



EVALUATION OF DANIDA SUPPORT TO VALUE CHAIN DEVELOPMENT

Serbia Country Study

EVALUATION

February 2016



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List of Abbreviations

AAS	Agriculture Advisory Service
CFA	Call for Applications
DAP	Directorate for Agrarian Payment
F&B	Fruit and berries
FGD	Focus group discussions
GoS	Government of Serbia
MoA	Ministry of Agriculture
ToC	Theory of Change
VC	Value Chain
VCD	Value Chain Development

1 Introduction

Danida has supported Value Chain Development (VCD) in different forms since 2002. In order to assess the Danida VCD support in this period and to provide recommendations for the future, Danida's evaluation department (EVAL) has commissioned Orbicon A/S and Wageningen UR to undertake an external evaluation¹.

The purpose of the evaluation is to contribute to improving the design and implementation of Danida's bilateral programme cooperation under inclusive green growth and employment by documenting results and experience and providing recommendations for future support to value chain development. The evaluation will hence primarily focus on the learning aspects, thereby providing an opportunity to enhance Danida's capability in the area of VCD support. The evaluation will aim at the following outcomes:

- An enhanced understanding in Danida in regard to what value chain approach can contribute with and how VCD interventions should be designed in order to contribute to inclusive economic development and green growth,
- A better understanding of the context in which a value chain approach would be most appropriate in future Danida programmes,
- Guidance to Danida with respect to future policy and programme implementation in this area.

The evaluation focuses on Danida VCD interventions within 11 countries: Burkina Faso, Ghana, Kenya, Mozambique, Tanzania, Uganda, Zimbabwe, Central America (Regional Programme, covering Honduras and Nicaragua), Albania, Serbia and Ukraine. These countries have been selected from originally 24 identified countries with VCD interventions in order to include a more limited and diversified portfolio which reflects the geographic balance of the overall portfolio. The evaluation will involve desk work in relation to the VCD interventions in all these 11 countries as well as fieldwork in selected case countries.

Three countries have been selected as primary case countries for the evaluation: Serbia, Uganda and Burkina Faso. This report contains the evaluation country study from **Serbia**. The primary case countries have included two-weeks fieldwork missions while the secondary case countries have included three-four days visits.

It should be emphasized that this evaluation is not carried out as a traditional programme evaluation but is particularly focusing on the **value chain development perspective**. The evaluation report contains the views of the evaluation team, which do not necessarily correspond with the views of the Government of Denmark (Ministry of Foreign Affairs/Danida) or the Government of Serbia (GoS).

1 The evaluation team from Orbicon-Wageningen comprises: Mr. Carsten Schwensen (Team Leader), Mrs. Monika Sopov and Mr. Bo van Elzakker.

2 The Fruit and Berries Programme

The programme on “Support to the Fruits and Berries Sector in the South of Serbia” (in the following referred to as the F&B Programme) was initiated in November 2010 with the overarching objective of “Sustainable economic growth and job creation by improved competitiveness and export of fruits and berries”. The main objective of the programme is to support improvement of productivity and quality of the fruits and berries sector (in the following the F&B sector) in the south of Serbia with a focus on education and training of extension service providers and producers, investments in the F&B sector, capacity building among producers, market initiatives, and improvement of post-harvest management, research and control.

The aim of the F&B Programme interventions is to **increase producers’ income and employment** in the entire value chain, thus contributing to reducing poverty and migration. The impacts are expected to include **increased export** of high quality fresh and processed fruit and berries, which should result in an increase in **jobs** and **income**. The programme has a specific focus on **women** and **youth**².

The total budget for the Danish support to the F&B Programme amounts to DKK 40 million and comprise two components: (1) Capacity building of producers/businesses and support for innovation, quality control and certification (DKK 11.5 million), and (2) an Investment Grant Scheme, a facility for financing investments in new crops, equipment and machinery, storage, processing and sales (DKK 17 million). The Investment Grant Scheme is co-financed with the Serbian government who contributes EUR 3.3 million, equivalent to approx. 60% of the total budget allocated for the grant scheme. The budget for operations (including TA), reviews, and contingencies is DKK 11.5 million.

The F&B Programme was originally planned as a four-year programme (expected to be completed in November 2014). However, due to slower than expected implementation of the support, the programme has been extended up to November 2016.

As part of the F&B Programme intervention, a value chain study was commissioned and completed in March 2012.

2.1 Status on implementation

Below is presented a brief status on implementation progress within the two programme components.

Capacity Building

Overall, the capacity building activities have been implemented as planned, with the exception of the planned support for establishment of mother plantations. The capacity building activities have covered:

2 In the scoring model for the grant application scheme, additional points are given to female and youth applicants. In Serbia, youth is defined as below 40 years old.

- Training of producers and processors
- Training of advisory service and extension staff
- Study tours and marketing events in Serbia and abroad.

The capacity building events have been attended by a relatively large number of persons, both grant beneficiaries and non-beneficiaries. Some people have attended several training events, while others have attended only one or few events. An estimate from the F&B Programme office is that approximately 8,000 persons have attended the capacity building activities.

The Investment Grant Scheme

After serious initial challenges and delays, the grant component of the F&B Programme and the cooperation with the ministry and the DAP have been improved remarkably over the past three years. This was confirmed by all key stakeholders. In total, five Call for Applications (CFA) have been launched by the F&B Programme. A brief status on CFA1 through CFA5 as of 1 September 2015³:

- CFA1 – completed and all approved beneficiaries had received their grants
- CFA2 – almost completed. All approved beneficiaries had received their grants, except one, who was in the process of payment approval
- CFA3 – almost completed. All approved beneficiaries had received their grants, except two of them, who had received an extension of the deadline for project realization until 30 September 2015
- CFA4 – most of the applications had been completed and disbursed. Two project were in the procedure of payment approval, and two beneficiaries were still in finishing projects with a deadline for completion by 30 September 2015
- CFA5 - most of the smaller projects were completed within the deadline of 31 July 2015.

The sum of already paid grants and grant commitments amounted to EUR 4,440,395. The total funds made available for grants by the Serbian and Danish governments total EUR 5,600,000. Unlike the situation in CFA 1 to CFA 4, there will not be sufficient grant funds available for all eligible projects from CFA5.

3 Progress Report No. 9, Semi-Annual Report, 1 January to 30 June 2015.

3 Evaluation Methodology and Framework

3.1 Overall evaluation framework

The 5Capitals approach

The “5Capitals – A Tool for Assessing the Poverty Impacts of Value Chain Development”⁴ (in the following just referred to as “5Capitals”) provides an useful approach for assessment of outcomes and impact from VCD interventions. 5Capitals is an impact assessment tool developed by the Tropical Agricultural Research and Higher Education Center (CATIE) to facilitate learning from VCD interventions.

The core of 5Capitals is an *asset-based approach*, where observed *changes* in household and business assets resulting from VCD interventions are used as indicators for improved household living standards and business performance. Changes in the stocks and flows of critical household and linked-enterprise assets (human, social, natural, physical and financial capitals) provide a more complete picture of household livelihood resilience and business viability than if focus would only be on impact indicators related to e.g. employment and income.

In addition, the 5Capitals approach provides a useful framework for understanding the role of market, political and institutional factors in facilitating or hindering favourable outcomes. The methodological framework underlying 5Capitals thereby helps to separate changes caused by interactions and interventions in value chains from those induced by the overall context. 5Capitals’ strong focus on farmers and farmer-linked enterprises together with its broader development and context perspective makes it a particular useful approach for outcome/impact assessment of VCD interventions.

The overall feature of the 5Capital approach and the related asset indicator framework is presented below.

Key household and business asset indicators for VCD impact assessment

Household asset indicators / Business asset indicators	
Natural Capital	Stock of environmentally provided assets, including soil, water, stock of plants or animals
Human Capital	Capacities and skills, formal education, nutritional and health status, business management and technical capacities and skills
Social Capital	Rules, norms, obligations and trust embedded in social relations, structures or arrangements that enable those who share it to achieve goals they could not achieve individually
Physical Capital	Tools, equipment, machinery, buildings, productive resources
Financial Capital	Cash, savings, equity, credit and other financial resources

4 Tropical Agricultural Research and Higher Education Center, CATIE, 2012.

In addition to these 5 Capital areas, the framework also focuses on the “Enabling Conditions” (e.g. access to public infrastructure, services and government programmes).

The evaluation team will be using the 5Capitals Approach as an overall framework for this VCD evaluation.

3.2 Evaluation approach and methodology

The data used in the analysis of the F&B Programme interventions were collected through a quantitative survey, qualitative focus group discussions (FGDs) and semi-structured interviews. The strength of combining these types of data is the ability to validate the findings of either method and to expand the understanding of the study tasks. In addition, combining different data types allows eliciting causation between variables and improving confidence in the results.

Qualitative and quantitative phases of data collection were mixed. The first semi-structured interviews with value chain facilitators, programme staff and grant beneficiaries were conducted prior to the survey and they were crucial for formulating survey questions. The qualitative information from this stage also served to understand the positioning of the F&B sector within a broader cultural, economic and political context. These interviews comprised two cold store operators, two farmers, four programme officers and one expert for F&B production involved in lectures and training sessions with producers. The survey was followed by FGDs with a number of grant beneficiaries and non-beneficiaries to further the understanding of the programme effects.

The Survey

The quantitative survey comprised 435 respondents from the F&B sector in southern Serbia. The survey took place in August and September 2015 in five districts in the south of Serbia: Jablanica, Nisava, Toplica, Pcinja and Pirot. The survey was conducted in Serbian language by eight enumerators who even though having previous survey experience underwent a two-day training prior to the survey.

The survey sample was created in two stages. The first stage included stratified random sampling of grant beneficiaries from the list of grant applicants obtained from the F&B Programme office. The list of grant beneficiaries obtained from the F&B Programme office contained names of 851 applicants that had been approved for grants and planting material in calls for applications 1, 2, 3 and 4. A closer inspection of the list revealed that some applicants still have not received the funds in which case they were replaced in the sample by a randomly drawn applicant from the same district who has in fact received the funds.

The sample was stratified by district with 30% of grant beneficiaries from each district apart from district Pirot where due to a very small number of grant beneficiaries, all of them were added to the sample. The targeted number of grant beneficiaries for the survey was 200 and the sample included 70 names more to account for possible non-responses. The replacements were made in around 10% of the cases either due to a non-response or if it was established that a respondent still had not received the funds. The final sample comprises 193 grant beneficiaries.

The second sampling stage involved identifying a comparison group. The list of all F&B producers in Serbia could not be obtained from the Statistical Office of the Republic of Serbia, as this would violate confidentiality regulation. Then, the list of producers that have not applied for the grant from survey districts was made by eight consultants that have worked with the F&B Programme on providing information about the programme and helping with grant applications. Some of the consultants also work for local municipality and have access to lists of registered producers. These eight lists were compiled and a random sample of non-beneficiaries was drawn from the final list⁵. The list of non-beneficiaries also includes producers with unsuccessful applications and applicants who still have not received funds. The survey sample comprises 242 non-beneficiaries of which 64 have applied but have not yet received the grant, as shown in Table 1.

Table 1: Survey sample grant beneficiaries and non-beneficiaries

	Grant beneficiary		Total
	No	Yes	
Grant approved			
No	178	0	178
Yes	64 (grant not yet disbursed)	193	257
Total	242	193	435

The largest share of the sample comprises household farms (427 respondents). All enterprises in the sample are registered as private limited company. The sample also comprises one co-operative. Compared to the list of grant applicants, the sample has not entirely preserved the composition of the main legal ownership forms, as shown in Table 2. The main difference is the lower number of enterprises.

Table 2: Composition of the sample and the list of approved applicants by legal ownership form

Legal ownership form	List of grant beneficiaries		Sample	
	Number	(%)	Number	(%)
Household farm	810	95.2	427	98.2
Limited liability company	28	3.3	7	1.6
Sole proprietor company	9	1.0	0	0.0
Co-operative	4	0.5	1	0.2
Total	851	100	435	100

Apart from asking about the participation in the F&B Programme, the survey questionnaire asked about production, costs, assets, inputs, marketing, labour, land, finance,

⁵ As the lists for the comparison group were made in different ways (some from personal knowledge of producers in the area, some from official lists), it is not possible to assess the representativeness of the list.

income sources and membership in farmer groups or associations in 2015 and 2012. The questionnaire also included several qualitative questions in the form of open-ended and preference rating scales questions. These were used to complement the quantitative questions and numerical findings. In formulating questions, care was taken to adopt the concepts and measures to local conditions.

Limitations

The potential bias introduced by the sampling and survey method could come from four sources. First, the reliance on consultants to identify producers for the comparison group was unavoidable, as the official list of F&B producers could not be obtained. Relying on these sources could lead to systematic exclusion of certain types of producers from the survey, e.g. of remote, smaller or poorer ones. To address this concern of excluding the remote respondents, an attempt was made to create a comparison group that would include approximately the same number of respondents per village which is the lowest administrative unit in Serbia. Table 3 shows a rather uniform distribution of respondents by district and grant holding status. The exceptions appear to be Toplica and Pirot where higher number of applicants have applied but still have not received the grant so they were reclassified as a comparison group. The effect of excluding smaller and poorer producers from the comparison group could be that the size of the programme effect would be underestimated and results therefore could be interpreted as a lower bound of the programme impact.

Table 3: Distribution of grant holders by district

	All		Grant beneficiaries		Grant non-beneficiaries	
	Number	Percent	Number	Percent	Number	Percent
Jablanica	81	18.62	40	20.73	41	16.94
Toplica	193	44.37	82	42.49	111	45.87
Nisava	78	17.93	42	21.76	36	14.88
Pirot	37	8.51	8	4.15	29	11.98
Pcinja	46	10.57	21	10.88	25	10.33
Total	435	100.00	193	100.00	242	100.00

The second form of bias that could negatively affect the reliability of results could come from the use of recall data. To address this concern, the recall information for 2012 was verified against the business plans that the grant applicants made but this was not possible for the comparison group. In addition, the number of recall questions was not large and it concerned aspects of production that producers are quite likely to know, such as the size of landholding or seasonal labour salary. Even though the size of the recall period is reasonable, errors in the recall may bias results by understating the 2012 values, due to which the situation in 2015 and the programme impact may be overstated. This is a concern if only the group of grant users suffers from the recall problem, but the sample also contains a comparison group with likely the same direction of recall bias, so the recall problems may not affect the results.

The third form of bias may come from the difficulties in eliciting responses to sensitive questions such as income level. This bias is likely downward oriented so the end results could possibly have lower values than in an ideal setting. It is, however, not possible to estimate the magnitude of such bias in the context of this study.

The fourth bias could come from systematic differences among beneficiaries and non-beneficiaries participating in the survey. There is a risk that those who have participated in the F&B Programme may differ systematically from those that did not participate in aspects that are not directly related to their social-economic profile such as their motivation/attitude, connections, network. If more talented individuals have self-selected into the programme, this would be overestimating the impact of the programme. But by how much we are not able to measure. In the survey design, the evaluation team has tried to mitigate this risk by including a large number of producers with unsuccessful applications and applicants who still have not received funds (see above).

Focus group discussions and key stakeholder meetings

FDGs were organised as follow-up to the quantitative field survey with beneficiaries and non-beneficiaries of the F&B Programme investment grant scheme. The FDGs were organised in 4 different municipalities in south Serbia: Bojnik, Vladicin Han, Aleksinac and Blace. The number of participants in each FGD varied between five and nine persons and the length of each FGD was approximately 1½ - 2 hours. The FGD participants were selected randomly among the survey respondents from the area.

In addition to the FDGs, visits were made to processing and cold storage centres within the region and interviews were conducted with the business owners. In total, eight FDGs with beneficiaries and non-beneficiaries and eight visits to processing and cold storage centres were conducted.

Finally, interviews and meetings were conducted with key stakeholders and resource persons, including management and staff from the F&B Programme, representatives from the GoS (Ministry of Agriculture (MoA)) and Directorate for Agrarian Payment (DAP)) as well as from the Danish Ministry of Foreign Affairs.

Other activities

In addition to the fieldwork activities, the evaluation team has reviewed relevant documentation, statistics and data.

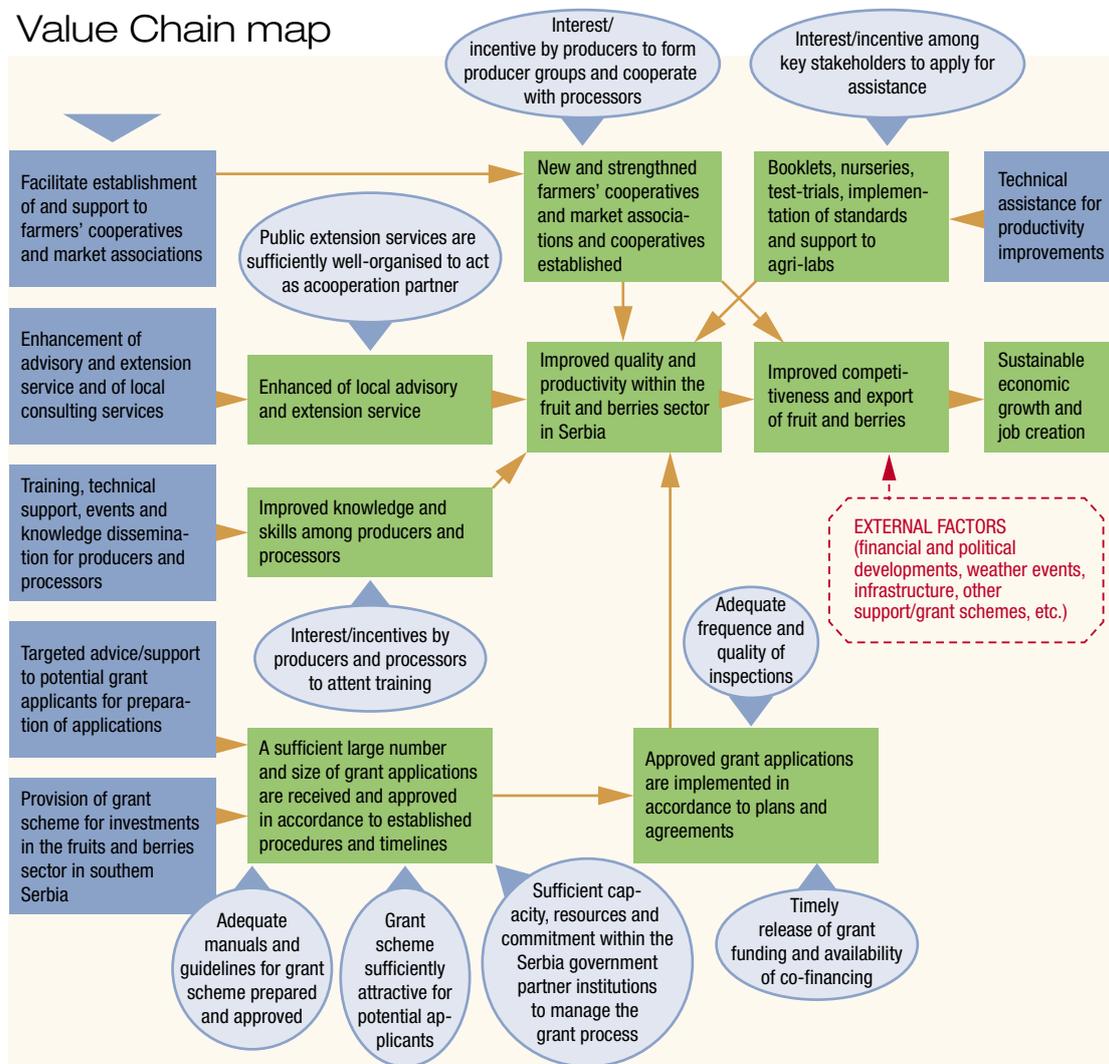
The evaluation team was invited to make a presentation of the preliminary survey findings at the Steering Committee Meeting in Nis on 18 September. This allowed for useful discussions and interaction with the committee members and for feedback from key stakeholders on the preliminary evaluation findings.

4 Theory of Change and Value Chain Analysis

4.1 Theory of change

The overall objective of the F&B Programme is to support selected value chains within the fruit and berry sector to contribute to: i) the preparations for EU accession, ii) the strengthening of a sustainable growth of the private sector in the districts, iii) increased export, iv) income generation, v) job creation, in particularly among youth and women, vi) reduced migration from the districts. Based on the review of programme documentation and interviews with key stakeholders, the evaluation team has established a Theory of Change (ToC) for the value chain development interventions supported through the F&B Programme (Figure 3.1). It is obvious from the figure, that the GoS and public institutions were expected to play a key role in the implementation process.

Figure 3.1: Theory of Change



Some of the initial assumptions of the F&B Programme have caused serious challenges during the implementation period:

1. **Interest/incentives to apply for grants:** Initially, there was reluctance among farmers to apply for the grants, mainly due to a deeply rooted mistrust to the GoS institutions and system. Not least through the involvement of the local consultants (see below) it became possible to gradually convince the farmers that this was not a “typical” GoS grant scheme, but that they could actually expect to receive the funds from the F&B grant scheme.
2. **Interest/incentives among farmers to form associations/cooperatives:** As discussed elsewhere in this report, despite strong and continued efforts by the F&B Programme it has not been possible to convince farmers of potential benefits from establishing cooperatives and associations. As a consequence of this, the farmers are still the weak part (price takers) in negotiations with traders and owners of cold storage and processing facilities. Likewise, the efforts by the F&B Programme to encourage standardization and certification of the farmers (required e.g. for export of fresh F&B) have become more difficult due to the relatively high costs related to these processes. Despite these organisational shortcomings, it has been possible to raise income, production and employment levels significantly in the short-term. However, in the medium to long-term the lack of organisation of the farmers could become a critical factor.
3. **Sufficient capacity within the GoS to handle the grant scheme:** In the first two years of programme implementation, limited capacity and interest within the GoS to ensure an effective handling of the grant scheme was a major concern for the programme. Frequent changes in MoA management and staff and a general lack of resources, skills and experience within the ministry, effectively blocked for take-off of the grant scheme up to 2012. And again only by the decision from the F&B Programme to temporarily fund three staff members within DAP to fill in most critical staffing gaps to allow for disbursement of the grants. Later on, there have been issues with timely payment of the Serbian contribution to the grants scheme and with the quality of the inspectors that were supposed to undertake control visits at the farms. All together, these issues have resulted in significant delays in programme implementation and accumulated a disbursement pressure on the programme. Due to the delay in grant disbursements, the expected production effects from the programme interventions have been delayed. This, together with the heavy focus by the F&B Programme to make the grant scheme up and running, has made it more challenging for the programme to make notable progress on market development issues.

The evaluation findings show that after 2012, the situation in the F&B sector in south of Serbia has improved significantly in terms of modernization of the equipment, establishment of the new fruit plantations, and increasing capacities of the processors. The opportunities in the export markets for F&B also look promising for Serbia.

Processors in the south of Serbia estimate that through the support from the F&B Programme the capacities for F&B production and processing have increased by 20-30% in terms of plantation expansion, new equipment and machinery, cold storage and drying facilities. That provides a good foundation for further development of the sector in the region.

Producers are also optimistic regarding the future of the F&B sector. They expect the sector to grow further, but they are also aware that changes have to happen also at the level of policy, knowing that uncontrolled establishment of plantations will lead to market overload with certain type of fruits. The producers also think that the new law on cooperatives needs to establish a more solid foundation for farmers to associate.

4.2 Assessment of the value chain design, approach and implementation

Value chain analysis

Supporting the programme design with value chain analyses worked well, thanks to a thorough report on value chain analysis⁶, which not only highlighted key bottlenecks in the sector, but allowed for modification of already planned activities.

Initially, interventions were planned based on findings and recommendation in the following value chains berries: raspberry, sour cherry, strawberry, blueberry and plums. Later more chains were added: sweet cherries, blackberries and wild collected berries, i.e. blueberries, raspberries and blackberries. Findings of the value chain studies had initiated changes in activities being supported, e.g. in formulating the eligibility criteria for the grants component of the programme. Some examples are: tractors became eligible for support and have been included in first CFA, requirements in terms size of parcels were reduced from 3,000 m² to 1,500 m², the requirement of contributing to the government's social security scheme was removed from the F&B CFA, which provided equal opportunities for the poorer segments of the farming community which typically do not contribute to the social security scheme.

Value chain selection and marketing pull

Selecting a subsector (F&B) where Serbia had already comparative and competitive advantages combined with high demand has been key to success. The value chain selection was clearly made with marketing pull in mind, targeting international customers with varying degrees of certification requirements (EU, Balkans, Middle East). Serbia has the right agro ecological conditions and extensive experience and to put its F&B products on the market in a time period when neither Poland nor Italy or Spain can do so, filling in a gap in the continuous supply of fruits and berries.

Identifying the possible product/market combinations in the early stage of the programme could have resulted in more success of SMEs accessing markets. While the value chain analyses highlighted the opportunity for Serbia to increase the production of berries as demand is there, the documents available for the evaluation team did not go into identification of a target market, specifics of possible product / market combinations based on customer preferences, determining its characteristics in relation to quality, price, quantity and other important factors, etc. As a whole, market assessment in the initial phase of the programme seems to be weak. Later, the USAID Agribusiness project performed a study of the Russian market. F&B therefore decided to concentrate its efforts on opportunities in Bulgaria and Romania. A market study of the Bulgarian market was started in the fourth quarter of 2013, and the report was published and distributed in May 2014. A market study of Romania, which was considered to be performed in the fall

6 Value chain analysis for Southern Serbia, 2012.

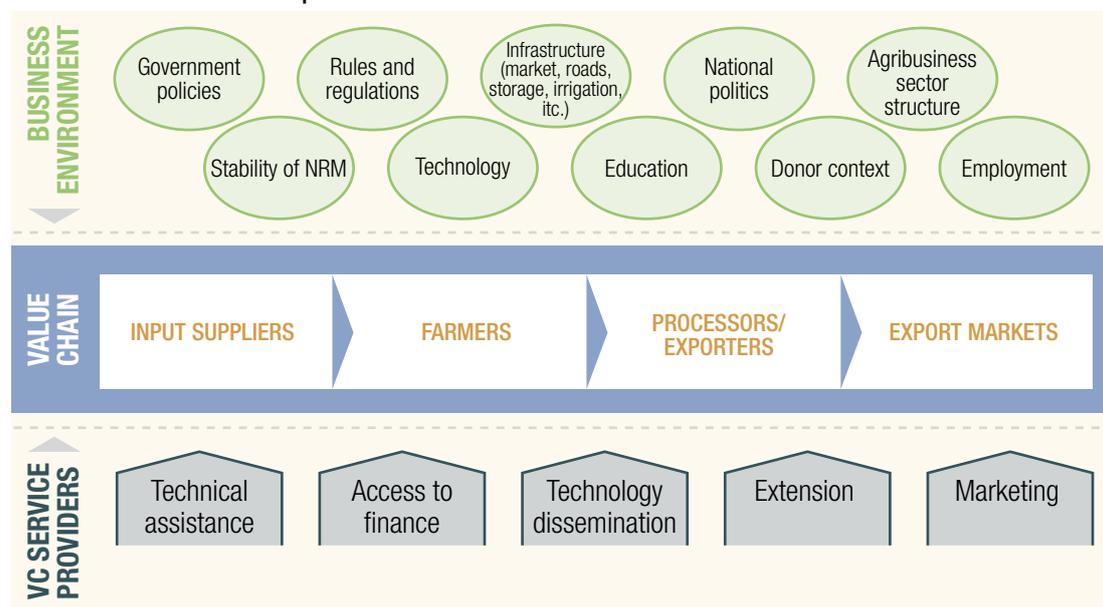
of 2014 was cancelled, due to lack of interest by beneficiaries in the Romanian market in general.

Bottlenecks and opportunities including sector-wide challenges in the wider value chain

In order to assess the bottlenecks and opportunities, the wider value chain framework has been used with its three layers: Business environment, Value chain and VC Service Providers (Figure 3.2). Interventions were identified early in the design phase of the programme covering all three aspects of the three-pronged approach to deal with gaps in the wider value chain.

Figure 3.2: The wider value chain

Value Chain map – Serbia



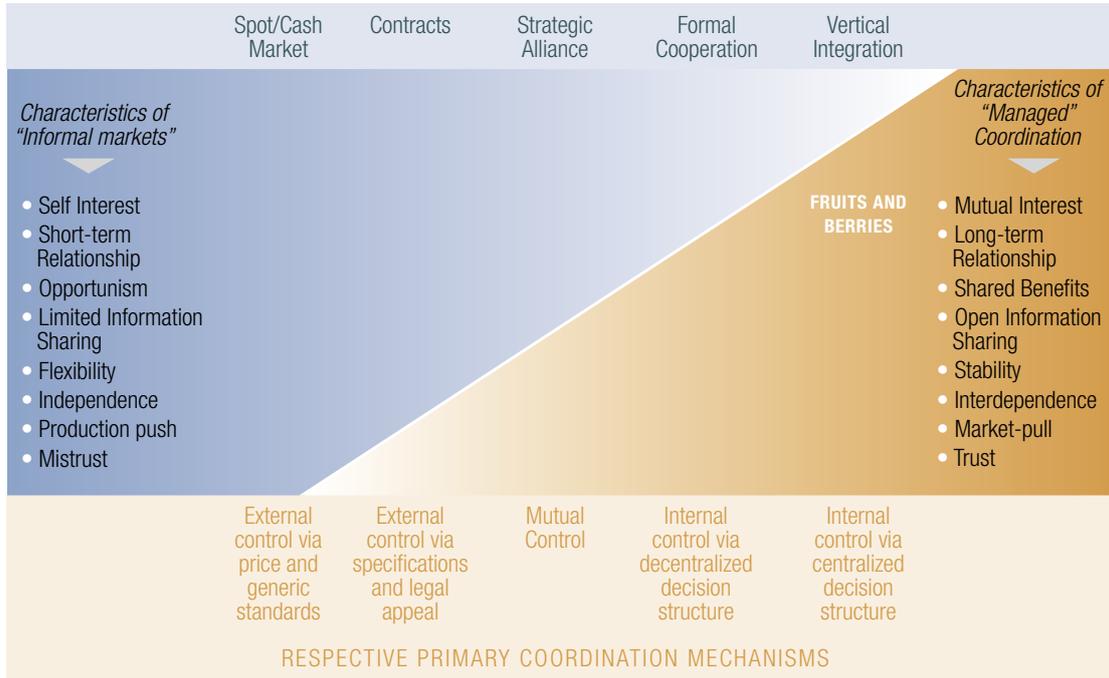
Business environment

The F&B Programme was successful in capitalising on a market opportunity and in enhancing sector performance: There are many challenges in a sector, that can be picked up only at sector level (across fruits and berries value chains) such as quality control, risk analysis, monitoring, certification, testing laboratories, setting up berry specific extension service, etc. Obviously, for Serbia there has been a clear sense of urgency due to its accession to the EU: producers are expected to comply with very high standards. The programme design included focus on identification of sector level issues, approaches to solve those issues, and options for embedding the programme in the national context.

As Figure 3.3 below shows, the F&B sector in Serbia exhibits vertical integration characteristics, indicating the need to intervene on sector level if the performance of the whole sector is at stake. The F&B Programme intended to do.

Figure 3.3: Agribusiness sector structure for the fruits and berries sector

Agribusiness Sector Structure



Apart from the support from the F&B Programme, most FGD grant beneficiaries found that the final phase of the transition process in Serbia (decline of industry, job losses and economic crisis) was the main driver and one of the most important factors for increasing the F&B production after 2012. The business environment was not favourable for small SMEs in Serbia, so people that owned land realized that relatively small investment in combination with reasonable workload, could bring additional income to their households.

Value chain

The combination of support elements to value chain actors has been key to success. Many of the beneficiaries received repeated support from F&B in the same element, such as access to finance, or a combination of support elements such as access to finance, technical assistance, marketing assistance and extension service (support with calls). Without support to reply to calls, they would not have been able to access programme finance. Without access to finance, farmers could not have bought equipment to upgrade their production based on the training received during technical assistance. Without technical assistance, they would not have known how to improve their agro technology despite having new equipment. However, the combination of the above made them more competitive in the market.

Value chain service providers

One of the key design features of the programme was outreach and cooperation with other donor projects, Serbian local and national government institutions and agencies, universities and research organisations and private extension services and other organisations providing services to the agricultural industry within the districts and the value chains covered by the programme

The key strategic directions of the F&B Programme were to:

- Coordinate and plan activities in close cooperation with those partners to avoid overlap or duplication of efforts
- Engage in joint activities to ensure the best use of resources and funds, including co-financing of events and to the extent possible and feasible always invite cooperation with other institutions in events and activities organised by Fruits and Berries
- Extend invitations to other donor organisations and service providers for all events and activities organised by the Fruits and Berries Programme

From day one the project staff was keen on establishing cooperation with other donor programs and coordinate activities with other donor organisations. Due to the continuous change of staff at government offices as result of changes on political level, collaboration with those stakeholders remained a challenge throughout the programme.

The State Agriculture Advisory Service (AAS) is providing services free of charge, however the FGD farmers expressed a huge lack of trust in the government, its institutions and agricultural policy, that reflect on also on extension services (blaming advisors for bad policy, unstable market etc.). The AAS has certain quotas to reach related to number of producers with whom they must cooperate. According the FGD participants, AAS advisors tend to select bigger farmers, with whom the cooperation is easier, who often initiate cooperation by themselves, who are more interested in extension support or have more financial means to apply the advised technology or organisation of production or in the worst case just the friends or relatives that could sign them necessary forms.

The F&B programme has been successful in counteracting the layoffs at local extension services on short-term by hiring in some of the staff that was let go to support farmers in writing of proposals. The local municipalities and the local extension services never got the supporting role in the F&B Programme they were expected to play. This created a gap in the planned support to the farmers for accessing the grant scheme. Strengthening of the agricultural extension centres by hiring in additional young agricultural advisors introduced in late 2011 was cancelled, which meant that the staff resources anticipated to work with F&B were cut down significantly.

As reply to the situation, the F&B made a smart move of hiring in – on a short term basis and at municipality level – a number of those redundant young advisors as consultants to assist in the call for grant proposals. The work of these local consultants has undoubtedly been important to reach and support a large number of small F&B farmers through the programme. On the other hand, the sustainability of this model is doubtful. To mitigate the risk, F&B has been exploring candidates for establishing private extension services either as part of cooperatives or as separate entities. As long as the public PSSS offices are financed by the Serbian government and provide their services for free, it will be a challenge to established unsubsidized private extension services.

5 Achievements

5.1 Impacts

The evaluation team has assessed impact from the F&B Programme interventions within four different areas: *production, income, employment and export.*

Production

The production effect from the F&B grant has been significant. The survey data (Table 4) show that production levels for cherry, plum, raspberry and blackberry have increased significantly in the period from 2012 to 2015 for those farmers who have received a grant from the F&B Programme. For those farmers who have not received a grant the production levels for the same F&Bs only show minor changes compared to the 2012 levels.

Table 4: Grant effect – changes in production levels from 2012 to 2015 (average tons)

	Grant beneficiaries			Non-beneficiaries		
	2012	2015	Difference (%)	2012	2015	Difference (%)
Cherry	10.65	12.05	+ 13%	4.96	4.86	- 2%
Plum	17.43	18.91	+ 8%	10.55	10.56	0%
Strawberry	7.76	7.96	+ 3%	4.79	4.75	- 1%
Raspberry	9.00	13.20	+ 47%	3.25	3.18	- 2%
Blackberry	5.71	5.38	+ 16%	4.00	4.23	+6%

Source: Survey data collected by the evaluation team

The only F&B that does not fit into this pattern is strawberry. Although positive, the survey data only showed little difference between the 2012 and 2015 production levels. The evaluation team tried to investigate this issue in the FGDs. Some farmers mentioned that the increase in strawberry production already took off in their district prior to 2012 and that results would therefore already be notable in the 2012 production data (this was the case in Toplica and Jablanica districts). Other farmers explained that the grant from the F&B Programme had been used less for strawberry production than for other F&Bs. It should be mentioned that the average production increases calculated from the survey data are in the lower end of the monitoring data on production increases collected by the F&B Programme, especially the data on strawberry production.

The perception of non-beneficiaries is that the F&B Programme has encouraged and initiated development of the F&B sector in the region. They agreed that the F&B Programme has been an important driver of revitalization of the F&B sector in south Serbia.

All participants in the FGDs (beneficiaries and non-beneficiaries) were of the opinion that no intentional or unintentional exclusion from the F&B Programme support had happened. The only mentioning was that in some cases **limited financial means of the farmers would prevent them to apply** for the F&B grant due to the requirement to pre-financing. In addition, it was mentioned several times in the FGDs, that in the last

call the F&B Programme should have included criteria to limit the number of applications for the larger⁷ companies that had benefited from each call (e.g. to a maximum of three grants in total). This would have opened up for the possibility that a larger number of producers and companies could benefit from grants, especially in the last 5th call for proposals. On the other hand, the successive support to the relatively bigger industrial players may also be considered a strategic important element to create the “space” in the value chains for the smaller farmers.

It should be recognized that particular efforts have been done by the F&B Programme to encourage ethnic Albanian groups within three municipalities with ethnic Albanian populations to participate in the programme (e.g. special sessions, translation into Albanian of documents etc.) through a cooperation with the Office of the Coordination Body of the Government of Serbia for the Municipalities of Presevo, Bujanovac and Medvedja. However, despite these efforts, only one application had been received from an ethnic Albanian from the Medvedja municipality. According to the FGDs and key stakeholder interviews, an explanation to this is that there has been resistance in the Albanian communities to register their farms and agricultural businesses with the GoS. There are also issues related to the ownership of land and its registry in the official cadastres.

Besides the employment effects, the evaluation team did not observe significant changes or benefits for women in relation to the F&B Programme interventions, apart from the advantage that they had during the grant application process (higher number of points for women grant applicants). Some stated that improvement in machinery and equipment in households helps both men and women to work less hard in agriculture, but they do not see some specific benefits only for women.

The mix of grant with targeted capacity building activities has significantly contributed to F&B production increases. The production increases for grant holders that have attended F&B capacity building activities are significantly higher than for those grant holders that have not attended F&B capacity building activities (Table 5). These data largely confirm the farmers’ high satisfactory rating of the capacity building activities (see Section 5.3) and underline the importance of capacity building as complementary to the grant mechanism in this programme.

Table 5: Capacity building effect - changes in production levels from 2012 to 2015 (%)

	Grant beneficiaries – with training	Grant beneficiaries – without training
Cherry	+ 14%	+ 10%
Plum	+ 10%	+ 2%
Strawberry	+ 5%	- 1%
Raspberry	+ 57%	+17%

Source: Survey data collected by the evaluation team

7 It should be mentioned that the Serbian government changed the definition of SMEs, so that some companies that for previous CFAs had been defined as large companies were defined as SMEs for CFA5.

Income

Income from F&B production is a crucial source of income for the large majority of the farming households that have benefitted from the F&B programme support. The survey data show that income generated from F&B production is among the three most important sources of income for nearly all farming households, including the non-beneficiaries (Table 6).

Table 6: Main sources of income in 2014 for farming households (three most important sources selected by beneficiaries and non-beneficiaries)

	Observations
Production of fruits and berries	297
Commercial processing of fruits and berries	16
Vegetables production	48
Commercial processing of vegetables	4
Crop production	117
Livestock production	90
Employment in private sector	105
Employment in public sector	80
Self-employment	72
Other	102

Source: Survey data collected by the evaluation team

Income from F&B production increased significantly more than income from other economic activities for farming households (grant beneficiaries) in the period from 2012 to 2014 both in absolute and relative terms. This finding is in line with the findings in Section 4.1, which showed significant production impact from the F&B grants.

Table 7: Average income amounts in 2014 and 2012 for different economic activities (farming households, grant beneficiaries)

	2014 (RSD)	2012 (RSD)
Production of fruits and berries	1,112,727	739,269
Vegetables production	408,571	328,000
Crop production	169,904	158,571
Livestock production	560,639	470,276
Employment in private sector	496,786	415,192
Employment in public sector	544,667	607,222
Self-employment	284,722	250,000
Other	270,898	557,000

Source: Survey data collected by the evaluation team

The majority of the FGD grant beneficiaries stated that compared to the situation before 2012, it is now possible to live from agriculture, but not only from F&B production. Production of F&B is very sensitive and depends highly on weather conditions, so the majority of the producers practice mixed production (usually F&B production in combination with husbandry) and production of vegetables (especially in Jablanica district) in order to reduce the risk of loss due to a bad year or fruit diseases. Only the largest producers can afford to live only from F&B production.

The FGD grant beneficiaries agreed that the F&B Programme had provided them with a better future. With the renewed machinery and equipment obtained from the grants, almost all farmers stated that they had already expanded their plantations. For young plantations it is too soon to predict how profitable these plantations will be. However, the farmers explained that they already plan to reinvest profit in irrigation, nets against ice rain and new machinery and equipment. The survey data showed that beneficiaries are using a larger share of their profit for reinvestment into the F&B sector (27%) compared to the non-beneficiaries (18%).

Employment

The short-term employment effect from the F&B Programme has been significant. In the period from 2012 to 2015, the employment increased substantially more at farms that had received a grant from the F&B Programme than at farms that had not received a grant (Table 8). The F&B production in southern Serbia is heavily dominated by seasonal (part-time) employment and the survey data show that it is additional seasonal employment that has been created.

Table 8: Average number of seasonal employees (farming households)

	Grant beneficiaries	Non-beneficiaries
	Number	Number
Seasonal employees for F&B production 2015 (2012)	50 (45)	23 (22)
Seasonal employees for F&B production - Women 2015 (2012)	44 (39)	17 (16)
Seasonal employees for F&B production - Youth 2015 (2012)	17 (15)	12 (11)

Source: Survey data collected by the evaluation team

The employment data also show that although more modern machinery and equipment have been provided through the F&B Programme grants, the F&B sector is still highly labour intensive and has the potential to generate local employment in the short-term.

It is in particular women that have benefitted by the jobs generated through the F&B Programme. Basically all new seasonal jobs that have been created are female jobs and a third of them have gone to young women. The survey data on employment to a large extent confirm the indications from the latest Annual Progress Report (2014) and Review Aide Memoire (2014) of significant short-term employment effects from the F&B Programme interventions, not least within the farming households.

Export

Serbia is a main global exporter of frozen and processed F&B and the most important provider to the French and German markets. Frozen and processed F&B therefore constitute an important export commodity in Serbia and account for 17% of total Serbian gross agricultural product export. Since agriculture accounts for nearly a quarter of total Serbian exports, the importance of the F&B production to the Serbian export and economy in general is evident.

Serbia is world's second largest producer of plums (second to China) as well as of raspberry (second to Russia). In terms of frozen raspberry, Serbia is a global leader. In the period from January to July (seven months), the Serbian export of frozen raspberry increased from 34,071 tonnes in 2013 to 40,013 tonnes in 2014 and 43,837 tonnes in 2015⁸. The increase in export of frozen raspberries from 2014 to 2015 was mainly due to large increases in demand from France (+16%), Austria (+78%) and Russia (173%). It is interesting to note that these same markets (France, Austria and Russia) are those where the larger processors and exporters in Nis mention that they have managed to establish business relations recently (mainly through their participation in international trade fairs in Moscow, Paris and Cologne, supported by the F&B Programme). This is another indication that there is a high potential for export of F&B from Serbia.

8 Source: Agra-net.net.

Given the high production increase in raspberry production among F&B Programme grant beneficiaries between 2012 and 2015 (see Section 4.1) it is reasonable to conclude that the support from the F&B Programme has contributed significantly to the large increase in export of frozen raspberries in the period.

The F&B programme has contributed importantly to recent export increases in frozen and processed F&B. The F&B programme has also encouraged the local F&B producers to start selling their fresh products since profit from fresh fruit sale is relatively larger compared to profit from sale of frozen and processed fruit. This has resulted in an increasing focus on fresh fruit sale, mainly to the local market. There are also examples of producers who have started to export fresh F&B, e.g. fresh strawberry to Russia. However, there are still many challenges for the farmers and cold stores operators in the south of Serbia related to export of fresh F&B. Serbia is not member of EU, and procedures for export of fresh fruits are more complicated than between members of EU. It is also directly connected with logistic problems, such as transport and customs, as well as with standards and certificates. The latter would require substantial investment in equipment and technology used in the production process, as well as support to establishing of commercial activities related to export markets for fresh F&B.

5.2 Outcomes

Changes in land and environmental conditions

The F&B programme has contributed to a significant increase in the area of land used for F&B production in the Nis region. Grant beneficiaries have rented significantly more land in the period from 2012 to 2015 than the non-beneficiaries (Table 9).

Table 9: Comparison of farm sizes in 2012 and 2015 (farms < 100ha)

	Grant beneficiaries	Non-beneficiaries
	Average (ha)	Average (ha)
Land owned in 2015	5.41	4.18
Land owned in 2012	5.13	4.01
Land rented in 2015	7.34	2.76
Land rented in 2012	4.90	2.35

Source: Survey data collected by the evaluation team

The FGDs with grant beneficiaries confirmed the relatively large increase in the amount of rented land among the grant beneficiaries. Most farmers explained that the large majority of the land they had rented was uncultivated before and that they were now using it for F&B production. In particular new cherry, plum and raspberry trees have been planted. The farmers explained that the grant they had obtained through the F&B Programme had given them possibility to invest and expand their F&B production area. Since the majority of the new fruit trees are only one-two years old, it must be expected that the production effects from these plantations still have not materialised.

It is also noted from Table 9 that the amount of owned land has not changed significantly in the period from 2012. According to the farmer FGDs this is due to government land ownership issues of land that was nationalized after the II World War. Much of this land has been of high quality but is currently deteriorating, neglected and not being used. From the farmers' point of view this land issue is one of the most important constraints that prevent them from increasing income and employment in the sector.

The F&B Programme has contributed to environmental improvements in the F&B production but has not effectively supported improvements in soil fertility and water supply (Table 10).

Table 10: Grant beneficiaries' perceived changes in environmental factors from 2012 to 2015

	Environment	Soil fertility	Water supply
Got much better	2.82	4.26	4.20
Got better	62.68	8.51	9.79
Stayed the same	34.51	87.23	86.01
Got worse	0	0	0
Total	100.00	100.00	100.00

Source: Survey data collected by the evaluation team

The general perception of the majority of FGD participants is that after 2012, the use of fertilizer and pesticide has been noticeably declining on most farms in the area, partially due to the economic crisis and partially due to education and actions for awareness raising intended to encourage producers to adopt more environmentally friendly and sustainable agriculture practices. The farmers found that the latter was partly a result of the training efforts from the F&B Programme on these topics and partly a result of an increased "nursing" from service providers and input suppliers during the period in order to optimize production processes on farms. Many producers use only organic manure, but FGD participants also explained that there are still examples of uncontrolled application of fertilizers (e.g. urea) that leads to even higher acidity of the soil.

Soil quality is often a problem for the F&B producers (due to high acidity), but regular soil analysis are still not the standard practice of south Serbian producers, although offered periodically for free by the MoA. FGD participants expressed doubts in results of the analysis performed by labs from the region, since there were examples of copy-paste results, or completely different results from the same soil sample. According to a professor in one agricultural school that has a certified lab, the demand for soil analysis has increased from 1,000 analyses in 2012 to 5,000 analyses in 2015. Only a few FGD participants found that the recommendations they got as a result of soil analysis has helped them to improve the quality of their soil and the products.

Organic production in the region is still undeveloped, and apart from few processors (Coja-prom in Aleksinac that is certified for organic production/processing of forest fruits and Midi Organic in Blace that does mostly processing) there were no other

examples of such practice in the FGDs. Regarding other certificates for food safety, only bigger processors operate under ISO standards such as ISO 9001 and ISO 22000. There were no examples in the FGDs of primary producers using Global Gap standards.

Two interviewed processors were using plums kernels as fuel for drying plant facility or heating in their companies. One facility for drying plums was using solar panels (co-funded through the F&B Programme grant scheme). Some FGD participants and processors mentioned that photovoltaic cells and smaller solar panels could be very useful if the process of getting the needed licenses could be simplified by the relevant ministries. The F&B Programme design has not had any particular focus on encouraging processors and producers to implement greener solutions to their production processes, although it has been possible to apply for these types of projects under the F&B Programme grant scheme.

As a negative factor, in the FGDs the farmers emphasised scarcity of water and lack of irrigation systems as a very critical factor to the F&B production. High cost for drilling of the pipe wells and uncertainty of the results of drilling are the most important factors that prevent the F&B producers from these investments. The F&B Programme has defined drilling as an infrastructure investment, which would be expected to be taken care of by the local government (the municipality) in cooperation with the farmers.

Changes in Human Capital

The F&B training activities have been relevant for the target groups and have been an effective complement to the grant scheme.

The large majority of processors and producers who have participated in F&B capacity building activities have found them important in relation to their F&B production and in particular, the practical training on how to improve and increase F&B production processes and the training related to business planning and farm management were highly rated. In the farmer FGDs, the importance of training on production techniques was emphasized as the most useful of the training provided to the farmers (in particular pruning). The FGD farmers emphasized the usefulness of having some of the best professors from the university among the lectures, but also that their presentations could have been adapted more appropriately to the audience. In the FGDs, the farmers did not recognise training on business planning and farm management with equal importance as in the survey (see Table 11 below).

The training on “Standards” and on “Cooperatives” was scored as relatively less important by the farmers in the survey. According to the farmer FGDs, the issue with “Standards” is related to the relatively small size of the F&B farms and the fact that standards for F&B production and distribution is becoming still more expensive and harder to implement for the farmers. Cooperative membership would be a more affordable way to certification of different standards for the farmers.

The relatively limited importance given by the farmers to training on “cooperatives” is largely related to farmers’ general unwillingness to form cooperatives (see also Section 5.3).

Table 11: Training participants rating of training modules (level of importance for their F&B production)

	Prac- tical	Grant applica- tion	Business plans	Farm manage- ment	Coop- eratives	Stand- ards	Preven- tion of diseases	Study Tour	Trade fair
“Very important” or “Important”	98	86	80	81	56	50	100	100	95
“Less important” or “Not important”	2	14	20	19	44	50			5

Source: Survey data collected by the evaluation team

Activities such as visits to trade fairs and study tours were directed more to processors than to producers and were rated as important events.

Social Capital

Group formation and association

The F&B Programme has not been successful in encouraging farmers to establish producer groups or cooperatives. Only 13% of the surveyed farmers are organised in either producer groups or cooperatives (Table 12).

Table 12: Membership of producer groups or cooperatives

	Number	Percent
No	373	86.95
Yes	56	13.05
Total	429	100.00

Source: Survey data collected by the evaluation team

Despite strong and continuous efforts from the F&B Programme, it has been difficult to convince F&B producers of the benefits from group formation and associations. The FGDs revealed that this resistance has a lot to do with the history of Serbia. In addition, until now the GoS has not been particularly supportive in terms of establishing of cooperatives. The limited degree of association within the F&B sector is a critical issue not only at regional level but also at national level in Serbia. According to interviewed representatives from the ministry, the F&B sector is characterized by a large degree of fragmentation in comparison to other agricultural sectors. This makes the sector relatively less influential at policy level, even compared with agricultural sectors of minor national economic importance (e.g. honey producers have a much stronger and more influential association in Serbia than the F&B producers).

Farmer FGDs and interviews with larger cold storage operators and processors clearly showed that the lack of organisation of the smaller farmers makes it difficult for them to

become sufficiently powerful in negotiations with the cold storage operators and processors. The small F&B producers usually find themselves in a weak bargaining position where they have to accept the conditions proposed by the more powerful buyers. In those areas where there are limitations in storage and processing capacity it becomes even more difficult for the smaller farmers to negotiate.

Both farmers and the interviewed storage operators and processors pointed at another problem related to the lack of farmer organisation: the difficulty to plan ahead. The farmers would like to have more firm agreements with buyers for marketing of their production while the cold storage operators and processors would like to have better control with the quantity and quality of the various products they receive. This would make it easier for them to enter export markets.

Most of the FGD farmers were not members of any existing association or cooperative related to F&B production. An exception from this were producers in the municipality of Razanj (Nisava district) that have a strong association of fruit and grape producers. Three of the six interviewed processing companies are members of the Regional Fruit Cluster of South Serbia, which is based in Leskovac (Jablanica district). All three of them have participated in at least one project implemented by the Cluster⁹.

The association of fruit and grape producers from the municipality of Razanj (Nisava district) presents a good example of a joint initiative. The association currently has 97 members, the majority of them smaller producers and/or owners of mini processing facilities. The association is well organised and strong enough to influence on municipal agricultural policy, regardless of political affiliation of its members. It advocates members' interest and provides financial means from the Municipal Agricultural Fund every year for free of charge seedlings, trainings and advisory services for its members. Moreover, because of its unity and good cooperation between members, the association has raised its negotiation position with buyers to the level of being one step ahead of buyers and capable, not only to influence but also to dictate prices to buyers and processors. The association in fact operated much like a company. The strongest member, who was more of a risk-taker, was running the organisation as the leader. The other members were risk avoiders, and they only wanted to secure markets and fixed prices for their production, which the leader provided for them. On the other hand, the leader made all the investment decisions for the association on his own, carrying all the risks and taking the largest rewards.

In the FGDs, the farmers expressed that they were not convinced that adapted models of successful cooperatives from western countries could be functional in Serbia, it would have to come with adequate change of mindset of people on all levels. The farmers were very reluctant to the idea of pooling resources in cooperatives, and emphasized several times that cooperatives would need to be established on clear and honest basis, with clear connection between invested assets and level of power in decision-making.

Most of the farmers were questioning the appropriateness of cooperatives for the Serbian context. The "one member one vote" concept was considered a challenge when farmers

9 In past 10 years, the MoA along with other government and foreign institutions, has worked to build clusters based on the projects, recognizing the importance of networking of agricultural producers, government institutions, R&D sector, as well as organisation for support to SMEs.

have different financial means and objectives when it comes to accessing markets, distributing profits or reinvesting it into the business.

Relationships with service providers, suppliers and/or buyers

It has not been possible through the F&B Programme to radically change the prevailing informality that characterizes the market for F&B in the south of Serbia. The large majority of the F&B producers do not have any formal agreements with the buyers of their product. Depending on the production level and the location and distance to cold storage and processing facilities, the farmers' F&B production is either picked up by local collectors or delivered directly to the storage or processing plants by the farmers themselves (Table 13).

Table 13: Sales arrangements in 2015 for local F&B producers (%)

	Local collector	Local processor	Cold store operators
Signed contract			15
Sales receipt	75	87	76
Other agreement	25	13	9

Source: Survey data collected by the evaluation team

The farmer FGDs confirmed that the type of agreements have not changed radically since 2012. The large majority of the farmers are still paid "on receipt" when they either deliver their production to the cold storage or processor or the production is picked up at their farm. It was a strong wish from the farmers that longer term contracts could be made with the buyers to give them security.

Table 14: Grant beneficiaries perceived changes in relationships (%)

	Professional network	Relationships with buyers and input suppliers
Got "much better" or "better"	35	62
Stayed the same	63	36
"Worsened" or "worsened a lot"	2	2

Source: Survey data collected by the evaluation team

The farmer FGD participants found that in general the relationships between producers and buyers had improved since 2012, although the market is still fragmented with poorly organised producers and local monopoly of cold storages and processors. Traders that act as middlemen, with small trucks at collection points purchase their entire production at relatively low prices during harvest time. Traders usually pay cash, sometimes even without receipt, taking advantage of the producers having no storage facilities and being in need of cash in the short term. In this way the producers are not able to benefit from the possibilities of having higher prices at a later period of the season. The F&B producers explained that before the F&B Programme support, it happened that traders

disappeared with the products without paying for them. This would not happen today, partially due to F&B Programme contribution that significantly has raised the capacities of the cold storages and processors in the region, which now have to act more responsible towards producers in order to keep their own processing capacities fully utilized.

Recently, a few processors have started with the practice of providing fertilizers and pesticides, or even of advance payment for the producers as a sort of contractual obligation. Although the FGD farmers provided examples of misuse also in relation to this modality, the farmers were in general positive towards this concept, since both processors and producers have tangible and mutual benefits from it, the processors will be ensured fully utilized processing facilities and the producers guaranteed sales of their products. The FGD farmers agreed that lack of cooperation and communication, unfair competition (monopoly) and an atmosphere of mistrust are still present in relationships on all levels. However, the general impression of the FGD participants was that the situation has improved since 2012.

All FGD participants, both grant beneficiaries and non-beneficiaries, found that access to inputs for production has improved since 2012. Since the market of agricultural inputs was liberalized in Serbia, production/processing inputs such as fertilizers, seeds and seedlings, fuels and power, agricultural machinery and other input supplies have become more available comparing to the period before. In the past couple of years there is also an expansion of different companies, producers and distributors of agricultural inputs that in conquering of the new markets, offer their products on competitive prices and together with all sorts of free advisory services to producers/processors. The planting material (seedlings) used is mainly produced and purchased on the domestic market, and is not always certified.

The majority of the F&B producers that participated in the FGDs demonstrated obvious lack of knowledge about market possibilities in Serbia as well as for export. The large majority of them would rather sell products as raw materials to traders, just very few of them that possess mini processing facilities (e.g. drying plants) would sell part of the yield as semi-finished (e.g. prunes).

The majority of the FGD participants stated that when deciding what to produce, the first and the most important thing was the profit and traditional production in the region. It is interesting that only a minority of the FGD participants considered market demand as a priority and raised the question of the importance of a national strategy with a regional perspective for the F&B sector.

The farmers use multiple sources of information on markets and prices (e.g. TV, agricultural input shops (agricultural pharmacies), internet and internet forums particularly, agricultural extension services, as well as direct contacts with other producers and processors). In the last couple of years, people in general have better access to internet where most information can be easily found. The farmer FGDs and interviews with processors revealed that processors are much better informed and connected than producers in getting information about markets and especially prices. The processors' main information channels go through direct communication not only with domestic but also with foreign partners and connections. They use internet more functionally and follow and adapt to the changes in the international market (e.g. the situation in Poland, Chile regarding EU market, or Russia).

Although the producer prices are negotiated and agreed before every harvest season, usually the prices, dictated by owners of cold storages, are formed and paid to producers on a daily basis depending on the quality of the fruits and market situation. The price is usually lower in the beginning of the season.

Physical Capital

Changes in cold storage and processing capacities

According to the farmer FGDs, the F&B Programme has contributed significantly to a substantial improvement in capacities of the processing facilities, especially cold storages, since 2012. The value chain analysis carried out by the F&B Programme clearly identified lack of cold storage as a key bottleneck in the sector, and the programme was geared to find a solution to that challenge. FGD participants stated that in areas such as Pcinja and Jablanica districts, cold storages capacities have been doubled or even tripled since 2012. The overall impression of the FGD participants was that this particularly type of support had been very important for the value chain development. Adequate storage and processing capacities are crucial for maintaining the value in the F&B value chains, in particular for the export market where Serbia is an important player.

The FGDs with farmers and interviews carried out with cold storage owners and other F&B key stakeholders also showed that real storage capacity varies considerably from one area to another and in a number of areas the storage facilities are operating at full or nearly full capacity. Figures from the 2012 Agricultural Census showed excess storage capacity in most areas, however according to the key stakeholders interviewed these data reflect a failed privatization process of a large number of cold storage centres in the south of Serbia. These centres were formerly state or public owned and have for various reasons become dysfunctional (e.g. they have no owner, are bankrupt, are in reconstruction or partly/fully being converted into other activities). Recently, and through considerable efforts from the F&B Programme, the increasing demand for cooling storage capacities in the south of Serbia have been noticed by private investors and more investment in cold storage facilities is now taking place. This has helped replace the decline in capacities of the previously mentioned public/state cold storages facilities.

It was noted by the evaluation team however, that most of the new cold storages are able to handle only the most basic treatment (cooling, freezing, primary sorting), while other aspects of treatment and high value processing are still lacking. Likewise, due to changes in the climate the period of harvesting has been shortened, which put further pressure of storage and cooling capacities in the peak season. Some participants underlined lack of equipment/facilities at traders' collection points, such as refrigeration trucks to prevent decomposing or fermenting of the F&Bs.

A major part of the grants from the F&B Programme have been provided to the farmers to replace old and obsolete machinery and equipment with new and more modern items (Table 15). This upgrade in the physical capital stock has been an important factor for the increases in F&B production from 2012 to 2015.

Table 15¹⁰: Equipment provided to the interviewed F&B grant beneficiaries

Plantations	18
Machines/tools for planting and clearing after pruning	7
Machines/tools for plant protection from disease, pests, weeds, hail and cold	42
Machines/tools for picking	1
Machines/tools/equipment for indoor fruit production	1
Equipment for irrigation	17
Equipment for washing, sorting, etc.	7
Equipment for cooling, transport and cold storage	4
Tractors, two-wheel tractors and implements	46
Observations	193

Source: Survey data collected by the evaluation team

FGD participants agreed that the grant beneficiaries have got a better starting position, because of the new equipment, machinery or new plantations they built. But the medium- to longer-term impacts still need to be seen. Many plantations are still young and need a lot of work and attention before the real benefits from these investments can be measured.

According to the FGD participants, there are sporadic cases of grant beneficiaries whose primary occupation is not agriculture, where machinery and equipment is not fully utilized or not used at all. But these cases were described as exceptional cases: the large majority of the grant beneficiaries were reported to use their equipment for F&B production, as well as for other type of agricultural production (e.g. tractors)¹¹.

Financial Capital

Beside the possibility for accessing the F&B grant scheme and the income generated from higher production, the evaluation team found no indication that farmers now had better access to finance compared to the situation before the F&B Programme started.

The F&B grant scheme has gradually become very attractive to F&B producers and processors. It has not been an option for many of the small F&B farmers to get a loan or credit from the local bank. Both interest rates and collaterals are unrealistically high for the farmers. The survey data clearly illustrates this situation as 82% of the grant beneficiaries are financing their own share of the investments with equity (Table 16).

10 This list is based on the information provided by the surveyed grant holders and is not based on the full list of grant holders.

11 The MoA, through the F&B Programme, make inspections to the grant holders to see if the equipment is properly used.

Table 16: How do the grant beneficiaries finance their share of the investment?

	Number	Percent
Equity	107	82.31
Bank loan	23	17.69
Total	130	100.00

Source: Survey data collected by the evaluation team

There is no indication that farmers have got better access to financial services than they had before the F&B Programme. Although the F&B Programme has contributed to an improvement in the farmers' business planning skills, their perspective for accessing financial support for future investment in F&B production at their farms are still limited. Although significant efforts have been done through the F&B Programme, it has only to a limited extent been possible to organise smaller farmers into cooperatives and producer groups, which could have put them in a stronger position for accessing future financial support for their production activities. Individually the large majority of the small farmers are still not able to obtain loans and credit from banks and financial institutions.

In the FGDs, the farmers explained that their main reasons for not applying for the F&B Programme grant was the lack of other financial means for extending the production (new plantations), new equipment and machinery that could reduce costs of production and increase efficiency, competitiveness and profit.

They explained the unfavourable Serbian agrarian structure they were experiencing, with unregulated market of agricultural products, small subventions to agricultural production, depopulation, in combination with old mechanization (e.g. 25-35 year old tractors), traditional ways of production and low level of business connections, which do not provide conditions for economic safety of rural households.

The farmers also explained that the initial mistrust that existed among the producers and processors has been replaced with satisfaction with the F&B Programme after the 2nd call for grant proposals. According to the grant beneficiaries, the procedures for the grant application were not complicated and the criteria for evaluation were fair.

The FGD farmers were aware that the Serbian financial sector offers a wide range of loan products to the agricultural sector. The list of lenders includes banks, state/municipal funds, leasing companies, etc. It was interesting that all small producers that participated in the FGDs, regardless which district they come from, have real aversion towards loans and credits. As main reasons for this they stated: enormous interest rates by the commercial banks (often up to 24%), unstable economic situation and unpredictability in cash flows, inefficient government loans often heavily influenced by political parties, and high risk of the F&B sector itself. Furthermore, even the banks often reject applicants for loans since the perception is that the creditworthiness of borrowers in agribusiness is weaker than of those in other sectors.

The FGD farmers were aware that there are a number of state-owned organisations and funds that provide lending or support to lending for the Serbian agricultural sector. The terms and conditions of these loans are very favorable, with significantly lower interest

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rates than those available in the market (6%). The smaller F&B producers would only use these state agricultural loans with low interest rate, but they also mentioned that disbursement of the loans, especially from municipal agricultural funds is often heavily influenced by local politics and in reality, not equally available for everyone.

On the other side, almost all interviewed processors seemed to be better informed, have different attitude regarding borrowing and all reported frequent use of loans for different purposes, but mostly for extension of the production halls, cold storages and equipment.

6 Engagement of Public Sector Institutions

During the period of implementation of the F&B Programme the relationship between governmental institutions and F&B farmers has not changed remarkably.

The central and local governments in Serbia were given a key role in the original implementation design of the F&B Programme. It was hoped that this could develop the level of relationships and interactions between the F&B farmers and the governmental institutions.

The survey data clearly show that the linkages between governmental institutions and F&B farmers did not improve remarkably during the period from 2012 to 2015. The farmer FGDs confirmed a large mistrust to the government, something that has been build up over a long term and seems to be the result of a neglecting of the south of Serbia for many years by the GoS. The farmer FGDs also underlined that the level and quality of the public extension services is very low and that only limited improvements have taken place during the period from 2012 to 2015, despite strong initial efforts by the F&B Programme to train public extension officers.

Table 17: Relations between F&B farmers and governmental institutions (%)

	Links with government institutions	Access to technical assistance
Got “much better” or “better”	7	20
Stayed the same	90	78
“Worsened” or “worsened a lot”	3	2

Source: Survey data collected by the evaluation team

After a very difficult start of cooperation with the MoA, the ministry has gradually become more responsive and involved in the discussions of F&B Programme implementation, mainly through its chairing role in the Steering Committee. For the Directorate for Agrarian Payment the process of handling the grant scheme has been a very important learning and preparation for IPARD grant management.

The difficulties by the F&B Programme to encourage organisation among the smaller F&B farmers (see Section 5.3) is partly a consequence of the GoS not being stimulating the conditions for better organisation of the farmers in the country. As an example, a new national law on cooperatives has for several years waited for codification. At the same time, small and newly started farming units will not become eligible for the IPARD grant scheme (expected to be launched in 2017). In this way the GoS is not enabling the conditions for the small F&B producers to enter the market.

The local municipalities and the local extension services never got the supporting role in the F&B Programme they were expected to play. This created a gap in the planned support to the farmers for accessing the grant scheme.

Forced by the circumstances, the F&B Programme instead decided to hire in a team of local consultants to play the extension role towards the F&B farmers. The work of these local consultants has undoubtedly been important to reach and support a large number of small F&B farmers through the programme. On the other hand, the sustainability of this model is doubtful.

The farmer FGDs revealed that farmers first seek advice from each other, or from friends and relatives with an agricultural background. Participants also seek for advisory services from agricultural engineers in agricultural input shops and distributors of the pesticides for agriculture, but the most common opinion is that these places are mostly driven by increase of sales and profits and usually do not give honest advice.

7 Opportunities and Challenges

The FGD farmers all agreed that after the start of the F&B programme in 2010, the situation in the F&B sector has improved significantly in terms of modernization of the equipment, establishment of the new fruit plantations, and increasing capacities of the processors. The opportunities in the export markets for F&B also look promising for Serbia.

Processors in the south of Serbia estimate that through the support from the F&B Programme the capacities for F&B production and processing have increased by 20-30% in terms of plantation expansion, new equipment and machinery, cold storage and drying facilities. That provides a good foundation for further development of the sector in the region.

Producers are also optimistic regarding the future of the F&B sector. They expect the sector to grow further, but they are also aware that changes have to happen also at the level of policy, knowing that uncontrolled establishment of plantations will lead to market overload with certain type of fruits. The producers also think that the new law on cooperatives needs to establish a more solid foundation for farmers to associate.

However, the F&B sector in Serbia still faces a number of challenges and obstacles for future F&B production increase and value chain development. These include:

Policy level:

- *Need for planning and implementation of an operational strategy for the F&B sector in Serbia that goes down to the regional levels.* The importance and opportunities of the sector are evident but an overview and plan for how to take advantage of the potentials for F&B production within the different regions of Serbia is urgently needed. This should include operational sector development plan with clear regional perspectives and targets for F&B production and capacities.
- *Need for a better organisation of the F&B sector and its key actors in Serbia.* The F&B sector in Serbia is very fragmented, also compared to other sectors within agriculture. This limits both the possibility to influence the political level at central and regional levels as well as to be able to more effectively utilize the opportunities for exporting.
- *The land ownership issue* in the region needs to be solved by the government in order to encourage further expansion of production capacity.
- *Water and irrigation constraints* need to be addressed in a systematic way and at policy level, before producers are forced to stop their production activities.
- There is a concern that the *IPARD grant* (expected to be launched in 2017 and to “take over” from the F&B Programme grants) may exclude a large number of relatively small and new (young) producers and processors in the F&B sector in Southern Serbia due to more strict requirements to land size and farming experience.

Sector level:

- *Models for aggregating farmers should be explored beyond associations and cooperatives.* There is currently an absence of *associations or cooperatives* that could help small producers to raise their competitiveness, but at the same time, no one has answer or clear vision of why or how would they can associate.
- *There is need for building trust between government institutions and the F&B market actors as well as between the actors themselves.* This would include more fixed agreements and commitments between the actors in the future.
- Despite the efforts and short-term achievements through the F&B Programme support, *there will still be a strong need for investments in production, processing and storage facilities in the F&B sector in Southern Serbia in the near future.* Not least investing in fresh fruit facilities and establishing of export linkages will require particular efforts.

8 Key Evaluation Findings and Lessons Learned

The overall finding from this evaluation is that the F&B Programme has managed to mitigate and deal effectively with serious assumptions/risk factors along the implementation of the programme and thereby achieve short-term production, income and employment results in line with or even above the expectations. However, from a sustainability perspective, it is a concern that the programme has not managed to introduce a solid base/model for local extension and advisory services to replace the current use of local consultant, contracted through the programme. The contracting of a network of local consultants was considered the best option at the time, but will not be a sustainable solution. Likewise, the limited progress made on associating/grouping of farmers, on strategic market development and the further need for trust building between farmers and government institutions as well as on ensuring access to finance for young and small farmers, constitute some important challenges for the medium to long-term impact from the programme interventions.

More specifically, the F&B Programme interventions have been successful within the following areas:

- *The F&B Programme has successfully targeted the key sector for economic development in South Serbia. The importance of income from F&B production for the farmers in the region is very high and there is a large potential for further expansion of the F&B production in the region.*
- *The short-term production and income effect from the F&B Programme interventions has been significant. In particular, the productions of raspberry, cherries and plums have been boosted during the period. The production increases are expected to continue at least over the coming years because of a massive planting of new plants on new (rented) land.*
- *The production increases in the F&B sector have generated significant employment, in particular part-time (seasonal) employment. The large majority of the new part-time jobs are female jobs.*
- *There are strong indications that the F&B Programme support has contributed to a significant increase in export volumes within an already important export sector in Serbia.*
- *Through perseverance, the F&B Programme has gradually achieved to increase the involvement of the MoA in planning and implementation of F&B Programme activities and to build up key capacities within governmental institutions. In particular the Directorate for Agrarian Payment has been through a valuable learning process before its future handling of IPARD grants.*
- *A momentum of increased confidence and opportunities has been established among thousands of small F&B producers in the region for commercial F&B production.*
- *More environmental-friendly production techniques (e.g. in relation to use of fertilizers and chemicals) have been adopted by the large majority of the supported F&B farmers*

in the region. The strong emphasis from the F&B programme on these aspects have contributed to these improvements together with a more proactive approach from input suppliers and some larger buyers in the region who have discovered the benefits from assisting the farmers more directly with advice and supplies.

The F&B Programme interventions have been less successful within the following areas:

- *Engagement of municipalities and local extension services in programme implementation.* Despite strong efforts from the F&B Programme to engage the extension services in all activities of the programme, a dysfunctional structure of the offices yielded limited results, which forced the F&B Programme to also use alternative methods to provide the necessary support to the beneficiaries. As a result, local consultants were hired in to fill in this gap. The relatively short time for implementation of F&B Programme, forced the programme to find a quick solution for reaching the programme targets. This has been effective in the short term, demonstrated through the grant process and increases in production, income and employment). It is however not seen as a sustainable solution and may create important gaps after completion of the F&B Programme. It should be mentioned though that in the case of the local consultants retained by the F&B Programme, the programme worked closely with each municipality in the hiring of the local consultants. In one case, the F&B programme reached agreement with a municipality to provide both office space and general support to the local consultant. In this way this consultant functioned as de facto municipal agricultural extension service professionals. In addition, it should also be noted that the F&B Programme has worked closely with local municipalities in the establishment of the F&B Information Centers (please see the Exit Strategy). Currently five Information Centers have been installed and are in full operation, and this fall an additional five will be installed in five municipalities.
- *Only few F&B farmer associations, cooperatives and producer groups have been established.* There has been a resistance among the farmers to engage in such group formation, partly due to the history of Serbia and the lack of support from the GoS to cooperatives.
- *Relationships and trust between F&B processors/producers in the south of Serbia and governmental institutions have not improved remarkably.* The farmers in the south of Serbia continue to have a very low trust with governmental institutions, despite the efforts from the F&B Programme to encourage more interaction, including through the F&B grant scheme.
- *Although relationships and cooperation between F&B buyers and sellers have improved, the bargaining power of the small F&B farmers has only increased to some smaller extent (getting better prices and deals).* The relationships between F&B buyers and sellers and the mechanisms for buying/selling of F&B production have improved over the programme period (e.g. cold store operators are providing various levels of support to the farmers). However, the small farmers are still to a large extent selling their F&B production to local collectors on receipt and in general their price bargaining position has not changed importantly. The limited capacity for cold storage and processing within some areas are also affecting the farmers bargaining position.

- *Linking of larger producers and processors to export markets have been done more from an individual than from a strategic perspective.* The increased export of fresh, frozen and processed F&B from the region has happened through individuals taking opportunities from participation in trade fairs in Europe, not because of a strategic (pull) approach to export markets.
- *The F&B programme has only partly succeeded in convincing farmers to produce for the fresh fruit market (export).* Partly a consequence as the bullet above and the reluctance of farmers to establish larger units (cooperatives) which would make it more feasible to implement the required standards and certification processes.
- *Access to finance is still a major challenge to small farmers.* Despite the F&B grant scheme opportunity, and the expansion of the LEDIB credit facility, operated in cooperation with the National Bank of Serbia, to all five districts supported by the F&B Programme, limited access to finance still constitute a major barrier for small farmers to further develop their business.

8.1 Lessons learned

The following key lessons can be drawn from the experience with the F&B Programme in Serbia, with a particular view to the value chain development perspectives:

- **Geographical focus:** *A focused and geographical delimited intervention area can be important for the local value chain actors to obtain trust and confidence in the value chain approach applied by the support interventions.*
- **Grant + capacity building:** *A mix of targeted financial support and complementary capacity building activities can be an effective mean to boost production levels in the short-term among small farmers.*
- **Capacity assessments:** *Large increases in local production levels within a relatively short timeframe will put pressure simultaneously on multiple capacity factors (land, cold storage, processing, water/soil etc.). It is therefore important that proper capacity assessments are carried out prior to such programme interventions.*
- **Programme design:** *When programme key targets (indicators) have focus on short-term boosting of production, income and employment figures, there is a risk that strategic market development interventions will receive less attention if programme implementation gets delayed.*
- **Market development interventions:** *Building of trust and radical changes in relationships and bargaining power between market actors, including with governmental institutions, may not be possible to achieve within a 4-5 year programme timeframe. Such interventions may need a medium- to long-term timeframe.*
- **Segmentation and organisation/association of farmers:** *Models for organising/ associating farmers to make them stronger market players may need to be explored beyond the concept of cooperatives and include a segmentation of farmers with more tailored interventions, considering that not all farmers are commercially oriented.*

- **Public sector involvement:** *A significant involvement and responsibility of governmental institutions in value chain development programme interventions may not be effective from an ownership and sustainability perspective. The approach and incentives from governments are often very different from those of the private sector and the issue of trust is critical. It may be more useful to provide targeted technical support to governments to support developing of enabling conditions for the value chains.*
- **Extension services:** *Access to competent agricultural advisory services are crucial for most farmers and alternative models to the public extension system may be needed, e.g. models building on partnerships and mutual incentives.*
- **Access to finance:** *Finance is crucial for value chain producers and processors to increase their production levels. Small farmers often don't have access through established financial systems, in which case alternatives will need to be established, also beyond the programme intervention period.*

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