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Production specialization – factor for increasing added value in the farms¹

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The production specialization of farms is among the main factors that affect the efficiency of their economic activity and the competitiveness of the produced products. It is the reason for obtaining different added value even using the same quantity and quality of production factors. The aim of the article is to analyze the production specialization of agricultural holdings in different regions of the country. The conclusions and assessments are based on the analysis of statistical information and results of surveys with experts and farmers. This gives the opportunity to be proposed recommendations for increasing the added value by changing or deepening the production specialization of the farms.

Key words: farms; production specialization; added value

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Introduction

The positive effects of the appropriate choice of production specialization that determine the efficiency of agricultural holdings is the possibility of reducing costs by increasing the scale of production and the added value of agricultural activities (Juszczak, 2004). Campi et al. (2020) also consider that production specialization creates opportunities to increase value added. Czyżewski and Smędzik-Ambroży (2015) note that the combination of production factors in agricultural holdings is one of the most important determinants of their economic status. The authors are on the opinion that the deepening of production specialization leads to higher economic results than the diversification of holdings. Production specialization and marketing support to achieve economies of scale, increase returns on investment and allow farms to gain greater experience (FAO, 1997).

The added value can be the result of the choice of production specialization in accordance with the favorable soil, climate and other characteristics and features of the landscape, market and transport infrastructure and thus use the competitive advantages of the area

(Doichinova et al., 2021; Lu and Dudensing, 2015). Campi et al. (2020) consider also that regardless of countries specialization in products for which they have competitive advantages, some countries are able to develop products unrelated to regional advantages, and the choice of such production specialization can be a driver of the development of agriculture. Ikova (2013) adds that there is a potential for the development of agricultural specialization, but it is not fully used. Ivanov et al. (2017) consider that the changes in the product and production structures in Bulgaria limit the created added value.

In other cases, the sources of added value are the created organizational, market, logistic and other conditions, which significantly improve the supply channels and these for the realization of the produced products by the farmers. A logical result is greater stability of supply and lower costs for raw materials and services, allowing manufacturers to focus their attention on production.

The improved disposition of supplies of raw materials and materials for agricultural producers creates benefits for all farmers on the territory of rural areas (Doichinova et al., 2022).

Agricultural policy can also encourage specialization in products with high added value (Singbo et al., 2021; IAE, 2020). In their study, Campi et al. (2020) add that understanding the patterns of production specialization and the dynamics of agricultural production can contribute to be created policies aimed at achieving global food security and more sustainable agricultural development. At the same time Lu and Dudensing, (2015) point out that many policies and programs support agriculture which create added value, but the consideration of the importance of consumer preferences and willingness to pay for the product is absent.

Kirechev (2018) pay attention to the financing of the value chain in agriculture and expresses the opinion that it is necessary to focus on integration in the chain of finance providers (financial institutions), structural support from the government to strengthen the supply chain, enhancement of risk protection information systems, strengthening the collaboration and cooperation.

In the above context, the aim of the article is to analyze the production specialization of agricultural holdings in different regions of the country. Based on the conclusions and assessments have been developed recommendations for increasing the added value of the farms.

Materials and methods

Methodological framework of the paper include: 1) Theoretical review of production specialization and arising prerequisites for creation and increasing the added value; 2) Analysis of

production specialization and net added value in regional aspect; 3) Expert assessment of the farm specialization by planning regions; 4) The assessment of the chosen from agricultural holdings production specialization (survey among agricultural producers); 5) Proposals and recommendations related to increasing the added value of the farms through changing or deepening the production specialization.

Expert assessment of the specialization of farms by regions and the assessment of the chosen from agricultural holdings production specialization are based on research conducted under scientific project “Sustainable multinational rural areas: reconsidering agricultural models and systems with increased demands and limited resources“, funded by the Bulgarian research fund. Two surveys were conducted within the project. The first one was among 163 experts in the regional Directorates of Agriculture, municipal offices and the regional offices of the National agricultural advisory service. The second survey was conducted among 112 farmers from the districts of Blagoevgrad, Pazardzhik and Dobrich.

Results and discussion

Production specialization, net added value and net income by statistical regions

Various studies of the changes in the production structure of Bulgarian agriculture reveal trends of a constant increase in the importance of grain production and oilseed crops in all regions of the country and a deterioration of the ratio between crop production and livestock production (Ivanov et al., 2017; Doichinova et al., 2017). At the same time, significant regional differences are observed, which find a concentrated expression in the indicators of net added value, net income per hectare and per annual work unit.

The Northwest region is a major producer of wheat, maize and sunflower. The areas with these crops reach 87.36% of the arable land in the region, and together with other grain and oil crops reach 92.3%. This predetermines the higher importance of crop production in the region. The relative share of crop production in the value of the produced production in recent years in North-

west region is high. The statistical data show that it reaches 85–87%. Only 11.9% of cattle, 9.4% of sheep, 13.9% of goats, etc. are raised in the region. The regional production structure is the reason for the relatively lower net added value and net income per hectare. According to the net added value Northwest region is on third place after the Southwest and South Central regions (Figure 1). On the other hand, the achieved level of the technological mechanization and the high labor productivity are the reasons that rank the region on the second place in terms of net added value per annual labor unit (Figure 2). The indicator is more than twice time higher than in both mentioned southern regions.

The structure of the used agricultural area in the North Central region is close to the structure of Northwest region. Cereal crops have the highest relative share – 52.6%, followed by sunflower and rapeseed – 30% of the used agricultural area. Favorable soil and climate conditions are a prerequisite 9.5% of the used agricultural area in the whole country occupied by field and greenhouse vegetables, watermelons and melons to be grown in the North Central region, as well perennial crops – 13.2%. The regional production structure, the size of farms, the applied technologies also define the highest net added value per annual

labor unit in 2020. In terms of net added value per hectare and net income per hectare, the region is on fourth place among the other regions.

In terms of net income and net added value per annual labor unit, the Northeast region is on the second place among the regions in Bulgaria. At the same time, the penultimate place in terms of net added value per hectare and the lowest net income per hectare are the reasons for the lower productivity of the used agricultural land in the region. Dobrich region is the leader in grain production. 60.2% of the used agricultural area of the district is occupied by cereals, which is 10.9% of the total area in the country and 22.8% of the cereal production. The share of cultivated sunflower and rape is high – 34.3% of the used agricultural area and 21.8% of the national production. 59.3% of the farms in the region breed 15.2% of the livestock units in the country.

Compared with the northern regions, the relative share of cereals from the used agricultural area in the Southwest region is modest – only 29.2%. Technical crops occupy 12.4% of the used agricultural area in the region. The leading crops are sunflower and tobacco. 39.2% of all farms in the country that grow tobacco are located in the Southwest region (mainly in the Blagoevgrad region). The region is the leader in the country in

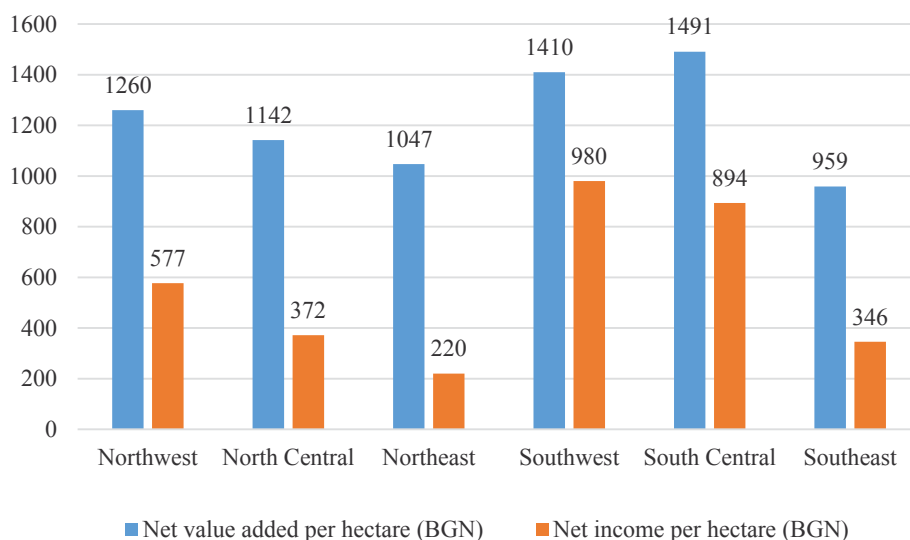


Fig 1. Net added value and net income per hectare by regions

Source: MAF, Agrostatistic, 2022.

terms of the agricultural area where potatoes are grown – 50.8%. The favorable soil and climatic conditions in this region, the proximity to the Mediterranean Sea, etc. are a prerequisite to be grown field and greenhouse vegetables, watermelons and melons – 8.5% of the used agricultural area and 9.4% of the agricultural area occupied by orchards. The Southwest region ranks last among the regions in terms of net income and net added value per annual labor unit, lagging far behind the three northern regions and the Southeast region. On the other hand, the higher net added value per hectare and the higher net income per hectare (highest among other regions) that is formed in the region is an indicator for the higher efficiency of the used natural resources in this region.

The soil and climatic conditions are a prerequisite for the formation of a diverse production structure in the South Central region. The region is the country’s largest producer of milk, meat, vegetables, most types of fruit, fodder crops, etc. It is on second place in the production of grapes, oilseeds, etc. 24.7% of the livestock units are bred in South Central region. The region ranks first in the number of raised cattle, buffaloes and sheep. In terms of net added value per annual labor unit, the South Central region ranks last. The average

net added value per hectare rank the region on first place among the other Bulgarian regions.

The production structure is also diverse in the Southeast region. Despite the usual annual changes in area and production, the region has traditionally ranked first or second in production of main crops. Data from the distribution of cultivated land show a very high presence of cereals and oil crops. Together they occupy 85.15% of the cultivated land. The relative share of vegetables is 5.62%, and according to this indicator the region ranks third in the country. According to the last two agrarian reports, Southeast region is a leader in fruit production – 26.3% from the national fruit production. The region has also a leading place in the production of grapes and products from their processing.

Based on the overview of the differences in the production structure, it can be summarized that:

- The difference of the net added value per annual labor unit (average per farm) between the highest value (North Central Region) and the lowest (South Central Region) is 3.17 times. The difference of the net income per annual labor unit (average per farm) is higher between the Northwest and Northeast regions – 3.31 times. These differences are explained by production special-

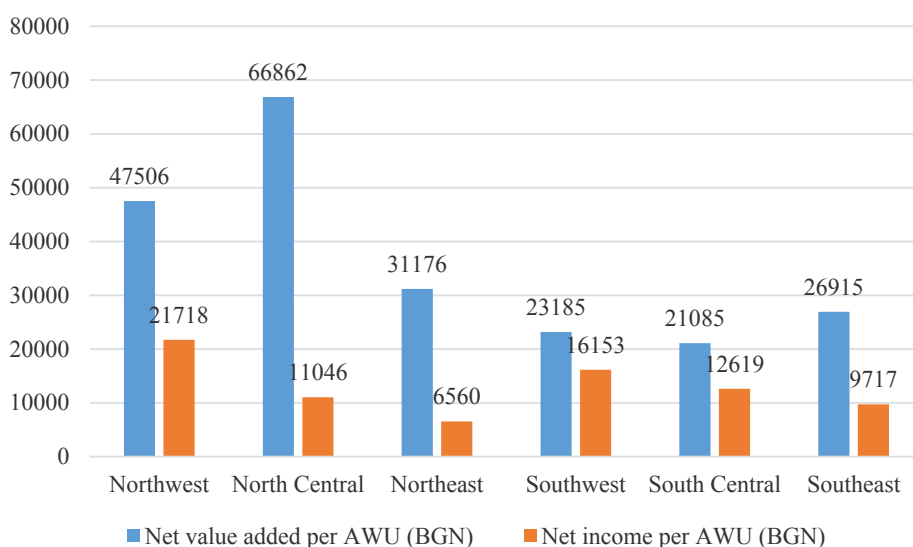


Fig. 2. Net added value and net income per AWU

Source: MAF, *Agrostatistic*, 2022.

ization, significantly higher capital investments and the higher degree of mechanization of production processes.

- Average level of net added value and average net income per hectare show are higher in the South Central and Southwest regions. The difference between the net income per hectare between the South Central Region and the Northeast Region is more than 4.5 times, indicating the substantial differences in production specialization and the presence of a more productions that bring higher added value capabilities.

Expert assessment of the specialization of farms by planning region

Experts gave relatively low to medium ratings to the statement that agricultural specialization is appropriate in the context of competitive advantages in rural areas. The production specialization of the majority of agricultural holdings is not considered suitable for the Northwest region. According to them, the average score for the Northwest region is only 2.33 (Figure 3). The potential opportunities of the region are not used enough. The reasons are the limited number of labor force, the significant reduce of relative share of irrigated areas in the region and the strong reduction of animals. The experts rate the peculiarities and possibilities for spe-

cialization of the agricultural sector in the North Central region with highest score – 3.63.

The experts gave high assessment of the test-ed statement that other productions of agricultural products could be developed in the region, which would realize a higher added value in five regions. The highest score is given by the respondents from the North Central and Southeast regions, respectively 3.95 and 3.88. Only in the South Central region the assessment of the current production specialization is higher.

The assessment of the chosen from agricultural holdings production specialization

For the assessment of the chosen production specialization is used a five-point scale. In the Blagoevgrad region, the farmers gave a score of 3.8 for the role of the markets in choosing the production specialization of the farms, while the scores of the other regions were lower – respectively, the Dobrich region with 3.07 and the Pazardzhik region with 2.8.

The role of direct payments and other CAP instruments for the choice of production specialization of farms was assessed with scores of 3.85 in Pazardzhik district, 3.8 in Blagoevgrad and 3.4 in Dobrich district.

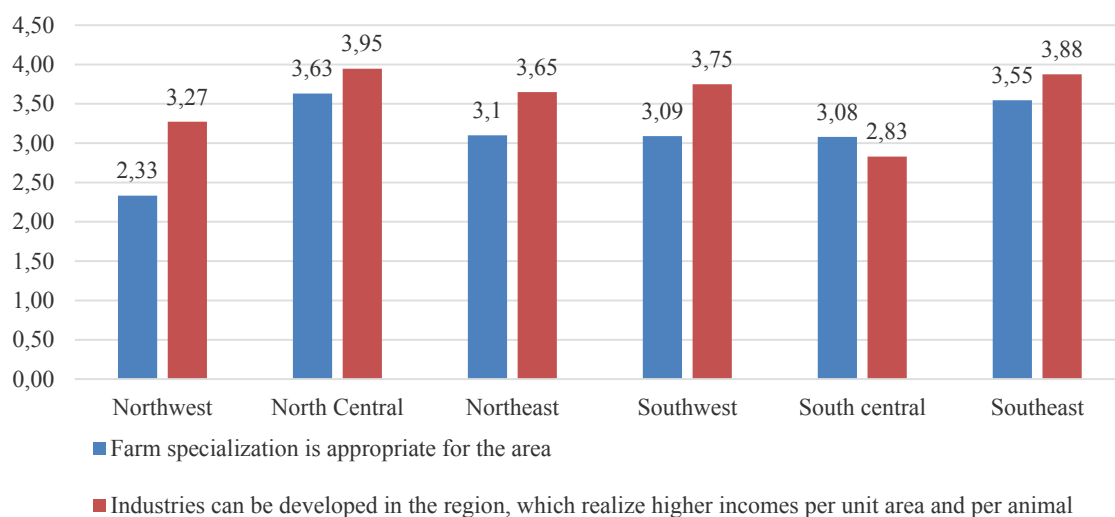


Fig. 3. Expert assessment of the specialization of farms and the possibilities for development of productions with higher added value

Source: Own research.

More significant are the differences in the assessments of the importance of direct payments and production specialization for the stability of the farm’s financial condition. In the Blagoevgrad region the score is 3, in Pazardzhik 4.0, and 3.36 in Dobrich.

Production specialization and participation in network structures are not perceived as prerequisites for the sustainable development of the economy. The formed assessments differ from 2.0 in Blagoevgrad district to 3.7 in Pazardzhik district and 2.93 in Dobrich district. The higher assessment in the Pazardzhik region is related to the experience and practice of creating various network structures in this part of the country.

A higher assessment was formed in the Pazardzhik region regarding the beneficial effects of the applied technologies on the environment. It is 3.9

against 2.8 in Blagoevgrad district. For the Dobrich region, the formed assessment is 3.6.

Of indisputable interest are estimates of the extent to which the production specialization of farms ensures the full use of the production potential. Obtaining maximum income from the production factors available to the farm is a statement rated with the highest score in Blagoevgrad district (4.0). On second place is Pazardzhik district (3.63) and Dobrich district (2.93).

The degree to which the current production specialization of the farm uses the competitive advantages of the region (the specialization is suitable for the conditions of the region) was rated with the highest score in the Blagoevgrad region – 4.5, followed by the Pazardzhik region – 4.09 and the lowest is in the region Dobrich – 3.8.

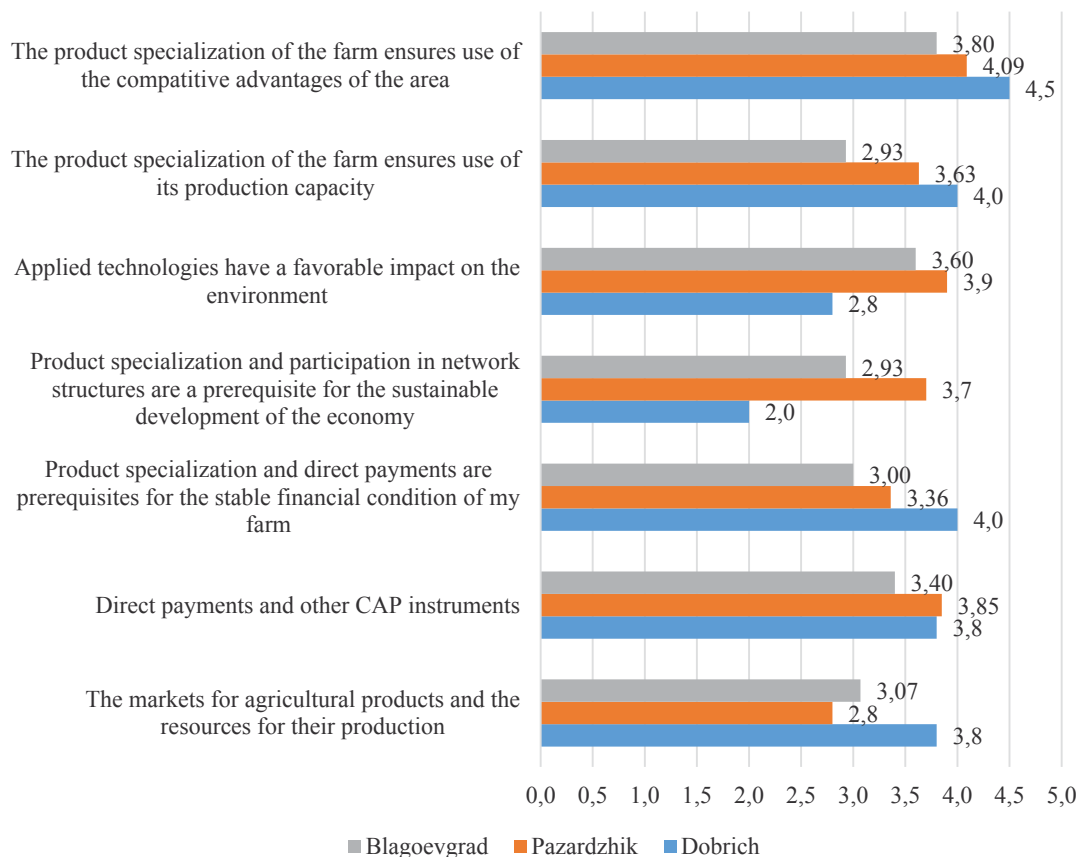


Fig. 4. Farmers’ assessment of the factors and consequences of the formed farm’s production specialization

Source: Own research.

Proposals and recommendations related to increasing the added value of agricultural production

There are two main directions for using the advantages of production specialization to increase added value. Depending on the specifics of the area, the change in production specialization or its deepening may lead to the desired increase in added value.

Change in production specialization

Regardless of the fact that for the period 2007–2017 (IAE, 2019) there was an outflow of producers from productions with a higher added value (extensive crops and animal husbandry), the policy continues to promote the change of the production specialization in order to obtain relatively higher added value. This change would have an impact both at the micro level, increasing the farmer's income, and at the macro level, affecting the development of the rural areas, as the products of the agricultural sector are used in both the industry and service sectors. Increasing the number of farms that create higher added value would improve the viability of rural areas by having a positive impact in terms of achieving sustainability and increasing their market orientation.

The development of productions with high added value is associated with high financial intensity and participation in a longer value chain. Therefore the main recommendations for implementing the change of production specialization to productions with higher added value are related to:

- Stimulation and financial support of crop and livestock productions, which bring higher added value through modernization and renewal of technologies in farms, implementation of innovations;
- Implementation of a longer value chain and increase in the market realization of agricultural products;
- Access to irrigation in order to reduce the risk of crop loss, due to the strong dependence of some sectors creating high added value on the availability of water resources.

Part of these recommendations for increasing the added value of agricultural holdings can be

realized by the measures of the Strategic plan for development of agriculture and rural areas and other documents related to the implementation of the Common Agricultural Policy for the period 2023–2027.

Significant role could have the promotion of cooperation between the enterprises for achieving the objectives of the CAP through: the creation of quality schemes; promoting short supply chains and local markets; agricultural partnerships, networks and clusters; social agriculture; establishment of producer groups and producer organizations, as well as other forms of cooperation considered necessary to achieve the specific objectives of the CAP.

During the new programming period continues the stimulation of the establishment of farms by young farmers, new agricultural holdings and the startup of non-agricultural activities (Art. 75 of Regulation (EU) 2021/2116) continues, as well as the expansion and diversification of forms of cooperation (Art. 77), which includes: preparation and realization of the projects of the operational groups within the European partnership for innovation; supporting groups and organization of producers or interbranch organizations, etc.

In the Strategic plan for development of agriculture and rural areas, a special place finds the irrigated agricultural sector in the context of adaptation to climate change. It is rightly emphasized that providing irrigation in the most threatened areas is key for stimulating the development of intensive production (vegetables) with a higher added value. The support is aimed at irrigation infrastructure in order to achieve economic sustainability by increasing the ratio of benefits to the agricultural sector and to achieve environmental sustainability through efficient use of water resources. The support “will be aimed at operators who manage hydro melioration infrastructure and provide the service “Delivery of water for irrigation” in accordance to the applicable national legislation” (MAF, 2023).

Deepening the production specialization

In areas where the current production specialization of farms uses the competitive advantages

of the area and is predominantly aimed at products with a higher added value per unit of used resource, the efforts of farmers should be aimed at creating prerequisites for improving market conditions and to expand and diversify the markets for the sale of the products produced in the rural areas. Good solutions are the organization of markets on the territory of the district or the improvement of existing ones through the development and implementation of projects, as well as the formation and organization of producers' organizations.

Strengthening the market orientation of agricultural producers is main element of the CAP during the current programming period. In this regard, deepening the production specialization of farms in regions where highly specialized farms prevail is of significant importance. At the same time, the strengthening of the market orientation of agricultural holdings also depends on the state of the regional market infrastructure. The main activities that could be undertaken both for deepening the production specialization and for the development of the regional infrastructure are:

- Encouraging innovation activity towards the development of smart agriculture by stimulating and sharing knowledge, innovation and digitization in agriculture and rural areas and promoting their wider use;
- Development of digital infrastructure for communications and use of software products and applications in the production process;
- Encouraging the formation of producer organizations.

At the same time, the relevance of environmental problems related to climate change, depletion of natural resources, air and soil pollution, pressure on natural ecosystems and loss of biodiversity has increased in recent decades. Taking into account the two current priorities (innovation and environmental protection), more and more farmers are starting to apply intelligent agriculture, which works at a high-tech level. This lead to achievement of higher production efficiency, sustainable profitability and better quality products. In this regard, farmers could benefit from support under the program Competitive-

ness and innovations in enterprises for the period 2021–2027. It is an instrument for implementing the European Cohesion Policy during the current programming period.

The participation of farmers in producer groups and organizations would improve their market orientation by shortening the supply chain to their final customers, improving the management of farm financial flows and undertaking and participating in risk management schemes.

The stimulation of the creation of networks under the CAP (Article 126 of Regulation (EU) 2021/2116), the promotion of innovations in agriculture, support for partner training and the inclusion of all interested parties in the process of knowledge exchange, has also an impact. On this basis, it is logical to encourage the creation of platforms, the organization of forums and events. The specified activities require gathering information and facilitating its dissemination, as well as working in networks of funded structures and projects aimed at supporting cooperation projects between operational groups within the European partnership for innovation, local initiative action groups or similar structures for local development, including for transnational cooperation.

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