Business model as a basis for diversification of agricultural to non-agricultural activities in order to protect local genetic resources and increase farmers' income[1]

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Abstract

Part of the biological diversity are precisely the local genetic resources, which provide not only subsistence, but also employment in rural areas. Empirical studies have shown so far that modern market channels are not attractive and popular to farmers who cultivate local plant varieties. In this regard, new initiatives and innovative business models are needed to create incentives and conditions for the sustainable inclusion of farmers who cultivate local varieties.

The aim of the present research is to develop a business model that provides a solution for sustainable production, use and promotion of local genetic resources.

The multi-criteria analysis V-AHP (Analytic Hierarchy Process) is used to evaluate the business model. The following scientific methods were used in the research: analysis and synthesis, comparative analysis, desk research, statistical grouping method, survey method, and graphic method.

The obtained results have led to the conclusion that a large part of farmers growing crops from local varieties protects these genetic resources; need to diversify the agricultural activity in order to increase their income.

Key words: sustainability; local genetic resources; non-agricultural activities; innovative business models

Бизнес модел като основа за диверсификация на селскостопански към неземеделски дейности, с цел опазване на местните генетични ресурси и увеличаване на доходите на фермерите

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Резюме

Част от биологичното разнообразие са именно местните генетични ресурси, които осигуряват не само прехрана, но и заетост в селските райони. Емпиричните проучвания досега показват, че модерните пазарни канали не са атрактивни и известни за стопаните, отглеждащи растения от местни видове. В тази връзка са необходими нови инициативи и иновативни бизнес модели, които да създадат стимули и условия за устойчиво включване на производителите на растения от местни сортове.

Целта на настоящето изследване е да се разработи бизнес модел, който дава решение за устойчиво производство, използване и популяризиране на местните генетични ресурси.

За оценка на бизнес модела се използва мултикритерийният анализ V-AHP (аналитичен йерархичен процес). В изследването са използвани следните научни методи: анализ и синтез, сравнителен анализ; т.нар. кабинетно проучване (desk research), метод на статистическите групировки, анкетен метод и графичен метод.

Получените резултати водят до извода, че голяма част от стопаните, отглеждащи култури от местни сортове и видове за опазване на генетичните ресурси, се нуждаят от разнообразяване на селскостопанската си дейност с цел повишаване на доходите си.

Ключови думи: устойчивост; местни генетични ресурси; неземеделски дейности; иновативни бизнес модели

Introduction

Biodiversity is vital to countless human activities. Much food production is only possible because of natural resources such as fertile soil, water and pollinators, which are the preconditions of good crop harvest. Argobiodiversity, i.e. local genetic resources, provide not only sustenance but also rural employment. Cultivation of local varieties depends on geographical, climatic, economic, social and political framework factors that may change over time - local topography and infrastructure, agrarian and cultural policies, markets, cultivation traditions of certain plants, etc. Cultivation of local plant varieties is highly dependent on factors arising from the structure and background of the particular household - household composition, age of household members, financial situation, migrations, aesthetic and gastronomic preferences, experience, etc.

Currently, product boundaries have disappeared and the global market dominate the production of agricultural products worldwide. Moreover, there is a great difference between local agriculture, competitiveness and market development in different countries. In most of them, including Bulgaria, there are serious problems that need to be solved, such as reduced agricultural incomes, inefficient use of local genetic resources, ageing of people involved in agriculture, migration of young people from rural areas to cities, gap between the quality of urban and rural lively-hood.

Empirical studies have shown so far that modern market channels are not attractive and known to farmers growing local varieties. In this context, new initiatives and innovative business models are needed to create incentives and conditions for sustainable inclusion of local plant breeders.

Currently, there are not many farms in Bulgaria involved in agricultural activities aimed at the cultivation of local varieties and breeds, despite the provision of various types of subsidies for the conservation of the local genetic resources. As a result of the challenges in the recent years, the number of farmers and agribusinesses has declined steadily, with the most noticeable decrease in small farms. According to the data from the 2020 census published by the Ministry of Agriculture, the number of farms in Bulgaria was 132 742 with a utilized agricultural area of 4 564 152 ha. 72 000 farms keep livestock, poultry or bee colonies and the livestock units are 1 026 174. The downward trend in the number of farms continues and compared to the 2010 census their number is 64% lower. 119,251 farms individually manage 3,959,288 ha of the total utilized agricultural area (4,564,152 ha). This structural change follows

the economic growth at the same time as the contribution of agriculture to gross domestic product (GDP) decreases, a phenomenon observed in all developed economies. It is a challenge for Bulgarian farmers to confront the instability of weather and markets, competition for land, labour and capital, and the continuing squeeze on costs. Therefore, there is a need to consider the elaboration of innovative approaches through different business models to combine farming activities with non-farming ones which may foster their farming business to sustain profitability.

The main objective of the study is to propose a new business model for direct distribution of agricultural products derived from local varieties and breeds by diversifying agricultural activities with non-farm ones such as alternative, gastronomic, wine and ecotourism development. The definition of the business model is primarily based on the specificity of the product, service and information flows, including a description of the different actors involved in the business and their roles. Also a description of the potential benefits for the different actors in the business and lastly a description of the sources of revenue.

Materials and methods

1. Business model types

Rethinking management methods and business models can help maintain and improve farm efficiency and profitability. Introducing innovative business models is a useful method to challenge farmers' attention to business management, especially when the economy and production environment are constantly changing, but the fundamental need for positive cash flow, stable profitability and wealth creation remains the same.

As stated above, the essence of business is achieving business objectives through liquidity, efficiency and diversification. A business is considered sustainable when it can generate adequate cash flow while realized profits and wealth improve over time. However, it is not necessary for a family farming business that owns all of the assets under management to assume all responsibilities or to provide all management and labor.

The basis of innovative business models to engage small family farms growing crops primarily from local varieties and local breeds of animals are activities aimed at diversifying their farming activities to non-farming activities to achieve sustainability and increase their income.

In the theory and practice of business models there are many different combinations that can be made in agribusiness, three of the most commonly used agribusiness structures are family farming, collaborative farming and corporate farming.

1.1. Family farming model

This is the typical family farm, where the family owns most of the assets it manages, including land, livestock and machinery. Against these assets it borrows funds to run the business: loans against land, livestock and machinery. The family also provides the management and most of the permanent labour to the business. Different generations contribute labour and management to the farming business by planning and managing the capital, rather than being paid for their efforts.

Management of business operations on family farms typically functions with informal meetings that focus primarily on operational and physical activities. The family bears all the risks and, simultaneously, the success, with increased profits from the business and from capital growth from land appreciation.

Advantages of this model:

• Sustainability – the family structure provides the highest degree of business sustainability as the primary goal for most family farms is to maintain a reasonable cash flow rather than a high return on total managed capital. During times of force majeure such as drought or poor commodity prices, family inputs and purchases will be kept to a minimum as surpluses can be invested in diversification of activities to minimize losses and sustain the business in difficult times.

• Flexibility – Family farms can be very responsive to seasonal circumstances, changing commodity prices and improvements in technology, while also having the flexibility to make decisions quickly when needed.

• Focused on the long term – Most family farms have aspirations of passing the farming business on to the next generation, as a continuation over several generations. This means they have meaningful long-term goals, giving family farms the incentive to survive through prolonged difficult periods of crisis in the hope that once conditions improve, the business will take off and be preserved for the next generation.

• Lifestyle – One of the advantages of the family farm is that it combines the family lifestyle with the work process in one location. Family farms with their rural operations are typically characterized by strong community ties and a sense of belonging that helps create a positive environment to maintain sustainability.

Disadvantages:

• Succession planning – While the long-term primary goal of most family farms is continuity with the next generation, there are often not well-defined plans for how and when this transition can occur, so that it meets the goals and needs of all concerned. Cash surpluses, when they occur, are most often reinvested in the family business to regenerate capital, increase productivity and maintain sustainability. This means that the financial resources needed to help the older generation retire from the farm without continued financial dependence on the farm are limited. Therefore, in this complex situation open communication between family members and careful planning of activities and finances.

• Limited financial reserves – The statement that family farms often face cash flow challenges but are asset rich is true in many cases. In times of crisis and financial stagnation, the farmers rely on the support from the banks to sustain their businesses. Businesses with limited financial reserves have limited options to manage periods of financial shortages.

• Economies of scale – The challenge for any business is to achieve financial growth so that economies of scale are generated. This will mean that fixed cost output production to continuously improve. Ideally, in order to achieve improved business efficiency at the same time as financial growth, investments such as buying land, new machinery and taking on the cost of more labour should be made. However, with limited financial reserves, these investments are usually intermittent, leading to inefficiencies until all systems can be synchronized.

• Isolated lifestyle – as family farms are mostly located in rural areas and only a few people work on the farm, social interactions can be limited. This isolation can become problematic at times when the stress of bad seasons and financial (economic) crises need to be managed. In such difficult times and crises, to minimize the negative impact of isolation, additional efforts are needed to maintain social ties in the community.

• Balanced Lifestyle – Because family members provide most of the employment on the farm, the responsibility of managing family farms means that finding "staying power" in the farming system is difficult. Work and weather require family members to be constantly on call, limiting their opportunity for breaks and vacations. Failure to strike a balance can cause problems that increase stress and seriously impact the quality of family life.

• Communication – managing interpersonal differences, goals, expectations and communication styles in a family business can be challenging. Where if not so well managed and mastered leads to compromising the long term success for the business.

1.2. Co-farming (collaboration) model

Cooperation between farmers can take many forms, from providing labour and help to carry out certain activities to sharing ownership and management of machinery. There are various examples of collaborative farming business models developed by different organisations. In some cases, the collaboration involves a complete combination of two viable farming businesses.

Advantages

• Economies of scale (efficiencies) – the collaborative business model is designed to improve farm efficiency. In cases of co-managed businesses, the costs of production are significantly lower than the costs of running the farm alone. There is a significant improvement in manage-

ment and production processes with correspondingly lower costs.

• Accountability – Management processes are supported by an advisory board that monitors the implementation of plans and objectives throughout the period. It involves all owners and board members in the decision making process, making them accountable for the proper management of the business collaboration.

• Transparency – Holding regular meetings between owners and board members for strategic and operational management creates full transparency of processes. This is necessary to maintain trust within the business collaboration.

• Professionalism – The focus is on focused effective management and active communication with both staff within the business and with all suppliers, whether they be advisors, bankers, accountants or traders.

• Advisory Board – An advisory board is established and emphasis is placed on an independent chair being elected. This ensures professionalism in the conduct of business and dissemination of expertise for proper decision making.

• Succession – Since there are many roles in this larger business, the next generation can choose freely if they wish to participate in the business and at what level. The future of the business is not up to the next generation but the next generation is free to get involved.

• Lifestyle – As roles are distributed and there are more staff, the business operation is no longer dependent on one person. This means holidays and time out can be more easily managed. For example, in 2013 at Bulla Burra, John took 7 weeks study leave and Robin completed a Nuffield Fellowship requiring a 13 week absence from the business without operations being significantly compromised.

• Corporate Principles – The aim of this business model is to adopt robust corporate governance and financial reporting whilst retaining the family values, farming lifestyle and management flexibility offered by traditional family farming.

Disadvantages

• Risk Management – On the one hand, with improved accountability, reporting and use of an advisory board, risks to the business can be better identified, understood and managed. However, on the other hand, larger operations by definition have greater financial risks. If management systems do not have activities in place to manage these risks, larger operations can result in greater losses during difficult periods, and especially in the first few years of establishment.

• Increase discipline – More effort and resources are needed to plan and monitor successful collaborative farming. This may take more discipline than is required on a family farm.

• Increased management costs – The costs of an advisory board and management board, setting up and maintaining legal structures, and paying for management are added costs above those in family farms. These costs must be managed well and carefully.

1.3. The corporate farming model

The corporate business model also has a long history of implementation in different countries. Privately owned and other publicly listed ones are observed. They are usually governed by a board of directors and operate under corporate governance structures. In recent years, there are examples where pension funds have also invested in corporate farming enterprises. These operations are managed similarly to large corporate enterprises for which a board of directors is used to strategically plan and monitor the progress of the business. Management is employed to manage the activities and operational aspects of the business. In this type of model organizations have shareholders; their goal is to provide competitive dividends in the corporate business. This means they are highly focused on financial performance regardless of seasonal cyclicality and commodity price conditions. These operations have a strong culture of efficiency and financial performance.

Benefits

• Corporate Governance – With this type of company coming under the provisions of national legislation, they must maintain a high level of governance, tight control of financial reporting and business decision making. This is so in order to ensure that the interests of the shareholders are maintained.

• Economies of scale (efficiency) – Generally these companies have access to larger amounts of capital than family farms and so can develop business operations that achieve high levels of efficiency through economies of scale.

• Accountability – To ensure accountability among shareholders they are required to maintain a high level of financial management and must-clear communication. This is typically done through a series of reporting and annual shareholder meetings.

• Professionalism – A high level of governance, financial planning and control requires a high level of professionalism in operational processes. They employ a larger workforce and have higher occupancy levels as well as maintaining health and safety standards.

• Diversification – Another advantage of having access to larger amounts of capital is that these businesses can manage properties in different geographic locations They can also benefit from vertical integration or diversification through operations in many primary industries, such as farming, pastoralism, horticulture and intensive livestock production.

Disadvantages

• High financial targets – Higher financial targets of the business means there is more financial pressure on performance. Prolonged periods of poor financial performance caused by various factors such as drought or market downturn are not well tolerated by shareholders/owners so they mostly leave the industry.

• Poor financial flexibility – due to the structure of corporate governance and reporting requirements, flexibility in decision making can be slower than in family farms.

• Management costs – As high levels of management are required for the management responsibilities of these businesses, their management and governance structure can be significantly more expensive than in a family farm.

2. Key components of the business model to improve financial results

The previous section provided an overview of the different business models most commonly used in the Agriculture sector. In practice, there can be many variations of these models and the following section provides a checklist of the different strategies and management methods that have been used as components of the agricultural business. The important point here is that once the strategic direction of the business is clear, goals have been set and the resources that are available are clear, then the farmer is in an excellent position to assess which part of the business model can be changed. Table 1 lists the components that can be used to improve the financial health of a farming business.

It is important to note that before constructing a business model it is important to define what is meant. The definition of a business model is based first of all on the specifics of the product, service and information flows, including a description of the different actors in the business and their roles. Secondly, a description of the potential benefits for the different actors in the business and finally a description of the sources of revenue. The business model articulates the logic, data and other evidence that supports the delivery of customer value and a viable farm income and cost structure. But developing a successful business model is insufficient in itself to provide a competitive advantage. Strategic analysis is therefore an important step in creating a competitively sustainable business model.

3. Multicriteria analysis of innovative business models

The advantages and disadvantages, as well as the costs and benefits, that characterize decisions depend on multiple, often conflicting, perspectives or criteria used in decision making. Multicriteria decision analysis is a mathematical discipline that offers a realistic and naturally multidimensional approach to decision theory that has generated considerable interest among scholars. The methodology of Multi Criteria Decision Analysis (MCDA) is a hierarchical process based on pairwise comparisons between criteria and alternatives to produce an overall ranking that represents a "rational decision". Pairwise comparison, i.e., the definition of relative importance between entities according to the criterion, allows

Table 1. Components of the business model
Таблица 1. Компоненти на бизнес модела

Items/Артикул	**Strategy/Начин на ползване**	**Comment/Обосновка**
Assets/Активи		
Land/Земя	The farmer owns all its land./Фермерът притежава цялата собственост върху земята.	The farmer benefits from any growth in land values but is liable for the associated debt repayments./Фермерът печели от всяко нарастване на стойността на земята, но и носи отговорност за това да погасява (плаща) всички дългове (данъци) за нея.
	The farmer rent farm additional land./ Фермерът допълнително наема земя.	Assists with economies of scale without taking on more land related debt. Depending on the agreement, the risk is shared between farmer and land owner./ Този начин на ползване помага за икономии от мащаба, не се поема поземлен дълг. В зависимост от споразумението рискът се разпределя между фермер и собственик на земята.
	Lease additional land./Фермерът притежава земя под аренда.	Assists with economies of scale without taking on land debt. The farmer takes all the risk as repayments remain the same, regardless of the type of seasons./Този начин на ползване също помага за икономии от мащаба, без да се поема поземлен дълг. При него обаче фермерът поема целия риск, тъй като плащанията остават същите независимо от изменението на обстоятелствата.
Livestock/Животни	The farmer owns all the livestock./ Фермерът е собственик на всички животни в стопанството.	The business benefits from any asset value change, but is also liable for any stock related debt./Фермерът печели от всяка промяна в стойността на активите, но също така носи отговорност за всеки дълг, свързан с акциите.
	Livestock is share farmed./Животните са собственост на двама или повече фермери.	This is not common but livestock can be jointly owned with other parties, with the income and costs shared./ Този начин на ползване не е обичаен, но животните могат да бъдат съвместно притежание с други стопани, като приходите и разходите се споделят.
	Livestock is agisted./Животните се отглеждат от друг стопанин.	Here the farmer receives a rent for their grazing and takes no risks of livestock loss or changes in commodity prices./При този начин на ползване фермерът получава рента за пашуване на животните и не поема никакви рискове от загуба на добитък или промени в цената на стоките.
Machinery/Машини	The farmer owns all the machinery./ Фермерът притежава всички машини.	The farmer benefits from the full use of the machinery but experiences machinery depreciation and is liable for any associated machinery debt./Фермерът печели от пълното използване на машините, но плаща за амортизация на машините и носи отговорност за всички свързани с тях дългове.
	Machinery is share-owned, perhaps with a neighbour./Машините са споделена собственост, най-често между съседни стопанства.	The farmers shares the costs of repairs and maintenance and depreciation, but needs to manage timeliness as both may wish to use the machine at the same time./ Фермерите споделят разходите за поддръжка, ремонт и амортизация, но трябва да управляват навременното ползване на машините, когато и двамата пожелаят да използват машините едновременно.
	Machinery contractors are used./Използват се договорни отношения за машините.	The farmer does not have repairs and maintenance, labour or depreciation costs, but has contract costs. The farm may wear a timeliness opportunity cost as the contractors may not arrive when optimally needed, which may result in some yield loss./Фермерът няма отговорност за ремонт, поддръжка, труд и разходи за амортизация, но има разходи по договора. При този начин на ползване фермерът може да има навременни алтернативни разходи, тъй като изпълнителят може да не предостави машината навреме, което може да доведе до известна загуба на добив.

Liabilities/Задължения		
Lending/ Кредитиране	Farmer uses a bank or stock firm to fund the various capital and overdraft requirements./Фермерът използва банка или фондова фирма, за да финансира различен капитал и овърдрафт изисквания.	The farmer is liable for all the debt and associated repayments./Фермерът е отговорен за целия дълг и свързаните с него плащания.
Shareholder equity/ Акционер и собствен капитал	Equity from shareholders can be used to fund carry-on finance, machinery ownership, land ownership and/or livestock./Може да се използва собствен капитал от акционери за финансиране за машини, собственост върху земя или добитък.	The farmer needs to have appropriate legal arrangements put in place to protect shareholders interests and will be required to pay a shareholder dividend./Фермерът трябва да има подходящи правни разпоредби, място за защита интересите на акционерите и ще трябва да плати акционерен дивидент.
Income/Приходи		
Farm enterprises/ Земеделски стопанства	Sale of commodities/Продажба на стоки	Farm income derived from selling grain, livestock and wool./Доход на стопанството, получени от продажба на произведена продукция.
Expertise/Опит	Management/Управление	If the farm has surplus management resources, management services can be provided to other farms or in consultancy opportunities./Ако фермата има излишни ресурси за управление, услугите за управление могат да бъдат предоставени на други ферми или под формата на консултантски услуги.
Labour/Труд	Sell surplus labour capacity./ Продажба на излишъци на работна сила.	Labour can be sold to other farmers, such as for shearing, fencing and tractor driving./Трудът може да бъде продаден на други фермери в зависимост от нуждите на стопанствата им.
Machinery/Машини	Contract out surplus machinery capacity./ Договаряне на излишък от машинен капацитет.	Surplus machinery capacity can be contracted out to other farmers such as for hay making, spraying and harvesting./Излишък от машинен капацитет може да бъде предоставен на други фермери за различни мероприятия в стопанството като например за приготвяне на сено, пръскане и прибиране на реколтата.
Разходи/Costs		
Variable costs/ Променливи разходи	Farm enterprises/Селскостопански предприятия	All inputs are purchased from local distributors./Всички суровини се закупуват от местни дистрибутори.
	Freight rates/Товарни тарифи	Freight rates may be negotiable./Товарните тарифи могат да бъдат по договаряне.
	Selling costs/Разходи за продажба	Selling costs may be negotiable./Разходите за продажба може да подлежат на договаряне.
	Use buying groups/Ползване на групи за закупуване	Distributors have been known to give discounts to groups of farmers buying collectively and in bulk./ Известно е, че дистрибуторите дават отстъпки за групи фермери при закупуване на едро и колективно.
Overhead costs/ Постоянни разходи	Accountants/За счетоводител	Accountants' fees may be negotiable./Хонорарите за счетоводителите могат да подлежат на договаряне.
	Energy suppliers/За доставчици на енергия	Cheaper energy suppliers may be selected./Могат да бъдат избрани по-евтини доставчици на енергия.
	Telephone and internet suppliers/ За доставчици на услуги (телефон, интернет)	Cheaper telephone and internet suppliers may be selected./Могат да бъдат избрани по-евтини доставчици на услуги за телефон и интернет.
	Consultant fees/За хонорари на консултанти	Consultants' fees maybe negotiable./Хонорарите за консултанти могат да се договарят.
	Insurance/За застраховки	Cheaper insurance cover may be selected./Може да бъде избрана по-евтина застраховка.
	Labour costs/Заплати	Assess if the available labour is fully utilised and adjust accordingly/Разходи за заплати и възнаграждения
Finance costs/ Финансови разходи	Interest rates/Лихвени проценти	Cheaper interest rates and bank charges may be negotiable./По-ниските лихвени проценти и банковите такси могат да бъдат по договаряне.

Source: Business strategy P2PAgri Pty Ltd.
Източник: Бизнес стратегия на "P2PAgri Pty Ltd".

for the definition of priorities for intangible units, which by definition do not contain scales of measurement, but also for tangible units, which can be evaluated on zero-point scales and units of measurement.

3.1. Business model "Diversification of agricultural activities to non-agricultural activities"

The development of this business model provides a solution for the sustainable production, use and promotion of local genetic resources. The definition of the business model related to the diversification of agricultural activities to non-agricultural activities in order to promote local varieties is as follows: A system that solves the problem of the use of local genetic resources in the production of different crops mainly vegetables (example the pink tomato) and defines the marketing channels for these products in order to increase the income of producers and at the same time aims to diversify activities, providing replenishment and added value to a set of customers with attractive price. The elements of the business model are:

1. Value proposition;
2. Internal process/skills;
3. Market power;
4. Customers;
5. Capabilities;
6. Cost and profit;
7. Novelty.

For the purpose of the evaluation using the analysis of hierarchical processes (AHP) will include all elements – 1, 2, 3, 4, 5, 6, 7. The alternatives for management decisions based on the model "Diversification of agricultural activities to non-agricultural activities" are:

(A) – reduce costs – increase gross margin by 15%;

(B) – increase selling prices – increase gross margin by 25%;

(C) – product innovation – increase gross margin by 10%;

(D) – combining two alternatives – increasing gross margin by 35%;

Table 2. Cluster matrix with elements estimates
Таблица 2. Клъстерна матрица с оценка на елементите

Business model elements/ Елементи на бизнес модела	Value proposition/ Стойностно предложение	Internal process skills/ Вътрешен процес на умения	Market Power/ Пазарна сила	Customers/ Клиенти	Capacity/ Капацитет	Costs and Benefits/ Разходи и печалба	Novelty/ Новости
Value proposition/ Стойностно предложение	1.00	0.15	0.17	0.13	0.25	0.67	0.79
Internal process skills/Вътрешен процес на умения	3.00	1.00	1.50	2.00	2.50	3.00	3.50
Market power/ Пазарна сила	4.00	0.25	0.20	0.15	0.76	0.57	4.00
Customers/ Клиенти	5.00	0.17	0.32	0.17	0.38	0.41	5.00
Capacity/ Капацитет	2.00	0.37	0.25	0.36	0.53	0.18	2.96
Cost and benefits/ Разходи и печалба	8.00	0.17	0.18	0.31	0.48	0.63	7.00
Novelty/Новости	9.00	0.48	1.79	2.07	0.75	3.94	1.00

Source: Expert estimates of the authors.
Източник: Експертна оценка на авторите.

Results and Discussion

In applying the AHP it is necessary to: first calculate the group matrix that determines the weights of the elements in the caric evaluation of the alternatives. The estimates are made expertly. Table 2 shows the estimates using a 1/9 to 9 scale, where the 1/9 estimate denotes the maximum influence of the column element over the row element. A score of 9 indicates maximum influence of the row element over the column element. A score of 1 means equal influence of the two elements. According to the methodology of the AHP model, only one-half of the resulting matrix is estimated. The diagonal row (where pairs of identical elements are actually evaluated) is assigned a value of 1, which means that it has no influence on the final result. In the other half of the matrix, the reciprocal values of the scores already given are calculated.

In Table 3 shows the results after calculating the cluster matrix scores. The percentages shown are then used to adjust the impact of the individual elements on the alternatives. According to the expert evaluation, the element "Customers" is estimated to have the highest relative importance with 75.4%. "Costs and Profits" is the second most important with 43.6%, followed by the element "Market Power" with 41.8%. While the items "Value proposition" and "Internal skills process" are given weights of 23.5% and 7.9% respectively. The lowest scores are for the items "Capacity" and "News" at 13.5% and 5.7% respectively.

Estimates of the impact of each element on the pairs of alternatives were made. Table 4 shows the summary results of the evaluations. The rows show the business model alternatives and the col-

Table 3. The results of cluster matrix estimates
Таблица 3. Резултат от оценките на клъстерната матрица

Elements/Елементи	Final share of the importance of the element/ Крайна оценка на важността на елемента
Value proposition/Стойностно предложение	23.5%
Internal process skills/Вътрешен процес на умения	7.9%
Market power/Пазарна сила	15.7%
Customers/Клиенти	21.8%
Capacity/Капацитет	11.2%
Costs and benefits/Разходи и печалба	16.5%
Novelty/Новости	3.4%

Source: Own calculations./Източник: Собствени изчисления.

Table 4. Summarized evaluation results on the elements
Таблица 4. Обобщени резултати от оценките по различните елементи

Alternatives/Elements Алтернативи/Елементи	Value proposition/ Стойностно предложение	Internal process of skills/ Вътрешен процес на умения	Market power/ Пазарна сила	Customers/ Клиенти	Capacity/ Капацитет	Costs and benefits/ Разходи и печалба	Novelty/ Новости
Expenditure decrease/ Намаляване на разходите	12.8%	15.3%	26.9%	28.1%	20.4%	29.5%	8.6%
Sell price increase/ Увеличаване на продажните цени	31.6%	23.7%	18.4%	25.6%	21.9%	26.8%	13.5%
Product innovation/ Продуктова иновация	10.3%	14.2%	13.7%	11.8%	18.6%	19.5%	33.2%
Combination between two alternatives/Комбиниране на две алтернативи	45.3%	46.8%	41.0%	34.5%	39.1%	24.2%	44.7%

Source: Own calculations./Източник: Собствени изчисления.

Table 5. Assessment of the degree of impact of alternatives on the business model
Таблица 5. Оценка на степента на влияние на алтернативите върху бизнес модела

Alternatives/Алтернативи/	Share/Дял
Expenditure decrease/Намаляване на разходите	9%
Sell prices increase /Увеличаване на продажните цени	18%
Product innovation/Продуктова иновация	11%
Combining two alternatives/ Комбиниране на две алтернативи	62%

Source: Own calculations./Източник: Собствени изчисления.

umns show the business model elements. The results show the percentage influence of each element on the individual alternatives.

Table 5 shows the final result of the application of the AHP model on the innovative business model "Diversification of agricultural activities with non-agricultural activities". The scores are calculated by multiplying the percentages from the cluster matrix (Table 2) with the summary scores of the different elements from Table 4. In this way, the final score of the expert evaluations is calculated. The result in Table 5 shows that implementing a chimney strategy is significantly more important (62%) than concentrating on the other alternatives separately.

Conclusion

This paper argues for the importance of constructing innovative business models to promote the use of local genetic resources to diversify farm activities and, most importantly, to increase the incomes of smallholder farmers. The conservation of local varieties and breeds of animals is vital not only for sustainable agriculture, but also for protecting the environment and combating climate change.

This paper constructs an absolutely new business model in order to focus the attention of its users on the use of local genetic resources as an alternative for diversifying agricultural activities with non-agricultural ones. The elements that make it up are identified so as to be subjected to further analysis through the AHP method. The application of the AHP indicates that management alternative in the application of the model that would bring the greatest benefit in farm management within the business model.

The summary that we could make in order for farms producing and conserving local genetic resources to increase their productivity and sustainability is the need to implement a variety of activities and alternatives such as agritourism including gastrotours, wine tours, culinary workshops, own (online) shops, etc.

Within the business model, combining several alternatives such as "Cost reduction", "Increase in selling prices" and/or "Product innovation" has the highest impact with 78% compared to applying only one element.

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