AGRICULTURAL SYSTEMS OF VINGA LOCALITY, ARAD COUNTY

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Abstract. *Agriculture is a traditional branch of the Romanian economy that has, as a means of production, the agricultural land fund (the totality of land situated between the borders of a country, including those under water), which provides the necessary food for the population, raw materials for some industries, and products for export. It has been practiced in our country since prehistoric times, with shepherding predominating, practiced in several forms including transhumance (the movement of herds according to the season from high to low areas). In the 19th century, after the Peace of Adrianople, the structure of land use changed in favour of plant cultivation, especially cereals, Romania becoming "the granary of Europe" in the 20th century. In the second half of the 20th century, some progress was noticed in agriculture due to mechanization, chemistry, irrigation, etc., but overall, because of collectivization, interest of the peasantry in production decreased. After 1990, Romanian agriculture faced strong fragmentation of agricultural land as a result of the 1991 restitutions (Law 18/1991), lack of funds for investments, and decommissioning of irrigation systems The natural and social conditions influencing agricultural production are the relief, which plays the role of thermal threshold causing a differentiation of agricultural practices on large relief units: in mountain areas, predominates animal husbandry; in hill and plateau areas, predominate viticulture, tree growing, and animal husbandry; in lowland areas, predominate the cultivation of cereals, industrial plants and vegetables; the climate is, generally, favourable, with, sometimes, phenomena that partially compromise crops (freeze, drought, etc.). From an administrative point of view, Vinga commune is part of Arad county and consists of three villages: Vinga - commune residence village located at a distance of 23 km from Arad, Mailat and Mănăştur municipality. Vinga commune is located in the southwestern extremity of Arad county, in Vingăi Plain, only 23 km from Arad municipality and approximately 30 km from Timişoara municipality.*

Keywords*: Vinga, agriculture, systems, profit, income, production*

INTRODUCTION

Conventional intensive agricultural systems are characterised by the strong specialisation and intensification of agricultural activity and the minimisation of production costs. Mineral fertilisers and pesticides are widely used in field crops, but also in horticulture, viticulture, and vegetable growing. (OKROS ADALBERT – 2015). The livestock sector is often not part of the farm activity and, therefore, grasses are not included in the crop rotation system, although they are of great importance for improving and preserving soil fertility. Organic waste materials from animals (stable manure, pig sludge, etc.) and those of vegetal origin should, as a rule, be applied to agricultural land since they are a rich source of nutrients for crops and, at the same time, a soil protection against degradation. (PIRSAN PAUL 2006). Only certain crops, especially cereals and technical ones, predominate in soil rotations, the most common being monoculture (grain maize) and two-year rotation of maize and wheat, with the application of high doses of mineral fertilizers and other chemicals to control diseases and pests. Soil work is intensive, and high-capacity machines are often used, which, especially under irrigation conditions, increase the risk of environmental degradation and pollution. (NITA SIMONA, BORCEAN A.,2007). Such agricultural units aim mainly to obtain maximum profit, minimizing the protection of environmental resources. Large farms, concentrations of land and production, capital and labour processes are organised, while the social living conditions of the rural environment are largely neglected. Agriculture, under these conditions, is only an economic business in rural areas without paying the necessary attention to man and environmental protection. Research and technological development in this type of agricultural system does not

have a strong influence on the protection and conservation of resources and, therefore, does not correspond to sustainable development. (DIANA MARIN 2013).

MATERIAL AND METHODS

For the elaboration of the paper were used data obtained through own observations, through data accessed from the APIA, AFIR, Vinga commune and discussions with farmers.

RESULTS AND DISCUSSIONS

This paper shows the areas under cultivation and production obtained within the municipality of Vinga, Arad County, Romania, in the following groups of crops: cereals, grain legumes, oil plants, textile plants, fodder, vegetables, etc. In addition, there are data related to the application of fertilisers, amendments, and pesticides. All this is presented over three years, i.e. 2017, 2018 and 2019, to compare the crops, the areas and the productions obtained in different agricultural years.

Table 1.

Area and production obtained in 2017

Crops	Unit (Local Council)		Individual Farms	
	Harvested areas (ha)	Production (t)	Harvested areas (ha)	Production (t)
Common winter wheat	4000	16400	800	3200
Winter triticale	200	800	200	800
Barley	300	1300	100	400
Winter two-row barley	250	1250		
Grain maize (total)	3820	9550	500	1200

Table 2.

Cultivated area and yield in oil plants and sugar beet in 2017

Crops	Unit (Local Council)		Individual Farms	
	Harvested areas (ha)	Production (t)	Harvested areas (ha)	Production (t)
Sunflower (total)	1520	2280	400	600
Rapeseed	600	1200		
Grain soybean	275	160		
Crops for other uses	111	1330		
Sugar beets	111	1330		

Table 3.

Cultivated area and yield in potatoes and vegetables in 2017

Crops	Unit (Local Council)		Individual Farms	
	Harvested areas (ha)	Production (t)	Harvested areas (ha)	Production (t)
Potatoes (total)	40	400	40	400
Vegetables cultivated in the field and in solaria (total)	120	830	120	830

Table 4.

Cultivated area and yield in cereals in 2019

Crops	Unit (Local Council)		Individual Farms	
	Harvested areas (ha)	Production (t)	Harvested areas (ha)	Production (t)
Common winter wheat	5900	30010	500	2450
Barley	200	1040		
Winter two-row barley	200	1002		
Grain maize (total)	2200	17820	180	900

Table 5.

Cultivated area and yield in legumes and oil plants in 2019

Crops	Unit (Local Council)		Individual Farms	
	Harvested areas (ha)	Production (t)	Harvested areas (ha)	Production (t)
Grain legumes – fodder peas	20	40		
Sunflower (total)	2100	6400	190	580
Rapeseed	200	620		
Grain soybean	20	45		

Table 6.

Cultivated area and yield in vegetables and potatoes in 2019

Crops	Unit (Local Council)		Individual Farms	
	Harvested areas (ha)	Production (t)	Harvested areas (ha)	Production (t)
Potatoes (total)	40	720	40	720
Vegetables cultivated in the field and in solaria (total)	60	575	60	575

Table 7.

Cultivated area and yield in vegetables in 2019

Crops	Unit (Local Council)		Individual Farms	
	Harvested areas (ha)	Production (t)	Harvested areas (ha)	Production (t)
Tomatoes (total)	5	60	5	60
Dried onion	20	200	20	200
Dried garlic	5	30	5	30
Cabbage (total)	5	100	5	100
Bell peppers (total)	5	100	5	100
Cucumbers (total)	5	25	5	25
Root plants (total)	10	85	10	85
Pod peas	5	25	5	25
Pod beans (total)	5	25	5	25
Other vegetables (total)	4	25	4	25

CONCLUSIONS

During the three years (2017-2019), differences could be observed between cultivated areas and yields, as well as in the choice of crops, as follows:

1. In cereals for grains, the largest cultivated area was in 2017 – 8,570 ha, followed by 2019 with only 8,500 ha, and 2018 with a total cultivated area of 6,350 ha, i.e. a major decrease;
2. Cereals grown were wheat, barley, two-row barley, triticale and maize, the year 2019 being the only one in which triticale was not cultivated;
3. As regards yields, the year 2019 recorded the best cereal production, followed by 2018 and by 2017 with very low yields relative to the cultivated areas;
4. In 2019, the cultivation of fodder peas on an area of 20 ha is observed; yet, it missed in previous agricultural years;
5. As regards sugar beet, it was only grown in 2017 on an area of 111 ha with a yield of 1,330 t;

6. The oil plants grown were sunflower, rapeseed and soy, with the largest area being cultivated with sunflower, and the smallest area cultivated with soybeans; the latter missed in 2018;
7. The area cultivated with potatoes was the same over the three years, but the yields differed: 2019 yielded the most, i.e. 720 t;
8. Vegetables grown were mainly onions, tomatoes, garlic and cabbage, followed by bell peppers, carrots, aubergines, melons, peas, and beans;
9. In 2018, a hazel plantation was established on an area of 25 ha.

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