



Republic of Serbia
City of Nis
MAYOR

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PROJECT PROPOSAL

Project Title: Development of Fruit Growing in Nis Region

Prepared By: Nis Incubator Center

Sector: Improvement of Fruit Growing in the Region

Project Duration: 60 months

Introduction

Natural preconditions for the development of fruit growing in Nis region are enormous and they are reflected in the fact that even the half-intensive systems of fruit growing achieve good harvest. The production of fruits in tons compared with the average production in other districts of Serbia is given in the table below (2007-2009):

District	Nisava District	Regional Average	Fluctuation in %
Sour Cherry	10,507.67	3,673.07	186.07
Strawberry	2,460.67	1,211.06	103.18
Melon and Watermelon	15,316.00	9,279.01	65.06
Cherry	1,611.67	992.50	62.38
Walnut	1,321.33	946.13	39.66
Quince	629.33	518.25	21.43
Pear	2,622.67	2,408.39	8.90
Apricot	561.33	656.90	-14.55
Plum	21,240.00	25,862.21	-17.87
Peach	1,028.00	1,613.78	-36.30
Blackberry	690.33	1,289.50	-46.47
Apple	5,211.00	9,778.40	-46.71
Raspberry	531.67	3,418.51	-84.45

Fruit production in the region is mostly extensive and largely intended for consumption on the farm, although, in recent years, there is a trend of growing large commercial orchards. The fruit sector in Nis region is dominated by plums, apples, sour cherries (in the region of Oblacina) and strawberry (Senga Sengana). In recent years, certainly the most significant is the commercial sour cherry production, primarily due to high prices and export potential. Significant orchards of apricots are grown as well.

The Nisava District Rural Development Plan for period 2012-2021 in its General Objective 1.3 states that the general objective is having developed and modern processing and storage capacities. As part of this goal the specific objectives are: supporting opening of new processing and storage capacities – support to the investments (Activity: supporting the opening of cooling storages and facilities for the purchase of fruits and grapes) and supporting opening of cooling and drying facilities for fruits, vegetables and berries (Activities : supporting work of export processing capacities, raising the level of knowledge about the domestic and international markets and the formation of marketing associations).

In Nis 2.500 ha are under orchards out of which 500 ha are contemporary plantation.

The early bearing plum of Cacak region is the prevalent sort of the plum as well as the sort called stenlej. The largest portion goes to processing.

Apricots are grown on 50 ha. The prevailing sort is DM 1, indigenously created and selected. Also other popular sorts are: Roksana, Aurora, NS-4 and NS-6.

Sour cherry is gradually giving way to more profitable fruits. The sort of sour cherry typical for Oblacina region is grown the most.

Peaches are grown on 120 ha as contemporary plantations. The growing of peach is economically viable and the peaches are grown more often.

Cherry is grown on 30 ha. The prevailing sorts are Burlat, Van, Bing, Gernerzdorfska, Hadelfingenska and Lambert.

Apples are grown on about 40 ha. The most common sort is called ajdared.

City of Nis and the line ministry take the following measures to overcome the situation in the fruit growing sector:

- Investing in the primary production and processing
- Education of experts and farmers, through lectures, seminars, study visits and workshops
- Help with the purchase of seeds
- Long term lease of state-owned land
- Help with the organizing of the producers and other measures.

The result is a continuous increase in the area under the new plantings with a quality assortment and better quality of the products.

Short Description of the Current Situation and the Needs for This Project

The fruit production faces the problems in all parts of the value chain, from production and agricultural logistics to processing and market placement. Potential problems are reflected in the small number of cooling storage facilities and processing capacities, lack of quality standards and the small number of registered producers of planting materials.

Various factors indicate the need to strengthen this sector. One of these factors includes the need for new investments in crops and farming techniques. Testing of new varieties of certified fruit and new production techniques is required for the markets of fresh and processed fruits. Many households are engaged in the fruit sector, particularly in the

production of plums and apples and most fruits are exported fresh from Serbia, although it is known that a large potential represents dried products and other products of these fruits.

Without intervention and improving conditions in terms of yield, quality, productivity, organization and marketing, there is a concern for a significant reduction in the production and export of fruits in the near future with serious negative effects on income and employment, particularly in Nis region. Most fruits in Nis are varieties suitable for processing and not only for exporting fresh. Fruit production in Nis region is done on small land parcels with old fruit sorts that are prevalent in this production. Essential for the development and improvement of these areas is the use of certified materials for raising orchards of high quality varieties.

Project Description

City of Nis wants to expand capacities in terms of fruit production. Therefore, there is an intention to establish Green Zone on state – owned agricultural land planted with apple, apricot and sour cherry with the use of modern technology, agro - technical measures, the modern system of cultivation which contains elements of anti-hail protection systems for defense against frost, with weather station, as well as elements of irrigation and nutrition. Based on laboratory tests of the chemical properties it was found that the quality of land fits the growing of the planned sorts of fruits.

The project affects the competitiveness in the fruit sector in Nis region, expansion of production and the creation of conditions for bigger investments in the stated sector, which is crucial for the economic empowerment of villages and poverty alleviation in rural areas. The project contributes to the development of public-private partnerships, to the increasing of the area under fruit plantations, to the development of processing capacity by building plants for drying fruits or production of fruit concentrate, to the developing storage facilities by construction of cooling capacities, to the education of the fruit producers and to the joint participation in domestic and international markets. The project is practically focused on two main components: an increase in the area under fruit plantation and establishment of processing and storage facilities.

Project Objectives

General Objective:

The objective of the project is to establish long-term partnerships in the agro-business industry, enhancing competitiveness and improving the conditions for increased direct foreign investments in the production and processing of fruit.

Specific Objectives:

1. Development of sustainable production plan in the sector of fruit growing by investing in new orchards of apple, apricots and sour cherries on the state-owned and privately owned land
2. Constructing the facilities for fruit keeping and processing
3. Creating new jobs and decreasing the migration from the rural areas

4. Increasing the export of fresh and processed fruits.

Target Group

Direct Target Group:

- Village residents
- Registered agricultural households
- Unemployed
- SMEs dealing with the processing and fruit trade
- Local self-government

Indirect Target Group: Citizens in the South and East of Serbia

Activities

1. Forming Fruit Plantations

City of Nis wants to expand the capacities in terms of fruit production. Therefore, there is an intention to establish Green Zone on the state-owned agricultural land with the apple orchards covering the area of 20ha with 90 000 trees, apricot orchards covering the area of 30ha with 26 500 trees and sour cherry orchards covering the area of 20ha with 26 500 trees with the application of modern technology, agro - technical measures, the modern system of heating, which contains elements of anti-hail protection, defense systems from frost, the weather station, as well as elements of irrigation and nutrition. In relation to the environmental aspect, the production of fruit sorts - apples, apricots and sour cherries does not harm the environment. This investment does not change the conditions in the environment that would degrade the ecosystem. Total protection measures that will be used in accordance with applicable regulations, i.e., the protection measures that are common in this production shall be implemented. Based on laboratory tests of the chemical properties it was found that the quality of land fit the growing of the planned fruits.

2. Construction of the Facilities for Fruit Keeping and Processing

The investment into ULO (Ultra Low Oxygen) cooling storage is envisaged for the fruit keeping sector and the investment into processing capacities for the production of clear fruit concentrate and drying facilities is planned for fruit processing sector.

a) ULO Cooling Storage

In order to achieve optimum prices of fruits and vegetables it is needed to provide conditions that preserve the quality of the product that will be placed on the market and that can be only achieved in cooling storages with controlled atmosphere. City of Nis plans, in partnership with a potential investor, to build controlled-atmosphere cooling storage units with capacity of 3000 tons.

The infrastructure of the cooling facilities will consist of:

- access and internal roads,

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- main and support facilities which may consist of: space for receiving and preparation of raw materials, cooling chambers, mechanical rooms, room for packing, sanitary facilities, etc.;
 - transport and communications infrastructure,
 - water supply,
 - electricity supply,
 - storage for liquid or solid fuels to heat the interior common areas,
 - system for waste water: sanitation and waste waters and the waters from the process of preparation for storage and other infrastructure.

Preparatory activity for the construction of cooling storage is the prepared business plan with investment and technical documentation, as well as studies that will enable obtaining approval for the location according to the current legislation. It is also important, before the commencement of works, to carry out testing of soil mechanics and to evaluate the location in terms of being able to provide water and electricity, as well as in terms of the existence and quality of the road network. Air, water and soil pollutants as well as farm with livestock breeding should not surround the cooling storage facility.

b) Plant for Clear Concentrate Production

Production of clear fruit concentrates will be based on the processing of stone and pome fruit (apple, apricot and sour cherry), and if necessary, of berries (raspberries, blackberries, strawberries, grapes, blueberries). The process will be carried out by using well known and worldwide applied technological methods such as membrane ultrafiltration technique - UF and microfiltration - MF in the processing of juice or reverse osmosis - RO in the process of concentrating the half-concentrate. The applied membrane processes, in addition to the positive influence on the quality of the concentrate, significantly affect the economics of production. Moreover, for the filling and storage of the concentrate, the station for the aseptic filling will be used where the prepared concentrate is kept under aseptic conditions, filled in sterile bags or other forms of different sizes. In addition to the clear concentrate, specially designed steaming plants will be used in the production process in order to concentrate the mash to mushy concentrate. Fresh and healthy fruits that are fully technologically mature will be processed by modern technological process into basic juices.

Modern production line for fruit concentrate with the capacity of 30 t/h would consist of two strainers, separators, vacuum filters, two devices for microfiltration and three steaming plants out of which one is with low temperature and allows access to the highest quality fruit.

c) Tunnel Dryer Plant

Dried fruit is highly valued in the market at home and abroad. For this reason, the tunnel dryers of large capacities should be built in order to submit as large quantities of fruits as possible to the drying process. Beside dryers, the storage space for fresh fruit, dried fruit, packaging machines and other necessary infrastructure will be under the same roof.

Expected Project Results

- At least 80 ha planted with certified high quality seedling of apple, apricots and sour cherries
- ULO cooling storage built
- Clear concentrate production plant built
- Tunnel dryer plant built
- 200 permanent employees and 500 seasonal workers employed
- Increased export of processed fruit from the region
- Increased competitiveness in fruit production
- Branded products made of fruits from the region

Gender Equality

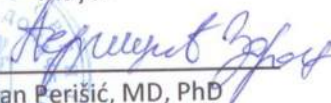
All project activities are based on the principle of equality and non-discrimination. Gender equality is present in all aspects of project implementation.

Needed Funds:

1. Forming Fruit Plantation	1.000.000 €
2. ULO Cooling Storage	2.500.000 €
3. Plant for Clear Concentrate Production	1.300.000 €
4. Tunnel Dry Plant	1.000.000 €
TOTAL:	5.800.000 €

Note:

The project will be implemented through the strategic partnership between the City of Nis and potential investors. New strategic partnership can be realized for each of the planned activities.

Mayor

Zoran Perišić, MD, PhD

