Sustainable value creation in the agricultural sector. A literature review

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Abstract:

The sustainable value framework (Hart and Milstein, 2003) allows conducting a diagnostics of a firm regarding its strategies for the creation of sustainable business value. We have applied this instrument to the field of agricultural business. The analysis of literature made it possible to identify activities that source value creation for agricultural enterprises. The activities were grouped into six topics, namely collaboration, diversification, product identity, distribution channels, knowledge and innovations, changes in production. Applying the sustainable value framework to locate these six topics allowed drawing the conclusions that agricultural enterprises are successful in pursuing business strategies in near-term perspective in both internal and external dimensions, while long-term oriented strategies such as innovativeness, knowledge acquisition and collaborations with external stakeholders are out of the radar of agricultural enterprises. These conclusions lead to the need to explore what agricultural enterprises require in order to create sustainable value in all segments of the framework.

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Introduction
How can firms prosper in the competitive environment at the same time addressing sustainable development in their business? Sustainable value creation (Hart and Milstein, 2003) is one of the ways to answer this question. The changing business markets, interests of the wide range of stakeholders and limited resources have enhanced the importance of sustainability of value businesses are creating.

Sustainable development as a term was first pronounced in 1980 in the World Conservation Strategy report by the International Union for the Conservation of Nature and Natural Resources where mostly ecological aspect was addressed (Mebratu, 1998). The development of this term took place thanks to the Our Common Future (also known as the Brundtland Commission) report released in 1987 by the United Nations World Commission on Environment and Development (WCED), which stated that sustainable development is a process of achieving human development that "meets the needs of current generations without compromising the ability of future generations to meet their own needs" (Brundtland et al., 1987). The definition by WCED serves as a mainstream understanding of sustainable development adopted and promoted by a number of organizations (Lélé, 1991; Palmer et al., 1997; Steurer et al., 2005).

Since the early stages of sustainability concept development, business has been recognised as an inherent element of success in achieving sustainable development1. Deriving from the definition of sustainable development, sustainable business is the one that though its activity produces benefits in economic, social and environmental domains (see Elkington, 1998). This suggests a completely new perception of the purpose of a business evolving from purely profit-orientating and shareholder-benefiting towards more inclusive, long-term, stakeholder-benefiting and external impact considering.

In the same vein, business value creation undergoes a transformation. While the creation of business value is regarded to be the major objective of any firm, the way value is created, its targets and consequences are subjects of re-examination. The typical understanding of value in business context links suppliers, firms and customers, defining value as customers' willingness to pay minus suppliers' opportunity costs (Brandenburger and Stuart, 1996; Peteraf and Barney, 2003; Helfat et al., 2009). According to this view, value capturing through maximization of a firm net present value is the main objective of business activity (Teece, 1986; Brandenburger and Nalebuff, 1995; Christos N. Pitelis, 2009). Another view suggests that in this vertical chain of three elements – suppliers, firms and customers – each should benefit from the created value appropriating a part of it (Brandenburger and Stuart, 1996). This monetary-limited perception of business value where only a few reap benefits can no longer be running in the world the faces pressing environmental and societal challenges.

Business value that accounts for the sustainability of business-society relations can be addressed in different ways. Sustainable value is an approach that allows combining a firm value creation in a classical sense with the sustainable development of business. In other words, the increase of

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1 While we are aware of the differences between the terms ‘sustainability’ and ‘sustainable development’ (see for examples Dunphy, 2000; Harris, 2003; Palmer et al., 1997) here these terms are used interchangeably.
shareholder wealth can be connected with delivering economic, social and environmental benefits to the broader society. According to Hart and Milstein (2003) who gave prominence to the concept of sustainable value, by adopting sustainability as a strategy, firms can easily manage costs and risks and even increase revenues and market share. Possessing a number of undoubted advantages, sustainable value creation is still not a mainstream business strategy. We assume that one of the reasons for this is lack of practically oriented scientific research and consequently evidence of the benefits sustainable value can bring to industries.

This article takes a closer look at value creation activities among enterprises in the agricultural sector and the sustainably of these activities, e.g. their relation to economic, social and environmental dimensions of sustainable development. To identify a list of currently pursued value-creating activities, a literature review of scientific articles from the field of agricultural sciences was conducted. Identified activities are then structured within the sustainable value framework (Hart and Milstein, 2003) in order to understand the industry situation in regard to the sustainability of its value creation strategies. The article intends to contribute to the field of business studies by applying theoretical framework of sustainable value creation to managerial activities currently pursued by business. While the creators of the sustainable value framework suggested the application of it on the firm level, we increase the scale by examining not an individual firm, but an industry as a whole. Moreover, agricultural business field is targeted by the attempt to systematically explore the sustainability of value-creating activities in the agricultural sector – something that has not received attention by scholars in agricultural economics and management field.

Agriculture is the basic activity necessary for the survival of the humankind. It is so fundamental that it shapes environment and influences society. At the same time, agricultural production carries environmental social and economic risks. For this reasons, the functioning of agriculture should be carefully examined from the point of view of the sustainable business development. The understanding of value-creating activities currently present in the agricultural sector allows assumptions regarding the development of the industry and suggestions for improvements towards sustainable future.

The later of the article consists of background section where the brief review of sustainable value concept is given together with the overview of the agricultural business. In approach section, the applied method is described and the conceptual framework is explained. Further, the article proceeds to the results section, which contains the analysis of the reviewed literature against the conceptual framework. Next section presents the discussion of the results in relation to (sustainable value creation in business). Finally, conclusions summarise the findings and propose topics for future studies.

Background

Value in business

“The creation of value is the core purpose and central process of economic exchange” (Vargo et al., 2008, p. 146). The term value appears in business literature with a remarkable frequency, while as it often happens the definitions of the term are rather vague. For the classic economic theory of the nineteenth century, the distinction between the use and exchange value were in the core of value discussions (Jensen, 2010). Recently, the interest in value concept has gained a new wave of interest from economics and management scholars. The exchange value deals with the change in a product
Value in the production process: the difference between cost and sale price. Use value is a subjective perception of the value of a product by a customer.

Porter (1980) views value as something that is created along the vertical chain of suppliers, firms and buyers and depends on the individual characteristics of the chain members. Value is added by each member of this chain and at the same time, each member is interested to capture as much value as possible. How to capture value becomes the core question for an individual member of the vertical chain and the way to achieve it is discussed in the business strategy of every firm. The notion of customer value (Kordupleski, 2003) looks as value as at the balance between beneficial attributes of a product (e.g. experience, service, brand) and the price.

In general, the majority of scholars in economics and management fields are dealing with the value that can result in financial benefits to shareholders. What is missing in such approach in the applications to other shareholder groups and considerations about the sustainability of the business that creates value.

**Value in agricultural business**

Agriculture is a specific industry that outstands from others due to the number of characteristics such as its impact on the environment and society, the fundamental importance of its produce, etc. Agricultural business bears the burden of the peculiar features of the industry through special attention to safety and security of agricultural product and debate about the regulations of business and its impact on society and nature.

Creating value in agriculture is of a crucial importance to the development of agricultural entrepreneurship, innovation and rural development (Coltrain et al., 2000; Womach, 2005). However, the discussions about value in agricultural literature are limited to the specific term of 'value-added agriculture' that has a narrow focus on production. When thinking about value in agriculture, the common perception is that related to the change in the characteristics of a product. Traditionally, any type of processing of basic commodity is the value adding activity (Amanor-Boadu, Vincent, 2003). Later, an option of adding value through the change of product identity characteristics was recognized (Ernst and Woods, 2011; Womach, 2005). However, both directions point at the product as the only source of value creation and value itself is examined exclusively from the financial perspective. We suggest having a broader perspective on possible ways to create value and extend the understanding of value beyond the financial aspects.

**Corporate sustainability and sustainable value**

Business or corporate sustainability under different names have been practiced by firms for many centuries. The example from the 17th century Germany describes forest management approach that accounted for the reviewable capacity of the trees (Steurer et al., 2005). The modern perspective on corporate sustainability can be traced back to 1990s after the publication of Brundtland report has allowed business to adopt sustainable development goals to firm context. The recognition that economic sustainability will not satisfy long-term prosperity of a firm made a distinction between traditional management theories and sustainable perspective (Dyllick and Hockerts, 2002; Gladwin et al., 1995). The Tripple Bottom Line (TBL) approach (Elkington, 1998) integrates economic, environmental and social dimensions of sustainability and facilitates the understanding of their
interrelations in multiple ways. TBL currently is perceived as a necessary element of a strategy for any firm that aims at integrating sustainability in its business.

While there is a general agreement upon the fact that profitability is not a sufficient condition for the long-term business success, up until now the notion of corporate sustainability is highly discussable. This article operates the opinion that sustainability is achievable under the conditions of reasonable economic development. Thus, firms can and should target the satisfaction of all aspect of TBL.

Sustainable value framework (Hart and Milstein, 2003) is an instrument that allows converting the challenges posed by global sustainability into drivers of sustainable value creation. Authors suggest a framework that consists of four sections located along horizontal axis "internal-external" and vertical axis "today-tomorrow" (Figure 1).

![Sustainable value framework by Hart and Milstein (2003)](image)

The creators of the framework argue that addressing sustainability challenges is the way to achieve profitability in business while not compromising sustainability goals. By integrating into business strategy activities targeted at pollution prevention, product stewardship, sustainability vision and clean technology, companies can reduce risk, improve reputation, hasten innovations and focus on qualitative development. In this article, we apply this framework to the agricultural industry in order to diagnose the sustainability of value-creating activities.
Methodology

Literature reviews are considered to provide high quality evidence as they are conducted according to a specific process, ensuring rigorous, unbiased searching of the literature and synthesis of the findings (Bhattarai et al., 2013, Campos et al., 2010, Gardner et al., 2011 and Thomson and Ravia, 2011). The approach is a literature review based on keyword search. The term “value” comprises a numerousness of meanings and is used by researchers in a variety of ways. However, we are interested in a specific and narrow understanding of value in terms of concrete activities in the agricultural sector. For this reason, we adopted strict selection requirements for the initial pool of articles to ensure the inclusion of relevant studies.

Such databases as Thompson Reuter’s Web of Science and Elsevier’s Scopus were used to conduct the search. The search terms consist of "add value" or "value" and its derivatives (i.e. TS= add*) together with "agriculture" or "farming". The document type is "article", language "English" and subject areas are limited to business or management. The search was done through titles, abstracts and keywords.

Results

This section provides a descriptive analysis of the articles selected for the review and characterizes value-creating activities in agricultural sector captured in highly cited papers.

Descriptive analysis

The reviewed articles apply a variety of methodological approaches to data collection and analysis. The majority of articles are empirically based and only some are theoretical. Regarding methodological approaches to data collection, about a half of the articles are based on case studies some of which are longitudinal (e.g. Eastwood et al. (2012); Nettle et al. (2013)). Others use survey data (e.g. Thilmany et al. (2006); Armstrong et al. (2005)); and a small portion of articles have employed observation and participatory method (e.g. Higgins and Laredo, (2006); Sogn-Grundvåg et al. (2014). Data analysis methods include statistical methods, economic modeling, theory building and testing (e.g. conceptual papers by Hooker, (1999) and Gray et al. (2004)). We have also come across one meta-analysis article by Deselnicu et al. (2013).

Thematic analysis

The careful analysis of the articles allowed us to identify a number of activities that are done at the farm level in order to create value. We have identified 6 main topics with subthemes in the body of literature on the value in the agricultural sector. Below there is a detailed description of each topic identified through the literature review.

Collaboration

While surveying through literature in the search for activities that enable value creation in the agricultural sector, two themes run through the majority of studies as inherent parts of any successful business venture. These are collaboration and diversification.

Collaboration facilitates the majority of value-adding activities described above. Collaboration happens at different levels of the value chain and can be both, informal and formal. Examples of informal collaboration are the common use of processing facilities, facilities for testing and R&D activities; informal knowledge exchange occurs as a way of informal collaboration. Formal collaborations appear in a form of farm federations, established joint ventures. Formal organizations
can act as promoters of certain trends such as encouraging organic production, certification of products. Joint purchasing of inputs is another example of formal collaborations; however, it does not happen through the formal organization but is of flexible character when certain farmers cooperate for a single purchase.

Collaborations with outsourcing partners are one more way to optimize business activities. The article by Briscoe and Ward (2006) touches upon the issue of collaboration within small-size dairy cooperatives in Ireland. Smaller cooperatives value their independence; however, recognize the importance of cooperation and co-existence with larger neighbors. One of the cooperatives under study pays the same price for milk as a large cooperative even when it is possible to pay more in order not to cause unrest in the relationships with the giant. However, members of the small cooperative receive a generous bonus at the end of the year to reflect the profitability of the business.

Informal cooperation is an important aspect of small-size cooperatives. It expresses itself in the form of collective use of testing and processing and storage facilities. This allows farmers to avoid investments in higher capacity facilities. Farmers also collaborate informally on EU milk quotas by transferring quotas between cooperatives. In this case, cooperatives are happy to gain access to additional quota and increase farm income.

**Diversification**

Diversification is another overarching topic. Thanks to diversification farmers achieve long-term sustainability of their business and at the same time increase own well-being. Diversification can be agriculture- and non-agriculture-related. Examples of agriculture-related diversifying activities are growing vegetables for sale by dairy farmers (Briscoe and Ward, 2006), production of feed for sale by meat farmers, changing from conventional to organic production (Tzouramani et al., 2011). Above this, agriculture-related diversification is targeting not typical sales markets or customer segments (more details regarding this kind of diversification are given under the product identity topic).

Tzouramani et al. (2011) have assessed the financial performance of organic sheep farming in Greece and compared it to conventional. Their conclusion is that organic sheep farming has an advantage when it comes to net returns. The probability of negative outcome in net returns equals almost zero, while the expected net returns of conventional farming are 15% lower comparing to organic. However, subsidies make organic farming economically viable - without subsidies, the probability of negative net return increases to almost 60%. Moreover, organic farming is highly dependent on grain prices. At the time of the study, (before 2010) market for organic products was not developed in Greece that is why price premium for organic meat and milk was not high. The authors conclude that further development of the market and price premium at the level of 20% will allow farmers to be economically sustainable even without subsidies.

When it comes to non-agriculture-related activities the examples are selling or lending land to other business (REF); building non-agricultural facilities on own land (REF), opening (eco-) touristic site on the farmland.

**Product identity**

Under this category, we collect a variety of activities related to labeling, certification and branding. Labelling schemes address a number of domains, such as environmental, social, ethical and a combination of several. Labels within the environmental domain are represented by "green", "eco", "organic", etc. labels. Fairtrade label is the most famous example of labels addressing social domain. While nowadays it is mostly associated with such commodities as coffee and cocoa beans that are
grown in the developing countries, the label has proven its effectiveness in adding value to the agricultural products. Ethical labeling includes animal welfare claims; production practices statement; humane treatment. Other examples are country-of-origin labeling (Protected Designation of Origin, Protected Geographical Indicators); credence attributes labels (quality, safety, taste, naturalness, healthiness of products).

Hartlieb and Jones (2009) article state that while some labels address specific issues, a vast group of labels contains a combination of claims. Authors have studied labeling landscape in the UK (26 main labeling initiatives) and have grouped labels into three categories:

- environmental sustainability, including biodiversity, the health of the soil, sustainable management of resources;
- social justice, including fair trade, labor and human rights, development issues;
- animal welfare (Hartlieb and Jones, 2009, p. 588)

Firms’ motivation to become engaged into labeling has two sides – economic and idealistic. Ethical labels as market instrument make it practically possible to do business in a better way referring to moral values. Labels help to initiate a dialog on how to achieve sustainability in an industry.

Thilmany et al. (2006) look at the variety of labels in beef production in the USA. They study health and ethical labels (‘no antibiotics’, ‘no hormones’, ‘natural beef’) as well as those related to geographical location (‘locally produced’) and product quality (‘premium quality’). The result of the survey conducted by the authors demonstrates the presence of five categories of customers. Quality Seekers same Health and Natural Consumers are willing to pay a premium for natural local beef because of their expectations of the highest premium quality of natural beef products. Health and Natural Consumers are motivated by "no antibiotics", "no hormones", "humane treatment" claims. The same group emphasized more on public health benefits than on personal benefits. Empathetic Value Seekers have no willingness-to-pay price premium for local but are price sensitive and value lower priced offerings.

Armstrong et al. (2005) study marketing of health-enhancing foods in the dairy sector. There is a general lack of awareness of health-enhancing food concept and its benefits among the consumers. However, almost 65% respondents of the survey are ready to pay a price premium for health benefits offered by health-enhancing dairy products. Typical consumer of health-enhancing dairy products is well-educated young male or female with reasonably high income. Authors conclude that there is a challenge for marketing communications to provide education of such products and to convey a value-for-money message. Right consumer segmentation and product positioning are central to the success of promoting health-enhancing dairy products and receiving a price premium.

Quality assurance systems (traceability and third-party auditing programs, producer-signed affidavits) are used by firms to build their reputation on the market (Carriquiry and Babcock, 2007). These systems can be used by consumers to differentiate between the high and standard quality of goods delivered by producers. Producers tend to invest more in the quality assurance when they are able to capitalize on the full returns (ibid.). Credence attributes of products can be verified by the quality assurance systems.

Credence attributes include "the conditions under which the product is produced, any externalities associated with production, how workers are treated and how well they are paid, and whether the product is made from sustainable inputs" (Baron, 2011, p. 1331). Consumers may be willing to pay a premium for the supply of credence attributes and for the producer it is a form of product differentiation (ibid). Credence attributes of food products have been studied by the number of
research. Sogn-Grundvåg et al. (2014) look at the retail market of frozen whitefish in the UK. They draw conclusions that price premiums appear for four credence attributes:

- Fishing methods – line-caught fish is valued higher
- Non-home country of origin – Icelandic fish valued higher
- Eco-label – MSC labeled fish valued higher
- Brands – national brands for seafood have higher price premium than individual supermarket private brands

The review of credence and consumer liking of food by Fernqvist and Ekelund (2014) has identified seven credence categories: health-related, organic, origin, brand, production method, ethics, descriptive food names and ingredients. The conclusion of the review is that credence attributes of products influence the perceived quality of food by consumers and these attributes can be communicated through product labels.

Labelling and certification are closely related and certification often leads to a label on a product. The purpose of certification is to ensure safety and traceability of food from producer to consumer, which allows enhancing consumer confidence and trust. Campbell and Doherty (2013) give examples of economic benefits that can be achieved by certification. The basic one is the aversion of economic losses associated with food scares. Above this, certification enables value-adding services to food products through safety assurance certification and labeling. In their study, authors employ choice experiment methodology to determine consumers’ willingness-to-pay (WTP) for value-added services to chicken meat products in Ireland. They conclude that food safety and quality features add value to the products, but the demand is often segmented among different types of consumers and may represent only a niche market. The assumptions about the homogeneous WTP among all consumers is wrong. Only a half of consumers are willing to pay more for chicken that meets higher animal welfare and food testing standards; for locally produced chicken 15% of consumers are willing to pay a price premium. Highest price premiums get chicken with high food testing and animal health/welfare standards, least is paid for locally produced chicken; price premium for traceability is in-between. Thus, accounting for the niche market consumers gives the more precise estimation of pricing decisions.

Across the reviewed articles several have investigated geography related certification and labeling. Geographic Indicators (GI), country of origin, Protected Designation of Origin (PDO), Protected Geographical Indicators (PGI) are the ways to include additional features to the value proposition and by this obtain a price premium. Deselnicu et al. (2013) have conducted a meta-analysis of studies on GI across several product categories. They have discovered that GI typically lead to positive price premiums. Regarding the categories of products, GI labeling for grain, meat and fresh produce (fruits and vegetables) provide highest price premiums. Cheese follows next. The lowest percentage price increase is for olive oil and wine. Interpretation may be that in addition to GI, the product with value-added characteristics and longer supply chains may use private brands to capture reputation premiums. A European product with PDO has 21% more price premium compared to nonregulated regional name. PDO that has more complex certification proses bring higher premium PGI certification. When different schemes coexist (PDO and PGI in EU), the price premium is lower than with one scheme like GI in the USA. In general, according to authors, farmers that use GI can avoid the completion in commodity markets where brand-based product completion is impractical. GI may be an option for increasing farmers’ income and promote rural development.
As described in the business model canvas, the distribution channel represents the channel toward the consumer. Alternative sales channels are important for agricultural firms working with the added value the same as conventional channels that may apply to the value-added product.

In agricultural sector value-creating distribution channels are direct marketing through farmers markets, on-farm shops, small retail shops, sales at ranch sites, mail and internet order or subscription, delivering to a restaurant or opening own. The purpose of direct marketing, in this case, is to reduce the number of links in the sales chain and by this increase a share of price received by a farmer. Above this, short supply chains are claimed to have a positive effect on the environment and local economy and are trusted by consumers (Migliore et al., 2015).

Studying Colorado farmers Starr et al. (2003) have concluded that their survival depends on farmers being able to pursue direct sales pass. While sales to grocery stores instead of packagers are often seen as the best alternative, authors suggest direct marketing to restaurants and institutions. The specifics of sales to restaurants and institutions found by the study is that price is not the main concern for these buyers to choose locally produced food. What can convince restaurants and institutions is a high quality of products. For farmers, this distribution channel opens a possibility to receive a price premium even higher than at the niche markets (e.g. at the farm shop, small market garden).

The study by Hinrichs (2000) has identified factors affecting the adoption of a direct marketing strategy by farmers in the USA. Organic farms and those having access to metropolitan customer base are more likely to sell directly. The gross sales of farm operations are also affected by the type of sales channel. According to this study, direct sales strategy allows farmers to capture a larger share of the consumers' dollar and increase gross sales.

Sales at farmer markets is another type of direct marketing channels that aim at the shorter supply chain. Migliore et al. (2015) looked closer at farmers' markets specialized in the sale of organic products in order to find out whether credence traits of food quality are detected in the short supply chain context. The study showed that reliability and reputation in relation to the farmer influence consumer behavior more than recognition of organic certification.

Knowledge and innovations

To be able to successfully create value a farmer should possess a number of relevant competencies, which are included as a part of the theoretical model for this study. In order to obtain competencies, access to knowledge is crucial. We have explored the body of literature related to the knowledge required in agricultural business. The examples we found are farm education, farm training schemes, market research that gives better knowledge about customers and advisory services.

Giannakis and Bruggeman (2015) have assessed the economic performance of the agricultural sector in 27 EU member states and have concluded that better educated and trained farm population achieve almost 9 times higher economic performance results compared to farmers with poor farm training. This suggests an importance of education that targets current and future farmers.

Mishra et al. (2009) have investigated the factors that can affect the performance of new and beginning farmers (NBF) in the USA. Their findings are that having a written business plan, increasing the number of decision makers and engaging in value-added agriculture have a positive effect on the financial performance. In order to be able to conduct these activities, a farmer should have relevant knowledge. Several decision makers have expertise in different aspects of farm management; written business plan opens access to loans from banks and grants from developing agencies; those involved in value-added activities are likely to receive higher returns on assets.
Eastwood et al. (2012) in longitudinal case studies have researched decision support systems (DSS) in Australian dairy sector in relation to the learning process and relevant competencies. DSS is used to automatize farm tasks and manage large and complex businesses. This leads to improved control and optimised economic, social and environmental dairy farm performance. The use of information technology in dairy sector management is increasing and this creates challenges in learning and adapting to DSS. According to Eastwood et al. (2012) core competencies necessary to the successful implementation of DSS are:

- information technology skills – a farmer require at least basic understanding of IT
- engagement – users should actively engage with the system in order to be able to see new opportunities that individual cow data gives
- knowledge exchange – information about the system should flow between users and system database

Another longitudinal study by Nettle et al. (2013) uses similar empirical context of Australian dairy farms and studies knowledge provided by programme teams aimed at innovation. Programme teams are a semi-formal governance mechanism for innovations. The programme team approach involves and enables communication and knowledge sharing between groups of researchers, public and private organizations, farmers, community, extension services, policy and service groups. The programme team approach enables research-led and demand-pull innovations in the industry despite the institutional constraints.

Advisory services that provide knowledge to enhance innovations in agri-food sector is the subject of the article by Batterink et al. (2010). The role of an innovation broker that orchestrates the innovation processes in small and medium enterprises was studied. Authors conclude that a broker brings value for the development of innovation networks when he takes a leading role in such functions as initiation of innovation, network composition and innovation process. With the support of a broker, a farm gains access to the knowledge at the inter-organizational level.

Access to knowledge facilitates innovations in agricultural sector. These two topics namely, knowledge and innovations are interrelated. To be able to develop a business model for value creation, literature shows that innovations have a decisive role. Agricultural innovations are understood as production of new knowledge, products, processes that are used to bring benefits to society and those that demand social, economic, technological and institutional change (Hall, 2005; Pant et al., 2012). Organizational, technical, value chain innovations emerged as topics across the reviewed literature.

Katz and Boland (2002) explore the phenomenon of New Generation Cooperatives (NGCs) in the context of the agriculture in the USA. Organizational principles that distinguish NGCs from traditional are delivery rights (the amount of products members can deliver is fixed) and restricted membership. Key features of NGCs are

- focus on adding value to products previously considered commodities;
- interest in niche markets for their value-added products;
- closed membership allowing only certain producers into the co-operative;
- focus on productive efficiency;
- owners need not own the same number of shares.

The article contains an example of NGC – US Premium Beef. The authors argue that thanks to the new organizational structure of the cooperative US Premium Beef has achieved success and became the fourth largest processor and marketer of beef in the USA.
Mentioned in previous topics study by Briscoe and Ward (2006) compared the competitiveness of small-, medium- and large-size dairy cooperatives in Ireland and concluded that small-size cooperatives are able to pay higher prices for milk to its members and have higher competitive advantage due to the following reasons:

- management advantages - better communication with farmers, staff flexibility, hands-on management, greater motivation, greater efficiency at farm level
- cooperation – use of processing facilities, milk testing laboratories, on EU milk quota, joint purchasing of inputs and supplies
- agricultural diversification – farm stores, grocery supermarkets, production of vegetables, access to export markets
- non-agricultural diversification – managing land banks and property assets, real estate, car parks
- outsourcing – production, advisory programs
- entrepreneurial spirit

The study by Gray et al. (2004) provides a framework for the assessment of market potential of agricultural innovations. To estimate the success of innovation the assessment of customers, competitors, internal capabilities and competitive advantage should be conducted. Authors argue that previous research mostly dealt with the market analysis, while the focus should be shifted towards firm-level analysis.

Changes in production

Creating value through changes in the primary production processes is an effective option for both supply- and demand-side oriented producers. In the supply-oriented strategy, basic cost minimization is a pass that a firm can follow. However, obtaining a demand-side focus opens more opportunities and stable advantages. In the demand-oriented strategy, producers determine who the customers are and what they want and then assess own resources to meet the needs of the potential market. The examples of value creation through change in production are precision agriculture, organic production, free-range practices, improved animal welfare, “corn chicken”, etc.

Looking at cost-minimisation approach, Higgins and Laredo (2006) have developed a modeling framework to optimise sugar cane harvest transporting system in Australia and applied it to the case-study region. Several scenarios have shown a net cost reduction. The decrease in the number of harvesting groups and the increase of the hours of harvesting appeared to bring more benefits than scenario of less siding transport roads. Scheduling harvesting groups to work over a 24h window (instead of operating in daytime only) and assigning approximately 40% less harvesting groups have resulted in cost reduction by about AU$1 150 000 per year (Higgins and Laredo, 2006, p. 374). The authors note that the developed model is adaptable to industries around the world.

Following the demand-oriented strategy, Tzouramani et al. (2011) have assessed the financial performance of organic sheep farming in Greece and compared it to conventional. Their conclusion is that organic sheep farming has advantage when it comes to net returns. The probability of negative outcome in net returns equals almost zero, while the expected net returns of conventional farming are 15% lower comparing to organic. However, subsidies make organic farming economically viable - without subsidies, the probability of negative net return increases to almost 60%. Moreover, organic farming is highly dependent on grain prices. At the time of the study (before 2010), market for organic products was not developed in Greece that is why price premium for organic meat and milk was not
high. The authors conclude that further development of the market and price premium at the level of 20% will allow farmers to be economically sustainable even without subsidies.

Precision agriculture practices can be viewed as a way to create not only economical but also environmental value. In the situation when usage of farm chemicals is unavoidable, precision agriculture helps to manage them in a more efficient and ecological way allowing for both, cost minimization and environmental protection (Bongiovanni and Lowenberg-Deboer, 2004). However, for precision agriculture to advance, the development of decision support systems for the implementation of precision agriculture practices is required (McBratney et al., 2005).

A farm can add value to the product by changing a raw agricultural product into something new through any type of process that differentiates the product from the original raw commodity. Examples are packaging, processing, cooling, drying, extracting, etc. Adding value to agricultural products brings higher returns that come with the investment, the opportunity to open new markets and extend the producer’s marketing season as well as the ability to create new recognition for the farm.

The literature recognizes positive effects of adding value through product processing and emphasizes the importance of the vertical integration of smallholders to processing firms. Vertical integration means a combination of the sequence of marketing and production activities at a firm. An illustration can be a meatpacking firm that decides to extend both backward to the production level and forward to the consumer. This means that activities along the whole chain happen within one firm. Melton and Huffman (1995) have studied beef and pork industry in the USA. The application of econometric modeling methods to data for 1963-1988 has allowed drawing conclusions and making suggestions for the future of the industry. Authors note that top-down vertical integration is an important factor for the success of producers. Another study by Sexton et al. (2007) studies the role of downstream market power comparing a model of vertically linked and concentrated food markets of developed countries with developing countries characterized by export-oriented raw commodity producers. The conclusion is the vertical integration into food processing and further down the marketing chain enables capturing larger share of the "food dollar".

Discussion

With the help of surveying the literature, we managed to identify a number of activities conducted by agricultural Enterprises in order to create business value. In this section, we use the sustainable value framework as a tool to structure the identified activities and discuss their sustainability.

The identified topics are

- Collaboration
- Diversification
- Product identity
- Distribution channels
- Knowledge and innovations
- Changes in production

The detailed analysis of these activities allows us to suggest the following allocation of them within the sustainable value framework (Figure 2):
The segment “internal-today” contains such topics as changes in production and diversification. Both activities are conducted inside the organization and are focused on managing today’s business allowing for cost reduction and risk minimization. These types of activities are common for the agricultural sector and a large number of scientific articles that describe these activities give a proof of their successful application in business strategy. According to the sustainable value framework, the “internal-today” segment mainly consists of pollution prevention strategies. We, however, want to argue that sustainable value in this segment of the framework can be achieved with the help of other strategies such as named above diversification and changes in production. Both strategies have the potential to contribute to environmental, social and economic sustainability of an enterprise.

The activities in the field of product identity and distribution channels we assign to the segment “external-today” – they are related to external stakeholders of a firm (e.g. suppliers, customers, media) and are conducted in the short-term business horizon. According to the original sustainable value creation framework, this segment is about product stewardship strategy which is achieved by integrating external stakeholders’ opinions. We suggest that working with product identity and distribution channels, agricultural Enterprises interact with external stakeholders. This interaction enables improvement of the environmental impact thanks to effective reorganization of distribution channels and enhancement of the reputation of firm thanks to strong product identity.
The top level of the framework consists of activities with a future vision. In the "internal-tomorrow" sector we have knowledge and innovations. With the help of the activities in these fields, a firm can use its strategical opportunities in the long-term perspective. One of the sample articles by Hall and Martin (2005) emphasizes on the importance of disruptive technological innovations in the agricultural value chain, which corresponds to the statement that the creation of firm’s value is dependent on its ability to “creatively destroy its current capabilities in favor of the innovations of tomorrow” (Hart and Milstein, 2003, p. 58). Except for this example, only several more articles briefly mention innovations as a source of value creation in agriculture. This observation leads to the necessity of putting more attention at discussing how innovations can bring benefits to agricultural Enterprises. Moreover, as Hart and Milstein (2003) argue, for industries dependent on fossil fuels and other natural resources, disruptive technologies offer opportunities to change radically their competencies set and build it around sustainable technologies. However, the reviewed literature has shown that this pass is not yet pursued by the agricultural enterprises.

Collaboration is an equivalent of long-term vision in the external domain. For this reason, collaboration has found its place in the "external-tomorrow" segment. Facilitating a dialog with stakeholders and including collaborations into the business model is a new pass for sustainable value creation (Hart and Milstein, 2003). In the reviewed literature we have seen the examples of collaborations between agricultural Enterprises with a purpose of joint use of production facilities, storage space or conducting R&D activities. The surveyed articles do not contain the evidence of inclusive two-way dialog between firms and stakeholders. Thus, although collaboration exists in the industry, whether it leads to truly sustainable value leaves doubts.

**From business value to sustainable value**

After conducting the analysis of value-creating possibilities in agriculture and structuring them within the sustainable value creation framework it is possible to argue that agricultural business is going for the strategies of the near-term nature (lower section of the framework) while long-term strategies that require innovations, knowledge and collaboration are less popular. The reason for that might be the maturity of agriculture as an industry. A number of empirical studies have observed that innovations are not successfully implemented in incumbent enterprises (see e.g. Christensen, 2013; Sull et al., 1997; Utterback, 1994; Anderson and Tushman, 1986) due to their embeddedness in the established industry networks that fail to recognize the value of innovations. Industry specifics can be an explanation for inability or unwillingness to acquire new knowledge and initiate mutually beneficial collaborations between the agricultural Enterprises.

**Conclusions**

The sustainable value framework allows conducting a diagnostics of a firm regarding its strategies for the creation of sustainable business value. We have applied this instrument to the field of agricultural business. The analysis of literature made it possible to identify activities that source value creation for agricultural Enterprises. The activities were grouped into six topics, namely collaboration, diversification, product identity, distribution channels, knowledge and innovations, changes in production. These topics were then located in the sustainable value framework. The main conclusion that can be drawn analyzing the results is the presence of imbalance in the positions of the topics – the majority is in the lower level of the framework. This means that while firms are rather successful in creating value in the near-term horizon, their strategical vision misses the long-term opportunities for sustainable value creation.
The results of this study may have implications for managers and consultant services in the agricultural sector. The study provides a comprehensive coverage of value-creating activities that are possible to implement on a farm. Moreover, the strategical focus and sustainability of these activities are identified and assessed with the help of the sustainable value framework. Advisory efforts to facilitate the development of agricultural production can be more efficient and more diverse with the list of possible alternative options that have proven to contribute to the economic sustainability as well as sustainable development in environmental and social dimensions. Except for possible empirical applications, we see the advantage in the future research that explores internal and external drivers of sustainable value creation for each segment of the framework.
References


