beet**

The sugar beet culture at the two production levels, 40 t / ha (conventional system) and 30 t / ha (in organic farming) has gross income rates of 19.8% (conventional system) and 20.7 % (in the organic system) (Table 3, line 17). When the support schemes are also taken into account, the rates of profitability of the crop change as follows:

Table no. 3 Profitability of sugar beet culture - conventional system / ecological system

Nr. crt.	INDICATORS	U.M	VALUES	
			Sugar beet CONV 40 t/ha	Sugar beet ECO 30 t/ha
1	<b>A. PRODUCTION VALUE</b>	lei	8000	8040
2	A <sub>1</sub> . Of which the main production	lei	<b>8000</b>	8040
3	<b>B (+) SUBSIDIES</b>	lei	4656	5658
4	<b>C (=) THE CRUDE PRODUCT</b>	lei	12656	13698
5	<b>D (-) TOTAL COSTS</b>	lei	6677	6662
6	D <sub>1</sub> . Of which for the main production	lei	<b>6677</b>	6662
7	<b>I. VARIABLE COSTS</b>	lei	6253	5189
8	<b>II. FIXED COSTS</b>	lei	424	1473
9	<b>E. (=) TAXABLE INCOME</b>	lei	<b>1323</b>	1378
10	(-) Taxes	lei	132	138
11	<b>F. (=) NET INCOME</b>	lei	<b>1191</b>	1241
12	F.1 (=) NET INCOME + total subsidy	lei	5847	6899
13	F.2 (=) NET INCOME + coupled support	lei	4706	4755
14	F.3 (=) NET INCOME + subMeasure 11.2	lei	X	2243
15	F.4 (=) NET INCOME + direct payments	lei	1998	2047
16	F.5(=) NET INCOME + ANT 6	lei	1525	1575
17	<b>G. RATE OF TAXABLE INCOME (%)</b>	%	<b>19.8</b>	<b>20.7</b>
18	<b>H. RATE OF NET INCOME (%)</b>	%	<b>17.8</b>	<b>18.6</b>
19	H.1 RATE OF NET INCOME + total subsidy (%)	%	87.6	103.6
20	H.2 RATE OF NET INCOME + coupled support (%)	%	70.5	71.4
21	H.3 RATE OF NET INCOME + subMeasure 11.2 (%)	%	X	43.2
23	H.4 RATE OF NET INCOME + direct payments (%)	%	29.9	30.7
24	H.5 RATE OF NET INCOME + ANT 6 (%)	%	22.8	23.6
25	<b>COST OF PRODUCTION</b>	lei/to	<b>167</b>	<b>222</b>
26	<b>PREDICTABLE PRICE OF INTERNAL MARKET</b>	lei/to	<b>200</b>	<b>268</b>

Source: Own calculations; ADER Project 13.1.2

### Sugar Beet - conventional system

#### Case 1: Profitability of sugar beet culture: Subsidy option

- *Rate of net income + total subsidy*: it is estimated a rate of return of 87.6%, pondering the share of total support (4655.9519 lei/ha/1012.318 euro/ha) in net income + total subsidies (5847 lei/ha) of 79.6% for the production of 40 t/ha. **Option 1**: Total subsidy = 97,2452 euro/ha (SAPS) + 5 euro/ha (RP) + 57,1745 euro/ha (GP) + 16,0078 euro/ha (TNA 1) + 764,2 euro/ha (CS) + 72,690 euro/ha (TNA 6) = 1012,318 euro/ha.
- *Rate of net income + coupled support (SC)*: it is estimated a rate of return of 70.5%, the share of coupled support SC (3514.7851 lei/ha/764.2 euro/ha) in net income + total subsidies (5847 lei/ha) of 60.1% for the production of 40 t/ha. **Option 2**: coupled support (764,2 euro/ha);
- *Rate of net income + direct payments*: it is estimated a rate of return of 29.9%, the share of direct payments (806.6057 lei/ha/175.4275 euro/ha) in net income + total subsidies (5847 lei/ha) of 13.8% for the production of 40 t/ha. **Option 3**: direct payments (175,4275 euro/ha = 97,2452 euro/ha SAPS + 5 euro/ha redistributive payment + 57,1745 euro/ha - greening payment + 16,0078 euro/ha - transitional national aid TNA 1);
- *Rate of net income + transitional national aid TNA 6*: it is estimated a rate of return of 22.8%, the share of TNA 6 (334.3231 lei/ha/72,690 euro/ha) in net income + total subsidies (5847 lei/ha) of 5.7% for the production of 40 t/ha. **Option 4**: transitional national aid TNA 6: (72,690 euro/ha).

#### Case 2: Profitability of sugar beet culture: Option without subsidies

- o *Rate of taxable income*: it is estimated taxable income rate of 19.8% (1323 lei/ha/287 euro/ha);
- o *Rate of net income*: it is estimated net income rate of 17.8% (1191 lei/ha/259 euro/ha).

## Sugar Beet - ecological system

### Case 1: Profitability of sugar beet culture - ecological: Subsidy option

- *Rate of net income + total subsidy*: it is estimated a rate of return of 103.6%, the share of total support (5658.486 lei/ha/1230.2929 euro/ha) in net income + total subsidies (6899 lei/ha) of 82.0% for the production of 30 t/ha. **Option 1**: Total subsidy = 97,2452 euro/ha (SAPS) + 5 euro/ha (RP) + 57,1745 euro/ha (GP)+ 16,0078 euro/ha (TNA 1) + 764,2 euro/ha (CS) + 72,690 euro/ha (TNA 6) + 218 euro/ha sM 11.2 = 1230,2929 euro/ha.
- *Rate of net income + coupled support (SC)*: it is estimated a rate of return of 71.4%, the share of coupled support SC (3514.7 lei/ha/764.1754 euro/ha) in net income + total subsidies (6899 lei/ha) of 50.9% for the production of 30 t/ha. **Option 2**: coupled support (764,1754 euro/ha).
- *Rate of net income + subMeasure (sM 11.2)*: it is estimated a rate of return of 43.2%, the share of sM 11.2 (1002.6 lei/ha/218 euro/ha) in net income + total subsidies (6899 lei/ha) of 14.5% for the production of 30 t/ha. **Option 3**: subMeasure (sM 11.2) - (218 euro/ha).
- *Rate of net income + direct payment*: it is estimated a rate of return of 30.7%, the share of direct payments (806.6057 lei/ha/175.4275 euro/ha) in net income + total subsidies (6899 lei/ha) of 11.7% for the production of 30 t/ha. **Option 4**: direct payments (175,4275 euro/ha = 97,2452 euro/ha SAPS + 5 euro/ha payment redistributive + 57,1745 euro/ha payment greening + 16,0078 euro/ha transitional national aid (TNA 1);
- *Rate of net income + transitional national aid (TNA 6)*: it is estimated a rate of return of 23.6%, the share of TNA 6 (334.3 lei/ha/72,690 euro/ha) in net income + total subsidies (6899 lei/ha) of 4.8% for the production of 30 t/ha. **Option 5**: TNA 6 (72,690 euro/ha).

### Case 2: Profitability of sugar beet culture - ecological: Option without subsidies

- o *Rate of taxable income*: it is estimated taxable income rate of 20.7% (1378 lei/ha/299.7 euro/ha).
- o *Rate of net income*: it is estimated net income rate of 18.6% (1241 lei/ha/269,7 euro/ha).

## Hemp for fiber

The hemp crop at the two production levels, 45 t / ha (conventional system) and 35 t / ha (in the organic system) has a gross income rate of 3.3% (conventional system) and -3.1% (in the ecological system) (Table 3, line 17). When the support schemes are taken into account, the rates of profitability of the culture change as follows:

Table no. 4: Profitability of hemp crop - conventional system / ecological system

Nr. crt	INDICATORS	U.M	VALUES	
			Hemp CONV 45 t/ha	Hemp ECO 35 t/ha
1	<b>A. PRODUCTION VALUE</b>	lei	7875	7350
2	A <sub>1</sub> . Of which the main production	lei	7875	7350
3	<b>B (+) SUBSIDIES</b>	lei	1630	2633
4	<b>C (=) THE CRUDE PRODUCT</b>	lei	9505	9983
5	<b>D (-) TOTAL COSTS</b>	lei	7624	7582
6	D <sub>1</sub> . Of which for the main production	lei	7624	7582
7	<b>I. VARIABLE COSTS</b>	lei	7068	5917
8	<b>II. FIXED COSTS</b>	lei	556	1664
9	<b>E. (=) TAXABLE INCOME</b>	lei	251	-232
10	(-) Taxes	lei	25	-23
11	<b>F. (=) NET INCOME</b>	lei	226	-208
12	F.1 (=) NET INCOME + total subsidy	lei	1856	2425
13	F.2 (=) NET INCOME + subMeasure 11.2	lei	x	794
14	F.3 (=) NET INCOME + coupled support	lei	1019	584
15	F.4 (=) NET INCOME + direct payments	lei	1033	598
16	F.5 (=) NET INCOME + ANT 3	lei	257	-178
17	<b>G. RATE OF TAXABLE INCOME (%)</b>	%	<b>3.3</b>	-3.1
18	<b>H. RATE OF NET INCOME (%)</b>	%	<b>3.0</b>	-2.7
19	H.1 RATE OF NET INCOME + total subsidy (%)	%	24.3	32.0

20	H.2 RATE OF NET INCOME + subMeasure 11.2 (%)	%	x	13.4
21	H.3 RATE OF NET INCOME + coupled support (%)	%	13.4	7.7
23	H.4 RATE OF NET INCOME + direct payments (%)	%	13.5	7.9
24	H.5 RATE OF NET INCOME + ANT 3 (%)	%	3.4	-2.3
<b>25</b>	<b>COST OF PRODUCTION</b>	<b>lei/to</b>	<b>169</b>	<b>217</b>
<b>26</b>	<b>PREDICTABLE PRICE OF INTERNAL MARKET</b>	<b>lei/to</b>	<b>175</b>	<b>210</b>

Source: Own calculations; ADER Project 13.1.2

### Hemp for fiber - conventional system

#### Case 1: Profitability of hemp for fiber culture: Subsidy option

- *Rate of net income + total subsidy*: it is estimated a rate of return of 24.3%, the share of total support (1630.394 lei/ha/354.5 euro/ha) in net income + total subsidies (1856 lei/ha) of 87.8% for the production of 45 t/ha. **Option 1**: Total subsidy = 97,2452 euro/ha (SAPS) + 5 euro/ha (RP) + 57,1745 euro/ha (GP) + 16,0078 euro/ha (TNA 1) + 172,349 euro/ha (SC) + 6,66 euro/ha (TNA 3) = 354,5 euro/ha.
- *Rate of net income + coupled support (SC)*: it is estimated a rate of return of 13.4%, the share of coupled support SC (792.9 lei/ha/172.4 euro/ha) in net income + total subsidies (1856 lei/ha) of 42.7% for the production of 45 t/ha. **Option 2**: coupled support (172,4 euro/ha).
- *Rate of net income + direct payments*: it is estimated a rate of return of 13.5%, the share of direct payments (806.6057 lei/ha/175.4275 euro/ha) in net income + total subsidies (1856 lei/ha) of 43.5% for the production of 45 t/ha. **Option 3**: direct payments (175,4275 euro/ha = 97,2452 euro/ha SAPS + 5 euro/ha redistributive payment + 57,1745 euro/ha - greening payment + 16,0078 euro/ha - transitional national aid TNA 1).
- *Rate of net income + transitional national aid (TNA 3)*: it is estimated a rate of return of 3.4%, the share of transitional national aid TNA 3 (30.6 lei/ha/6.66 euro/ha) in net income + total subsidies (1856 lei/ha) of 1.7% for the production of 45 t/ha. **Option 4**: transitional national aid TNA 3 (6,66 euro/ha).

#### Case 2: Profitability of hemp for fiber culture: Option without subsidies

- o *Rate of taxable income*: it is estimated taxable income rate of 3.3% (251 lei/ha/54.6 euro/ha);
- o *Rate of net income*: it is estimated net income rate of 3.0% (226 lei/ha/49.1 euro/ha)

### Hemp for fiber - ecological system

#### Case 1: Hemp for fiber crop yield - ecological: Subsidy option

- *Rate of net income + total subsidy*: it is estimated a rate of return of 32.0%, the share of total support (2633 lei/ha/572.5 euro/ha) in net income + total subsidies (2425 lei/ha) of 108.6% for the production of 35 t/ha. **Option 1**: Total subsidy = 97,2452 euro/ha (SAPS) + 5 euro/ha (RP) + 57,1745 euro/ha (GP) + 16,0078 euro/ha (TNA 1) + 172,349 euro/ha (CS) + 6,66 euro/ha (TNA 3) + 218 euro/ha subMeasure (sM 11.2) = 572,5 euro/ha.
- *Rate of net income + coupled support (SC)*: it is estimated a rate of return of 7.7%, the share of coupled support (792.9 lei/ha/172,349 euro/ha) in net income + total subsidies (2425 lei/ha) of 28.6% for the production of 35 t/ha. **Option 2**: coupled support (172,349 euro/ha).
- *Rate of net income + subMeasure (sM 11.2)*: it is estimated a rate of return of 13.4%, the share of sM 11.2 (1002.6 lei/ha/218 euro/ha) in net income + total subsidies (2425 lei/ha) of 41.4% for the production of 35 t/ha. **Option 3**: subMeasure (sM 11.2): 218 euro/ha.
- *Rate of net income + direct payment*: it is estimated a rate of return of 7.9%, the share of direct payments (806.6057 lei/ha/175.4275 euro/ha) in net income + total subsidies (2425 lei/ha) of 33.3% for the production of 35 t/ha. **Option 4**: direct payments (175,4275 euro/ha = 97,2452 euro/ha SAPS + 5 euro/ha payment redistributive + 57,1745 euro/ha payment greening + 16,0078 euro/ha transitional national aid (TNA 1)).
- *Rate of net income + transitional national aid (TNA 3)*: it is estimated a rate of return of -2.3%, the share of TNA 3 (30.6 lei/ha/6.66 euro/ha) in net income + total subsidies (2425 lei/ha) of 1.3% for the production of 35 t/ha; **Option 5**: TNA 3 (6.66 euro/ha).



### **Case 2: Profitability of hemp for fiber culture - ecological: Option without subsidies**

- *Rate of taxable income*: it is estimated taxable income rate of -3.1% (-232 lei/ha/-50.4 euro/ha);
- *Rate of net income*: it is estimated net income rate of -2.7% (-208 lei/ha/-45.3 euro/ha)

## **CONCLUSIONS**

The payment schemes applied for the crop year 2017/2018 ensure the profitability of the analyzed crops, contributing to the cultivation of cultivated areas and compensating for income losses for conventional crops (soy, hemp), as well as crops grown in organic farming (soy, rice, hemp). The results show that sugar beet is profitable both in conventional and organic systems, for both cases of profitability analysis: subsidy option and option without subsidies.

It follows from the above that, in calculating and analyzing the profitability indicators, the particularities that led to changes in income and yield rates of the analyzed crops have to be taken into account.

## **BIBLIOGRAPHY**

1. A. Ursu, I.L. Petre, E. Surca (2017). "*Indicatori ai eficienței economice pentru agricultura convențională și agricultura ecologică*", Editura ASE;
2. A. Ursu (2016). "*Influence of the coupled support to the profitability of the vegetable crops sector*", International Symposium "Agrarian Economy and Rural Development - Realities and Perspectives for Romania", 7<sup>th</sup> edition, 17 November 2017, Editura ASE, Bucharest.
3. A. Ursu, E. Cofas (2016). "*Research on forms of financial support for producers in Romanian agriculture. Case study: 2011-2015*"
4. N. Teaci, A. Teaci (2004). "*Peculiarities of production profitability analysis in agricultural enterprises*", Economics, Academy of Economic Studies of Moldova
5. L. Zahiu, E. Toma, A. Dachin, C. Alexandri (2010). "*Agricultura în Economia României – între așteptări și realități*", Editura Ceres, București 2010.
6. APIA (2018). "[Ghid pentru solicitantii de plăți directe și ajutoare naționale tranzitorii în sectorul vegetal – Campania 2018 - Versiunea 1.0](#)"
7. Proiect ADER 13.1.2: "*Fundamentarea tehnico-economică a costurilor de producție și estimări privind prețurile de valorificare pentru grâu, orz, porumb, floarea-soarelui, rapiță, soia, sfeclă de zahăr, orez, cânepă, hamei, tutun, cartof pentru agricultura convențională și agricultura ecologică*"
8. MADR (2015). Ministerul Agriculturii și Dezvoltării Rurale – "*Ordinul nr. 619/2015 pentru aprobarea criteriilor de eligibilitate, condițiilor specifice și a modului de implementare a schemelor de plăți prevăzute la art. 1 alin. (2) și (3) din Ordonanța de urgență a Guvernului nr. 3/2015 pentru aprobarea schemelor de plăți care se aplică în agricultură în perioada 2015-2020 și pentru modificarea art. 2 din Legea nr. 36/1991 privind societățile agricole și alte forme de asociere în agricultură, precum și a condițiilor specifice de implementare pentru măsurile compensatorii de dezvoltare rurală aplicabile pe terenurile agricole, prevăzute în Programul Național de Dezvoltare Rurală 2014-2020*"