SUFISA RASPBERRY REPORT
AN EXTENDED SUMMARY

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Žaklina Stojanović

Emilija Manić

Irena Janković

Radmila Dragutinović-MItrović

The performed analysis clearly shows that concepts and strategies applied in practice are generally based on low risk awareness of agricultural producers and less developed individual risk control strategies. Instead, producers are trying to "share the risk with the state/government" or to address the main issues of risk control and sustainability to "the responsible policy maker" (both at the local and national level) and agricultural and rural policy measures applied in practice.

“But we need to get some guidelines, someone must be standing behind it, so if the state stands behind it's like the development plan. Let somebody do an economic study and say in which direction we should go.“
(Manufacturer/Trader)

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1. Introduction

SUFISA (Sustainable finance for sustainable agriculture and fisheries) project from Horizon 2020 category aims to identify practices and policies that support the sustainability of primary producers in a context of complex policy requirements, market imperfections and globalisation. Knowledge on market conditions and other driving forces exists, but in a fragmented way: relevant producer groups and regions have not yet been analysed, or framework conditions and driving forces have changed in the meantime. Moreover, little information is available on cross-linkages between various drivers and future opportunities and threats will need to be integrated for an encompassing analysis.

The work of the SUFISA project is be based on close cooperation with stakeholders of the industry, policy makers and representatives of governmental and non-governmental organisations. The combination of theoretical approaches and multi-actor involvement is the precondition for the identification of practices and policies aiming at addressing market failures hindering farmers and fishers to function sustainable. More information on SUFISA project can be found on its official [website].

This document shows related results obtained from this analysis. It focuses in particular on the fundamental technological, market and regulatory conditions that potentially impact raspberry farming businesses in Serbia, including price volatility, and the key strategies emerging to manage these risks and pressures. This policy brief is based on the full report, available on the SUFISA [website].

The region of Sumadija and Western Serbia hashilly topography, with mild continental to mountain climate. It has relatively low population density (around 60 people/km^2). It is dominantly rural population with all characteristic problems as other rural areas of Serbia (aging process, poorly education structure, small family farms). Although the agriculture is dominant activity, it is faced with several severe problems: low productivity, small farm size (average farm size is around 3ha), insufficient state support, inadequate and insufficient infrastructure, lack of equipment and machinery, limited economic activity, lack of investment and initiatives, lack of marketing and limited membership in cooperatives or associations, and inadequate planning by local policy makers. On the other hand, due to its high market share, global recognition and competitiveness, the raspberry production, especially in this region, has been the most important fruit production in Serbia. This was noticed by all participants within focus group as well as in the field research, too. The

qualitative research of food chain stakeholders' attitudes towards sustainability, conditions and strategies was conducted using form of focus groups discussion. Two focus groups were conducted in May-June 2017. Raspberry producers from the Arilje region took place in interviewing. The second group consisted of manufacturers with storage capacities (cold storages) in their own possession. All results obtained during the discussions were confirmed in stakeholders' workshop which took place in Belgrade at the beginning of June 2017.

Another research was a survey conducted over random selection of the sample units using farm size in the Arilje Municipality as the stratification criteria. The sampling frame is obtained using the Municipality data on the raspberry producers at the local level. Due to high cost of interviewing, Arilje Municipality was selected as the representative of total area of Sumadija and Western Serbia with almost 85% of all raspberry producers officially enrolled in the agricultural holdings register in Serbia. The analysis focuses on small family farms. The sample of primary producers in the region for study is representative of the target population (farms above 1 ha dominate in sample because only the farm area used for raspberry production was observed, young farmers represent a group of slightly more than one third of our sample, there is the larger share of male farmers, while the share of lower secondary education level among farmers is almost 60%). Self-reported income is calculated using data on average price and quantity sold per farm during the observed period. The information about the cost of raspberry production is collected as well.

The interviews were conducted in December 2017 / January 2018 (n=131). The interviews were lasting on average 35 minutes and conducted using the face-to-face method. The questionnaire was translated in Serbian.

Among different problems that have been identified during the research, two main problems were the biggest: the unfavourable structure of the farms and the high raspberry price volatility. Price volatility is caused by uncertainty and unpredictability and that discourages investment in production, storage and processing. This is also the result of the unfavourable market structure, where buyers / distributors of raspberries have a stronger position than the primary producers. The strong state support programs for the procurement and construction of cold storages for raspberry sector and establishment of new forms of cooperatives are needed, so that primary producers can be more flexible in terms of the time of sales of their products.

2. Policy and regulatory conditions

Agricultural policy in Serbia is inconsistent and the state support is often inadequate. It is often changed without a clear goal and it does not deal with rural development at all. The agricultural budget is constantly changing, but its structure deviates from the EU model. There is a trend to reduce budget expenditures for the food and rural development sector over the past five years. However, there are still significant **subsides** (input subsidies, support for purchase of equipment, support for expansion of land used for raspberry planting, support for organic production, support for insurance from hazards). Besides the basic subsidies, the agricultural policy measures are also oriented toward promotion of the high quality food through the organic production schemes implementation and improvement of raspberry producers marketing activities (small producers at the local market) as well as through Geographical indication (GI) production. One of the interesting view from the focus groups was that the family farm is not eligible for such arrangements because great deal of them aren't registered as a legal entity. All these things reveal one of the biggest problems within Serbia agricultural sector and that is **financing production.** Family farmers usually use their own resources combined with subsidies to develop or technologically improve their production. So, the Ministry of Agriculture has introduced short-term and long-term lending programs. The first formal model of a short-and long-term lending program for agriculture was established in 2004 by the Ministry of Agriculture. The system allowed more favourable conditions than bank loans (the producers have to be registered in the Register of Agricultural Holdings governed by the Ministry of Finance, the loans were exclusively provided to the physical persons with an interest rate of short-term loans was 5% with a repayment period of 12 months). Long-term loans were disbursed by commercial banks (for specific purposes such as: building and purchasing of irrigation systems and equipment, purchasing of agricultural machinery, establishing plantations, establishing greenhouses, investing in livestock production, with a banks contribution of 10-30% of the capital, and the Ministry of Agriculture provided 70-90% of the capital). In 2010 a new model of credit support by the Ministry of Agriculture was introduced - interest-rate subsides are provided in order to encourage banks to lend to the sector. The Ministry of Agriculture facilitates very low interest rates to individuals, agricultural households and SMEs via a number of partner commercial banks. This model has been implemented since 2010.

Agriculture policy and regulation condition touch also the problem of **lease agricultural land.** Although Serbian Government adopted the Regulation on the Conditions, Manner and Procedure for Exercising the Priority Rights to Lease in December 2017 including related criteria for determining the lease fees, it is totally unfamiliar to agricultural producers. Actually, legal entities that are registered and have an active status in the Registry of Agricultural Holdings, and submit a plan for investing in agriculture and food processing industry will be given priority in leasing state-owned land to the period of 30 years. Family farm isn't usually registered as a legal entity and thus is not eligible for such arrangements. Instead, they are still kept in a short leasing position, which is not favourable in general. Therefore, state land that could be used to increase the production of raspberries is simply unused / out of production. Although the market is not under the state control, there is clearly needs for the state to involve itself in regulation process and in the projects that helps Serbian export activity in general. In this sense, there are at least three challenges that Serbian raspberry sector is facing to:

- **Declining competitiveness in the international market**– mostly it is the consequence of the low presence of market-oriented producers, with intensive production and modern technology applied in their practices. It is necessary to innovate and improve technology. Production systems must be significantly improved in the future. Educational programs supported by the government or municipalities in the region of Sumadija and Western Serbia should play a key role. Particular attention should be paid to the implementation of food quality standards. Different programs and projects tried to give a glance at the improving market efficiency and implementing community standards. The implementation of agricultural standards in Serbia is mainly forced in the context of the EU accession and will be supported by the IPARD program. Unfortunately, food companies in Serbia are not generally sufficiently interested to implement certification schemes. The main reason is that most of Serbian food products are produced for the domestic or regional markets (the Western Balkan countries);

- **Very small share of processed raspberry products in export** – this is directly connected with the previous. The bulk of the raspberry production is for export and almost 90% of it is frozen, while only 10% is used for processing or fresh retail sale. Exports are fairly variable and dependent on several markets (almost 60% of exports go to 2 countries and more than 80% of exports to 6 countries in the World). In the focus groups it was identified that this problem is essentially connected with necessity to shift sales from frozen to fresh raspberries. Based on different experts opinion import and planting of new varieties, particularly those varieties most appropriate for the fresh markets in Europe and North America, is a key element of the strategy for the sector;

- **Uncontrolled import of raspberries** – the biggest amount of raspberry import in Serbia is from Bosnia and Herzegovina, Albania and Macedonia, which is of poor quality. Unfortunately, it was usually mixed with domestic raspberry as traders cannot deliver the contracted quantity. Due to poor quality raspberries are often returned from export.

Another set of the regulation standards, which should be derived from the proper agricultural policy, concerned the environmental and scientific standards. Unfortunately, this segment is in the even worst situation:

- **Infected planting material** – Plant material is infected with a fungus Phytophthora fragariae var. rubi. The infected planting material was imported 14 years ago (according the focus groups the disputed planting material is imported into Serbia through the action of renewing stem plantations supported by the Ministry of Agriculture, Forestry and Water management of Republic of Serbia). According to respondents, this action was suggested by the experts, scientists in the field of research. Unfortunately, the poor standards in import procedures were implemented. They are still in use influencing the appearance of fungi in the rainy years. It is a huge problem as raspberry producers don't know how to deal with it. It significantly reduces yields, although the planted surface is larger, and the root of the plant is dried;

- **Lack of adequate scientific research that would support and allow dissemination among farmers -** farmers lost the trust in agricultural advisers who act as "input traders". Primary raspberry producers are forced to experiment by themselves. They started to experiment on a small size of their land - buy new varieties of raspberries (polka and polana), and rise new experimental plantations under green houses, apply different technologies, monitor differences in yields and product quality. They do it independently from scientific research institutions. There is a lack of a common scientific approach to the advisory service that should help agricultural producers to overcome various barriers and a clear link between technological research and the needs of the sector;

- **Excessive and uncontrolled use of chemicals** - there is a huge, uncontrolled activity of agro-technical lobby. Their goal is to sell as many inputs (pesticides, herbicides, fertilizers) as they can. This can also cause problems in the European market in the future. According to the focus groups, producers have the ultimate goals - to preserve productivity growth, lower costs and higher income. There is a need for strict control of the use of chemicals in production. They are also aware of the chemical approach limitations and traditionally oriented toward strict low use of inputs. Attention is also put on importance of the existence of laboratories for testing the presence of heavy metals and pesticides in fruits. The appropriate experts-advisors (the extension service) can give advice on the ground, rather than traders.

- **Lack of laboratories** - laboratories are needed to test the presence of heavy metals and pesticides in fruits. The purchase of all necessary equipment is covered by international funds and projects, but these laboratories are still not operative or active in Serbia. In addition, there is no effective and modern state advisory service.

- **The policy measures** - governed at the national and local level have significant impact on farm income in the fruit sector in Serbia. The participants mainly commented the investment support and the changes related to establishment of transparent procedures for funds allocation from the agricultural budget. Although simplified, these procedures are more adjusted to younger farmers. There is a positive trend in development of young farmers' activity in the Arilje region. It is evident that younger families are going back to rural areas and do farming. Younger farmers are more oriented toward farm expansion. The price of land varies from 100 to 500 euro/a. Participants at the local level announce that the Working Group will have the task to access the effects of applied agricultural measures in order to maximize benefits for producers and all stakeholders in the raspberry food chain. Such an initiative would force establishment of budgetary spending mechanism in the agricultural sector of Serbia based on measurement of budget spending effects in the sector development.

- **Better organization in case of weather accidents -** Particular attention is paid to the insurance scheme. High exposure to unforeseen weather conditions caused the widespread need for insurance in the sector. The state subsidizes insurance premiums for agriculture, while the municipality has the system of protection against heavy rains. Although awareness of the necessity of insurance is growing in recent years, the supply of insurance services is inconsistent. In many municipalities, the organization of the protection against heavy rains service is inadequate or doesn't even exist. Insurance premiums are usually paid by larger producers individually, while small producers make agricultural insurance through trade companies (cold storages). The government supports agricultural insurance with subsidized premiums, while the municipality takes care about systematic protection from hails. A better organization is needed, the state does not support meteo-stations with adequate payments (often there are not enough missiles). In the practice better results are given by local initiatives in this area.

3. Market conditions

Negative trends in raspberries production in Serbia are explained by unfavourable structure of farms (small farms, deterioration in the age structure of farmers, etc.) and high volatility in prices.

The prices of raspberry in Serbia are **quite unpredictable**. Due to the lack of strong institutional arrangements in the production chain, agricultural producers depend on the price determined by cold storages (traders). Better price can be obtained for organic raspberry. Producers in the region are starting with raspberry business. Although the yields and quality are lower than in Serbia, the situation didn't prevent Serbian traders from importing certain quantities from the region. The Serbian market is currently in the stage of hyper production. All storage capacities are fully loaded that may result in significant losses if they face barriers in selling current stock at the foreign markets.

Producers of raspberries do not have an agreed price for their product. In addition, they are forced to buy inputs for production using unusual contracts - the input price is set, but not the future raspberry price in which they will make the final payment. This disequilibrium in the market may be to certain extent reduced by increase in state support programs targeted at acquisition and construction of cold storages by raspberry producers and cooperatives, so they can be more flexible in terms of the time of sale of their products.

Changes in raspberry prices on the world market are not as intensive as on the domestic, internal market. The great dependence on exporting companies is evident. There are a few export wholesale companies in the region of Arilje (5-6 larger companies). All other cold storages (medium and small) "work for large exporters". Farmers are at the bottom of the chain and in subordinate position in relation to other participants in the system. In order to improve the position, farmers who were able to build their own storage capacities did it to control the price during the harvest. The cost of storage is extremely high (having in mind electricity and other payments), and it is uncertain when and under what conditions they will be able to sell frozen raspberries to the large warehouses. Currently, around 250 small cold storages operates in the Arilje municipality.

Although the Serbian Agriculture Strategy drafted in 2004 clearly stated that producers are responsible for their decisions and despite numerous attempts to establish an agricultural market information system, to exploit research related to the development of market conditions and make it publicly available to producers, producers are still unwilling to compete in the new circumstances. According to the focus groups, there is strong impression that the great number of the actors at the raspberry market were faced with blindness of the long-lasting approach applied in the period of socialism (before the year 2000). State was responsible for everything, ministry was asked to define strategy and what was sustainable - to define the best concepts for the sector survival both in the terms of internal conditions (the role of agriculture in the development) and international competition (role of agriculture in foreign trade). So, there is **still excessive expectations and reliance on the state**. The food chain stakeholders are used to be directed by others. They have not adapted to the new conditions seen in "the invisible hand of the market". There is indication of the lack of coordination between local/regional and national level, but all off them generally put too much attention to the role of principal decision maker - minister (it is expected more than it is written in the description of his job). Due to the sector importance for the overall economy, the impact of the lobby groups is very strong. Also, from the individual perspective, sustainability is simply interpreted as family farm business or trade company economic goal (including recognition of other stakeholders' involvement). However, having in mind very long tradition in raspberry production in the region, it also includes different perspectives of environmental sustainability.

One of the most important question in the market conditions aspect is the **access to markets**. In that sense, **Serbian government has different instruments and programs that support the export**: export promotion (the Development Agency of Serbia (Razvojna agencija Srbije - RAS) helps companies in carrying out business and investment activities in Serbia), cooperatives and support to the producer groups, support to the products with designation of origin ("Ariljska malina"). This kind of support is important because there were identify several problems within this segment. One of them is **great dependence on export companies** and the **lack of producer organizations**. Small and medium-sized cold storages work for a few big market players / exporters. The weakest position in the Serbian food chain belongs to farmers. They are unorganized, divided and without adequate representation in the various governing bodies. There is a limited number of organizations (cooperatives) that can help farmers to sell their raspberries to wholesalers and processors. Producers' organizations should play a key role in the development of the sector. The strict implementation of The Competition Law is requested. However, there are no instruments that will allow forward contracting - the trade in advance, for the known customer and at a predetermined price.The current situation is unfavourable regarding position of farmers and is unsustainable in the long run.

Investigation of **international programs implemented in fruit (berry) sector in Serbia** showed that foreign aid was generally governed toward institutional development and private sector straightening. Projects aimed:

- Improvement the work of new and existing cooperatives and farmer's associations according to the Western European - Norwegian model;
- Program has supported five fruit value chains for domestic and export markets;
- Increase the competitiveness of the Serbian economy and its private sector by streamlining the business enabling environment, improving public financial management, and strengthening financial markets;
- Identification of berry sector as a rare source of steady income for growers and the processing industry in western Serbia, where the berry industry is a driving force for agriculture and regional economic growth (USAID Serbia Agribusiness Project – Project Completion Report, 2012). The majority of the berries grown.

Key conditions faced by small family raspberry producers

The general conditions related to the agricultural sector functioning in Serbia could be depicted as the one with a **very fragmented ownership**. Serbian raspberry farms are small, usually organized as a seasonal family business. The average area of the raspberry farms is between 0.5 and 1 ha, making it difficult to take advantage of the economies of scale and production costs are usually high. The farms are poor technology equipped, unorganized producers/farmers and weak market position connected with poor management capacity. They have problems with standards implementation, but also with understanding the changing consumer preferences related to traditional and organic raspberry.

Key strategies adopted by small raspberry producers and their impact on performance

Key internal strengths of family owned raspberry farms are:

- Good soil and climate conditions for fruit production.

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- Long traditions in producing fruit.
- GMO free production.
- Sufficient sources of water for irrigation.
- Available workforce.
- Developed seed production.
- Biodiversity -existence of varieties of cultivated plants.
- High competitiveness on regional markets.

On the other side, the most prominent weaknesses are:

- Weak vertical and horizontal links of domestic market.
- Decreasing competitiveness at international markets.
- Lack of producer organization.
- Small number of market oriented producers with intensive production and modern technology.
- Small export share of processed products.
- Low level of state support.
- Fragmentation of the land use.
- Low level of technical and technological equipment (drying and storing of crops, packing facilities, cooling of fruit, etc.).

Considering all the strengths and weaknesses of the family raspberry sector in Serbia, there are different opportunities for further development, with significant threats of the climate change and economic crisis:

- Promotion and organization of domestic production.
- Readiness of consumers to use domestic products.
- Access to foreign markets.
- Establishment of producer organizations.

In searching the **best alternatives and strategies**, there are different activities that can be done by the producers themselves, while some of the identified problems require the broader institutional support. Certainly, it is not the question of direct forms of state support. Instead, we should speak about a model of macro regulator that creates the adequate conditions for better business development and facilitate the sustainable rural areas. The main focus is on overall importance of the sector for the Serbian agriculture and economy. The system still doesn't work properly, it is faced with numerous barriers, but there are also opportunities and solutions for better response to the contemporary challenges.

The most commonly used/preferred strategies in risk control and mitigation in the Serbian small family raspberry sector:

- Straightening of agricultural producers organizations
- Part-time farming
- Innovation and technology improvement

These strategies have been pointed out within the focus groups, too:

1. The new production alternatives such as

- technology improvements and new varieties,
- labelling using quality food schemes,
- development of fruit processing.

2. Cooperation between the food chain stakeholders

- less formal forms (trainings, education, coordination etc.),
- formal cooperation within cooperatives/producers groups,
- cooperation between small cold storages.

Farmers need to face all problems and use the existing knowledge and experience. With publicly available complex analyses of the market conditions in the country, region, Europe and the worldwide (Economic Research Unite, the Ministry of Agriculture), they can improve their business.

It is necessary to move from traditionally oriented to entrepreneurial-oriented farming integrated within a larger food supply system as a part of national, regional and international flows. This type of reform requires both macro and micro approach (bottom-up and top-down approach). Local circumstances can be combined with exogenous factors to improve local communities and regional perspectives in different aspects of sustainability (economic, social and environmental).

THE RASPBERRY SECTOR - SURVEY RESULTS

The objectives of the survey were to map existing institutional arrangements across the raspberry sector in the Region of Sumadija and Western Serbia and to identify the main attributes characterizing institutional arrangements in the sector. Additionally, the survey aimed to explore the sustainability through producers' opinions regarding quality of institutional arrangements and its role in achieving sustainable farm businesses (in economic, social and environmental context) including collection of information on the adoption of good environmental practices and sustainability standards. Finally, the survey addressed the factors driving primary producers' decisions about farming strategies in the future in response to potential emerging issues (adverse climatic conditions and pests, market changes and price volatility, policy and regulatory reforms).

The main results of quantitative research on Serbian raspberry farmers are summarized as follows:

- The analysis is focused on small family farms (from 0.5 to 1 ha used for raspberry production and with a long tradition in producing raspberry). Small family farms with specialized raspberry production are more represented in our sample.
- The average income per farm is EUR 11,180, and the average share of cost in total income collected in raspberry production is around 65%.
- Individual sales channels dominate the collective ones in number of farms (n=108 for individual vs. n=23 for collective). The lack of „collective" is previously indicated as one of the major obstacles and, at the same time, the opportunity for development of this particular agricultural sector in Serbia.
- Farmers are (somewhat) satisfied with the sale agreements. This also leaves the room for further improvements in the future.
- The average income generated and average raspberry price achieved is higher for the group of younger farmers (below 40 years). This group leads also with technological improvements resulting in the lowest share of cost in self-reported average price of product (56.46%).
- The price reached in sales agreements is higher on farms managed by higher educated farmers as well.
- A legal contract before or during production is mostly used. Most sales agreements are made either for this particular sale, or they last between 7 months and 1 year.
- The raspberry price is mostly variable and linked to market price at the time of delivery. Payments for delivered products are commonly made after or at the time of delivery.
- The standards on quality and food safety are mainly imposed to both collective and individual sale channels. Animal welfare is not mentioned at all, while standards related to preservation of nature and environment, as well as standards related to mitigation and adoption to climate change are recognized as less important.
- There are no other alternatives to sell their products and payments to farmers are made with significant delay. Even farmers that use collective arrangements report a lower level of agreement with statements related to higher price achievement, stabile price and fair negotiation.
- Farmers do not know much about overall production sustainability (the ecological aspects are considered to be the less important).

- Farmers perceive the largest influences on farms sustainability in the future related to climate change and market conditions, while the least influence on the future farms sustainability will be the regulations.
- The surveyed farms reported the dominant intention to maintain production in the future. The majority of farmers don't have specific expectations regarding farm succession. This situation addresses a huge demographic problem in the rural community.

The analysis performed shows that concepts and strategies applied in practice are generally based on low risk awareness of agricultural producers and less developed individual risk control strategies. Producers are trying to share the risk with the state/government or to address the main issues of risk control and sustainability to the responsible policy maker and agricultural and rural policy measures applied in practice.

The following approaches are applied in practice: (1) traditional approach comprising of measures directly applied in the farm practices - diversification on the farm, and rural economy diversification - implementation of complementary activities of rural economy at the local level, such as tourism, trade and processing; (2) "the old story" - producers are still waiting for the strong state support, both in direct and indirect ways; (3) agricultural and rural development policy measures applied at the local level are oriented toward improvement of management quality and farmers skills (training, education and innovations).

The year by year the policy instruments are exposed to significant changes. A particularly important issue in agriculture is the labour force and its characteristics. Serbia rural areas are generally characterized by depopulation process and very pronounced emigration process.

The relative amount of public spending on agriculture in Serbia is not low, due to difference in relative prices and the size of GDP. However, the absolute amount of public spending on agri-sector per hectare of utilized agriculture in Serbia (69 EUR/Ha) is considerably lower than the EU-27 average (476 EUR/Ha). Public spending for support to agri-sector in Serbia is sufficient to maintain competitiveness of Serbian farmers in the CEFTA region. However, the level of public spending to agri-sector in Serbia is lower than in the EU. Relatively lower state aid available to Serbian farmers, together with implementation of the Stabilization and Association Agreement, which provides for large scale liberalization of agri-sector market in Serbia with regards to the EU market players, put Serbian farmers under substantial pressure.

Since 2007 input subsidies have become a dominant scheme of budgetary support to agriculture, with their share of total agricultural budget exceeding 45 percent. However, the structure of input subsidies has changed dynamically in the last few years.

The case study on raspberry sector in Sumadija and West Serbia Region isolated the essential issues faced by the system of family farming in central Serbia. In the first phase an analysis of various sources (policy documents and strategies, scientific articles, as well as public media and blogs) was performed. This analysis provided a general overview of both conditions and limitations that agricultural producers are exposed to. The additional insights from the stakeholders' point of view were obtained by focus groups discussion, survey and participatory workshop.

The way out - the main alternatives and strategies

The key words are efficient institutions and market oriented and organized small raspberry family business in the Region of West Serbia and Sumadija. Small family business related to raspberry production in the region is often organized in the form of part-time farming. This additionally aggravates the situation related to traditional system transformation to a modern agribusiness. However, the transition process have influenced the position of the Region of West Serbia and Sumadija inhabitants. Without permanent job opportunity (many industrial capacities were closed due to its inefficiency, while the establishment of new companies can not absorb high unemployment rate), they turned more intensely on agricultural production, production in which they have a long tradition. All stakeholders can benefit from the better organized food chain, while agricultural producers can organize better functioning business on the farm if they use modern risk management instruments. This instruments can help risk avoidance, minimizing of risk exposure and cost on the farm, maximising input-output ratio both in terms of quality and quantity and securing the better product price

The main barrier is seen in excessive expectations and reliance on the state. However, the main strategies are identified in the mix of state (national or local) and farmers actions (Table 4). Without state support farmers will do their business as usual with continuing obstacles related to modern agribusiness development.

Table 1. Conditions, state support and strategies for Raspberry CS in Serbia

Conditions	Institutional support	Farmer strategies
Infected planting material, Excessive and uncontrolled use of chemicals	**Integrative import control** on input suppliers, **The extension service development** - development of the specific educational programs for end users (farmers).	**Right to be educated and protected** - workshops, trainings, LLL programmes, farmers are seen as the end users of transferred knowledge who actively support definition of training programmes etc.
Lack of adequate scientific research that would support and allow dissemination among farmers, Lack of laboratories	Public financing of data analysis for farm management decision making - **Big data implementation** for management purposes	**Intensive use of IT technologies for knowledge transfer** - how we can make big data systems easily available for the average farmer: what chemicals and when should they use in their production to

		minimize environmental effects and maximize profit.
Unpredictability of price Financing production	**Creating the environment for effective and efficient price control**: Public warehousing (warehouse receipt model), Establishment of **micro-finance institutions** (particularly important for small businesses), designing of the specific farms credit arrangements - banks should be supported to create the specific contracts for agricultural producers such as **landing based on warehouse receipts** etc.	**Use of innovative financial instruments** - the agricultural commodity derivatives (forward contracting, futures contracting, options on futures etc.), development of the micro-finance institutions, designing of the specific credit arrangements that fits farmers needs due to specific cash flow,
Great dependence on export companies and the lack of producer organizations, Uncontrolled import of raspberries, Declining competitiveness in the international market, Very small share of processed raspberry products in export	Building of **the specific market environment** with strong market players on both sides (supply and demand) and development of the **Quality schemes** supported by the agricultural budget.	**Long term contracting** with processors, traders and exporters, **Labelling** - farms orientation toward PDO/PDI or organic production, **Processing** - juice industry, frozen fruit industry etc., **Creation of unions of the small family owners with cold storages**.
Better organization in case of weather accidents	Development of the state or local community meteo-stations that will help farmers to avoid unnecessary weather risks (heavy rains with hail), creating of the global reinsurance system (EuropaRe).	**Investments on the farm in protection of hails** (this activity can be supported by subsidised credit arrangements with lower interest rates) and better planning on the farm regarding the climate change effects.
A very fragmented ownership, Lease of agricultural land	**Land market institutions**: better functioning of Real Estate Cadastre, Law on	**Cooperation in the new equipment use between farms at the community level.**

	agricultural land and long term leasing, commassation, inheritance law and agriculture (right of pre-purchase).	
Inconsistent agricultural policy and inadequate state support	**Consistent agricultural policy & long term planning**: what should be our priorities in the next 30 years?	**To be prepared for efficient use of available additional resources** such as subsidies both on national and local level.

"Sustainability means sustainable for all stakeholders in the chain, from farmers to cold storages and exporters. For me it means that I can have profit." (Manufacturer /Trader)

“Do you know what happens when you combine ideal climate, fertile soil, high-quality seed and the years of experience of Serbian farmers? The answer is quite simple – the tastiest and most fragrant raspberries! Welcome to Serbia, the capital of the “Red Gold”. (http://www.serbia.com/

“We are struggling a lot. We do not have adequate seedlings. We could make a yield of 10kg per 100m² or 20t per hectare. But we cannot do this when we got infected planting material.” (Producer)

"And the chemical inputs are problem. Lot of people in Serbia live from income earned on raspberries. Something is happening (or we can blame climate change in general). But something's happening. There were no diseases we have now." (Manufacturer/Trader)

"The raspberry production is a science. Somebody should take care about the scientific research, we (agricultural producers) should work based on the experts suggestions and advices." (Producer)

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