



USAID
FROM THE AMERICAN PEOPLE

USAID Agribusiness Project
57 Internacionalnih Brigada
www.dai.com
11000 Belgrade
Serbia



Fresh Vegetable Value Chain

Commodity Action Plan

July 2, 2008

Serbia has a very long tradition in production of vegetables, very favorable climate conditions and good soil structure. The vegetable subsector (for both fresh consumption and processing) is one of the most important in Serbian agriculture and it shows growth trend in previous period, being one of the sub-sectors with the highest revenues. Areas planted with vegetables (closed environment and open field) have been increased over the past 15 years by 150%. Being a very labor intensive production, this sub-sector provides income from April to the end of October for more than 50,000 seasonal workers. Market demand for fresh vegetables has increased over the past 5 years by 200%. As a result of increased incomes of local population, demand for fresh vegetables on local market was also raised.

Dynamics/driving forces

The increasing number of supermarket chains in Serbia is changing the dynamic in vegetable marketing. It has opened additional market for local producers and processors, but also for customers. Although it has been hard to change customers' habits of buying on green markets, long working hours and more convenient shopping have been increasing the market share of large supermarkets. This is compounded by the government's decision to close wholesale markets by January 2009 and their role should be assumed by distribution/consolidation centers.

In regional trade, Serbia has a tradition in fresh vegetables production and export to ex-Yugoslav countries. Fresh vegetables are also being exported to CEFTA countries and more recently to the Russian Federation and Ukraine. Export of fresh vegetables to EU market is still difficult because of certification requirements and uncompetitive prices of Serbian products. However, Serbian market demand for fresh vegetable has also been rapidly increasing lately. At present, local producers are still protected by the Serbian government seasonal import tariffs. However, with accession of Serbia into the World Trade Organization, they will face open competition with the foreign products.

The main challenges for developing vegetable production are: increasing production and yields, extending the season (both earlier and later), reducing the post-harvest losses, increasing adequate storage capacities, certification (primarily product traceability-Global GAP), improved packaging, labeling and design, as well as upgraded distribution network.

Therefore, the forces driving the vegetable value chain in Serbia are:

- **Changing marketing patterns.** Increased role and concentration (fewer brands) of supermarkets in vegetable marketing, as well as increasing sophistication of private entrepreneurs (increased direct supply to the end markets, avoiding intermediaries), have been leading to disappearance of the conventional wholesale markets
- **Development of distribution/consolidation centers.** Will result in better promotion and market diversification for local products (taking the role of wholesale markets), offer contracted production under certain standards for both POs and small scale farmers, as well as sorting, washing, packaging and storing.
- **Certification requirements.** Increasing global demand for vegetables (specifically from Russia, Ukraine, CEFTA countries and EU) has imposed a need for certification in the area of product traceability – Global GAP. Only 5% of all vegetable producers know “something” about the Global Gap, while only 0.3 % are fully informed and aware of a need for implementation.
- **Change in consumption patterns.** Concern for healthy diets by increasing number of consumers has led to higher demand for various types of fresh vegetables.

Implications for Serbia

The sub-sector dynamics and driving forces described above have serious implications for Serbia that it must recognize to remain competitive. The Serbian vegetable sub-sector must be aware of this changing environment and implement necessary activities to meet the growing opportunities.

Serbian main market for fresh vegetable product at the present is still locally oriented. Russian market is a good opportunity for export of vegetables. Issues related to organized production and supply need to be resolved to meet quantity requirements and continuity of supply. This market is adopting the same standards as EU regarding certification, packaging and traceability. By better organization of individual vegetable producers and POs, as well as by creating direct linkages between producers and buyers in Russia, export of vegetable products can boost up quickly. Also, improved small retail packaging, along with better post harvest handling practices, will provide additional profit.

Therefore, to grow the competitiveness of its vegetable industry, Serbia must address the following key areas:

- **Increased revenues on fresh and storable vegetable crops.** Focus will be on onion, carrot, potato, cabbage, working with four largest POs (they produce more than 60% of total root crop vegetables in Serbia).
- **Improved packaging and storing.** Post-harvest handling, packaging and storage have become significant factors for extension of selling season and making more profits.
- **Extension of season.** By implementing new varieties, production period can be extended up to 8 weeks that will also lead to import substitution to a certain extent.

- **New production technology.** Implementation of modern technology and specializing producers for certain types of vegetables will result in increased yields and revenues. This process will allow Serbian producers to become more competitive on the market.
- **Reduction of post-harvest losses.** New techniques will lead to better preservation of products and increased revenues. Specifically related to storable vegetables (mainly root crops) where the losses are 20 - 40% (increased quantities by 4,000 – 8,000 tons annually).

Objectives

Considering the Agribusiness project goals to increase (export) sales, create jobs and enhance ABDS provision, the focus of the vegetable sub-sector is on boosting revenues on storable vegetables (onion carrot, potato, cabbage, parsley), increasing yields (new varieties, modern growing techniques), introducing Global Gap certification programs and cutting the post harvest handling and storage losses. Vegetable production is one of the most labor intensive productions in agriculture so it opens further possibilities for employment (mainly short term and seasonal). This production is 5-8 times more profitable than field crops, so on a quite small plots of land it is possible to provide high profits. Incomes of vegetable producers can be significantly increased by applying modern growing and farm management techniques, as well as increasing marketing and management skills of managers.

Knowing that Serbia has yet to develop its vegetable production and marketing capacities, domestic market will be targeted for the period of initial two years of the project implementation. During that period, the industry stakeholders will be supported to establish production of adequate varieties and develop products (retail-packed fresh vegetables), as well as to implement efficient production, post-harvest and logistics technologies, that will result in steady local sales of fresh products to supermarkets.

Complementary goals for that period include development of effective marketing strategies and implementation of needed international standards (Global GAP and HACCP). All these activities will also include various ABDS providers, who will work with the stakeholders and develop their own capacities through training and know-how exchange programs. From year three, the Project will re-focus on assisting successful businesses to implement their marketing strategies and expand fresh vegetables sales from domestic to foreign markets. Through all those stages of program implementation, the Project will use producers/processors' associations and existing ABDS providers as leverage points to maximize impacts and assure sustainability.

Activities that will lead to accomplishment of the above are as follows:

1. Implement new production technologies to increase yields
2. Plant new vegetable varieties to extend growing season
3. Introduce fresh vegetable certification at individual and group level to enable export
4. Implement post harvest handling and storing techniques to increase revenues
5. Introduce proper packaging, labeling and design to add value to products

With these achievements, the expected results are:

- Increase export sales
 - Sales to CEFTA – (increased by 20%)
 - Sales to EU – (increased by 15%)

- Other countries – (increased by 20 %)

Total expected export sales revenues \$20 to \$50 million annually

- Increase sales at domestic market by 30%
 - Import substitution
 - Improved distribution networks
 - Increased revenues of local producers

Strategy

The main strategy concept is based on creation of four clusters, with their leaders being the four most developed vegetable producing cooperatives in Serbia. This will include development and implementation of modern production, harvesting, storage and handling methods, introduction of quality management standards, use of latest marketing approaches, etc. The project will:

- Focus on root crops, fresh and storable
- Concentrate on four large cooperatives (points of leverage), initially
 - Roll out experience to other crops (service providing for the members)
 - Develop a model according to experience with above mentioned groups
- Use these cooperatives as model for other POs in their region concerning information on production, plant protection, trends, markets, prices
- Use/build local ABDS service provider capacity to deliver services
- Extension of production by implementation of new varieties (extend supply calendar)
- Initiate production of new products that are imported at this moment (e.g. sweet potato)
- Coordinate closely with donors with similar agendas (leveraging our comparative advantage e.g. SIPPO, GTZ, SECO...)
- Cooperate with local government programs for the support of implementation of standards
- Use private industry providers whenever possible
- Develop marketing capacity

Activities

Assistance to the vegetable sub-sector will be consisted of intervention at several levels which will be implemented according to their priority.

1. Assistance on distribution/consolidation centers preparatory works
2. Develop service cooperative model to stimulate technology adoption & linkages, and increase functionality
3. Quality/Standards management (traceability) – Global GAP
4. Export market development
5. Industry awareness tours
6. Introduction of new production technologies/varieties
7. Introduction and implementation of post harvest handling and storing techniques
8. Service provider development

1) Consolidation/Distribution Centers

Forward contracting with supermarkets and vegetable processors makes it possible to raise “marketable yields” and boost prices by better quality and size/quality sorting, as demanded by the market. The Project will build on and support the already on-going trend of improvements in the logistical infrastructure (consolidation/distribution centers and cool chain technology) to preserve product quality and reduce distribution costs along the supply chains to the markets.

The consolidation/distribution centers with modern technology for fresh vegetable grading, sorting, and packing (calibrators, floating systems, packaging, etc.) will assume the role of traditional wholesale markets whose activities have been completely in a grey economy without control of any institution. Additional value of these centers will be that individual vegetable producers and cooperatives will be able to sell/deliver their products and they will be washed/packed and prepared for final buyer in distribution centre.

Preparatory works regarding these centers have already been initiated, but since this type of facilities and their services is completely new in Serbia, assistance of the Agribusiness project is needed on several levels. These centers will have multifunctional role in organization of production, purchase of regionally produced products, classifying, washing, packing, storing and finally distribution. Using this model, it will be possible to extend quality service and assistance and secure market for local producers, regardless of their size.

Activities and assistance will be given by the Agribusiness Project team according to their specialties, as well as through ex-pat and local consultants, organization of various training courses and study tours.

- Development of the distribution centers being put in place by four large cooperatives
 - Layout of the facilities using latest concepts
 - Application of efficient storage methodology
 - Identification of packaging technology
 - Management training
 - Facilitating market linkages
 - Organization and internal governance training
 - Integration of supply channels and logistics

2) Service Cooperative

Organized vegetable production under cooperative organization represents a model which leads to sector development on many levels. Unfortunately, role of cooperatives is not well known or applied among existing cooperatives. Often managed by good producers, but not by trained and skilled managers, the coops’ purpose and efficiency has been insignificant. To meet needs of the producers, it is necessary to increase efficiency of POs and help them become service type of cooperatives. Assistance on these issues will be given according to the priorities and current level of development.

- Enhance service supply through big cooperatives
- Develop database of members, production quantities and types of services
- Training of cooperative members (through ABDS providers)
 - Production
 - Farm management skills
 - Postharvest handling

- Commercial access to inputs/technologies
- Management training
- Cooperative audit training
- Information dissemination

3) Global GAP

Lack of Global GAP standardization presents one of the main obstacles for further development of vegetable sub-sector. Recent polls among Serbian vegetable producers showed that 5% of producers have heard about Global GAP, but they don't recognize necessity, while only 0.3 % knew what it is and why it is so important for further sub-sector development. Awareness campaign has never been properly conducted at the country level and it has been presented only to several service provider organizations. Existing institutions involved in knowledge and information transfer do not have potential/capacity to present it to significant number of producers.

Implementation of this traceability standard is not very expensive, but the process is time-consuming and it requires application of about 250 steps to meet the regulations. Government created a program of subsidies on both regional and country levels, but it has not been promoted very well using media (radio, television, press) or other resources. This could be improved by using private agricultural TV shows that are being broadcast on numerous regional and local TV stations (more than 40), so whole Serbia can be covered using their network.

- Awareness and introduction programs (in conjunction with other donors)
 - Seminars, national media (radio, television, press)
 - Promotional materials (soil and substrate management, irrigation/fertilization, harvesting, product handling and storage)
 - Seminars with participation of buyers who will emphasize the necessity of certification

As a first step, four introductory training workshops are planned with participation of 400-500 farmers only from four largest cooperatives and several big individual POs from Vojvodina. The same model will be replicated later in other areas in Serbia with organized intensive vegetable production.

- Work with the Global GAP service providers
 - Identify service providers (QMS consulting companies)
 - Identify auditors to perform necessary system audits
 - Identify certification companies (with national accreditation)
- Focus on four large cooperatives, their members and POs
 - Certify four cooperatives as “groups of individual members”
 - Certify 20 representative members of each cooperative (total 80 farmers)
 - Certify six producer groups (level to be determined)
- Link to the national and regional programs for funding of Global GAP certification (Executive Council of Vojvodina, Ministry of Agriculture, Chamber of Commerce)

4) Export market development

- Develop producers' marketing capacities for domestic and export markets
 - Marketing Training/educational programs
 - Improve packaging designs and introduce new materials
 - Trade mark/brand development assistance

- Database of marketing service providers and networking
- Trade fairs in country and abroad
- Business to business meetings to create linkages with buyers
- Business delegations and inward missions

5) Industry awareness tours

- Facilitate study tours that would be applicable to all key stakeholders
- Organize demonstration centers visits (one of the most effective models of knowledge transfer)

6) Introduction of new production technologies/varieties

- Organize training on modern growing techniques (provided by local ABDS providers) for certain types of vegetables will result in increased yields and revenues.
- Facilitate introduction to new vegetable varieties that may extend the production period by 8 weeks that will also lead to import substitution due to significant marketing season extension.

7) Post harvest handling

As integral part of Global GAP standards, producers need to be introduced to traceability issues and post harvest handling and storage techniques. These techniques have not been applied properly by producers, and also there has been no assistance given on this subject by local service providers.

This assistance will be extended on two levels:

- Post harvest handling and storing for producers
 - Training for the producers (by local trainers)
 - Assistance by local ABDS providers during implementation period
 - Study tours for producers
- Post harvest handling and storing techniques for local ABDS providers
 - Identify local providers
 - Training of trainers (by international STTA)

8) Service Provider Development

Existing service providing organizations, including various agricultural institutions and extension service centers, do not meet producers' needs for assistance. Several recently established service providers need further organizational development to enhance their capacities for establishing effective relations and linkages with producers.

- Identify service providers
- Introduce financing models
- Train service providers (e.g. post harvest handling, Global Gap, production in closed environment, farm management)
- Facilitate and develop linkages (cooperation) between service providers and producers
- Present services offered by ABDS to the producers

COMMODITY ACTION PLAN CHART

ACTIVITIES	STAKEHOLDERS	TIME TABLE
Vegetable producers and processors		
Production technology	Producers, STTA, ABDS Prov.	Year 1,2,3
Traceability issues	Producers, STTA, ABDS Prov.	Year 1,2,
Global Gap introduction/certification	Producers, STTA, ABDS Prov.	Year 1,2,3
Study tours (neighboring countries with intensive production, e.g. Hungary)	Local Institutions, EU organizations, Chambers of Commerce	Year 2,3,4
Quality and packaging requirements for export markets	STTA, ABDS Providers	Year 1,2,3
Market linkages and promotion	Marketing team	Year 1-5
Strengthening of POs and their functionality	Producers Group team, STTA, ABDS Providers,	Year 1-5
Funding facilitation	Governments and EU funds/ other projects	Year 1-5
Identification of processed products markets and promotion	Marketing team	Year 1-5
Build National Processors' Association	STTA, ABDS Providers	Year 2
Service Provider Development		
Training of Trainers/Technical Capacity	STTA, ABDS Providers	Year 2,3
Business skills and linking with beneficiaries	STTA, ABDS Providers	Year 2,3,4
Database of service providers and networking		Year 1
Commercial Vegetable Farming Promotion		
Farm management trainings	STTA, ABDS Providers	Year 1,2
Business planning and finance facilitation	VDF, banks, insurance companies, chambers of commerce,	Year 1-5
Awareness study tours in country and abroad	local/regional institutions,	Year 2-4
Demonstration fields	Local/regional institutions, EU organization	Year 1-5
Global Gap	Donors and local/regional institutions	Year 1-5
Project Marketing Activity		
Develop media for project activity mainly regarding transfer of knowledge and marketing of Serbian products	Media centers, Private agricultural TV shows,	Year 1-5
Cooperation with other programs in developing vegetable sector	EU and other countries programs, local/regional institutions,	Year 1-5

Fresh/Storable Root Crop Vegetable Value Chain Map

