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Efficiency of agrarian governance in Bulgaria

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Abstract

Empirical studies on efficiency of the governance system in agriculture are very rare. That is a consequence of both theoretical and practical challenges. The criteria and approach for assessing of efficiency is still debated while appropriate statistical, accountancy, etc. data for evaluation diverse mechanisms and modes of governance are not readily available. This is a first attempt for a comprehensive empirical study on the efficiency of the system of agrarian governance in Bulgaria. Since there is a social “contract” about sustainable agrarian development in EU as a criterion for assessing the social efficiency of the governance is taken the impact to sustainability. The interdisciplinary New Institutional Economics framework is incorporated, and the impact of diverse institutional environment and diverse market, private, collective, public and hybrid modes of governance on agrarian sustainability at the current stage of development in Bulgaria assessed. First, the methodological framework of the study is outlined. After that impact of major components of institutional environment of agrarian sustainability evaluated. Following, dominating governing modes in Bulgarian farms of different juridical type, size, specialization, ecological and geographical location are identified, and their impacts on agrarian sustainability assessed. In conclusion implications for further research, public policy improvement, and private managerial strategy formation are presented.

Key words: Agrarian Governance, Sustainability, Market, Private, Collective, Hybrid modes

JEL: Q13, Q12, Q18, D23, E61, H23, L14, L22, L33, L51

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Introduction

Empirical studies on efficiency of the governance system in agriculture are very rare. That is a consequence of both theoretical and practical challenges. The criteria and approach for assessing of efficiency is still debated while appropriate statistical, accountancy, etc. data for evaluation diverse mechanisms and modes of governance are not readily available.

This is a first attempt for a comprehensive empirical study on the efficiency of the system of agrarian governance in Bulgaria. Since there is a social “contract” about sustainable agrarian development in EU and Bulgaria (at least so declared) the criteria for social efficiency of the governance is the impact to sustainability (Bachev, 2010).

Achievement of diverse economic, social, environment conservation, intergenerational, etc. goals of sustainable development greatly depend on the specific system of governance in different countries, industries, regions, communities, etc. (Furuboth and Richter, 1998; North, 1990; Williamson, 1996). Having in mind the importance of agrarian sector (in terms of employed resources, contribution to individuals and social welfare, positive and/or negative impacts on environment, etc.), the improvement of the governance of agrarian sustainability is among the most topical issues in Bulgaria and around the globe (Башев, 2006, 2012, 2013, 2014; Иванов и др., 2009; Радева, 2017; Саров, 2017; Терзийска, 2016; Хаджиева и др. 2005; Bachev, 2010, 2016; Bachev et al., 2016; EC, 2017; Raman, 2006; Sauvenier et al., 2005; Terziev and Radeva, 2016; UN, 1992, 2015).

Nevertheless, research on forms and efficiency of the governance of agrarian sustainability is at the beginning stage due to the “newness” of the problem, and the emerging new challenges at the current phase of development (environmental pollution and degradation, climate change, competition for natural resources with other sectors, etc.), and the fundamental institutional modernization during recent years, and the “lack” of long-term experiences and relevant data, etc. Most studies in the area are focused on the formal modes and mechanisms while the important informal institutions and organizations are not included into analysis. What is more, research is commonly restricted to a certain form (contract, cooperative, industry initiative, public program), or a management level (farm, eco-system, region, international) without taking into consideration the interdependency, complementarities and/or competition of different governing structures. Besides, widely used complex forms of governance (multi-lateral, multi-level, reciprocal, interlinked, hybrid) are usually ignored.

Likewise, one-dimensional and uni-sectoral analyses are broadly used separating the management of agricultural activity from the governance of environmental and the overall households and rural activities. Furthermore, most studies concentrate on technology related (“production”) costs ignoring significant transaction costs associated with the identification, assignment, protection, exchange and disputing of diverse property rights and rules. Moreover, “normative” (to some “ideal” or “model in other countries”) rather than a “comparative institutional approach” (between feasible alternatives in the specific socio-economic and natural conditions of a country, region, sector, ecosystem) is employed. Furthermore, uni-disciplinary approach dominates (“pure economic”, “pure ecological”, “pure juridical”, “pure political”, etc.) preventing a proper understanding of the driving factors (“logic”) and the full consequences (multiple effects, costs, risks) of a particular governance choice. Consequently, a complete understanding and adequate assessment of the system of agrarian governance and its contribution to agrarian sustainability is impeded, and the effective assistance to public policy and private (individual and collective) strategy formation cannot be given by researchers and experts.

In Bulgaria, with very few exceptions (Башев, 2000, 2003; Башев и Терзиев, 2001, 2002; Bachev, 2010; Georgiev, 2010; Bachev and Treziev, 2018), there are no empirical studies on dominating governing structures in agriculture, and their impact(s) on agrarian sustainability.

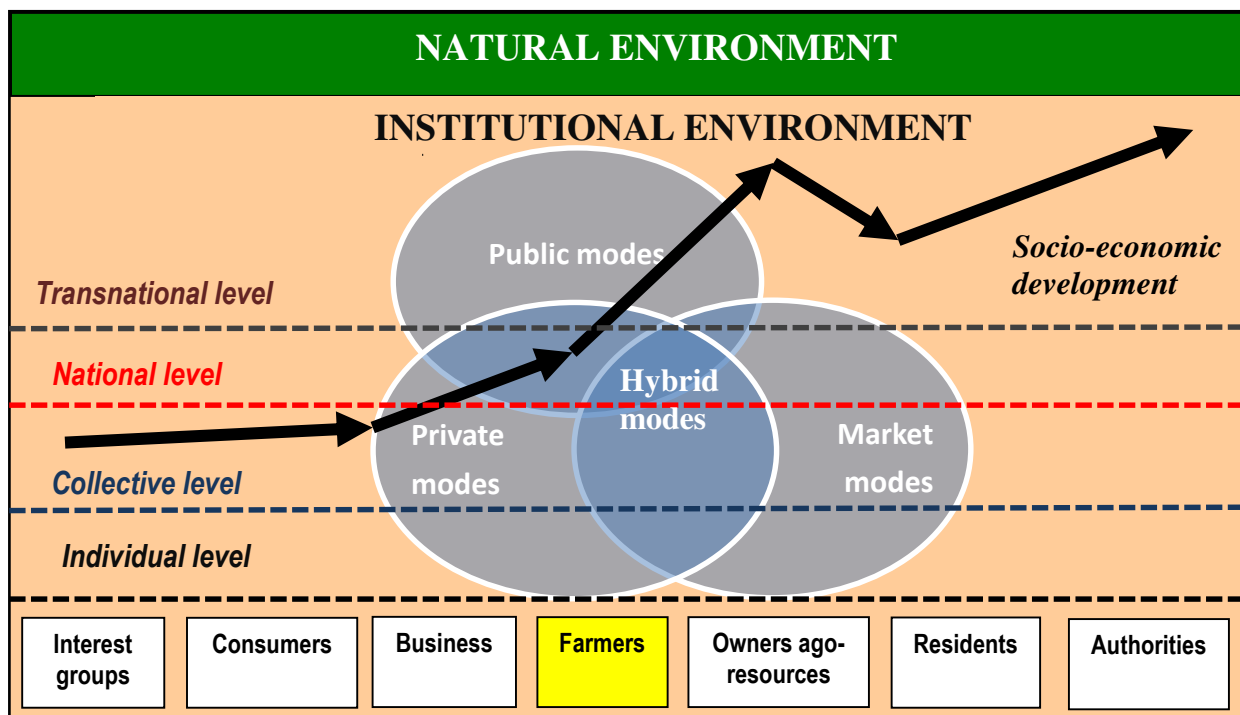
In this paper interdisciplinary New Institutional Economics framework (combining Economics, Organization, Sociology, Law, Political and Behavioral Sciences) is incorporated, and the impact of institutional environment and diverse private, collective, public and hybrid modes of governance on agrarian sustainability at the current stage of development in Bulgaria assessed. First, the methodological framework of the study is outlined. Second, impact of institutional environment on agrarian sustainability in Bulgaria assessed. Third, dominating governing modes in Bulgarian farms of different juridical type, size, specialization, ecological and geographical location are identified, and their impacts on agrarian sustainability and its economic, social, and environmental pillars evaluated. In conclusion implications for further research, public policy improvement, and private managerial strategy formation are presented.

The New Institutional Economic Framework

Maintaining and improving the social, economic and ecological functions of agriculture requires an effective social order (a “good governance”) - a system of “human created” mechanisms and forms regulating, coordinating, stimulating, and controlling behaviors, actions and relations of individual agents at different levels (Bachev, 2010). The system of governance of agrarian sustainability is a part of the specific system of “agrarian” governance and includes: diverse agrarian and non-agrarian agents, and a variety of mechanisms and forms for governing of behavior, activity, relations, and impacts of related agents.

The individual farms are the main organizational and production units in agriculture, which manage resources, technologies and activity, and maintain social, economic and ecological functions of the sector. Thus, farms and farm (production, service, innovation, marketing, etc.) organizations are the major elements of the system of governance of agrarian sustainability (Figure 1).

Figure 1. System of governance of agrarian sustainability



Source: author

Other agents also directly or “indirectly” participate in the governance of agrarian sustainability imposing appropriate conditions, standards, norms, demands, etc. These are the owners of agrarian (land, material, finance, intellectual, etc.) resources, who are interested in their effective utilization, conservation, and multiplication. Next, that is related business including suppliers of inputs, finance, innovations, buyers of farm produces, etc. They all impose socio-economic and ecological standards, specific support and demand for sustainable agrarian performance. Next, these are final consumers of farm and related produce, residents, visitors of rural areas, and diverse interests groups, which “impose” conditions (pressure, demand) for environmentally friendly, socially responsible, and economically viable agriculture and rural regions. Finally, those are the state and local authorities,

international organizations, etc., which assist initiatives for agrarian sustainability of different agents, and/or impose mandatory (social, economic, environmental, animal welfare, etc.) standards for sustainable production, distribution, and consumption.

The system of governance of agrarian sustainability includes a number of distinct (“generic”) mechanisms and modes, which manage behavior and actions of individual agents, and eventually (pre)determine the level of agrarian sustainability (Figure 1):

First, institutional environment (“rules of the game”) - that is the distribution of rights and obligations between individuals, groups, and generations, and the system(s) of enforcement of these rights and rules (Furuboth and Richter, 1998; North, 1990). The spectrum of rights comprises material assets, natural resources, intangibles, activities, working conditions and remuneration, social protection, clean environment, food and environmental security, intra- and inter-generational justice, etc. The enforcement of rights and rules is carried out by the state, community pressure, trust, reputation, private modes, or self-enforced by agents. A part of the rights and obligations is constituted by the formal laws, official regulations and standards, court decisions, etc. In addition, there are important informal rights and rules determined by the tradition, culture, religion, ideology, ethical and moral norms, etc.

Institutional development is initiated by the public (state, community) authority, international actions (agreements, assistance, pressure, etc.), and private and collective actions of individuals and groups. It is associated with the modernization and/or redistribution of the existing rights; and evolution of new rights and novel (private, public, hybrid) institutions for their enforcement. For instance, agrarian sustainability ‘movement’ initially emerged as a voluntary (private) initiative of individual farmers, after that it evolved as a “new ideology” (collective institution) of agrarian and non-agrarian agents, and eventually was formally “institutionalized” as a “social contract” and part of the “new public order”. Similarly, the European Union (EU) membership of Bulgaria is associated with adaptation of modern European legislation (*Acquis Communautaire*) as well as better enforcement (outside monitoring, and sanction for non-compliance by the EU). At current stage of development many of the institutional innovations are results of the pressure and initiatives of interests groups (eco-association, consumer organizations, etc.).

Institutions and institutional modernization create unequal incentives, restrictions, costs, and impacts for different aspects of agrarian sustainability. In the specific socio-economic, institutional, natural etc. environment the „rational“ individual agents tend to design and use such (“most effective”) market, private, collective, hybrid etc. modes of governance which maximize their transacting benefits and minimize transaction costs (Bachev, 2010; Williamson, 1996). However, if property and other rights are not well-defined or enforced, that leads to inefficient and unsustainable organization and exploration of natural and other resources, constant conflicts among interested parties, and low economic, social and ecological efficiency and sustainability, and vice versa (“Coase theorem”).

Second, market modes (“invisible hand of market”) – those are various decentralized initiatives governed by the “free” market price movements and market competition – e.g. spotlight exchange of resources, products and services; “classical” purchase contract, lease or sell contract; trade with high quality, organic, etc. products and specific origins, agrarian and ecosystem services, etc. Individual agents use (adapt to) markets, profiting from the specialization of activity and mutually beneficial exchange, while their voluntary decentralized actions “direct” and “correct” the overall distribution of resources between diverse activities, sectors, regions, ecosystems, countries. However, there are many examples for the lack of individual incentives and choice and/or unwanted exchange, and unsustainable development in agrarian sector – missing markets, monopoly or power relations, positive or negative externalities, disproportion in incomes, working and living conditions between

rural and urban regions, etc. Free market often “fails” to govern effectively (the overall, some) activity and exchange in agrarian sphere, and leads to low socio-economic and ecological sustainability.

Third, private modes (“private or collective order”) – diverse private initiatives, and special contractual and organizational arrangements (long-term supply and marketing contracts, voluntary eco- and social actions, voluntary or obligatory codes of behavior, partnerships, cooperatives and associations, brands and trademarks, labels, etc.). For instance, conservation of the natural resources is a part of the managerial strategy of many green (eco) farms. In the EU there are numerous initiatives of farmer organizations, food industry, retail chains, and consumer organizations, which are associated with improvement of socio-economic and ecological sustainability. Individual agents take advantage of the economic, institutional and other opportunities, and deal with institutional and market deficiencies through selection or designing (mutually) beneficial private forms and rules for governing their behavior, relations and exchanges. Private modes negotiate “own rules” or accept (imposed) existing private or collective order, transfer existing rights or gives new rights to counterpart(s), and safeguards absolute and/or contracted rights of agents. A great part of the agrarian activity is managed by the voluntary initiatives, private negotiations, “visible hand of the manager”, or collective decision-making. Nevertheless, there are many examples of private sector deficiency (“failures”) in governing of a socially desirable activity such as environmental conservation, preservation of traditional structures and productions, protection and development of rural areas, etc.

Forth, public modes (“public order”) – various forms of public (community, government, international) interventions in market and private sector such as public guidance, regulation, assistance, taxation, funding, provision, property right modernization, etc. For instance, in the EU there are huge programs for agrarian and rural development aiming at “proportional” development of agriculture and rural areas, protection of incomes and improving the welfare of rural population, conservation of natural environment, etc.

The role of the public (local, national, and transnational) governance increases along with the intensification of activity and exchange, and growing interdependence of socio-economic and environmental activities. In many cases, the effective management of individual behavior and/or organization of certain activity through market mechanisms and/or private negotiation takes a long period of time, and is very costly, could not reach a socially desirable scale, or be impossible at all. Thus a centralized public intervention could achieve the desirable state faster, more cheaply or more efficiently. The public “participates” in the governance of agrarian sustainability through provision of information and training for private agents, stimulation and (co)funding of their voluntary actions, enforcement of obligatory order and sanctioning for non-compliance, direct in-house organization of activities (state enterprise, scientific research, monitoring), etc. However, there are a great number of “bad” public involvements (inaction, wrong intervention, over-regulation, mismanagement, corruption) leading to significant problems of sustainable development in Bulgaria and around the globe.

Fifth, hybrid forms – some combination of the above three modes like public-private partnership, public licensing and inspection of private organic farms, etc.

In a long run the specific system of governance of agrarian sector and sustainability (pre)determines the type and character of social and economic development. Depending on the efficiency of the specific system of governance of agrarian sustainability “put in place”, individual farms, subsectors, regions and societies achieve quite dissimilar results in socio-economic development and environmental protection, and there are diverse levels and challenges in economic, social and ecological sustainability of farms, subsectors, regions, etc. (Bachev, 2010).

Efficiency of the specific system of governance of agrarian sustainability eventually finds expression in certain level and dynamics of the social, economic, ecological and integral sustainability

of agriculture as whole or agricultural systems of different type (farm, industry, agro-ecosystem, region, etc.). Accordingly, a high or increasing agrarian sustainability means a high efficiency of the system of governance, and vice versa.

Agrarian sustainability is defined in a number of ways and still there is no agreement about what agrarian sustainability is and how to evaluate its level (Raman, 2006; Sauvenier et al., 2005). In this paper sustainability is understood as a “system characteristic” and the ability of agriculture to maintain its economic, ecological and social functions over a long period of time. Agrarian sustainability and its individual aspects have multiple dimensions. In order to assess the efficiency of the governance a holistic system for assessing the social, economic, ecological and integral sustainability is applied, presented in other publications (Bachev, 2016; Bachev et al., 2016).

For identification and assessment of major components of institutional environment and diverse market, private, collective, hybrid, etc. modes of governance, and their impact on agrarian sustainability in Bulgarian agriculture, its major subsectors, in various geographical and ecological regions, as well as sustainability contribution of farms of different juridical type and size, in-depth interviews have been carried out with the managers of “representative” market-oriented farms of different kind and location. The study was carried out in the summer of 2017 and comprised 40 agricultural holdings from four administrative regions of the country – North-Central, South-East, South-Central, and South-West. Identification of the “typical” for the particular regions agricultural farms have been made with the assistance of the major producers associations in the country (National Union of Agricultural Cooperatives, National Association of Grain Producers, Association of Livestock Raring, etc.), state agencies (National Agricultural Advisory Service, Executive Agency on Vine and Wine), processors, bio-certifying, and service providing organizations, and local authorities.

Agricultural producers of different type have been interviewed as entire spectrum of the farms in respective regions included: farms of major juridical types (Physical Persons, Sole Traders, Cooperatives, Companies); holdings with different sizes (Predominately for subsistence, rather Small for the sector, with Middle size for the sector, Large for the sector); farms of different production specialization (Field crops, Vegetables, Flowers, and Mushrooms, Permanent crops, Grazing Livestock, Pigs, Poultry, and Rabbits, Mix crop-livestock, Mix crops, Mix livestock); enterprises which are (vertically and/or horizontally) integrated in more complex forms such as Corporations, Holdings, etc.; farms in specific geographical and ecological locations (Plain, Semi-mountainous, and Mountain regions, less-favorable and protected areas, etc.). From initially selected 45 holdings for investigation the interviews with five managers (11,11% of total) have not been carried out because of the lack of availability, unwillingness to participate, or other reasons. The structure and the specific features of surveyed farms approximately correspond to the real structure of all farms in the studied regions.

The survey comprises multiple questions associated with the usage and the impact of diverse components of governing system (formal and informal institutions, personal preferences, resource endowment, specific managerial strategies, applied contractual and collective forms, participation in public support schemes, community and counterparts initiatives and pressure, etc.) on agrarian sustainability, and its social, economic and environmental aspects. Initially the managers assessed the impact of each particular institutional element and governing mode as “positive”, “neutral”, or “negative”. After that, the relations between the “estimates” of the managers for the efficiency of governing modes, and the sustainability level of respective farms are specified. The integral estimates are arithmetic averages of the assessments of individual farms of a particular type.

The assessment is based on first-hand data collected from the managers of “typical” farms of different type and location. That approach is only feasible since there are no available “objective”

statistical, monitoring, survey, etc. information about the employed (preferred, failed) governing modes, and the impact of a particular element of the governing system on agrarian sustainability. Besides, the farm managers are the most aware with the “efficiency” of dominating governance mechanisms and modes, and its relation (timing, direction, and extent of the effect) to agrarian sustainability in the specific conditions of their own farm, region, subsector, etc. Besides, when there is available aggregate data for certain mode(s) of governance (e.g. particular type of contract, public regulation or support schemes, etc.) there is no way to know how they contribute to sustainability since “rational” agents adapt modes maximizing their efficiency (minimizing private costs, maximizing private benefits) which may or often fail to maintain/improve the overall efficiency and sustainability (Башев, 2012; Bachev, 2010).

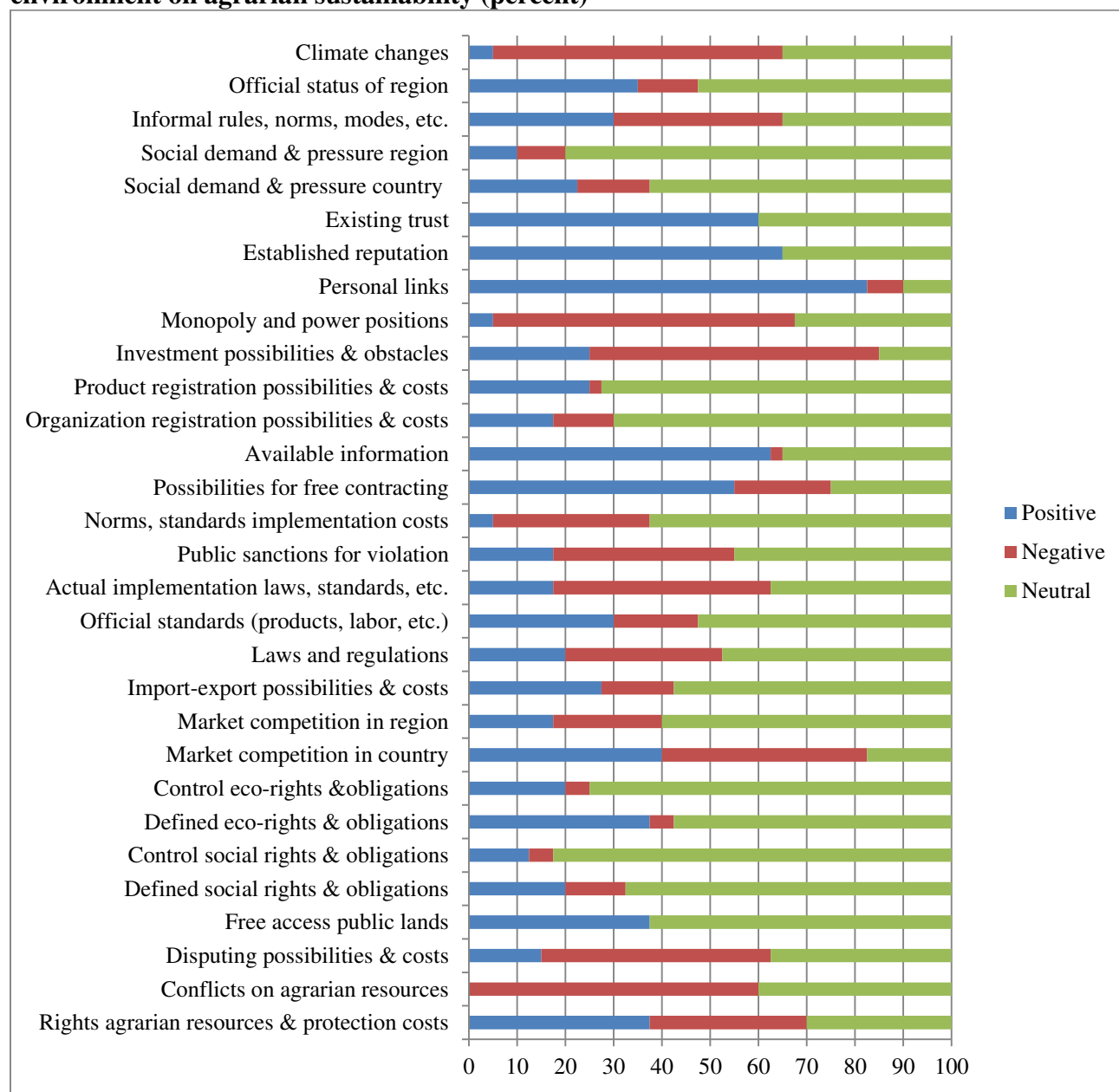
Furthermore, for certain data the farm managers are the sole or only reliable source of information – e.g. personal ideology, preferences, and satisfaction, interlinked and complex forms, widespread informal modes, level of sensibility and adaptation to outside pressure and demand, etc. Nevertheless, in order to diminish subjectivity, the assessments (“perceptions”) of the managers is complemented with the “objective” assessment of sustainability level of their farms, and the correlation determined between the managers’ estimates on the importance of a particular governing mode and the actual sustainability level.

Following section of the paper presents the impacts of institutional environment of agrarian sustainability, and diverse private, collective, public and hybrid modes of governance on agrarian sustainability in Bulgaria.

Efficiency of Institutional Environment

Provided and well protected by the existing institutional arrangements private rights on diverse agrarian resources (farmlands, pastures and meadows, material and intellectual assets, water sources, ecosystems, etc.) are important factors for effective exploitation of resources and sustainable development. Our survey have proved that, for the majority of interviewed agricultural producers (37,5%) “provided rights on agrarian resources and the costs for protection of private rights” have a positive impact on multiple aspects of agrarian sustainability (Figure 2).

Figure 2. Impact of major elements of socio-economic, institutional and natural environment on agrarian sustainability (percent)

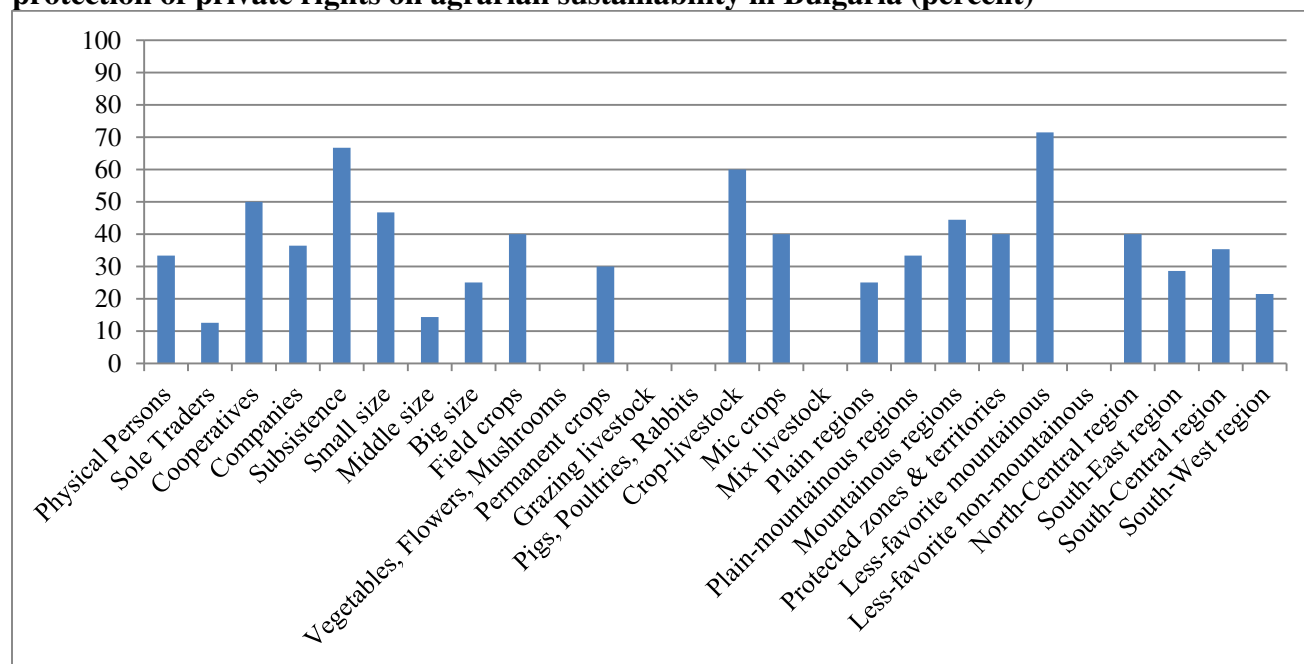


Source: interviews with managers of farms, 2017

According to the majority of the farmers existing private rights and costs for their protection are of a primary importance for the improvement of economic sustainability. The system of private property rights has a high economic significance since it creates incentives for investment and effective utilization of resources. What is more, for many managers dominating structure of rights and rules in the sectors, modernized according to the EU standards, impact positively social and environmental aspects of agrarian sustainability as well. Furthermore, for almost every third of the surveyed farms existing private rights on agrarian resources and (a high) level of costs for their protection and exchange affect rather negatively different aspects of agrarian sustainability. One of the interviewed points out that managed by him farmlands is situated in 500 different locations with distance between individual plots up to 30 km. Besides great transportation costs that farm also has a high cost for governance, protection of property and yield, application for public subsidies and other relations with authorities. For instance, in order to submit numerous (1500) applications in the municipality office, the farmer has to bring own papers and toners for printing out applications.

The negative impact of the structure and the costs, associated with rights on agrarian resources, affects farms of various types (Figure 3). The only exceptions are holdings specialized in Vegetables, Flowers, and Mushrooms, Pigs, Poultryes, and Rabbits, and Mix livestock, as well as those located in Less-favored non-mountainous regions. All these farms usually use smaller amount of own or rented lands (greenhouse vegetable production, pig production, middle size holdings), have access to usage of public meadows and pastures (grazing livestock) and no need to trade (purchase or lease) of agricultural lands in large amount or other intellectual agrarian products (origins, new crop varieties and technologies, etc.).

Figure 3. Negative impact of provided rights on agrarian resources and costs for protection of private rights on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

On the other hand, holdings, implementing intensive deals (purchases, leases) of farmlands with numerous land owners for an effective exploration of scales and scopes, or using ownership as a

collateral for loan, to a bigger extent are affected by the negative consequences of imperfect institutional framework (identification of property rights) and costs for protection and transfer of private rights. For example, a half of the Cooperatives, 60% of holdings in Mix crop-livestock, 40% of farms in Field crops and Mix crops, underline the negative impact of that factor.

Many cases are reported, when for producers is difficult to organize efficient operations on larger land plots, due to practical impossibility to negotiate lease-in or purchase of dispersed small plots of landlords – lack of formal ownership titles, many heirs, absence from the country, disputes with a third party, enormous costs, etc. One of the surveyed farm, representing a big for the region investor in vine operation, points out the existence of numerous little “islands” of (fragmented, unidentified, multiple owners, etc.) land property in the area for expansion of enterprise. All these land plots are practically impossible to acquire and that impedes planned effective enlargement of the production in that farm.

That restricting element of the institutional environment is particularly critical for farms with smaller sizes (46,67%), having no potential (negotiation power, sufficient staff, access to lawyers, etc.) typical for the large business enterprises. Some smaller farms and semi-market holdings report for discrepancy in the description and borders in the formal ownership documents with the actual sizes and locations of the property (lands, buildings, etc.) also preventing the effective investments and deals. Identification of the ownership rights and correction of documentary mistakes from the past through bureaucratic and court procedures, is a long, costly, and inaccessible for many (small) producers process. The latter is a consequence of the existence of many and/or lack of any heirs, numerous interested parties, high costs for expertise, lawyers, lawsuits, introduction into new ownership, etc. The adverse impact on sustainability of that factor is particularly strong for semi-market holdings – two-third of surveyed farms Predominantly for subsistence.

The negative impact of existing structure and possibilities for protection of private property rights is particularly strong for holdings in Mountainous regions (44,44%), where agrarian resources are limited and dislocate in large areas. Also, a good part of the farms in Less-favored mountainous regions (71,43%) and those with Lands in protected zones and territories (40%) are influenced by the negative impact of that component of institutional environment due to multiple restrictions of/for utilization of resources related with the (special) status of such areas.

Many producers of different type also report having high costs for protection of resources and output, due to constant thefts of property and yields. A good number of holdings provide permanent security for yield, which additionally make product more expensive or turn managers, owners and their families into guards. According to a surveyed strawberry producer, he and his farther spend 24 hours on the field during ripening of fruits. Another surveyed producer shares experience in which in order to protect the property from repeated thieves he had built an expensive fence around, and subsequently the valuable fence was stolen. A president of the surveyed cooperative also underlines that problem and the fact, that after he terminate “work” in the office, he “becomes a guard, since the municipality does not secure needed protection of the fields”. The multiple complains of the latter manager against “well known” thieves, are not resolved by the authorities “since harms were too small to be punished”. Because of the same reason, in the South-East region of the country it is not produced corn of big farmers at all (easy to steal). Another cooperative in that region regularly hires security guards for protection of the property in the farmyard and the grape yields.

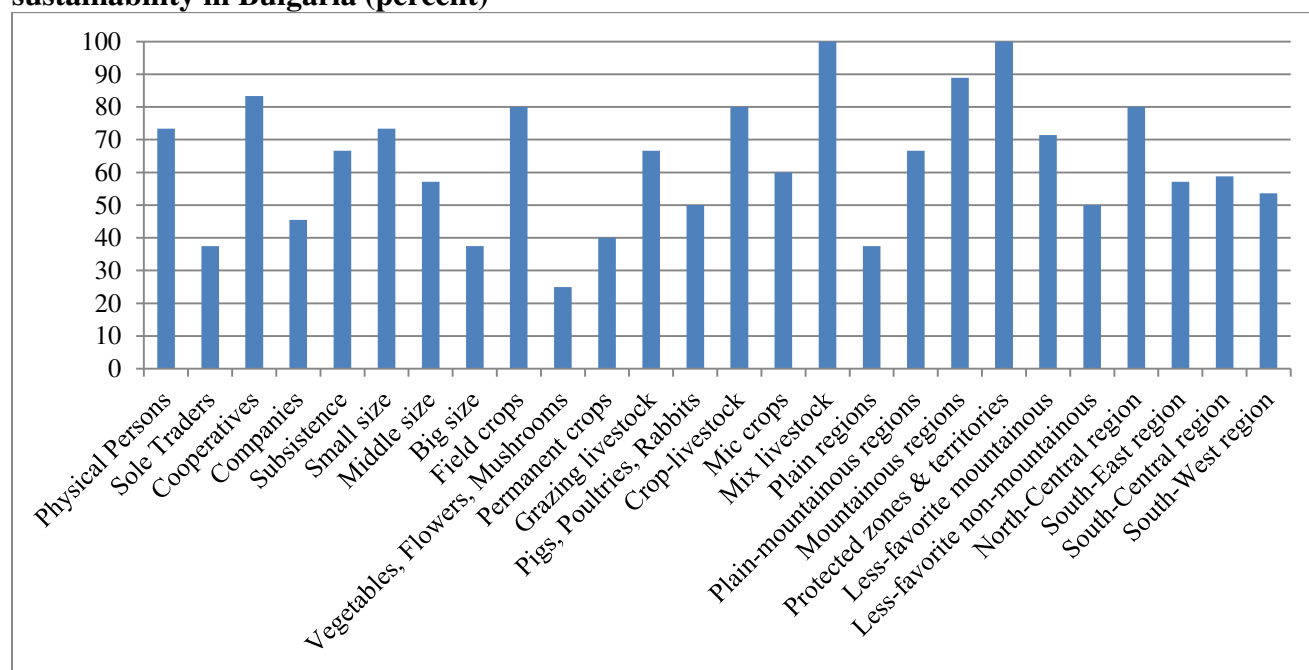
There are also many examples, when private animals destroy harvest of other farmers and it is very difficult to punish offenders, due to uncertainty, or difficulty to prove and claim through lawful way. In other instances, wild animals destroy sow, permanent crops and/or yield, and for assault on property is not by persons, but there is needs (costs) for managing natural risk (purchase of insurance, building fence, payment for security guards, etc.). For almost 30% of surveyed farms the rights on

agrarian resources and the costs for their protection have no importance (neutrality) in relation to aspects of agrarian sustainability. The latter means, that existing system of governance, and concentration, transfer and protection of agrarian resources in these holdings “work well” and do not prevent strategies and activities for sustainable development.

The character, strength, and possibility for rapid and costless resolution of conflicts, associated with the rights on agrarian resources, are important factor for effective governance of agrarian sustainability. For 60% of the surveyed farms “existing conflicts over agrarian resources” impact negatively diverse aspects of agrarian sustainability, while for the rest part they are not essential (Figure 2). The conflicts usually obstruct efficient distribution and sustainable exploitation of agrarian resources, and are related with significant costs for prevention and resolution. According to the managers of surveyed holdings, that factor, most often considerably diminish economic sustainability, sometimes environmental sustainability, and occasionally social sustainability in the sector.

Conflicts of various types, associated with agrarian resources, have unequal effect on sustainability of different subsectors, regions, and type of farming organizations (Figure 4). Such conflicts are commonly associated with the strong interests for acquisition of ownership and/or utilization of certain limited (valuable) agrarian resources by two or more parties – individual agents, farms, related and unrelated businesses, powerful groups, etc. In certain cases there are strong conflicts, related to strategies of some large groups for “legitimate” acquisition of major resources (lands, processing facilities, entire enterprises) from smaller producers through various schemes (applying pressure, unfair competition, severe conditions for crediting, lawsuits and bankruptcy). There are many instances of conflicts, caused by not defined or badly defined rights of ownership, direction, utilization etc. of certain resources or by their “public” (good) character, as it is for the new technologies, state and municipal pastures and lands, water sources, ecosystem services, critical infrastructure, etc.

Figure 4. Negative impact of existing conflicts on agrarian resources on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

To the greatest extent conflicts over agrarian resources affect negatively the Cooperative farms (83,33%) and holdings of Physical Persons (73,33%). On the other hand, the adverse impact of that factor to a lesser extent is faced by the firms of various types. Agro-firms possess or use more - efficient mechanisms for prevention and/or effective overcoming of existing conflicts with other agents on agrarian resources. Despite that a good proportion of Sole Traders (37,5%) and Companies (44,45%) evaluate, that conflict on agrarian resources impact negatively agrarian sustainability.

The negative impact of conflicts, related to agrarian resources, increases along with the reduction of farm size, and it is typical for holdings with Small sizes (73,33%), semi-market holdings (66,67%), and farms with Middle sizes (57,14%). Furthermore, a considerable portion of Large farms (37,5%) also indicate, that such conflicts diminish agrarian sustainability. To the greatest extent the conflicts over agrarian resources influence different aspects of agrarian sustainability in sectors Mix livestock (all farms), Field crops and Mix crop-livestock (four fifths of holdings), Grazing livestock (two thirds of farms), and Mix crops (60% of holdings). The adverse effect of conflicts on resources is smallest in sectors Vegetables, Flowers and Mushrooms (one quarter of farms), where the amount of employed agrarian resources in individual holding and overall is also relatively small.

The negative impact of conflicts, associated with agrarian resources, on agrarian sustainability is the most pronounced in Mountainous regions (88,89%) and in (all) farms with Lands in protected zones and territories, and to the less extent in Plain regions of the country. The latter is consequence of the fact, that in mountainous regions the amount of agrarian resources is relatively limited and all related conflicts affect severely the sustainable development in such regions. The negative impact of that factor to a greater extent is expressed in North-Central region, in comparison with studied south regions of the country.

Possibilities and costs for disputing of absolute and contractual rights through a legitimate way are important feature of the institutional environment greatly determining opportunities for sustainable development. When there is no practical possibility to enforce (protect) legitimate rights or resolve emerging disputes and conflicts between agents through legitimate way or costs for disputing rights on resources and contractual terms through a third party (court, administration, local authority, independent expertise, arbitration, etc.) are too high, then realization of economic, social, and environmental objectives of sustainable development is difficult.

According to a big part of the interviewed managers (47,5%) the real “possibilities and costs for disputing rights and contracts through a legitimate way” affect negatively agrarian sustainability (Figure 2). That is a consequence of the fact, that legitimate means for disputes and conflicts resolution are actually “impossible”, not accessible or too expensive for using by the significant fraction of agrarian agents. For example, many surveyed agricultural producers complain from a delayed payment of purchased produce by big buyers, processors and/or food chains, or untimely provision of subsidies, compensations or assistance by the responsible state agencies. Often delayed payment by private agents or government organizations takes months, and in some cases years (e.g. compensation for damages from natural disasters), and sometimes not take place at all.

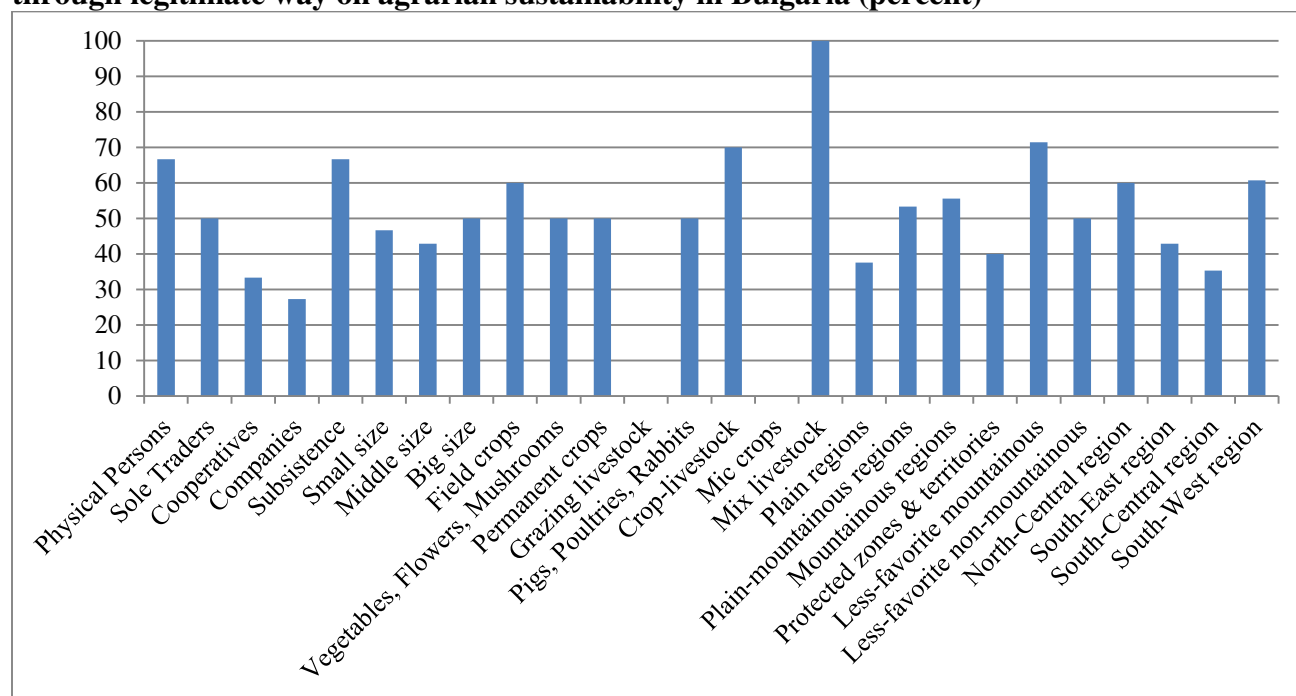
Many instances are reported, when it is too expensive or practically impossible to enforce legitimate rights on certain resources or activities through awful way, due to not working, slow or costly to use by individual agents public system of identification, enforcement, disputing and provision of rights. In all these cases, unilateral dependent from certain buyers and/or state institutions agricultural producers are harmed, without being able to enforce legitimate rights on resources and activities, or get compensation for realized losses or missed benefits. What is more, when costs (for enforcement) of private contracts are enormous then agents replace the most effective form for governing of agrarian sustainability with less efficient, but “safer” mode for safeguarding their

investments and interests – restrictions of deals and relationships with market agents, personification of trade, weaker cooperation with external agents, complete (internal) integration of transactions, targeting short-term benefits and solely own (private) profit, etc.

Only for a small portion of holdings (15%) the possibilities and costs for disputing the rights and contracts through legitimate way impact positively diverse aspects of agrarian sustainability. At the same time, according to a relatively big portion of the farms (37,5%), that possibilities and associated costs are neutral in regards to sustainability. These figures indicates, that for the majority of Bulgarian holdings the official system for disputing the rights and contracts either “work” well, or they possess (use) other informal and more-effective mechanisms for protection of their rights and contracts – good relations, privileged and/or powerful positions, personal connections, assistance from a third party, unlawful modes, etc. Some holdings do not need at all to use the official system of conflict resolution due to the lack of interest or conflicts over resources and obligations with other parties – small amount of owned or used resources, absence or small number of contractual relations, etc.

Possibilities and costs for disputing the rights and contracts thorough legitimate way are negative factor for agrarian sustainability for two third of Physical Persons and every another one of Sole Traders, one third of Cooperatives, and just above a quarter of Companies (Figure 5). Apparently, the last types of farming enterprises possess greater possibilities for covering (often high) costs associated with the protection of private rights and contractual obligations.

Figure 5. Negative impact of possibilities and costs for disputing rights and contracts through legitimate way on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Among holdings with smaller sizes and the biggest farms comparatively larger number feel the adverse impact of that factor. That is due to high costs of a “unit” of contestation, lack of experience, capability, possibilities, low frequency, etc. (for the former type of farms) or significant “overall” costs for multiple disputes as a result of the scale of activity, employed resources and contractual

relations with other parties (for the latter type of farms). The negative impact on agrarian sustainability of the existing possibilities and costs for disputing of rights and contracts through legitimate way is dissimilar in different agricultural subsectors. Those factors adversely affect all or predominant part of holdings with Mix livestock (100%), Mix crop-livestock (70%), and Field crops (60%). Among farms specialized in Permanent crops, Pigs, Poultryes and Rabbits, and Vegetables, Flowers, and Mushrooms, the negative impacts is reported by each another one. For all of the managers of holdings, specialized in Grazing livestock and Mix corps, possibilities and costs of disputing the rights and contracts through legitimate way are positive or neutral factor for agrarian sustainability.

In various ecosystems to the greatest extent are exposed of the negative impact of possibilities and costs for disputing the rights and contracts through legitimate way the farms in Less-favored mountainous regions (71,43%), Mountainous regions generally (55,56%) and Plain-mountainous regions (53,33%), On the other hand, farms located in Plain regions, and those with Lands in protected zones and territories, suffer to a lesser extent by the adverse effect of that factor. There is a great regional differentiation in the effects of the system and costs for disputing the rights and contracts through lawful way. To the biggest extent by the inefficiency of the existing system suffer holdings located in South-West and North-Central region of the country (60% of all), while farms in South-Central region are affected to the least extent (35,29%). Existing regional differentiation of the impact of that factor is determined by the different efficiency of the formal system of disputing of rights in each region, specific structure (and efficiency) of informal institutional environment and modes of governance, and unlike needs, challenges, contractual structure, accumulated experience, and internal capability of farms in each region and ecosystem.

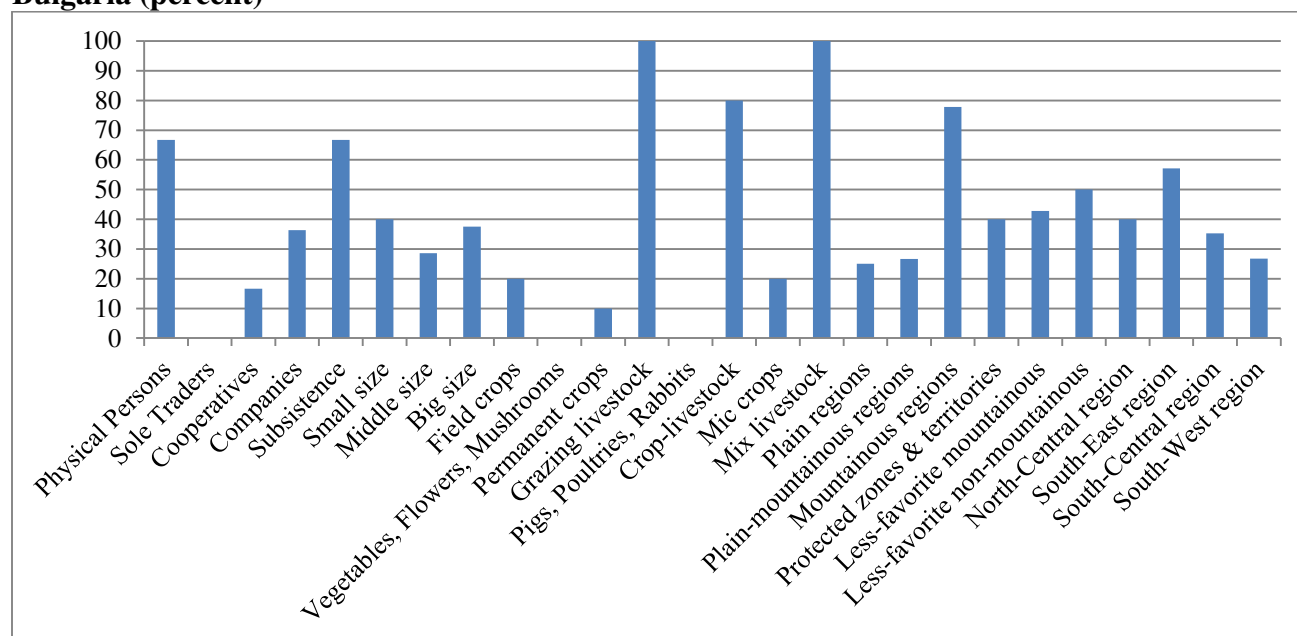
Provision of rights to use agrarian resources (farmlands, meadows and pastures, fishponds, water basins, etc.) is an important factor for their sustainable management (exploitation) as well as for sustainable development of agriculture in certain regions (mountainous, less-favored, with limited resources, inhabited or in a process of depopulation, etc.) and some major subsectors (livestock, collection of wild plants and animal species, etc.). A significant part of the surveyed holdings (37,5%) report, that the “free access to public lands” is an essential positive factor for agrarian sustainability, simultaneously for the economic as well as social and environmental aspects (Figure 2). At the same time, none of the managers assesses that such an access impact negatively the agrarian sustainability.

Despite that, many small producers in mountainous and other regions complain, that public lands not always are fairly distributed. Many instances are reported for allocation of public (state, municipal) pastures and meadows in large sizes to individuals and groups “with connections”, for which lands huge public subsidies are received. Such modes decrease social efficiency (sustainability), although they may not necessarily change (even could increase) economic and/or environmental sustainability of land use in the region. What is more, in many residential areas there are no (sufficient) municipal pastures and that creates series problems for sustainable development of many small-scale livestock breeders. On the other hand, in certain regions the land and other resources with “free access” are not utilized sustainably due to overuse (more that allowed number of livestock on a pasture, uncontrolled collection of wild plants, snails, etc.) or underuse (lack of care for public resources due to the “absence” of owners).

To the greatest degree the favorable impact of such institutional organization (“free” rather than restricted or no access to public lands) on agrarian sustainability is reported by the Physical Persons and holdings Predominately for subsistence (two third of the total number), Companies (36,36%) and Small size farms (40%), all farms specialized in Grazing livestock and Mix livestock, as well the majority of the Mix crop-livestock holdings (80%) (Figure 6). The positive impact of that factor is confirmed by the farms, located in Mountainous regions (77,78%), in two third of holdings in Less-

favored non-mountainous regions, and most of the surveyed farms in the South-East region (57,14%). The latter is subsequence of the fact, that mostly holdings with small size, growing grazing livestock, located in the mountainous regions of the country, to the greatest extent take advantage of such good opportunity. In these regions private agricultural lands are limited and there are large pastures and meadows, which are widely provided for use to local farmers. In some cases bigger livestock holdings, which are with juridical status of companies also use large municipal and state pastures and meadows. Therefore, all these produce appreciate the positive effect of the free access to public lands on agrarian sustainability.

Figure 6. Positive impact of free access to public lands on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Well formulated and controlled social rights and obligations are important element of the institutional environment, which is to improve the social aspect and the overall level of agrarian sustainability. Well defined and effectively enforced social rights of individual agents (hired labor, residents and visitors of rural areas, final consumers, etc.) facilitate relationships, secure a public protection of “weak” parties, and lead to improvement of social and overall sustainability in agriculture. According to one fifth of the interviewed farms managers “defined social rights and obligations” at the current stage of development have positive impact on agrarian sustainability, and particularly on its social aspect (Figure 2). The favorable impact is pointed out by the majority of Cooperative farms, in which social goals are principally an essential priority for the overall activity. One of the interviewed presidents of cooperatives underlines, that social responsibilities for providing employment for members are important, and therefore the coop members accept lower labor productivity in comparison to other structures. The positive impact on agrarian sustainability is also determined by other big employers (Sole Traders, Companies), which believe that social rights of workers are to be respected, and that secured workers are also economically more productive, and ecologically more efficient.

However, for the majority of the surveyed farms (67,5%) formally defined by the institutional environment social rights and obligations do not have any impact on agrarian sustainability or any of its individual aspects (including social one). That is a consequence of the fact, that many formal norms and standards, related to social rights, labor conditions and payment, etc. are not well respected or controlled in agriculture.

For a good fraction of the farms (12,5%) regulatory determined social rights and obligations have a negative impact on agrarian sustainability. Principally, bigger holdings and major employers are forced to comply to a greater extent with official norms for contracting, working conditions, wage payments, insurance, social security, etc. These farms are subject of considerable public subsidizing and along with that to a stricter control and sanctions by the state agencies for noncompliance with variety of (quality, social, environmental, etc.) standards. For some managers “new” social obligations, arising from the modernization of legislation, are associated with additional costs and diminishing economic efficiency, and together with that of overall sustainability of the sector. A large interviewed employer of seasonal labor pointed out as example the high costs for labor and social security payment (reaching up to a third of the total firm’s costs), and for preparing temporary contracts, and for constant issuing of orders for unpaid leave of absence due to unregularly appearance to work, and for termination of contracts, and for penalties, etc. At the same time it is underlined, that competitors with a smaller size in the “shadow economy” attract workers with higher wages.

On the other hand however, the greatest portion of the interviewed managers (82,5%) believe, that “efficiency of controlling social rights and obligations ” is a neutral factor for agrarian sustainability and its individual aspects (Figure 2). That is due to the fact that implementation and enforcement of social rights and obligations in the sector (similarly to other sectors in the country) is not at a good level and have no real impact on sustainability and its social aspect. Simultaneously, a good portion of holdings (12,5%) assess as positive the impact of effective control on social rights and obligations. That is a consequence of that fact, that a stricter control improves significantly the status-quo and lead to implementation of otherwise “good” social standards and norms, introduced during pre- and post-accession to European Union. At the same time, for a relatively little part of the farms (5%), “improved” control on strict implementation of social rights and obligations is undesirable, because it considerably increase costs of production and affect negatively the overall sustainability of holdings activities.

Well-defined and enforced environmental rights and obligations are a major element of the institutional structure at the contemporary stage, and important factors for sustainable exploitation and conservation of natural resources. They are particularly crucial in agrarian production, which is a major polluter and user of natural environment, as well as one of the key factors for preservation, recovery and amelioration of natural resources. In pre-accession period and after the integration of the country to the European Union a significant modernization of environmental rights have taken place, as eco-standards have been harmonized with superior European levels, new rights and rules introduced for use and conservation of lands, waters, air, ecosystem services, etc., protection and improvement of biodiversity and landscape, compliance with principles of animal welfare, etc.

According to the significant part of the interviewed farm managers (37,5%) “defined eco-rights and obligations” affect positively agrarian sustainability, particularly its environmental aspect, and eventually contribute to enhancing social and economic dimensions of sustainability as well. The favorable impact of that factor is assessed equally by holdings with different juridical type, specialization, sizes, geographical and ecological location. A big number of agricultural producers receive public subsidies, which require complying with modern eco-standards and norms. Besides, there are special measures for assisting agro-ecology and organic production imposing even higher environmental standards. There are also introduced numerous norms and standards for protection and

exploitation of natural resources as a whole or in certain regions (NATURA, less-favored, protected zones and reserves, etc.), which are obligatory for agrarian resources owners, agricultural producers and non-agrarian agents (industry, residents, visitors, etc.).

Only a tiny section of surveyed farms (5%) indicate that the structure of regulated eco-rights and obligations is a negative factor for agrarian sustainability. The latter is consequence of the fact that adaptation of holdings to requirements of new environmental rules in the sector is associated with additional costs or considerable lost benefits. At the same time, the majority of interviewed managers (57,5%) believe, that defined eco-rights and obligations are not important for agrarian sustainability, including its environmental aspect. Very often agricultural producers are not well familiar with or implement new eco rules and norms due to the lack of means, capability for adaptation or weak (practically impossible, too expensive, politically unacceptable) control by the state bodies. Subsequently most agricultural producers do not put any importance on the structure of eco-rights and eco-obligations in the governance of agrarian sustainability.

In other instances provided rights for profiting from eco-activities and products do not allow obtaining any market and contractual bonus. According to some of surveyed holdings, which are certified for organic production, they mostly sell their output at normal market prices without receiving needed bonus for organic produce. That is further reinforced due to the fact that internal demand for organic produce in the country is not big, markets for agrarian organic products are in the process of development, and/or many small producers have no access to such markets.

Moreover, three quarters of surveyed farms do not think, that the “efficiency of the control of eco-rights and obligations” is of significant importance for agrarian sustainability, and for environmental aspect in particular (Figure 2). The reason for the latter is that permanent control on eco-standards in a geographically extensive and multifaceted sector like agriculture is relatively weak (or practically impossible), violations are easily hidden, often disputed or difficult to prove (through expertise, court, etc.), while sanctions for noncompliance are insufficient to induce mass pro-environment behavior. On the other hand however, every fifth holdings believes that improved efficiency of the control on eco rights and obligations in the past years affect favorably agrarian sustainability and its environmental dimensions. These are mostly larger producers, which understand well and try to comply with mandatory standards for quality, ecology, protection of nature and biodiversity, etc. These holdings strive to preserve (and improve) quality of utilized natural resources, since to a greater extent are controlled by the state bodies, and greatly suffer from detected violation and sanctions (fines, ceasing production, restoration costs, etc.). Some producers also think that “production” pressure of the sector on environment is not strong due to low application of fertilizers, crop protection chemicals, intensification of activity, etc.

Relatively few farms (5%) indicate, that control efficiency on eco-rights and obligations affect negatively agrarian sustainability. Those are producers which are either unconvinced (aware) with the meaning of effective eco management, or disinterested in the latter (due to advance age, part time involvement of farming, practicing a short-term lease of others resources, negative impacts on third parties, etc.), or have no financial, expert etc. capabilities to carry necessary eco-activities in a needed scale and terms. For that type of producers the improved public control is an “obstacle” for sustainable development of their holdings, since it is associated with additional costs for eco-actions, payments of penalties for violations, bribes to controlling authorities, etc. Many examples are presented for not provided accurate information about the real (eco)state in order to trade on markets and/or participate in public programs, professional and other organizations, as shortage of efficient “external” (quality, integral crop protection, pollution, waste management, etc.) control favor that. For instance, in order to take part in the selection control, an interviewed cooperative provides inaccurate information for the number of livestock, to prove unfeasible (but required) normative milk yield per cow head.

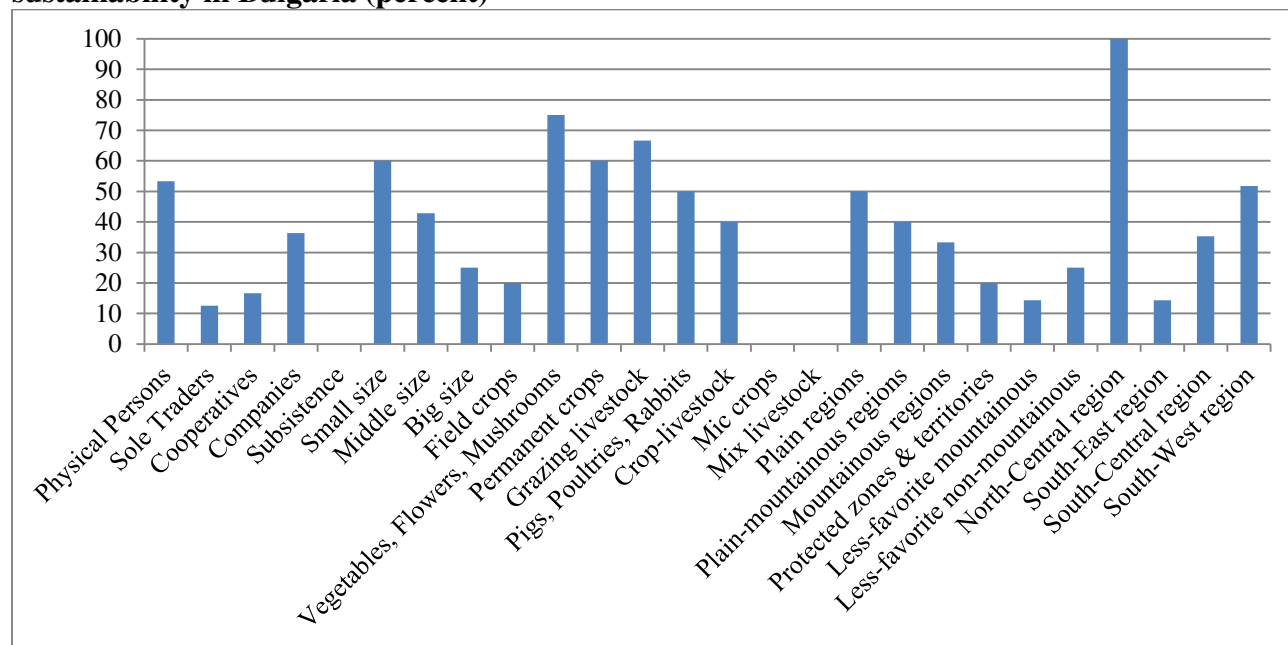
Creation of an environment for effective market competition in the country and its individual regions is an important factor for efficient resources allocation and utilization and for governing sustainable development of the sector. A big portion of interviewed holdings (40%) report that “existing market competition in the country” impact positively agrarian sustainability and its aspects (Figure 2). Bulgaria is a small country and many bigger farms compete successfully with local and international producers in a nationwide scale. However, for the majority of interviewed managers (42,5%) the type and character of market competition in the country is a negative factor for agrarian sustainability. Many farmers believe that there are not favorable conditions for loyal competition with foreign goods and between domestic producers. As reasons for the latter are following: policies for trade liberalization (including countries outside of the European Union), bad regulations and/or control for illegal import, domination of large buyers (food chains, processors, exporters, middlemen, etc.), wide informal (shadow) sector in the country, unequal public support to different subsectors of agriculture and type of producers, etc. An interviewed big livestock farmers indicates, that multiple bankruptcies in recent years as a result of the “low milk price” are a serious problem, still waiting solution. Another farmer in integrated grape and wine production lost his winery due to a failure to pay high bank interests. According to that manager it is necessary to establish a guarantee (supporting) national fund in order to prevent failures of structures with a high productivity but financial difficulties.

Many surveyed farmers also report, that the severe market competition leads to compromising social and environmental aspects of agrarian sustainability in order to maintain economic vitality. Examples are also given for missing or undeveloped markets for certain products in agriculture such as Lucerne, silage, manure, lack of short or long term agrarian credit, etc. In the latter cases, producers look for private ways for dealing with the issues – own production, contraction of activity, free provision, barter or combine exchanges, illegal waste disposal, contracts for chemicals etc. supply interlinked with crediting (“portion payment”), and so forth. Another reason for that problem in the country is that still there are not developed more complex and (often) more efficient market forms as alternative of competition with current prices such as future deals, forecasting and waiting for “high” prices, long-term contracts, vertical integration, etc. That is a consequence of the insufficient experience, information, superior costs (for of harvest storing, keeping, etc., contracting), uncertainty and risk for holdings, etc.

For a relatively small portion of the farms (17,5%) market competition in the country is a neutral factor for agrarian sustainability. Those are mainly smaller size producers, semi-market holdings or farms with unique produce and guaranteed marketing (due to freshness, superior taste, preferred local products and varieties, etc.). That type of producers has no serious competition in local or regional scale and/or competes with big players at national or international scale.

The negative impact of market competition in the country on agrarian sustainability is faced differently by farms of various juridical type, sizes, production specialization, geographical and ecological location. To the greatest extent the adverse effect on agrarian sustainability is felt by Physical Persons (53,33%), holdings with Small size (60%), producers specialized in Vegetables, Flowers, and Mushrooms (75%), Grazing livestock (66,67%), Permanent crops (60%), and Pigs, Poultry and Rabbits (50%) (Figure 7). The latter categories of holdings and agricultural subsectors mostly suffer from the intensification of competition in the country in the past several years.

Figure 7. Negative impact of existing market competition in the country on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Existing nationwide market competition is a negative factor in regards to agrarian sustainability for every another farms situated in Plain regions of the country, for all holdings in North-Central region, and more than a half of the farms in South-Central region. The adverse effect to the least degree impact Sole Traders (12,5%) and Cooperatives (16,67%), farms with Big sizes (25%), holdings specialized in Field crops (20%), and located in Less-favored mountainous (14,29%) and non-mountainous (25%) regions, as well as with Lands in protected zones and territories (20%). All these type of farms, production subsectors, and ecological regions are with superior comparative advantages for exploration of economies of scale and scope in production and marketing, with good competitive and negotiating positions, established reputation and effective marketing channels. Moreover, these holdings, productions and regions also enjoy the biggest public support – subsidies for areas of utilized lands, agroecology, less-favored regions, etc.

For the majority of surveyed agricultural producers (60%) “existing market competition in the region” is a neutral factor in relation to agrarian sustainability and its aspects. The little importance of the local competition is caused by the fact that many of producers work (and compete) for national and international markets and/or supply giant commercial chains and processors. Competition at local level is between limited numbers of small producers for restricted number of local buyers, and here relations are “governed” by personal, rather than market connections – high trust, elaborated clientalisation, and high frequency of deals between same partners, etc.

Simultaneously, for a good proportion of the interviewed managers (22,5%), market competition in the region is a negative factor for agrarian sustainability, and particularly its social and environmental dimensions. The latter is mostly typical in the regions with intensive production, high population density, and for smaller size commercial holdings. What is more, many of interviewed managers indicate the lack of sufficient qualified and low skilled workers in the sector as one of the main factors, obstructing development at the current time. The latter demonstrates that local markets do not work well and bring an increase in the prices and “satisfaction” of existing demand for hired

labor. Subsequently farm size is not expanded to the effective scale, or important agro-technical and other activities implemented in an effective scale, or more expensive mode of governance applied (as a permanent labor contract, purchase of external services, leasing out of “idle” resources, etc. instead of using a contract for seasonal employment). Many managers also complain from the shortage of financing in agriculture, which is indicative that loan markets do not work well at local and national level (unattractiveness, high risk, long pay back periods, etc. in the sector). Many examples are also given for farmers selling output and /or supplying from agents in other (often remote) regions, because local suppliers and buyers are not reliable (delayed implementation or default of negotiated terms).

On the other hand, a good portion of surveyed farms (17,5%) indicate the positive impact of market competition in the region on agrarian sustainability. A well working local market provides opportunity for numerous smaller producers in the region to realize comparative advantages in relation to producers (products) of other regions of the country and/or import – lower prices, higher quality, freshness, origin authenticity, rapid and quality supplies, produce marketing in a “package with service” (farm visit, protection of nature, personal consultation, etc.). Superior competitiveness allows not only to maintain the economic vitality of local farms, but also to improve their social and environmental functions.

Liberalization and costs, associated with international trade, are important factors for stimulation of local producers and realization of their competitive advantages in larger international scales. The majority of surveyed holdings (57,5%) do not directly take part in export or compete immediately with imported goods, and for them “possibilities and costs for import and export” are neutral factor for agrarian sustainability and its aspects (Figure 2). The majority of interviewed managers (27,5%) evaluate at positive the existing possibilities and costs for import and export on agrarian sustainability at current stage. Those are mostly larger producers in export oriented or related agricultural subsectors, for which possibilities for effective participation in international trade additionally improve some or all aspects of agrarian sustainability in the country. At the same time however, for 15% of holdings, the good opportunities and low costs for import and export (“globalization”) are negative factor diminishing competitiveness, destroying national production and producers, and having not only socio-economic but also environmental consequences (devastation of family holdings, inferior lands fertilization and cultivation, lack of irrigation, practicing monoculture in large scales, unproductive utilization and/or abandoning of fertile lands, lost traditional varieties, productions, and biodiversity, etc.).

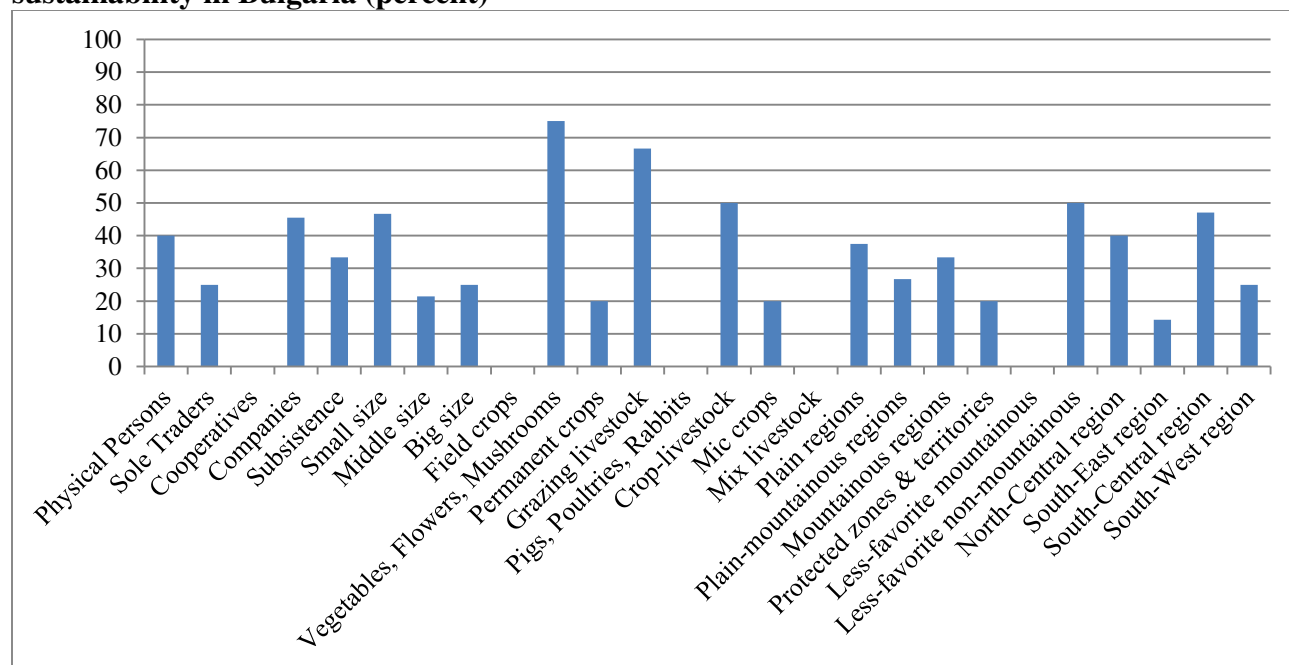
Legislative and regulatory arrangements are important element of the institutional environment, which are to regulate (govern) the maintenance or achievement of agrarian sustainability and all of its aspects. According to the majority of interviewed managers (47,5%) existing in the country “legislative and regulatory arrangements” do not have any effect on agrarian sustainability or its aspects (Figure 2). The latter means that either the system of laws and formal regulations does not aim at improving agrarian sustainability, or the extent of implementation and enforcement of the system of laws and rules contribute to achievement of goals of sustainable agrarian development. For example, many interviewed managers confess that they apply for different type of subsidies (for products, ecology, organic agriculture, etc.) only to get public support, and after that they destroy subsidized crops. Obviously, such kind of subsidies (public “assistance”) has no particular benefit for agrarian sustainability and program objectives (besides creating temporary employment).

A good fraction of the farms (32,5%) assess as negative the impact of legislative and regulatory settings in the country on agrarian sustainability. Numerous farmers complain that the multiple regulations of the Ministry of Agriculture and Food are difficult to study, not published on time, with a very short period for examination, preparation and application for support or complying with regulations, while sanctions for violation are great. The latter means that existing laws and regulations

at the present time of development in the country do not stimulate or regulate well activity of the main agents in the sector (farm managers, owners of agrarian resources, agrarian bureaucracy, users of agricultural produce and services). In some instance, they even obstruct realization of socio-economic and environmental aspects of agrarian sustainability. An interviewed large producer gives a good example demonstrating how difficult and costly is to register a big size combine purchases in Yambol (South-East Bulgaria). Combine inspection and registration have to be done in Sofia (300 km away in West Bulgaria), and numerous (for each administrative region) special permissions are required for movement of the combine through all 7 regions from Yambol to Sofia. In order to deal with that challenge unlawful driving of the combine in the country is undertaken (with paying fines and/or bribes to police). Also many examples are shown for delayed payments of subsidies, compensation, etc. by the state agencies, creating enormous difficulties for producers of different type. Merely for each fifth of the interviewed managers, the contemporary legislative and regulatory arrangements contributes (impact positively) to accomplishing agrarian sustainability.

There is a great differentiation in the negative impact of the legislative and regulatory settings on the behavior for sustainable agriculture of producers of different juridical type, sizes, product specialization, geographical and ecological location (Figure 8). To the greatest extent the adverse impact of the legislative and regulatory framework affect Physical Persons (40%) and Companies (45,45%), holdings with Small size (46,67%), and those specialized in Vegetables, Flowers, and Mushrooms (75%), Grazing livestock (66,67%), Mix crop-livestock (50%), as well as farms located in the Less-favored non-mountainous regions (50%), and North-Central and South-Central regions of the country (accordingly 40% and 46,06%).

Figure 8. Negative impact of existing legislative and regulatory arrangements on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

On the other hand, legislative and regulatory settings do not affect adversely agrarian sustainability in Cooperatives and holdings, specialized in Field crops, Pigs, Poultry and Rabbits, Mix livestock, and farms in Less-favored mountainous regions. The negative impact of the legislative

and regulatory arrangement is lesser for Sole Traders (25%), holdings with Middle (21,43%) and Big (25%) sizes, and in subsectors of Permanent crops and Mix crops (each 20%), located in Plain-mountainous regions (26,67%), and with Lands in protected zones and territories (20%). To the least extent the legislative and regulatory framework affects agrarian sustainability of farms in South-East (14,29%) and South-West (25%) regions of the country.

Official standards for product quality, working conditions, environment protection, etc. greatly (could) facilitate activity and relations of various agents, assist increasing efficiency, and sustainable development. According to more than a half of interviewed farmers (52,5%), existing in the country system of “formal standards for products, labor, etc.” has no impact on agrarian sustainability and its socio-economic and environmental aspects. That is a consequence of the fact, that dominating system of formal standards is not directed toward realization of diverse goals of agrarian sustainability in the greatest part of agricultural producers, due to a bad design, mismatch with practical needs and/or inferior practical implementation.

At the same time however, 30% of surveyed farms believe that official standards for products, labor, etc. support sustainable development and are a positive factor for achieving agrarian sustainability and its main aspects. Apparently, introduction and control of modern standards of European Union for products quality and safety, conditions and assurance of labor, natural resources protection, cross-compliance, etc. also contribute to improvement of agrarian sustainability in the country. The latter however, concerns mostly larger producers and major market players, having greater capability, strong interests and financial means to introduce new standards and meet market and institutional requirements. That also concerns the best part of holdings receiving public subsidies and participating in various support programs, since they are a subject of constant and stricter control by different state bodies.

For a good portion of holdings (17.50%) adaptation to novel quality, environmental, labor, etc. standards is too expensive, technically not feasible, undesirable or unnecessary, and leads to negative consequences in regards to agrarian sustainability or some of its aspects. Principally, those are smaller-size holdings, with a lower capability (expertise, financial potential) for adaptation, in less developed regions of the country, as well as owned by advance age entrepreneurs. That type of farms also suffer greatly from enhanced control for precise compliance with modern standards from the state authority, due to the high costs for adaptation and complicated bureaucratic procedures, impossibility or big losses from paying penalties, bribes, etc.

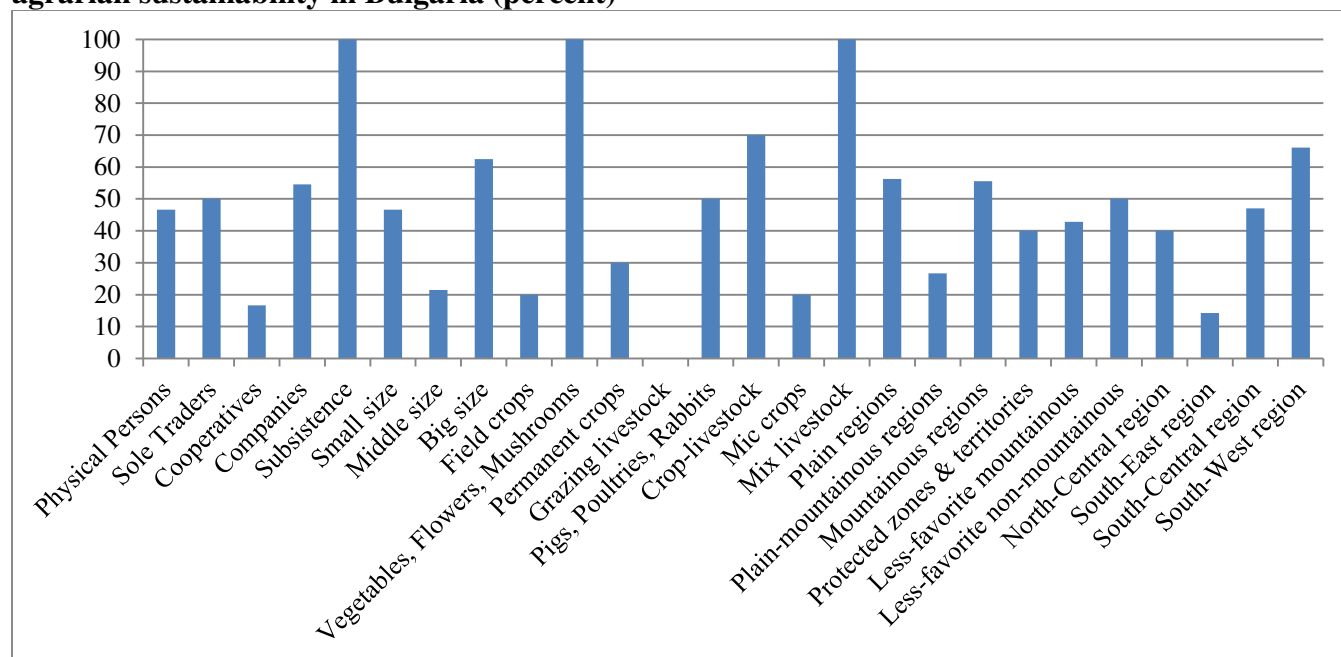
The actual implementation of existing laws, standards, rules, etc. is an important component of the institutional environment and factor for sustainable development. In Bulgaria the entire legislation was “harmonized” with that of European Union and high standards for quality, safety, environment protection, animal welfare, etc. introduced in the pre-accession period. Despite that, a big part of otherwise good laws and regulations does not work well due to the bad implementation by the state and private agents, insufficient control and lack of efficient mechanisms for stimulation and/or punishment. It is not by accident that a majority of the interviewed farm managers (45%) report that the “real implementation of laws, standards, etc.” in Bulgaria is a negative factor for agrarian sustainability (Figure 2). The biggest fraction of the farmers believe that there is not supremacy of law and/or laws and rules are implemented equally to all in the sector and/or equally well in all regions of the country. There are also some managers, according to whom “good” enforcement of certain laws and rules is not associated with real improvement of individual aspects of agrarian sustainability, due to inferior (not corresponding to the needs, costly for agents, cumbersome, etc.) regulatory system.

An important part of interviewed managers (37,5%) assess as neutral the impact of the actual implementation of laws, standards, etc. on agrarian sustainability. In many cases, existing on paper

“good” laws and standards practically “are not implemented” or incompletely applied. That consequently leads to nonfulfillment of expected results for amelioration of diverse aspects of agrarian sustainability. The smallest portion of surveyed managers (17,5%) suggests that real implementation of laws, standards, etc. is effective, and that contribute to improvement of socio-economic and environmental aspects of agrarian sustainability. Those are agricultural producers, subsectors and regions, where formal laws and rules are applied and controlled comparatively well and that is associated with an actual enhancement of agrarian sustainability. That share of farms give also approximate insight for (insignificant) extent of agricultural holdings in the country, in which official rules, standards, norms, etc. are implemented and controlled well.

To the greatest extent the negative impact of the (low) “efficiency” of the system of actual application of laws, standards, etc. is faced by Companies (54,55%), Sole Traders (50%), Physical Persons (46,67%), holdings with Small (46,67%) and Big (62,5) sizes, producers specialized in Vegetables, Flowers, and Mushrooms (100%), Mix livestock (100%) and Mix crop-livestock (70%) (Figure 8). On the other hand, Cooperatives (16,67%), farms with Middle size (21,43%), holdings specialized in Grazing livestock (0%), Field crops and Mix crops (by 20%), and Permanent crops, to a lesser degree are affected by the adverse impact of that factor. Similarly, while only a little portion of farms in Plain-mountainous regions (26,67%) and in South-East region of the country (14,29%) report the negative impact of agrarian sustainability of the extent of real implementation of laws, standards, etc., a comparatively greater portion of agricultural producers in Plain (56,25%) and Mountainous (55,56%) regions, and in South-West region of the country (66,07%) are affected by the adverse consequences of that imperfect institutional organization.

Figure 8. Negative impact of the extent of real implementation of laws, standards, etc. on agrarian sustainability in Bulgaria (percent)



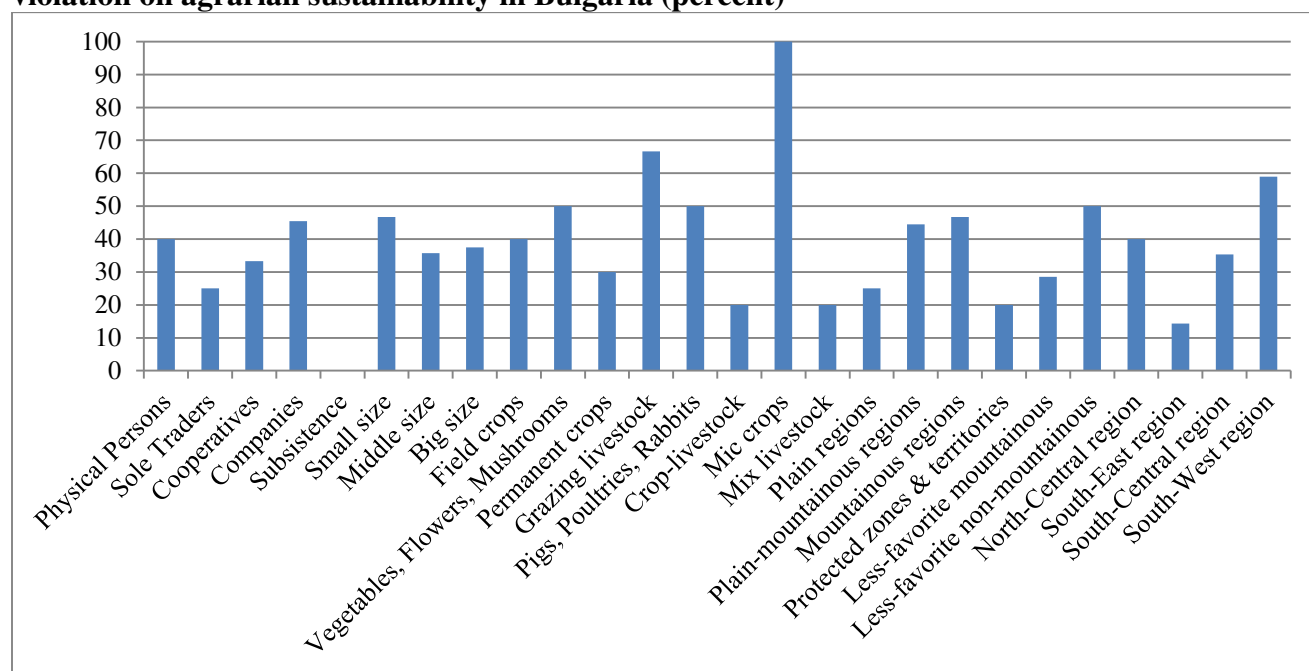
Source: interviews with managers of farms, 2017

Presence, type and amount of public sanctions for violating laws, rules, norms, etc. are important factor for effective operation of the institutional environment and governing activities of various agents (resources owners. Producers, consumers, government administration, etc.). The

biggest part of interviewed managers (45%) do not think that “existing public sanctions (fines, punishments) for violation” affect in any way activities and actions of agents for maintaining and/or increasing agrarian sustainability and its aspects (Figure 2). That is a consequence of the fact that existing system of sanctions does not provoke adequate behavior for amelioration of agrarian sustainability due to insufficient amount (fines, punishments, etc.) or inefficient organization (weak control, monitoring, lack of correlation between sanctions and outcome of activity, slow procedures, etc.). At the same time, only a tiny portion of holdings (17,5%) suggest that the system of public sanctions for violation “work well” and lead to positive results in regards to elevation of agrarian sustainability. A big proportion of farm managers (37,5%) evaluate as negative the impact of the character and the size of public sanctions for violation on agrarian sustainability and its different aspects. That is a result of the fact that superior and adequate sanctions are associated with increasing costs for prevention of likely violations and/or payments for actual violations, without however being always connected with any or proportionate improvement of agrarian sustainability or its specific aspects.

To the greatest extent the negative impact of the public sanctions for violation are faced by the Physical Persons (40%) and Companies (45,45%), while among Sole Traders and Cooperatives affects only a quarter and a third of them accordingly (Figure 9). The latter kind of farms either have less and unimportant violations (less frequent and smaller sanctions) or the sanctions payments to a lesser extent affect the overall outcome of their activity (a tiny share of sanctions in total costs, high return on costs for sanction payments comparing to the benefits of violations, etc.).

Figure 9. Negative impact of the existing public sanctions (fines, punishments) for violation on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

The adverse effect of the public sanctions for violation is greater for Smaller size (46,67%) and farms specialized in Grazing livestock (two third of them), Mix crops (100%), Vegetables, Flowers, and Mushrooms, as well as Pigs, Poultry, and Rabbits (correspondingly for every another one). On

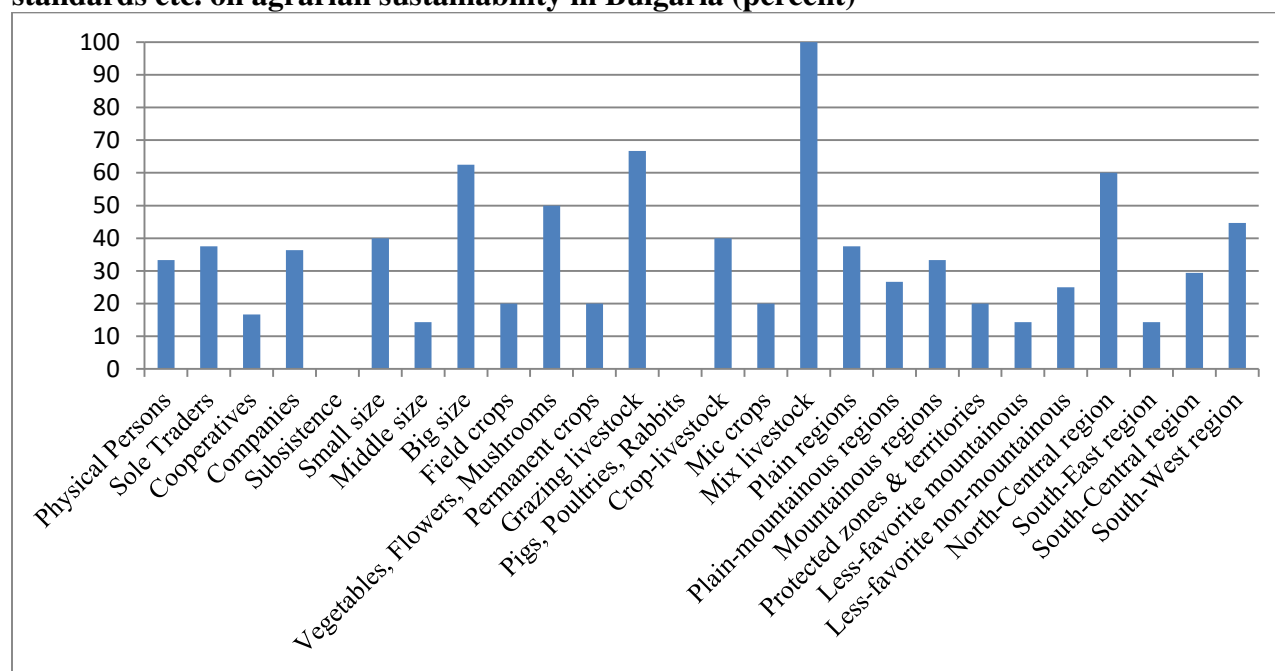
the other hand, farms with Mix livestock and Mix crop-livestock to a lesser extent are impacted by the system of public sanctions for violation (every fifth one). The latter either make less violations (a high compliance with public norms and standards), or their violations are more difficult to detect and effectively punished, or implemented sanctions are not proportional to received benefits from breaking rules. Depending on the ecosystems, farms located in Mountainous (46,67%) and Plain-mountainous (44,44%) regions as well as in Less-favored non-mountainous regions (50%) most greatly indicate the negative effect of the public sanctions for violation. Similarly, most farms located in South-West region of the country (58,92%) report the negative impact on agrarian sustainability of public sanctions for violation, while in South-East region of the country they are least numerous (14,29%).

“Costs for implementation of formal and informal norms, standards, etc.” are costs of the farms for adaptation to requirements of socio-economic, institutional and market environment. Along with traditional (“production”) costs, they determine to a great extent the efficiency of farming activity, as their high level could impede sustainable agrarian development. According the majority of interviewed managers (62,5%) the level of such costs have no effect on agrarian sustainability or certain aspects (Figure 2). Therefore, costs for adaptation to regulatory requirements are not important for maintaining or increasing agrarian sustainability, or the actual agrarian sustainability level does not depends on effective amount of such costs. Simultaneously merely 5% of all holdings believe that the real costs for implementation of formal and informal norms, standards, etc. have a positive impact on agrarian sustainability or some of its aspects.

At the same time however, for a relatively good portion of farms (32,5%) growing amount of costs for adaptation to constantly evolving formal requirements of institutional and market environment as well as existing informal rules are negative factor for agrarian sustainability. It is well known that farms have high additional costs for complying with novel standards for quality, safety, ecology, etc. of the European Union, with voluntary or compulsory “codes of behavior” of various professional organizations, purchasing industries, commercial chains, consumer associations, etc. Studying out and training in/and implementation of multiple laws, norms, etc. in agrarian sphere is also associated with enormous costs for individual producers. Furthermore, agricultural producers have significant costs for “complying” with informal rules – informal standards of buyers, bribe payments, doing “favors”, giving “presents” to controlling and protecting bodies and persons, etc.

The greatest adverse effect on agrarian sustainability have the amount and character of costs for implementation of formal and informal norms, standards, etc. for the managers of firms of different type – Sole Traders (37,5%) and Companies (26,36%) (Figure 10). On the other hand, to least extent the negative impact of that type of costs is felt by the Cooperative farms – sole 16,67% of them.

Figure 10. Negative impact of the costs for implementation of formal and informal norms, standards etc. on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

The costs for implementation of formal and informal norms, standards, etc. are negative factor for agrarian sustainability according to the majority of managers of Big size holdings (62,5%). These farms to a greater extent comply with formal rules, interact with external agents and institutions, and have higher absolute and relative costs of that type. In individual subsectors of agricultural production the negative impact on agrarian sustainability of the costs for implementation of formal and informal norms, standards, etc. is faced to the greatest degree by farms specialized in Mix livestock (all of them), Grazing livestock (two third), and in Vegetables, Flowers, and Mushrooms (every another one). In all these subsectors the size of farms is relatively small, while costs for adaptation to the new standards of the European Union, market counterparts, and nonmarket agents extremely high. To a little extent the negative impact of such costs affects highly standardized and mechanized productions like Pigs, Poultry, and Rabbits (0%), Field crops, Permanent crops, and Mix crops (one fifth of holdings).

Costs for implementation of formal and informal norms, standards, etc. to a greater extent impact negatively the farms, located in Plain regions of the country (37,5%), while in Less-favorite mountainous (14,29%) and non-mountainous (25%) regions, and in the farms with Lands in protected zones and territories (14,29%) the adverse effect of that factor on agrarian sustainability is less important. Similarly, costs for implementation of formal and informal norms, standards, etc. are negative factors for the significant part of farms, situated in North-Central region (60%), while in South-East region of the country they are essential only for relatively small fraction of holdings (14,29%).

Possibilities and restrictions for free contracting are important factors for optimization of the governance of sustainable development according to the interests and initiatives of various private and market agents. For more than a half of surveyed farms (55%) existing “possibilities for free contracting” are a positive factors for agrarian sustainability, predominately for economic, and to a smaller extent for social and environmental aspect (Figure 2). The positive impact of that factor is

pointed out by farm managers of different type, for which provided real freedom to negotiate conditions and prices of exchange are critical for effective and sustainable development.

At the same time however, every fifth of surveyed farms indicates that “possibilities for free contracting” affect negatively agrarian sustainability or its individual aspects (mostly economic one). That concern commercial holdings of various juridical type, size, production specialization, and locations, all of which suffer from “free contracting” with counterparts. Many of the Bulgarian farms of different type have a high asymmetry of contractual positions (a great unilateral dependency) with dominating buyers and/or sellers – big quasi or monopoly suppliers of materials, energy, water, credits, etc. and/or buyers of agricultural produce and services. Agricultural producers have no real possibility to choose a partner and negotiate prices, terms of payment, amount of damages, etc. in relations with suppliers and buyers. At the same time, farms are not able (too expensive) or willing (lack of alternative supplier or buyer) to protect their interests in legitimate way and therefore constantly suffer by the “provided freedom”.

Interviewed managers also point out many examples for contracts violation by public (state, municipal, international) bodies adversely affecting agrarian sustainability. For instance, often negotiated subsidies transferred on time or in a required amount, contracted terms are not fulfilled by local and state authorities, etc. Disputing of such “contracts” through a third part (court, etc.) is too expensive or undesirable for individual producers, due to a high specificity, low efficiency, huge costs and bureaucratic procedures, as well as likelihood for subsequent “punitive actions” by the provider of public services (and sanctioned) state body. For a quarter of interviewed managers existing possibilities for free contracting have no importance for agrarian sustainability or some of its aspects in the contemporary conditions of Bulgarian agriculture.

Quantity and quality of available information of interested agents is essential factor, which predetermine the efficiency of the governance of agrarian sustainability. According to the majority of surveyed managers (62,5%) “available information for prices, markets, innovations, etc.” Impact positively agrarian sustainability and its different aspects (Figure 2). The favorable effect of the “system of provision” of information for effective governance of agrarian sustainability is indicated by all type of agricultural producers. Different kind of holdings (large, small, individual, group, specialized, not specialized, etc.) have unequal information needs and possibilities for access (collection, purchase, etc.) and processing (skills, qualification, available experts, etc.) of diverse information. Despite that however all underline that external environment work well and information they possess lead to improvement of agrarian sustainability or some of its socio-economic and environmental aspects.

Only 2,5% of farms suggest that available information for prices, markets, innovations, etc. is not sufficient or misleading, and therefore is a negative factor for agrarian sustainability. Simultaneously, a good portion of agricultural producers (35%) evaluate as neutral the importance of available information for process, markets, innovations, etc. in relation to sustainable agrarian development. Some of the latter holdings (small, subsistence, extensive, etc.) have no great information needs, while another part have no access to information (from media, advisory and training system, consultants, etc.), which is beneficial to the management of their multifunctional activity. Our survey also has found out that many farm managers have none or sufficient reliable information for important parameters related to agrarian sustainability such as: extent of erosion and pollution of soils, quality of ground waters, protected species, biodiversity, etc. in the region or in the area of their farms.

Existing “freedom and restrictions” for formal registration of business forms, joint organizations and associations of agrarian and non-agrarian agents, and associated costs and time of interested parties is one of the major factor for development of efficient private and public modes of

governance of agrarian sustainability. According to the majority of surveyed farms existing “possibilities and costs for registration of enterprises, associations, and organizations” at present stage have a little impact on agrarian sustainability or its main aspects (Figure 2). That means that for most managers there are no formal institutional restrictions or high costs and difficulties for registration of various private and collective modes for governing of activity and relations, managing relations with market and private agents, and for lobbying for public support. These farmers of different type assess as “normal” possibilities and costs for registration of private and collective organizations of agricultural producers. Another reason is that majority of Bulgarian farmers rarely participate in a formal registration of any business and other forms (firms, joint ventures, cooperatives, associations, etc.).

A relatively small fraction of interviewed managers (17,5%) indicate that existing possibilities and associated costs for registration of farms, associations and organizations affect favorably agrarian sustainability. That group includes managers-innovators looking for new organizational forms for improving activity and actively (and frequently) taking part in procedures for formal registration of various organizational formations. Many of these entrepreneurs are with accumulated experiences in such activity, or use qualified specialists for carrying out formal registrations, and therefore their costs and efforts are not big.

However, a good number of surveyed farms (12,5%) believe that existing possibilities and costs for registration of farms, associations, and organizations affect negatively agrarian sustainability. Those are usually smaller producers with little experience in formal procedures and/or capability to hire expensive specialists (consultants, lawyers, etc.), for which related institutional restrictions (bureaucratic procedures, high costs of resources and timing, etc.) are obstacle for improving agrarian sustainability or some of its aspects.

Existing formal possibilities for registration and protection of products, origins, activities, etc. and associated costs and time are another important factors for effective development of variety of new forms for governing of agrarian sustainability and its diverse aspects. For the majority of surveyed holdings institutionally determined possibilities (freedom, restrictions) and costs for registration of products, origins, activities, etc. have no significant impact on the governance of agrarian sustainability (Figure 2). That is a consequence of the fact, that most Bulgarian farmers do not formally register new products, origins, trademarks, etc. and therefore think that available possibilities and related costs are important in regards to agrarian sustainability. At the same time, for every forth of the interviewed managers existing “possibilities and costs for registration of products, origins, activities, etc.” have a favorable impact on agrarian sustainability and its individual aspects. These are predominately entrepreneurs well familiar with and using formal procedures for official registration of special products, origins, technologies, etc. Along with introduction of the European legislation in the area of registration and protection of agrarian intellectual property in the country gradually are disseminated various forms by private agents and/or farmers organizations (protected products, denominations, origins, bio certification, eco-products and services, etc.). These innovations give new opportunities for increasing efficiency of private and collective initiatives and investments, while the lack of bureaucratic obstacles and/or costs, associated with their registration, enhance agrarian sustainability.

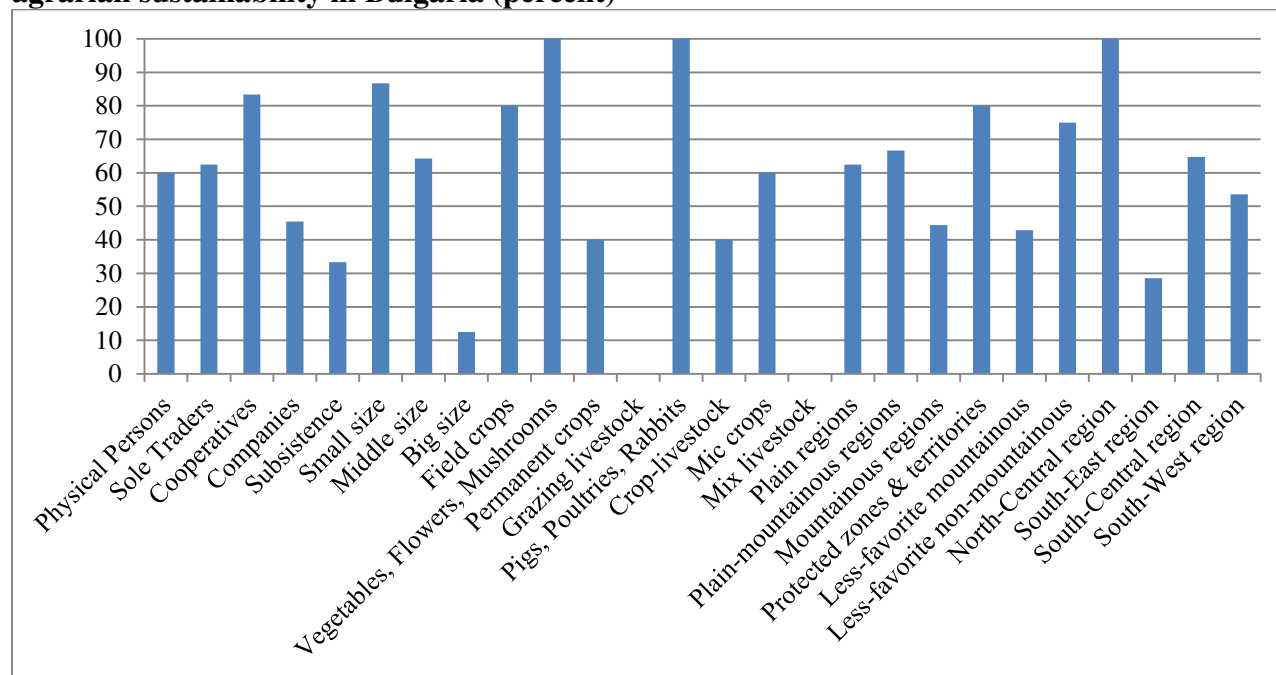
Only a tiny proportion of surveyed holdings (2,5%) assess as negative the impact of existing possibilities and costs for registration of products, origins, activities, etc. on agrarian sustainability. For some entrepreneurs existing institutional restrictions and costs prevent effective registration of novel products, origins, activities, etc. That is a result of inferior financial capabilities for payment of fees, wages, bribes, etc., insufficient experience and/or expertise for such activity, lack of qualified personnel or practical difficulties, associated with complicated, incomplete and/or vague bureaucratic

rules and procedures. The respondents also point out examples when the lack of compulsory certification for certain activities (e.g. production of propagating plants, eco-products, etc.) is a factor for widespread dissemination of inauthentic to declared origin and quality products.

Existing opportunities or obstacles for investment in agriculture and economy as a whole are important factors for improving agrarian sustainability and all its aspects. A quarter of surveyed farm managers evaluate as positive the impact of “possibilities and obstacles for investment” at current stage of development of Bulgarian agriculture (Figure 2). For a relatively little portion of the farms (15%) possibilities and obstacles for investment in the operating environment, are neutral factors, which neither stimulate nor deter improvement of agrarian sustainability. For the majority of agricultural producers (60%) however, real possibilities and obstacles for investment in agrarian sphere obstruct agrarian sustainability and its aspects. For most Bulgarian holdings socio-economic and institutional environment do not provide favorable opportunities for finding investment resources or sufficient incentives for investment activity for increasing economic, social and/or environmental sustainability in the sector.

To the greatest extent existing possibilities and obstacles for investment deter agrarian sustainability in Cooperatives (83,33%), holdings with Small sizes (86,67), (all) farms specialized in Vegetables, Flowers and Mushrooms, as well as Pigs, Poultryes and Rabbits, farms with Lands in protected zones and territories (80%), and located in Less-favored non-mountainous regions (75%), as well as in North-Central region of the country (Figure 11). On the other hand, the specific socio-economic and institutional environment to a lesser extent affects adversely the investment activity for improvement agrarian sustainability of Companies (45,45%), farms with Big size (12,5%), holdings specialized in Grazing livestock and Mix livestock (0%), and those situated in Mountainous regions (44,44%), Less-favored mountainous regions (42,86%), and in South-East region of the country (28,57%).

Figure 11. Negative impact of existing possibilities and obstacles for investment on agrarian sustainability in Bulgaria (percent)



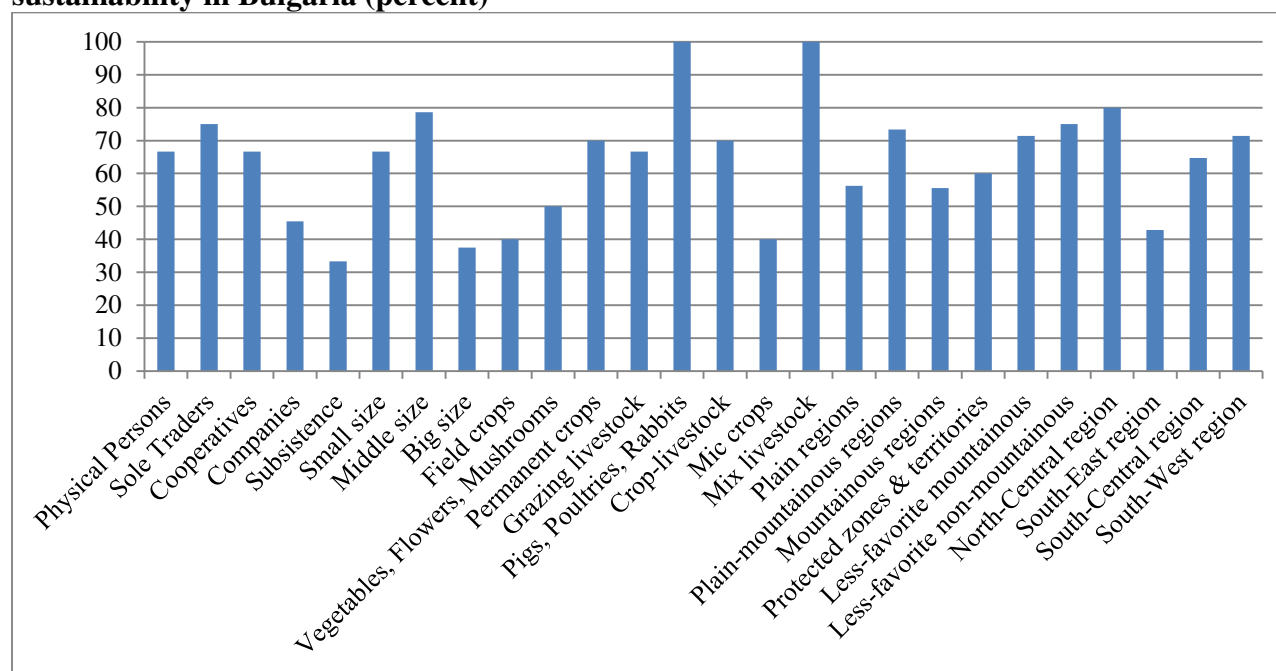
Source: interviews with managers of farms, 2017

Existing monopoly and power positions most often considerably obstruct effective allocation of resources and sustainable development of business organizations, sectors of economy, and individual regions and communities. That is particularly important in agriculture, where producers rarely have monopoly positions – numerous small and competing farms, inefficient national organizations for price negotiation, lack of public prices regulation (guarantee), etc. What is more, very often farms face complete or partial monopoly both in the supply of materials, energy, credit, insurance and other services, as well as in marketing of farm produce.

Our survey has proved that for the majority of the managers of agricultural holdings (62,5%) “existing monopoly and power positions” affect negatively agrarian sustainability and its individual aspects (Figure 2). Merely 5% of all farms assess the actual situation in regards to monopoly as favorable for agrarian sustainability. Such holdings commonly are contractually or completely integrated in some structures with “power” positions and benefit from the monopoly positions of that mode. A significant portion of the managers (32,5%) evaluate as neutral existing state regarding presence of monopoly and effects on agrarian sustainability. Such farms either trade on competitive (well working) markets with many sellers and buyers, or most of their relationships are carried with local and predominately small buyers and/or sellers (absence of monopoly).

All categories of holdings, subsectors of agriculture and regions of the country, suffer from the negative impact of existing monopoly and power positions (Figure 12). To the greatest extent the adverse effect of the monopoly and power positions impact agrarian sustainability in Sole Traders (three quarters), holdings with Middle size (78,57%), farms specialized in Pigs, Poultryes and Rabbits, and Mix livestock (by 100%), as well as Permanent crops (70%), farms located in Plain-mountainous regions (73,33%), Less-favorite mountainous and non-mountainous (71,43% and 75% accordingly), and in North-Central (80%) and South-West (71,42%) regions of the country. On the other hand, the negative effect of monopoly and power positions in regards to agrarian sustainability, to a comparatively lesser degree affects Companies (45,45%), farms with Big sizes (37,5%) and those Predominately for subsistence (33,33%), holdings specialized in Field crops and Mix crops (by 40%), and located in Mountainous regions (55,56%), and South-East region of the country (42,86%).

Figure 12. Negative impact of existing monopoly and power positions on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Personal connections are crucial factor for effective management of relations between different agents. They are particularly important when market mechanisms and private contracts “do not work” and there is no effective public (court) system for enforcement of private contracts and obligations. In the present conditions of Bulgarian agriculture the traditional “personal collections” are still reported as an important positive factor for agrarian agriculture by the great majority (82,5%) of interviewed managers (Figure 2). The favorable effect of personal connection for agrarian sustainability is indicated by all type of farms, subsectors of agriculture, and in different regions of the country. Personal links between close friends, relatives, partisans, etc. dominate both in the governance of commercial relations (deals of different type) and various “relations” with public (state, municipal, non-governmental, etc.) organizations, as well as in participation in collective initiatives and/or organizations of different type (marketing, inputs supply, eco-management, lobbying for public support, etc.).

For one tenth of the holdings the personal connections have no importance in the governance of relationships with other agents and in regards to agrarian sustainability. Those are mainly large commercial farms, for which market (prices, competition, trade conditions) rather than personal factors are essential for choosing a partner for exchange and coalition. Comparatively small part of interviewed managers (7,5%) indicates that domination of personal connections in Bulgarian agrarian sphere is a negative factor for amelioration of agrarian sustainability and its individual aspects. That type of governance frequently is associated with the privilege and even illegitimate “inclusion” in public support programs or access to major public resources by certain groups and individuals with “good connections” with authority at national, regional and/or local level.

Building a good reputation is perceived as an important factor contributing to selection of an appropriate supplier, buyer or partner for join initiatives. Therefore, agents having intention to stay a long-time in certain business and improve agrarian sustainability tend to invest in establishment of a

“good name”. firm or product reputation, etc. On the other hand, created “bad” social reputation gives a good signal for avoiding relations with certain (undesirable) agents and eventually assists the effective governance of agrarian sustainability. According to the majority of surveyed managers (65%) established reputation has a positive impact on the governance of agrarian sustainability and its main aspects (Figure 2). The favorable effect of that factor is equally reported by farms of different juridical type, size, production specialization, geographical and ecological location. Simultaneously, none of the investigated holdings suggests that information about/for building a (good, bad) reputation hinders agrarian sustainability.

At the same time however, for a good fraction of holdings (35%) the established reputation is not a factors affecting agrarian sustainability. The governance of diverse aspects of agrarian sustainability often require relations with new counterparts, for which usually there is no reliable reputation information (new business, regional, or country players, etc.). Therefore agrarian agents use other “faceless” mechanisms for controlling quality and protection of interests as recommendations, collateral, joint investments, short-term contracts, taking additional risk for a higher benefits, etc.

The state of trust between partners, and agents of a particular kind, in a specific region, subsector of economy, etc. is an important factor facilitating relations and cooperation, and leading to realization of socio-economic and environmental objectives of sustainable development. According to the majority of interviewed managers (60%) “existing trust” at the contemporary stage of agrarian development have a positive impact on agrarian sustainability and its main aspects (Figure 2). The high trust affects favorably sustainability according to the managers of different type of farms, subsectors of agriculture, geographical and ecological regions of the country.

In agrarian sphere and rural communities a great portion of the relations are between agents, knowing each other well for a long-period of time, and developing trust, reputation and personal connections. Namely such informal mechanisms (trust, good reputation, personal connections, mutual interest to avoid and/or quick resolution of disputes and conflicts, etc.) to a great extent govern effectively a significant part of the activity and determine behavior of the majority of participating agents. Subsequently, a great portion of the agreements in the sector are based on informal contracts, governed by the “high trust” and the “good will” of parties. At the same time, none of the respondents indicates that the extent of trust is a negative factor for agrarian sustainability. That is indicative that those who base their relations on those type (informal) mechanisms appreciate its positive importance in the governance of agrarian sustainability or its aspects.

Nevertheless, for a considerable fraction of the holdings (40%) existing social trust is a neutral factor for governing agrarian sustainability. At the present stage the agrarian agents increasingly have to trade with unknown counterparts from other regions and/or countries without being able to use traditional interpersonal forms, based on good knowledge, personal connections, punishment through building a bad reputation, etc. What is more, achieving or maintaining agrarian sustainability often requires a long-term efforts and involvements of a big number of participants (“collective actions”) in vast territories. The latter gives possibilities for opportunistic behavior of some or most of the participants often leading to a failure of common projects. Many examples are also presented when excess trust to a certain partner(s) in bilateral or multilateral deals lead to failures, nonfulfillment of agreements, unrealized objectives and significant losses for certain parties. All that necessitates in the agrarian sphere increasingly to be used other more efficient forms for governing of agrarian sustainability such as formal contracts and agreements, market competition, assistance of a third party, dispute resolution through a court system, etc.

Evolution of social demands and pressure at national and regional scale is an essential “driving” factor for the pace and character of socio-economic development. However, not always satisfying

current social needs leads to accomplishment of multiple goals of sustainable development. The majority of interviewed managers (62,5%) believe that “social needs and pressure at national scale” at current stage has no substantial impact for achieving or maintaining agrarian sustainability or any of its aspects (Figure 2). Besides, 15% of holdings even think that social needs and pressure have a negative outcome regarding agrarian sustainability or its social and/or environmental dimensions.

A good proportion of the managers (22,5%) however, have opinion that evolution of social needs, demand for products and services of agrarian sector and pressure of interests groups, government, non-governmental and international organizations, and public at large have a positive significance for realization of agrarian sustainability. Such novel national needs and “pressure” direct (assist, stimulate, sanction) efforts of a considerable part of agricultural producers in line for achieving socio-economic and environmental objectives of sustainable development. Those are predominately bigger commercial farms, which are sensitive to market demand for certain products and services from the consumers in national and/or international scale for socially responsible, environmental friendly, etc. agriculture. There are also numerous good examples for progressive models, introduced by young entrepreneurs, who react to new trends in social needs introducing original initiatives or join novel national or international “movements” for sustainable agriculture (organic agriculture, permaculture, etc.).

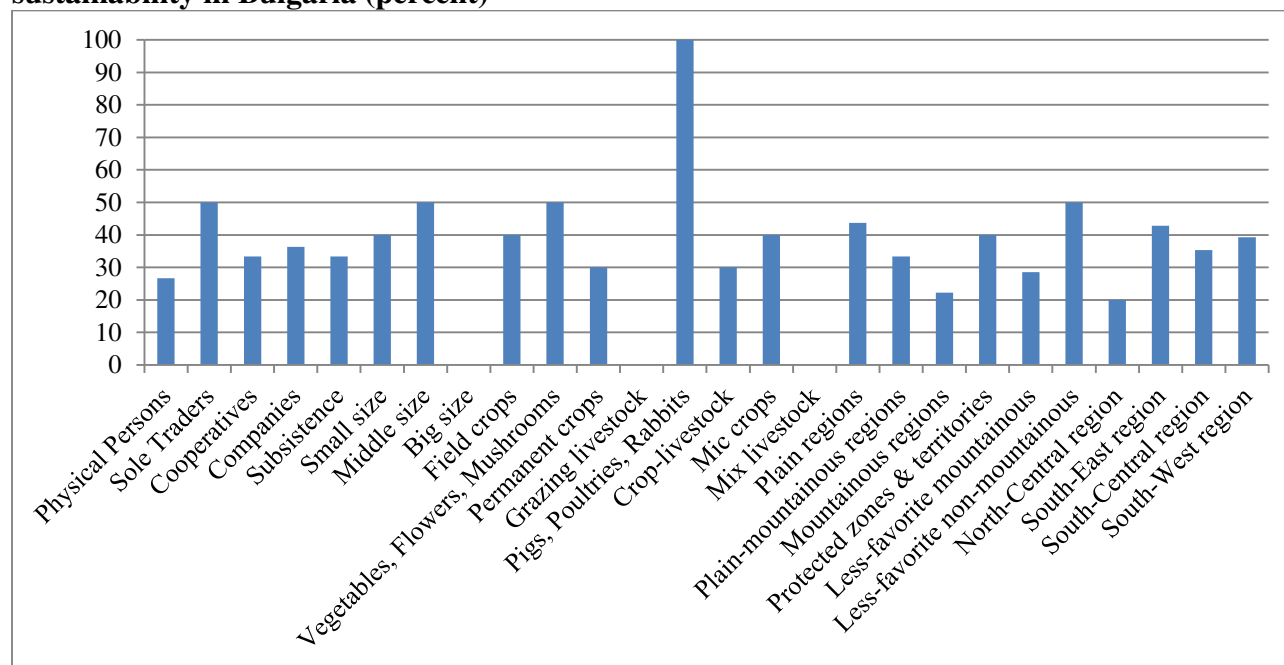
As far as “social needs and pressure in the region” is concerned, for the best portion of interviewed managers, they are mostly neutral (80%), and even negative factor (10%) (Figure 2). For every tenth farm however, social needs and pressure in the region is a positive factor for agrarian sustainability, apart from its economic increasingly for the environmental and/or social aspect as well. That concerns mainly smaller holdings which meet local demands and forced greatly to take into account various needs of residents and visitors of the region.

Informal institutions are important factor of the institutional environment, which significantly affect the (transition) process and character of agrarian sustainability. According to 30% of surveyed managers “informal rules, norms, modes, etc.” impact positively agrarian sustainability and its main aspects (Figure 2). In agrarian environment traditionally dominate a great variety of informal rules, norms and forms (contracts, agreements, norms, etc.) which determine greatly relations and behavior of agrarian agents. In the conditions of not well working system of formal institutions, agrarian agents widely use such informal rules and diverse forms for organization and management of entire activity. For a fraction of holdings they also assist the improvement of agrarian sustainability or its individual aspects.

A significant part of the managers assesses as neutral the impact of informal rules, norms, forms, etc. on agrarian sustainability. Along with development of the system of formal rules and markets, and improvement of the control and enforcement of formal standards, norms, etc. through lawful way, the formal institutions (greatly) replace informal one in governing relations and behavior of a tiny fraction of agrarian agents. At the same time however, a good portion of holdings (35%) argue that domination of informal rules, norms, forms, etc. affect adversely agrarian sustainability. A dual system of formal and informal structures in the sector punishes those, who comply with laws and regulations, and favor those violating them. According to the manager of a greenhouse, 90% of the sector is in the shadow sector where there is no quality and safety control, tax and social security are not paid, etc. That hinders development of the “light” structures and diminishes their competitiveness. In the country still there is no effective system for implementation and enforcement of laws standards, and regulations, as massively are applied informal (even illegal) forms for carrying out activity, conflicts resolution, assets acquisition, access to public resources and support funds, etc. That impedes evolution of the effective (formal) structure for governing of agrarian sustainability and each of its aspects.

All categories of farms, subsectors of agriculture, and regions of the country are exposed to the adverse effect of the informal modes of governance (Figure 13). The only exceptions are Big farms and holdings specialized in Grazing livestock and Mix livestock. In the latter groups the informal institutions “work well” assisting or not disturbing agrarian sustainability and its aspects.

Figure 13. Negative impact of existing informal rules, norms, forms, etc. on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

By the negative impact of the widespread application of informal rules, norms and forms, to the greatest extent are affected Sole Traders (50%), farms with Middle size (50%), holdings specialized in Pigs, Poultry and Rabbits (100%), Vegetables, Flowers and Mushrooms (50%), farms located in the Plain regions (43.75%), and in South-East region of the country (42.86%). On the other hand, relatively smaller share of Physical Persons (26.67%), Cooperatives (33.36%), holdings Predominately for subsistence (33.33%), farms specialized in Permanent crops and Mix crop-livestock operation (by 30%), those located in Plain regions (22.22%), and in North-Central region, to a lesser degree evaluate as negative the application of informal rules, norms, forms, etc. In these groups of holdings, subsectors and regions the official rules and forms dominate while informal rules either are not employed or their implementation is neutral or more efficient (cheap, favorable) for participating agents.

Official status of the region (rural, national park, resort, etc.), where a particular farm or agricultural production is located, often provides some socio-economic, institutional and natural advantages for farmers generally or in certain subsectors. For the biggest fraction of holdings (52.5%), the “official status of the region” is not essential for agrarian sustainability since they are not located in such regions or their situation does not give any benefits, or it is associated with additional costs (Figure 2). Nevertheless, according to a good portion of interviewed managers (35%) the region’s official status is a positive factor for agrarian sustainability or some of its aspects. The latter equally concerns farms of different juridical type, sizes, production specialization, ecological and geographical location. Usually farm’s location in favorable (resort, more developed, border, etc.)

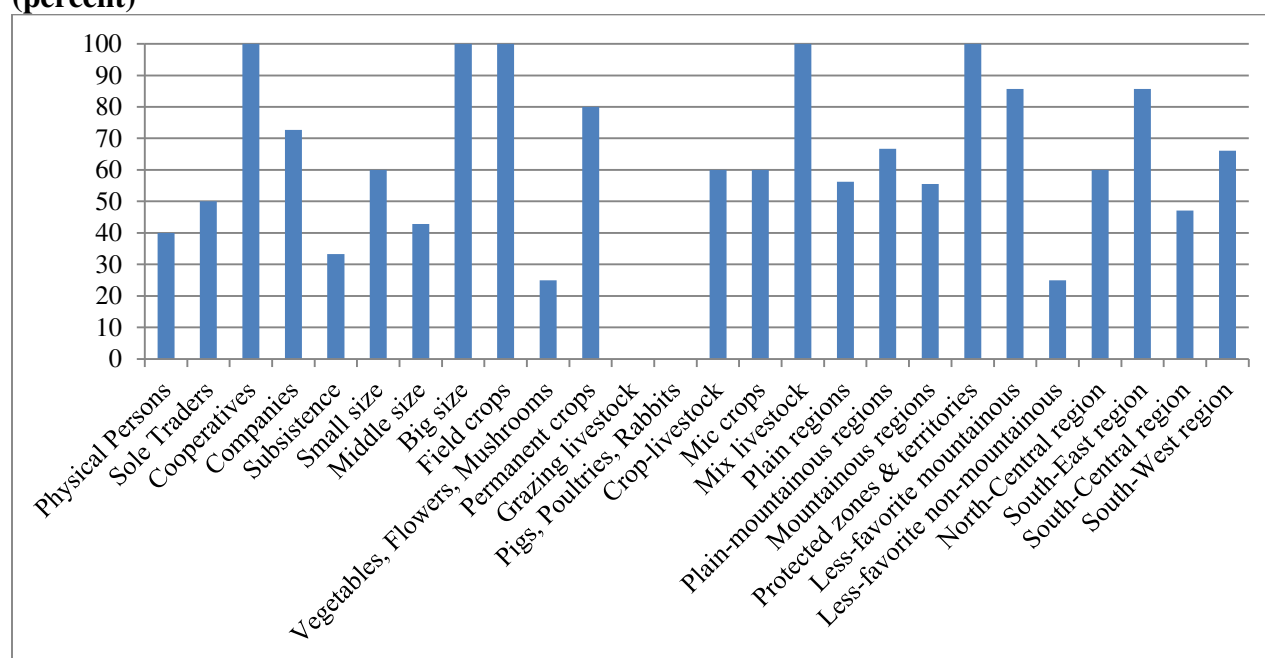
regions gives a number of socio-economics advantages like superior prices, guaranteed marketing, diversification in related and other activities (restaurant, hotel, ecosystem services, tourism, etc.). On the other hand, location of the holding in special (rural, less-favored, protected zones and territories, etc.) region gives opportunities for participation in various public support schemes and leads to improvement of agrarian sustainability. Nevertheless, for a good proportion of farms (12,5%), the special status of the region have a negative impact on agrarian sustainability or individual aspects. Affiliation of the farm to such a region most often is associated with numerous comparative disadvantages (low productivity, superior costs, remoteness from markets, restrictions for resources utilization and certain activities, etc.), which are not compensated or insufficiently offset through public support forms, and eventually compromise agrarian sustainability or some of its aspects.

Climate changes are important factor for agrarian sustainability and often discussed in recent years as affecting positively, negatively or neutrally agricultural producers and agrarian sustainability. Our study has found out that according to the majority of surveyed farms (60%) “climate changes” are a negative factor in regards to agrarian sustainability, and its economic, social and environmental aspects (Figure 2). A great part of Bulgarian farms are not prepared or able to adapt to climate changes (warming, draughts, natural extremes, floods, etc.) though appropriate changes in production structure, technologies, organizational and governing forms. All that diminishes agrarian sustainability and its individual aspects. Some managers point out that bad “management” such as incorrect zoning, agro-techniques, etc., additionally strengthened (or caused) adverse impacts of climate. For instance, the best conditions for production of valuable (“expensive”) apples are not in Pazarjik region (200 m above sea level), but at a higher grounds (600 m); Tracian lowland is ideal for fruits and vegetables, rather than widespread wheat and corn cultivation, broadly practiced zero or insufficient irrigation cannot offset changed needs and lead to adverse climate impact, etc.

Only 5% of interviewed managers report that climate changes affect positively agrarian sustainability. Some farmers are obviously favored from the climate changes as warming, drought, heavy rainfalls, etc. For that type of holdings climate changes are associated with amelioration of conditions, yields growth, prolong of agro-techniques period, and possibility to produce new crops and/or diversify in new activities. For a good portion of Bulgarian farms (35%), climate changes are not important in relation to agrarian sustainability. The managers of the latter holdings believe that such changes are not new and threaten agriculture abnormalities (rather a normal process of fluctuations) and that farms possess sufficient adaptation capability for counteraction to changes, or holdings are somehow favored from the novel trends in climate evolution.

Climate changes to the greatest extent affects negatively Cooperatives (100%) and Companies (72,73%), large and as a rule highly specialized enterprises (100%), holdings in Field crops (100%) and Permanent crops (80%), farms with Lands in protected zones and territories (100%), those located on Less-favored mountainous regions (85,71%), as well as in South-East region of the country (85,71%) (Figure 14). On the other hand, the adverse impact of climate changes on agrarian sustainability is not felt by none among farms specialized in Grazing livestock, and Pigs, Poultryes, and Rabbits. To a lesser degree under the influence of climate changes are holdings specialized in Vegetables, Flowers and Mushrooms, widely using greenhouses, as well as holdings located in Less-favored non-mountainous regions (by 25%).

Figure 14. Negative impact of climate changes on agrarian sustainability in Bulgaria (percent)

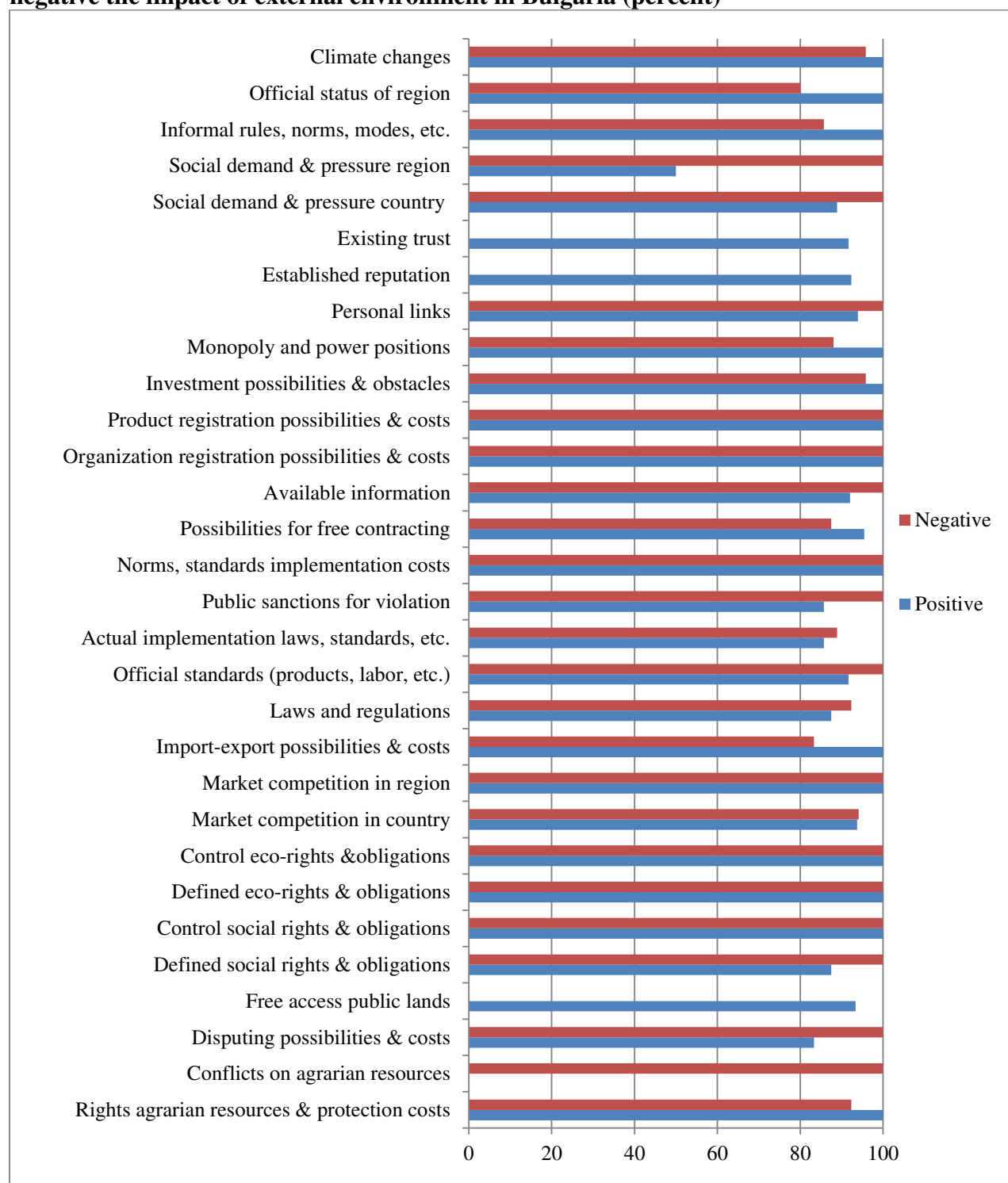


Source: interviews with managers of farms, 2017

Holdings of Physical Persons (40%) are affected less negatively by climate changes comparing to other juridical types. Also holdings Predominately for subsistence (33,33%) and with Middle sizes (42,25%) are less sensitive to adverse consequences of climate changes. Similarly, a smaller share of the farms located in Mountainous regions (55,56%) are adversely affected by climate changes in comparison with holdings in Plain and Plain-mountainous regions. Also smaller number of agricultural producers in South-Central region of the country (47,06%) assesses as negative the impact of climate changes comparing to farms in other regions of the country.

Analysis of the relationships between agrarian sustainability level in the farms, and the importance that managers give to the individual elements of external environment and governing modes, also allow evaluating the actual efficiency of different governing mechanisms and modes for improving agrarian sustainability in the country. In regards to most components of the external institutional, market and natural environment there is no a strong correlation between the good and high levels of sustainability and the (positive, negative) assessments of managers for the impact of corresponding factors on agrarian sustainability (Figure 15). The only exceptions are “free access to public lands” (93,33%), “established reputation” (92,31%), and “existing trust” (91,67%), where the farms with a positive estimates for the impact of factors demonstrate also superior levels of agrarian sustainability. Apparently, for the rest elements of external environment, the farms adapt to conditions for achieving agrarian sustainability, independent of the favorable or adverse impact of considered factors.

Figure 15. Share of farms with good and high sustainability, which evaluate as positive or negative the impact of external environment in Bulgaria (percent)



Source: interviews with managers of farms, and assessment of sustainability of agricultural farms, 2017

Efficiency of market, private, collective and public modes

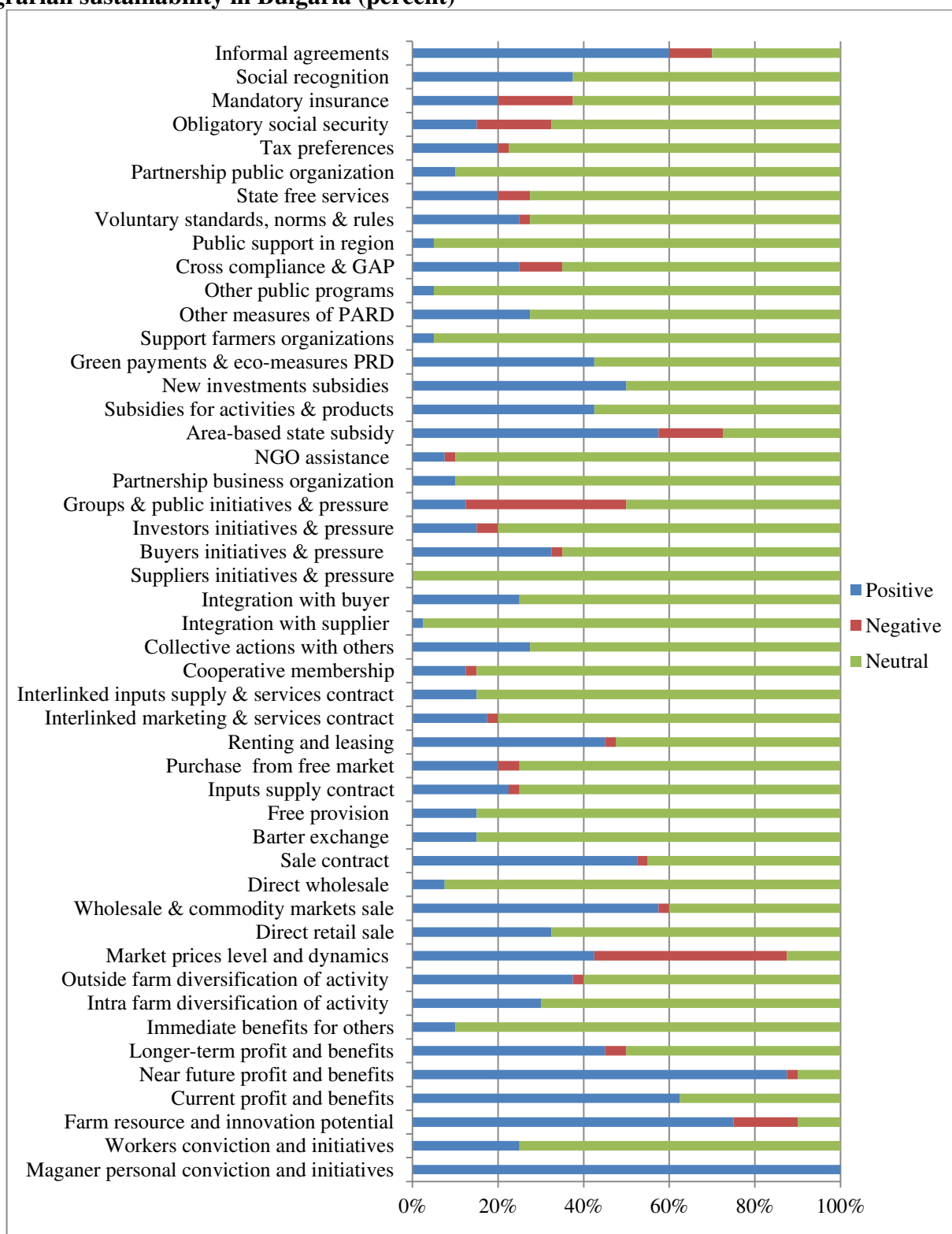
Our surveyed has found out that, for all managers their “own personal conviction and initiatives” are important positive factor for maintaining and improving agrarian sustainability and its dimensions (Figure 16). Understandings, skills, and targeted actions of the agrarian entrepreneurs and managers of farms of all juridical types, sizes, production specialization, ecological and geographical locations, are a key factor for accomplishing socio-economic and environmental aspects of agrarian sustainability.

At the same time, merely a quarter of the managers indicates, that the “personal conviction and initiatives of workers” is a positive factor for agrarian sustainability (Figure 16). The latter is important for innovating enterprises of different type, which rely on and create conditions for involvement of all workers in improvement of farm activity and agrarian sustainability – selection of qualified stuff, continuing training, freedom to apply and experiment initiatives, delegation of management and responsibilities, strong incentives, output based compensation, etc. However, for the biggest part of Bulgarian farms the hired labor does not have needed quality, freedom, and/or motivation and contribute little to amelioration of agrarian sustainability.

Available and accessible resources and innovations are essential factors for effective and sustainable development. According to three quarters of the managers of surveyed holdings existing “resource and innovation potential of the farm” contribute positively to agrarian sustainability and its individual aspects (Figure 16). The majority of farmers appreciate highly the significance of that factor and believe that their holding possesses necessary human, land, material and intellectual resources for achieving socio-economic and environmental goals of agrarian sustainability. Commonly, the control on “critical” for the farm resources are secured through internal governance (acquiring ownership, permanent labor contract, etc.) or external collective or leading organization (cooperative, association, holding, etc.). More “mobile” resources are governed through long-term lease contracts, while for the “universal” assets and products it is relied on market modes.

Nevertheless, 15% of the surveyed farms assess as negative the effect of their insufficient resource and innovation potential for the needs of sustainable development. Many farms with a smaller size, with lower public support, and poor regions of the country do not have sufficient own resources and innovations, neither access to external sources for effective and sustainable operations. On the other hand, every tenth manager does not suggest that existing resource and innovation potential of the farm is important for agrarian sustainability and some of its aspects. For that portion of the farmers, for the accomplishment of socio-economic and environmental sustainability are more important personal conviction, skills and strategies of the farmers, public stimulation, regulation and support policies, etc., rather than currently available resources.

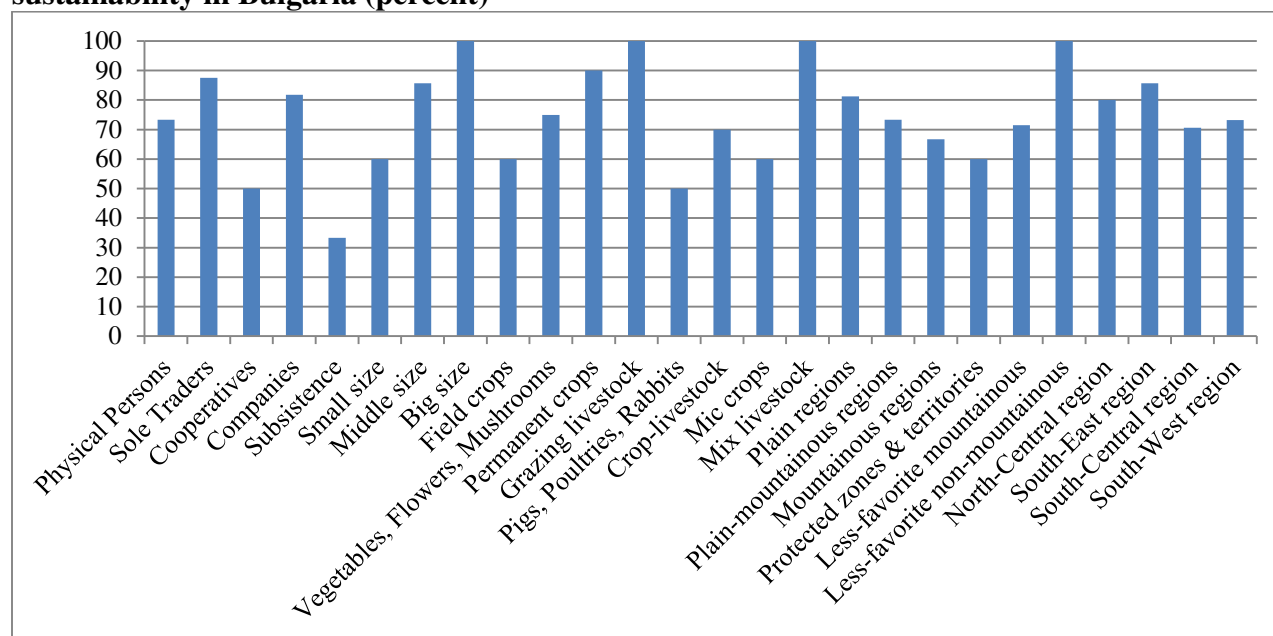
Figure 16. Impact of private, collective and hybrid factors, forms and strategies on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

The farms of different type and sizes, subsectors and locations are with unequal potential of own and external resources and innovations for successful implementation of sustainable development strategies. The greatest share of holdings with existing resources and innovation potential for sustainable development are among Sole Traders (87,5%) and Companies (81,82%), farms with Middle (85,71%) and Big (100%) sizes, holdings specialized in Grazing livestock (100%), Mix livestock (100%), and Permanent crops (90%), and located in Plain regions (81,25%) and Less-favored non-mountainous regions (100%) as well as in South-East (85,71%) and North-Central (80%) regions of the country (Figure 17).

Figure 17. Positive impact of farm's resource and innovation potential on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

The smallest number of farms with effective resource and innovation potential for sustainable development are among Cooperatives (50%), holdings Predominately for subsistence (33,33%) and Small size (60%), and producers specialized in Pigs, Poultryes and Rabbits (50%), Field crops and Mix crops (by 60%), as well as farms located in Mountainous regions (66,67%), with Lands in protected zones and territories (60%), and in South-Central region of the country (70,59%).

Strategies with a different time horizon to a different extent contribute for maintaining and achieving agrarian sustainability. For instance, realization of some economic objectives and most environmental and social goals of sustainable development often requires continuous long-term efforts and investments from participating agents. According to the majority of surveyed managers (60%) “current profit and benefits” are a substantial factor, which affect positively the governance of agrarian sustainability and its main aspects (Figure 16). Simultaneously, the rest significant part of the managers (37,5%) evaluate the importance of that type of strategy as neutral in relation to agrarian sustainability and its individual dimensions. The latter know that orientation of activity and efforts solely to present profit and benefits little contribute to agrarian sustainability and its aspects.

The best fraction of surveyed farms (87,5%) believes that “profit and benefits in near future” are important factors favorable for sustainable agriculture (Figure 16). The majority of managers are

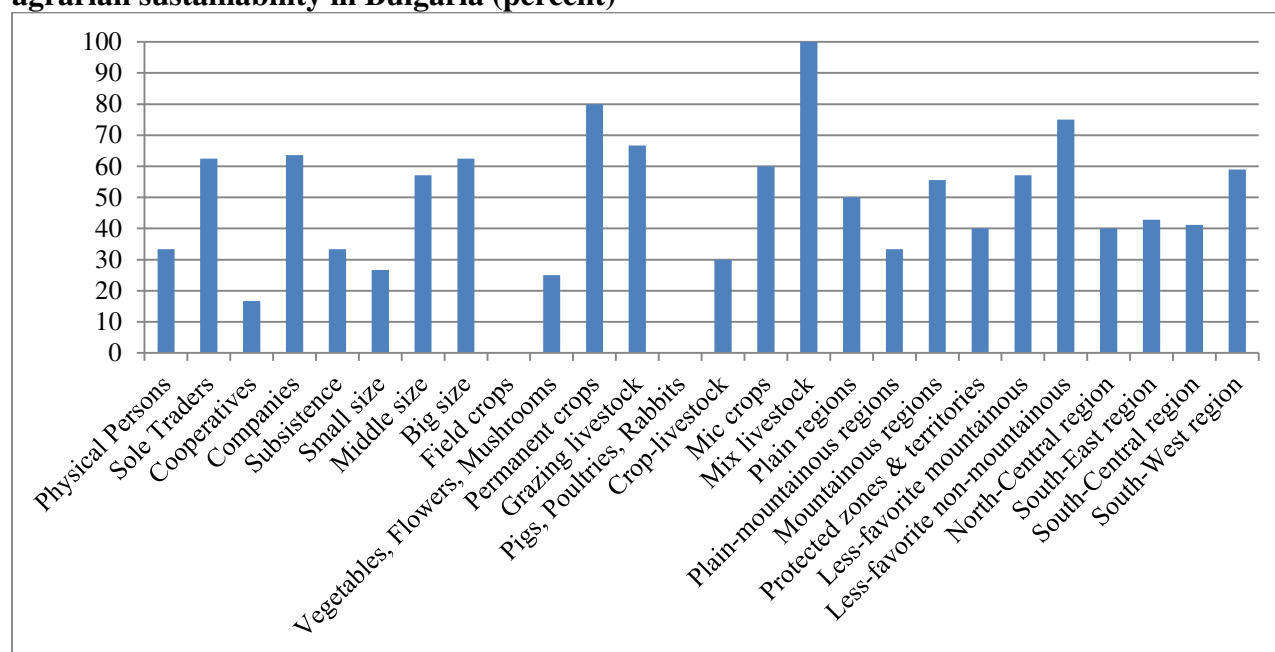
convinced that realization of the diverse socio-economic and environmental goals of agrarian sustainability requires longer-term efforts, and therefore undertake such managerial strategies. Only a tiny portion of questioned (2,5%) evaluate that orientation toward near future profit and benefits is negative in relation to agrarian sustainability and its aspects. Besides, every tenth manager thinks that undertaking a “short-term” strategy aimed merely at profit and benefits in near future is a neutral factor not contributing significantly to agrarian sustainability and its socio-economic and environmental aspects.

A relatively smaller segment of the Bulgarian farms applies strategies oriented to profit and benefits in a long-term (which are actually the means for achieving and maintaining agrarian sustainability). One considerable part of all surveyed managers (45%) assess as positive for agrarian sustainability and its main aspects directing the farm activity toward “profit and benefits in a longer-term” (Figure 16). Only a small portion of holdings (5%) suggests that such strategy for profiting and benefiting in a longer-term is negative for agrarian sustainability. At the same time, every another farm evaluates as neutral in relation to agrarian sustainability and its aspects the strategy for profit and benefits in a longer-term.

All these demonstrates that the best part of the Bulgarian farms does not direct their activities for achieving the long-term goals of socio-economic development of the sector, but are oriented toward specific goals in shorter time horizons. Many holdings are forced to direct their efforts toward immediate benefits in current period or in near future because of the necessity for “economic survival” in the conditions of intensive competition. Numerous farms are less interested in or able for long-term investments for improving its economic viability, social responsibility, and environmental stewardship. According to many interviewed presidents of Cooperatives “the young generation does not care for the future” and future development of the cooperative farms is associated with a great uncertainty. It is well-known that similar type of (short-term) private farming strategies does not correspond to (long-term) governance needs of sustainable development. That further necessitates the intervention of a „third party“ (the state, local authority, private, non-governmental and international organizations, etc.) for effective achievement of agrarian sustainability.

Effective contribution of the various types of farms through long-term strategies for agrarian sustainability is quite different. In the greatest extent strategies directed to longer-term profit and benefits are applied by the firms of different type – Companies (63,64%) and Sole Traders (62,5%) as well as holdings with Big sizes (62,5%) (Figure 18). All these farms have greater financial and overall capabilities for long-term investments for agrarian sustainability, stronger incentives (goal) for development of the firm, and evaluate as positive the orientation of efforts toward long-term benefits. On the other hand, relatively smaller parts of the Cooperative farms (16,67%), Physical Persons (33,33%), holdings with Small size (26,67%) and Predominately for subsistence (33,33%) employ strategies for long-term profit and benefits. The latter is caused by the lack of funding, strive to survival in the conditions of low efficiency and high competition as well as the typical for these kind of farms short investment horizon due to the advance age of farmers, lack of successor ready to take up the farm, impossibility to trade unregistered farms or cooperative shares, low rent and lack of dividend for cooperative shares, etc.

Figure 18. Positive impact of strategy, oriented to profit and benefits in longer-term, on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Toward long-term profit and benefits orient their strategies most of the farms specialized in Permanent crops (80%), Mix livestock (100%), and Grazing livestock (66,67%). Those are predominately productions, requiring long-term investments and commonly “paying back” in longer periods of time. On the other hand, in productions with a rapid return on investments the long-term profit and benefits are to a lesser extent a factor for the strategy formation. Neither of producers in the Field crops and Pigs, Poultryes and Rabbits assess as positive such a strategy, while in the Vegetables, Flowers and Mushrooms only a quarter of them. Obviously, these types of strategies little contribute to improvement of the social and environmental aspects of agrarian sustainability.

Similarly, in the regions with natural handicaps a relatively larger share of the managers assesses as positive the strategy oriented towards long-term profit and benefits – accordingly 75% in Less-favored non-mountainous regions and 57,14% in Less-favored mountainous regions. At the same time, in Plain-mountainous regions solely a third of the agricultural producers apply long-term strategies for agrarian sustainability. In different geographical regions approximately similar portions of the farms (around 40-43%) implement long-term strategies for governing of agrarian sustainability. Only holdings in South-west region are exceptions where favorable effects of long-term strategies for diverse aspects of agrarian sustainability are appreciated to a greater extent (58,92%).

Received benefits from other persons and groups from the farm activity are important (social and environmental) aspects of agrarian sustainability. Our survey has found out that, merely for 10% of interviewed managers the “immediate benefits for other persons and groups” are a positive factor for directing of activity (Figure 16). Such objectives are predominately important for the agricultural cooperatives, for which in addition to the members and workers, benefits are particularly of significance (or at least so declared) for farm households and rural communities as well. However, for a remaining greater portion of the farms the immediate benefits for other persons and groups, are not parts of strategies and has no importance (neutrality) in relation to agrarian sustainability.

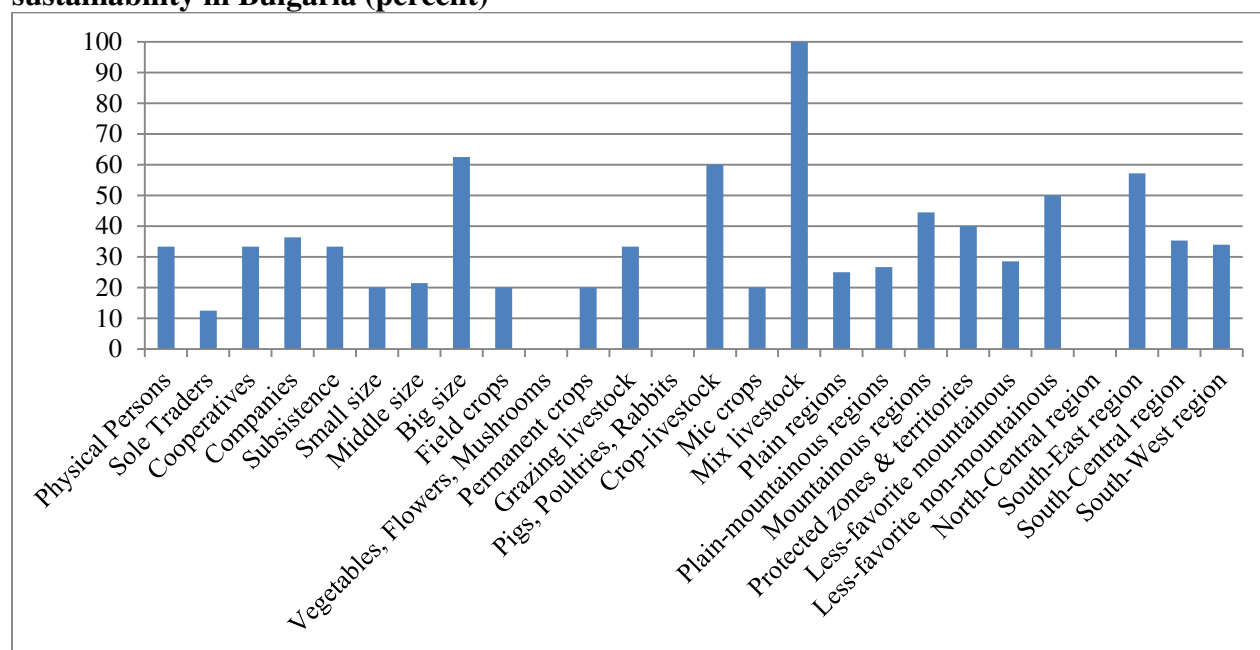
Diversification of activity is an important strategy for amelioration of socio-economic and environmental sustainability in agriculture. That mode of management of agrarian sustainability is widely practiced by the Bulgarian farmers as well. According to 30% of questioned managers they implement a strategy for “diversification of activity in the farm” affecting positively the agrarian sustainability and its aspects (Figure 16). Many farms produce several products and services for better utilization of available land and other resources, application of effective agro-technics (crop rotation) and protection of natural environment, reduction of risk from climate and market prices variation, using free machinery (providing mechanization and other services), etc. At the same time, none of the holdings considers as negative for the agrarian sustainability the diversification of activity within the farm boundaries.

Nevertheless, most of the surveyed farms employ another more effective strategy – for specialization of activity in one or more products. For 70% of the managers the diversification of activity in the farm has no effect (neutral) on agrarian sustainability and its different aspects. A greater specialization allows exploration of economies of sizes and scopes, increasing productivity, investing in specialized skills and technologies, more efficient marketing (selling a single product in large volumes, negotiation of better prices, reputation building, establishing supply chain networks, etc.).

Many examples have been found among surveyed farmers of “experimenting” in production diversification in search for higher benefits, and depending on the outcome it is either given up or entered in the new productions. For instance, a strawberry producer invested in a large-scale potato production, while a livestock farmer experimented in open vegetable operation, but after realized losses both producers abandoned diversification strategy. Similarly, a cooperative and a farm tried with rapeseed or field vegetables (the latter quit due to a lack of profitability), another farmer is experimenting on the part of lands with organic production to test the efficiency and take advantage of provided public subsidies, etc. Many cooperatives sell yields immediately after harvesting and lose from not-waiting the best prices. Here diversification into grain storage is unbeneficial both temporary storing at farm (destructions by birds, rodents, bad weather, etc.) as well as long-term renting of external warehouses (a high price of 1 stotinka per kg).

Farms of different type, production specialization and location, to a various extent take advantage of the favorable effect of the diversification within the farm. To a greatest extent the diversification in the farm is employed and appreciated as positive for agrarian sustainability by the Companies (36,33%) and every third of the Cooperatives and Physical Persons (Figure 19). At the same time, most of the Sole Traders widely practice product specialization, and only 12,5% of them suggest that diversification in the farm is a positive factor for agrarian sustainability.

Figure 19. Positive impact of diversification of activity in the farm on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Our survey has also found out that to a greatest extent the diversification of activity within the farm is applied by the holdings with a Big for the sector size (62,5%). That type of farms possesses bigger capability for seeking benefits in many directions, incentives for distribution of risk, and agro-technological necessity for certain diversification for effective utilization of resources (land, labor, machinery) and environmentally friendly agriculture (needs for crop rotation). On the other hand, smaller farms to a lesser extent appreciate as positive the implementation of strategies for intra-farm diversification – only a fifth of holdings with Small sizes and 21,43% of those with Middle sizes. Every third holding Predominately for subsistence diversifies its activity in the farm for a greater satisfaction of its divers needs of agricultural products and better utilization of family resources.

To the greatest extent diversification within the borders of the farm is implemented by holdings specialized in Mix livestock (all of them), and Mix crop-livestock orientation (60%). Simultaneously, none of the farms in highly specialized production like Vegetables, Flowers and Mushrooms, and in Pigs, Poultryes and Rabbits applies product specialization in the farm. Relatively to a lesser extent that strategy is employed in the sectors Field crops and Mix crops – merely 20% of holding. A greater share of the farms, located in Mountainous regions (44,44%), in Less-favored non-mountainous regions (every other one), and with Lands in protected zones and territories (40%) implement diversification within the farm for improving agrarian sustainability. Most part of farms in Plain regions (three quarters) and Plain-mountainous regions (73,33%) as well as in Less-favored mountainous regions (71,43%) do not believe that diversification of activity in the farm is an effective strategy for enhancing agrarian sustainability. All these farms aim at specialization in particular product/s for increasing productivity of limited agrarian resources in such regions. To the greatest extent are diversified farms in South-East region of the country (57,14%), while none of the holdings in the North-Central region assess as positive that type of strategy in relation to agrarian sustainability.

Diversification of activity outside of the farm is another feasible strategy for improving efficiency and elevating agrarian sustainability. It gives possibility for specialization in the farm for

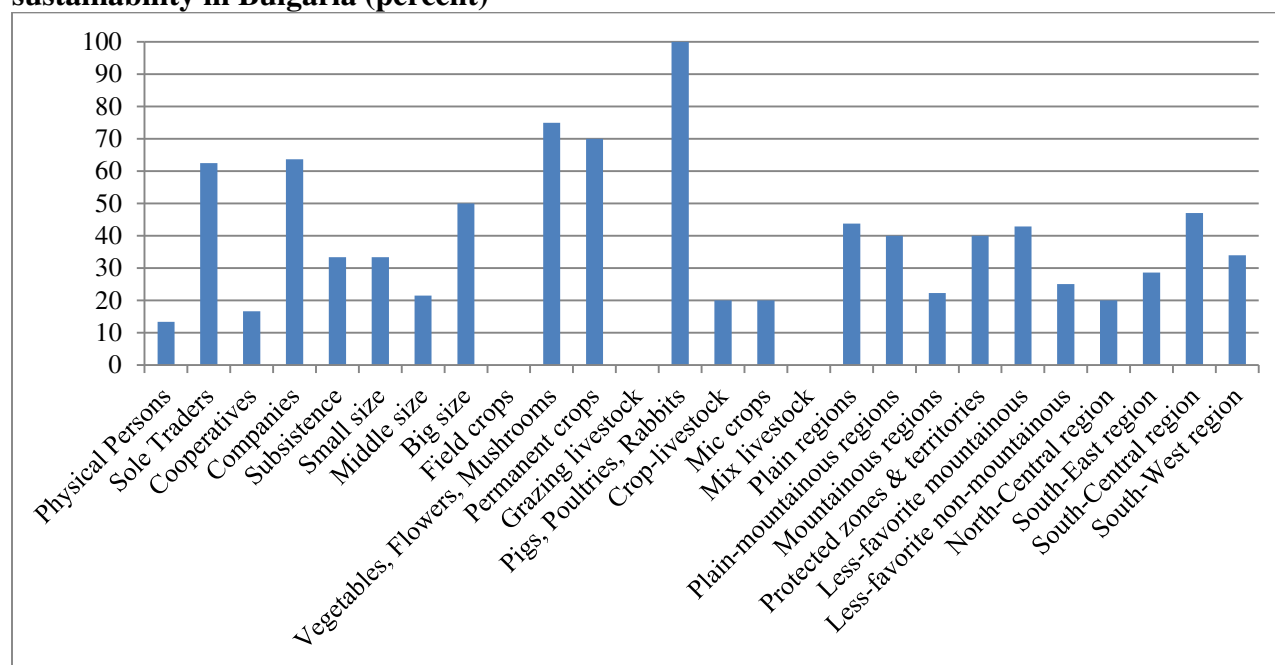
achieving maximum productivity (efficiency) of agrarian resources, while simultaneously it is looked for new opportunities in related to agriculture (such as processing, marketing, supply of services, agro-tourism, restaurant, eco-system services, etc.) and/or unrelated activities (other industries, services) for assuring employment, additional income, profit, risk sharing, etc. outside the farm gates. A good portion of interviewed managers (37,5%) practice a strategy for diversification of activity outside the farm and evaluate its impact on agrarian sustainability as positive (Figure 16). A good fraction of holdings diversifies into farm produce processing (vine, dairy, etc.) or marketing (own shops, labels, trademarks, etc.), while others point out a great variety of other activities (inputs and technology supply for green houses, hotel and hospitality, transportation, mountain tourism, etc.).

Our study has also found out that many individuals and households, having another major (non-agrarian) business or temporary available resources (free time, unemployment, students, own farmland, etc.) “diversify” into farming activity in order to increase family incomes or utilize free resources. Those are mainly younger entrepreneurs with a successful (or developing) family business in other sectors of the economy (hotel, fitness club, mountain tourism, etc.) who invested in agrarian sphere (production of snails, strawberries, etc.). Some of them get involved in the activity and/or management of existing family farms (of parents, relatives) in order to take advantage of different forms of public support such as assistance to young farmers, etc. A manager of a modern vegetable greenhouse has been also interviewed, who “unwillingly” entered agrarian business. He has another main business in consulting, crediting, and import of modern greenhouse technologies (hydroponics, precision agriculture, etc.), crop varieties, and chemicals from Netherlands. In recent years, many of his clients-farmers have been experiencing serious economic difficulties, and unable to return provided by him (interlinked with inputs and innovation supply) credits, and failed down. In order to “save” one already well developed greenhouse and apply his good knowledge in that area, the entrepreneur exchanged the previous owner’s debt for taking-over the greenhouse business.

The majority of surveyed farms (60%) are exclusively specialized in agricultural activity, they do not practice diversification outside the farms, and assess as neutral the impact of that factor on agrarian sustainability or some of its aspects. A small fraction of the managers (2,5%) even think, that diversification of activity outside the farm is a negative factor for agrarian sustainability or for its economic, social or environmental aspect(s).

To a greatest extent the extra farm diversification is implemented by the firms of different type - Sole Traders (62,5%) and Companies (63,64%) (Figure 20). Those are business oriented forms, which entrepreneurs have resources and constantly searching for profit opportunities in the agrarian sector and elsewhere. Contrary, a relatively smaller segment of the Physical Persons (13,33%) and Cooperatives (16,67%) practice diversification outside farm gates and believe that such a strategy is favorable for agrarian sustainability. Similarly, a half of the Big farms see diversification outside the farm as a vehicle to increase agrarian sustainability or some (mostly economic) aspects. On the other hand, Middle size holdings implement to the weakest extent extra farm diversification (21,43%).

Figure 20. Positive impact of diversification of activity outside the farm on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Agricultural producers specialized in different subsectors unequally apply diversification outside the farm-gates. No holding, specialized in Field crops, Grazing livestock, and Mix livestock practices such a strategy or evaluates it as favorable for augmenting agrarian sustainability. At the same time, all farms specialized in Pigs, Poultry and Rabbits, as well as a good part of those in Vegetables, Flowers and Mushrooms (75%) and Permanent crops (70%) applies strategies for diversification of activity outside of the farm. The later are usually subsectors with significant economic problems (pig production, vegetable production, etc.) or production closely integrated with the processing (grape and milk production, etc.).

Holdings in Plain (43,75%) and Plain-mountainous (40%) regions to a greater extent use diversification outside the farm, comparing to the farms in Mountainous regions (22,22%). Farms located in Less-favored mountainous regions (42,86%) and with Lands in protected zones and territories (40%) practice more broadly a strategy for outside farm diversification, comparing to the holdings in Less-favored non-mountainous regions (25%). The biggest share of the managers assesses as positive for agrarian sustainability the outside farm in diversification of activity the South-Central region (47,06%), while to a smallest degree such diversification is practiced by the farms in the North-Central region (one fifth of them). All above is a consequence of the existing practical possibilities for diversification of the business (consumers demand, available resources, entrepreneurial skills, free time, etc.) as well as the real needs and perceptions of agricultural producers in referred regions.

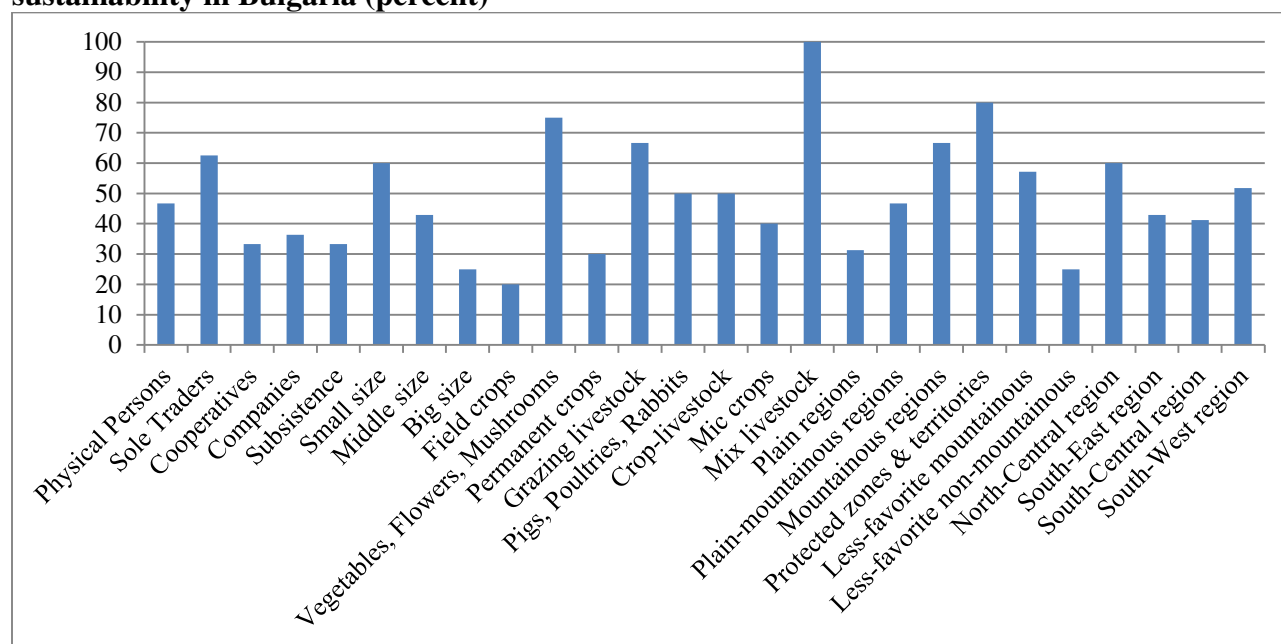
Market prices and competition are an important mechanism for governing of activity of various agents (resource owners, entrepreneurs, farmers, consumers, etc.). According to a significant part of the interviewed managers (42,5%) “the level and dynamics of market prices” have a positive impact on (manages, coordinates, stimulates) their activity and agrarian sustainability (Figure 16). The favorable effect of market mechanisms is appreciated to a various degree by different type of farms and producers in diverse subsectors and regions taking advantage of their comparative advantages and competitiveness and profiting from price levels and dynamics. At the same time, a good portion

of holdings (12,5%) think that the market prices level and dynamics do not affect agrarian sustainability and some of its aspects. Some small and situated in remote areas producers do not “feel” real market prices and their dynamics (undeveloped or missing markets). For another part of the managers the achievement of agrarian sustainability requires a longer-term strategy (management), rather than governance based on the fluctuation of („current”) market prices. What is more, certain “products” of the farm have a public good character (conservation of tradition, natural environment, biodiversity, etc.) for which there are no markets and prices at all.

For the biggest part of surveyed farms (45%) the level and dynamics of market prices at the present stage of development impact negatively agrarian sustainability and its individual aspects. The majority of managers underline the negative effect of the market as a dominant mechanism for maintaining (and achieving) economic, social, and environmental goals of agrarian sustainability. Most often it is pointed out that market prices are too low for effective (profitable) operations and sustainable agriculture. It is also emphasized that price fluctuations are great and unpredictable, and obstruct the governance of agrarian sustainability requiring long-term (permanent) investments in productive, socially responsible and environment preservation production. Moreover, the lack of any prices and markets for some of the socially important (public, quasi-public, collective, quasi-private, etc.) products and services of the farms (like conservation, improvement and restoration of natural resources and ecosystems) fail to induce sufficient incentives for effective actions in such directions.

The negative impact of the market prices level and dynamics on agrarian sustainability to a greatest extent affects Sole Traders (62,5%) and Physical Persons (46,67%), farms with Small and Middle sizes (60% and 42,86% accordingly), holdings specialized in Vegetables, Flowers, and Mushrooms (75%), Grazing livestock (66,67%), and Mix livestock (100%), farms located in Mountainous regions (66,67%) and with Lands in protected zones and territories (80%), as well as in North-Central region of the country (60%) (Figure 21). To the smallest extent the market prices level and dynamics negatively impact the Cooperatives (one third) and Companies (36,36%), Big farms (a quarter) and holdings Predominately for subsistence (every third), producers specialized in Field crops (every fifth) and Permanent crops (30%), farms located in Plain regions (3,25%) and in Less-favorite non-mountainous regions (25%), as well as in South-Central region of the country (41,18%).

Figure 21. Negative impact of level and dynamics of market prices on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Effective realization (marketing) of farm products and services is an essential factor for agrarian sustainability and for economically viable, socially stable, and environmentally friendly agriculture. In order to benefit from market opportunities and safeguard against market risks (low prices, price fluctuations, contractual asymmetry, likely opportunism, delayed payment, etc.) agricultural producers use and/or develop diverse effective forms of marketing of farm produce.

“Direct retail sale of products and services” is practiced as an effective form of marketing by 32,5% of surveyed farms (Figure 16). Those are holdings with different sizes, specialization, and location, for which direct sales are highly efficient due to superior “retail” prices, low costs for direct marketing (on farm or local farm market), low risk for opportunism, etc. Usually, those are producers with smaller sizes, having small volume of production and sales, loyal clients in the region and/or good location (proximity to highway, resort, large consumer center), seasonable and high quality products with a big demand (fresh fruits and vegetables, lamb meat, eco-products). In some cases, agricultural produce is sold “in package” with another service and it is profited from the interlinked retail marketing – e.g. self-pick up of farm produce by client, serving of produced fresh or processed produces in own restaurant, etc.). Many of the biggest vertically integrated agricultural producers (vine growing and wine producing complexes and vineries, dairy and meat processors with own livestock, etc.) possess own brand shops for direct retail sale of final products in the region and/or big cities.

None of the surveyed managers believes that such mode of marketing affects negatively agrarian sustainability. Simultaneously, for the majority of Bulgarian farms (67,5%) direct retail sale output does not have significant importance for the governance of agrarian sustainability or some of its aspects. The greatest portion of the Bulgarian farms uses other (more efficient) forms for realization of farm produce. Most of the surveyed farms (57,5%) widely practice “direct wholesale” of output and evaluate its impact as positive on agrarian sustainability (Figure 16). Those are bigger producers of different type having sufficient volumes and product standardization. The sale

commonly is negotiated and implemented directly on farm (field) as most frequent buyers are large processors, retail chains, middlemen, exporters, etc. A considerable fraction of all farms in the country (40%) does not apply direct wholesale or do not believe that mode is having a significant importance for agrarian sustainability and some of its aspects. On the other hand, only a tiny fraction of the agricultural producers think that the direct wholesale marketing is not an effective form, mostly for the economic sustainability of agriculture due to lower prices and profit.

The “sale on wholesale and commodity markets” is not a popular form for realization of produced output in Bulgarian farms. For the great majority of surveyed farms (92,5%) that mode is not essential for agrarian sustainability and its all aspects (Figure 16). Simultaneously, for a small proportion of holdings (7,5%) possibility to trade on wholesale and commodity markets is a positive factor in the governance of agrarian sustainability. The latter considers predominately the economic aspect of sustainability for which “discovery” of actual (competitive) market prices through sale on official wholesale or commodity market is a crucial factor for maximum marketing efficiency.

The “sale contract for products and services” is another major mode for governing of marketing of farm produce. According to more than a half of the surveyed managers (52,5%) they often use a sale contract and it affects positively agrarian sustainability (Figure 16). Farms commonly deal with several buyers for securing a successful marketing and maximizing revenues. The contract for purchase, sale, or marketing is an important means for planning of realization of output and sale prices. That form is applied by commercial farms of different type, product specialization and location as primary a one year or a yield contract are used. A short-term contract form usually is a policy and requirement of big buyers (processors, food-chains, middlemen, exporters) or preferred by farmers. Very often farmers wish to preserve freedom in order to be able to change a buyer during the next season in case of unsatisfactory (low) prices, delayed payment for product, lack of complementary (crediting, interlinked services, etc.) benefits, change in structure of activity, emergence of a favorable new partner and/or more-effective marketing channel, etc.

Only a tiny segment of holdings (2,5%) assess as positive in regard to agrarian sustainability utilization of the sale contract for product and services. That is mostly in the cases, when farmers face a small number of big buyers (situation of quasi or full monopoly) imposing unfavorable contract prices, conditions and/or not complying with negotiated terms and compensating affected farms. Frequently smaller producers are not able to comply with requirements of the buyers for certain volumes, timing and regularity of supply, produce quality, variety structure, etc. In other cases, the contract does not include payment for unsold by the retailer products which is returned to the farmer (fresh vegetables and fruits) additionally diminishing the profit for agricultural producers. A good part of the Bulgarian holdings (45%) does not employ the contract form for output realization and consider that mode as important for agrarian sustainability or its individual dimensions.

The majority of surveyed farms (85%) does not practice barter “exchange of products and services for other products and services” and think that governance mode has a significant importance in relation to agrarian sustainability (Figure 16). Similarly, for none of the holdings, such natural exchanges represent a negative factor for agrarian sustainability and some of its aspects. A small portion of the farms believe that product and service exchanges for other products and services have a positive impact on agrarian sustainability. Those are mainly farms with smaller sizes in depopulated and remote from residential places areas. In the condition of imperfect or missing markets for products and services, low incomes (cash) of farmers and rural households, lack of alternative employment or advance age of occupied persons, domination of monopolies etc., some farmers exchange (instead of trading) a portion of produce in mutual benefit and subsequently improve the overall economic, social and/or environmental sustainability of agriculture in the region.

The majority of interviewed managers (85%) does not use “free provision of resources, products, services and activities” and think they are important in regard to agrarian sustainability (Figure 2). Nevertheless, none of the holdings assess as negative the free provision of resources, products, services and activities from or to others. For a relatively small portion of the farms (15%) the free provision of resources, products, services and activities is a positive factor for amelioration of agrarian sustainability. Some of the smaller size producers receive free services from other agents and organizations (farmers, cooperatives, non-governmental and international organizations, state and local agencies). Such assistance improves efficiency of the “beneficiaries” and increase agrarian sustainability in the region or subsector. However, often the “free” provision of certain goods and/or services between agrarian (and other) agents comes with an expectation of other or future “reciprocal” free products and/or services.

Some farmers report for informal “free” leasing-out of critical resources such as farmland, buildings etc. as a single form for keeping the land and other assets in a good condition of absent from the region (country) or old of age owners. Also examples are given for “free lease” of agricultural lands in exchange of giving up rights for area based, etc. subsidies from using farmers. The latter is illegitimate form for receiving mutual benefits from the landlords and farmers, which nonetheless maintain agrarian sustainability and do not adversely affect the taxpayers.

The effective governance of farms supplies with needed resources, materials etc. is an important factor for agrarian sustainability. According to the three-quarters of surveyed managers their holdings do not use special “contracts for supply of needed resources” and such a form have no importance regarding agrarian sustainability (Figure 16). Usually markets for supply with major inputs and resources in agriculture “work” well (strong competition, multiple suppliers, etc.) and it is not necessary to apply special modes of governance (guarantee) of supplies. Moreover, farmers are not big users of “external” resources and it is not necessary to develop special (contractual) forms for governing of standard supplies as commonly free markets are used when procurement needs arise. What is more, often long-term relations evolving (high frequency of deals between the farmer and the supplier), and counterparts get to know each other, and are interested in restriction of opportunistic behavior (the bad reputation is punished easily through changing the supplier).

Only a small fraction of the holdings (2,5%) estimates as negative the existence of a contract for supply of required inputs in mind of unfavorable prices or terms of contracts (single of a small number of supplier). A good portion of the managers (22,5%) thinks that employment of a contractual form for supply of needed resources is a positive factor for agrarian sustainability. The contractual mode is preferred in case of greater and frequent supplies of required by the farm resources. The special contract gives possibility to tailor the conditions of exchange and supplies for the needs of a particular farm, as well as to guarantee stable relations between counterparts, and possibility to protect (dispute) the rights through the formal (court) system. Some big producers point out examples for supply of special varieties (grape, wheat, etc.) from abroad – France and other leading countries. However, often the existence of quasi or full monopoly (in forage, electricity, water, essential materials etc. supply) leads to serious damages for farmers despite the presence of a contract. In such cases is impossible to effectively punish a supplier through switching to another supplier and/or enforcement of contract (getting compensation of damages) through a lawful way.

“Purchasing of needed resources and services from free market” is a positive factor for agrarian sustainability and is practiced by one fifth of the surveyed farms (Figure 16). Those are holdings of different type for which market governance of procurement of necessary resources and service is the most efficient. At the same time, for a fraction of farms (5%) regular purchase of resources and serviced from the “free” market is a negative factor for agrarian sustainability. The latter is consequence of already mentioned cases of occasional or small number of suppliers for certain farms,

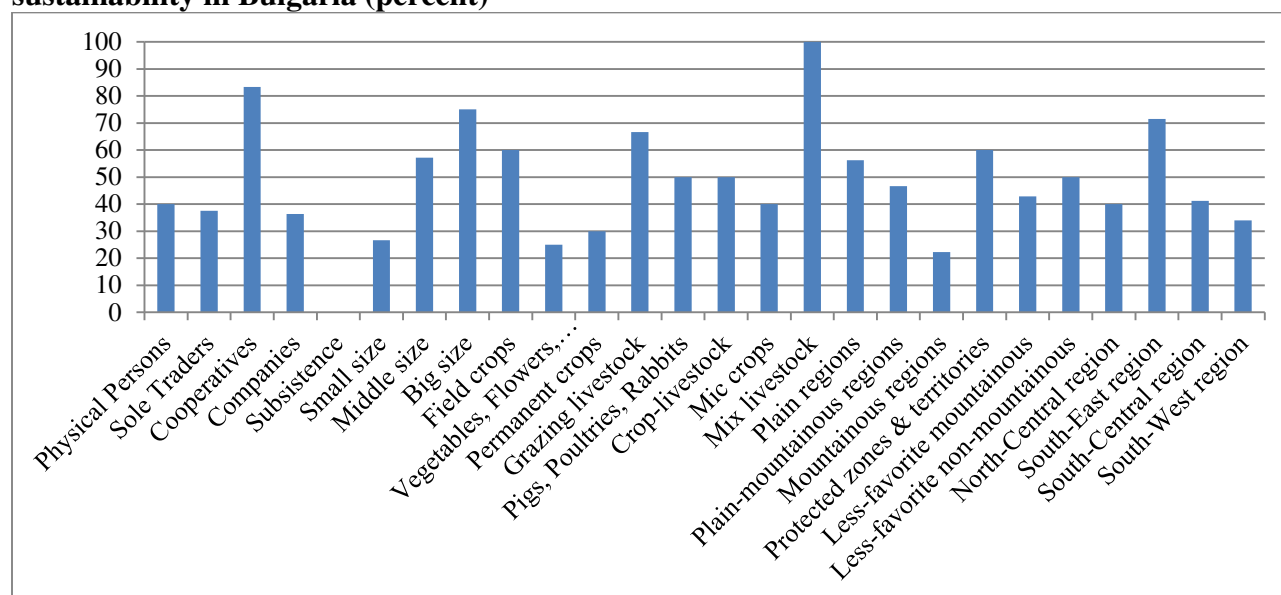
subsectors and/or regions of the country. The best part of the managers (75%) believes that supplying of necessary resources and serviced through a purchase from free market is a neutral mode of governance in regards to agrarian sustainability. That implies competitive (well working) markets for supply of standardized products, which are not associated with any special benefits or disadvantages for using farmers.

The lease is a widely used and efficient form for governing of supply of land and other long-term assets in agriculture. That mode allows a rapid and cheap expansion of farm size for better exploration of possibilities for economies of scale and scope, implementation of ecological and other projects, etc. According to a big portion of the surveyed managers (45%) “renting (leasing) of needed resources” is an effective form and it affects positively agrarian sustainability and its main aspects (Figure 16). The main part of the biggest holdings in the country is also large tenants from numerous small land owners as lease is a major form for expansion of farms sizes in last decades. Usually, a long-term lease is practiced when highly specific investments are made in permanent crops, long-term improvements of land, construction of buildings and equipment, etc. Most frequently the lease is an additional form for governing of the land supply as an acquisition of ownership is preferred by the big investors, particularly when investments are highly specific to a land (vines, orchards, buildings and facilities, etc.) or related productions (wine production, dairy processing). In many cases however, a short-term (a year or season) rent is applied, when there is a desire to experiment in new productions, in greenhouse operations, and monoculture with annual crops (both requiring a periodical change of land plots) or due to unwillingness of landlords for long-term contracts and/or cooperative memberships (facile change of tenant if market demand for farmland is high).

At the same time, more than a half of the holdings in the country (52,5%) does not rent or lease-in lands or other resources or believe that form is important for agrarian sustainability and some of its dimensions. Only a small fraction of farmers (2,5%) suggests that renting and leasing of needed resources impact negatively agrarian sustainability. Most often respondents have in mind environmental and social aspects of sustainability. Widespread utilization of large land plots for constant monoculture (lack of crop rotation) in past years has adverse effects on soil preservation (exhaustion, erosion), landscape and biodiversity. What is more, concentration of lands in a small number of large and highly mechanized farms is associated with extermination of the smaller size family holdings and diminution of employment affecting negatively social sustainability of agrarian sector.

To a greatest extent the positive impact on agrarian sustainability from renting and leasing of needed resources is reported by the Cooperatives (83,33%), and farms with Middle (57,14%) and Big (75%) sizes (Figure 22). Namely the latter to the greatest extent practice leasing and borrowing (mostly farmlands) and apply that specific mode for increasing sustainability of agricultural production. Employment of lease and rent of resources is most favorably reported by farms specialized in Field crops (60%), Grazing livestock (66,67%), and Mix livestock (100%). Simultaneously, resource lease and rent has greater importance for holdings in Plain (56,25%) and Plain-mountainous (46,67%) regions, in farms with Lands in protected zones and territories (60%), as well as located in the South-East region of the country (71,43%). For the best part of all other categories of farms and regions that specific mode for extension of farm sizes and governance of agrarian sustainability is less significant or assessed as neutral.

Figure 8. Positive impact of renting (leasing) of needed resources on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

Sometimes in agriculture are also applied more-complex forms for governing of relations between market agents like interlinking the contracts for inputs supply and/or marketing of farm produce with parallel reception of additional services (e.g. crediting, lending, consultations, information, assistance, purchase by a supplier, supply by a buyer, etc.).

According to the majority of surveyed farms (80%) they do not use “interlinked contract for marketing with reception of services from the buyer” and such a special mode have no importance for agrarian sustainability and its aspects (Figure 16). At the same time, a considerable portion of surveyed managers (17,5%) evaluates as positive the impact of employed interlinked contracts for marketing with services from a buyer. Those are mostly smaller producers in different subsectors and regions, for which obtained complementary services from the buyers “in package” with the marketing (interest free loan, consultations, inputs supply, laboratory tests, cooling containers, transportation, etc.) are essential. These type of farms do not have own internal capability for organization of such activities and/or easy access, or necessary means for procurement of needed services from the market or other suppliers. The package of received “free” services with marketing of farm produces most frequently includes advance financing, preferential interest and credit, transportation from the farm, agronomic and veterinary consultations, quality and safety laboratory tests, training of personnel, market information, storage and cooling facilities, assistance in finding suppliers or supply of critical inputs (medicaments, forage, etc.), and so forth. Only a tiny portion of the managers asses as negative in regards to agrarian sustainability the utilization of interlinked contract for marketing with additional services from the buyer.

Similarly, to the interlinked marketing, a segment of farms (15%) also applies “interlinked contracts for inputs supply with reception of services from the supplier”, and evaluate that mode as positive for agrarian sustainability (Figure 16). Usually those are producers of different type, subsectors and regions, for which obtained additional services “in package” with the supply are very important. The package of services most often includes: crediting, transportation, consultation, finding a buyer or purchasing of farm produce, etc. The majority of surveyed holdings (85%) does not practice such form of interlinked supply not believing the latter is important for agrarian

sustainability. Also no manager thinks that such mode of governance of supply negatively affects agrarian sustainability or some of its aspects.

Setting up and/or participation in various collective organizations outside the farms gates (cooperatives, associations, professional initiatives, etc.) considerably facilitates overcoming disadvantages of pure private or market forms for governing of agrarian sustainability. Our survey has found out that the great majority of surveyed farms (85%) do not take “part in cooperatives” of any type (joint supply, marketing, crediting, logistics, lobbying, etc.) and assess such membership as essential for agrarian sustainability and its individual aspects (Figure 16). Most holdings do not consider as effective the cooperatives membership since they see no significant private benefits but only costs for membership fee, participation in activity, etc. For instance, surveyed cooperative in the South-East region of the country, which used to be a member of the National Union of Agricultural Cooperatives, terminated membership because “there is no benefits and a high cost for membership” (10 stotinki per dka) as well as experienced financial difficulties. Another big producer (and processor) of grape in the same region is a member of a professional association but has “no voice” for protection of its interests.

In the last years the number of traditional cooperatives in Bulgaria substantially decreased and their activity restricted due to the low efficiency, bad management, and losing the comparative advantages in relations to other forms such as own farm, contract, market, firm mode, etc. Many of existing cooperatives started to function as market oriented production cooperatives, and/or in “private” interests of the managers and small groups around them. At the same time, very few coops managed to orient its activity toward better servicing the needs of members and rural communities, as well as for realization of collective projects for socio-economic development, ecology, risk sharing, lobbying, etc. Subsequently, the number of cooperatives, the number of cooperatives members, and the size of cooperative farms considerable decreased in recent years. Therefore, many farmers asses as neutral the impact of cooperatives in achieving the socio-economic and environmental sustainability in the sector. What is more, a small proportion of the managers (2,5%) even think that such membership in a cooperative is a negative factor for governing of agrarian sustainability at the contemporary stage. Merely an insignificant portion of farms (12,5%) participates in some cooperative and evaluate that membership as positive for agrarian sustainability or some of its aspects. Those are mainly smaller holdings belonging to farmers in advanced age. For the latter participation in a cooperative give possibility for (full or part-time) employment and/or cheap and secured supply of essential services and products (e.g. cultivation of farmland, provision of food for household, feed for domestic livestock, mechanization and other services etc.).

In recent years there are also examples for formation of successful “new generation” cooperatives for effective servicing the real needs of members such as collective marketing, processing, negotiating, contracting, lobbying for public support, etc. Such instances are not many as membership in that type of cooperatives is small, while participants small producers. The latter further hinders exploring the potential of cooperative form for improving agrarian sustainability even in cases the collective mode outside of the farm gates is strongly needed (collecting negotiation and marketing of output). Many vegetable producers pointed out that the lack of an effective nationwide producers organization is a significant problem. However, such an organization is difficult to establish at the current stage due to the big numbers and conflicting interests of producers, tendency for waiting and “free riding” by nonmember farmers, etc. A big buffalo producer also underlines that the existence of two associations in the country in a situation of small overall number of holdings and animals (total 9000) is a significant problem – inefficiency of activity, division of producers, etc.

The “failure” of collective modes in Bulgarian conditions is also a reason for the low participation of farms in joint initiatives with other agrarian and non-agrarian agents. According to

the majority of interviewed managers (72,5%) “participation in collective actions with other farmers and non-farmers” do not have significant importance for agrarian sustainability, and practicing by them (Figure 16). For the remaining good portion of holdings however (27,5%) participation in diverse collective actions with other farmers and non-farmers is a positive factors contributing for improvement of agrarian sustainability or some of its aspects.

In recent years there have emerged and becoming more and more popular various farmers and non-farmers informal and formal initiatives (“collective actions”) for innovation and quality, revival of rural regions and traditional productions, protection of natural environment, “codes of behavior”, protection of intellectual agrarian property (traditional livestock breeds and crops varieties, special products, specific origins and protected names) etc. Such collective forms are initiated by entrepreneurial farmers, professional organizations, related (processing, trade) industries, non-governmental and civic organizations, etc. These forms are increasingly supported by younger farmers of different type, professional and non-governmental organizations, state and local authorities, and other interested parties. The great potential of and the farmers needs from such “collective” actions however has not been completely explored and the positive effect(s) on agrarian sustainability realized. There are also a few examples of successful collective initiatives for sustainable exploration of natural resources (lands, waters, ecosystem services, etc.) when a great common interests and benefits are present. A good example are the joint actions of one of the surveyed cooperative with other cooperatives and farmers in the South-East region for consolidation of the agricultural lands in managed by them areas.

A partial or complete integration of farms in the vertical (food, supply, etc.) chain is a popular form for improving governance efficiency and the activity of related agents for sustainable development. When market prices and standard (“classical”) contracts do not work well the agrarian agents design integrated modes for governing of their relations. Our investigations have found out that only a tiny proportion of surveyed farms (2,5%) are involved in some “integration with a supplier of the farm” and evaluate that form as positive in relation to agrarian sustainability (Figure 2). For instance, one of the interviewed livestock operator uses the veterinary and medical services of his retired parents. Such services are critical for successful development of his holding and therefore their supply is internalized (“fully integrated”) in the family farm. The predominant part of the surveyed managers (97,5%) does not believe that integration with a supplier to the farm is important for amelioration of socio-economic and environmental aspects of agrarian sustainability at the current stage of development.

“Integration with a buyer of product” is more widely used form for governing the vertical links in the sector. According to every forth of the interviewed managers they apply some form of integration with a buyer of output and that governance mode favors agrarian sustainability (Figure 16). The partial or complete integration with a buyer (processor, retailer, exporter, etc.) allows a better coordination and control of transactions between partners, guarantee the sale, avoid risk of market prices fluctuation and opportunistic behavior, and induces strong incentives for joint initiatives, cooperation, and rapid “internal” resolution of emerging disputes in a mutual interest. Such integration mostly is required by the existing strong bilateral or multilateral assets dependency (processing capability, geographical proximity, volumes and timing of delivery, products quality specification, varieties, origin and certification, etc.) of the individual agents in the supply chain. That necessitates (strong incentives, needs, justify additional costs for) elaboration of a special form with designed mechanisms for coordination, stimulation and dispute resolution for facilitation of relations of symmetrically dependent agents.

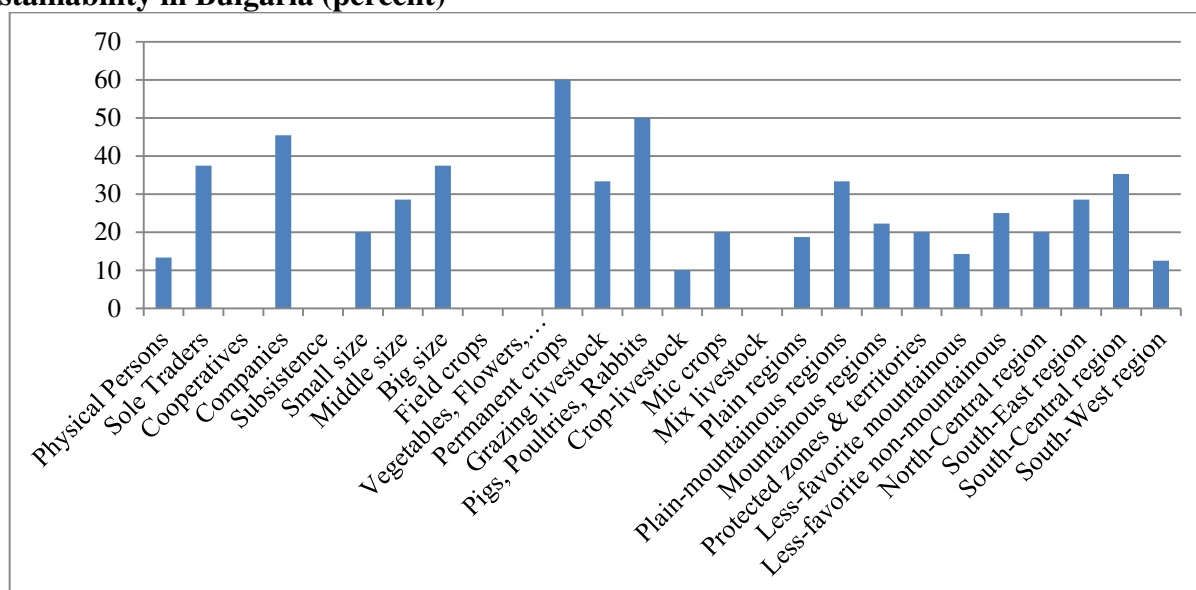
In certain cases, the integration with a buyer of farm produce is partial as farms preserve their autonomy, while vertical relations are governed though long-term provision contracts, interlinking

purchase with crediting and service supply by buyer, etc. (as it is the case in marketing of raw milk, fresh fruits and vegetables, etc.). In other cases, however, there is a complete integration and control based on a joint (co)ownership or organizational form (firm, holding) as it is the case for most part of the grape for industrial wine production. In such cases, farms either entirely lose their autonomy, or become an internal division of a bigger organizational form, or are registered as separate organizational entities. The latter minimize the risk of joint failure (bankruptcy) of different divisions, tax reduction, increasing public subsidies, and meeting formal requirements for participation in public support programs (restrictions for farm size, ceiling for amount of subsidies, maximum number of project applications, etc.), profiting from established reputation of trademarks and origins and/or keeping “competition” between relatively separated units of the integral form (co-ownership). Our study has also found out a “new” tendency in the evolution of governing structures in certain subsectors of agriculture. The survey proved that a great part of vine-wine complexes in the country are additionally integrated on the base of common ownership in large financial and organizational conglomerates (holdings, groups) in agrarian, and related and unrelated with agriculture sectors.

According to the three quarters of Bulgarian farms they are not vertically integrated with other agents nor they believe that form is essential for agrarian sustainability and any of its aspects. In most cases, there is a situation of competitive markets (many suppliers and many buyers), high standardization and “mass character” of produce, as well as lack of dependencies of partners’ assets in the supply chain. In other cases, effective integration of farming with processing, marketing etc. requires certain minimum quantities of product which are difficult to reach. Such example is a surveyed big buffalo grazer whose calculations indicate that it is not profitable to produce in-house (own) buffalo yogurt (selling raw milk to another processor without realizing value added). In other instances, specific quality (variety structure, standardization of product) is required difficult to achieve by smaller producers. In all these cases relationships seller-buyer are more effectively governed through (“faceless”) market forms and market price movements (competition), standards contracts for marketing (supply) of product, and/or personal relations (high trust, gentlemen agreements, other sanctioning mechanisms) between counterparts.

To a greatest extent there is a forward vertical integration with buyers of farm produce for Companies (45,45%) and Sole Traders (37,5%) which assess its positive importance for the governance of agrarian sustainability (Figure 23). Physical Persons are integrated to a lesser degree (13,33%) while none of the Cooperatives practice that mode. The lack of vertical integration in cooperatives is determined by: “high” specialization in certain “mass” productions (grain and industrial crops) which do not require vertical integration; existence of own processing and/or marketing channels for realization of farm produce; and better (symmetrical) negotiating positions and “power”. Degree of vertical integration of agricultural producers increases along with the enlargement of farm size, as the greatest share of integrated with buyers are among the Big holdings (37,5%), to a lesser extent among Middle size farms (28,57%), a little portion among Small producers (20%), while among Predominately for subsistence holdings there is not such an integration. Greater scales of the agricultural production impose a bigger integration since the market and contractual risk (“failure”) is bigger. At the same time, larger buyers (processors, retail chains, etc.) prefer trading with bigger agricultural producers in order to secure needed volumes and decrease transaction costs.

Figure 23. Positive impact of integration with a buyer of produce on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

The greatest extent of forward vertical integration exists in subsectors Permanent crops (60%), and particularly in grapes for wine production, Pigs, Poultry and Rabbits (50%), and Grazing livestock (33,33%), particularly in milk production. Simultaneously, no holdings specialized in Field crops, Vegetables, Flowers and Mushrooms, and Mix livestock practices integration with buyers and consider it as favorable for agrarian sustainability. Also a relatively small share of farms with Crop-livestock specialization (10%) and Mix-crops (20%) develop integration with a buyer and believe it is important for agrarian sustainability. There is a considerable variation in the degree of vertical integration of farms with buyers in different ecological and geographical regions of the country. Comparatively biggest segment of the holdings located in Plain-mountainous regions (every third one) and in South-Central region of the country (35,29%) appreciate the positive impact and integrates in marketing of the output. To a least extent are vertically integrated with a buyer the farms located in the Less-favorite mountainous regions (14,29%) and South-West region (12,5%).

Various initiatives and pressure of farms suppliers, buyers of farm produce, interests groups and public and large are all important factors for governing of agrarian sustainability in all its aspects. Our study has found out that for all surveyed farms the “initiatives and pressure of suppliers” have no or negative importance in governing of agrarian sustainability and some of its aspects (Figure 16). At the same time, for a relatively good fraction of the surveyed managers (32,5%), the “initiatives and pressure of the buyers” of farm produce (processors, traders, exporters, final consumers, etc.) is an essential positive factor for improving agrarian sustainability in all its aspects. The activity of commercial holdings of different type and location is governed by the latter initiatives and pressure. In recent years increasingly are introduced and popularized (advertised) diverse initiatives of retail chains, processors etc. aiming at improving efficiency of Bulgarian farms (“Made in Bulgaria” initiatives), and social and environmental contribution of agricultural production (“green” and “eco” initiatives, corporate “social” responsibility, sustainability movements, organic production, etc.). They all assist, create incentives, and/or pressure on agricultural producers for modernization of activity and increasing different aspects of agrarian sustainability.

Only a tiny proportion of holdings (2,5%) evaluates as negative the impact of various initiatives and pressure of buyers on agrarian sustainability. Such external initiatives and pressure for progressive change often augment the costs of farms, diminish competitiveness, and restrict markets for effective marketing of agricultural produce. At the same time, for the majority of Bulgarian farms (65%) the initiatives and pressure of buyers do not have significant importance and lead to change in agrarian sustainability. At the contemporary stage of development, the main part of the activity of most farms are governed by other important mechanisms and factors (“movements” of market prices, innovations, entrepreneurs initiatives, resource capability, etc.) rather than by the specific initiatives and pressure of the buyers of agricultural produce.

For a comparatively small section of the surveyed farms (15%) the “initiatives and pressure of the investors” are essential positive factors for improving agrarian sustainability and its different dimensions (Figure 16). That type of (external, hybrid) governance is typical for the bigger and more (vertically) integrated farms, with a significant or entire share of the “external” investors in the ownership of agricultural holding. For instance, when a vine (and wine) complex is integrated in a Holding, they lose (governance, financial, price, etc.) “autonomy”, and their relationships with other (internal and external) counterparts are regulated by the common goals of the conglomerate (the “profit” center/s).

For the majority of farms (80%) however, the initiatives and pressure of investors have no importance for agrarian sustainability, since these holdings (most often) have no external investors or the outside investors intervene in the farm management. In Bulgaria still there are few agricultural farms with a partial or dominant (co)ownership of external investors. Most holdings are based on individual or family ownership, or a small-group or cooperative membership. Principally, evolution of the corporations with open or close external membership (shares) in agriculture is impeded due to the high uncertainty of production and the enormous costs for outside control on activity (and opportunism) of the managers and farmers. A minor portion of the managers (5%) evaluate the initiatives and pressure of external investors as negative for the agrarian sustainability. Often involved outside agents (investors) do not have a high competency and/or full information for the specificity of agrarian production and their “active” intervention in the management is considered as negative in regards to agrarian sustainability or some of its aspects.

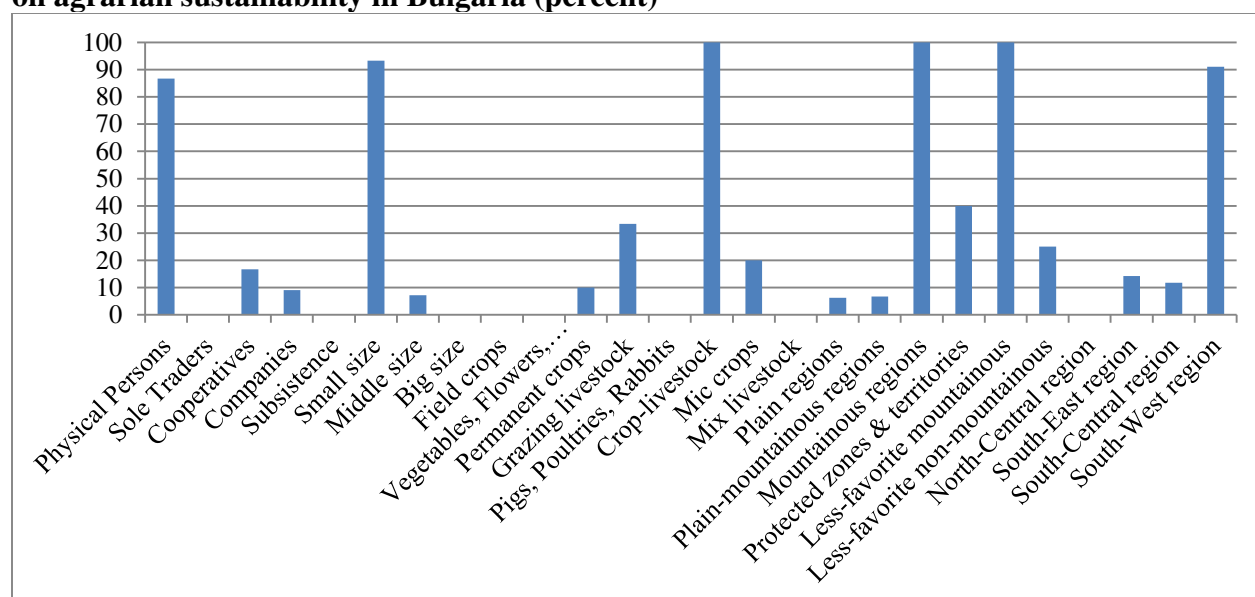
The initiatives and pressure of different interests groups and public at large are important factors which may direct the governance of agrarian sustainability and its individual aspects in one or another way. According to the half of the surveyed managers the “initiatives and pressure of interests groups and public at large” do not impact considerably agrarian sustainability and some of its dimensions (Figure 2). For every second farm other market, private and public mechanisms for governing of agrarian sustainability are more important than the various initiatives and/or direct pressure of interests groups, local community or large society.

For a relatively small portion of the farms (12,5%) the various economic, social, environmental, etc. initiatives of interests groups and public at large and/or certain „pressure “from their side on agricultural producers impact positively agrarian sustainability or some of its aspects. For instance, most often a strong pressure of specific interests groups and/or public at large leads to improvement of eco-management in particular regions, subsectors or type of holdings. According to the good part of the surveyed farms (37,5%) the character of existing initiatives and executed pressure of interests groups and society impact negatively agrarian sustainability and some of its aspects. There are numerous cases when requirements of strong groups of (business, environmental, etc.) interests or local community are in conflict with sustainable agrarian development on account of other sectors and activity (tourisms, housing construction, industry, natural parks, etc.). There are also reported frequent instances of powerful individuals or groups in or outside agrarian sphere striving to acquire

ownership or management rights over significant agrarian resources in certain (high value) ecological and geographical regions. Usually smaller producers are under constant “pressure” to transfer the ownership and/or management of resources against their will and interests. The latter has great negative consequences for agrarian sustainability and some of its aspects. One a relatively big of the surveyed grape producer in order to save his firm from a strong externa take-over pressure (in a combination with a lawsuit for insolvency) leased-out farmland to a „placed person “while court procedures are going on, and simultaneously searching for other “more reliable” ways for salvation.

Generally, different types of farms are affected unequally by the negative influence of the initiatives and pressure of interests groups and community. To a greatest extent from that factor suffer Physical Persons and holdings with Small sizes, out of which 86,67% and 93,33% evaluate as negative the importance of initiatives and pressure of interests groups and community for agrarian sustainability (Figure 24). Relatively a smaller portion of the Cooperatives (16,67%) and farms with Middle sizes (7,14%) assess as negative for agrarian sustainability the existing initiatives and pressure of interests groups and society. That “external” factor is determined as negative to a minor extent by the Companies (9,09%) and none of the Sole Traders, farms with Big sizes, and Predominantly for subsistence.

Figure 24. Negative impact of initiatives and pressure of interests groups and community on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

As a rule, firms and larger structures have stronger mechanisms for adaptation to external social pressure and/or confrontation to unacceptable pressure of certain interests groups and community. In some cases, certain firms and big farms represent interests of the “special” interests groups aiming at acquiring resources, activity and markets of other agricultural producers. On the other hand, having in mind their miniature size and unimportant resources, the semi-market holdings most often are not subject to external pressure of interests groups and/or community. There is a great variation on the negative impact of the external initiatives and pressure of interests groups and community on agrarian sustainability in different subsectors of agriculture and regions of the country. All farms with Mix crop-livestock specialization and every third in Grazing livestock feel the negative impact of the initiatives and pressure of interests groups and community. On the other hand, none of the holdings

in Field crops, Vegetables, Flowers, and Mushrooms as well as Pigs, Poultryes and Rabbits and Mix livestock assess as negative for agrarian sustainability the existing initiatives and pressure of interests groups and community.

The initiatives and pressure of interests groups and community is a negative factor for all farms located in the Mountainous regions and Less-favored mountainous regions as well as for a considerable part (40%) of the holdings with Lands in protected zones and territories. Simultaneously, the majority of farms in Plain and Plain-mountainous regions evaluate as favorable or neutral for agrarian sustainability the impact of the initiatives and pressure of interests groups and community. The initiatives and pressure of interests groups and community adversely affect the most farms in the South-West region of the country (91,07%), and comparatively minor portion in the South-East (14,29%) and South-Central (11,76%) regions, and none in the North-Central region.

Cooperation with and an assistance of farms by a business organization or non-governmental organization may contribute to enhancement of agrarian sustainability or some of its aspects. Such an involvement of a “third” party in the governance of agrarian sustainability is necessitated when pure market and private forms do not work, while a state intervention is inefficient or untimely. However, not always such a complex mode of governance of agrarian sustainability produces good results. The majority of interviewed managers (90%) assess as neutral for agrarian sustainability the “partnership with a business organization”, since the later usually does not exist or it is not essential for the aspects of agrarian sustainability. However, every tenth holding practices some form of partnership with a business organization and believe that such kind (“profit-oriented”) partnership with an external organization have a positive impact on agrarian sustainability and some of its dimensions.

Similarly, a great majority of the surveyed farms (90%) report that “assistance by non-governmental organization” has no significant importance for agrarian sustainability since it either does not exist or the contribution of non-governmental organization toward agrarian sustainability is negligible. What is more, a tiny portion of the managers (2,5%) even suggest that “assistance” from the non-governmental organization hinders sustainable agrarian development. The latter is a consequence of the inefficient activity of existing non-governmental organizations, or of its content with directions distinct from sustainable development goals. A small proportion of farms (7,5%) however implements a beneficial collaboration with some non-governmental organization(s) and evaluates that type (“non-for-profit oriented”) assistance as favorable for agrarian sustainability or some of its aspects. For instance, some of the interviewed managers are taken part in a beneficial long-term training in farm management in foreign (German) organizations, while others received (Swiss) support for transition to organic agriculture.

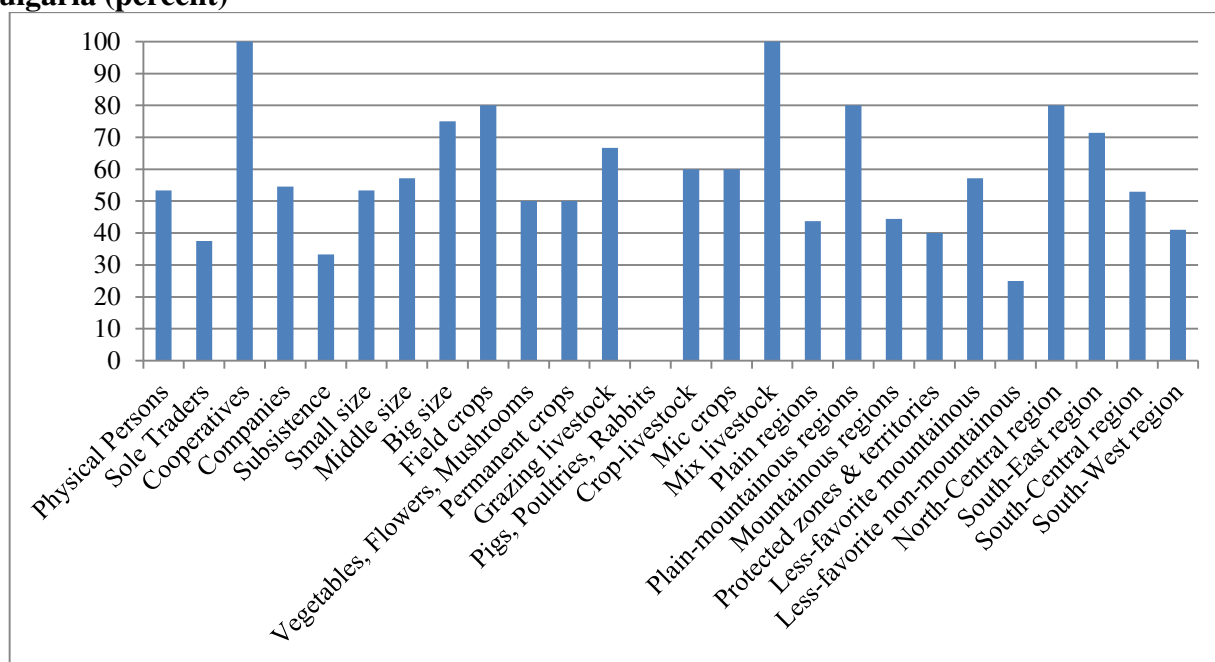
A public intervention in private and market sectors is a necessary and effective means for reaching the objectives of sustainable agrarian development. For example, state subsidizing is one of the main instruments for supporting agricultural producers in the European Union. Different type of subsidies to a various degree favor agrarian sustainability and its individual aspects in different type of farms, subsectors of agriculture, and ecological and geographical regions of the country.

“Farmland area-based state subsidy” is a major component of the Common Agricultural Policy for supporting the income of agricultural producers. According to the majority of surveyed managers (57,5%) that type of subsidies impact positively agrarian sustainability and all its dimensions (Figure 16). That mode of public assistance aims at increasing economic and social sustainability of agriculture and rural regions and overcoming disproportions with other sectors of economy. Along with this, reception of a single area-based payment is also related with an obligation for maintaining the land in a good agronomic condition by landowners and farmers, which improves environmental sustainability.

Nevertheless, a good portion of the farms (27,5%) evaluates as neutral the effect of state subsidies for utilized agricultural land in regards to agrarian sustainability and its individual aspects. Expected effect of this public instrument on agrarian sustainability for many leasing-in farmland holdings is minimized or annulled due to the fact that many owners of lands augment rent with a part (or the entire) amount of eligible subsidies. Some farms and landowners lease out “for free” to other farmers without registering the deal and receiving entire due subsidies for owned land. In all these cases the public subsidies for utilized agricultural land are actually taken not by the farmers operating the land but external agents (farms, landlords, middlemen, etc.). Moreover, 15% of the managers believe that this type of subsidies is a negative factor for agrarian sustainability. The good part of the farmland area based payments in the country is received by a relatively small proportion of (large) agricultural holdings and in certain subsectors of agriculture (grain, oilseeds, etc.). The latter further contribute to income disparity of different type of farms, subsectors, and regions of the country.

Favorable impact of the state farmland area based subsidies to a various extent affects positively the farms of different juridical type, size, production specialization, and ecological and geographical location. Our study has found out that to a greatest degree the positive impact of area-based subsidizing is felt by the Cooperatives (100%), Companies (54,55%), and Physical Persons (53,33%) (Figure 25). Furthermore, with increasing the size of agricultural holdings also progressively grows the favorable impact of that type of public support. While in holdings Predominately for subsistence merely a third assess as positive that type of EU support, among the farms with Big sizes their share is three quarter.

Figure 25. Positive impact of state land-based subsidizing on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

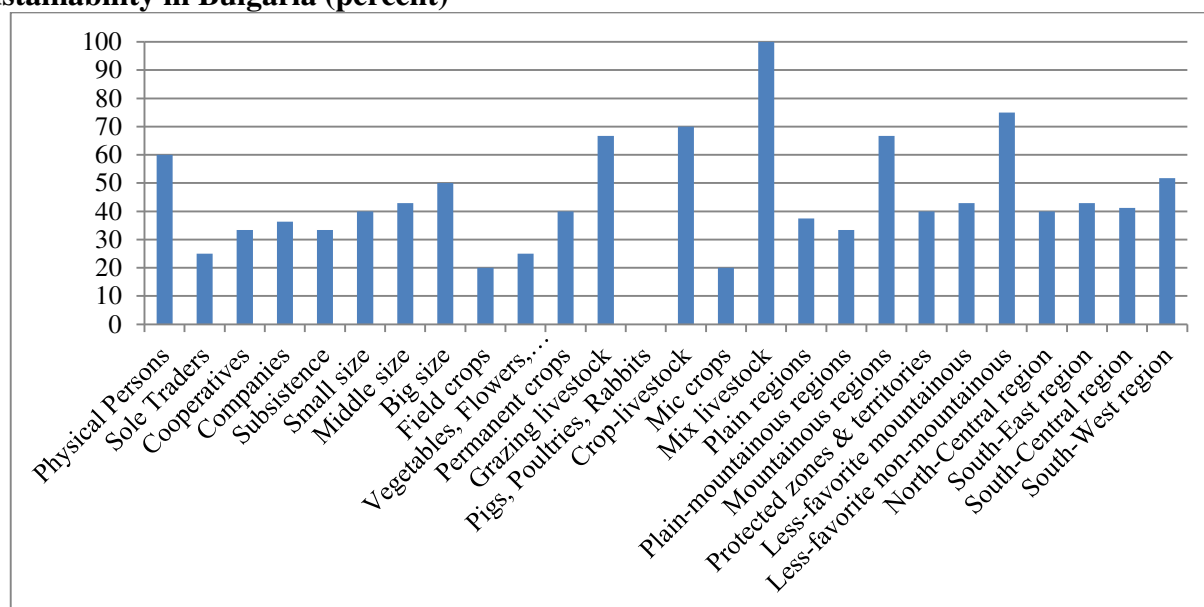
There are also variations in the positive impact of the state area-based subsidies in different subsectors of agriculture. From this instrument of public support to a greatest extent take advantage farms specialized in Mix-livestock (100%) and Field crops (80%). Among producers specialized in Permanent crops and Vegetables, Flowers, and Mushrooms every other assesses as positive the

received area-based subsidies in relation to agrarian sustainability. In holdings specialized in Pigs, Poultry and Rabbits none of the surveyed managers indicates that this type of public support favors agrarian sustainability. There is also a considerable differentiation in the positive effect of the state land-based subsidies in different ecosystems and regions of the country. Comparatively the biggest proportion of farms in the Plain-mountainous regions (80%) and Less-favored mountainous regions (57,14%) evaluate as favorable the impact of utilized farmland based subsidies on agrarian sustainability and its individual aspects. At the same time, merely a quarter of the holdings in Less-favored non-mountainous regions take advantage of that type of public support. To the greatest extent the positive impact of area-based subsidies is felt by the farms in North-Central region (80%) and South-East region (71,3%) of the country, while in the South-West region a smallest degree of holdings benefited (41,07%).

Another main form of public support is the national (top-ups) subsidizing for particular activities and products. Utilized agricultural land based subsidizing creates great differences in the incomes and effectiveness of individual subsectors and producers, which necessitates “correction” though direct subsidizing the production of certain products, grazing livestock, executed (restricted) activities, etc. According to the majority of interviewed managers (57,5%) “state subsidies for activities and products” does not affect significantly agrarian sustainability (Figure 16). Simultaneously, none of the surveyed believes that such type of direct support to production is a negative factor for agrarian sustainability and any of its aspects. For a good portion of the surveyed farms (42,5%) state subsidizing for activities and products is a positive factor for maintaining and improving agrarian sustainability or some of its elements.

There is a great variation in the degree of the public subsidizing of production among different type of farms. The biggest share of holding assessing as positive the impact of direct subsidies for products and activities is in the group of Physical Persons (60%) (Figure 26). On the other hand, only a quarter of the Sole Traders feel the favorable effect of that type public support. The extent of the subsidizing for products and activities augments along with the farm size. Among the biggest operators every other one take advantage from the positive effect of these subsidies, while among semi-market farms only a third. That form of public support to the greatest extent participate and take advantage farms in Mix-livestock (all), Mix crop-livestock specialization (70%), and in Grazing livestock (two-third). On the other hand, that mode of state support reaches none of the farms in Pigs, Poultry, and Rabbits, and only one-fifth of holdings in Field crops and Mix crops as it is evaluated as positive for agrarian sustainability.

Figure 26. Positive impact of state subsidizing for activities and products on agrarian sustainability in Bulgaria (percent)



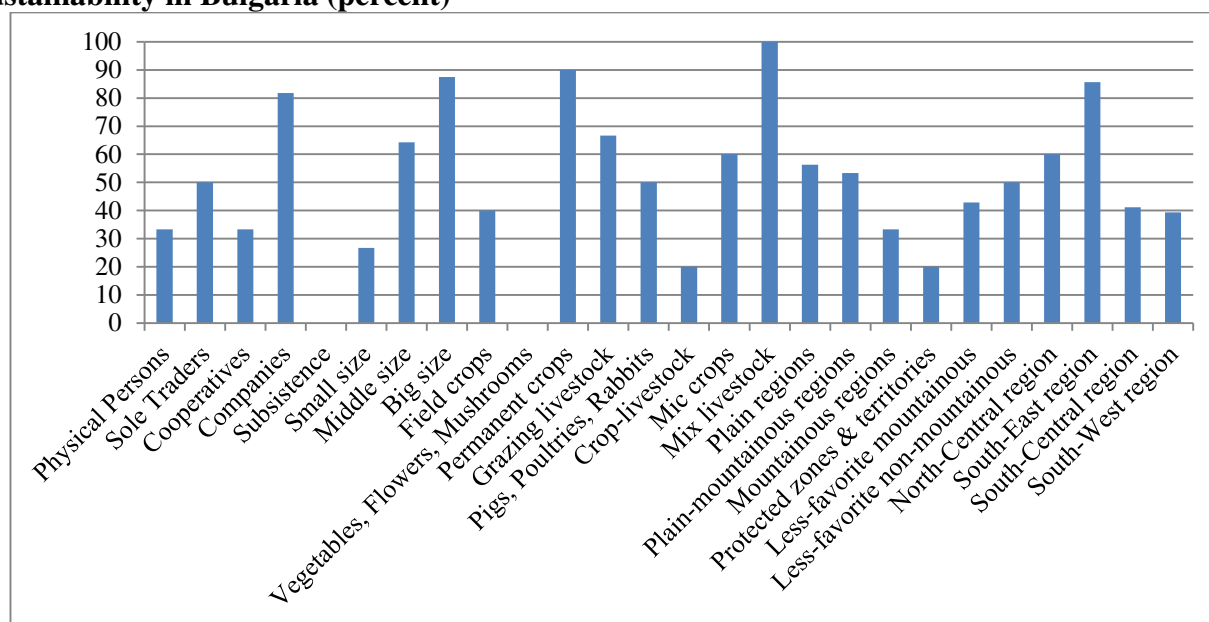
Source: interviews with managers of farms, 2017

In different type of ecosystems that form of governing of sustainability to a greatest extent is implemented by the farms in Mountainous regions (two-third) and Less-favored non-mountainous regions (three quarters) and relatedly lesser degree by the holdings in Plain-mountainous regions (a third). A relatively bigger faction of the farms in South-West region (51,78%) is benefited from that form of public support in comparison with the rest three regions where the schemes cover around 40-43% of the holdings.

The failure of effective market and private investments in agrarian sectors is a reason for the state intervention in supply of a preferential credit and subsidies for long-term (“capital”) investments for improving sustainability. A half of the interviewed farms used “state subsidizing for new investments” and evaluate that form of public support as positive in relation to agrarian sustainability and its main aspects (Figure 16). The rest half of the holdings however, have not benefited from that mode of public support and asses it as neutral in regards to agrarian sustainability. Many instances are pointed out when public investment funds are utilized ineffectively due to the high amount of subsidies. For example, permanent crops (walnuts, rosehips, alfalfa, etc.) have been created without harvesting the yields or assets destroyed once the monitoring period (a “pay-back” business plan) by the authority is expired.

Firms of different type to the greatest extent participated in diverse schemes for state subsidizing of new investments – Companies (81,82%) and Sole Traders (50%) (Figure 27). The largest portion of supported by that public support instrument farms are among the groups of the Big size (87,5%) and Middle size (64,29%), as well as specialized in the Permanent crops (90%), Mix livestock (100%), and Grazing livestock (66,67%). Simultaneously, none of the holdings Predominately for subsistence and from the sector Vegetables, Flowers and Mushrooms is favored by that mode of governance of agrarian sustainability.

Figure 27. Positive impact of state subsidizing for new investments on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

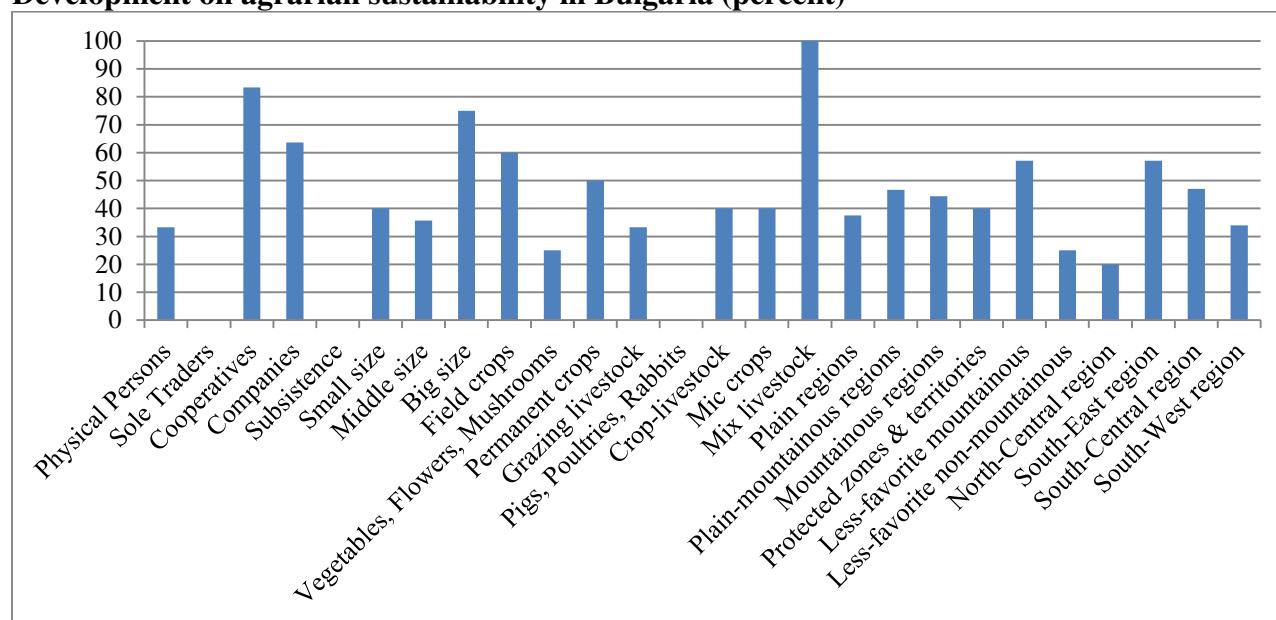
A greater proportion of holdings located in the Plain (56,25%) and Plain-mountainous (53,33%) regions are beneficiaries of the public investment subsidies in comparison with the farms with Lands in protected zones and territories (20%) and Mountainous regions (33,33%). A good share of the farms in South-East region (85%) and North-Central region (60%) benefit of the positive impact of that form of public intervention comparing to the holdings in the South-West (39,28%) and South-Central (41,18%) regions of the country.

The green payments and environmental measures of the Program for Rural Development (PRD) are another instrument for public support to sustainable agrarian development, particularly its environmental aspect. The greatest proportion of surveyed managers (42,5) assesses “green payments and eco-measures of the Program for Rural Development” as positive for agrarian sustainability (Figure 2). Public subsidies of that type are considered as mode of payment for services (public goods provision) and compensation of the costs of farmers for carrying out of an important social function – care for natural resources. For their part, the farms participating in that hybrid form of governance are obliged to implement certain (“good”) practices for conservation and improvement pf lands, waters, landscape, natural biodiversity, etc. It is indicative that none of the interviewed farms thinks that type of public support has a negative impact on agrarian sustainability, and particularly on its environmental aspect. Nevertheless, according to the majority of holdings (57,5%) that form of public support has no significant importance for agrarian sustainability and any of its aspects. That is consequence of the fact that most farmers either do not receive such a support, or its form and amount affect anyway agrarian sustainability and its different aspects.

To the greatest extent the positive impact of green payments and other eco-measures of the PRD benefit the Cooperatives (83,33%) and Companies (63,64%), farms with Big sizes (75%), and those specialized in Mix livestock (100%), Field crops (60%), and Permanent crops (50%) (Figure 28). The favorable impact of the public payments for environmentally friendly agriculture are mostly felt by the holdings in the Less-Favored mountainous regions (57,14%) and Plain-mountainous regions (46,67 %), as well as those located in the South-East region of the country (57,14%). On the

other hand, this instrument of public support is a positive factor for agrarian sustainability for a relatively small portion of the holdings in the Less-favored non-mountainous regions (25%), North-Central (20%) and South-West (22,93%) regions of the country.

Figure 28. Positive impact of green payments and eco-measures of Program for Rural Development on agrarian sustainability in Bulgaria (percent)



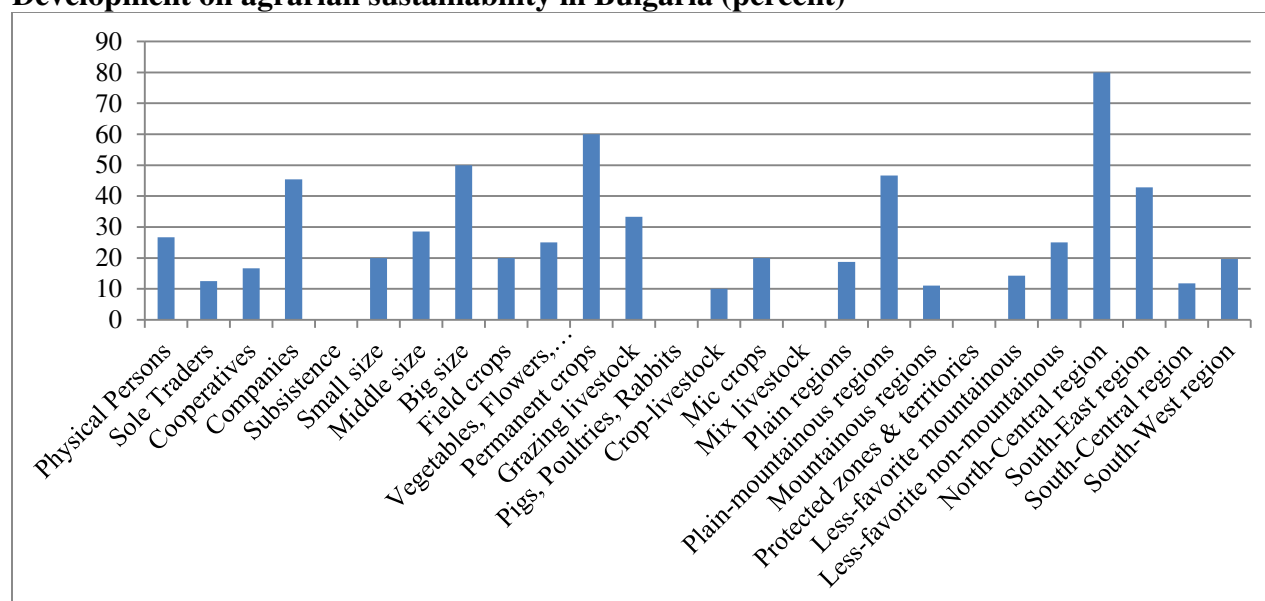
Source: interviews with managers of farms, 2017

Various forms of public support to farmers organizations of different type are a major component of the public intervention in agriculture and mode for increasing agrarian sustainability. That type of public support is extremely important for Bulgarian agriculture where evolution of the effective organizations of agricultural producers for correction of market and private failures considerably lag behind the needs of farmers. For predominant part of the interviewed managers (95%) existing at the contemporary stage of development in the country “state support to farmers organizations” does not assist in any way agrarian sustainability (Figure 16). Apparently envisaged instruments of the state intervention in that exceptionally important area are not used by the farmers and/or lead to actual improvement of the governance of agrarian sustainability in the country. For the rest tiny portion of the holdings (5%) the state forms for supporting farmers organizations are a positive factor for improving sustainability in the sector or some of its main aspects (social, economic, environmental).

In Bulgarian agriculture there are also applied some other measures of the Program for Agrarian and Rural Development aiming at supporting the actions of agrarian agents for improving different aspects of agrarian sustainability. According to the great part of the surveyed managers (72,5%) “other measures of the Program for Agrarian and Rural Development” do not impact significantly the level of agrarian sustainability (Figure 16). That is subsequent of the fact that considerable number of the Bulgarian farmers either do not have practically access to that form of public support or see that intervention as an essential factor for agrarian sustainability or some of its dimensions. The rest smaller portion of the farms (27,5%) have taken and/or are taking part in other measures of the PRD, and evaluate them as positive for agrarian sustainability or some of its aspects.

To a greatest extent the favorable impact of other measures of the PRD is pointed out by Companies (45,45%), holdings with Big size (50%), farms specializes in Permanent crops (60%), and located in Plain-mountainous regions (46,67%), and North-Central region of the country (80%) (Figure 29). For the best portion of the farms in the rest groups of juridical type, sizes, product specialization, ecological and geographical situation, the favorable impact of that form of public support is relatively small or absent.

Figure 29. Positive impact of other measures of Program for Agrarian and Rural Development on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

As far as the remaining public programs are concerned, according to the greatest part of the interviewed managers (95%) they do not contribute in any way for agrarian sustainability (Figure 16). The rest small portion of the holdings (5%) are taking or have taken part in some other type public (state, sectoral, social, environmental, regional, international, etc.) support and development program, and they believe that involvement favor agrarian sustainability or some of its main aspects.

Norms for good agricultural practices and cross compliance aim at directing actions of the agricultural producers toward achieving sustainable agriculture in its three aspects – social, economic and ecological. Most surveyed managers (65%) indicate that “requirements for cross compliance and good agricultural practices” do not have substantial importance for the governance of agrarian sustainability. Many agricultural producers do not comply fully (or at all) with compulsory norms and systems of good agricultural practices, or they appreciate that such official standards contribute to agrarian sustainability. What is more, one tenth of the farms points out that mandatory requirements for cross compliance and good agricultural practice have a negative effect in regards to agrarian sustainability or some of its aspects. The latter is often due to the fact that superior “external” standards increase costs of producers (diminishing economic sustainability) without being associated with an expected positive impact on overall sustainability. In some cases, such norms do not correspond to the specific conditions of each holding and contribute to accomplishment of desired objectives for sustainable development of related farms, subsectors, ecosystems or geographical regions.

According to every forth of the surveyed managers the requirements for cross compliance and good agricultural practices are positive factor for improving agrarian sustainability and particularly its social and environmental aspects. The favorable impact of that mode of public intervention is reported in equal extent by farms of different juridical kind, sizes, production specialization, and ecological and geographical location. The formal norms for good agricultural practices and obligatory requirements for cross compliance assist agricultural producers and impose a “type of behavior” leading to improvement of agrarian sustainability at farm, sectoral and regional levels.

Different forms of local support by the community and/or local authority are means for supporting market, private, collective and state modes, and for correction of market, private and/or state failure(s) and improvement of agrarian sustainability in the region. According to the predominant portion of the interviewed managers (95%) “existing public support in the region” has no significant importance for agrarian sustainability and its diverse aspects (Figure 16). In many cases such support practically is missing or it is insufficient, unsustainable, or not well designed in the interest of agrarian development in the region. An interviewed big agricultural producer describes public support in the region “only as moral”. The remaining very small portion of the surveyed holdings (5%) evaluates as a positive the existing public support in the region in regards to sustainable agrarian development. There is tinny number of good examples where the local authority and/or public organization assist directly or indirectly farmers, farm households and organizations with appropriate policies, initiatives (festivals, product promotions, etc.), information, (co)financing, partnership and join forms, lobbying before superior authorities etc., and that intervention improves sustainability of agriculture at farm, (sub)sectoral, ecosystem and/or regional level.

Formal and informal voluntary standards, norms and rules, introduced and applied by the farmers and/or farmers organizations are new developing form for governing of agrarian sustainability. They are expression of the willingness of individuals or a group of producers to impose voluntary quality, social, ecological etc. standards, norms, rules and/or restrictions for sustainable agriculture overpassing the official norms. According to the majority of surveyed holdings (72,5%) they do not apply any “voluntary standards, norms and rules” and consider that modes as important for agrarian sustainability and some of its aspects (Figure 2). A small portion of the managers (2,5%) however, indicates that “voluntary” standards, norms and rules, which are required (“imposed”) by the professional organizations, big buyers, consumers associations, interests groups, governmental agencies, etc. increase operational costs (for studying, introduction, implementation, controlling, disputing, etc.) and affect negatively agrarian sustainability. Every forth of surveyed managers assess as positive for agrarian sustainability implementation of (participation in initiatives for) voluntary standards, norms, and rules. Those are innovative farms from different juridical type, size, product specialization, ecological and geographical location, which implement such emerging private or collective mode for governing of agrarian sustainability (or some of its aspects).

Provision of free services like training, advices, etc. by the state is an important form for public support to agrarian sector. Every fifth of the interviewed managers reports of using in the past or presently some form of “provided by the state free services (training, advices, etc.)”, and assess that mode of state assistance as a positive factor for agrarian sustainability and its dimensions (Figure 16). In recent years there have been carried out numerous trainings and consultations by the Agricultural Advisory Service and other government organizations, aiming at improving qualification and awareness of agricultural producers. In this mode smaller size holdings are mostly involved, which do not have or cannot afford to hire experts in management, finance, agronomy, etc. and rely on free state services in the area. At the same time however, the majority of the farms do not believe that provision of free services (training, advices, etc.) by the state is essential for agrarian sustainability. The latter confirms that the majority of Bulgarian farms have no access or use free state services, or

evaluate the importance of (received) services as neutral in relation to agrarian sustainability and its individual aspects. What is more, a small fraction of the managers (7,5%) indicates that “assistance” of the farms by the state through free services as training, advices etc. is a negative factor for agrarian sustainability. According to a portion of the users of the state system of free farm services it does not work well and impedes achievement of agrarian sustainability due to inefficiency, high related costs for farmers, inadequate information, improper training, etc.

Another form for public (government) involvement in the private and collective sector for governing of agrarian sustainability is a public-private partnership. The majority of the surveyed managers (90%) do not report participating in a “partnership with community, state, international etc. organization”, nor evaluate that hybrid mode as important for agrarian sustainability (Figure 16). The latter is subsequence of the fact that in the country still there are not popular and widespread formal partnership forms of agricultural producers with a community, state and/or integrational organization. The rest small portion of the holdings (10%) however, applies some partnership with a community, state and/or international organization, and evaluates it as positive for agrarian sustainability and its main aspects. In the agrarian sector in the country there are few examples for successful partnerships of individual farmers or farmers organizations with local, national or international public organizations, aiming at implementation of certain social, environmental, regional, etc. programs, introduction of new initiatives, standards, supporting and training young entrepreneurs and innovators, association of producers and interested parties, etc.

Tax preferences of different type are popular public form for supporting certain producers, subsectors, regions, etc. The majority of surveyed holdings (77,5%) does not use “tax preferences” and/or suggest that mode is important for agrarian sustainability and its dimensions (Figure 16). An insignificant proportion of the interviewed managers (2,5%) estimates that tax preferences for certain activities, productions, regions, etc. are even a negative factor for the agrarian sustainability. Every fifth of the managers however, assess as positive received by tax preferences in regards to agrarian sustainability, mostly for its economic aspect. The surveys farm most often underlines the favorable impact of returned excise for diesel fuel, the zero excise duty for wine etc. Beneficiaries of that type of public support are predominately bigger producers of different type in crop subsectors of agriculture (with enormous costs for purchasing fuel, mechanization, and transportation), and integrated farms in the vine-wine sector.

Mandatory social security payments are an important form for public intervention aiming at improving the social position of the workers in the sector and elevating agrarian sustainability. According to 15% of the surveyed managers they strictly implement “obligatory social security payments” and believe that instrument favor agrarian sustainability, particularly its social aspect (Figure 16). Those are mostly larger cooperative and other farms, for which the social security payment of workers is a priority and evaluated as a positive factor for improving of overall efficiency. The latter type of farms is also the mostly controlled by the authorities for complying with the social security payment norms, they often strictly implement formal regulations, and perceive that mode as a part of the normal farm practice.

At the same time, a good portion of the holdings (17,5%) assess as negative compulsory social security payment in relation to agrarian sustainability, and particularly for its economic aspect. These are larger farms, hiring many permanent and seasonal labors, for which the social payments take a big share in the total costs. The enhanced control and sanctions from the government agencies on big farms give less possibility to ignore regulatory requirements in the area. A good number of managers are also complaining that they are forced to hire many „unmotivated and unskilled workers“, for which they pay social securities without getting corresponding labor contribution (high costs for negotiation, training, unjustified absences from work, low working discipline, high job turnover, etc.).

For the latter type of holdings, the mandatory social security payments are a significant additional cost which is not associated with relevant positive effects on agrarian sustainability.

The mandatory insurance is one of the forms of public intervention in the risk governance in agrarian sphere and for enhancement of agrarian sustainability. In agriculture, pure market forms for insuring against risk are not popular due to the lack of appropriate insurance coverages (products), high costs (premiums), frequent disputes over claims for compensation for damages, lack of tradition, etc. In many instances, the market forms are not applied due to the employment of other more effective private modes of risk management. Usually, compulsory assurance is required for participation in some of the public support measures as it is necessary to insure permanent crops and buildings, livestock, yields, labor, etc. in projects for modernization of agricultural holdings. One fifth of the surveyed farms point out the favorable impact of “mandatory assurance” on agrarian sustainability and its aspects. Those are mainly bigger farms, which take part in different forms of public support programs requiring obligatory insurance (Figure 16).

According to a good part of the managers (17,5%) however, the mandatory insurance has negative consequences for agrarian sustainability, because it increases the production costs and claims for damages are associated with multiple problems. Moreover, for a major part of the holdings (62,5%) the obligatory assurance has no importance in regards to agrarian sustainability or some of its aspects. The majority of Bulgarian farms either does not practice that mode of (market) assurance or see any benefits from that form for governing of agrarian sustainability.

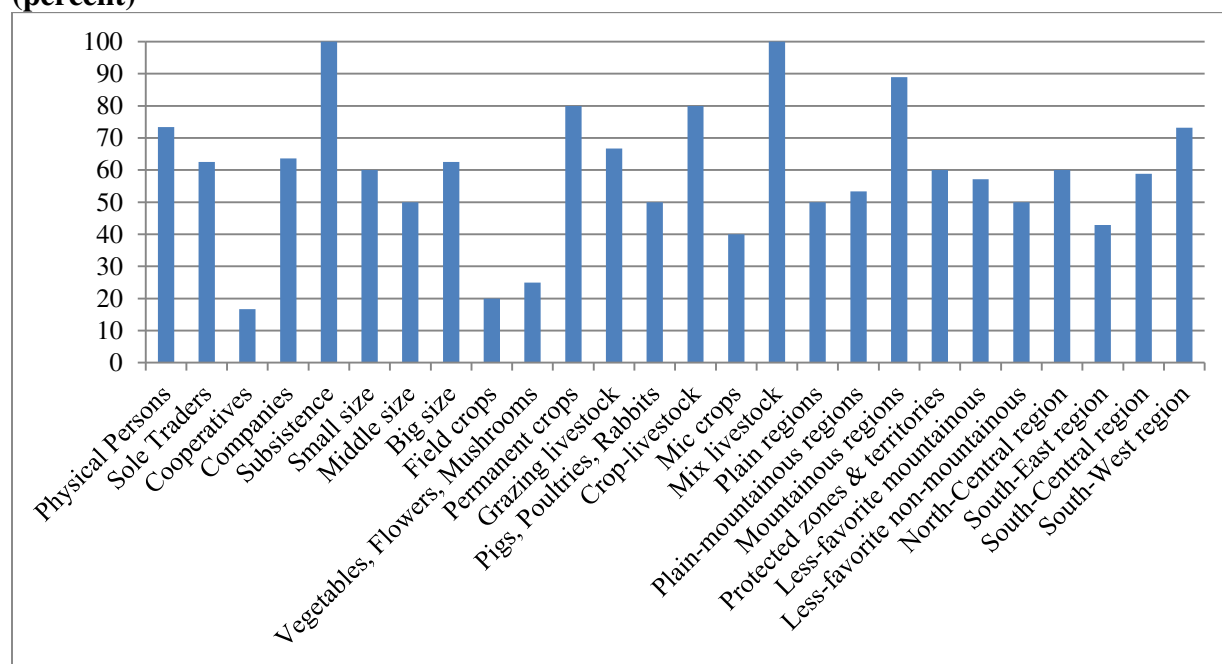
Social recognition of the contribution of the farmer, the owner and/or the manager of the holding is an important factor for stimulating (improving) the actions for achieving agrarian sustainability. According to a large part of the interviewed managers (37,5%) “social recognition of their contribution” is an essential regulating behavior and directing activity positive factor for improving agrarian sustainability (Figure 16). The great importance of the “social image” of the farmer and the recognition by the community in the region and country is pointed out by the innovating entrepreneurs and farmers of different kind, size, production specialization, ecological and geographical regions. That informal form of social governance of the behavior is particularly typical for agriculture, where farmers, their activities and “reputation” are well known by the professional community, related sectors and general community in a residential area, region or country. For the remaining larger portion of the holdings (62,5%) however, social recognition of the farmer’s contribution has no importance for agrarian sustainability and its dimensions.

Informal contracts between agricultural producers, farmers and suppliers, farmers and buyers, etc. are widely used in agrarian sphere. Unlike written contracts, having a legitimate power and being able to be disputed though a court system, informal agreements are governed solely by the “good will” and trust between counterparts and unwillingness to lose cooperation with a partner and/or social reputation. The greatest part of surveyed managers (60%) indicates the positive importance of the “informal agreements” in relation to the governance of agrarian sustainability (Figure 16). A significant fraction of the relationships in the agrarian sphere in the country are still governed (more) effectively through that traditional mode between counterparts, knowing each other well and frequently trading. For a good proportion of the holdings (30%) informal agreements have no importance for agrarian sustainability. Increasingly the relationships between counterparts are governed though a formal contract since they cover rare deals, large volumes, unknown counterparts, big partners (retail chains, processors, electricity, water, etc. suppliers) and other organizations (banks, insurance companies, state agencies), for which “formal” written contracts are mandatory. Besides, existence of formal contracts (e.g. for marketing of output) very often is a precondition for application for a bank loan and some of public support programs.

Nevertheless, each tenth of the holdings believes that informal agreements in the sector impact negatively agrarian sustainability and its components. For that form is too expensive or impossible to resolve conflicts between parties in case negotiated obligations are not fulfilled or conditions of exchange change (sharp increase in prices of purchased by farm inputs or considerable decline in market prices of farm produce). Interviewed farmers have given many examples, in which they are cheated and realized huge damages due to nonfulfillment of certain informal agreements by the partners, without been able to enforce their rights in court (as a result of difficulties, failure, more favorable opportunities for deals, etc.). Moreover, widely used informal agreements in the country are associated with development of a huge informal (grey) sector in agriculture, with unenforced quality, safety and environmental standards, unpaid taxes and social securities, juridical consultations fees, costs for contracts preparation, writing and registration, etc. All these increase production costs in the “light” sector of agriculture, and inferior competitiveness and efficiency comparing to the informal sector. Therefore, farms complying with the formal rules assess as negative for agrarian sustainability widespread application of informal agreements.

Different type of holdings, subsectors and regions apply unevenly the informal agreements and evaluate as positive their role for agrarian sustainability. To the greatest extent informal agreements dominate among Physical Persons (73,33%) and firms of various kind – Sole Traders (62,5%) and Companies (63,64%) (Figure 30). Simultaneously, relatively a small portion of the cooperative farms (16,67%) applies that mode for governing relations with divers agents, and assess it as positive for agrarian sustainability.

Figure 30. Positive impact of informal agreements on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms, 2017

The smallest semi-market holdings entirely govern their relationships with other agents through informal agreements. At the same time, farms with Middle sizes to the least extent (50%) use contract of the latter type. Informal agreements are most popular in subsectors Mix livestock (100%), Permanent crops and Mix crop-livestock (by 80%). Farms applying at least informal agreements and

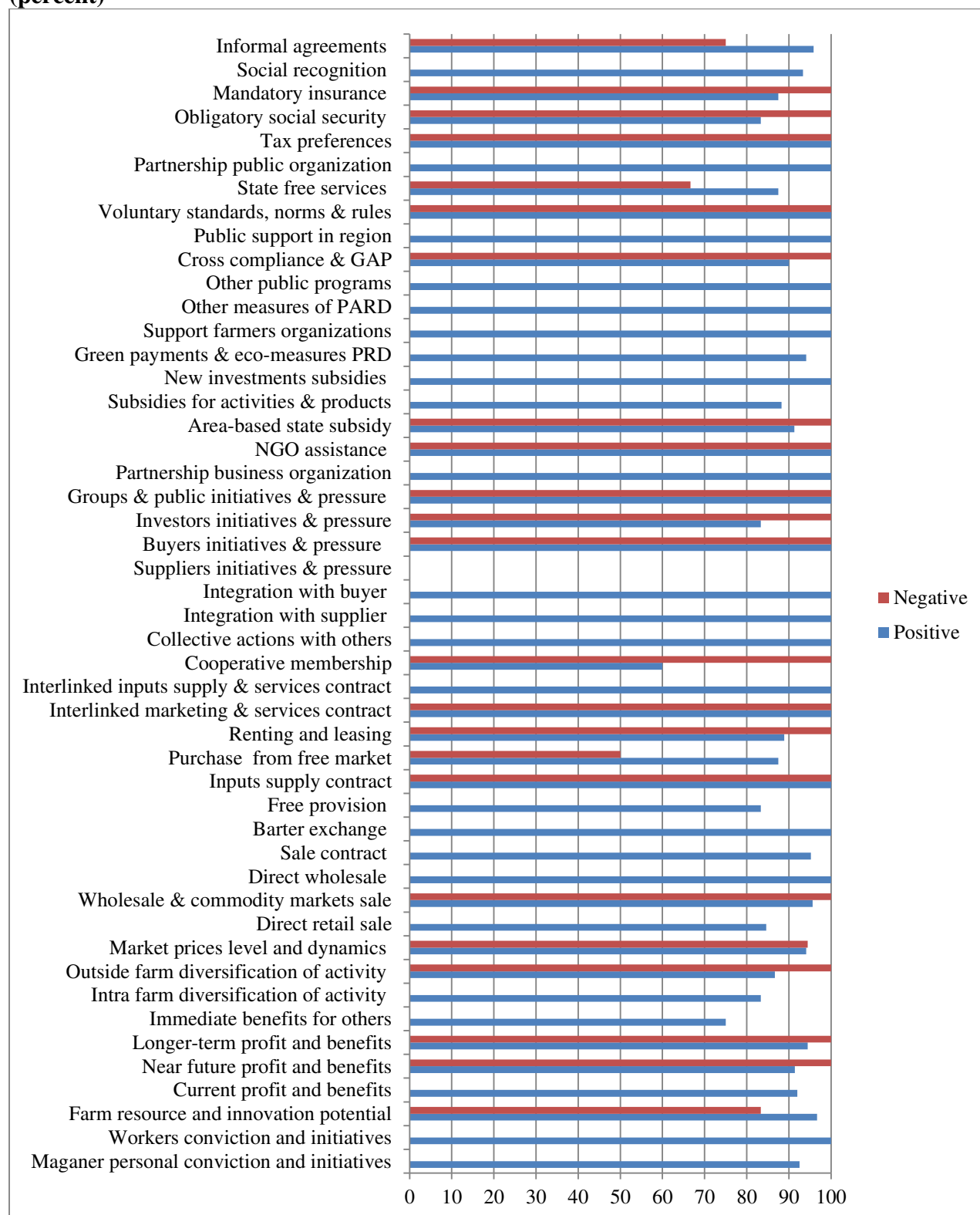
assessing them positively are among Field crops (20%) and in Vegetables, Flowers, and Mushrooms (25%). Informal contracts to the biggest degree are employed by the holdings in Mountainous regions (88,89%), while in the Plain regions to smallest extent. The South-West region of the country is the leader in terms of the proportion of farms (73,21%) practicing informal agreements, while fewer number of farms in the South-East region (42,86%) evaluate as positive that type of governance of relations. The structure and the scope of informal agreements in different type of farms, subsectors of agriculture, type of ecosystems and regions of the country give also some tentative insight for the evolution of the informal sector in agrarian sphere at the present time.

Identification of the links (correlation) between the level of agrarian sustainability in individual farms and the importance (efficient, “positive” impact) of diverse private, contractual, collective and hybrid modes of governance for these holdings, allows to determine the real efficiency of the specific governing modes for improving agrarian sustainability in the country. For most of implemented governing forms there exist a strong correlation between the positive estimates of the managers for the impacts on agrarian sustainability, and the archived good (and high) level of agrarian sustainability in the corresponding farms (Figure 31).

Thus, preferred and employed by the farms governing forms are critical and (most likely) their choice by the managers to a certain extent actually contribute to achievement of a higher agrarian sustainability in surveyed holdings. Effectiveness of individual governing modes is as following: personal conviction and initiatives of the farmer (92,5%), personal conviction and initiatives of workers (100%), profit and benefits in the present time (92%), immediate benefits for other persons and groups (75%), diversification of activity in the farm (83,33%), direct retail sells of products and services (84,62%), sale on wholesale and commodity markets (100%), marketing contract for products and services (95,24%), barter exchange of products and services (100%), free provision of resources, products, services and activities (83,33%), interlinked supply contract with services by the supplier (100%), participation in joint actions with other farmers and non-farmers (100%), integration with the buyer of produce (100%), partnership with a business organization (100%), state subsidies for activities and products (88,24%), state subsidies for new investments (100%), green payments and eco-measures of the PRD (94,12%), state support to farmers organizations (100%), other measure of the PARD (100%), participation in other public programs (100%), existing public support in the region (100%), partnership with community, state, and integrational organization (100%), and social recognition of the contribution (93,33%).

For the rest of analyzed governing forms used by the surveyed farms there is no clear relation between the superior levels of agrarian sustainability and the managers assessments on sustainability impact of a particular mode. In all these cases, preferred by the managers governing forms do not lead to expected results (due to novelty, a short period of implementation, inefficiency in terms of sustainability), or manifested “joint (cumulative, complementary, contradictory) effect” with other employed governing modes. It is also likely that the managers’ estimates are not precise and represent the impact of a particular governance form on farm private efficiency rather than the real impact on agrarian sustainability (overall social efficiency).

Figure 31. Share of farms with good and high sustainability evaluating as positive or negative the impact of individual governing forms on agrarian sustainability in Bulgaria (percent)



Source: interviews with managers of farms (2017), author calculation

Conclusion

Our empirical study has just been a first attempt to identify the complex links between the governing system employed in Bulgarian agriculture and the level of agrarian sustainability in the country. It made it possible to identify the mechanisms and modes of governance mostly used by the agricultural producers, and assess their impact on agrarian sustainability as a whole, and in different subsectors, geographical and administrative regions, (agro)ecosystems, and type of farming enterprises.

We have found out that in the specific socio-economic, institutional and natural environment agricultural producers of different juridical type, size, specialization, and location use quite unlike mixture of effective market, private, collective and hybrid modes for governance or their activities and relations.

Nevertheless, evolution of the system of agrarian governance and the level of agrarian sustainability depends on various economic, political, behavioral, demographic, technological, international, natural etc. factors. Individual, joint and spillover effects of all these factors are to be accounted for and assessed in further research in that new area. Besides, always there is a certain “time lag” between the “improvement” of the system of governance, and the positive, negative or neutral impact on agrarian sustainability, and its economic, social and environmental aspects. All these factors are to be studied in such assessments as estimates also made on the “dynamics” of the impact over a longer time horizon.

Research on the relations between the governing structure and the (level and dynamics of) agrarian sustainability is to continue though expansion of the number and representation of surveyed holdings, and the spectrum of the specific governing modes used by the farms of different type as well as assessments of the impact of institutions on agrarian sustainability. What is more, applied methods are to be enriched in order to specify better the complex relations between the agrarian governance and sustainability. Furthermore, modes of governance at higher hierarchical levels (sector, national, transnational) have to be specified and their separate and/or complementary impact on agrarian sustainability evaluated.

Having in mind the importance of comprehensive assessments of the impacts of governing system on agrarian sustainability, and the enormous benefits for farm management and agrarian policies, this type of studies are to be expended and their precision and representation increased. The latter however, requires a close cooperation between all interested parties, and participation of farmers, agrarian organizations, local and central authorities, interest groups, research institutes and experts, etc. Moreover, the precision of estimates has to be improved, and besides on the estimates of farm managers to incorporate other relevant information – experts and stakeholders’ assessments, monitoring, report, statistical, etc. data, studies on “actual” (rather than declared) behavior of various agrarian and non-agrarian agents, and associated “effects” on agrarian sustainability, etc.

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