Економика пољопривреде
СБ/SI-1
УДК: 631.11(23.01)(498)

THE DEVELOPMENT OF AGRICULTURAL ACTIVITIES IN THE HILL AREA OF DROBOTFOR VALLEY FROM BACĂU DISTRICT, ROMANIA

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Abstract

Because of risk hereupon are insecure the natural resources and other environmental elements, must to act in the sustainable development sense. Permanently, are decisive to assure the healthy life conditions (pure water, fresh air, health food). Thus, in studied zone, are imperative field work of an affected areas from natural disaster (inundations, deforestations, and landfall) and friendly technologies based agricultural activities (in crops and animal husbandry).

Key words: agricultural activities, risk, natural resources, strategy.

Introduction

Since 2008, many localities from Bacău County were declared disadvantaged areas, with specific natural conditions. They are also located in the basin Drobotfor / Pojorata and Motoşeni and Stănişeşti. Here are the necessary rehabilitation works (areas affected by natural disasters) and reconstruction of natural capital (damaged areas).

The relation between regional development and environment has than fundamental aims to creating on long-term harmony between it and the socio-economic processes. Thus, the decision makers of economic field must take responsibility for the consequences on the environment. The future of area study is bound to preserve soil fertility, and interests present and future generations should be oriented towards the adoption of technologies needed to achieve a healthy food.

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Material and method of working

In the perimeter of Basin Drobotfor - Pojorata were analyzed demographic and natural aspects, production, management (based on statistical data of the territory, using questionnaires) and were quantified influences with the help of specific indicators of this field. In terms of number of inhabitants, settlements in the area of analysis have between 4000 and 5000 persons are considered, the sociological perspective, medium-sized. It was found that the population, compared to 1989, decreased a little. The person employed in the active economy is approx. 65% (of which 13.5% working in out of locality) and agricultural activity in 85% of working population (can do manual work hoeing, weeding, mowing and harvesting, but the shepherd). Among those active persons, in the last period, went to work abroad approx. 50%.

In inside of locality are 3328 households (430 new homes), the share of young families representing about 60%. The labor market is poorly developed, the populations of hilly areas are farmers and beekeepers, and the degree of organization is in its early stages.

The studied area is characterized by increased degradation, particularly by torrential erosion, favored by dominance of sandy rocks, features of relief, but also by anthropogenic activities. The process has intensified and as a result of the use of land: fragmentation (Low18/1991), the orientation of the parcels and works on the direction of slopes on direction of slopes.

The exposure slopes have significant implications on the structure of crops and the establishment of associative exploitations. The anti-erosion agro-technical measures on these sloping lands, considered imminent, are: the territory organization, selection of plants, the specific production system, specific technological actions and actions for land improvements.

Results and discussions

1. Current situation of agriculture. Analysis of use of land in the hydrographic basin Drobotfor shows a different distribution such as vegetal formations and the area occupied by these formations. Lack and / or fragmentation of forests reveals anthropogenic activities predominantly agricultural, with vegetal crops applied, especially in the bottom of the slopes and in the meadows rivers Drobotfor Pojorata - subject to management and technology used to achieve them. Across sub basin Pojorata prevail areas occupied by pastures, meadow, vineyards and orchards (land occupied by vineyards and orchards - cherry, pear etc. - are present in the vicinity of localities).

The legal position of agricultural land governed by Law 18/1991. The land (6831.89 ha) -in perimeter Drobotfor / Pojorata - is fragmented on the 3036 exploitations. Thus, there are 1066 exploitations with areas less than 1 ha, 986 with areas of 1.1 - 2 ha, 588 with areas of 2.1 - 5 hectares, 222 with areas of 5.1 - 10 ha, 127 with areas 10.1 - 25 ha, 46 with areas of 25.1 - 100 ha, 1 exploitation with area of more than 100 ha. As a result, the average area on exploitation is less than 2 ha – critical situation regarding efficient and sustainable exploitation. *Ownership and the mode of operation are the first conditions that may elucidate the role of viable exploitations to solve problems of agriculture, from the rationalization and organization of activity and of their territory.*

In vegetal production and animal production prevailing tradition, empiricism, the trend is toward diversification; considerations relate to the provision of family food needs and achieve revenue. Of course, in sole commercial exploitation, things are different, the purpose of the activity to obtain a profit. Therefore, the production structure is oriented towards specialization.

The main cultures practiced on agricultural exploitations (60% of exploitation have as their object the cultivation of plants) are cereals, fodder plants and technical. Them yields obtained in 2007 were low: wheat 1.7 t / ha, barley 1.2 t / ha; grain maize 1.4 t / ha, sunflower 0.9 t / ha, fodder plants 3 t / ha. In a small proportion are included vegetables, potatoes, alfalfa. Because these cultures are obtained in the, individual households, the small size of them not facilitated the creation of a rigorous statistical basis on their share in the area held on the exploitation. Besides the show, mention that the plant products are not sold. Also, the territory includes a fruit-growing exploitation of 100 hectares, the sole exploitation with legal personality.

With a greater openness to market are the products of animal nature. In locality, there is an exploitation specializing in raising sheep, the size is 100 head, and destination marketing products is integral to the local fair. In individual households, along with crop production is a growing number and variety of animals and birds, but also families of bees (187), bred milk cows (785), sheep (2465), goats (105) pigs (77 actual source), horses (147), + hen turkeys (4515), ducks + geese (1005). For them, there are 60 ha of pasture, managed by the local council, growers alfalfa (50 ha) and corn silage (50 ha).

In Drobotfor basin, production system practiced in the culture of plants is traditional with insertion of elements to increase, based on poly culture and practiced in the open. In animal husbandry, production systems are traditional - sheep transhumance.

2. Perspective on issues of agriculture development. The area Drobotfor / Pojorata can be exploited by exploitations (field crops, vegetable, forage, mixed,

and vines and pomicole, zoo technical) and modern forestry, after the preliminary works to improve the conservation and proper slopes and erosion. Thus, the agricultural favorability, respectively the structure crops recommended for different tilt is on slopes below 10% → vegetables, wheat, mash, corn, peas, sunflower, rapeseed, sugar beet, perennial grasses (Bromus), on slopes of 10 - 15% → 60% annual crops (of which 1 / 2 fall), 40% perennial crops, on slopes of 15 - 20% → 40% of annual grasses and perennial autumn, wider 20%, 10% forage herbs, 30 % forage legumes, over 20% → destination forestry.

The most rational use of land and directions of development of the agricultural exploitations are defined by determining the number and types rotation to be organized. The crops suitable for protection against soil erosion in the basin Drobotfor are perennial legumes and gramineae which protects from year of vegetation, grain cereal, legumes and perennial gramineae in the growing season of year, annual forage plants, and legumes annual grain are poorly protective.

The favorability is even better the texture culture and the period of exploitation is higher. So, in rotation, the structure should fall weeding crops rate and annual plants. To achieve rotations for 4-6 years with these cultures, the association of owners is required. Specified for that should be taken into account and meet the owners of certain products, staggered crops need to be more technical, labor, available opportunities for producers and mechanization of the work.

The situation in the exploitations impose measures in the future: re-production technologies, the meaning of optimal allocation of production factors determining the level of production, depending on the effort required, given the costs, projected production environments must ensure that the necessary balance between income and expenses, while enabling and producing a profit, resizing fleet of cars and tractors, which allow execution of the entire volume of agricultural best periods, filling gaps in existing plantations and the establishment of young plantations, establishment of own funds to support production technologies and realization of investments, development of recovery programs plantations reached the limit of economic exploitation.

In Drobotfor, use of advanced technologies or improving existing ones could have positive impact on revenue growth, in the case of family exploitations, or profit, in the case of commercial exploitations. In this sense, first, should be respected rotation crops. Needs for food, and primarily for profit, in conjunction with "good agricultural practices", the rotation crops must contain the autumn cereal, rape seed (bio diesel) and / or forage, maize (grain and silage), sunflower, alfalfa (with field rotation jumper). To wheat, for example, that may be obtained on the effect of stabilizing the soil, and analyzed the variations in profits, more, if they

use organic crops, the profit is more than double compared to conventional technologies.

From the analysis of the structure of expenditure production is found high share of expenditure with the seed, generated by the high quantity to hectare and its price, as a resource for organic production. Culture of maize for grain, the variable costs have 94% of total expenditure, which has strong impact on the training cost of production.

In the structure of this indicator are relevant (as a share) the mechanical works spending, as is culture weeding, not give herbicides, is required multiple mechanical weeding. Also, following the division of culture on small areas (a phenomenon specific land slope) occurring return repeated at short intervals of time, with increasing influence on fuel consumption and therefore on growth of expenditure.

For alfalfa, the biggest variable expense is recorded for the period of exploitation with the mechanical work, in the II-IV years of exploitation, these costs increased by approximately 1,7 times compared to the year of establishment. The explanation lies in the increased number of work and maintenance work related to culture. Given the influence of size and of other factors on the production and economic results, and the changes about the operating system and the management practice, is necessary to use changes in areas planted, with increase the land.

The structure of categories of land in the area examined was determined according to the insurance needs of consumption and formation rotation. Thus, the following calculations, based on variables - number of inhabitants, consumption per capita and the average production obtained in 2007 - were obtained as:

- for cereals (wheat + maize), the required annual sowing = 711.7 ha, representing 15.76% of total arable;
- for sunflower (for vegetable fats), the required annual sowing = 293.93 ha, representing 6.52% of total arable.

Mention: words needed in main agricultural crops suitable in terms of protection against soil erosion shall ensure an area of 1005.63 hectares (is 11.2% of the perimeter basin analysis). If the high culture with its reserve the arable with slope to max 10% (although it may get up to 20% if that vine plantings and trees are not investors), 6.3% of the perimeter basin back of the alfalfa (for animal feeding) and rapeseed (for sale).

The lands with slopes of 10-15% will be for life and plantations of trees (16.9% of the area studied) in order to avoid the offset, which is costly for small

businesses. The vine can put on land less favorable for the cultivation of field plants. The conditions of slope in the area Drobotfor / Pojorata are favorable for obtaining grapes and aromatic white wines, as well as table grapes. Currently, the vines are the hybrid direct producers, to be replaced with new plantings vine fruitful they must be located on land which does not require expensive solutions for interior and anti arrangements with broad possibilities of mechanization and lifting continuous indices of economy. The economic conditions (the existence of financial availability) refers to the offer of setting up a wine-growing plantations. Thus, if there is placed a short distance of a good service for winemaking products and close to a good and cheap way of communication, the price that the seller and the loss or reduction of quality is lower.

An important technical factor is the land form and size of parcels determined the level of exploitation expenditure. Uneconomic use of energy has raised costs, thus small exploitations must circumscribe in conceptual organized areas, underpinning the establishment of use in the agricultural perimeter.

The technical criteria are determined by: anti arrangement, construction of roads network, etc. If land is slope is uniform and depth of erosion was not, anti arrangement can run with ordinary mechanical means, and traces the paths are easy to build. For land with sloping uniform, with frequent changes of exposition and frequent places with pronounced erosion of depth, will call the various solutions and specific interventions. Where are slopes of 10-12%, should use anti agro technical works (works of deep soil, administration of chemical fertilizers or green), grass etc. On slopes less than 12%, targeting rows of vineyards and orchards was on the bend. It designs permanent buffer strips (4-5m wide) along water courses and strip grass the bend between the rows of vines or trees.

On the land with low fertility and slope greater than 12%, protection against erosion requires the offset arrangement of land. Planting distance should be 2.0-2.2 m between rows, to ensure work mechanization and 1.0-1.2 m between vines per row. So, stop or reduce loss of water and soil, due to leakage on versants requires practicing anti curtains, grass bends, channels terraces, and coastal. The main shortcoming of tree plantations is age, leading to a potential decline (excluding exploitations with 100 ha). The alternative is the establishment the new plantations.

The organization of land for this purpose, pursuing and achieving the best conditions for preventing and combating soil degradation, creating optimum conditions for the execution of the work of tree care and recovery of production must include works of land improvement, fragmentation, trace roads etc. On slopes of 12% - 18%, are required the grass bands between rows of trees (ratio 1:2:3 or 4, depending on the slope and distance between rows. For establish a hectare of orchard with apples, for example, the land preparation it means an investment of at least 10-15 thousand euros (semi intensive and extensive

exploitations, which they recommend the area studied). Annual maintenance costs, to enter the rod, also are high, and fructification starts at 4-6 years. It follows that the recovery of investment is high and is preferably a combination of such owners for the business, which involves the cost of storage.

As a feature of the area Drobotfor / Pojorata, as was specified, the assurance of agricultural products is essential. Thus, to the requirements of annually livestock products, respectively 63.5 kg meat, 240 kg milk and 280 pieces of eggs, the production per capita are achieved 30.78 kilograms of meat, milk and 466.72 l 652 eggs. The deficit is found in meat product. Therefore, can use the mix of industries and growth of sheep for meat and rational exploitation pasture and meadow. By using the rational and full of pasture and meadow land with slope between 15 and 20%, annual to increase over 6,000 head fattened sheep (approximately 141,435 kg meat) that far exceeds the needs of consumption and therefore production can be marketed fresh or processed (if the Association to access funds for IMMs).

Also, can to increase the herd of cows, and, milk production, whereas the maintenance of the meadows and pastures, their yields (3 t/year) may be double. Therefore, in the livestock can be organized associative exploitations in the production and processing, which will increase value added.

Conclusion

In the area Drobotfor, are predominant agricultural activities, as a means of ensuring the needs of food and income for family. The exploitations are, in generally, small, and least connected to market and poorly capitalized. The solutions obtained after completion of diagnostic analysis regarding capacity the use of the land, knowing the area potentialities, as premise for development of basin Drobotfor.

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