SYUNIK INVESTMENT FORUM

11-13 November, 2013

Syunik Investment Guide

Regional Administration of the Syunik Marz

OSCE Organization for Security and Co-operation in Europe **Office in Yerevan**

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INTRODUCTION

Syunik marz is of great significance for the economy of the Republic of Armenia and provides the most important foundations of its development and stable progress. When considering the vision of regional development it is important to admit that Syunik region is specific and this guide of Economic Development Forum has been developed based on those peculiarities and in the light that Syunik region needs to effectively respond to the economical, social and ecological opportunities and challenges typical of the region.

In general, the balanced and effective development of the regions nationwide is considered to be an essential cornerstone of economic progress, and from this perspective fundamental solution of the economic and social problems of Syunik region plays an essential role for the Republic of Armenia also in political and strategic terms. It has a direct impact on the income of the region's population, employment, investments, ecological balance, working conditions of the employees, and after all, the welfare of the regional population. Promotion of economic development, encouragement of investments and implementation of new business plans will have a multiplier effect also on the population of surrounding regions and the economy of the country in general.

The organizers have thoroughly studied, analyzed and identified the development opportunities of the region, comprehensively discussed and arrived at a general conclusion that in the framework of that forum focusing attention on the following eight fields is considered most realistic and effective, where *the greatest potential and capabilities for full demonstration of positive economic effect and system-creating components* are available.

The organizers are also confident that this guide to be presented in the framework of the Economic Development and Investment Forum of Syunik region will further the development of collaborative approaches between potential investors and the region and the promotion of numerous regional development initiatives, thereby combining realization of various mutually beneficial initiatives between the state and the private sector.

This guide provides the investors with practical milestones on how and in which directions it is possible to integrate the pivotal determinants of an investment project in regional development plans and initiatives. This guide has been developed first of all to assist the regional administration in the identification of the priorities of building strong local economy, as well as in the promotion and improvement of the process of decision-making within the development of the region's economy by means of making use of evidence-based analyses.

A number of participants are involved in the regional development processes including the Government of the Republic of Armenia represented by Syunik Regional Administration, local self-governmental bodies, private sector, various international and community institutions. The

guide has been made to support the representatives of both local and foreign investors and donor organizations to have real involvement in the realization of the regional development strategy and expansion of economic opportunities by means of combined perception of existing problems, possibilities and challenges and application of the key decisive factors aimed at ensuring growth. It is noteworthy that this guide admits that better solutions and opportunities may be found in the future when collaboration around the development will become a reality; and that is the reason that it is presented as the first wave of a pilot project with the expectation of its further continuous improvement and amendment. We are confident that it will provide you with necessary information, ideas and milestones which will serve as a basis for the effective implementation of the economic and social development initiatives of Syunik region.

The following most important vectors lie in the foundation of development of pilot projects to be presented in the framework of the forum as pivotal pillars for the integrated and comprehensive development of the region.

Human capital	Social and ecological factors
Enhancement of skills and employment of the population • Education and training • Capacity building of labor force	**Social and ecological stability** • Development of agriculture • Development of urban infrastructures • Social and ecological initiatives • Development of urban services
Access to markets	**Comparative advantages and business competitiveness**
Capacity building of the region • Branding and promotion of regional production • Fundraising and mobilization of investments and funds • Promotion of entrepreneurship	**Social-ecological stability** • Fundraising and management of regional projects **Organizational and managerial capacity building** • Deveopment of entrepreneurship and SMEs • Technical support and educational projects • Encouragement of technologies and innovation

Currently solution of the following economic and social-ecological problems is of key priority in Syunik region:

- Diversification of regional economy and provision of stable growth
- Growth of population income
- Growth of population employment and development of business abilities
- Diversified development of branches of industry
- Increase of the level of marketability of agricultural produce and growth of sales volume

- Improvement of the ecological situation of the region
- Development of regional and community infrastructures
- Justified expansion of possibilities and authorities of the local self-governmental bodies

As it has already been mentioned, generally the directions specified in the guide are pilot and include priority directions identified regionwide which are related mainly to the provision of stable economic growth and problems related to the development of human capital assets. Based on the targets of this forum the following priority areas of economy of Syunik region have been specified the advanced development of which will essentially contribute to the economic, social-ecological development of the region and enhancement of human resource capacities:

- Development of SME and private sector
- Development of agriculture
- Effective solution of ecological problems
- Development of tourism
- Construction and improvement of regional and community infrastructures

In the framework of this forum there are a number of beneficiaries and participants who can have an essential impact on the general development possibilities of Syunik region. From this perspective the guide aims also at supporting any activity contributing to all kinds of proactive initiatives, planning of new projects and revival of business environment, including joint discussions of problems, and strengthening of multifaceted cooperation between the public and private sectors. The abovementioned main target areas are a basis for development prospects in Syunik region and attraction of investments and donors for the realization of necessary initiatives and new projects in the framework of the forum.

It is particularly noteworthy that in almost all investment projects there is tangible participation of the state the main and primary purpose of which is provision of support to the other parties of the projects and giving most important impulses to the market. State participation also essentially enhances the possibilities of successful implementationof the project creating big opportunities of collaboration in the future for the effective implementation of other system-creating projects.

In other words, the most essential in the case of support to investment projects is not the amount of share of state/government investments, but the impulse that the state gives to investors with that step, i.e. its – the state's – readiness to support their similar initiatives. The role of the state in those projects will enhance the role and significance of the project in the process of encouraging and finding investors.

It is also worth mentioning that the projects will have more success if they are in close collaboration with international and local insitutions engaged in the given area. Thus, in the framework of the projects included in the guide, depending on their direction and strategic goals,

the following international organizations and local partners can play a serious role in the future success of the endeavure:

- Ministry of Agriculture
- Agrarian Peasant's Union NGO
- Armenian Harvest Promotion Center (AHPC) CJSC
- Shen NGO
- IFAD
- CARD (export consultation and financial support)
- Union of Manufacturers and Businessmen (Employers) of Armenia (in terms of export of products)
- Greenhouse Association NGO
- Chamber of Commerce and Industry (export and certification)

World Vision international charity organization, etc.

Syunik region is situated in the south of the Republic of Armenia. This region is the richest with minerals. Most important of those are ores of nonferrous (copper, molybdenum, zink, etc.) and precious (gold, silver) metals, as well as a whole range of non-metalliferous minerals (construction and tile stones, raw basaltic materials, reserves of limestone and petroliferous shale, marble, granite, pearlite and diatomites.

Syunik region, while occupying an important strategic and geopolitical position, possessing rich natural reserves, big production potential and being one of the largest administrative and economic regions of the Republic of Armenia, at the same time remains relatively sparsely populated and poorly realized from economic standpoint, which is mostly due to the long distance from the capital city and lack of alternative means of transportation. Branches of industry and agriculture dominate in the total volume of the region's economy.

In the total volume of the respective branches of the RoA economy specific weights of the main sectors of the region economy are as follows:

- Industry - 18.5%,
- Agriculture - 5.7%,
- Construction - 7%,
- Retail trade - 1%,
- Services - 1%.

The main branch of regional industry is mine industry and electric power production. A dominant part of the produced electric power belongs to Vorotan cascade of hydroelectric power plant. Agriculture is mostly specialized in crop husbandry (particularly production of grain crops and potato) and animal husbandry (particularly cattle-breeding).

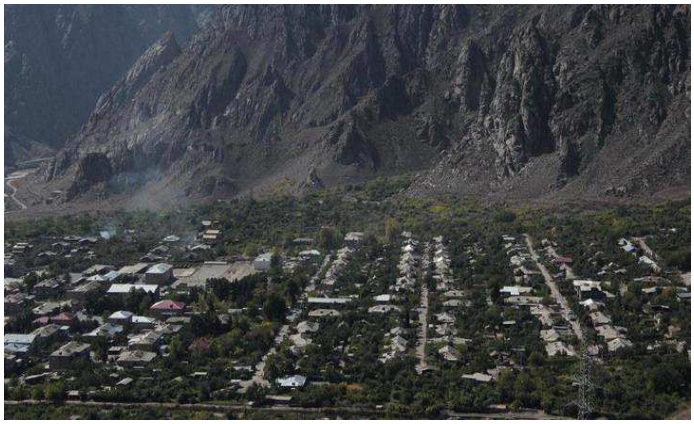
Freight and passenger transportation in the region is carried out by auto- and electric transport (cableway). The highway linking Armenia with Iran crosses the territory of the region which has an essential role in the development of the region's economy. In 2008 Kapan-Tsav-Meghri highway of strategic importance was put into operation which, as an alternative to Kapan-Kajaran-Meghri interstate road, exceeds the latter with its technical indicators.

The city of **Kapan** (45.5 thsd. inhabitants) is one of the major industrial cities of Armenia and is situated at a distance of 301 km from Yerevan. The leading branch of economy is industry with mine industry dominating, of which extraction of nonferrous and a precious metal is the most central. Manufacturing industry (foodstuff, apparel, non-mineral construction materials, aluminium and metal-plastic goods, wood processing, production of furniture and equipment) and production of electric power also have a certain specific weight.

The town of **Kajaran** (8.1 thsd. inhabitants, situated at a distance of 327 km from Yerevan) is the center of nonferrous metal industry of the RA on the basis of the operation of a rare deposit of strong raw material base of copper and molybdenum. The leading branch of economy is mine industry. Manufacturing industry also has its share in the economy of the town where production of food and ready-made metal products is particularly notable.

The main branch of economy of the town of **Goris** (23.1 thsd. inhabitants, situated at a distance of 236 km from Yerevan) is industry. Production of electric power, production of foodstuff, textile products, apparel, aluminium and metal-plastic goods, wood processing and wood products, furniture and electrical equipment are particularly developed.

The industry, especially the food industry is the mainly developed branch of the city **Meghri** (4.8 thsd inhabitatnts, situated at distance of 376 km from Yerevan) is one of the southern cities of Syunik region. It is separated from the Iran by the Arax River and State Border. Here, there are bread, cheese, and canned food production, as well as the production of unique wine. One of the main sectors of Megri's economy is the gardening.



The small industrial city **Agarak** (4.8 thsd inhabitatnts, situated at a distance of 410 km from Yerevan) has huge quantity of natural resource materials, from which the most prevailing is the copper molybdenum. The dominant sectors of industry are mining and agricultural industries. The majority of population works in the "Agarak copper-molybdenum factory".

The city **Sisian** (7.0 inhabitatnts, situated at a distance of distance 217 km from Yerevan) is located around 6-7 km far from Yerevan-Artsakh, Yerevan-Iran interstate freeway. The main sector of economy is the poorly developed agricultural industry. There are various local residencies of many international organizations. In the city Sisian there is a "Business Center" supporting local business initiatives and developments.

1. ORGANIZATION OF PURVEYANCE OF RAW MATERIALS FOR WINE, DISTILLED FRUIT AND BERRY VODKAS

The project of "Organization of purveyance of raw materials for wine, distilled fruit and berry vodkas" proposes establishment of centers for the purveyance of raw materials for wine, as well as for the production of local distilled fruit and berry vodkas in the below-mentioned subregions of Syunik region:

Table 1.1

Region	Community
Goris	Khndzoresk, Khnatsakh, Shinuhayr, t. Goris
Kapan	c. Kapan
Meghri	Shvanidzor, Agarak, Lehvaz

According to preliminary estimates a standard purveyance point must consist of 2 units.

The first is the purveyance workshop of raw materials of wine which will include:

- Site for purveyance of raw material, where the raw material will be received, sorted, washed and dried,
- Crushing-pressing unit, where devices turning the primary raw material into pulp and must will be installed,
- Distillation and fermentation units, which will be equipped with high-capacity tanks and equipment for pulp and must processing and fermentation.

The second is the workshop of local vodka production, which will include:

- Raw material site, where the raw material will be received, sorted, and dried,
- Crushing-pressing unit, where devices which crush and break the primary raw material and turn it into a special mix will be installed,
- Unit of ethanol production,where special tanks and "heat-exchangers" will be installed, by means of which, through multiple evaporation and condensation, cleared alcohol will be produced from which the final product will be released,
- Unit of filtration and production of final product.

With regard to the implementation of this investment project a number of marketing components require attention, most important of which are the design and promotion of a relevant brand, and provision of access to corresponding domestic and foreign markets. As per preliminary estimates investment of a total of around 960 million Armenian Drams will be required for the implementation of this pilot project.

Table 1.2

Fruit/berry	Purveyance price (AMD/1 kg)	Volumes to be purveyed (ton)
Grapes	150-180	840
Cornellian cherries	150-200	600-700
Common elderberry	200-220	70-80
Mulberry	100-120	2800-3000
Plum	100-120	470

Taking into consideration the volumes of the potential of purveyed raw material, the volumes of gross product of purveyance points are presented in the table below:

Table 1.3

Product	Unit of measure	Amount	Unit Price (AMD)	Total Price (AMD)
Wine raw material	liter	562800	350	196980000
Cornellian cherry vodka	0,5-l bottle	37143	2000	74286000
Mulberry vodka	0,5-l bottle	1450000	1500	2175000000
Common elderberry vodka	0,5-l bottle	37500	3000	112500000
Plum vodka	0,5-l bottle	235000	1500	352500000
TOTAL				2911266000

MARKET AND CUSTOMERS

The main market of purveyance points for the sales of raw materials for wine is the local market, and the customers will be the companies engaged in the production of wines in the local market. Researches show that in the structure of domestic consumption of beverages, consumption of vodka is highly dominating – 63-65%. In the mentioned volume vodkas with different flavores *(which is the major point of interest of the investment project)* present a separate – quite prospective – segment, which consists of local natural fruit vodkas ***(mulberry, cornelian cherries, pear, cherry, apricot, etc)*** and of imported products of small quantity. It is expected that the main investor for the implementation of this business project is the private sector with a proactive participation of the Government represented by Syunik Regional Administration, and banks. In this regard it is expected that in the entire volume of contributions the optimal share of the Government will amount to around 20%, which is entirely of financial nature. Around 30% of the investment necessary for the project is envisaged to be carried out by means of attracting credit resources. Furthermore, the banks will provide with a complete set of instruments for the financing of the investment project. The load of 50% of the project implementation will be born by the private sector. Thus,

- *The cost of equipment and aggregates (accessories) to be purchased for all the eight purveyance points of the region will amount to AMD 600-610 million, and the cost of means of transport – around AMD 150-155 million.*
- *In terms of obligations against the labor force, investment of around AMD 25 million is required amounting to the monthly salary fund.*

- *In the initial period, in order to ensure the normal activity of the business, investment of AMD 120-125 million is required for the creation of stock of spare parts of equipment and materials, as well as raw material (with the amount of around 20% of the equipment and accessories to be purchased).*
- *Introduction of ISO quality management system will amount to AMD 50 million. In the future, every 2-3 years one company will spend AMD 16.5 hsd required for certification.*

MANAGEMENT

The optimal staff required for the effective management of this project is presented in the table below. In parallel with the expansion of the project, opening up of new management positions might become necessary.

Table1.4

Title of the position	Quantity	Permanent	Qualified
Senior Management	1	1	1
Deputy Director/Chief Engineer	1	1	1
Finance Specialist/Accountant	1	1	1
Managers of regional units	8	8	8

MAIN LABOR FORCE

For normal activity of the purveyance points/workshops and for the operation and technical maintenance of expensive equipment 96 qualified specialists/workers, as well as 16 highly qualified and trained support/technical staff will be required.

RISKS AND THREATS

- Lack of qualified, specialized labor force,
- Emergence of unfavorable conditions for lending, interest rate, terms and mortgage,
- Underutilization of purveyance capacity due to drought,
- Scarcity/lack of farms' own resources, as well as insufficient volumes of procured fruit due to scarcity of credit amounts,
- Difficulties with accessibility for the farmers due to poor quality of inter- and intra-community roads,
- Issues related to high risk of agricultural production, absence of insurance system in the field, and payment of fees by installments in terms of export of agricultural produce,

- Scarcity of fruits necessary for purveyance due to non-rational utilization of land resources by rural and farm households, and as a consequence, underutilization of purveyance capacity and labor force,

- Change of the structure of domestic market of wine and vodka and its actors.

ECONOMIC IMPACT

Table1.5

Indicator	Evaluation of impact
Number of permanent jobs	During the ten years of project life 125 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 30 permanent jobs in the second year until the number reaches 125. In case of optimistic developments this number can reach 140.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 3,750 million, and in case of realization of an optimistic scenario it will amount to AMD 3,950 million.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 35,857 million (average annual amounts to AMD 3,628 million), and in case of optimistic developments – AMD 41,236 million.
Economic outcome on the macro level	
Continuous in the form of produced output/provided services	During the ten years of project life output (services) amounting to AMD 35,857million will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the region during that period will increase by around AMD 3,585 million only due to direct impact of the project.

2.ESTABLISHMENT OF LEASING CENTERS OF AGRICULTURAL MACHINERY

The project of "Establishment of leasing centers of agricultural machinery" (LCAM) envisages revival/reoperation of the system of machine-tractor stations (MTS) known to us since Soviet years in the form of a business model by making adjustments and corrections corresponding to current requirements. Taking into consideration the results received during the preliminary research conducted with the involvement of stakeholders (experts, business sector, representatives of local self-governmental bodies, NGOs) leasing centers of agricultural machinery are recommended to be established in the following subregions/communities of Syunik region:

- Sissian subrregion – Sissian, Noravan,
- Goris subrregion – Goris, Khndzoresk,
- Kapan subrregion – Kapan,
- Meghri subregion – Meghri.

In total, investment of around AMD 2,802 million is required for the implementation of this project.

APPROPRIATENESS

Agricultural land forms of Syunik region comprise 74.1% (334,019 hectares) of the total area of the region. According to natural-climatic conditions the region is divided into mountainous, mid-mountainous and high mountainous zones. Based on elevation zones, almost all types of climate typical of the territory of Armenia follow each other in Syunik – dry subtropical, moderate warm, mild, cold mountainous and snowy. The warmest place of Armenia – lowland zone of Meghri - is located in Syunik region. Duration of sunshine reaches up to 2700 hours per year. Annual precipitation is up to 826 millimetres (Sissian mountain pass). Distribution of precipitation is conditioned not only by elevation, but also direction and position of mountain ranges and forms of relief.

In 2008 out of 43,8 thousand hectares of arable of the region 32,6 thousand hectares were used by the rural and farm households, 22,0 thousand hectares of which were used for grain crops. Around 11,2 thousand hectares of arable has actually not been used, 5,0 thousand hectares of which are privatized. Unused arable is located mostly in highland zone and has big inclines. At the same time, there are also a number of serious objective and subjective problems in this field, of which both physical and moral depreciation of agricultural machinery, and their accessibility for the inhabitants and households of the rural communities are of primary importance. Thanks to this project the population of rural communities of Syunik region is given an opportunity of machinery leasing at affordable fees. At the same time, with this project great importance is attached to the establishment of both (a) a repair base of the given agricultural machinery and related devices and equipment (on the basis of Kapan machinery plant) and (b) a consortium of the investor and credit/leasing company.

MARKET AND CUSTOMERS

Customers of leasing centers of agricultural machinery will become both rural and farm households and inhabitants of rural communities who cannot afford purchasing their own specialized machinery. In the estimates the potential of around 5000 hectares of privatized unused arable was used as a prerequisite of success of the future activity of a given company without consideration of the remaining unused land resource. The logic of this approach is to show the picture of only one section of unused potential of the agricultural field of the region. Currently the types, quantity and existing leasing fees of the machinery available in the territory of Syunik region can be presented in the following table:

Table 2.1

Types of machinery	Approximate number of working machinery	Current leasing prices (thsd. AMD)	
		Leasing of machinery for one year	Provision of services per 1 hectare
1.1 Combine harvester	151	420.0	20.0
1.2 Forage harvester	27	380.0	15.0
1.3 Wheel tractor	733	350.0	12.0
1.4 Caterpillar tractor	261	350.0	15.0
1.5 Seed drill*	111		
1.6 Grass compressor*	120		
1.7 Tractor mower*	215		
1.8 Tractor sprayer*	27		
1.9 Plough/harrow machine*	294		

* - provided together with the agricultural machinery as attached implements

Optimal leasing prices, due to which the number if users of agricultural machinery will sharply increase, are provided in the table below:

Table 2.2

Machinery	Leasing of machinery for one year (thsd. AMD)	Provision of services per one hectare (thsd. AMD)
Combine harvester	390	17.0
Forage harvester	350	12.0
Wheel tractor	320	10.0
Caterpillar tractor	320	12.0

Table 2.3

Subregion	Community
Goris	Goris, Khndzoresk
Meghri	Meghri
Kapan	Kapan
Sissian	Sissian, Noravank

Geographical distribution of leasing centers of agricultural machinery throughout Syunik region is supposed to look as follows (see the attached table):

MANAGEMENT AND INVESTMENTS

The given enterprise will be a Closed Joint-Stock Company (CJSC) where Syunik Regional Administration will be a co-founder jointly with the private investor and credit organization with a share correlation of 20/50/30. In the future, when the enterprise reaches the expected level of profitability, Syunik Regional Administration leaves the business selling its share of the business to another stakeholder.

Key participants of this investment project can be Syunik Regional Administration, private investors and banks. It is foreseen that in the entire volume of investments the optimal share of Syunik Regional Administration will amount to around 20% which will be entirely of financial nature and equals to AMD 560 million. The optimal share of a private investor amounts to 50% or around AMD 1,400 million. The remaining share required for the project – 30% (AMD 840 million) – is foreseen to be implemented by means of attraction of credits. According to the project implementation directions, distribution of investments looks as follows:

*1. **Land, buildings/constructions and/or improvement of building conditions** – in case of the project implementation in the given format the option of renting a building/construction is appropriate which means that no expenses will be charged from this budget line.*

*2. **Agricultural machinery and accessories/equipment to be purchased:***

Table2.4

N	Machinery/aggregates of machine-tractor station	Image	Total quantity	Market price per unit (thsd. AMD)	Total price (thsd. AMD)
1	Combine harvester "NIVA-EFFECT" (used)		46	12210	561 660
2	Combine mower (e.g. KDF-390 "FORTSCHRITT" SIPMA)		35	6 105	213 675
3	Tractor "Belarus"		115	8 140	936 100

4	Seed drill		52	4 884	253 968
5	Grass compressor		70	2 035	142 450
6	Mower		65	2 035	142 450
7	Tractor mower (reaper) (e.g.ЖВН-6Б)		35	3 256	113 960
8	Plough/harrow machine		123	1 017.5	125 152,5
	Total				2 489 415,5

3.Means of transport to be purchased

Table 2.5

N	Means of transport/purpose	Image	Total number	Market price per unit (thsd. AMD)	Total price (thsd. AMD)
1	GAZ-3302 "GAZelle"(truck)		1	4 070 000	4 070 000
2	GAZ-2705 "GAZelle"(van)		1	4 070 000	4 070 000

3	Ural		1	2 035 0000	2 035 000
4	Volga GAZ 31		3	2 035 000	6 105 000
	Total				16 280 000

4. In terms of obligations against the labor force, in the initial period with the purpose of ensuring the normal activity of the company (payment of salaries, etc) investment of around AMD 47 million is required amounting to the monthly salary fund.

5. In the initial period, in order to ensure the normal activity of the system, investment of AMD 250 million is required for the creation of stock of spare parts and materials (with the amount of 10% of the agricultural machinery and aggregates to be purchased).

MAIN LABOR FORCE

The professional and quantitative distribution of the Company staff looks as follows:

Table 2.6

Position	Quantity	Permanent	Qualified
Specialists (combine driver, tractor driver)	200	200	200
Support/tech. staff	30	30	15

For the normal operation and technical maintenance of the leasing centers of agricultural machinery 200 qualified staff, as well as 30 support staff will be required.

RAW MATERIAL AND SPARE PARTS

In the initial period a significant part of spare parts can be purchased from the producing factory (for instance, “”Rostselmash” Yaroslavl engine plant, etc). In the future, production of necessary spare parts can be organized locally on the basis of Kapan machinery plant.

RISKS AND THREATS

- Lack of qualified, specialized labor force,
- Emergence of unfavorable conditions for lending, interest rate, terms and mortgage,
- Unfavorable state policy,

- Decrease of service demand due to drought,
- Low level of demand for LCAM services due to high level of segmentation, as well as non-rational use of land resources or idle time and/or excessive run-out of LCAM machinery,
- Loss of a substantial segment caused by artificial increase of leasing prices of LCAM machinery due to segmentation of agricultural production,
- Low level of demand for LCAM services due to improper speed of development of infrastructures of agricultural production, as well as impairment of infrastructures for the marketing of agricultural produce,
- Loss of the given segment of customers due to scarcity/lack of own resources of the farms, as well as scarcity/inaccessibility of credit (loan) resources,
- Difficulties with accessibility due to poor quality of inter- and intra-community roads, as well as breakdown/damage of LCAM machinery,
- Unawareness of LCAM services due to issues related to accessibility of information and consultation for the farms,
- Problems associated with collection of fees-by-installments due to issues related to high risk of agricultural production, absence of insurance system of the field, and export of agricultural produce,
- Probability of damage to LCAM machinery because of hostile actions in the frontier agricultural lands of the region.

ECONOMIC IMPACT

Table 2.7

Indicator	Evaluation of impact
Labor force	
Number of permanent jobs	During the ten years of project life at least 239 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 124 permanent jobs in the first year until the number reaches 239. In case of optimistic developments this number can reach 251.
Temporary/seasonal staff	In the case of full implementation of the project (optimistic option) every year during the season average 15 temporary/seasonal staff will also be recruited.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 7,131,665,068, and in case of realization of an optimistic scenario it will amount to AMD 7,488,248,321.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 15,872,010,175 (average annual amounts to AMD 1,619,133,916), and in case of optimistic developments – AMD 18,252,811,701 total.
Profit	During the ten years of the project life out of the mentioned AMD 15,872,010,175 profit will amount to AMD 878,363,536, in the case of optimistic scenario – AMD 1,010,118,067.
Economic outcome on the macro level	
Lump sum in the form of initial investments	As a result of the project implementation initial investments of AMD 2,801,887,050 will be made, around 15% of which (AMD 420,283,058) are local purchases, including construction.
Continuous in the form of produced output/provided services	During the ten years of project life output (services) amounting to AMD 15,872,010,175 will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the region during that period will increase by around AMD 1,587,201,017only due to direct impact of the project.
In the form of taxes	Certainly, the total amount of taxes is hard to project, but by rough estimates, total tax allocations will amount to AMD 2,117,309,076 during the entire project implementation period. This amount includes VAT (AMD 158,720,102), income tax (AMD 1,782,916,267) and profit tax (AMD 175,672,707).

3. ESTABLISHMENT OF INTERCOMMUNITY CENTERS OF COOLING FACILITIES, PURVEYANCE, SORTING AND GRADING CENTERS OF AGRICULTURAL PRODUCE AND FRUITS

During the development of the project of "Establishment of intercommunity centers of cooling facilities, purveyance, sorting and grading centers of agricultural produce and fruits" the research work carried out by the stakeholders (experts, business sector, representatives of local self-governmental bodies, NGOs) in all the subregions of Syunik region and the obtained results were taken into consideration. It is recommended to establish a fleet of small- and/or middle-size cooling facilities and refrigerators, as well as centers of purveyance, sorting and grading of agricultural produce and fruits in the following subregions/communities of Syunik region:

Table 3.1

Subregion	Number of communities	Community
Goris	4	t. Goris, Shinuhayr, Khnatsakh, Kndzoresk
Kapan	1	c. Kapan
Meghri	3	Agarak, Lehvaz, Shvanidzor
Sissian	5	Ashotavan, Akhlatyan, Darbas, Shaghat, t. Sissian
Total	13	

One standard cooling purveyance point is a separate construction, where chambers for the storage of agricultural produce and various auxiliary premises separated by partitions are arranged. In general, cold storage facilities are equipped with automotive ramps for upload and download. The above-mentioned ramps can be with covers, open-air, and covered with refrigeration sandwich panels. All the refrigerated chambers are furnished with special heat-insulated doors, entrances and air-curtains. Depending on the temperature cooling chambers can be of three types:

- **Average-temperature chambers of type A** – ensure storage of products within the range of +100 C and 00 C degrees,
- **Low-temperature chambers of type B** – ensure cooling and storage of products within the range of 00 C and -100 C degrees,
- **Low-temperature chambers of type C** – ensure cooling and storage of products within the range of -100 C and -300 C degrees.

In general, for the implementation of the above-mentioned 13 cooling facilities around AMD 2,3 mln is required. Gross circulation of the first year is provided in the table below:

Table 3.2

N	Conditional produce/service purveyed	Unit of measure	Amount	Price per unit (AMD)	Total price (AMD)
1	Potato	ton	8280	12000	99360000
2	Vegetable crop	ton	3160	8000	25280000
3	Fruit/berry	ton	870	35000	30450000
4	Grape	ton	810	45000	36450000
5	Autorefrigeration freight	vehicle/km	150000	250	37500000
	TOTAL				229040000

APPROPRIATENESS

The rationales of implementing this business project in Syunik region are numerous. We will list here only some of them:

a) Saving of short-lived products and those losing their appearance, and transportation to Yerevan markets (in the future, also abroad),

b) At the same time these facilities can also perform functions of intercommunity purveyance points of milk and meat (the building facilities of reception points can be used),

c) In case of Sissian subregion those centers will play an irreplaceable role in the purveyance of garlic, honey, potato, linseed (also oil), beans and mushrooms, and their processing and again transportation to Yerevan markets,

d) This will also serve as an additional incentive for both the cultivation of persimmon, fig and pomegranate, and increase of production of traditional agricultural products.

In reality, part of the crop remains on the trees, falls down or is used for home distillation of vodka. In these terms the picture of the regions is as follows:

Table 3.3

N	Name	Specific weight of "not used" crop, %
1	Potato	30
2	Cabbage	20
3	Persimmon	10
4	Fig	5-7
5	Grapes	90

As of today only by creation of purveyance and transportation possibilities the total income of the farmers received from harvest can be significantly increased.

Table 3.4

N	Name	Multiplier coefficient
1	Potato	1,5
2	Cabbage	1,5
3	Persimmon	2,5
4	Pomegranate	2,5
5	Fig	2,5
6	Grapes	2,0

By using the specific weights of the above-mentioned "not used" crop and multiplier coefficients and trying to get the volumes of "not used" crop and potential growth, we will have the picture presented in Table 3.4.

MARKET AND CUSTOMERS

Taking into consideration the factors of previously mentioned multiplier coefficients and "not used" crop one can presume the circle of customer network of those cooling facilities. Individual farmers, farms and inhabitants of rural communities of Syunik region can become customers of those cooling facilities, who are devoid of having modern cold storage facilities and due to it year by year they lose a significant part of their crop and lose potential income.

INVESTMENTS

Investors for this project will be Syunik Regional Administration, private investors and banks. It is foreseen that in the entire volume of investments the optimal share of the Government will amount to around 20% which will be entirely of financial nature and will equal to around AMD 405 million. The optimal share of a private investor amounts to 50% - more than one billion AMD. The remaining 30% (around AMD 610 million) share required for the project is foreseen to be implemented by means of credits.

According to the project implementation directions, distribution of investments looks as follows:

1. **Land, buildings/constructions and/or improvement of building conditions** – in case of the project implementation in the given format the option of renting a building/construction is appropriate which means that no expenses will be charged from this budget line.

2. **Equipment to be purchased (per one cooling facility) –** Around AMD 82.000 per one square meter of building is required for building one standard cooling facility or adjusting existing building premises. In the framework of this project a standard facility is considered one with a building area of 1,500 sqm. Considering that total 13 similar cooling facilities are foreseen, total investments in this regard will amount to AMD 1,600 million.

3. **Means of transport to be purchased**

Table 3.5

N	Name/purpose of transport	Total number	Market price per unit (AMD) *	Total price (AMD)
1	RefrigeratorMAN TGA 26.430 E4	5	20 350 000	101 750 000
	Total			101 750 000

4.**In terms of obligations against the labor force**, in the initial period with theh purpose of ensuring the normal activity of the company (payment of salaries, etc) investment of AMD 21,400,000 is required amounting to the monthly salary fund.

5. **In the initial period in order to ensure the normal activity of the business,** investment of AMD 317 million is required for the creation of a stock of spare parts and materials for the vehicle station (with the amount of 20% of the equipment and aggregates to be purchased).

MANAGEMENT

Table 3.6

Title of the position	Quantity	Permanent	Qualified
Senior management	1	1	1
Deputy Director/Chief Engineer	1	1	1
Finance Specialist/Accountant	1	1	1
Area managers	13	13	13

In its legal form the given enterprise will be a Closed Joint-Stock Company (CJSC) where the Government of the Republic of Armenia represented by Syunik Regional Administration will be a co-founder jointly with the private investor and a credit organization with a share correlation of 20/50/30. In the future, when the enterprise reaches the expected level of profitability, the Government leaves the business selling its share of the business to another stakeholder.

MAIN LABOR FORCE

In the framework of this business project for the normal and effective running of the cooling facilities, the operation and technical maintenance of the equipment 26 highly qualified and trained staff, as well as 65 highly and mid-qualified operation personnel will be required. The professional and quantitative distribution of the Company staff looks as follows:

Table 3.7

Position	Quantity	Permanent	Qualified
Support/tech. staff	26	26	26
Operation personnel	65	65	65

RAW MATERIAL AND SPARE PARTS

In case the agricultural produce is entirely of local origin, it is envisaged that the smooth and normal operation of the refrigerators as the objects of this project and full utilization of their capacity should be guaranteed. Besides construction, accessibility of equipment and spare parts is also a serious guarantee of success of enterprises of this nature both in terms of prices and accessibility of market. In this regard emphasis has been put particularly on the markets of Russia and Belarus (for instance, Belarussian "Eurostalstroy" LLC).

APPROPRIATENESS

This business project is completely in accordance with the goals of both the stable social-economic and agricultural development project of Syunik region. This business project is closely related to the provisions of opportunity of building small capacities by means of targeted loans for the processing of agricultural raw material, and to the provisions of increasing the level of marketability which is a serious challenge for the agriculture of the region. In particular, this business project is closely related to the appropriateness of addressing issues associated with the accessibility of the sales market and ensuring protectability of the producer by means of establishment of storage and cooling facilities in accordance with the defined criteria and of organizing storage and cooling facilities by the principle of joint use (cooperative).

RISKS AND THREATS

- Emergence of unfavorable conditions for lending, interest rate, terms and mortgage,
- Unfavorable state policy,
- Decrease of service demand due to drought,
- Risk of crop/produce scarcity and underutilization of purveyance capacities due to low yield in crop husbandry, low productivity of agricultural animals and increase of production volumes mainly by extensive means,
- Insufficient volume of procured fruit due to scarcity/lack of own resources of the farms, as well as scarcity/inaccessibility of credit (loan) resources,
- Difficulties with accessibility due to poor quality of inter- and intra-community roads, as well as breakdown/damage of own machinery,
- Unawareness of services provided by those centers due to issues related to accessibility of information and consultation for the farms,
- Problems associated with collection of fees-by-installments due to issues related to high risk of agricultural production, absence of insurance system of the field, and export of agricultural produce,

- Scarcity of fruits to be procured due to non-rational use of land resources by rural and farm households, segmentation of agricultural production, scarce opportunities of the above-mentioned households for the export of agricultural produce and absence of structures dealing with its implementation, and as a concequence, underutilization of purveyance capacities and underutilization of labor force.

ECONOMIC IMPACT

Table 3.8

Indicator	Evaluation of impact
Labor force	
Number of permanent jobs	During the ten years of project life at least 107 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 23 permanent jobs in the second year until the number reaches 107. In case of optimistic developments this number will reach 118.
Temporary/seasonal staff	In the case of full implementation of the project (optimistic scenario) every year during the season average 15 temporary/seasonal staff will be recruited.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 3,230,002,803 and in case of realization of an optimistic scenario it will amount to AMD 3,391,502,943.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 22,618,855,145 (average annual amounts to AMD 4,335,651,823), and in case of optimistic developments – AMD 26,011,683,417 total.
Profit	During the ten years of the project life out of the mentioned AMD 22,618,855,145 profit will amount to AMD 13,536,861,420, in the case of optimistic scenario – AMD 15,567,390,633.
Economic outcome on the macro level	
Lump sum in the form of initial investments	As a result of the project implementation initial investments of AMD 2,027,910,000 will be made, around 78% of which (AMD 1,587,300,000) are local purchases, including construction.
Continuous in the form of produced output/provided services	During the ten years of project life output (services) amounting to AMD 22,618,855,145 will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the region during that period will increase by around AMD 2,261,885,515 only due to direct impact of the project.
In the form of taxes	Certainly, the total amount of taxes is hard to project, but by rough estimates, total tax allocations will amount to AMD 3,741,061,536 during the entire project implementation period. This amount includes VAT (AMD 226,188,551), income tax (AMD 807,500,701) and profit tax (AMD 2,707,372,284).

4. ESTABLISHMENT OF SPECIAL DRYERS FOR DRIED FRUIT PRODUCTION

With the project of "Establishment of special dryers for dried fruit production" it is proposed to establish dryers with an area of 300 sqm in ten communities of Syunik region. Each dryer will enable purveyance of around 12-14 tons of fruit, out of which about four tons of dried fruit will be produced. Together with the traditional fruit varieties ecologically pure pear and apple are also foreseen to be procured and processed. The region is rich in wild fruit varieties.

Table 4.1

Variety, ecologically pure, wild	Quantity (ton)	Price of delivery per 1 ton (AMD)	Communities
pear	600-700	120,000	Settlements of Kapan and Goris subregions close to forests, Lichk, Tashtun communities of Meghri subregion
apple	50-60	130,000	

Around 130 tons of fruit is yielded in Syunik region, of which only 20 tons undergo processing in the form of dried fruits. The forest stock makes 94,825 hectares of area where ecologically pure wild pear and apple of around 700-750 tons can be collected. The favorable nature-climatic conditions of the region provide opportunities for growing fruit varieties such as fig, persimmon, apple, grapes (raisin), plum and other varieties; the demand for dried fruits is available in the market.

MARKET AND CUSTOMERS

In Armenia around 1100 tons of dried fruits are produced annually and around 1700 tons are consumed annually of which 600 tons are imported. In Syunik Region total 80 tons of dried fruits are produced per year, including:

- Plum – 2 tons
- Pear – 3 tons
- Apple – 5 tones
- Fig – 10 tons
- Persimmon – 0.5 tons

There are 220 dryers in Armenia, 12 of which are located in Syunik region (see Table 4.2).

Table 4.2

Number of dryers, productivity			
Solar dryer		Artificial drier	
Quantity	Annual productivity (tons)	Quantity	Annual productivity (tons)
10	10-20	2	15

MANAGEMENT AND INVESTMENTS

The project will function as private property. The project will be managed mainly by the Project Director. For the project management knowledge of the technologies of dried fruit production will be required. The Director must work jointly with international and local organizations engaged in the field; particularly s/he can undergo hands-on training in "Cheer" OJSC, which will enable to obtain knowledge in situ. Local and international organizations can support in the marketing of the products.

Table 4.3

Distribution of investments				
Region/co mmunity		**Investor**	**Credit**	**Total**
10%		45%	45%	100%
Financial	In-kind			
10%	90%			
119,714	1,077,424	5,387,119.	5,387,119	11,971,375

The project will be implemented in collaboration between the state, private investor and a bank. Investment shares by amounts and tyes are provided in Table 4.3.

The project implementation will require a staff consisting of 7 employees. The number of employees and amount of salaries are provided in the following table:

Table 4.4

Salary calcualtion	Quantity	Salary	Total
Senior management	1	250,000	250,000
Service providers	2	120,000	240,000
Workers	3	100,000	300,000
Support/tech. staff	1	110,000	110,000
Total			900,000

With the combination of the specific weights of "not used" crop and maultiplier coefficients we can get the volumes of "not used" crop and potential growth. As a result we will have the following picture.

With initial investments solar dryers with an area of 300 sqm will be built. This will include a 6-sqm smoking facility. A special area will need to be allocated for washing and grading. Drying screens and containers will be necessary to be purchased. A means of transport will be required for transportation.

STRUCTURE OF INVESTMENTS

Table 4.5

Initial investments	Amount of money
Land	200,000
Dryers	6,015,375
Means of transport	3,256,000
Purchase of stock	2,500,000
TOTAL	11,971,375

The amount of money foreseen for the dryers includes also construction works and materials, containers, drying screens for the preparation of dried fruits. Stock includes fruits, containers for packaging and other materials.

INCOME AND EXPENDITURES

Income of the project is generated from the sales of dried fruits. Material costs include variable costs necessary per unit of product. Depreciation allocations are estimated 20% for means of transport and 1-5% for buildings.

STATE PARTICIPATION

The share of state participation is envisaged to amount to 10% (in-kind and financial), which will be directed to the purchase of lands or to another kind of support. State participation in this project will increase the project's role and significance in the process of finding investors.

APPROPRIATENESS

With the investment project of "Establishment of special dryers for dried fruit production" it is foreseen to:

- Increase the volumes of agricultural production, particularly of various fruit varieties,
- Establish agricultural crop processing plants in rural communities,
- Increase efficiency, increase the level of marketability of products, significantly increase the export volumes particularly of products received from fruits and their processing, consistently and effectively use the land and human resources of the region by means of applying intensive technologies, expanding irrigable lands under cultivation, and cultivating uncultivated lands.

RISKS AND THREATS

- Agricultural risks – bad weather conditions can result in significant decrease of yield. This risk can be drecreased if different fruits undergo processing in the dryers. Diversification of fruits will decrease agricultural risk.
- Market risk – drop in prices of imported products which can be lower than the prime cost of locally produced product.

- However, it should be noted that Armenian dried fruits have quite high quality and taste peculiarities. Locally produced dried fruits do not contain sulphates. A buyer pays great importance to this property which can result in preference of local produce in the market.

ECONOMIC IMPACT

Table 4.6

Indicator	Evaluation of impact
Labor force	
Number of permanent jobs	During the ten years of project life at least 10 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 7 permanent jobs in the first year until the number reaches 7. In case of optimistic developments this number will reach 12.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 5584782 and in case of realization of an optimistic scenario it will amount to AMD 6701738.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 125185562 (average annual amounts to AMD 12584062), and in case of optimistic developments – AMD 150222674 total.
Profit	During the ten years of the project life out of the mentioned AMD 125185562 profit will amount to AMD 4254203, in the case of optimistic scenario – AMD 5105043.
Economic outcome on the macro level	
Lump sum in the form of initial investments	As a result of the project implementation initial investments of AMD 11971375 will be made, around 100% of which (AMD 11971375) are local purchases, including construction.
Continuous in the form of produced output/provided services	During the ten years of project life output (services) amounting to AMD 125185562 will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the region during that period will increase by around AMD 15022267 only due to direct impact of the project.
In the form of taxes	Certainly, the total amount of taxes is hard to project, but by rough estimates, total tax allocations will amount to AMD 13422799 during the entire project implementation period. This amount includes VAT (AMD 15022267 x 10%), income tax (total salary fund x 25%) and profit tax (profit x 20%).

5. PURVEYANCE AND PROCESSING OF WILD HERBAL TEA AND MEDICAL HERBS

The investment project of "Purveyance and processing of wild herbal tea and medical herbs" can become a model for the construction of special dryers foreseen for drying of wild tea plants and herbs, their purveyance, processing and organization of production. There are herbal tea plants and medical herbs in Syunik region which can be collected from ecologically pure highland regions. For the start-up of tea production raw material needs to be purveyed in advance. In this region thyme, mint, rosehip, blackberry and other herbal teas and medical herbs can be procured. Marketing of the teas depends on the type of packaging. With the purpose of preserving the aroma and medical properties of the plants 15 DXDC auto teabag packaging machines are recommended which have the capacity of making 105 teabags in a minute. The machine can produce 252 boxes of tea in an hour operated by two workers. Around 4.2 tons of processed raw material can turn into 105,000 boxes of tea. Due to the high seasonality of the plant varieties, purveyance season can start from May and end in late autumn. Purveyance of raw material will be carried out in the communities with the involvement of 30-40 rural inhabitants. The climate in Syunik is favorable for the exclusive quality of the picked herbal teas, therefore, it is expedient to establish similar production, since the region is rich in the following tea plants – thyme, mint, rosehip, hypericum, chamomile, and the following wild herbs – rosehip, blackberry, cowslip, chamomile, dandelion, hypericum and common elderberry. In case of high demand for the above-mentioned herbal teas and medical herbs it is appropriate to grow these plants in the open air as well. For the products produced here ecological purity, traditional ways of purveyance and processing of the raw material should be ensured.

MARKET AND CUSTOMERS

Teas are sold in different types of packaging. The most common consumption was found in the Russian market – boxes with about 20-25 bags of 1.5-2 grams. Consumption of teabags made total 14% of the Russian market in 2003, about 40% in 2006, and already 61.3% in 2009. At present in Great Britain 94% of the population uses teabags. Teabags are preferred because they enable to save time. In the Russian market the largest amount of tea is sold through self-service stores. It makes 30% of sales. The next largest sale is carried out through markets and food stores. By using only the raw material of the Armenian nature without causing any damage to the ecology, 300 tons of thyme, 250 tons of rosehip, 200 tons of mint, etc, can be purveyed.

Table 5.1

For domestic market	Sale price per bag of "Mega Ararat" (AMD)	Sale price per bag of "Sari Tey" (AMD)
thyme	810	820
mint	810	800
hawthorn	1050	-
rosehip	960	560
thyme-mint	810	-

In Goris subregion of Syunik region "Abda" LLC operates under "Sari Tey" (Mountain tea) brand. Under this brand six varieties of herbal teas are produced – thyme, mint, wild rosehip, blackberry leaves, etc. Herbal teas are picked by the inhabitants of nearby communities from the highland plains and mountains of Sissian, Kapan and Goris. The retail price of teas is as follows:

MANAGEMENT AND INVESTMENTS

The project will be implemented in collaboration between the state, private investor and financial organization. The shares of investments by amounts and types are provided in Table 5.2.

Table5.2

Distribution of investments				
Region/Community		Investor	Credit	Total
10%		35%	55%	100%
Financial	In-kind			
10%	90%			
257,688	2,319,188	9,019,063	14,172,813	25,768,750

The project will function as private property and will be managed mainly by the Project Director who must have some knowledge of biology, plant cultivation, drying technologies and production process. Marketing of the products must be carried out by the Sales Manager who should follow the market competitors, price policy, and develop the organization's strategy. For the project implementation a staff consisting of 11 employees will be required according to the provided salaries. Around 30-40 village people will also be involved in this production but their payment will depend on the type and quality of the purveyed product.

Table 5.3

Salary calculation	Quantity	Salary	Total
Senior management	1	400,000	400,000
Service providers	2	250,000	500,000
Workers	5	200,000	1,000,000
Support/tech. staff	3	150,000	450,000
Total			2,350,000

For the initial investments, purchase of equipment, 4.2 tons of raw material and necessary materials for packaging will be required.

APPROPRIATENESS

The project will promote:

1) Increase of the volumes of agricultural production and various fruit varieties,

2) Establishment of agricultural crop processing plants in rural communities,

3) Increase of efficiency, increase of the level of marketability of products, significant increase of export volumes particularly of products received from fruits and their processing, consistent and effective use of land and human resources of the region by means of applying intensive technologies, expanding irrigable lands under cultivation, and cultivating uncultivated lands.

It is envisaged that totally 105,000 boxes of thyme, mint, rosehip and other herbal teas can be sold annually. During the year the work will be performed mainly throughout 9-10 months.

STATE PARTICIPATION

The share of state participation is envisaged to amount to 10% (in-kind and financial). State participation in this project will increase the project's role and significance in the process of finding investors.

RISKS AND THREATS

Agricultural risk depends on crop yield. Based on annual crop yield certain raw materials can be inappropriate for production. Abrupt rise of prices and prime cost can be observed. Diversification of products can hedge the agricultural risk. Armenian teas are special in terms of their taste, flavor and medical properties; for that reason the share of herbal teas in the total consumtion of tea will not decrease.

ECONOMIC IMPACT

Table 5.4

Indicator	Evaluation of impact
Labor force	
Number of permanent jobs	During the ten years of project life at least 17 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 11 permanent jobs in the first year until the number reaches 17. In case of optimistic developments this number will reach 18.
Temporary/seasonal staff	In the case of full implementation of the project (optimistic option) every year during the season average 40 temporary/seasonal staff will also be recruited.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 36456213 and in case of realization of an optimistic scenario it will amount to AMD 35973728.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 782409763 (average annual amounts to AMD 93889172), and in case of optimistic developments – AMD 354696570 total.
Profit	During the ten years of the project life out of the mentioned AMD 782409763 profit will amount to AMD 52553807, in the case of optimistic scenario – AMD 63064568.
Economic outcome on the macro level	
Lump sum in the form of initial investments	As a result of the project implementation initial investments of AMD 25768750 will be made, around 51% of which (AMD 13268750) is local purchases.
Continuous in the form of produced output/provided services	During the ten years of project life output (services) amounting to AMD 782409763 will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the region during that period will increase by around AMD 93889172 only due to direct impact of the project.
In the form of taxes	Certainly, the total amount of taxes is hard to project, but by rough estimates, total tax allocations will amount to AMD 92229978 during the entire project implementation period. This amount includes VAT (AMD 93889172x 10%), income tax (total salary fund x 25%) and profit tax (profit x 20%).

This project can become a model to be implemented in five communities with the purpose of building special dryers for drying wild herbal teas and medical herbs, their purveyance, processing and organization of production.

6. RESTORATION OF KIWI, EARLY-RIPENING APRICOT AND PEACH ORCHARDS IN THE COMMUNITIES OF SYUNIK REGION

Taking into consideration the favorable climate of Syunik region with the investment project of "Restoration of kiwi, early-ripening apricot and peach orchards in the communities of Syunik region" it is proposed to establish orchards of kiwi, early-ripening apricot and peach.

The project estimates were done per 1 hectare which will proportionally include all three fruit varieties. Soil amelioration, fertilization needs to be done for the establishment of the orchards and saplings need to be purchased. Amelioration activities depend on the availability of stones, cemented layer and roughness of soil and the degree of roughness. In the calculations soil with stones, of average roughness and of not having any cemented layer was taken as a base. Fertilization is necessary to ensure high crop yield. As per preliminary studies the majority of lands in Meghri subregion need complex fertilization (potassium, phosphor, nitrogen).

The first year of orchard establishment is the most costly. Expenses of the first and second years include also fertilization costs with phosphor and potassium. In the fifth year increase of expenses will be mainly conditioned by the necessity of guarding the crop. Starting from the sixth year of

cultivation considerable increase in expenses should be expected which is conditioned with the necessity of pruning, spraying, irrigation, use of pesticides and increase in the use of materials, double fertilization with phosphor and potassium, crop marketing, packaging and other expenses. Usage of high quality planting stock and seeds, and improvements in accordance with the requirements of agricultural practices will bring about a need of increasing the crop yield which will result in the increase of productivity. Establishment of orchards of early-ripening fruit varieties can be done in the following communities.

Table6.1

Fruit	Communities	Hectare	Price per sapling/AMD	Crop yield per tree/kg	Number of saplings per 1 ha
Kiwi	Vardanidzor, Karchevan, Vahravar, Alvank, Shvanidzor, Kuris, Gudemnis	30	1000	120	250
Apricot	Syunik (Kapan), Vaghatin (Sissian), Vorotan (Sissian), Vorotan (Goris)	40	500	130	180
Peach	Syunik, Nrnadzor, Alvank, Shvanidzor, Vardanidzor	40	500	80	600

MARKET AND CUSTOMERS

Taking measures aimed at reducing the prime cost of agricultural produce and increasing the efficiency of production are among the priorities of agriculture in the region. In 2010, 29,849 centners of miscellaneous crop was harvested from 2587 hectares of orchards in Syunik region. It is foreseen to establish a 15-hectare orchard in Sissian subregion with the purpose of providing the fruit processing plant of Darbas community, which is under reconstruction, with fruit.Cultivation of kiwi, early-ripening apricot and peach will enable to get products with low prime cost. Currently early-ripening fruits and kiwi have the following approximate prices in the market:

Table 6.2

Approximate prices in the market	Estimated lowest prices are taken as a base:
Early-ripening apricot – AMD 600-1000	**Early-ripening apricot – AMD 500**
Early-ripening peach – AMD 500-1000	**Early-ripening peach – AMD 500**
Kiwi – AMD 800-1200	**Kiwi – AMD 900**

MANAGEMENT AND INVESTMENTS

The project will be implemented in collaboration between the state, private investor and financial organization. The shares of investments by amounts and types are provided in the table below.

Table 6.3

Distribution of investments				
Region/Community		Investor	Credit	Total
5%		25%	70%	100%
Financial	In-kind			
10%	90%			
197,899	1,781,094	9,894,967	27,705,909	39,579,869

The project will function as private property and will be managed mainly by the Project Director. For the project implementation a staff consisting of 7 employees will be required. The number of employees and amount of salaries are provided in the table below:

Table 6.4

Salary calculation	Quantity	Salary	Total
Senior management	1	250,000	250,000
Service providers	1	150,000	150,000
Workers	4	150,000	600,000
Support/tech. staff	1	120,000	120,000
Total			1,120,000

APPROPRIATENESS

The goal of the project is the increase of volumes of crop and livestock products, increase of production efficiency, solving of marketing issues, by means of formation and improvement of infrastructures necessary for the functioning of agriculture in Syunik region, which will result in the increase of the income of rural households and in the reduction of poverty.

FINANCIAL DATA

Table 6.5

Initial investments	Amount of money
Land	400,000
Means of transport	2,849,000
Trees	236,000
Acquisition of stock	36,094,869
TOTAL	39,579,869

INCOME, EXPENDITURES

Project incomes are generated from the marketing of early-ripening fruits and kiwi. Material costs include variable costs necessary for the creation of one unit of product. Depreciation allocations are estimated according to the accounting standards of the Republic of Armenia – 20% for means of transport, 10% for trees, 1-5% for buildings. Loan interest is calculated at the interest rate of 16%. During the first five years the project will have no profit. Since crop yield will start from the fifth year, profit can be anticipated only starting from the fifth year.

STATE PARTICIPATION

The share of state participation is envisaged to amount to 5% (in-kind and financial), which will be directed to the purchase of lands or saplings. State participation in this project will increase the project's role and significance in the process of finding investors.

RISKS AND THREATS

The following factors appear to be risks and threats for the project implementation:

- Presence of high risk of agricultural production and absence of insurance system,
- Scarce possibilities of the households for the marketing of the products and almost absence of structures dealing with their marketing; unfavorable conditions of inter- and intra-community roads,
- Lack of information and consultation for the rural households,

- Scarcity and impairment of agricultural machinery/equipment.

ECONOMIC IMPACT

Table 6.6

Indicator	Evaluation of impact
Labor force	
Number of permanent jobs	During the ten years of project life at least 10 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 7 permanent jobs in the first year until the number reaches 10. In case of optimistic developments this number will reach 12.
Temporary/seasonal staff	In the case of full implementation of the project (optimistic option) every year during the season average 6 temporary/seasonal staff will also be recruited.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 6949950 and in case of realization of an optimistic scenario it will amount to AMD 7644945.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 126782904 (average annual amounts to AMD 13231950), and in case of optimistic developments – AMD 139461194 total.
Profit	During the ten years of the project life out of the mentioned AMD 126782904 profit will amount to AMD 9438670, in the case of optimistic scenario – AMD 10382537.
Economic outcome on the macro level	
Lump sum in the form of initial investments	As a result of the project implementation initial investments of AMD 39579869 will be made, around 100% of which (AMD 39579869) is local purchases.
Continuous in the form of produced output/provided services	During the ten years of project life output (services) amounting to AMD 126782904 will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the region during that period will increase by around AMD 15213948 only due to direct impact of the project.
In the form of taxes	Certainly, the total amount of taxes is hard to project, but by rough estimates, total tax allocations will amount to AMD 17242803 during the entire project implementation period. This amount includes VAT (AMD 15213948 x 10%), income tax (total salary fund x 25%) and profit tax (profit x 20%).

7. ESTABLISHMENT OF SMALL- AND MIDDLE-SIZE SHEEP-BREEDING FARM

With the project of "Establishment of small- and middle-size sheep-breeding farms" it is envisaged to create a standard big sheep-rearing farm with up to 800 head of sheep. In the initial period 500 ewes will be purchased. In five years this number is foreseen to reach 500 and in 10 years – 800. Marketing will be carried out in both domestic and foreign markets, particularly in the Islamic Republic of Iran and Arab countries. It is envisaged to purchase sheep of Balbas breed and cross-breed sheep of local breeds, which are half coarse-wooled sheep raised for meat, fleece and milk. This breed possesses the following properties:

- High milking capacity (130-140 kg)
- High fat content (6-7%)
- Wool is coarse and long (up to 17 cm)
- Net wool outcome – 55-60%
- High fertility (Birthrate of twins - around 30%)
- Lambs gain weight fast
- Live weight of rams – 55-60 kg
- Live weight of ewes – 45-50 kg
- Slaughter weight amounts to 50-52%

In the opinion of the experts of the region there is still huge potential for the development of sheep-breeding in Syunik region – Nzhdeh, Spandaryan, Sarnakunk, Gorayk communities of Sissian subregion, Geghi, Nor Astghaberd communities of Kapan subregion, and others. As per preliminary estimates sheep-rearing can be increased by around 3500 head in these communities.

MARKET AND CUSTOMERS

In the Soviet period the national flock of sheep of Armenia amounted to 2.2 million of head which provided mostly with wool, meat and milk, and made the second largest part in GDP. The current flock amounts to 480,000-500,000 head. In the Republic of Armenia sheep-breeding traditionally developed in the direction of meat-wool-milk production which enabled usage of not only meat, but also milk, fleece, pelt, etc, which served as raw material for a number of productions.

The majority of consumers considers that local breeders are not inclined towards usage of hormones for the artificial boost of animal growth, whereas the imported products contain large portions of similar additives. Moreover, local consumers prefer Armenian meat also for its taste properties.

In the Islamic Republic of Iran the average market price of lamb and mutton is as follows:

- 1 kg mutton – around 9000 toman, which is equivalent to around USD 9
- 1 kg lamb – around12 -13000 toman, which is equivalent to around USD 12-13

For comparison, in Armenia the average market price of lamb and mutton is as follows:

- 1 kg mutton – AMD 2500, which is equivalent to around USD 6
- 1 kg lamb – aroundAMD 3400, which is equivalent to around USD 8.5

INVESTMENTS

The project will be implemented in collaboration between the state, private investor and financial organization. The shares of investments by amounts and types are provided in the table below.

Table7.2

Distribution of investments				
Region/Community		Investor	Credit	Total
6%		45%	49%	100%
Financial	In-kind			
10%	90%			
196,200	1,765,800	14,715,000	16,023,000	32,700,000

MANAGEMENT AND INVESTMENTS

The project can function as private property. It will be managed mainly by the Project Director who should have some experience in cattle-breeding. At present there is sufficient experience in Armenia in the field of sheep-breeding. By collaborating with the Ministry of Agriculture and Center for Agribusiness and Rural Development (CARD) Foundation it is possible to get sufficient support in project management.

Table 7.3

Salary calculation	Quantity	Salary	Total
Senior management	1	250,000	250,000
Service providers	1	140,000	140,000
Workers	2	120,000	240,000
Support/tech. staff	1	110,000	110,000
			740,000

During slaughter seasonal workers will be hired from nearby villages who will be involved mainly in carrying out the slaughter. In parallel with the increase of the flock, the number of permanent staff will also increase. There will be a need to build barns with an area of at least 1,2 -1,5 sqm per sheep. Pasture rental amount is calculated AMD 10-12 000 per 1 hectare a year. This project aims at:

- Increasing the volumes of meat and milk production,
- Increading the efficiency of production,
- Enhancing the marketability of cattle-breeding produce.

Table 7.4

Initial investments	Amount of money
Land	1,000,000
Building/barns	20,000,000
Means of transport	3,000,000
Livestock	6,180,000
Acquisition of stock	2,520,000
TOTAL	32,700,000

Near the barn premises should be built which will be enough for storing forage to meet the 90-day foddering demand of the sheep. This fodder can include barley, hay and rocksalt.

INCOME, EXPENDITURES

Project incomes are generated mostly from marketing of the meat. Income is generated also from sales of sheep milk, pelt and fleece. Depreciation allocations are estimated according to the accounting standards of the Republic of Armenia – 20% for means of transport, 1-5% for buildings. Some expenses will incur in the first year, revenue will be generated already from the second year, and after the 4th year the project will become profitable.

APPROPRIATENESS

In Armenia sheep-breeding develops within 30-40% of its real potential. The largest number of head of sheep is centralized in Gegharkunik, Shirak, Aragatsotn and Syunik regions. Below occupancy of pastures (1982-2009) of the Republic of Armenia per 1 hectare is presented by regions:

Table 7.5

Regions	Total sheep and goats (head)		Total pastures (ha)	Occupancy of pastures (head/ha)	
	1982	2009		1982	**2009**
Atagatsotn	319075	93372	70779	4,5	**1,3**
Ararat	144037	71852	44072	3,3	**1,6**
Armavir	79720	64625	12974	6,1	**5,0**
Gegharkunik	480975	105779	118489	4,1	**0,9**
Lori	225413	40277	100459	2,2	**0,4**
Kotayk	138731	58426	53597	2,5	**1,1**
Shirak	333638	86105	65454	5,1	**1,3**
Syunik	264546	67282	131511	2,0	**0,5**
Vayots Dzor	175836	19661	48626	3,6	**0,4**
Tavush	81558	25085	47593	1,7	**0,5**
c. Yerevan	4448	4637	461	9,6	**10**
Total	**2256350**	**637101**	**694015**	**3,2**	**0,9**

(Source: Ministry of Agriculture of RoA)

RISKS AND THREATS

- Dominance of brucellosis is a matter of serious concern in Armenia (which is caused by Brucella melitensis bacteria),
- Lack of privatized land in many communities and expenses related to pastures, as well as long-term security,
- Poor cattle-breeding and management skills,
- Lack of healthcare activities which causes emergence of epidemic diseases, particularly brucellosis,
- Degraded pastures,
- Poor practice of fodder management,
- Inbreeding which results in weak genetic stock,
- Poor transport infrastructure.

ECONOMIC IMPACT

Table 7.6

Indicator	Evaluation of impact
Labor force	
Number of permanent jobs	During the ten years of project life at least 5 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 5 permanent jobs in the first year until the number reaches 7. In case of optimistic developments this number will reach 12.
Temporary/seasonal staff	In the case of full implementation of the project (optimistic option) every year during the season average 8 temporary/seasonal staff will also be recruited.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 13775795 and in case of realization of an optimistic scenario it will amount to AMD 16530953.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 411185525 (average annual amounts to AMD 48785460), and in case of optimistic developments – AMD 493422630 total.
Profit	During the ten years of the project life out of the mentioned AMD 411185525 profit will amount to AMD 80234709, in the case of optimistic scenario – AMD 96281651.
Economic outcome on the macro level	
Lump sum in the form of initial investments	As a result of the project implementation initial investments of AMD 32700000 will be made, around 100% of which (AMD 32700000) is local purchases.
Continuous in the form of produced output/provided services	During the ten years of project life output (services) amounting to AMD 411185525 will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the

	region during that period will increase by around AMD 49342263 only due to direct impact of the project.
In the form of taxes	Certainly, the total amount of taxes is hard to project, but by rough estimates, total tax allocations will amount to AMD 48081719 during the entire project implementation period. This amount includes VAT (AMD 49342263 x 10%), income tax (total salary fund x 25%) and profit tax (profit x 20%).

8. ESTABLISHMENT OF GREENHOUSES FOR VEGETABLE CROPS AND FLOWERS

For the implementation of the project of "Establishment of greenhouses for vegetable crops and flowers" investments will be required for the construction of 1000 square meter greenhouses, purchase of seedlings, and creation of conditions for electricity, gas and watter supply. The project goal is to grow flowers (rose, carnation) and vegetable crops (tomato, cucumber) on the 1000 square meter area. As a result of the project implementation 11,000 kg of vegetables and 125,000 flowers can be produced from that 1000 square meter area.

MARKET AND CUSTOMERS

In the Republic of Armenia the majority of greenhouses are built in Ararat valley, but there is a huge potential for the establishment of greenhouses in foothill regions of the country, particularly in Syunik Region. Currently around 120-130 greenhouses operate in Armenia. The majority of the greenhouses, around 60%, are specialized in the production of vegetables, and 40% - in growing flowers. In winter the greenhouses of Armenia provide 45% of vegetable demand of the domestic market.

In Europe vegetation period of one plant is about nine months which results in high crop yield. In Armenia productivity of vegetables is organized twice a year. Mostly in greenhouses four types of vegetables are grown which are presented in Figure 1 by respective shares. The prices of greenhouse vegetables are as follows:

- Tomato – AMD 750-1200
- Cucumber – AMD 850-1500

FLOWER GREENHOUSES

The flowers sold in the Armenian market are of two types – local and imported. The prices of greenhouse flowers depend on whether they are imported or are produced in the local market.
Local greenhouse flowers have the following prices:

- Rose – AMD 200-700
- Carnation – AMD 100-150

MANAGEMENT AND INVESTMENTS

The project will function as private property and will be managed mainly by the Project Director. Knwoledge of new technologies created with the purpose of effective management of the greenhouses and reduction of expenses, and knowledge of crop husbandry and other agricultural information will be required for the project management. The Director should work jointly with local and international organizations engaged in the field, which can support not only in the management of advanced technologies, but they can also support in the marketing of the products.

A staff consisting of 7 employees will be required for the project implementation. The number of employees and their salaries are presented in the following table:

Table 8.1

Salary calculation	Quantity	Gross salary	Total
Senior management	1	300,000	300,000
Service providers	2	150,000	300,000
Workers	3	120,000	360,000
Support/tech. staff	1	130,000	130,000
			1,090,000

The project will be implemented in collaboration between the state, private investor and financial organization. The shares of investments by amounts and types are provided in the table below.

Table 8.2

Distribution of investments				
Region/Community		Investor	Credit	Total
5%		55%	40%	100%
Financial	In-kind			
10%	90%			
353,302	3,179,718	38,863,220	28,264,160	70,660,400

For the project implementation a “GAZelle” truck will also be required to purchase for transportation purposes.

STRUCTURE OF INVESTMENTS

Table 8.3

Initial investments	Amount of money
Land	400,000
Greenhouses	61,050,000
Means of transport	4,884,000
Acquisition of stock	4,326,400
TOTAL	70,660,400

The prices of agricultural lands in Syunik region vary greatly by communities. In the calculations AMD 400.000 per 1000 square meters is taken as a base. For the construction of greenhouses glass, gas pipes, soil and other construction materials will be required. Stock includes seedlings, fertilizers, medical materials, etc.

INCOME, EXPENDITURES

Project incomes are generated mostly from marketing of flowers and vegetable crops. Material costs include variable costs necessary for the production of a product unit. Depreciation allocations are estimated according to the accounting standards of the Republic of Armenia – 20% for means of transport, 1-5% for buildings. In the first year no profit will be generated by the project. Later, starting from the second year, the project will become profitable.

APPROPRIATENESS

Greenhouses with new technologies are established by "Armenian Harvest Promotion Center" CJSC which is a public-private-owned company. In the coming years 500 hectares of heated and 1500 hectares of non-heated film (plastic) greenhouses will be built. It is envisaged to produce 600-700 tones of additional vegetables during 5-7 years, 90-95% of which will be exported to Russia.

Studying the problems existing in the field of agriculture in Kapan subregion, in 2012 Kapan Area Development Program of World Vision international charity organization established 15 greenhouses with an area of 30 square meters. In the framework of the implemented project greenhouses were built where tomato, cucumber, marrow, beans, and rose bushes of the villagers' choice are cultivated. Based on the aforementioned it is recommended to expand the geographical zone throughout Syunik region, establishing greenhouses with an area of 1000 square meters particularly in Kapan, Syunik, Vorotan (Goris), Karahunj, Shaki, Agarak communities, and adjacent communities of the city of Kapan. The number of sunny days is a lot in these communities and they have warm natural-climatic position which can contribute to receiving high quality crops at a relatively low prime cost. In the future this project will contribute to the development of infrastructures and transportation routes, and The project is in-line with the strategy of "Armenian Harvest Promotion Center" CJSC activity in the field of crop husbandry which envisages establishment of 500 hectares of heated and 1500-2000 hectares of non-heated greenhouses involved in vegetable growing and export, equipped with modern technologies, storing and cooling facilities, and grading and packaging capacities. Implementation of this project will solve a number of other essential problems:

1) Land resources of the region will be utilized purposefully,
2) Volumes of agricultural production, particularly of various fruit varieties will increase,
3) Effectiveness will rise, the level of marketability of products will increase,
4) Export volumes, particularly of products received from fruits and their processing, will increase significantly,
5) Land and human resources of the region will be used effectively by means of applying intensive technologies, expanding irrigable lands under cultivation, and cultivating uncultivated lands.

RISKS AND THREATS

- **Agricultural** risk depends on the crop yield and diseases. Greenhouses also have strong dependency on gas supply. They can hedge this risk to some extent by replacing gas with electricity by using generators and other equipment. For instance, heat-saving "shutters" of "Ludvig Svensson" brand can be installed to reduce heating expenses, which will result in economizing heat by about 20-30%.

- **Crop yield** is highly dependant on the right choice of the seed stock. The newly established companies can collaborate with substructures (international organizations, Greenhouse Association), which support greenhouses to be able to organize an informed and skillful management in issues related to the selection of the right seed stock, fight against diseases and introduction of new technologies.

ECONOMIC IMPACT

Table 8.4

Indicator	Evaluation of impact
Labor force	
Number of permanent jobs	During the ten years of project life at least 10 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 7 permanent jobs in the first year until the number reaches 10. In case of optimistic developments this number will reach 12.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 15218530 and in case of realization of an optimistic scenario it will amount to AMD 18262236.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 352033530 (average annual amounts to AMD 35286113), and in case of optimistic developments – AMD 44185560 total.
Profit	During the ten years of the project life out of the mentioned AMD 352033530 profit will amount to AMD 22941253, in the case of optimistic scenario – AMD 26382441 .
Economic outcome on the macro level	
Lump sum in the form of initial investments	As a result of the project implementation initial investments of AMD 70660400 will be made, around 100% of which (AMD 70660400) is local purchases, including construction.
Continuous in the form of produced output/provided services	During the ten years of project life output (services) amounting to AMD 352033530 will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the region during that period will increase by around AMD 42244024 only due to direct impact of the project.
In the form of taxes	Certainly, the total amount of taxes is hard to project, but by rough estimates, total tax allocations will amount to AMD 38955867 during the entire project implementation period. This amount includes VAT (AMD 42244024 x 10%), income tax (total salary fund x 25%) and profit tax (profit x 20%).

State participation is envisaged to amount to 5% (in-kind and financial), which will be directed to the purchase of lands or partial subsidizing of seeds.

It is recommended to expand the geographical zone throughout Syunik region, establishing greenhouses with an area of 1000 square meters particularly in Kapan, Syunik, Vorotan (Goris), Karahunj, Shaki, Agarak communities, and adjacent communities of the city of Kapan (7 communities).

9. ESTABLISHMENT OF SMALL CANNERIES

The project of "Establishment of small canneries" envisages establishment of new enterprises, purchase and relaunching of those not functioning at present, as well as merging of small workshops currently functioning in the region. This is a model project, which proposes establishment of workshops in the following subregions/communities of Syunik region:

- Kapan
- Meghri (Lehvez community)
- Goris (Harzhis community)

A total investment of around AMD 63 million will be required for the implementation of this project. The variety of the final produce may include the following products:

- Pomegranate juice,
- Fig jam,
- Nut jam,
- Cornelian cherry juice/jam,
- Blackberry juice/jam
- Apple juice/jam,
- Pear juice/jam,
- Cherry juice/jam,
- Sweet cherry jam
- Plum juice/jam,
- Peach juice/jam

APPROPRIATENESS

The appropriateness of the project implementation is based on the following circumstances:

a) the perspectives of utilizing the agricultural potential of liberated territories, as well as that of Sissian and other subregions of the region,

b) Elimination/mitigation of the current monopoly position of the only cannery funtioning in Meghri,

c) Expected positive impact on the current level of purchase prices,

d) Possible mitigation of employment problem of the women in the region, and other factors.

Table 9.1

Name	Quantity (tons)
Pomagranate	45
Fig	25
Nut	60
Cornelian cherry	150
Blackberry	100
Apple	850
Pear	420
Cherry	50
Sweet cherry	20
Plum	250
Peach	25

It is anticipated that in two or three years, as a result of implementation of "Establishment of small canneries" project, when rural population of the region have increased awareness and trust towards the alternative purveyance opportunities, at least the following quantities for each fruit presented in Table 9.1 will be purveyed. The forecast of the product growth dynamics is based on these projections.

In case of the business model of the small/local cannery workshops a replicative approach, relatively small investments and usage of local raw materials can be applied.

MARKET AND CUSTOMERS

There is a tendency of stable growth of fruit juice and different jam market both in Armenia and worldwide. The latter particularly refers to the natural products which should be the focus of the project in the process of its implementation. Many studies of target markets conducted in the framework of different business projects show that the products which used to be produced in Syunik, especially in Meghri cannery, enjoy demand. These workshops should target both domestic markets and those of the US, CIS and European Union countries. It is worth mentioning that natural/organic food is the most popular in the US and European Union countries. Thus, while promoting the brand of the company, this factor should be highlighted in company's marketing policy.

The volume of the Armenian cannery market was around 23 thousand tons[1], out of which over 50% of share belonged to juices. Educational establishments, Ministry of Defense of the Republic of Armenia, urban population (mainly the city of Yerevan) can be considered as the main consumerss' groups of the local market.

As to the CIS market, success will be guaranteed through its access to the wholesale markets of the Russian capital Moscow and Ukraine by establishing business relations with the partner organizations.

[1]- Source: National Statistical Service of the Republic of Armenia

MANAGEMENT AND INVESTMENTS

From the perspective of their legal form, these workshops will be Closed Joint Stock Companies (CJSC), where the Government of the Republic of Armenia, represented by Syunik Regional Administration, will be a co-founder jointly with the investor and a credit organization with a share correlation of 20/50/30. The Government's participation in the project assumes only financial contribution, with the status of CJSC founder and owner, followed by exit strategy. Particularly, the share of the state in the investment structure makes 20% which is totally financial (around AMD 12,543 million). In the future when the enterprises reach the anticipated level of profitability, the government leaves the business selling its share to another stakeholder.
According to the calculations, it is envisaged that the optimal share of the Government in the total investments is 20% which is totally financial by nature and amounts to AMD 12 543 330. The optimal share of the private investor makes 50% which is (AMD 31 358 325). The remaining 30% (AMD 18 814 995) of share required by the project will be covered by credits.

According to the implementation directions, the distribution of investments will look as follows:

1. **Land, buildings/constructions and/or improvement of building conditions** – based on communication with regional specialists and experts, it is beneficial to lease/rent land and buildings/constructions which means that no expenses will be charged from this budget line.

Table 9.2

N	Equipment	Total quantity
1	Steam autoclave	1
2	Glass jar washer	1
3	Seminautomatic seamer	1
4	Dosing machine for sticky products	1
5	Jar sterilizer	1
6	Blancher	1
7	Cleaning and cutting machine	1
8	Machine for cleaning fruits and vegetables	1

2. **Equipment to be purchased**

Standard mini cannery with the required equipment can be purchased, for instance, from producers available in the market of the Russian Federation, (i.e Prodmash factory CSC, city Belgorod) with the price not exceeding AMD 8 750 500. The given mini cannery includes the following equipment:

Thus, according to this business project, total cost of the equipment to be purchased for three small cannery workshops will amount to around AMD 26,251,500.

3. Transportation means to be purchased

Table 9.3

N N	Transportation means/purpose	Total	Market price per unit (thsd. AMD) *	Total price (thsd. AMD)
1	ГАЗ-3302 "ГАЗель" /truck/	1	4 070 000	4 070 000
2	ГАЗ-2705 "ГАЗель" /van/	1	4 070 000	4 070 000
	Total			8 140

Thus, the total cost of the transportation means to be purchased for the three small cannery workshops will amount to around AMD 24,420,000.

4. In terms of obligations against the labor force, in the initial period in order to ensure the normal operation of the three workshops (payment of salaries, etc) an investment of around AMD 9 420 000 will be required.

5. In terms of acquisition of raw materials and stocks, according to the estimates, an investment of AMD 2 625 150 will be required.

Management team

Table 9.4

Title of the position	Quantity	Permanent
Director	1	1
Chief engineer/technologist	1	1
Finance specialist/accountant	1	1

Permanant Staff

According to the calculations, with the purpose of ensuring normal operation of one workshop and for the equipment maintenance the following staff will be required: a qualified head of production, 17 workers/specialists of average qualification for supporting the production process, and 2 highly qualified technical personnel. The professional qualifications and quantitative distribution of the staff are presented below:

Table 9.5

Title of position	Quantity	Permanent	Temporary/ Seasonal	Qualified
Head of production	1	1	-	1
Workers/specialists	17	17	-	17
Technical personnel	2	2	-	2

Raw material and spare parts

The raw material necessary for the smooth and normal operation of the workshops should be purchased locally. Some chemicals and conservants required for the technological processes will be procured from abroad. Availability of the equipment and spare parts in terms of prices and appropriate access to the market are prerequisitea for future successful operation of the workshops. In these terms purchase of equipment and spare parts from Russian/CIS countries (for instance, Prodmash factory CSC, Belgorod, RF) is considered.

APPROPRIATENESS

The main goals of the project are: increase of volumes of vegetable crop and livestock products, promotion of production effectiveness, and addressing the main problems associated with product marketing, which can be done through establishment and improvement of agricultural infrastructures which will bring about increase of rural households' income and poverty reduction in rural areas.

RISKS AND THREATS

- Lack of qualified professional labor force,
- Emergence of unfavorable conditions for lending, interest rates, terms and mortgage,
- Unfavorable state policy,
- Underutilization of production capacities due to drought,
- Insufficient volumes of procured fruits due to lack/ limited resources owned by the rural households or little/no access to credits (loans),
- Difficulties with accessibility due to poor quality of inter- and intra-community roads, as well as breakdown/damage of own machinery,
- Unawareness of services provided by those enterprises due to issues related to accessibility of information and consultation for the farms,
- Problems associated with collection of fees-by-installments due to issues related to high risk of agricultural production, absence of insurance system of the field, and export of agricultural produce,
- Due to irrational utilization of land resources by rural households and farms, scarcity of fruits for procurement and as a result of this underutilization of production capacities and workforce,
- Scarcity of fruits to be procured due to non-rational use of land resources by rural and farm households, and as a concequence, underutilization of purveyance capacities and underutilization of labor force
- Changes in structure of domestic market and competitors,
- Challenges connected with export,
- Unfavorable foreign market.

ECONOMIC IMPACT

Table 9.6

Indicator	Evaluation of impact
Labor force	
Number of permanent jobs	During the 15[2] years of project life at least 69 new permanent jobs will be created. This number will be achieved gradually, after completion of construction/other initial works, starting with 35 permanent jobs in the second year until the number reaches 69. In case of optimistic developments this number will reach 72.
Temporary/seasonal staff	In the case of full implementation of the project (optimistic option) every year during the season average 5-10 temporary/seasonal staff will also be recruited.
Salary fund	The amount of total funds for salary per year is estimated within at least AMD 2,439,240,828 and in case of realization of an optimistic scenario it will amount to AMD 2,561,202,869.
Economic outcome on the micro level	
Gross revenue	Total gross revenue is estimated around AMD 9,296,867,353 (average annual amounts to AMD 794,527,126), and in case of optimistic developments – AMD 10,691,397,456 total.
Profit	During the 15 years of the project life out of the mentioned AMD 9,296,867,353 profit will amount to AMD 1,408,664,192, in the case of optimistic scenario – AMD 1,619,963,821.
Economic outcome on the macro level	
Lump sum in the form of initial investments	As a result of the project implementation initial investments of AMD 612,166,650 will be made, around 84% of which (AMD 514,651,500) is local purchases, including construction.
Continuous in the form of produced output/provided services	During the 15 years of project life output (services) amounting to AMD 9,296,867,353 will be produced (provided), the portion of added value of which is estimated 10-15%. This means that the GDP of the region during that period will increase by around AMD 1,115,624,080 only due to direct impact of the project.
In the form of taxes	Certainly, the total amount of taxes is hard to project, but by rough estimates, total tax allocations will amount to AMD 984,511,719 during the entire project implementation period. This amount includes VAT (AMD 92,968,674 x 10%), income tax (609,810,207) and profit tax (281,732,838).

[2]- Since the index of profitability is negative in the first seven years of the project, the estimates are done for 15 years.

10. PROMOTION OF TRADITIONAL AGRICULTURE, IMPLEMENTATION OF INTENSIVE AGRICULTURE

With the project of "Promotion of traditional agriculture and implementation of intensive agriculture" it is envisaged that the State signs alienation and sale contracts with interested Pool of Investors for the arid land resources. This will allow to make necessary investments in increasing crop yield of the lands and promoting intensive agriculture in line with the infrastructure development carried out by the State. Thanks to this, the lands on the mountain slopes of Meghri subregion will also be cultivated, which will become an additional incentive for the cultivation of persimmon, pomegranate and fig. In the table below one can have a look at those settlements of the subregion, which have irrigable lands and significant lands with the potential for additional income which are not currently irrigated.

Table 10.1

Areas/communities	Approcimate area, ha	Key crops
Meghri	25.0	Persimmon, pomegranate, fig
Agarak	20.0	Persimmon, pomegranate, grapes, fig, quince
Alvank	47.0	Persimmon, pomegranate, grapes, apricot, fig, olive
Shvanidzor	5.0	Pomegranate, persimmon, grapes, fig
Nrnadzor	11.5	Pomegranate, grapes
Lehvaz	25.0	Persimmon, nuts
Vardanidzor	17.0	Nuts, persimmon

Table 10.2

Fruit/crop	Multiplier coefficient
Persimmon	1.3
Pomegranate	1.4
Grapes	1.4
Fig	1.2
Olive	1.3
Quince	1.3

The multiplier coefficient table below presents the extent to which the total volume of the crop (considering the average for different settlements) will increase in the midterm period (2-3 years) only due to irrigation (without considering other factors, such as consumption, purveyance, climate changes, etc). The intensive agriculture project in Meghri subregion will become possible through impelmentation of this project. It is worth mentioning that the net income of a rural household increases by almost 2,8 times with the cultivation of pomegranate on 1000 sqm, even if paid labor is used for all activities, and it amounts to AMD 7,5 million in case cultivation of one hectar. In case of cultivation of persimmon, the net income will increase twice and will amount to AMD 18 million per one hectar. In case of fig cultivation net income will increase three times, thus the net income per one hectar will amount to AMD 26 million.

Table 10.3

Crop	Piep-furrow	Drip
Fig	0-5%	15-20%
Persimmon	0-5%	20-25%
Pomegranate	0-5%	15-20%
Grapes	0-5%	20-25%

The current agricultural practice shows that the crop yield of orchards greatly depends on the irrigation method. Nowadays the method of furrow irrigation is the one mostly used in Meghri, the effectiveness of which is worth comparing with the pipe-furrow and drip irrigation methods. As compared to the other crops mentioned above, persimmon and grapes are the most "water-demanding" crops. Thus, if irrigated equally (through drip system), the yield will be higher.

Now let's refer to those main regions where irrigation systems typical of intensive agriculture are applicable. [3]

- **Surface irrigation system** – is not currently applied. This methods was applied in the period of USSR for irrigating pastures in mountainous zones - Lichq, Tashtun, Vank, Kaler.
- **Sprinkling irrigation** – is not applied either, though it has been applied in the period of USSR in mountainous zones, in the lands of Tashtun and Lichq communities.
- **Furrow irrigation** – This is the main irrigation method in Meghri subregion. The irrigation system is partially supported by the Meghri Water Users' Association (WUA), while the communities situated in mountainous zone (Tashtun, Lichq, Lehvaz, Vardanidzor, Kuris, Gudemnis, Vahravar, Karchevan, Agarak and Meghri) are partially irriagated by the gravity water from Meghri river.
- **Pipe-furrow irrigation** – this system is installed in the orchard area of one farmer (about 1 ha, t. Meghri, I. Aslanyan)
- **Drip irrigation** – is set up in 4 farmers' orchard areas[4]:
    - 500 sqm, v. Lehvaz, K. Karapetyan, nursery;
    - 5 000 sqm, v. Shvanidzor, H. Ohanyan, vineyard;
    - 40 000 sqm, v. Alvank (area close to Araks), A. Hovhannisyan, apricot orchard;
    - 150 sqm, t. Meghri, N. Muradyan, nursery.

This irrigation system has not become very popular due to the following reasons:

- Water of Araks and Meghri rivers, as well as that of deep wells water contains big particles which block filters and pipes. As a result the system breaks down reapidly and later needs maintenance, bringing about additional expenses.

[3]- Different irrigation methods are presented in Appendix 2

[4] - Markets for Meghri project: http://www.shen.am/?pageid=meghri

- There is still high demand for irrigation water, therefore, no water was saved. The farmers do not want to make any investments.

Table 10.4

Crop	Pipe-furrow	Drip
Fig	5-15%	60-85%
Persimmon	5-10%	50-75%
Pomegranate	5-15%	60-85%
Grapes	5-15%	50-75%

The fact that water saving is closely interrelated with water demand of the crops, soil structure (clay, clay-sand, sand), as well as weather conditions, should be taken into consideration.

There are outdated irrigation and drinking water systems in Alvank and Shvanidzor communities of Meghri, underground tunnels with a length of around 1500 meters in Alvank and around 1200 meters in Shvanidzor. They consist of water tunnels and wells which are provided for maintenance of the system. Water flows into the system from mountain springs. The local population uses that water for both irrigation and drinking purposes. The irrigation problem can be partially addressed through expanding the network. The picture shows one of the wells of Shvanidzor kharis.

ESTABLISHMENT OF REGIONAL CENTERS FOR SUPPORTING INTENSIVE AGRICULTURE

One of the options of establishing these centers is the idea of farmers' cooperatives, with the State involvement, which later, for instance, after three years, will be handed over to the interested rural communities. The main mission of these centers will be *provision of consultancy, professional and training services to the farm and rural households, as well as individual farmers on the popular methods and modern technologies applied in intensive farming.*

The objectives of the centers are mainly the following:

- Training on management skills /transfer of experience to the economic entities in terms of agricultural machinery and information technologies;
- Support to economic entities in grading and packaging (if applicable) of high value product/crop, establishing value added, storage and transportation systems, as well as instilling the culture of strict compliance with the quality criteria, especially from the perspective of possible export;
- Training on management of natural water reserves and development of skills (various effective water usage technologies, particularly drip irrigation, sprinkling irrigation, water collection, etc) to interested communities;

- When possible, training on planning of sustainable water usage management and practical consltancy to interested economic entities.

In general, considering also the infrastructure investments unit, investment of around AMD 6,5 billion is required for the implementation of this project.

RATIONALE

Lands located on mountain slopes also will be cultivated, which will become an additional incentive for the cultivation of persimmon, pomegranate and fig. It should be stated in particular that the key prerequisite for high and guaranteed yield received from agricultural crops in the region is the smooth operation of the irrigation system.

Around 6 880 hectares of arable of the region out of 43 846 hectares are irrigated which greately affects the increase of the volume of agricultural production and efficiency of land cultivation.

Agricultural lands of the region are not cultivated due to lack of irrigation possibilities. Insufficient irrigation network and conditions are ranked as second major problem among the priority areas identified in the region in the field of agriculture.

MARKET AND CUSTOMERS

Table 10.5

Volumes of gross yield of agricultural production by years , thsd. tons

	Name/group of agricultural crop	2007	2008	2009	2010	2011
1	Potato	31.3	33.3	32.4	23.6	27.6
2	Melons and gourds	16.7	17.9	17.5	15.1	15.8
3	Fruits and berries	19.7	20.0	13.8	3.0	11.6
4	Grapes	1.3	1.0	1.0	0.9	0.9

Thus, not only the Pool of Investors envisaged within this project will benefit from the water supply system to be established as a result of project implementation, but also rural and farms households and the population of rural communities of Meghri subregion of Syunik region.

INVESTMENTS

Construction of the main and network dividing pipeline systems of the gravity water of Meghri river within the infrastructure investment unit makes the State share in the total volume of investments worth AMD 6 150 million.

Private investor will make an investment of AMD 272 445 700 (purchase of land, purchase and assembling of the equipment required for intensive farming, acquisition of trees and saplings, etc).

Distribution of investments by implemention directions is presented below:

1. **Land, buildings/constructions and/or improvement of building conditions** – The average cadastre values of 1 ha of agricultural lands of the communities of Meghri subregion are as follows (thsd. drams):

Table 10.6

N	Community	Arable		Perennial plants		
		Irrigable	Arid	Grapes	Stone fruit crop	Seed crop
1	Meghri	762.5	302.5	1952.5	1280.0	-
2	Agarak	1107.5	297.5	2510.0	-	1475.0
3	Alvank	895.0	300.0	1440.0	1360.0	877.5
4	Gudemnis	710.0	450.0	-	-	1977.5
5	Lehvaz	1032.5	352.5	1350.0	1150.0	827.5
6	Karchevan	707.5	353.8	1617.5	1505.0	1375.0
7	Kuris	685.0	532.5	2510.0	-	1435.0
8	Nrnadzor	967.5	252.5	1185.0	625.0	-
9	Shvanidzor	970.0	350.0	1840.0	915.0	1060.0
10	Vahravar	727.5	340.0	1395.0	947.5	-
11	Vardanidzor	787.5	312.5	1417.5	655.0	-

Irrigable but not irrigated agricultural lands of Meghri subregion are presented below:

Table 10.7

N	Community	Size of not irrigated arable /ha/	Ownership
1	Meghri	25.0	Private property
2	Agarak	20.0	Private property
3	Alvank	47.0	Community property
4	Gudemnis	0.0	
5	Lehvaz	25.0	10 ha community, 15 ha private
6	Karchevan	45.0	5 ha community, 40 ha private
7	Kuris	10.0	5 ha community, 5 ha private
8	Nrnadzor	11.5	Private property
9	Shvanidzor	5.0	Community property
10	Vahravar	8.0	3 ha community, 5 ha private
11	Vardanidzor	17.0	4 ha community, 13 ha private

Thus, at his point there is 213,5 hectares of not irrigated agricultural land in the subregion. Based on the information provided above, it can be concluded that the Pool of Investors will spend 74 725 000 drams on acquisition of lands.

2. Setting up/ upgrade of infrastructure. The total cost of construction of the "main" irrigation pipeline (including the branch stretching to Agarak) with the length of 53-55 thousand meters, as

well as internal network dividing pipe system (in 10 communities of the subregion, with the total length of around 40,000 meters) is estimated to be around AMD 6 150 million.

3. **Equipment to be purchased necessary for intensive agriculture** (per 1 ha). It is worth presenting here only the costs associated with the introduction of those irrigation methods which can be developed in Meghri subregion. Those are furrow, pipe-furrow and drip irriagation methods.

In the tables below the calculations of installing irrigation system per unit area are presented /1 000 sqm` 25*40 meters/:

Furrow

Table 10.8

Crop	Trees	Amelioration[5]	Furrowing	Total
Fig	40	100 000	20 000	120 000
Persimmon	40	100 000	20 000	120 000
Pomegranate	80	100 000	40 000	140 000

Total of AMD 120 000 - 140 000 will be required, including amelioration, which is usually done once, and if the land is already leveled and moulded, then only AMD 20 000 – 40 000 can be accepted for furrowing only as an investment cost for furrow irrigation system.

Pipe-furrow

Table 10.9

Crop	Trees	Amelioration	Furrowing	Pipes	Total
Fig	40	100 000	20 000	25 000	145 000
Persimmon	40	100 000	20 000	25 000	145 000
Pomegranate	80	100 000	40 000	25 000	165 000

Total of AMD 145 000 – 165 000 will be required including amelironation which is done once. However, if land is levelled and moulded, then AMD 45 000 – 65 000 can be accepted for furrowing only as an investment cost for furrow irrigation.

Drip

Table 10.10

Crop	Pipes	Droppers	Filter	Reservoir	Pump	Work	Total
Fig	27080	16000	15000	100000	20000	24000	202 080
Persimmon	27080	16000	15000	100000	20000	24000	202 080
Pomegranate	39080	32000	15000	100000	20000	48000	254 080

[5]- Amelioration (soil leveling and moulded) is conducted once, while furrowing is done annually. The service cost is approximate average depending on the land relief and quality of soil (clay, sand, hoed, etc). Usually farming services are calcualted based on the hours worked.

As it can be seen from the table, the cost of drip system installation for 1000 sqm orchard drastically differs from the other methods mentioned above.

Thus, based on the calculations presented above and international studies, average of around AMD 160 000 will be required for the purchase of devices and equipment for the development of intensive agriculture per 1 hectare (in case of drip irrigation - tapes with drip and flat emitters, old orchard pipelines; in case of automated irrigation - different solenoid valves and accessories, controllers, atomizers, dispursers, runners, drip pipes, rain transducers, etc.)

At this point within the framework of this project, there is only 213, 5 hectares of arid area available. Thus, investments for this line will amount to AMD 34 160 000.

4. Purchase of trees/saplings

Before reviewing investments for trees/saplings, it is worth referring to the target crops per community. The table below gives the overview of this:

Table 10.11

N	Community	Size of not irrigated arable	Target crops	Persimmon	Pomegranate	Fig	Grapes
1	Meghri	25.0	Persimmon, pomegranate, fig	8.33	8.33	8.33	
2	Agarak	20.0	Persimmon, pomegranate, fig, grapes	5	5	5	5
3	Alvank	47.0	Persimmon, pomegranate, fig, grapes	11.75	11.75	11.75	11.75
4	Gudemnis	0.0					
5	Lehvaz	25.0	Persimmon	25			
6	Karchevan	45.0	Persimmon, pomegranate, fig	15	15	15	
7	Kuris	10.0	Persimmon	10			
8	Nrnadzor	11.5	Pomegranate, fig		5.75		5.75
9	Shvanidzor	5.0	Persimmon, pomegranate, fig, grapes	1.25	1.25	1.25	1.25
10	Vahravar	8.0	Persimmon	8			
11	Vardanidzor	17.0	Persimmon	17			
	Total	213,5		101,33	47,08	41,33	23,75

Persimmon – as per experts' feedback and review of advanced interantional practices, 100 saplings is required per 1 ha at the price of AMD 3 000 - 5 000 each (depending on the type and yield capacity). Thus, AMD 50 665 000 is required for 101,33 hectares (101,33x100x5000).

Pomegranate - as per experts' feedback and review of advanced interantional practices, 200 saplings is required for 1 ha area at the price of AMD 2500 - 4 000 each (depending on the type and yield capacity). Thus, AMD 37 664 000 is required for 47,08 hectares (47,08x200x4000).

Fig - as per experts' feedback and review of advanced interantional practices, 60 saplings is required for 1 ha at the price of AMD 2500 - 4 000 each (depending on the type and yield capacity). Thus, AMD 9 919 200 is required for 41,33 hectares (41,33x60x4000).

Grapes - as per experts' feedback and review of advanced interantional practices, 1100 saplings is required for 1 ha at the price of AMD 1500 - 2500 each (depending on the type and yield capacity). Thus, AMD 65 312 500 is required for 23,75 hectares (23,75x1,100x2,500).

Thus, investment of AMD 163 560 700 is required for the purchase of trees/saplings.

LABOR FORCE AND RAW MATERIAL

Below the averaged cost distibution for recruiting labor force required for the performance of intensive agriculture (per 1 000 sqm) is presented:

Table 10.11

Work	Amount	Price	Total
Pruning, removal of cut branches	1	20,000	20,000
Preparation of furrows, and holes around the tree trunks	1	20,000	20,000
Whitening of tree trunks	3	3,500	10,500
Fertilization	1	15,000	15,000
Spraying	5	4 000	20,000
Mowing, preparation of hay blocks and transportation	1	33,600	33,600
Guarding of crop (guard)	1	60,000	60,000
Irrigation (as work)	20	3 000	60 000
Other costs	1	15,000	15,000
TOTAL			254,100

Below cost distribution of staff salaries of the centers on a monthly basis is presented:

Table 10.12

Salary calculation	Quantity	Salary	Total
Management	4	200,000	800,000
Local specialists	8	120,000	960,000
TOTAL			1,760,000

Below cost distribution of invited foreign specialists to those centers on an annual basis is presented

Table 10.13

Purpose of the cost	Quantity	Salary	Total (annual)
Salary	2	13,770,000	27,540,000
Per diem	2	6,885,000	13,770,000
Flight	8	765,000	6,120,000
Accommodation	2	4,590,000	9,180,000
TOTAL			56,610,000

RAW MATERIAL AND SPARE PARTS

Accessibility of the equipment and spare parts in terms of prices and access to the market are a serious guarantee for future success of the project. There is at least one production of drip irrigation system in the territory of the Republic of Armenia, which is in the town of Vedi, Ararat region of the RoA. The organization produces and sells drip system pipes with a diameter of 15 milimeters, at the price of AMD 80 - 100 per 1 meter (envisaged for open ground). There is no production of accessories/parts (filters, water containers, droppers, other parts) in Armenia yet, however, considering current tendencies, it can be certainly concluded that these parts are in demand and their local production can make a good business. For the purchase of these accessories, CIS markets, mainly those of Russia and Ukraine, were targeted, though it should be mentioned in particular, that they also import these equipment and devices from European markets.

MANAGEMENT

As mentioned above, participation of the Government in the project implementation, represented by Syunik Regional Administration, is limited by the infrastructure only. This assumes construction of Meghri gravity irrigation system as necessary infrastructure, which will enable around 682 ha lands of Meghri subregion of Syunik region, including 632 ha lands currently irrigated by 8 pump stations, to be irrigated through gravity irrigation. Besides, the State assumes the construction of mini pipeline network stretching from the “main pipeline” to the communities/targeted lands for the promotion and creation of necessary preconditions for the introduction and/or development of intensive agriculture, as well as revival of vineyards. Based on initial estimates, it will cost approximately 6,150 million drams.

RISKS AND THREATS

- Emergence of unfavorable conditions for lending, interest rate, terms and mortgage,
- Unfavorable state policy,
- Challenges in exploitation and maintenance of secondary and tertiary irrigation systems assigned to the water users’ associations connected with the problems in payment of fees-by-

installments caused by the high risk of agricultural production, lack of insurance system in that area, and issues related to export of agricultural produce

- Endangering of the participatory principle of irrigation system management envisaged by "Irrigation system improvement" program adopted by the Government of the Republic of Armenia connected with the passive performance and boycott by water using households; problems with the payment of fees-by-installments caused by potential drought, failure of normal performance of the water users' associations due to scarcity/lack of rural households' own resources, as well as scarcity/inessability of credits (loans); limited access to conduct renovation of water pipelines and water basins due to poor conditions of intra- and inter-community roads, as well as breakdown/damage of the machinery driving there for that purpose;
- Scarcity of fruits necessary for purveyance due to non-rational utilization of land resources by rural households and farmers, segmentation of agricultural production, and limited possibilities of the above-mentioned households and farms or lack of appropriate structures who would deal with the export of the agricultural produce, and as a consequence to all this, emergence of problems with the payment of fees-by-installments, as well as probable damage of water pipelines and water reservoirs situated in borderline agricultural lands of the region, including support machinery, through hostile actions.

SUMMARY OF THE ECONOMIC IMPACT OF THE PROPOSED PROJECTS

This section outlines the brief summary of economic impact assessmment of the proposed projects in the following areas:

LABOR FORCE

- Number of permanent jobs
- Temporary/seasonal workers
- Salary fund

ECONOMIC OUTCOME ON MICRO LEVEL

- Gross revenue
- Profit

ECONOMIC OUTCOME ON MACRO LEVEL

- Initial investments
- Contribution in the GDP of the region
- Taxes

LABOR FORCE

Number of permanent staff

- In case of successful implementation of the projects, after making the investments, in the first year 978 jobs will be created, and in case of realization of the optimistic scenario the number of created jobs will reach 2,067.
- In the last – tenth year of the implementation of the projects as per the main scenario 1,407 permanent jobs will be created, which, in case of the optimistic scenario, will become 2,756.
- In case of realization of the main scenario the average annual number of permanent jobs to be created will make 1,192, in case of the optimistic scenario this number will become 2,412.

Temporary/seasonal staff

- As per the main scenario, after making the investments, in the first year the number of temporary/seasonal staff will make 33, and in case of realization of the optimistic scenario it will become 577.

- In the last – tenth year of the implementation of the projects as per the main scenario, the number of temporary/seasonal staff will reach 64, and the average annual number will be 49. In

case of optimistic developments, it is estimated that these figures will amount to 1,129 people and 853 people respectively.

Salary fund

- After making the investments, in the first year, as per the main scenario the salary fund is estimated AMD 1.59 billion, which in case of the optimistic scenario will amount to AMD 2.64 billion.

- In the final –tenth year of the implementation of the projects the salary fund will amount to AMD 2.69 billion. This is in case of realization of the main scenario. In case events evolve by the optimistic scenario, this figure will amount to AMD 6.88 billion.

- It is estimated that the averaged annual value of the salary fund, as per the main scenario of project implementation, will amount to AMD 2.14 billion, or in case of optimistic developments – AMD 4.76 billion. In the entire course of implementation of the projects, as per the main scenario, the salary fund will amount to AMD 30.77 billion, and in case of the optimistic scenario – AMD 43.72 billion.

ECONOMIC OUTCOME ON THE MICROLEVEL

Gross revenue

- In case of the realization of the main scenario, as per the estimates, after making the investments, in the first year gross revenue of AMD 3.62 billion will be provided, and in case of optimistic scenario it will amount to AMD 6.19 billion.

- At the end of the implementation of the projects – in the tenth year – in case of the main scenario the estimated amount of gross revenue will make AMD 11.35 billion, and estimated by the optimistic scenario – AMD 17.55 billion.

- As for the average annual revenue and the total revenue generated in the course of all the projects, the estimates as per the main scenario will amount to AMD 7.48 billion and AMD 139.29 billion respectively, and in case of optimistic scenario – AMD 11.87 billion and 234.56 billion respectively.

Profit

- In the first year, after making the investments, by the main scenario loss of AMD 518.98 million is estimated. Even in case of realization of the optimistic scenario in the first year, after making the investments, negative profit – loss – is projected, which will amount to AMD 945.83 million.
- In the last – tenth year of the implementation of the project in case of the main scenario the projected profit will amount to AMD 2.5 billion, the average annual profit – AMD 988.52 million. As for the estimate of the values of these two indicators by the optimistic scenario, they will amount to AMD 8.35 billion and AMD 3.7 billion respectively.

- During implementation of all the projects total profit by the man scenario will amount to AMD 30.51 billion, and in case of the optimistic scenario - AMD 37.77 billion.

ECONOMIC OUTCOME ON THE MACROLEVEL

Initial investments

In case of the realization of the main scenario, after making the investments, in the first year the volume of initial investments is estimated AMD 4.05 billion, AMD 3.03 billion of which will be local (in the country) purchases. In case events evolve according to the optimistic scenario, it is projected that initial investments will amount to AMD 7.57 billion, around AMD 6 billion of which will make local purchases.

Contribution in the GDP of the region

- As per the main scenario of project implementation in the first year after making the investments, contribution in the GDP of the region, expressed by value, is estimated AMD 361.78 million, and in case of the optimistic scenario the contribution will be equivalent to AMD 928.36 million.

- In the last – tenth year of the projects contribution in the GDP of the region as per the main scenario will amount to AMD 1.13 billion, and average annual – AMD 748.36 billion. In case of optimistic developments these figures will amount to AMD 2.63 billion and 1.78 billion respectively.

- In the course of all the projects total contribution in the GDP of the region by the main scenario will be equivalent to AMD 13.93 billion, and in case of the optimistic scenario – AMD 35.18 billion.

Taxes

- In case of realization of the main scenario, after making the investments, in the first year taxes will amount to AMD 456.38 million, 8% of which will be indirect payments, 5% of profit tax, and 87% income tax. In case of the optimistic scenario, after making the investment, in the first year the taxes payable will amount to AMD 781.01 million, 12% of which is the portion of indirect taxes, 4% is profit tax and 84% is income tax.

- As per the main scenario, in the last – tenth year of the implementation of the projects the taxes payable will amount to AMD 1.29 billion, 9% of which is indirect taxes, 39% is profit tax, and 52% is income tax. As per the optimistic scenario in the same tenth year the taxes will amount to AMD 3.65 billion, 7% of which is indirect taxes, 46% is profit tax, 47% is income tax.

- In case events evolve according to the main scenario, it is projected that the average annual tax payments will amount to AMD 871.19 million, 9% of which is indirect taxes, 30% is profit tax, 61% is income tax. In case of optimistic developments average annual taxes will amount to AMD 2.22 billion, of which 8% is indirect taxes, 38% is profit tax, and 54% is income tax.

- As for the amount of taxes payable during the entire period of the projects, as per the main scenario they will amount to AMD 15.18 billion (9% is indirect taxes, 40% is profit tax, 51% is income tax), and as per the optimistic scenario it will make around AMD 22 billion (16% is indirect taxes, 34% is profit tax, 50% is income tax).

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