

THE IMPACT OF MARKET, PRIVATE, COLLECTIVE AND HYBRID MODES OF GOVERNANCE ON AGRARIAN SUSTAINABILITY IN BULGARIA

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Abstract: *The specific governance systems in different countries, regions, sectors, etc., are a factor which largely (pre)determines the rate and type of socio-economic development. Despite its tremendous theoretical and practical significance, little empirical research has been conducted in Bulgaria, and south Eastern countries in general, of the dominant governance structures in agriculture and their impact on agrarian sustainability. The aim of this study is to adapt the interdisciplinary New institutional economics and to assess the impact which the different modes of governance (market, private, collective, public and hybrid) have upon agrarian sustainability at the current stage of development of our country. The study first presents the methodology of the research. Next, typical governance modes are identified that are employed by Bulgarian farms of different legal type, size, production specialization, environmental position and geographical location, the impact of those governance modes on agrarian sustainability in its economic, social and environmental aspects. In conclusion, recommendations are made about conducting further research and improving public policies and private governance strategies. Agricultural producers employ various combinations of efficient market, private, collective and hybrid modes of governance in their activity and relationships. The factors and modes which contribute the most to raising agrarian sustainability at this stage are: managers' confidence and initiatives; economic resources and innovation potential; a short-term profit and gains strategy; price level and dynamics; EU payments per area, and informal agreements. The research of the relationship between governance structures and agrarian sustainability should continue further to improve its representativeness and enlarge the scope of the specific modes of governance which farms of different types employ, to assess the impact of institutions upon agrarian sustainability and the effect of governance at different hierarchical levels. The latter, however, requires employing a new type of micro and macro data and close cooperation between different stakeholders.*

Key words: agrarian governance, sustainability, market, private, collective, hybrid modes.

JEL: Q13, Q12, L22, L33, L51.

Introduction

The accomplishment of the numerous objectives of socio-economic development largely depends on the specific governance system which is employed in different countries, economic sectors, regions and communities. Bearing in mind the significance of the agrarian sector (in terms of the resources it requires, its contribution to the welfare of individuals and societies, its positive or negative impact upon the environment, etc.), improving the governance of agrarian sustainability is a key issue both in Bulgaria and across the world (Bachev, 2018; Bachev and Che, 2018; Ivanov et al, 2009; EC, 2001; Liota et al., 2008; Raman, 2006; UN, 2015). Despite its significance, little research has been conducted so far of the modes and effectiveness of managing agrarian sustainability due to the relatively 'recent' recognition of the issue and the occurrence of new challenges (e.g. environmental pollution, destruction of eco-systems, climate changes, competition for natural resources between agriculture and other industries and sectors of the economy, etc.) and the fundamental modernization of institutions over the last years, as well as the 'lack' of long-term experience and relevant data, etc. Apart from a few exceptions, (Bachev, 2012; Bachev, 2010; Georgiev, 2010; Sarov, 2017; Terziev and Radeva, 2017), little empirical research has been conducted of the dominant governance structures in agriculture or their impact on agrarian sustainability by Bulgarian authors. The aim of this study is to adapt the interdisciplinary New institutional economics and to assess the effect of the different market, private, collective, public and hybrid modes of governance on agrarian sustainability at the current stage of development of our country.

1. The Methodology of the Research

The performance of the social, economic and ecological functions of agriculture requires good governance, i.e. a system of mechanisms and modes which have been designed to regulate, coordinate, encourage and supervise agents' behaviour, actions and relationships at different levels (Bachev, 2010). The agrarian sustainability governance system¹ is part of the specific system for

¹ The term agrarian sustainability is used to refer to the ability of the sector to perform its social, economic and ecological functions in the long run (Bachev and Che, 2018).

governing agrarian development and includes: different agents in the agrarian and non-agrarian sectors and multiple mechanisms and modes for governing the behaviour, activity, relationships and effects of those agents.

Individual agricultural holdings (farms) are the primary organizational and production units in agriculture that manage resources, technologies and activities and perform the social, economic and ecological functions of the sector. Therefore farms and farming organizations (engaged in production, provision of services, introduction of innovations, marketing, etc.) are a major element of the system for governing agrarian sustainability. Other agents (owners of agrarian resources, related businesses, end users, local and central authorities, stakeholders, etc.) also take part in governing agrarian sustainability directly or 'indirectly' by establishing different conditions, standards, norms, demand, etc.

The system for governing agrarian sustainability consists of several principal mechanisms and modes which govern the behaviour and performance of individual agents and ultimately determine the level of agrarian sustainability. In the first place, *the institutional environment* (which sets 'the rules of the game') allocates rights and responsibilities to individuals, groups and generations, and establishes the system for observing those rights and responsibilities (North, 1990). Secondly, *the market modes* ('the invisible hand of the market') are decentralized initiatives prompted by free market prices and market competition which are materialized in the immediate exchange of resources, products and goods; purchase, lease or sale contracts; trading in specific high quality, biological and other products, agrarian and ecological systems, etc. In the third place, *private modes* ('the private or collective order') are various private initiatives and special contractual and organizational arrangements (long-term contracts for delivery and marketing, voluntary environmental actions, voluntary or obligatory codes of behaviour, partnerships, cooperatives and associations, registered trademarks and brands, labels, etc.). Fourth, *public modes* ('the established social order') are various public (community, state, international) interventions in the market and in the private sector, for example, public recommendations, regulations, support, taxation, funding, delegating and updating rights and rules, etc. Finally, *hybrid modes* are a combination of all these modes – for example, public-private partnerships, public licensing, inspection of private organic farms, etc.

The effectiveness of a particular system for governing agrarian sustainability is ultimately materialised in the level and dynamics of the social, economic, ecological and integral sustainability of agriculture (Bachev, 2012; Bachev, 2011). Hence, high or growing agrarian sustainability implies a highly-effective governance system and vice versa. To assess the effectiveness of governance, we employ a holistic system for assessing agrarian sustainability which has already been presented in earlier publications (Bachev and Che, 2018).

To identify and evaluate the numerous market, private, collective, hybrid, etc. modes of governance and their impact on agrarian sustainability,

we conducted extensive interviews with the managers of 'representative' market-oriented Bulgarian farms of different legal status, size, specialization and location. The research was conducted in the summer of 2017 and included 40 farms in the four administrative regions of the country. We were able to identify the farms which are typical of a particular region with the assistance provided by major associations of agricultural producers, the National Agricultural Advisory Service and local authorities.

The research interview consists of multiple questions about the deployment and the effects of governance system components, such as personal preferences, resource potential, the type of governance strategy, the contractual and collective modes employed, involvement in government support programs, pressure from communities and partners, etc. Interviewed managers first evaluated the impact of each governance system as 'positive', 'neutral' or 'negative'. Then, the relationship between their 'assessment' of the effectiveness of governance modes and the level of farm sustainability was established. The integral scores are the arithmetic mean of the scores of individual farms of a particular type.

2. Correlations between the Effectiveness of Governance Modes and Agrarian Sustainability

The findings of the interviews we conducted indicate that 'personal motivation and farm owners' initiatives' are a factor which contributes to maintaining and raising agrarian sustainability in all its aspects (Figure 1). The perceptions, skills and purposeful actions of agrarian entrepreneurs and managers of farms of different legal status, size, product specialization, ecological position and geographical location are a key factor for materializing the socio-economic and ecological aspects of agrarian sustainability. At the same time, only a quarter of the interviewed managers believe that the 'personal motivation of and initiatives from farm workers' are a factor which contributes to agrarian sustainability (Figure 1). Major requirements for innovative farms that seek to integrate workers to the process of improving economic performance and agrarian sustainability include recruiting qualified staff, offering continuous training, implementing and experimenting with various initiatives, delegating responsibilities and management-related tasks, providing powerful incentives, tying remuneration to accomplished results, etc. The workers employed in most Bulgarian farms, however, do not have the required skills, freedom and/or motivation and contribute little to raising agrarian sustainability.

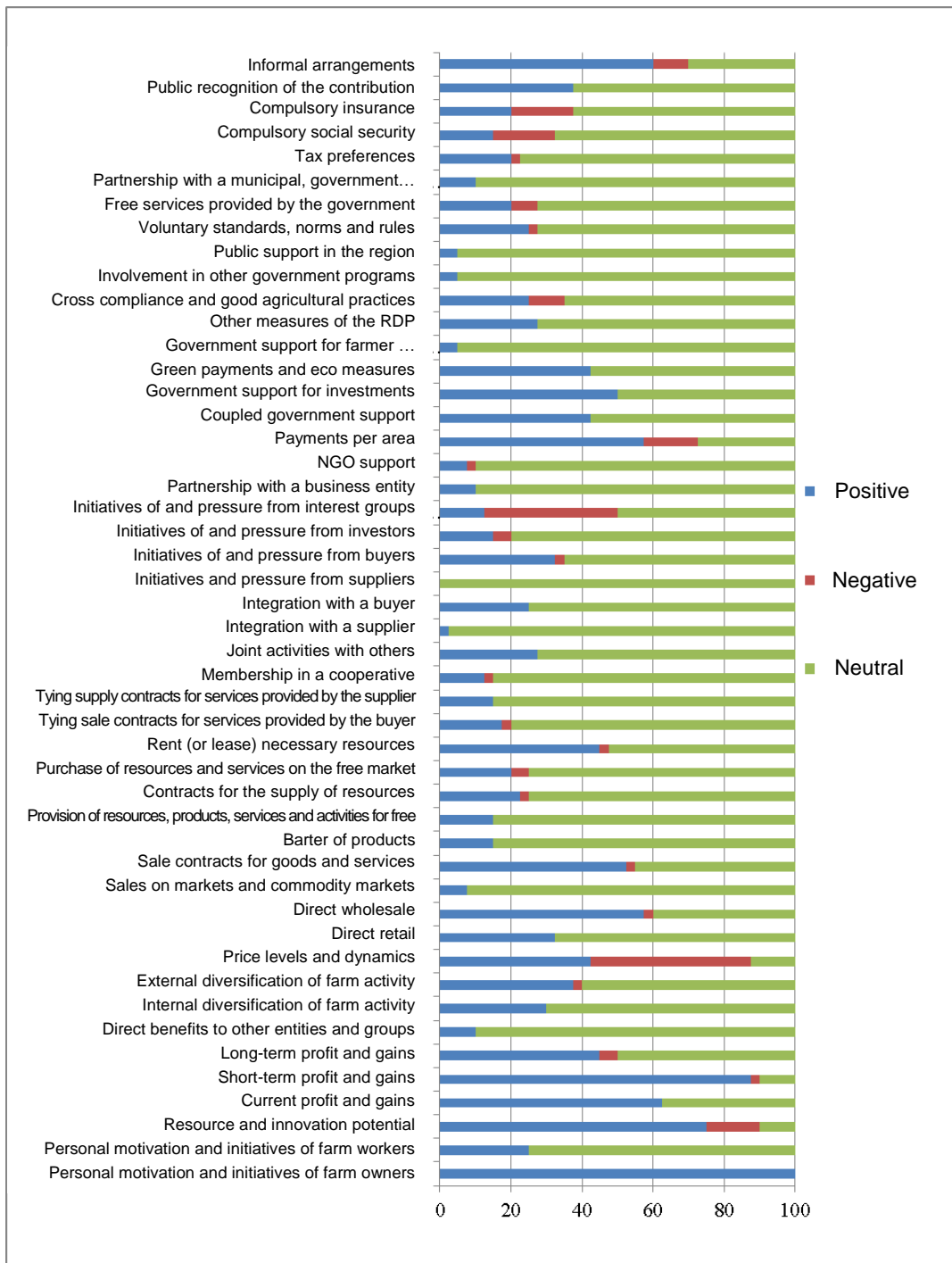


Figure 1. The impact of employed private, collective and hybrid factors, modes and strategies upon agrarian sustainability
 Source: An interview conducted with farm managers, 2017.

Three quarters of the farm managers we interviewed are confident that the available 'resource and innovation potential of farms' contributes to agrarian sustainability and its individual aspects (Figure 1). Most farm-owners consider this factor to be very important and believe that their farms have the required human, land, material and intellectual resources to accomplish the socio-economic and ecological objectives of agrarian sustainability. In most cases, the control over the resources which are crucial to their farms is ensured through internal management (acquisition of property, full-time employment contracts, etc.) or by an external collective organisation or some major entity (cooperatives, unions, associations, holding companies, etc.). Mobile resources are governed through long-term lease contracts, while market modes are preferred for universal assets and products. Nevertheless, 15% of the respondents assess the impact of insufficient resource and innovation potential as negative to sustainable development. Many of the smaller farms have limited access to public funding or are located in the poorer regions of the country; they do not have sufficient resources and innovations of their own or access to external sources for efficient and sustainable development. On the other hand, one out of ten farm managers does not consider the resource and innovation potential of their farms to be essential to agrarian sustainability or any of its aspects. According to these farm owners, the personal perceptions, skills and strategies of farmers and the public policies designed to promote, regulate and support agriculture are more important to the accomplishment of the socio-economic and ecological aspects of agrarian sustainability than the quantity of currently available resources.

Farms of different type and size and in different subsectors and locations differ in terms of their potential to successfully implement sustainable development strategies by exploiting their own (or external) resources and innovations. The largest relative share of farms with available resource and innovation potential to develop sustainably is that of sole proprietors and companies; medium-sized and large farms; farms specializing in grazing livestock, mixed livestock and permanent crops; farms in lowland areas and in lowland areas with natural constraints, as well as farms in the Yugoiztochen (Southeastern) and Severen Tsentralen (Central Northern) regions of the country (Figure 2). The lowest number of farms with effective resource and innovation potential for sustainable development is that of cooperatives; self-subsistence farm holdings and small farms; farms specializing in the production of pigs, poultry and rabbits, field and mixed crops, as well as farms located in mountain areas, in protected areas and territories and in the Yuzhen Tsentralen (Central Southern) region of the country.

According to most farm managers, 'short-term profit and gains' are an important factor which has a positive impact on governing agrarian sustainability and its major aspects (Figure 1). At the same time, the rest consider this type of strategy to be neutral in terms of its impact on agrarian sustainability and its individual aspects. Those managers are aware that

focusing their activity and effort entirely on current profit and gains contributes very little to agrarian sustainability or any of its aspects.

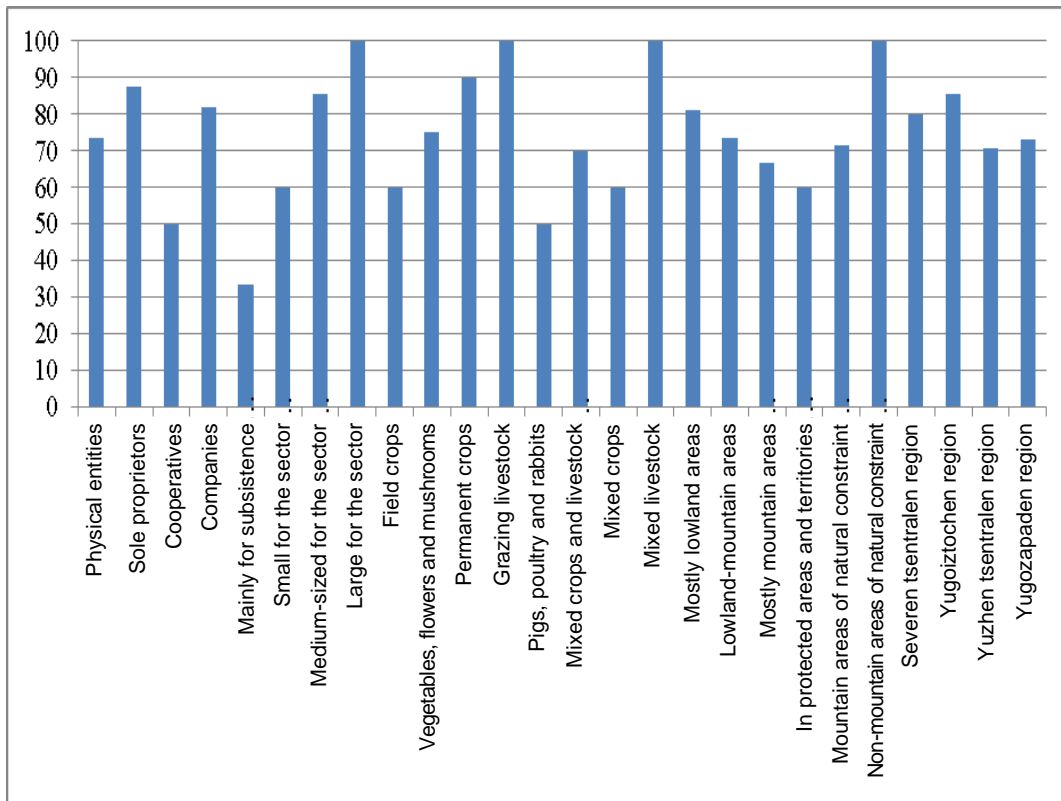


Figure 2. The positive impact of the resource and innovation potential of farms upon agrarian sustainability (as a percentage)
 Source: An interview conducted with farm managers, 2017.

Most farm-owners believe that ‘short-term profit and gains’ are an important factor which affects sustainable development favourably (Figure 1). They are convinced that the implementation of the different socio-economic and ecological objectives of agrarian sustainability requires long-term effort and therefore implement appropriate governance strategies. Only a small share of the respondents assesses focusing on short-term profit and gains as having a negative impact on agrarian sustainability and its aspects. Furthermore, one out of ten managers believes that implementing a ‘short-term’ strategy that focuses on short-term profit and gains only is a neutral factor which does not significantly contribute to agrarian sustainability or its socio-economic and ecological aspects.

A large share of all interviewed managers assess as positive to agrarian sustainability and all its aspects focusing the economic activity of their farms on ‘long-term profit and gains’ (Figure 1). Only a small number of farm-owners

consider a similar strategy to be negative to agrarian sustainability. At the same time, one out of every two farm-owners assesses as neutral in terms of agrarian sustainability and its aspects a strategy focusing on long-term profit and gains. A lot of farms have to focus their effort on current or short-term gains since they need to survive in a highly competitive environment. It is neither the priority, nor within the capacity of such farms, to make long-term investments to raise their economic viability, social responsibility or ecological expediency. Similar (short-term) private farm strategies fail to meet the (long-term) management requirements for sustainable development. This, in turn, renders the intervention of third parties (central and local authorities, non-governmental and international organizations, etc.) necessary in order to ensure agrarian sustainability.

The entities which largely implement strategies focusing on long-term profit and gains are mainly companies, sole proprietors and big farms (Figure 3). They have better financial, etc. opportunities to make long-term investments in agrarian sustainability and stronger incentives to develop and therefore assess positively focusing their effort on long-term benefits. On the other hand, a relatively small share of cooperatives, physical entities, small farms and self-subsistence farms implement long-term profit and gains strategies. This is largely due to the lack of funds, the effort to survive despite being less effective and competitive and the short time-period of the investments made in such farms because of the old age of farmers, the lack of a successor who is prepared to run the farm, the impossibility to trade non-listed farms or cooperative shares, low rents, the lack of a dividend to be paid on cooperative stocks and shares, etc.

Farms which focus their strategies on long-term profit and gains are mainly farms specializing in permanent crops, mixed livestock and grazing livestock. Their production requires long-term investment and in general takes longer periods of time to 'pay off'. On the other hand, long-term profit and gains are a less powerful factor when designing strategies for farms whose production is characterized by fast return on investment. None of the farms specializing in field crops or pigs, poultry and rabbits assesses positively a similar strategy, and only a quarter of the farms specializing in vegetables, flowers and mushrooms do so. Obviously, such strategies contribute little to improving the social and ecological aspects of agrarian sustainability.

A relatively high share of farm managers in areas with natural constraints assess positively a strategy focusing on long-term profit and gains. At the same time, only a third of the agricultural producers in lowland-mountain areas employ long-term strategies of agrarian sustainability. The share of farms which implement such strategies to govern their agrarian sustainability is approximately the same in the different geographical regions, the only exception being that of farms in the Yugozapaden (South-Western) region where farm-owners tend to assess more positively the favourable effects of long-term governance strategies on the different aspects of agrarian sustainability.

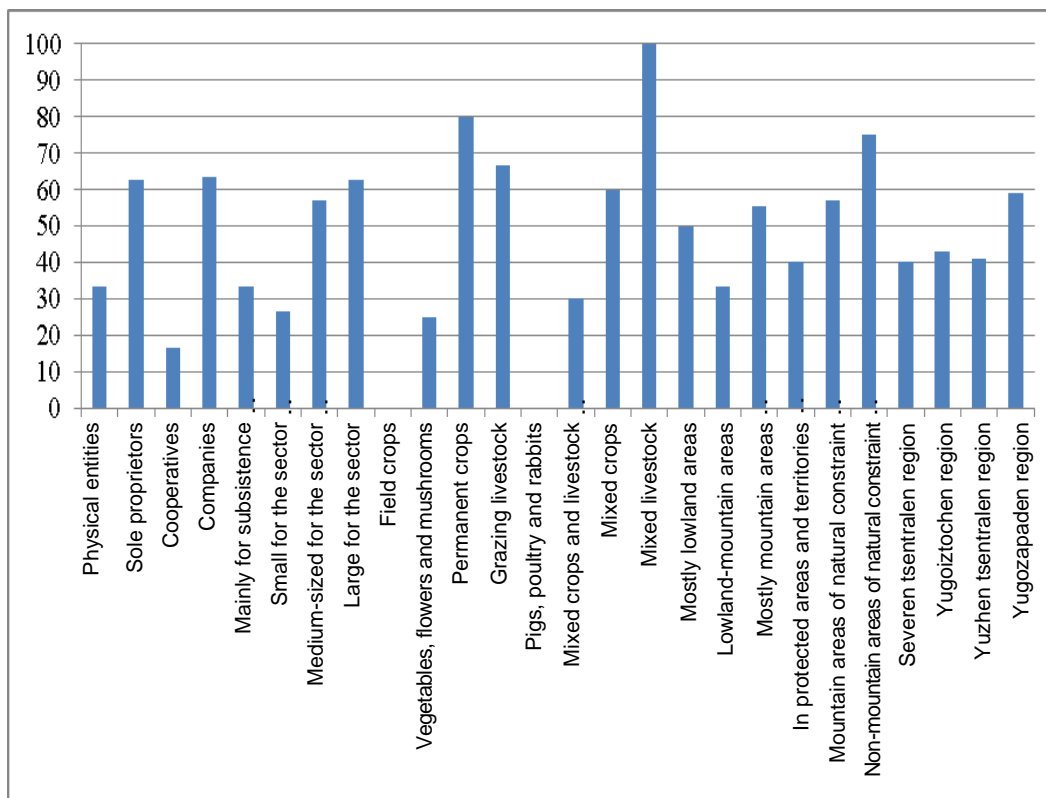


Figure 3. The positive impact of a strategy focusing on long-term profit and gains upon agrarian sustainability (as a percentage)

Source: An interview conducted with farm managers, 2017.

Our research also established that only one out of ten respondents considered 'the immediate gains for other persons and groups' to be a factor affecting positively their business (Figure 1). These goals are mainly important to agricultural cooperatives since the gains they make are crucial not only to their members and workers, but also to farmers' households and to rural communities (or so the respondents declared). According to the rest of the farms, though, the immediate gains for other persons or groups were of little significance and irrelevant to their strategies (i.e. neutral) to agrarian sustainability or its aspects.

30% of the respondents implement a strategy of 'internal diversification of farm activity' and assess it as positive to agrarian sustainability and its aspects (Figure 1). Many of the farms specialize in several products and/or services in order to use more efficiently available land and resources; to exploit more effectively their machine parks (crop rotation) and to protect the environment; to mitigate the risk of unpredictable weather and price fluctuations; to use available machinery (by providing mechanized farming services), etc. None of the farm-owners considers the internal diversification of farm activity to be negative to agrarian sustainability, yet most of them rely on a

more efficient strategy – specializing in one or several products. According to 70% of the managers we interviewed, the internal diversification of farm activity is neutral to agrarian sustainability and its aspects, whereas narrow specialization enables them to make economies of scale, to raise their productivity, to invest in specialized skills and machines, to improve their marketing (e.g. by selling larger volumes of a single product, by negotiating better prices, by earning a good reputation, by establishing relationships along the distribution chain, etc.). The respondents in our research gave numerous examples of ‘experimenting’ with diversified production in their pursuit of higher gains. Obviously, farm managers make their decision whether to continue the production of new products on the basis of achieved results.

Farms of different types, specializing in different products and in different geographical locations tend to take advantage of the internal diversification of farm activity to a different extent. Companies, cooperatives and physical entities employ a strategy of internal diversification of farm activity to the largest extent and assess its impact on agrarian sustainability as positive (Figure 4). In contrast, most sole proprietors follow a strategy of product specialization and only 12.5% of them believe that the internal diversification of farm activity has a positive impact on agrarian sustainability.

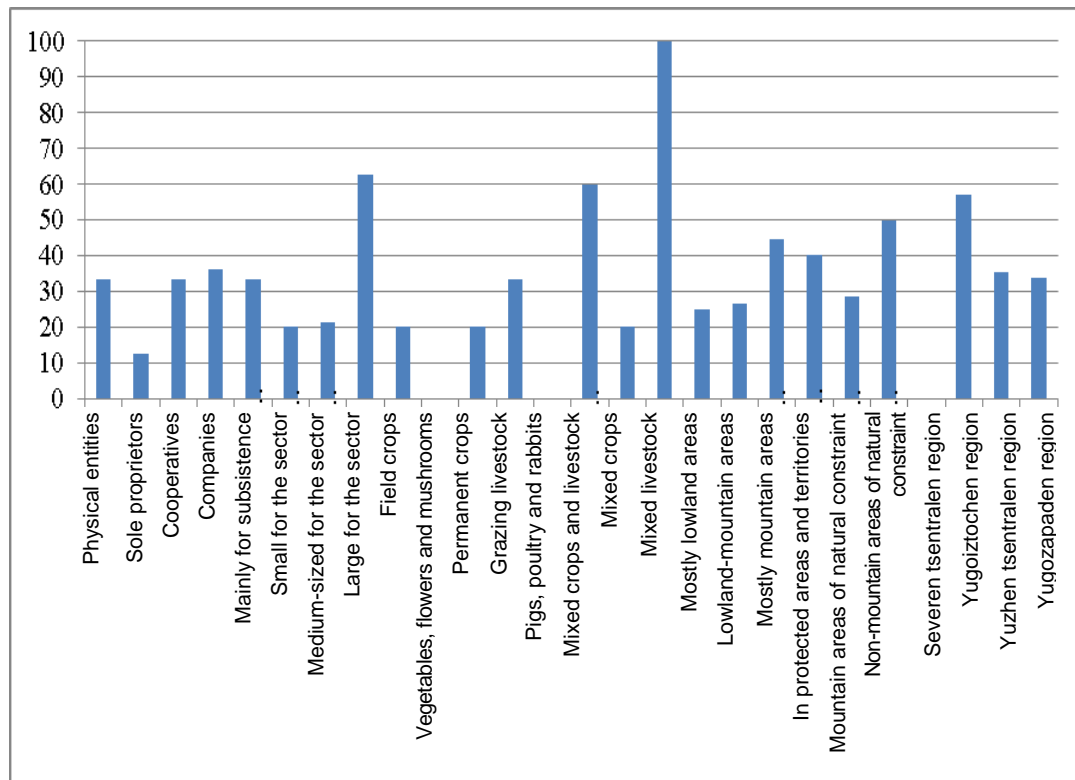


Figure 4. The positive impact of the internal diversification of farm activity upon agrarian sustainability (as a percentage)
 Source: An interview conducted with farm managers, 2017.

According to the findings of our survey, the strategy of internal diversification of farm activity is predominantly employed by large farms. These agricultural holdings have better opportunities to gain different benefits; stronger incentives to spread risk and the capacity to seek diversification in order to use available resources (land, labour, machines) more effectively and to implement environmentally friendly farming practices (crop rotation). On the other hand, smaller farms are less likely to assess positively strategies of internal diversification. One out of three self-subsistence farms diversify their activity internally to meet the demand for different agricultural products and to use available family resources more effectively.

As for companies with different product specialization, a strategy of internal diversification is mainly employed by farms specializing in mixed livestock and in mixed crops and livestock. At the same time, none of the farms with highly specialized production, such as vegetables, flowers and mushrooms, or pigs, poultry and rabbits implements internal diversification. The strategy is less frequently implemented by companies specializing in field or mixed crops. Farms in mountain areas, in non-mountain areas with natural constraints and in protected zones and territories are more likely to implement internal diversification of farm activity in order to improve agrarian sustainability. Most of the farms in lowlands and lowland-mountain areas, as well as in mountain areas with natural constraints do not consider internal diversification to be an effective strategy for raising agrarian sustainability. Instead, such farms focus on specializing in a certain product or products in order to raise the productivity of the limited resources available in those regions. The most diversified farms are those in the Yugoiztochen region, whereas none of the farms in the Severen tsentralen region assesses the strategy of internal diversification as positive to agrarian sustainability.

A substantial number of the interviewed farm managers follow a strategy of external diversification and assess its impact on agrarian sustainability positively (Figure 1). Many of the farms diversify by processing their products (wine, dairy products, etc.) or by selling them (through retail shops, as their own brands, etc.), while others also diversify in different activities (delivery of greenhouse equipment, providing hotel and transportation services, developing mountain tourism, etc.). The findings of our research also indicate that many of the individuals and households whose main business is different (not related to agriculture) or have free available resources (free time, unemployed family members and students, own land, etc.) 'diversify' in farming to raise their family income or to use those resources. Those are primarily younger entrepreneurs with a successful (or successfully developing) family business in other sectors of the economy (hotel services, gyms, mountain tourism, etc.) who also invest in agriculture (for example, in the production of snails or strawberries). Some of them also take part in the operation and/or the management of family farms (owned by their parents or relatives) to take advantage of different programmes for public support, e.g. programmes providing financial assistance to young farmers, etc.

Most farms specialize exclusively in agriculture, do not implement a diversification strategy and assess as neutral the impact of the factor. A small number of farm managers even believe that diversifying outside their farms affects agrarian sustainability and its economic, social and/or ecological aspects negatively. External diversification is most extensively employed by farms operating as companies of different types (Figure 5). Those are business-focused entities whose owners have plentiful available resources and constantly seek opportunities to make profit in the agrarian sector or in other sectors of the economy. On the other hand, a relatively small number of physical entities and cooperatives implement external diversification and assess its impact upon agrarian sustainability positively. Similarly, half of the owners of large farms approach external diversification as a strategy contributing to agrarian sustainability or any of its (mainly economic) aspects. External diversification is least implemented by medium-sized farms.

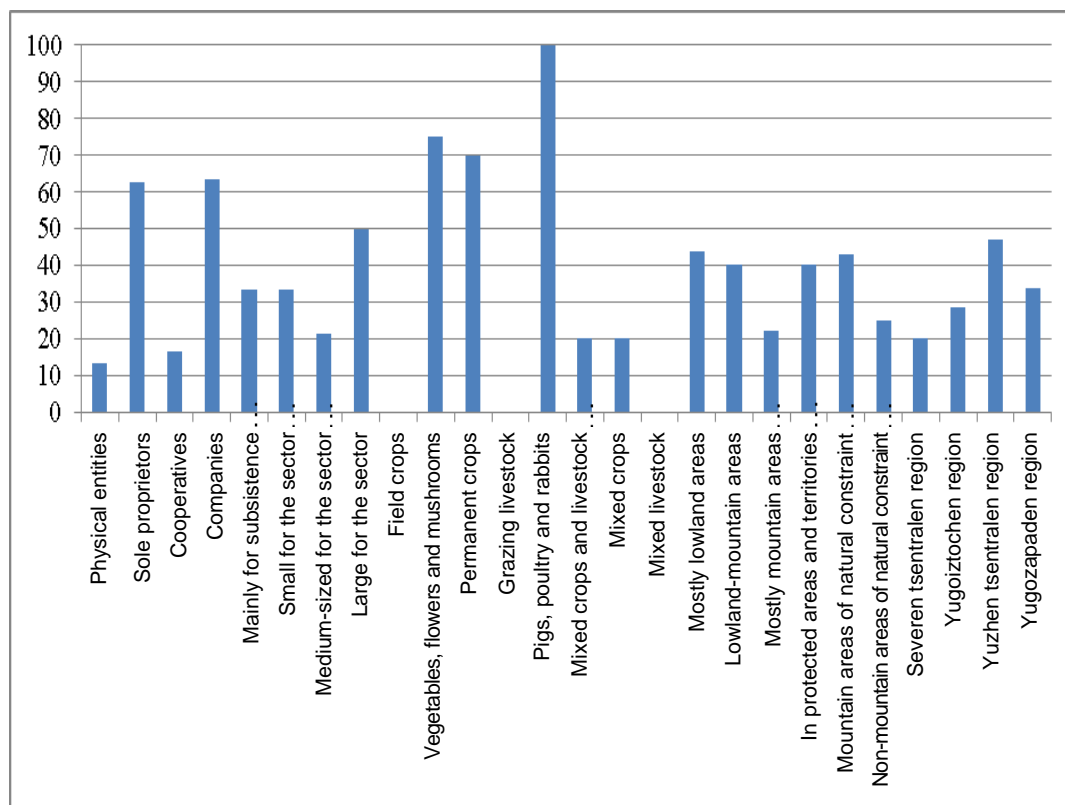


Figure 5. The positive impact of external diversification upon agrarian sustainability (as a percentage)

Source: An interview conducted with farm managers, 2017.

None of the farms specializing in field crops, grazing livestock or mixed livestock implements a strategy of external diversification or assesses its

impact upon agrarian sustainability as positive. At the same time, all farms specializing in pigs, poultry and rabbits and many of those specializing in vegetables, flowers and mushrooms and in permanent crops follow an external diversification strategy. Those are usually subsectors which face serious economic problems (farms producing pigs, vegetables, etc.) or farms whose business is closely related to the processing industry (viticulture, production of dairy products, etc.). Agricultural holdings situated in lowlands and lowland-mountain areas tend to implement external diversification to a larger extent than those in the mountain areas. Nevertheless, the number of farms in mountain areas with natural constraints and in protected areas and territories that implement a strategy of external diversification is larger than that of farms in non-mountain areas with natural constraints. The largest number of respondents who assess external diversification positively are farm-owners in the Yuzhen tsentralen region, whereas such diversification is least implemented by farm-owners in the Severen tsentralen region. This is due to the opportunities for diversifying the business of a farm (consumer demand, available resources, entrepreneurial skills, free time, etc.) as well as the needs and perceptions of the agricultural producers in those regions.

A significant number of respondents believe that 'price levels and dynamics' have a positive impact (i.e. governs, coordinates, encourages) their activity and agrarian sustainability (Figure 1). Market mechanisms are assessed positively by different types of farms and producers in different subsectors and regions that make the most of their comparative advantages and high competitiveness and thus benefit from price levels and dynamics. At the same time, many of the farm owners are confident that price levels and dynamics have no impact on agrarian sustainability or any of its aspects. Some owners of small farms or farms which are far from big towns and cities do not 'feel' any impact of market prices or their dynamics (due to the less developed markets or the lack of markets there). Other farm managers believe that agrarian sustainability requires the implementation of a long-term strategy, rather than a management strategy based on the fluctuations of ('current') market prices. What is more, some of the farm 'products' share the attributes of public goods (e.g. preserving the traditions, the environment, the biodiversity, etc.) and therefore could not relate to any markets or prices. For a large share of respondents, price levels and dynamics affect agrarian sustainability and its aspects negatively at this stage. Most managers emphasize the negative impact of the market as a dominant mechanism for supporting (and accomplishing) the economic, social and ecological goals of agrarian sustainability. According to them, market prices are too low to contribute to efficient (profitable) reproduction or sustainable agriculture. They also point out that price fluctuations are sharp and hard to predict, thus making it difficult to govern agrarian sustainability which requires continuous long-term investments in highly-productive, socially significant and environmentally protecting production. Furthermore, the lack of any prices or markets for some socially significant (public, semi-public, collective, private-public, etc.) farm products

and services (such as preserving, protecting and restoring natural resources and eco-systems) does not provide any incentives for focusing on those aspects.

The negative impact of price levels and dynamics upon agrarian sustainability is most obvious to sole proprietors and physical entities; to small and medium-sized farms; to farms specializing in vegetables, flowers and mushrooms, in grazing livestock and mixed livestock; to farms in mountain areas and in protected zones and territories, as well as farms in the Severen tsentralen region of the country (Figure 6). The negative impact of price levels and dynamics is least felt by cooperatives and companies; by large and self-subsistence farms; by farms specializing in the production of field crops (one out of five) and in permanent crops; by farms in lowland areas and non-mountain areas with natural constraints, as well as farms in the Yuzhen tsentralen region of the country.

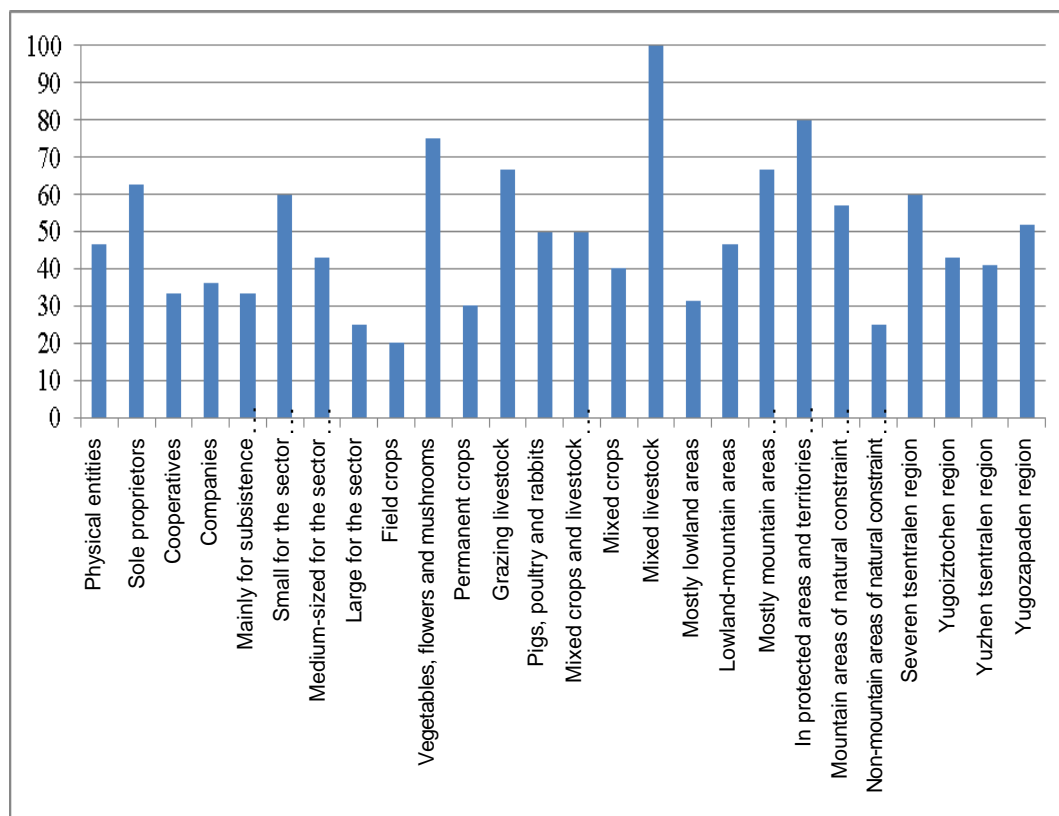


Figure 6. The negative impact of price level and dynamics upon agrarian sustainability (as a percentage)

Source: An interview conducted with farm managers, 2017.

In order to benefit fully from market opportunities and to protect their business from market risks (low prices, price fluctuations, contract asymmetry,

opportunism, delayed payments, etc.) agricultural producers employ and/or design various effective modes of selling their produce. 'Direct retail of goods and services' is employed as an effective form of marketing by a third of all interviewed farm managers (Figure 1). These are farms of different type, size, product specialization and location for which direct sales are highly profitable due to the better 'retail' prices; the low costs of direct marketing (at a farm or local market level); the low risk of fraud, etc.. These are usually smaller farms with low output and sales volumes; regular customers in the region and/or in a favourable location (close to a motorway, a resort, a large consumer centre, etc.); producing seasonal or high-quality products that are in great demand (fresh fruit and vegetables, lamb, bio products, etc.). In some cases, their agricultural produce is sold in a 'package' with another service, farmers thus making profit from the retail marketing they employ for the whole package – for example, customers may pick their own products; farmers may supply their own restaurant with fresh or processed products from their farms, etc. Many large, vertically integrated agricultural producers (such as vine-growing farms that have their own vineyards and cellars, dairies, meat-packing companies which process the meat they produce, etc.) also run their own retail stores in the region and/or in nearby big towns. None of the interviewed farm owners assesses the impact of this mode of marketing on agrarian sustainability negatively. At the same time, the direct retail of goods and services is considered to have no significant impact upon the governance of agrarian sustainability or its aspects by most Bulgarian farms.

The majority of farms employ other (more effective) modes of selling their produce. Most of the farms whose managers we interviewed use 'direct wholesale' to sell their produce and assess its impact on agrarian sustainability positively (Figure 1). These are larger farms with higher volumes of output and sufficient level of standardization. Sales are usually negotiated and made straight at the farm (or field), the buyers usually being large processing companies, retail chains, resellers, exporters, etc. A significant share of all farms in the country do not engage in direct wholesale and do not believe that it is essential to agrarian sustainability or any of its aspects. On the other hand, only a small number of agricultural producers consider direct wholesale to be inefficient, mainly to the economic sustainability of agriculture, due to lower prices and profit margins.

'Sales on market places and commodity markets' are not a popular mode of selling the products of Bulgarian farms. Most farm managers do not assess this mode as being important to agrarian sustainability or its major aspects. A small number of farm owners are confident that the opportunity to trade on market places and commodity markets is a factor which affects agrarian sustainability positively, mainly in terms of economic viability, since 'identifying' real (competitive) market prices by selling on market places and commodity markets is a key factor to maximizing marketing results.

'Sale contracts for goods and services' are another major mode of marketing agricultural products. More than half of the respondents frequently

use sale contracts and assess their impact on agrarian sustainability positively. It is a common practice to deal with several buyers in order to ensure successful sales and to maximize revenues. Purchase, sale and marketing contracts are an essential tool for planning selling prices and guaranteeing the sale of agricultural produce. This mode is employed by commercial farms of different types, with different product specialization and in different locations, the most common type of agreements being those signed for a year or for a particular crop. Short-term contracts are mainly preferred by larger buyers (processing companies, wholesale and retail chains, resellers, exporters, etc.) or by the farmers themselves. In some cases, farmers avoid long-term contractual arrangements so that they could deal with different buyers during the following year in case they are dissatisfied with prices, payments are delayed, or no additional benefits (e.g. loans, related services, etc.) can be gained; in case they change the structure of their business; new partners and/or more efficient distribution channels appear, etc. Only a small number of farms believe that sale contracts for goods and services have a negative impact on agrarian sustainability. This is primarily the case when farmers have to deal with a small number of large buyers (i.e. a situation of quasi- or full monopoly) who set low prices and unacceptable conditions and/or offer no compensation to farmers for breach of their agreements. Small farmers often find it difficult to meet buyers' demands in terms of volume, terms or frequency of deliveries, products quality, crops variety, etc. Some contracts also provide that buyers do not owe any payment for the products they cannot sell but shall return them to the farmers (e.g. in the case of fresh fruit and vegetables), which further diminishes farmers' profit margins. A large number of Bulgarian farms do not use contracts to sell their produce and believe that such arrangements have no major impact on agrarian sustainability or its aspects.

Most of the farms in our research do not engage in any 'barter of products and services' and do not believe that this mode of governance can produce a major impact on agrarian sustainability (Figure 1). Similarly, none of the farm-owners assesses such barter as a factor which affects agrarian sustainability or its aspects negatively. A small number of respondents believe that the barter of products and services has a positive impact on agrarian sustainability. Those are mainly small farms in less populated and remote areas. In a situation of imperfect markets or lack of markets for particular products and services, low incomes generated by farms and rural households (i.e. lack of funds), no alternative employment available or the farm workers being of age, monopolies on the purchase of products and services, etc., some agricultural producers find it more beneficial to exchange, rather than sell some of their products and services, thus improving the economic, social and/or ecological sustainability of agriculture in the region.

Most interviewed farm managers do not engage in the 'provision of resources, products, services and activities for free' and do not approach this practice as significant to agrarian sustainability (Figure 1). At the same time, none of the respondents assesses as negative the provision of resources,

products, services and activities to other agents for free. A relatively small number of farms assess the provision of resources, products, services and activities for free as positive to agrarian sustainability. Some smaller farms use the free services provided by other agents and organizations (farmers, cooperatives, non-governmental and international organizations, government and regional agencies, etc.). This type of support contributes to improving the efficiency of 'beneficiaries' and raises the agrarian sustainability in the region or the subsector. In some cases, however, the products and/or services provided by agrarian (or other) agents 'for free' are delivered in exchange for goods and/or services which they expect to obtain for free in the future. Some farmers engage in informal agreements for leasing 'for free' essential resources such as land, buildings, etc. since this is the only available option to maintain in a good condition the land and assets of owners who have either left the region (the country) or are too old. In some cases, arable land is 'leased for free' to farmers who agree not to benefit from government payments per area. Despite being an illegitimate practice, the latter is beneficial to both land owners and farmers. What is more, it contributes to maintaining agrarian sustainability and does not infringe the interests of taxpayers.

Three-quarters of interviewed farm managers claim that their farms do not use any special 'contracts for the supply of resources' and assess the mode as irrelevant to agrarian sustainability (Figure 1). They also state that the markets where basic raw materials, materials and resources for the agriculture are provided 'operate' efficiently (strong competition, multiple suppliers, etc.) and therefore they do not need any special modes for governing (guaranteeing) the supplies for their farms. Besides, farms are not major users of 'external' resources and therefore do not need to design special (contractual) modes to manage their regular supplies, but use the free market instead. In addition, farmers and suppliers often enter into long-term partnerships, the deals between them occurring frequently, which renders any opportunism irrelevant as a supplier with a bad reputation will easily be replaced with a new one. Only a small part of farm-managers assess negatively the practice of signing contracts for the supply of resources due to unfavourable prices or terms of use (when there are only one or very few suppliers). A significant number of farm owners believe that the practice of signing contracts for the supply of resources is a factor with a positive impact on agrarian sustainability. Contracts are preferred for the supply of large volumes or frequently purchased resources which farms needs. Special contracts make it possible to set more detailed conditions of exchange or supply in order to meet the needs of a particular farm, to guarantee stable relationships between partners and to legally protect their rights through the formal judicial system. A number of major producers use such contracts for the supply of special varieties (of grapes, wheat, etc.) from abroad. In some cases, however, the operation of quasi- or fully monopolistic markets (of fodder, electricity, water, major raw materials, etc.) inflicts serious losses to farmers even when a contract for the supply of these products has

been signed. In such situations, suppliers can neither be replaced, nor effectively forced to pay the compensations they owe to farmers.

The 'purchase of resources and services on the free market' is considered to have a positive impact upon agrarian sustainability and is a practice implemented by one fifth of the respondents (Figure1). Those are different types of farms to which the market mode of managing necessary resources and services is most effective. At the same time, some of the farms consider the current purchase of resources and services on the free market to be a factor affecting agrarian sustainability negatively. This is predominantly the case when there are only one or very few suppliers on a particular market, in a particular subsector and/or region of the country. Most of the managers assess the purchase of resources and services on the free market as neutral to agrarian sustainability. This implies well-developed competitive markets where standardized products are supplied without particular benefits gained or damages suffered by farmers.

A large number of interviewed farm-managers believe that the practice of 'renting (or leasing) necessary resources' has a positive impact on agrarian sustainability and its major aspects (Figure 1). Most large farms in the country are also lessees of large plots of land leased from numerous landholders of small plots. This type of leasing arrangement has become the main tool for farm expansion over the last decades. Lease agreements are long-term ones when investments are made in permanent crops, long-term land improvements, the construction of buildings and facilities, etc. Lease of land is in most cases an additional mode of managing land supply since large investors usually prefer to acquire ownership rights, especially when they need to make specific investments in cultivating the land (e.g. planting vineyards, orchards, buildings and facilities, etc.) or in related productions (wine production, dairy processing, etc.). In many cases, however, short-term (one-year) lease contracts are signed when the idea is to experiment with new products, with greenhouse production or monocultures which require regular change of the plots of land, or when landowners are reluctant to sign long-term agreements or to join cooperatives (since high demand for land allows land owners to easily change leaseholders). At the same time, more than half of the farms in the country do not use loans or lease contracts to use land or other resources and do not consider this governance mode to be essential to agrarian sustainability or any of its aspects. Only a small number of farmers are confident that the practice of borrowing and leasing resources has a negative impact on agrarian sustainability, mainly in terms of its ecological or social aspects. The excessive use of large plots of land for monocultures (i.e. the lack of crop rotation) over the last years has had a negative impact on the quality of soil (soil depletion and erosion), land surface and biodiversity. Furthermore, having large plots of land owned or cultivated by a small number of large farms with modern machines results in the failure of smaller family farms and in fewer employment opportunities, which deteriorates the social sustainability of the agrarian sector.

Cooperatives and large and medium-sized farms (Figure 7) tend to assess most positively the impact of borrowing and leasing resources upon agrarian sustainability. Those are also the farms which most frequently employ this mode of governance (lease of land) to raise the sustainability of their business. Lease of land and borrowing of resources are considered to be beneficial mainly by farms specializing in field crops, in grazing livestock and mixed livestock. Lease of land and borrowing of resources is also crucial to farms in lowlands and in lowland-mountain areas, farms in protected zones and territories, as well as those in the Yugoiztochen region. This specific mode of expanding farms and governing agrarian sustainability is assessed as less important or neutral by most farms specializing in other products or located in other regions of the country.

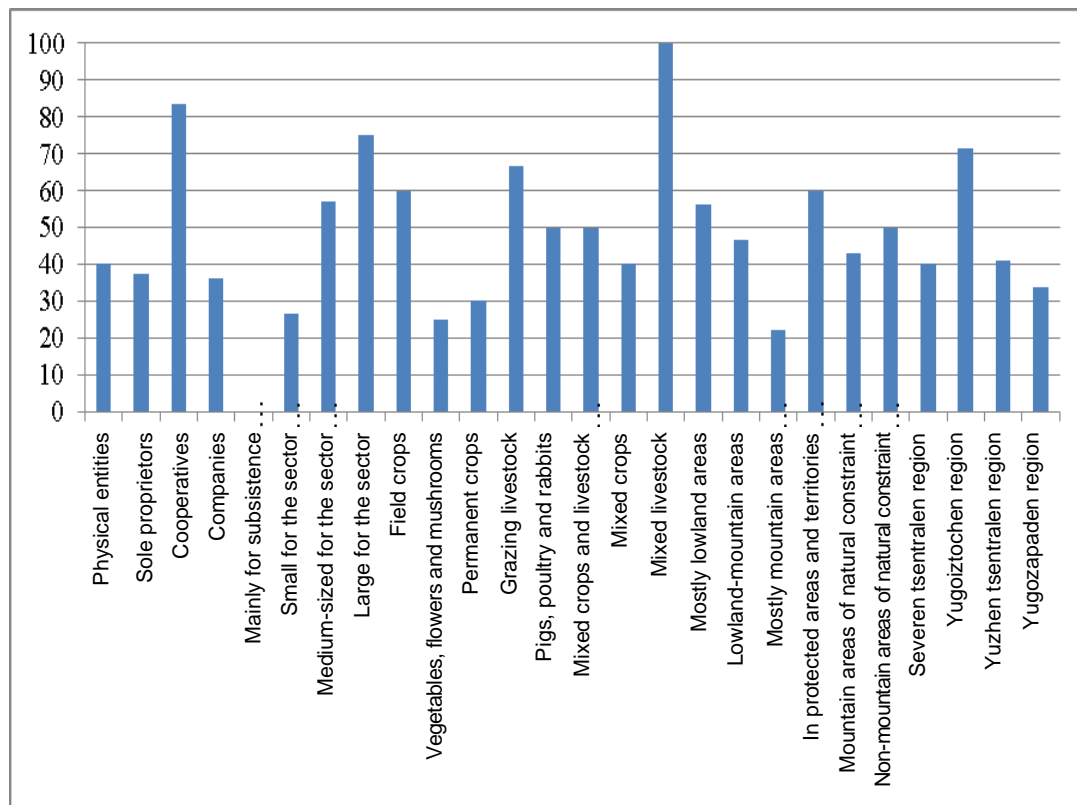


Figure 7. The positive impact of land-lease and borrowing resources upon agrarian sustainability (as a percentage)

Source: An interview conducted with farm managers, 2017.

Most farm managers do not enter into 'tying sale contracts in exchange for services provided by the buyer' and do not consider this mode to be essential to agrarian sustainability or any of its aspects (Figure 1). At the same time, a substantial number of respondents assess such contracts positively.

Those are usually small farms in different subsectors and regions for which the additional services provided by buyers (interest-free loans, supplies, laboratory tests, cooling baths, transportation, etc.) are essential. These farms do not have the potential to organize similar activities or (access to) funds to obtain the services they need from the market or from other suppliers. The package of services which buyers provide 'for free' in exchange for buying the produce of these farms usually includes pre-financing; lower interests on loans; transportation of the products from the farm; agronomic and veterinary consultancy; quality and safety laboratory tests; staff training; market information; storage and cooling facilities; assistance in finding suppliers or supply of essential raw materials and resources (medicines, fodder, etc.). Only a small share of interviewed managers assesses tying sale contracts in exchange for services provided by buyers as negative to agrarian sustainability.

Some of the farms implement a practice which is similar to tied marketing. They sign 'tying supply contracts for services provided by the supplier' and assess them as positive to agrarian sustainability (Figure 1). These are usually farms of different types, in different subsectors and regions for which the additional services provided 'in package' with the supply are essential. In most cases, the package of services includes loan extensions; transportation; consultancy; mediation in finding buyers; purchasing the produce of the farm, etc. Most farms do not enter into such agreements for tied supplies and do not consider them relevant to agrarian sustainability. None of the interviewed farm managers considers this mode of governance to be negative to agrarian sustainability or any of its aspects.

According to the findings of our research, most farms do not join any type of cooperatives (for example, for joint supply, marketing, obtaining loans, logistics, lobbying, etc.) and do not consider membership in cooperatives significant to agrarian sustainability or its aspects (Figure 1). Most farms do not find membership in cooperatives effective and believe that obtained benefits are outweighed by membership costs. The number of traditional cooperatives has declined significantly over the last years due to their low efficiency, poor management, and the loss of comparative advantages to other types of organising the agricultural business (private farms, contracts, markets, companies, etc.). Many cooperatives have begun to function as market-oriented corporations which operate in the 'private' interest of their managers. Only few of them have taken the effort to focus their activity on better meeting the demands of their members or rural communities and on executing collective projects for socio-economic development, dealing with environmental issues, risk-spreading, lobbying, etc. As a result, the number of cooperatives and their members and the size of cooperative farms have declined dramatically over the last years. Many of the farm-owners therefore assess as neutral the impact which cooperatives have on accomplishing the goals of socio-economic or ecological sustainability in the sector. What is more, a small number of farm-managers believe that joining a cooperative farm at this stage will affect the governance of agrarian sustainability negatively. Very few farms are members

of a cooperative and assess their membership as positive to agrarian sustainability or any of its aspects. Those are primarily small family farms owned by older people. Being part of a cooperative ensures some employment to those farmers as well as inexpensive and secure supply with major products and services (cultivating their land, supplying their household with food and their farms with fodder, providing agricultural machinery services, etc.). There are, however, examples of successful modern cooperatives which meet the demands of their members effectively by providing collective marketing, processing, negotiation, public support lobbying, etc. Such cooperatives usually have a small number of members who are mainly small farmers. This prevents them from fully developing their potential as cooperatives even in situations where collective governance is essential (for example, in collective negotiation or marketing).

Most respondents in our research share the opinion that 'participation in joint activities with other farmers or non-farmers' has no significant impact on agrarian sustainability or any of its aspects (Figure 1). Yet, a substantial number of farmers consider their participation in joint activities with other farmers or non-farmers to be positive to agrarian sustainability or some of its aspects. Over the last years, various formal and informal initiatives of farmers as well as non-farmers have gained popularity. Their activity focuses on the promotion of innovation and quality, on the revival of rural areas and traditional productions, on protecting the environment, on observing 'the codes of behaviour', protecting intellectual agrarian rights (traditional breeds, crop varieties, special products, products of special origin or registered trademarks, etc.).

Such collective modes are initiated by enterprising farmers, professional organizations, related industries (processing, commerce), non-governmental and civil society organizations, etc. They are increasingly gaining the support of younger farmers, of professional and non-governmental organizations, of central and local authorities and other stakeholders. The high potential of such 'collective' activities has not been fully exploited yet and they have therefore not produced their positive impact upon agrarian sustainability. There are also a few examples of successful joint initiatives for using natural resources sustainably (land, water, services provided by ecosystems, etc.) when this is of mutual interest and benefit.

According to the findings of our research, only a modest share of farms take part in some mode of 'integration with a supplier' and assess this as positive to agrarian sustainability (Figure 1). One of the interviewed farmers, for example, uses the veterinary services provided by his retired parents. Those services are crucial to the successful operation of his farm and therefore their provision is integrated internally within the family farm. Most interviewed managers do not consider integration with a supplier essential to improving the socio-economic and ecological aspects of agrarian sustainability at this stage of development of their farms.

One out of four managers responds that they employ some mode of 'integration with a buyer' and that this mode of governance is favourable to agrarian sustainability (Figure 1). Partial or full integration with a buyer (an entity processing their produce, a retailer, an exporter, etc.) enables agents to coordinate and control transactions between partners, to guarantee sales, to avoid the risk of price fluctuations or opportunistic behaviour by providing strong incentives for joint investment, cooperation and prompt 'internal' resolution of arising conflicts. In most cases, such integration is due to the strong correlation between the assets (processing capacity; close location; supply volumes and periods; quality specifications; variety, origin and certification of products, etc.) owned by different agents along the supply chain. This requires the design of a special mode of governance with mechanisms for coordinating and encouraging the cooperation between mutually dependent agents and dealing with any potential conflicts.

In some cases, the integration with a buyer is partial and farms remain independent, while vertical relations are managed through long-term supply contracts, supplies tied to loan extension or the provision of services, etc. (as it is the case with the sale of milk, fresh fruit and vegetables, etc.). In other cases, there is full integration and the exercised control is based on joint ownership or an economic mode of governance (company, holding company), for example in the production of grapes for industrial wine-making. In this case, farms either totally lose their autonomy and become a unit of a larger economic entity or are registered as independent organizations. The latter is done to minimize the risk of a simultaneous bankruptcy of all units; to reduce taxes; to gain access to larger public funding and to comply with the formal criteria set in different programmes for financial support (for example, the size of a farm; the maximum volume of provided subsidies, the number of projects a farm can apply with, etc.); to benefit from the established reputation of brands and trademarks and/or to keep the 'competition' among the separate units of an integrated entity. Our research also identified a 'new' trend in the development of management structures in some subsectors of agriculture. A large share of the farms specializing in vine-growing and wine-production are integrating through joint ownership in major financial and economic conglomerates (holding companies, corporate groups, etc.) in the agrarian sector and other sectors which may or may not be related to agriculture.

Three quarters of Bulgarian farms are not vertically integrated with other agents and do not consider this mode to be essential to agrarian sustainability or any of its aspects. In most cases, the market is highly competitive (i.e. there are a lot of suppliers and a lot of buyers), products are highly standardized and produced in large quantities, and the dependence between the assets of partners along the supply chain is weak. In other cases, integration with processing or commercial entities requires farmers to guarantee that they will produce certain quantities which may be too high for them. Relationships between suppliers and buyers are then governed more efficiently through market modes and market prices (competition); standard sale contracts; and/or established personal relationships (confidence in partners, gentlemen agreements, sanction mechanisms, etc.) between agents.

Vertical integration with buyers of agricultural produce is preferred by companies and sole proprietors that assess it as positive to agrarian sustainability. It is employed less frequently by physical entities and not employed at all by any of the cooperatives included in our research (Figure 8).

A number of factors account for the lack of vertical integration between cooperatives, such as the 'high' specialization of certain 'mass' products (field crops and industrial crops) which do not require vertical integration; the availability of their own processing and/or marketing channels for distribution; their stronger negotiating power, etc. Vertical integration tends to be more frequent between larger farms; it is less popular with medium-sized farms, and least common among small farms. There is virtually no vertical integration between self-subsistence farms and buyers of agricultural produce. The need of vertical integration is more obvious for larger volumes of agricultural output, since they entail higher market and negotiation risks. At the same time, large buyers (processing companies, retail chains, etc.) prefer to deal with larger farmers so as to ensure the volumes of produce they need and to reduce their transaction costs.

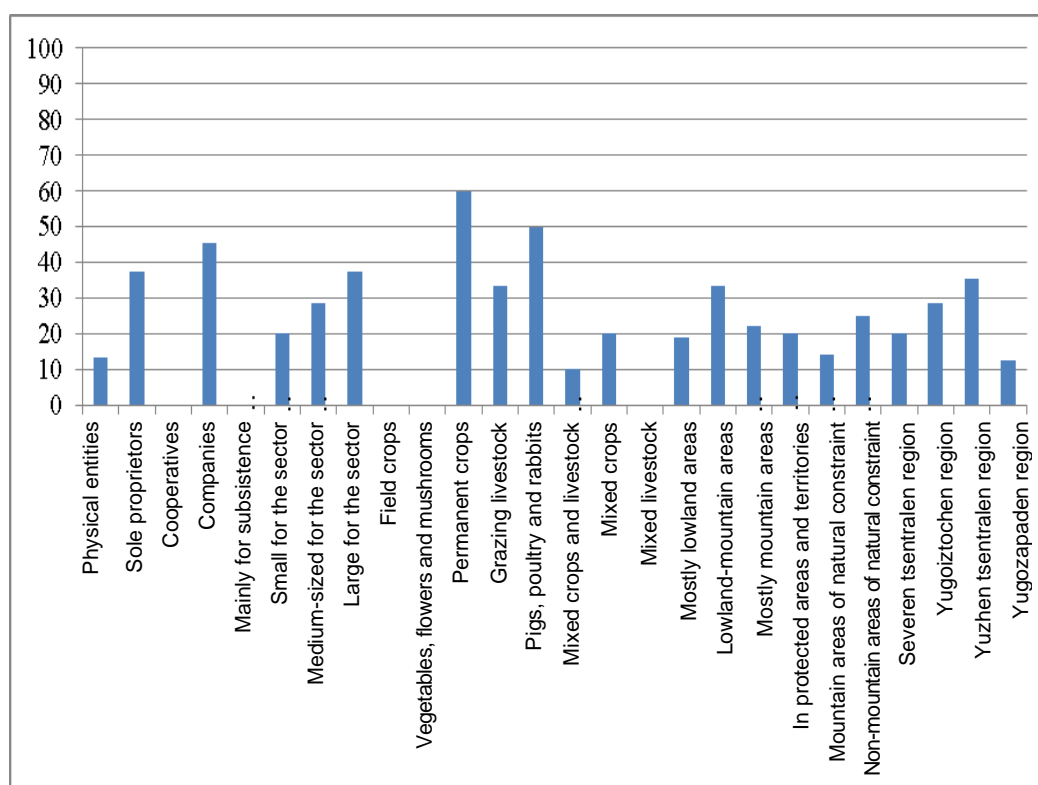


Figure 8. The positive impact of the integration with buyers of farm produce upon agrarian sustainability (as a percentage)
 Source: An interview conducted with farm managers, 2017.

The highest vertical integration is that of farms specializing in permanent crops, farms producing wine grapes, pigs, poultry and rabbits and grazing livestock, and milk-processing farms in particular. In contrast, none of the farms specializing in field crops, vegetables, flowers and mushrooms or mixed livestock is engaged in vertical integration or considers it favorable to agrarian sustainability or any of its aspects. A relatively small number of farms with mixed crops and livestock and mixed crops integrate with buyers and assess such integration as essential to agrarian sustainability. Farms in different ecological and geographical regions of the country tend to integrate vertically with buyers to a different extent. The highest share of farms assessing vertical integration with buyers positively is that of farms in lowland-mountain regions (one out of three) and in the Yuzhen tsentralen region of the country. The lowest number of farms integrated with the buyers of their produce is that of farms in mountain areas with natural constraints and in the Yugozapaden region.

None of the managers we interviewed assesses 'initiatives and pressure from suppliers' as a factor affecting agrarian sustainability or any of its aspects positively or negatively (Figure 1). At the same time, according to a large number of farm managers, 'initiatives and pressure from buyers' of their produce (processing entities, merchants, exporters, end users) is a major factor which has a positive impact on agrarian sustainability in all its aspects. The operation of commercial farms of different types and in different locations is governed by such initiatives and pressure. Over the last years, there have been a number of initiatives from retail chains, processing companies, etc. to promote and advertise Bulgarian farms ('Made in Bulgaria' initiatives), the social and ecological contribution of agriculture ('green' and 'eco' initiatives, corporate 'social' responsibility, sustainability campaigns, bio production, etc.). These initiatives are designed to offer support, to provide incentives and/or to exercise pressure on farmers to modernize their businesses and to improve the different aspects of agrarian sustainability. Only a small number of farms assess the impact of various initiatives and pressure from buyers as negative to agrarian sustainability. Such external initiatives and pressure for advancements often result in higher costs, lower competitiveness and fewer markets for farms. At the same time, most Bulgarian farmers believe that initiatives and pressure from buyers have no significant impact on agrarian sustainability. At this stage of their development, the activity of most farms is predominantly governed by other significant mechanisms and factors (fluctuations of market prices, innovations, initiatives of entrepreneurs, resource potential, etc.), rather than by specific initiatives and pressure from the buyers of agricultural produce.

A relatively small share of interviewed farm managers assess investors' initiatives and pressure as a major factor for improving agrarian sustainability and its aspects (Figure 1). This type of (external, hybrid) governance is common with larger and more strongly (vertically) integrated farms, in which external investors are largely involved. The integration of a vineyard complex with a wine-producing entity into a holding company, for example, means that

both entities lose their (management, financial, price-setting, etc.) 'independence' and their relationships with other (internal and external) agents are governed by the mutual benefits of the conglomerate (profit centre). Most farmers, however, consider investors' initiatives and pressure to be irrelevant to agrarian sustainability since (in most cases) those farms do not use external sources of funding or their external investors do not take part in the management of the farms. There are still relatively few farms in the country with fractional or predominant ownership of external investors. Most farms are located on land owned by individuals or families or are part of small groups or cooperatives. Agricultural corporations (with open or closed membership) are less popular due to the highly uncertain nature of production and the significant costs required for exercising external control upon the activity of farm managers and farmers. A small number of farm managers assess investors' initiatives and pressure as negative to agrarian sustainability. External agents (investors) frequently lack the specific competence and/or knowledge required for agriculture and their 'active' involvement in the governance of farms is considered to affect agrarian sustainability and its aspects negatively.

Half of the respondents are confident that initiatives and pressure from interest groups and the general public do not have a substantial impact on agrarian sustainability or any of its aspects (Figure 1). One out of two farm managers find other market, private and public mechanisms for governing agrarian sustainability to be more important than the initiatives and pressure from interest groups, local communities or society in general. Only a relatively small share of farms assess various economic, social, ecological, etc. initiatives from interest groups and the general public and/or the pressure they exercise on agricultural producers as positive to agrarian sustainability or any of its aspects. According to a large number of respondents, the nature of initiatives and the pressure exercised by interest groups and society affects agrarian sustainability and its aspects negatively. In some cases, the economic and ecological interests of influential groups or local communities are in conflict with sustainable agrarian development and favour the development of other sectors and activities, such as tourism, property development, industry, nature parks, etc. Farm managers also report about cases when powerful agents or groups operating in and outside the agrarian sector seek to acquire substantial agrarian resources located in certain ecological or geographical regions. Small farms are under continuous pressure to transform their ownership and/or management of resources although this is neither their will, nor in their best interest. This factor affects mainly physical entities and small farms (Figure 9). A relatively small number of cooperatives and medium-sized farms assess the initiatives and pressure from interest groups and the general public as negative to agrarian sustainability. This 'external' factor is least frequently assessed as negative by companies. None of the physical entities, large farms or farms for self-subsistence considers the factor as negative to agrarian sustainability.

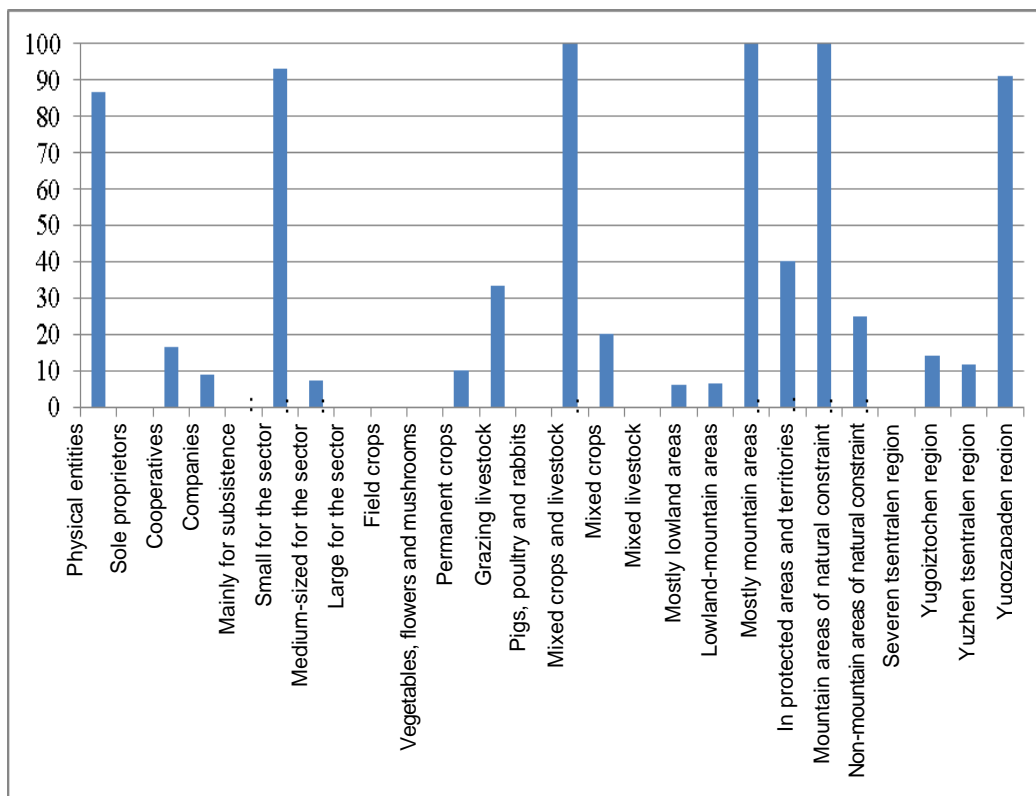


Figure 9. The negative impact of the initiatives of and the pressure from interest groups and the general public upon agrarian sustainability (as a percentage)

Source: An interview conducted with farm managers, 2017.

In general, companies and large farms are equipped with more powerful mechanisms for adapting to external social pressure and/or for withstanding the unfavourable pressure exercised by certain interest groups or the general public. There are examples of companies and large farms that represent 'special' interest groups and seek to acquire the resources, activities or markets of other categories of agricultural producers. On the other hand, in most cases semi-market farms are not subject to external pressure due to their small size and the insignificant resources they possess. The negative impact which external initiatives and pressure from interest groups and the general public have upon the agrarian sustainability in different agrarian subsectors and in different areas in the country largely differs. All farms specializing in mixed crops and livestock and one out of three farms specializing in grazing livestock suffer the adverse impact of the factor. In contrast, none of the farms specializing in field crops, vegetables, flowers and mushrooms, or poultry and rabbits assesses as negative to agrarian sustainability the initiatives and pressure from interest groups and the general public. The latter have an adverse impact on all farms in mostly mountain areas and mountain areas with natural constraints, as well as on a large number of farms with land in protected areas and territories. At

the same time, most farms in lowlands and in lowland-mountain areas assess as favourable or neutral to agrarian sustainability the influence of the initiatives and pressure from interest groups and the general public. Those are a negative factor affecting the vast majority of farms in the Yugoiztochen and the Yuzhen tsentralen region and none of the farms in the Severen tsentralen region.

Most interviewed managers assess as neutral to agrarian sustainability partnerships with a business entity, since they are either not involved in similar partnerships or find them irrelevant to agrarian sustainability. One out of ten farms, however, has entered a partnership arrangement with a business entity and assesses such a (profit-oriented) partnership as positive to agrarian sustainability and one of its aspects. Similarly, most managers of farms respond that the support from a non-governmental organisation has no significant impact on agrarian sustainability as they do not benefit from such support or its contribution to agrarian sustainability is insignificant. What is more, a small number of farm managers even believe that the 'support' provided by an NGO has a negative impact on sustainable agrarian development. Such opinions are due either to the poor performance of existing NGOs or to the differences between their objectives and those of agrarian sustainability. Nevertheless, a small share of farms cooperate effectively with some NGO(s) and assess such (non-profit oriented) partnerships as favourable to agrarian sustainability or some of its aspects.

Government payments per area are a major instrument of the Common Agricultural Policy for providing income support to farmers. Most of the interviewed farm managers believe that those subsidies have a positive impact on agrarian sustainability and all its aspects (Figure 1). This mode of government support aims at increasing the economic and social sustainability of the sector and rural areas and at compensating for the significant disproportions with the other sectors of the economy. Furthermore, farmers and land owners who receive these subsidies are obliged to maintain their farm land in good agricultural condition, which improves the ecological aspects of agrarian sustainability as well. Many of the farms assess government subsidies as neutral to agrarian sustainability and its aspects, though. The effect which this instrument is expected to produce upon the sustainability of farms that rent land is often minimized since many of the land owners charge a rent which includes a percentage of the subsidies that farmers receive, or even their whole sum. Some farms and land owners offer 'free' land lease to other farmers without registering their agreement and receive all subsidies they are entitled to for the land they own. In such situations, government subsidies per area are not obtained by the farmers who cultivate the farm land but by external agents – farms, land owners, intermediaries, etc. What is more, 15% of farm managers consider these subsidies to have a negative effect on agrarian sustainability. A relatively small share of farms in some agricultural subsectors (production of cereals, oleaginous crops, etc.) receives most of the subsidies per area. This contributes to the further income differentiation between different types of farms, different subsectors of agriculture and different areas in the country.

According to the findings of our research, the positive effect of payments per area is most obvious to cooperatives, companies and physical entities (Figure

10). In addition, the beneficial impact of these subsidies tends to be higher for larger farms. Thus only a quarter of self-subsistence farms assess positively this type of government funding, compared to three quarters of the large farms. Farms specializing in mixed crops and livestock and in field crops benefit the most from this instrument of government support. One out of two farms specializing in permanent crops or in vegetables, flowers and mushrooms is confident that payments per area contribute to agrarian sustainability. None of the managers of farms specializing in pigs, poultry and rabbits views this type of government support as positive to agrarian sustainability. The largest share of farms which assess the factor positively is that of farms in lowland-mountain areas and in mountain areas with natural constraints. At the same time, only a quarter of the farms in non-mountain areas with natural constraints benefit from the payments per area. The positive impact of the subsidies is more obvious to farms in the Severen tsentralen and the Yugoiztochen region, and least felt by the farms in the Yugozapaden region.

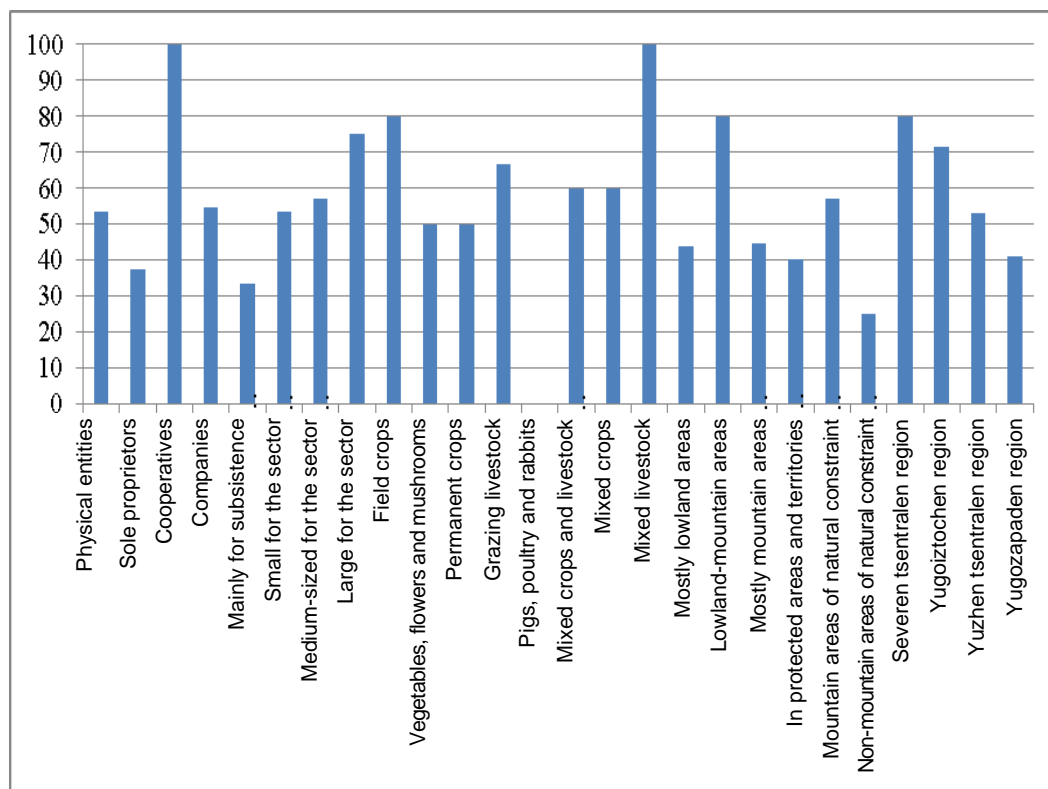


Figure 10. The positive impact of government payments per area upon agrarian sustainability (as a percentage)

Source: An interview conducted with farm managers, 2017.

Most interviewed farm managers believe that coupled support for activities and products does not have a major impact on agrarian sustainability (Figure 1). None of the respondents in our research considers such direct support to be nega-

tive to agrarian sustainability or any of its aspects. Coupled support for activities and products is assessed as a positive factor by many farm managers. The largest share of farms which assess the impact of direct payments for products and services as positive is that of physical entities (60%) (Figure 11). In contrast, only a quarter of all farm owners who are sole proprietors respond that they benefit from this type of government support. The size of government subsidies for products and services tends to increase with the size of farms. Half of the large farms and only a third of semi-market holdings benefit from the positive impact of such subsidies. The entities which benefit the most from this type of government support are farms with mixed livestock (all of them), farms specializing in mixed livestock and crops, and farms specializing in grazing livestock. In contrast, none of the farms specializing in pigs, poultry and rabbits and only a fifth of the farms specializing in field crops and mixed crops can benefit from this type of government support and assess it as positive to agrarian sustainability. In terms of the different types of eco- systems, farms in mountain and non-mountain areas with natural constraints have the highest share in employing this mechanism for managing sustainability, whereas that of farms in lowland-mountain areas is comparatively low. Most of the farms in the Yugozapaden region benefit from this type of support in contrast to the farms in the other three regions.

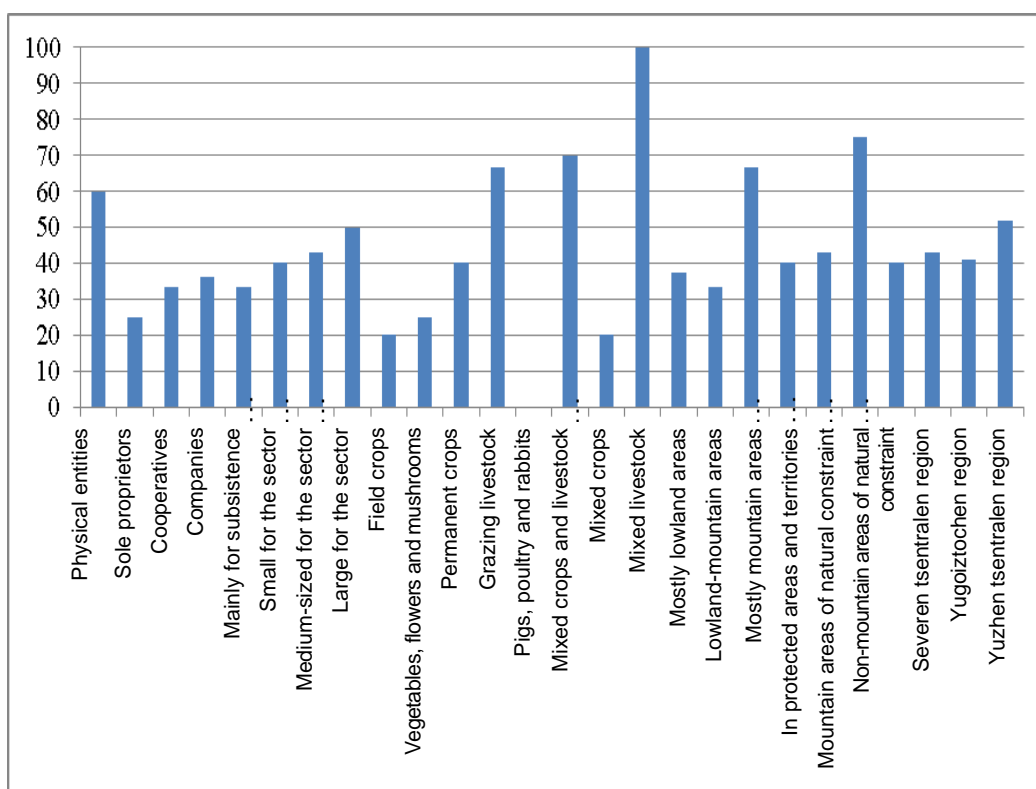
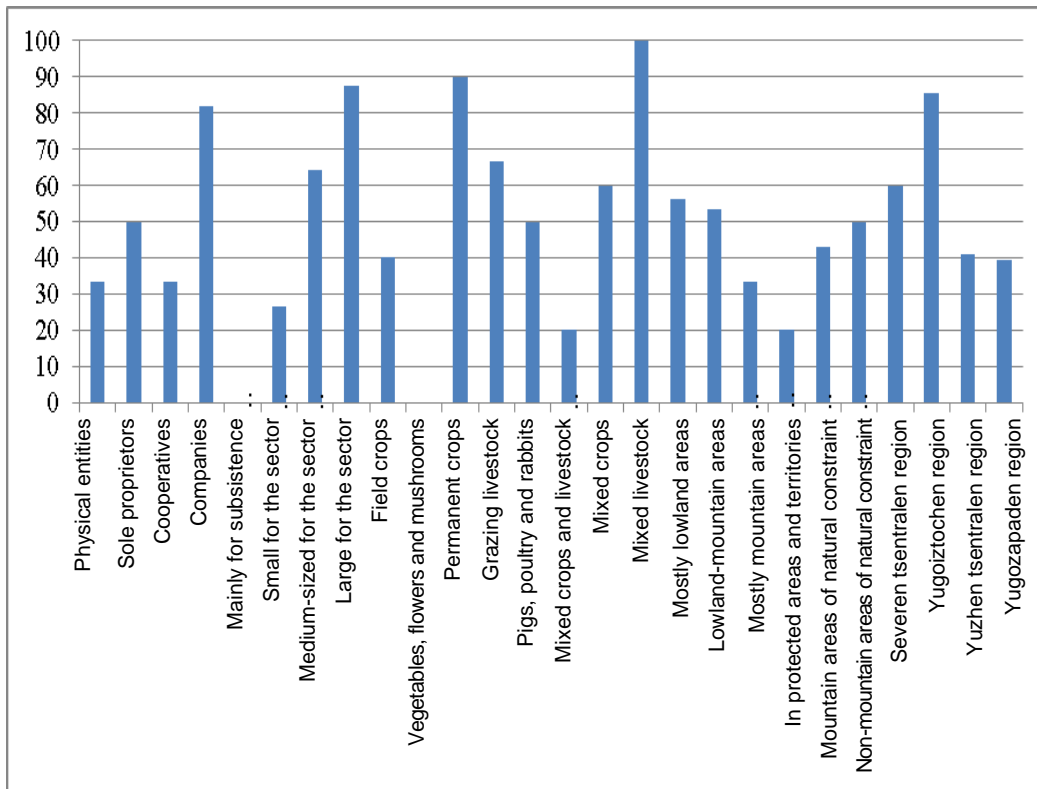


Figure 11. The positive impact of government subsidies for products and services upon agrarian sustainability (as a percentage)
 Source: An interview conducted with farm managers, 2017.

Half of the farms in our survey have benefited from government subsidies for new investment and assess this type of government support as positive to agrarian sustainability and its major aspects (Figure 1). The rest of the farms have not used such government support and assess it as neutral to agrarian sustainability. Respondents gave numerous examples of public investment resources being absorbed ineffectively due to the sizeable subsidies which are allocated. Permanent crops are planted but not harvested or are destroyed after the monitoring period expires. Farms registered as companies have benefited the most from different schemes of government support for new investments (Figure 12). The largest share of beneficiaries is that of large and medium-sized farms, as well as farms specializing in permanent crops, mixed livestock and grazing livestock. In contrast, none of the self-subsistence farms or the farms specializing in the production of vegetables, flowers and mushrooms, has benefited from this mode of governance of agrarian sustainability. Most of the farms in lowland and lowland-mountain areas benefit from government investment subsidies unlike the farms in protected areas and territories or in mountain areas. A significant share of the farms in the Yugoiztochen and the Severen tsentralen region are also beneficiaries of government support, in contrast to the farms in the Yugozapaden and the Yuzhen tsentralen region.



Source: An interview conducted with farm managers, 2017.

Figure 12. The positive impact of government subsidies for new investment upon agrarian sustainability (as a percentage)

A large share of interviewed managers assess as positive to agrarian sustainability green payments and eco-measures under the RDP (Figure 1). Agri-environmental payments are considered to be a mode of remuneration for services and compensation for the costs incurred by farmers who perform an essential social function, i.e. the sustainable management of natural resources. Farms which benefit from this type of funding are obliged to meet certain requirements for preserving and improving the condition of land, water, biodiversity, etc. It is worth noting that none of the respondents assesses green payments as negative to agrarian sustainability and especially its ecological aspect. Still, most farms assess the effect of this mode of government support as insignificant to agrarian sustainability and its aspects since they either cannot benefit from such support at all or, if they do, the size of the support they receive is too small to make any difference to agrarian sustainability or any of its aspects.

Cooperatives, companies, large farms and farms specializing in the production of mixed livestock, field crops and permanent crops benefit the most from the positive impact of green payments and the other eco measures under the Rural Development Programme (RDP) (Figure 13). The beneficial impact of

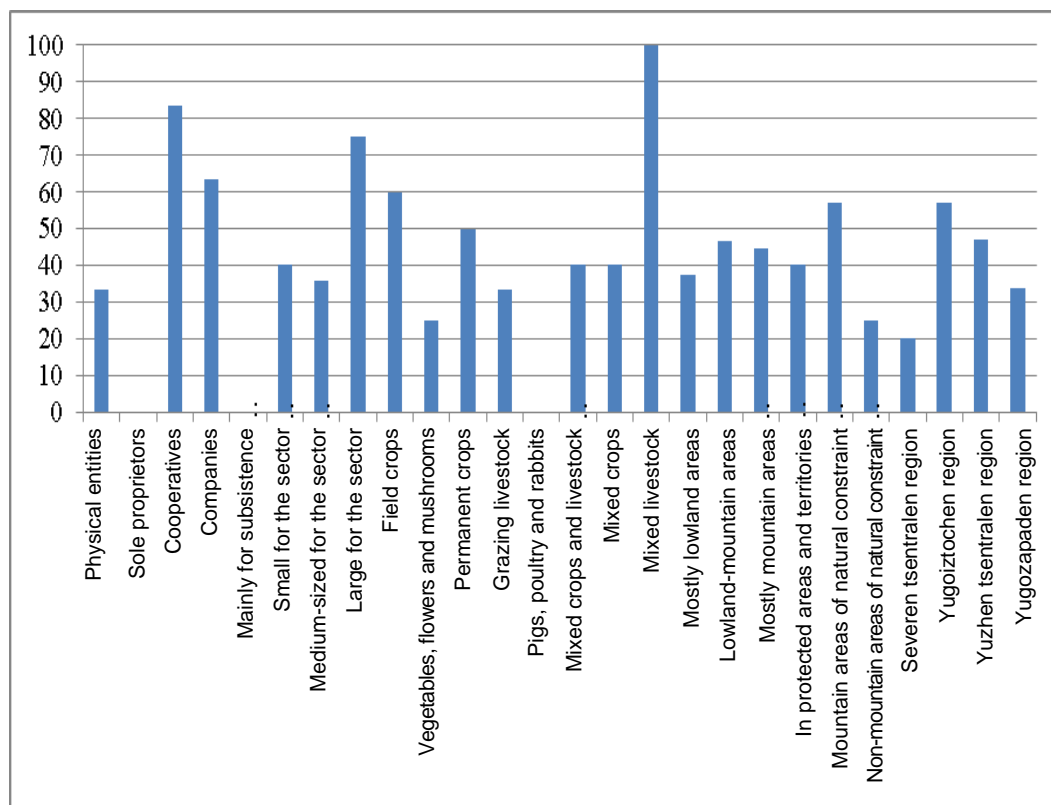


Figure 13. The positive impact of green payments and eco-measures under the RDP upon agrarian sustainability (as a percentage)
Source: An interview conducted with farm managers, 2017.

this mode of government support is most obvious to farms in mountain areas with natural constraints and in lowland-mountain areas, as well as farms in the Yugoiztochen region. This mode of government support, however, has a positive impact on agrarian sustainability for a relatively small share of farms in non-mountain areas with natural constraints, in the Severen tsentralen and the Yugozapaden region. Most interviewed farm managers (95%) are positive that the government support currently provided to farmers does not contribute to improving agrarian sustainability at all (Figure 1). Obviously, the instruments designed for government intervention in this essential area are not popular among farmers and/or do not result in improved management of agrarian sustainability in the country. At this stage, very few farms consider the different modes of government support for farmers to affect the sustainability of the sector or its major aspects (social, economic, environmental) positively.

According to a large number of respondents, the other measures of the Rural Development Programme do not affect the level of agrarian sustainability significantly (Figure 1). This is due to the fact that this type of government support is either inaccessible to many of the farms in Bulgaria, or is not considered to be a crucial factor for improving agrarian sustainability. Few Bulgarian farms have applied for some of the payments under the RDP and assess their impact on agrarian sustainability positively. The beneficiaries are predominantly farms registered as companies, large farms, farms specializing in the production of permanent crops and farms in lowland-mountain areas, as well as in the Severen tsentralen region (Figure 14). The beneficial effect of this type of government support is relatively small for (or not felt at all by) the other farms.

As for the other government programmes, most of the respondents do not believe that their instruments contribute to agrarian sustainability at all (Figure 1). A small number of farms have applied for and benefited from some program (governmental, branch, sectoral, social, ecological, regional, international, etc.) for support and development and assess its impact as contributing to agrarian sustainability or some of its aspects.

The majority of the respondents in our survey are positive that cross-compliance requirements and rules of good agricultural practices do not produce a significant impact on agrarian sustainability. Many farmers either do not observe the relevant rules and regulations or assess these formal standards as irrelevant to agrarian sustainability. What is more, one out of ten farmers believes that the statutory requirements on cross-compliance and good agricultural practices have a negative effect on agrarian sustainability or some of its aspects. This is largely due to the fact that higher 'external' standards raise the costs incurred by agricultural producers (i.e. they result in lower economic sustainability) without producing a positive effect on general sustainability. In some cases, these regulations and standards fail to take into account the specific conditions in different farms and do not contribute to achieving the desired results in terms of the sustainable development of the farm, subsector, eco-system or geographical area in which they are applied.

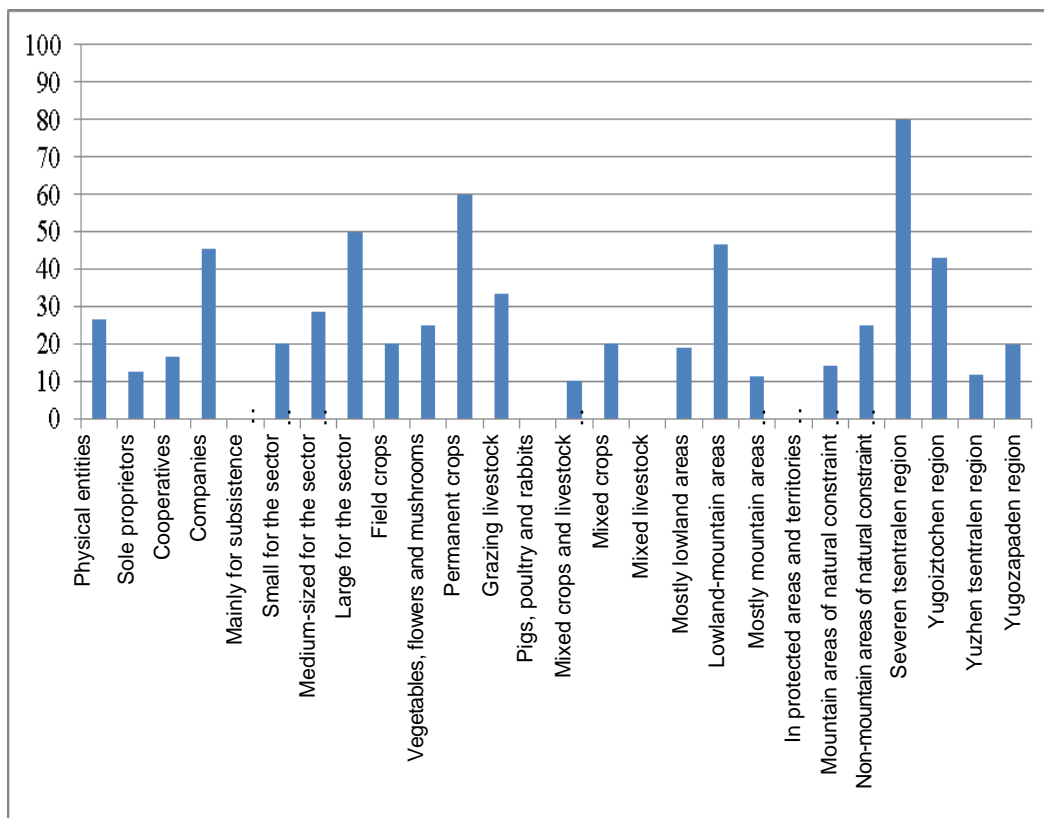


Figure 14. The positive impact of other measures under the RDP upon agrarian sustainability (as a percentage)

Source: An interview conducted with farm managers, 2017.

One out of four managers responds that cross-compliance requirements and rules of good agricultural practices affect agrarian sustainability positively, especially its social and environmental aspects. The positive impact of this mode of public intervention is equally acknowledged by farms of different legal status, size, specialisation, environmental and geographical location. Formal rules on good agricultural practices and cross-compliance requirements support agricultural producers and set a new mode of behaviour which contributes to raising agrarian sustainability at an economic, sectoral and regional level.

According to most interviewed managers, the existing public support in their regions does not significantly affect agrarian sustainability or its aspects (Figure 1). In many regions such support is not available at all, insufficient, irregular, or inadequate to meet the interests and needs of agricultural development. A small number of respondents assess the existing public support in the region as positive to agrarian sustainability. There are only a few examples of local authorities and/or public organizations providing direct or indirect support to farmers, farmer households and organizations by

implementing effective policies and adequate initiatives (festivals, events promoting their products and services, etc.), by disseminating information, co-funding, cooperation and joint activities, lobbying, etc., thus increasing the sustainability of agriculture in farms, (sub-) sectors, eco-systems and/or regions.

Most farms do not apply any of the voluntary standards, norms and rules and consider them irrelevant to agrarian sustainability and its aspects (Figure 1). A small number of managers however are confident that the 'voluntary' standards, norms and rules imposed by professional organizations, large buyers, consumer organizations, interest groups, authorities, etc. raise the costs incurred by farms (to get familiar with and to introduce and apply them, to exercise control, to settle disputes, etc.) and therefore affect agrarian sustainability negatively. One out of four farm managers assesses as positive to agrarian sustainability the employment of (and the involvement in initiatives related to) voluntary standards, norms and rules. Those are primarily innovative farms of different legal statute, size, specialization, in different geographical locations and environmental position that apply this mode of managing agrarian sustainability (or some of its aspects) privately or collectively.

One out of five respondents reports they have used or are currently using some mode of free services (training, consultancy, etc.) provided by the government and that it contributes positively to agrarian sustainability and its aspects (Figure 1). Over the last years, numerous trainings and consultancy events have been organized by the National Agricultural Advisory Service and other governmental organizations that seek to raise the qualifications and awareness of agricultural producers. These services are mainly used by small farms which do not have or cannot afford to hire experts in management, finance, agro equipment, etc. and therefore rely on the free services provided by the government. Most of the farms, however, do not consider these services to contribute significantly to agrarian sustainability. These findings indicate that most farms in Bulgaria do not have access to and do not use any free services provided by the government or assess them as irrelevant to agrarian sustainability and its aspects. What is more, a small number of managers respond that the 'support' which the government provides to farms as free services (training, consultancy, etc.) has a negative impact on agrarian sustainability. According to some of the beneficiaries, the performance of the government system for free services provided to farmers is inefficient and therefore hinders agrarian sustainability due to the high costs incurred by farms, the inadequate information and the poor training it provides, etc.

Most interviewed farm managers respond that they are not involved in any mode of partnership with a municipal, governmental or international organisation and that such partnerships do not contribute substantially to agrarian sustainability (Figure 1). This is due to the fact that such formal partnership arrangements are still not very popular. A small number of farms,

however, benefit from some mode of partnership with a municipal, governmental or international organisation and assess it as positive to agrarian sustainability and its major aspects. There are few examples in the country of successful partnerships between farms or farmer organizations and local, national or international public organizations for the implementation of certain social, environmental, regional, etc. programmes, the introduction of new initiatives, standards, measures providing support or training to young entrepreneurs and innovators, or cooperation between agricultural producers and stakeholders.

Most interviewed managers respond that their farms do not benefit from any tax incentives and/or do not find them essential to agrarian sustainability or its aspects (Figure 1). A small number of respondents even assess tax preferences for certain activities, products, regions, etc. as negative to agrarian sustainability. One out of five farm managers, however, is confident that tax incentives have a positive impact on agrarian sustainability, especially on its economic aspect. In most cases, the beneficial effect of tax incentives is in terms of the return of excise duty on diesel fuel, the zero-rate excise duty on wine, etc. The beneficiaries of this mode of government support are mainly large farms specializing in different crops (whose costs for fuel and transportation are higher) and integrated holdings in vine-growing and wine production.

Fifteen percent of interviewed farm managers report that they actively employ the compulsory social security system and are confident that the instrument has a positive effect on agrarian sustainability in general and its social aspect in particular (Figure 1). Those are predominantly large cooperatives and farms to which the social security of employees is a priority and a factor contributing to improved performance. Those farms are also subject to stringent government control, strictly comply with related statutory requirements and approach the payment of compulsory social security contributions as a regular element of economic activity. At the same time, a significant share of farms assesses the compulsory social security system as negative to agrarian sustainability, especially in terms of its economic aspect. Those are large farms employing a substantial number of seasonal and permanent workers for which compulsory security contributions represent a significant share of total costs. Government control and sanctions are stricter for large agricultural holdings and they cannot afford to neglect any of the statutory requirements prescribed by the social security system. Some farm managers complain that they are sometimes forced to hire numerous unqualified and unmotivated workers and then pay their social security contributions in exchange for very low labour input (high bargaining and training costs, high absenteeism, high employee turnover, etc.). The payment of compulsory social security contributions means substantial additional costs

incurred by these farms, yet, without producing any positive effects on their agrarian sustainability.

Market modes of risk insurance are not very popular among agricultural producers due to the lack of adequate insurance products, the high insurance rates (premiums), the prolonged claim disputes, the lack of established traditions, etc. Farm managers often prefer to rely on more efficient private modes of risk management. Compulsory insurance is usually required when farms are involved in projects about the modernization of agricultural holdings and need to insure their permanent crops, livestock, agricultural produce, workers, etc. One out of five respondents assesses compulsory insurance as positive to agrarian sustainability and its aspects. Those are mainly larger farms which benefit from different modes of public support that requires compulsory insurance (Figure 1). A large number of farm managers assess compulsory insurance as negative to agrarian sustainability due to the higher production costs and the problems they face when they need to have their damages covered. What is more, many farm managers consider compulsory insurance to be irrelevant to agrarian sustainability or any of its aspects. Most Bulgarian farms either do not employ those modes of (market) insurance or do not see any benefits in applying this mode of managing agrarian sustainability.

A substantial number of interviewed farm managers assess public recognition of their contribution as an essential positive factor which governs their activity and behaviour and contributes to raising agrarian sustainability (Figure 1). The significance of the 'social image' of farmers and the recognition of their contribution in the region and the country is emphasized by entrepreneurs and innovative farmers who manage farms of different sizes and with different specialization in different ecological and geographical regions of the country. This informal mode of social governance of behaviour is typical of agriculture where farmers, their activity and 'reputation' are well-known to other agricultural producers, to other agents in related sectors and in the community of the village or town, the region or the country. Most farm-owners, however, consider the public recognition of their contribution to be irrelevant to agrarian sustainability or any of its aspects.

A large number of respondents are positive that informal arrangements contribute to agrarian sustainability and its aspects (Figure 1). Relationships between agents who know each other well and regularly deal with each other are still predominantly managed (more) effectively through this traditional mode. A considerable number of farm managers do not believe that informal arrangements contribute significantly to agrarian sustainability. Relationships between economic agents are increasingly governed through formal contracts when they involve rare deals, large volumes, unfamiliar partners, major partners (such as retail chains, processing companies, electricity and water-supply companies, etc.) or other organizations (banks, insurance companies, government agencies, etc.) since formal written contracts are statutory for them. Furthermore, the existence of formal contracts (for example, for the

purchase of farm produce) is in most cases a key requirement when applying for a bank loan or some government support programme, etc. At the same time, one out of ten farm managers believes that informal arrangements in the sector have a negative impact on agrarian sustainability and its aspects. This type of arrangements render it very expensive or impossible to resolve conflicts arising in result of a failure to fulfill one's commitments or changes in the terms of exchange (for example, when the market prices of the products purchased by farms rise sharply or when the market prices of the products sold by farms drop dramatically). Interviewed managers give a lot of examples when they have been cheated or have suffered significant losses due to the non-fulfillment of commitments on behalf of their partners without being able to seek legal protection due to the informal character of the agreements between them. What is more, the informal arrangements which are widely employed in our country result in the development of a vast informal (grey) sector in agriculture where quality, safety and ecology standards are not observed; taxes and social security contributions are not paid and neither are fees for legal consultancy, preparation and registration of contracts, etc. The products of farms which operate legally thus become more expensive while their performance is rendered less competitive and less effective compared to that of farms operating in the informal (grey) sector. Hence farms which strictly comply with formal rules assess the employment of informal arrangements as negative to agrarian sustainability at this stage.

Farms of different legal status, in different subsectors of agriculture and in different regions of the country tend to employ informal arrangements to a different extent and acknowledge their positive impact on agrarian sustainability. Informal arrangements are most popular with physical entities and companies of different types (Figure 15). In contrast, the share of cooperatives which employ such arrangements and assess them as positive to agrarian sustainability is relatively low. The smallest agricultural holdings, i.e. self-subsistence farms, thoroughly manage their relationships with other economic agents through informal arrangements. At the same time, medium-sized farms are least likely to employ informal arrangements. The latter are most popular with farms specializing in mixed livestock, permanent crops and mixed livestock and crops. Informal arrangements are least employed or assessed positively by farms specializing in field crops and in vegetables, flowers, and mushrooms. Farmers in mountain areas employ informal arrangements the most, farmers in lowland areas being at the extreme opposite. The highest share of farms which enter into some type of informal arrangements is in the Yugozapaden region, while the share of farmers who assess this mode of governance positively is the smallest in the Yugoiztochen region. The structure and scope of informal agreements in the different types of farms, the different subsectors of the branch, the different types of ecosystems and the different areas across the country give some awareness about the current development of the informal (grey) sector in agriculture as well.

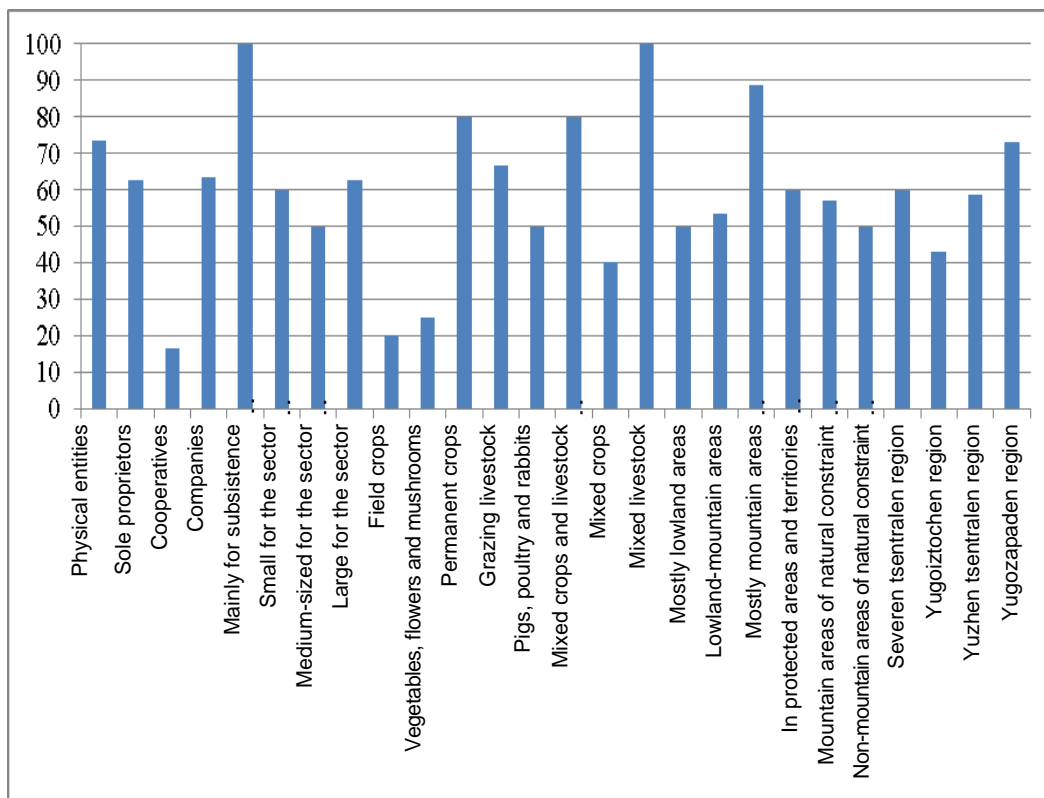


Figure 15. The positive impact of informal arrangements upon agrarian sustainability (as a percentage)

Source: An interview conducted with farm managers, 2017.

The analysis of the relationship between the level of agrarian sustainability of farms and the significance attributed by managers to the different modes of governance enables us to assess the real effectiveness of different governance mechanisms and modes for improving agrarian sustainability in the country. For many of the employed governance modes, there is a strong correlation between the positive assessment given by farm managers and the achieved good (or high) level of agrarian sustainability in their farms (Figure 16). Hence, the governance modes which are preferred and employed by farms are of crucial importance to raising the agrarian sustainability of the farms. The different modes of governance may be ranked in terms of their importance to achieved results as follows: personal motivation and initiatives of farm owners; personal motivation and initiatives of farm workers; current profit and gains; direct benefits to other persons and groups; internal diversification of farm activity; direct retail of products and services; Sales on market places and commodity markets; sale contracts for goods and services; barter of products and services; the provision of resources, products, services and activities for free; tying supply contracts with services provided by the supplier; participation in joint activities with other farmers or non-farmers; integration with a supplier; integration with a

buyer of the farm products; partnerships with business entities; coupled government support for activities and products (88.24%); government support for new investments, green payments and eco-measures under the RDP; government support to farmer organisations; other measures of the Rural Development Program; participation in other public programmes; existing public support in the area; partnerships with a municipal, governmental or international organisation and public recognition of the contribution.

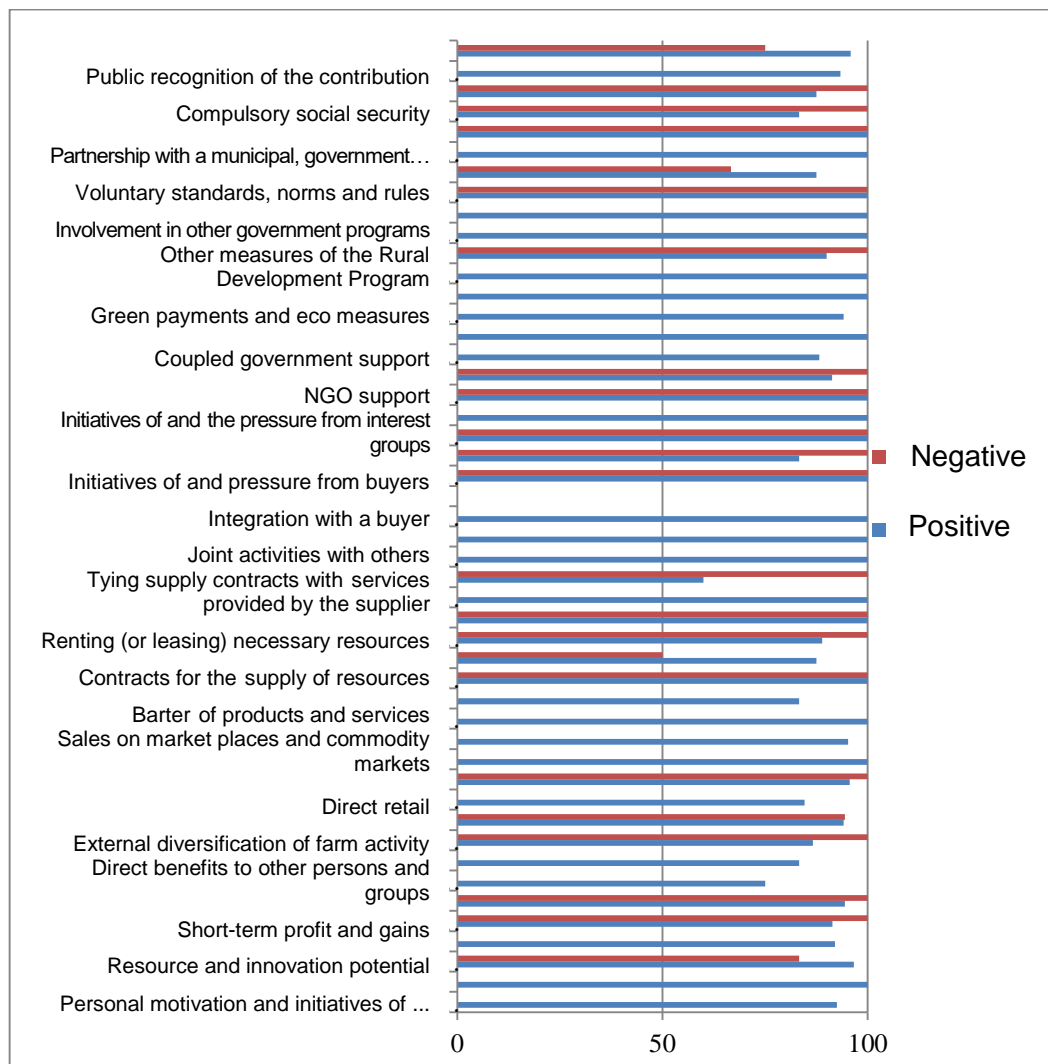


Figure 16. The share of farms with good and high sustainability which assess as positive or as negative the impact of the different modes of governance (as a percentage)
 Source: An interview conducted with farm managers, 2017.

As for the other governance modes which farms employ and we have analysed, there seems to be no straightforward correlation between the high levels of agrarian sustainability and the managers' assessments of the impact of those modes. In those cases, the governance modes which farm managers prefer do not produce expected results (due to their novelty, the short period of their employment, ineffectiveness, etc.) or produce a 'joint (cumulative, controversial, etc.) effect' with the other modes of governance which are employed, or the assessments which managers give are inaccurate and do not indicate the real impact of the governance mode upon agrarian sustainability.

Conclusion

The empirical research we have conducted is only an attempt to determine the complex relationships between the governance modes employed by Bulgarian farms and the level of agrarian sustainability in the country. The findings of the research render it possible to identify governance mechanisms and modes which are predominantly employed by agricultural producers and to assess their impact upon agrarian sustainability in general, as well as in the different subsectors, geographical and administrative regions, (agri-) ecosystems and types of farm holdings. It was established that within the context of the specific socio-economic, institutional and natural environment, agricultural holdings of different legal status, size, specialization, and location employ diverse combinations of effective market, private, collective and hybrid modes to govern their activity and relations. The factors and modes which contribute the most to improving agrarian sustainability at this stage are: the personal motivation and initiatives of farm managers; economic resources and innovation potential; short-term profit and gains; price levels and dynamics; EU payments per area and informal arrangements. In addition, there is always a certain time lag between an improvement made to the governance system and any change in the behaviour of economic agents, or the manifestation of the positive, negative or neutral effect upon the condition of agrarian sustainability and its aspects. All these factors need to be accounted for in further research works in order to assess the dynamics of their impact over different time periods.

Further research of existing correlations between governance structures and (the level and dynamics of) agrarian sustainability needs to be conducted by increasing the number and the representative character of researched farms, as well as the variety of specific governance modes employed by farms of different types and assessing the impact of institutions upon agrarian sustainability. What is more, a greater variety of methods should be employed

to identify more clearly the relation between the governance and the sustainability of agrarian holdings. In the next place, it is necessary to identify the governance modes which are employed at higher levels of the hierarchy (sectoral, national, trans-national) and assess their individual and/or combined effect upon agrarian sustainability.

Due to the immense significance of the comprehensive assessments of governance modes upon agrarian sustainability and the usefulness of research findings to farm management and agrarian policies design, such research is to be conducted in future by expanding its scope and employing more precise and more representative methods and measures. This requires the closer cooperation between all stakeholders and the active involvement of farmers, agrarian organizations, local and government authorities, interest groups, scientific institutes and experts, etc. In parallel, assessments need to be made more accurate by including feedback not only from interviewed farmers but also from experts; stakeholders; monitoring and accounting reports; statistical data about the 'actual' (rather than the declared) behaviour of different agrarian and non-agrarian agents; related effects upon agrarian sustainability, etc.

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