

GLOBAL LEADERS PROGRAMME



Planting fresh ideas in Iran: Developing Semirom's apple industry

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Executive Summary

Executive Summary (1/2)

- In expectation of the lifting of sanctions in 2016 and the opening of its markets to western businesses and investors, Iran's agriculture industry is well positioned to reap significant benefits and will continue to be one of the mainstays of the country's economy.
- The agriculture sector accounts for 9% of Iran's GDP (USD 43.8bn) and 16% of the labour force. However, the sector faces key constraints in terms of infrastructure, technology and expertise and access to capital and markets.
- Isfahan Province, located in the Central Plateau of Iran is a key agricultural region. Semirom County, located in the southern tip of Isfahan Province is well regarded for its apple industry and accounts for 10% of the country's total apple production.
- The industry is characterized by large numbers of smallholder farmers, those with 1 to 2 hectares of land. Although smallholder farmers account for almost 80% of the apples produced in the region, they lack the necessary tools and information to optimize production and sales of produce. It is estimated that up to 30% of production is lost to waste or sold on at cost for various uses such as for animal feed.
- Focus in recent years has been on increasing apple production in the region, yet productivity is still far below the global average at 15 tonnes/hectare compared with 40 tonnes/hectare in Europe.
- A key obstacle for farmers is their limited options for selling their produce in the region. They also currently lack adequate representation for negotiating with buyers and input/service providers.
- The current lack of any prominent apple brand in Iran and the growing demand for healthier products have combined to create an opportunity for an apple business producing and processing fresh apples and healthy apple products.
- This report proposes such a venture that will satisfy this growing demand and also support the development of the Semirom apple industry while contributing to livelihood development for farmers and driving overall positive social impacts in the region.

Executive Summary (2/2)

- The Global Institute For Tomorrow (GIFT) has partnered with the Esfahan Chamber of Commerce, Industries, Mines and Agriculture (ECCIMA) and the Semirom Farmers Union to develop a business plan for improving the region's apple industry.
- The proposed business model describes a new entity, the **Semirom Seeb Company (SSC)** that will manage the collection & sorting, processing & packaging and sales & marketing of fresh apples and apple products including apple chips, juice/concentrate and vinegar. The SSC will work closely with the newly formed Farmers Co-operative, a local farmer-led organisation that will also have a stake in the business.
- During Phase 1 of the plan, SSC will work closely with cooperative members to support the improvement of farming and harvest practices in order to increase the production of Grade 1 and 2 apples while purchasing Grade 3 and "undersized apples" for the company's apple chip business.
- SSC will operate a knowledge service platform in partnership with the local government, technical experts and universities to provide cooperative members with access to information such as market pricing, crop and water management in addition to technical support and best practice solutions.
- To strengthen supply chains and ensure stable supply of apples in the long term, cooperative members will be collectively offered up to 40% ownership of the SSC in the form of "sweat equity" in order to share in the future success of the company. Dividend payments to investors and farmer members are planned.
- In Phase 2 and 3, the company will expand its product range to include apple vinegar and apple juice/concentrate in order to meet the expected demand from a growing middle class and tourism sector.
- This report describes the opportunity for SSC investors to receive an attractive IRR of between 9% and 19% over a six year period.
- The report further proposes key enabling policies that it is suggested the government consider in order to support the development of the apple industry overall and describes expected social benefits that will be realized in the Semirom region.



Introduction and Background

Global Leadership Programme



The **Global Institute For Tomorrow (GIFT)** is an independent pan-Asian think tank providing content-rich and intellectually challenging executive education from an Asian worldview.

The **Global Leaders Programme (GLP)** is GIFT's flagship executive education programme designed for managers from leading global organisations to think critically about the drivers of change in the 21st Century and develop new business models that address the defining challenges of our time.

Project Team

- 20 participants from over a dozen countries and companies joined the GLP in Dubai, UAE and Isfahan, Iran in September/October 2015.
- With support from the Esfahan Chamber of Commerce, Industries, Mines and Agriculture (ECCIMA) and the Semirom Farmers Union, participants worked to produce business recommendations for developing the regions promising fresh apple and apple products industry. The group received support from other local partners including the Union of Producers and Exporters of Agriculture Products (UPEAP), the Agricultural Bank of Iran (Semirom Branch), the Governor of Semirom, investors and advisors.



International team of professionals exploring the challenges and opportunities for the apple sector in Isfahan Province.

Scope of Project (1/2)

Programme Objectives

Explore and gain a better understanding of the apple industry in Isfahan Province and review the challenges and opportunities for the growth of the sector.

Create a sustainable business plan for the apple sector in Semiron County which will enhance the economy of the region and improve the livelihood of the apple farmers.

Develop a financially viable business plan for the ECCIMA and Semirom Farmers Union which takes into account;

- Country context including the social, economic and environmental factors that impact the apple industry;
- Supply side of the industry including improvements in the organisation of farmers and production methods, and recommendations for overcoming key concerns;
- Demand side including target customers and product market.



Scope of Project (2/2)

Methodology

- Insights from the ECCIMA, the Semirom Farmers Union, the Agricultural Bank of Iran, UPEAP, independent farmers and experts in agriculture and the apple industry in Isfahan Province.
- Meetings and site visits in Semirom and Padena with farmers, local authorities, representatives of the Agricultural Bank and university students.
- Development of a business plan with in-depth analysis of four key areas: market analysis & operations; financial analysis; organisation structure, governance and social impact and sales and marketing.
- Presentation of highlights of business plan to representatives from the Isfahan Governors office, board members of the ECCIMA, representatives of the Agricultural Bank of Iran, farmers, university students and local officials from Semirom.
- Final business plan to be used as a pre-feasibility study to support the ECCIMA and Semirom Farmers Union in starting up and attracting investment into the new venture.



The Islamic Republic of Iran

Iran has the second largest population and is the second largest economy in the Middle East.

- Land area: 1,648,195 km²
- Population: 81 million
- GDP per capita: USD 5,292 (2014)
- Agricultural sector accounts for 9% of Iran's GDP (USD 43.8bn) and 16% of the labour force
- Inflation rate of 15.% (2014)
- Literacy rate of 86.8% and youth unemployment rate of 25%
- Largest global producer of pomegranate and pistachio and largest producer of fruits in the Middle East



Apple Industry in Iran

- Iran is the 7th largest producer of apples in the world, after China and the USA.
- Semirom is known as the “Roof of Iran” due to its high altitude of 2,000 meters above sea level. This gives the apples produced in the region their characteristically sweet taste, aroma and colour.
- Apples from the region are highly sought after by consumers in the Middle East and Asia.
- Orchards in Semirom County range in size from 1-100 hectares. Roughly 80% of farmers are categorized as having small holdings, between 1-2 hectares of land.

Total apple production in Iran	1.7 million tonnes
Apple production in Semirom	300,000 tonnes
% of arable land in Semirom	12%
% of arable land allocated to apple cultivation in Semirom	90%
Main varieties grown	- Red Delicious - Golden Delicious - Golab
Apple harvest season	June - end September (4 months)





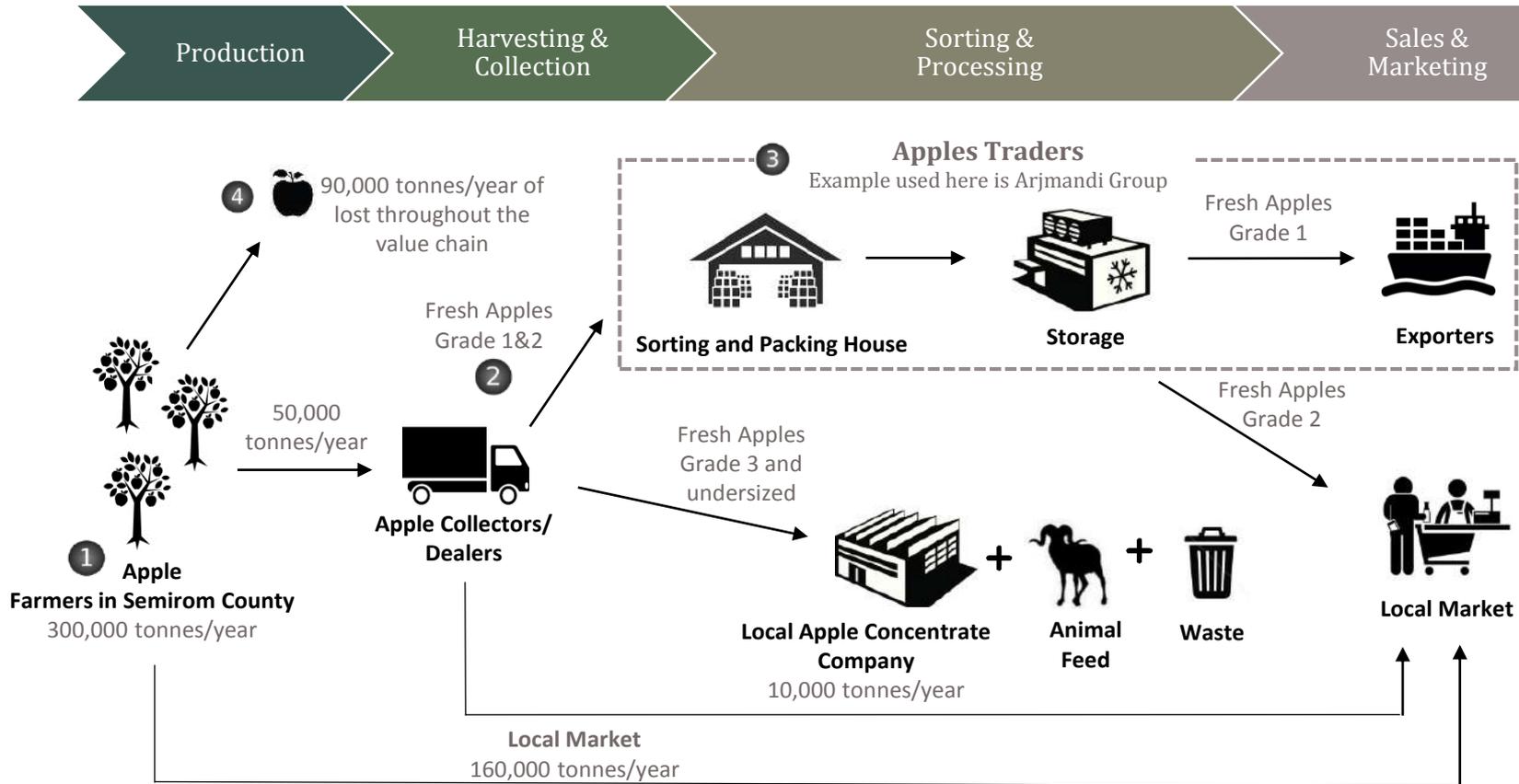
Current Situation and Challenges

Summary



- Iran's agricultural sector is lagging behind in terms of infrastructure, technology and expertise and access to capital and markets.
- 300,000 tonnes of apples per year, comprising 10% of Iran's total apple production comes from Isfahan Province, specifically Semirum County.
- Of the total apple production, 30% is either being wasted or sold at cost for use as animal feed.
- Focus in recent years has been on **increasing production** in the region, yet productivity is still far below the global average.
- Farmers have limited options for selling their produce and currently lack adequate representation for negotiating with buyers and input/service providers.
- **Environmental impact**, specifically water management is also a critical challenge for apple farmers.

Current Apple Value Chain in Semirrom County

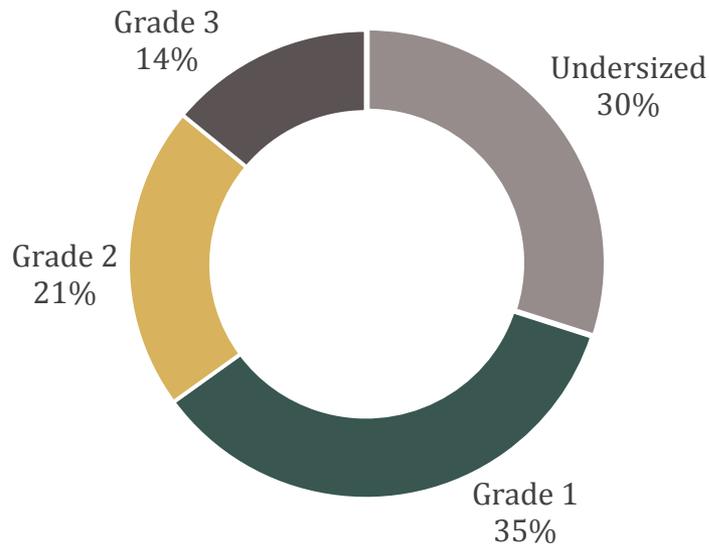


- 1 Small and medium size farmers sell their apples to a distributor/collector. Large farmers have the option to sell directly to the local market.
- 2 Dealers/collectors sell fresh Grade 1&2 apples to apple traders and Grade 3 and undersized apples to small scale apple product companies. A portion of the latter are also used as animal feed or wasted.

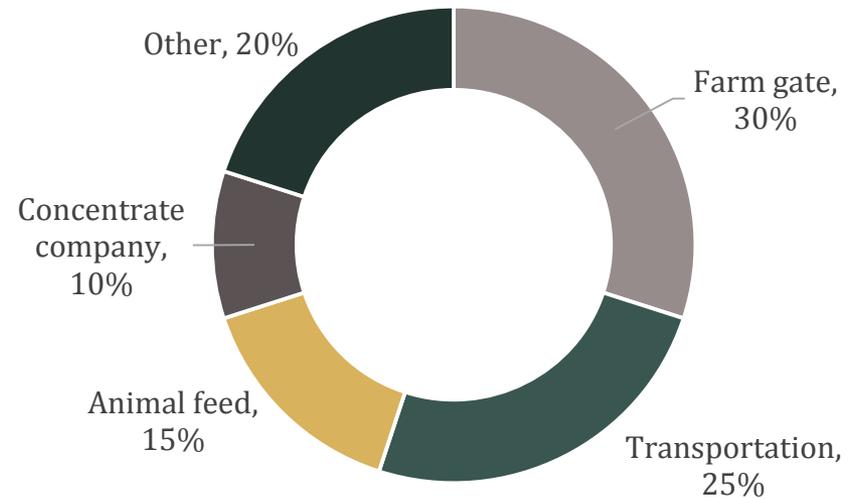
- 3 Apple traders such as the Arjamdi Group sort and package Grade 1 apples for export. Grade 2 apples are sold to the local market.
- 4 90,000 tonnes/year comprising 30% of the total apple production in Semirrom County is currently lost throughout the value chain. Of this 10,000 tonnes is purchased by the local concentrate company. ** Estimation of quantities based on 2014 production.*

Current Composition of Apple Production

Apple Production Composition in Semirom County



Apples Lost Across the Value Chain in Semirom County (90,000 tonnes/year)*



* Estimated quantities.

- At present, 90,000 tonnes/year or 30% of total apple production in Semirom lost throughout the value chain. These losses include those at the farm gate and during transportation. A portion of these are sold to the local concentrate company, or as animal feed.
- These apples are bought by collectors and utilized in the production of concentrate, vinegar, chips and fruit bars.
- The apple product market in Iran is still in its infancy with only 12 companies currently engaged in the production of apples products.

Challenges and Opportunities

Key challenges to be addressed include;

- Productivity of apple trees in Semirom at 15 tonnes/hectare is far below the global average and compares with estimated average of 40-45 tonnes/hectare in Europe.
- Water management remains a key issue with only 20% of total plantation area in Semirom currently equipped with proper drip irrigation technology. The region receives precipitation in the form of snowfall but lacks the infrastructure to capture this, and thus overall area under cultivation cannot be expanded.
- Majority of apples produced are sold in the domestic and international market with minimal added value processing.
- Farmers have limited options for selling their produce and currently lack access to expertise related to irrigation and water management, agricultural inputs financing and technical assistance.

Opportunities available in the apple sector of Semirom include;

- Improving farmers' livelihoods by increasing the proportion of Grade 1 apples produced, providing access to expertise in order to add value to products and facilitating additional profit share opportunities through a new farmer organisation.
- Introducing post-harvest processing solutions thus stimulating the local economy.
- Capitalizing on the latent value in Semirom apples through improved branding, marketing and sales efforts.

The apple sector of Semirom has great potential for improvement thus positively impacting the livelihoods of apples farmers in the region



Business Model

Summary

The objective of the business plan is to design a viable business model centered around technically sound and appropriate harvesting, sorting and packing solutions for Semirom's apple farmers, including the creation and marketing of processed apple products thereby improving the livelihoods of the farming community.

- The proposed business model describes the activities of a new entity, the **Semirom Seeb Company (SSC)** which include collection & sorting, processing & packaging and sales & marketing of fresh apples and eventually also processed apple products.
- Ownership of the SSC is to be shared among private investors and the newly formed **Farmers Co-operative** comprising small to medium sized farm owners (those with 1 to 2 hectares of land).
- The SSC will operate a **knowledge service platform** in partnership with government, technical experts and universities which provides co-operative members access to information such as market pricing, crop and water management.
- A **new brand** representing the uniqueness and quality of Semirom apples is proposed under which the SSC will market and sell fresh apples in the short-term and apple products in the future.



Tomorrow Matters.

Rational for Business Model

- Given the significant potential of the local apple industry in Semirom as well as commitments from government, ECCIMA and the Semirom Farmers Union to further develop the industry, there is an opportunity for a new commercial entity to lead the process of driving improvements.
- Apple farmers in Semirom have demonstrated a keen interest in becoming involved in a new venture and importantly also the ambition to improve productivity, individually and collectively.
- Thus, it is proposed that the new company be incorporated for and by farmers, relying on new structures of organisation both among farmers in a local Semirom-based cooperative and at the corporate level to operate in the market and represent farmers' interests with greater economic power.
- A new commercial structure, the "Semirom Seeb Company" (SSC) is proposed which will manage the collection & sorting, processing & packaging and sales & marketing of fresh apples and apple products in Semirom County.
- The SSC will work in conjunction with a newly formed Farmers Co-operative comprising small to medium sized farmer holdings (1-2 hectares). The co-op will facilitate improvements in produce quality and quantity by providing higher quality inputs to farmers and knowledge and technical services which are not currently available.
- To ensure alignment of interests, operational excellence and transparent decision making, the members of the farmers co-op will be shareholders in the new company alongside private investors. Other key stakeholders in the business model include the ECCIMA, the UPEAP and the local Semirom Government.
- To guarantee consistent supply of produce and loyalty to the company, members of the farmers co-op will be awarded between 25-40% shares in the SSC in the form of "sweat equity". Private investors (domestic and international) will be awarded 60-75% of the total shares.

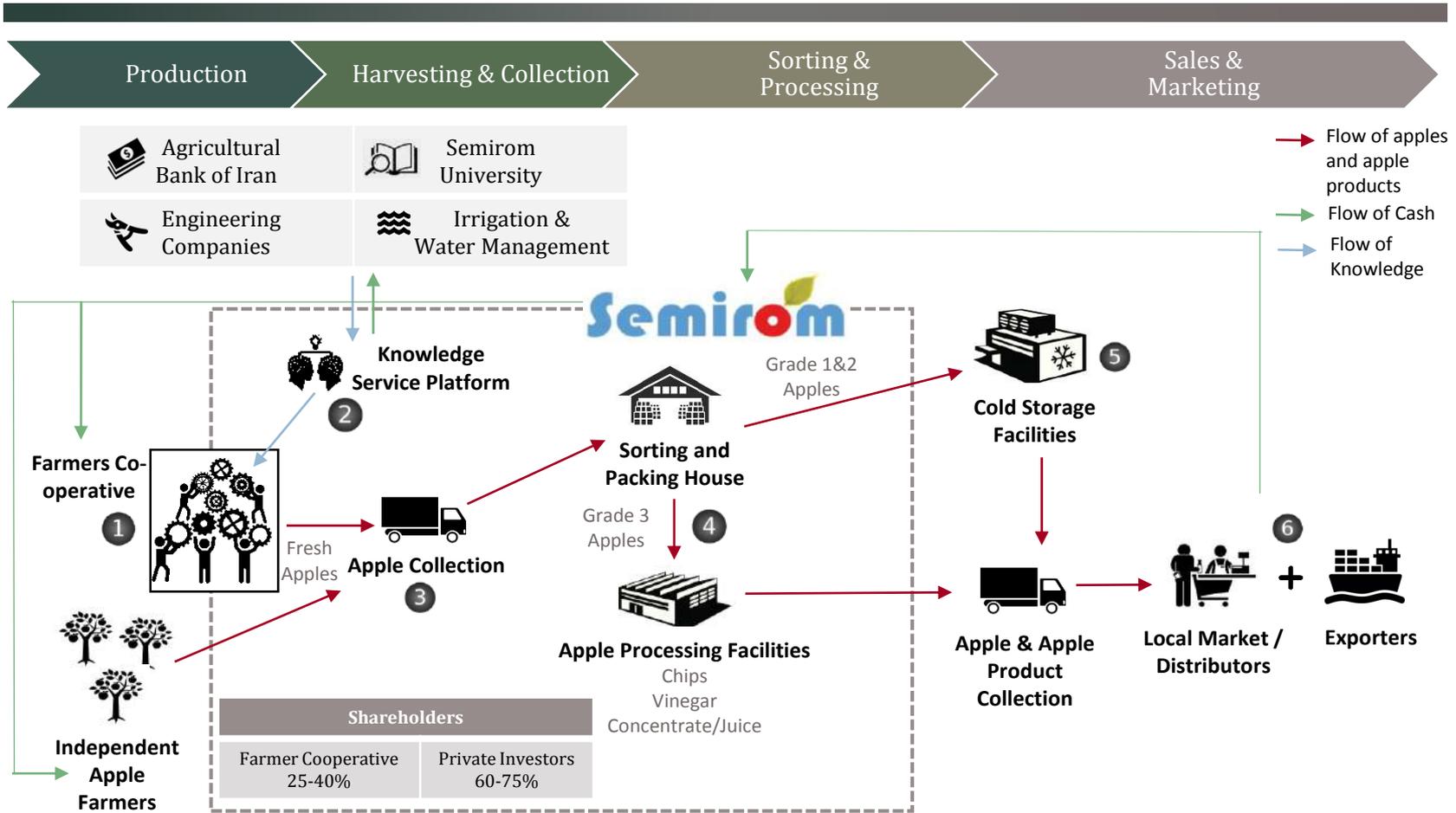
Introducing the Semirom Seeb Company



Pure apple products for your healthy life

- ✓ Unique nature and taste from Semirom
 - ✓ Supporting a healthy lifestyle
- ✓ Social value created through supporting farmers' livelihoods
 - ✓ Welcoming the world to Semirom

Proposed Business Model



- 1 SSC acquires apples from Farmer Co-op and independent apple farmers in the region.
- 2 Knowledge service platform established for farmers to gain access to information on best practice.

- 3 The company will own transportation and outsource additional vehicles as needed during harvest season
- 4 Sorting, packing houses and processing facilities to be owned and operated by SSC in Phase 3. Rental basis during Phase 1 & 2.

- 5 Cold storage facilities to be utilized on a rental basis.
- 6 Apple and apple products to be sold to the local market/distributors and exported.

The Farmers Co-operative

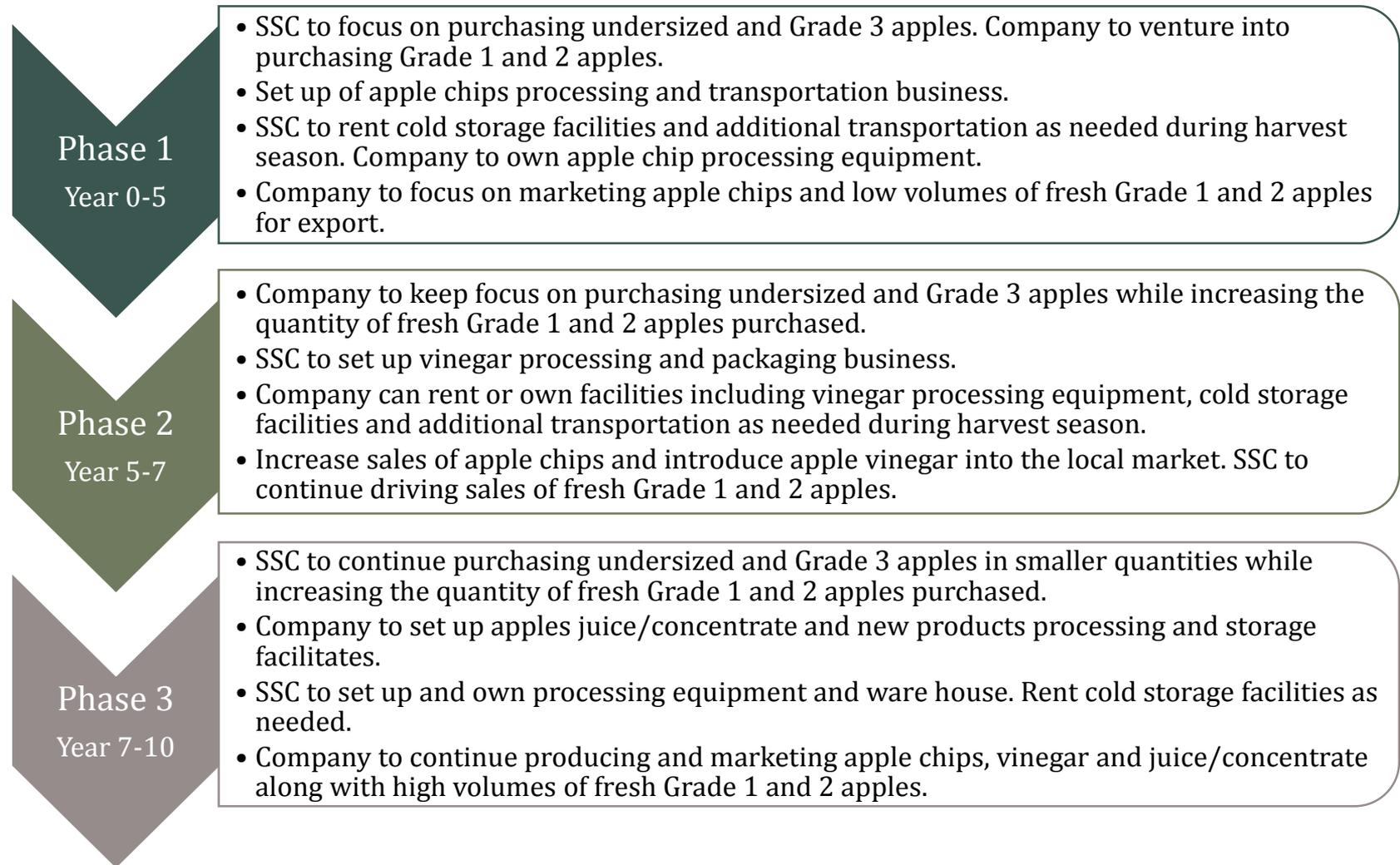
Despite the existence of the Farmers Union in Semirom, lack of effective organisation among farmers is a key obstacle to collectively improving the quality of apples and negotiating with buyers and agricultural input/service providers.

The proposed Farmers Co-operative will provide necessary services and include benefits for small and medium-sized farmer holdings comprising;

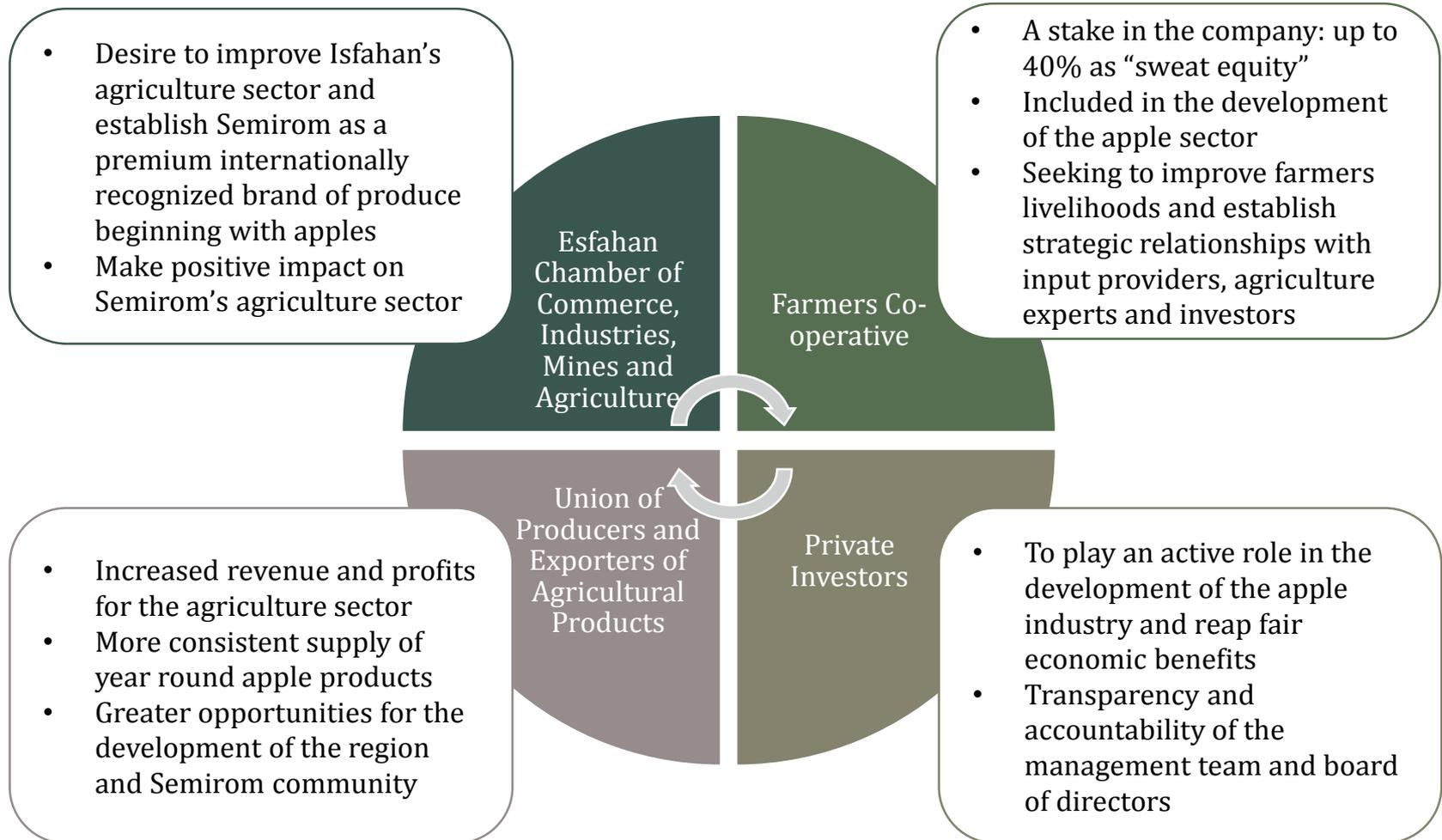
- Representation for negotiating with buyers and input/service providers for higher quality products;
- Between 25-40% **“sweat equity”** in the company in exchange for supply commitments;
- Access to the SSC’s **knowledge service platform** which is run in partnership with government, technical experts and universities to provide co-operative members access to information such as market pricing and tools and techniques for effective crop and water management;
- Details on proposed co-operative structure and benefits to follow in Organisational Structure and Governance section.



Phases and Business Expansion



Key Stakeholders and Interests



Key Business Model Assumptions

- Demand for local fresh food will increase along with exports as Iran continues its economic reconciliation with and opening to western countries
- Iran's fruit snack market will continue to grow at around 16% annually
- Currently there is no major brand producing apple chips in Iran, thus presenting an opportunity for the proposed company
- SSC will be able to capture a 25% market share of the fruit snacks market in Iran
- The Farmers' Co-operative will comprise a minimum of 200 members and the organization will have systems of management to ensure consistency and sustainability
- Majority shareholding of SSC will remain with private investors (domestic and international)
- SSC will be able to access skilled and un-skilled labor on a consistent basis





Organisational Structure and Governance

Summary



The proposed mandate of the Semirom Seeb Company (SSC) is to improve the quality and post-harvest processing of Semirom apples to ensure that the interests of farmers and other key stakeholders are protected, while driving social development.

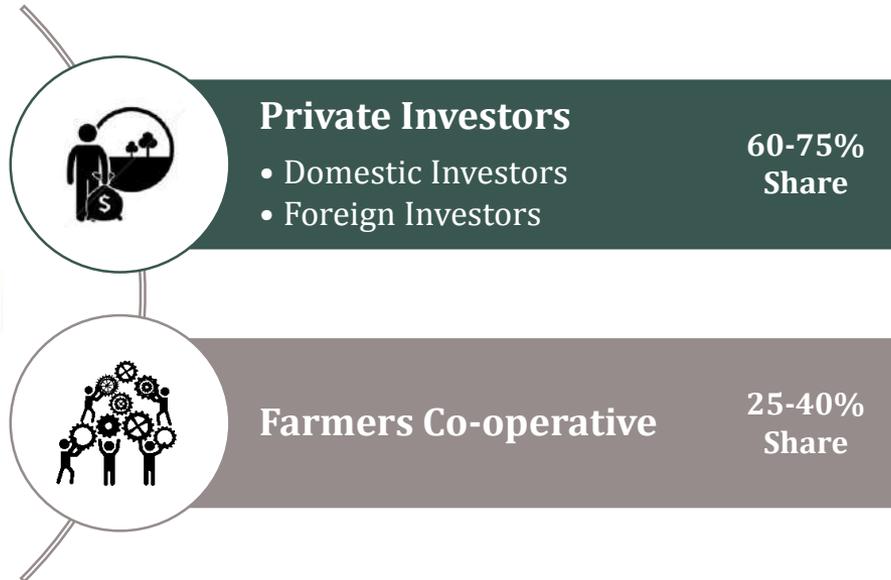
- Ownership of the SSC is shared among private investors and newly formed farmers co-operatives comprising small to medium sized farm owners (those with 1-2 hectares of land).
- To ensure alignment of interests, operational excellence and transparent decision making, the farmers co-op and private investors will be shareholders in the company.
- Farmers will be offered “sweat equity” in the company in exchange for supply commitments.

SSC Governance and Management

- The SSC will be run by a management team and governed by a Board of Directors comprised of representatives from both the farmers co-op as well as private investors.

Company Shareholding Structure

In order to align interests, ensure operational excellence and facilitate transparent decision making, the farmers co-op and private investors will be joint shareholders in the company.



- Private investors will be sought who have an orientation to “impact investing” or “patient capital” and who seek to drive social as well as financial returns
- “Sweat equity” will be offered to the new Farmers Co-operative and by extension to individual members, relative to land ownership and total overall production. Specific details of ownership and profit-sharing to be determined upon further consultation.
- Dividend payments proposed to be limited to 50% of maximum yearly net profits (10% allocated to local community development and the balance 40% for future development of SSC).

Proposed Organisation and Ownership Structure

The SSC will be run by a core management team and governed by a Board of Directors (BoD) **made up** of representatives from both the Farmer's Co-operative and Private Investors.

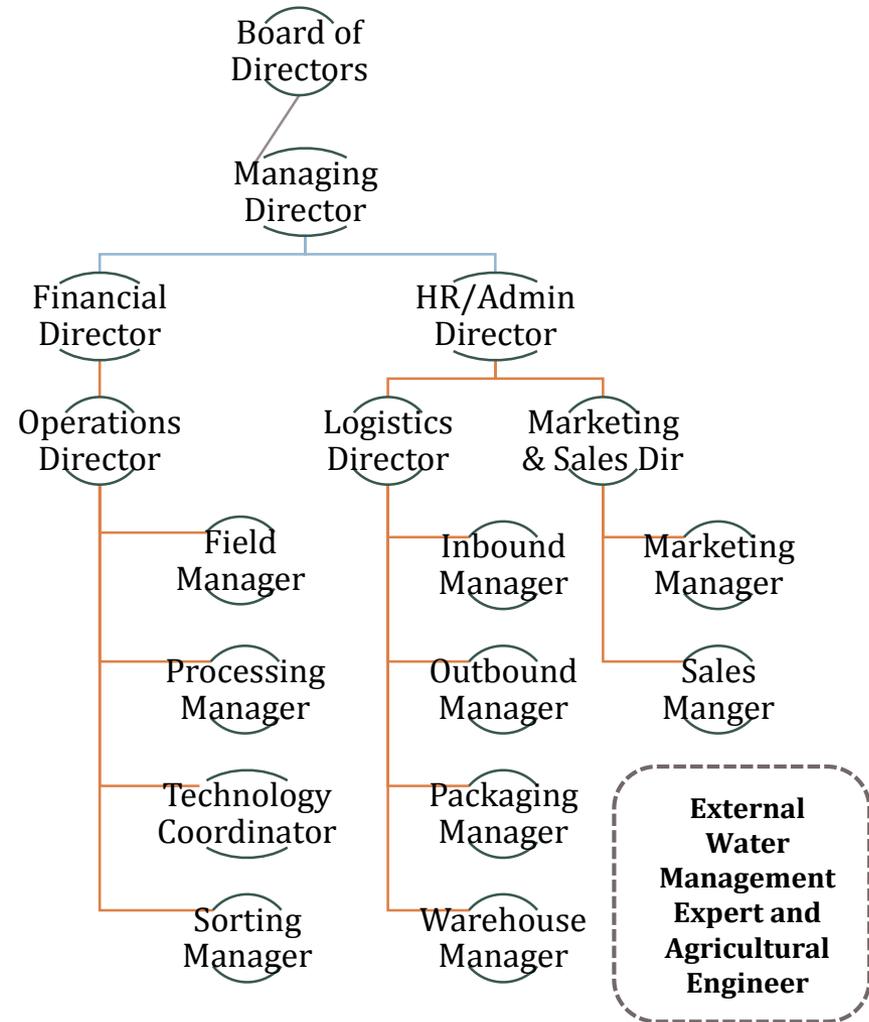
Board of Directors

- BoD is the main governance body of the SSC
- Shareholder representation (seats allocated in accordance with shares)
- Approval of management changes, review annual report and budget

Each shareholder will have a proportional voting right as per their shareholding. Private investors will control majority of the shares in the company.

Shareholder meetings to decide on the company's structural changes;

- Amendment of articles of association
- Changes to share of capital
- Termination or dissolution of the company



Semirom Seeb Company Management Team

Managing Director

- Representative of SSC and engages investor and key stakeholder relations
- Defines the strategic direction of the company
- Reports directly to the Board of Directors

Financial Director

- Responsible for budget preparation, financial management and forecasting
- Oversees the finance and operational activities at SSC

HR and Admin Director

- Responsible for HR management and development
- Oversees reconciliation with Farmers Co-operative
- Head of SSC administration

Operations Director

- Responsible for production planning, execution and supervision
- Resource planning and allocation (seasonal)

Logistics Director

- Responsible for transportation, onsite logistics supervision, cold storage facilities and warehouse, transportation of packaged goods

Marketing & Sales Director

- Market overview and strategy for implementation
- Customer relations management

Agricultural Engineer*

- Technical advisor to farmers
- Head of application laboratory
- Key liaison with universities

Water Management Advisor*

- Technical advisor to farmers on irrigation and water management best practices
- Supports facilitation of drip irrigation installations

* External resources

Benefits of the Farmers Co-operative

The Farmers Co-operative is a new entity consisting of farmers from the Semirom region who have voluntarily elected to work together to realise their common ambitions, through shared ownership and principles and organized within a mutually beneficial and democratic framework.

It is suggested that the Co-op can be further divided into regional cooperative groups – corresponding to the primary apple producing regions of Vardasht, Semirom and Padena – in order to optimize pooling of assets and in respect of transport logistics and other local conditions.

Farming support provided by the co-op will include;

- Provision of high quality seeds and fertilizers for farmers
- Representation for negotiating with buyers
- Strategic partnership with technical experts to provide support to farmers for;
 - Irrigation techniques and water management
 - Access to knowledge service platform to share and learn best practices

The SSC will additionally purchase **specialty apple products** produced by home workers (mainly housewives) to be packaged and sold under the SSC brand.

Co-op principles

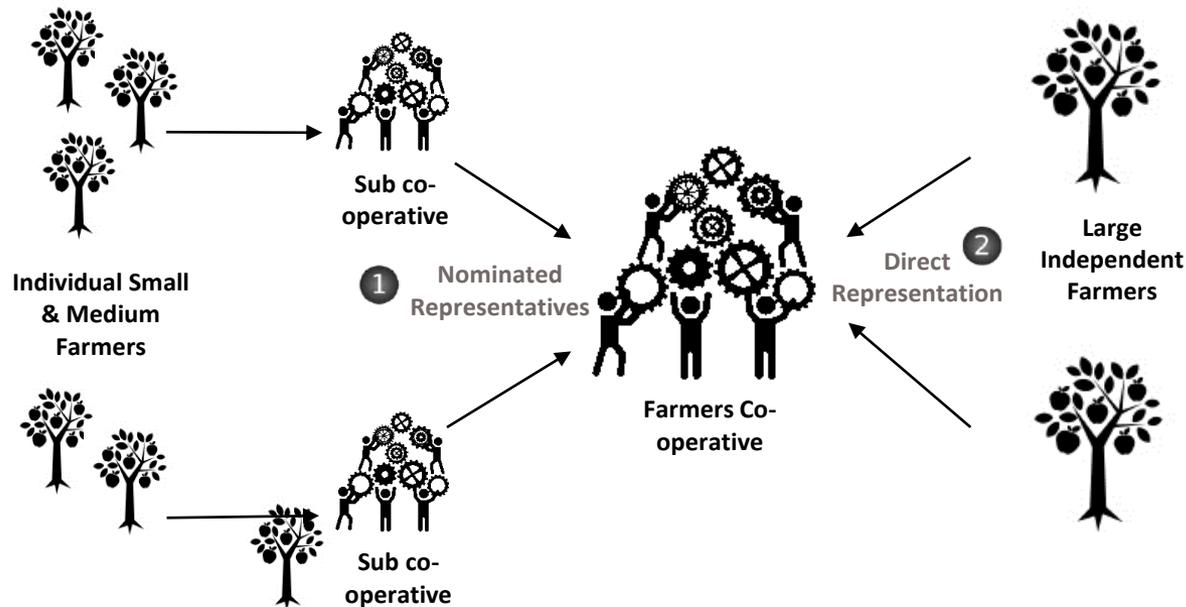
- ✓ Voluntary and open membership
- ✓ Democratic member control
- ✓ Autonomous and independent organization
- ✓ Knowledge sharing and training

Why Semirom farmers need a co-op?

- Need for better organization among farmers of the region.
- Standardization of production and sales activities.
- Strengthening of region wide cooperation and information sharing.
- Increase in collective negotiating power to acquire lower cost inputs.

Ownership Structure of the Farmers Co-operative

The Farmers Co-op will be structured to include farmers with varying plot sizes. The objective is to have a minimum of 200 members in the Farmers Co-op.



- 1 In principle, each member of the Farmers Co-op will have one vote. Members will be elected to represent each sub co-op.
- 2 Large independent farm owners (those with >10 hectares) are eligible for direct representation in the co-op.

Farmers Co-op membership distribution

- Small farmers (1 to 2 hectares) – 50%
- Medium farmers (2 to 10 hectares) – 30%
- Large farmers (<10 hectares) – 20%



Sales and Marketing Strategy

Summary

Increasing urbanisation, rising incomes and developing taste for healthy snacks is expected to drive consistent and increasing demand for apple and apple products in Iran.

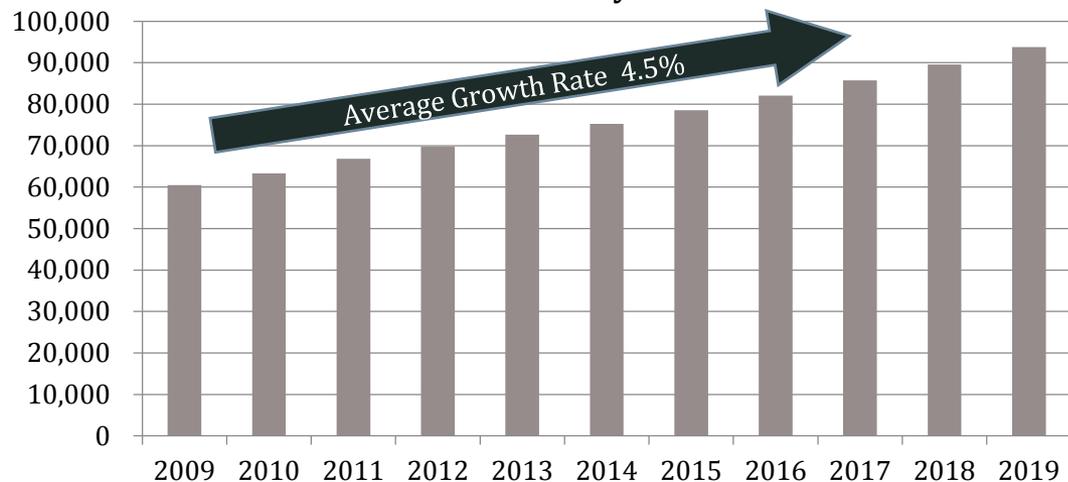
- A **new brand** representing the uniqueness and quality of Semirom apples is proposed under which the SSC will market and sell fresh apples in the short-term and apple products in the future.
- Branding and marketing activities to focus on “Semirom produced” and “healthy living” messages in order to establish Semirom as an international brand.
- Potential future product diversification to include additional apple products for higher profit margins.



Trends in Sweet and Savory Snacks

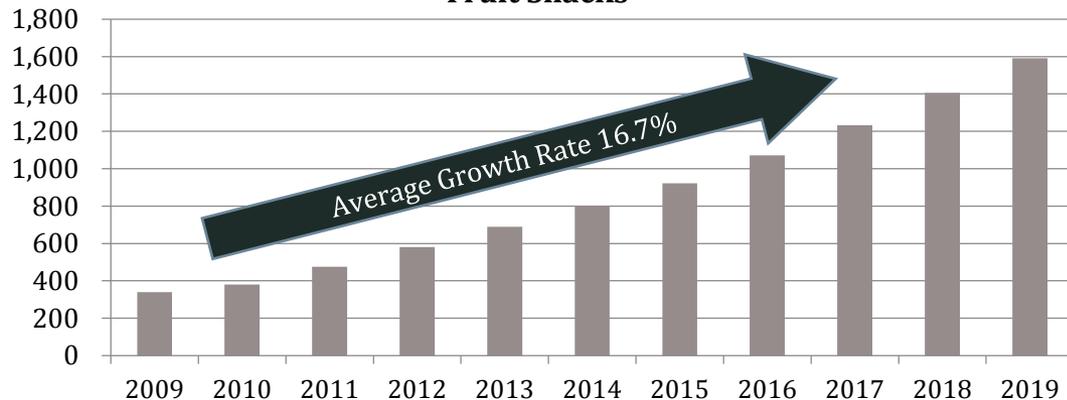
Unit: tonnes

Sweet and Savoury Snacks



Unit: tonnes

Fruit Snacks



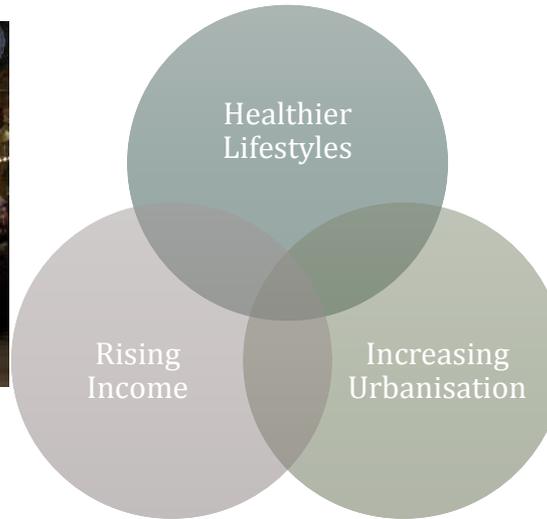
- Per Capita consumption of all snacks grew at CAGR 4.86% from 2009 to 2013.
- Higher consumption growth rate expected from increasing GDP per capita by almost 4% until 2019. (4.5% across the whole period 2009-2019).
- Fruit snacks have the biggest average growth rate among all the sweet and savor snacks.
- Changing lifestyles among the younger generation are influencing eating habits and therefore opportunities for new products.
- Healthy ingredients, brand recognition and information on the “origin of the product” are key factors which consumers take into account in making purchasing decisions.

Growing demand for sweet and savory snacks and fruit snacks but local production is currently is unable to meet the demand

Favorable Market Conditions



Growing per capita GDP leading to increase in spending habits and taste for luxury items



Awareness of healthier lifestyle among the younger generation



Rapid urbanization leading to changes in dietary habits

In spite of Iran's slowing population growth, those between 18-30 years make up approximately half of the country's total population, influencing the change in dietary habits.

Market Strategy Linked to Quality Improvements

Focus on unique taste, color and aroma of Semirom apples. Packaged products reflect desire for healthy products and understanding of product origins.

- Fresh Apple by Grade:

Continued improvements in productivity drive an increased volume of high quality Semirom apples, enabling SSC to process and sell Grade 1 & 2 apples from Year 2

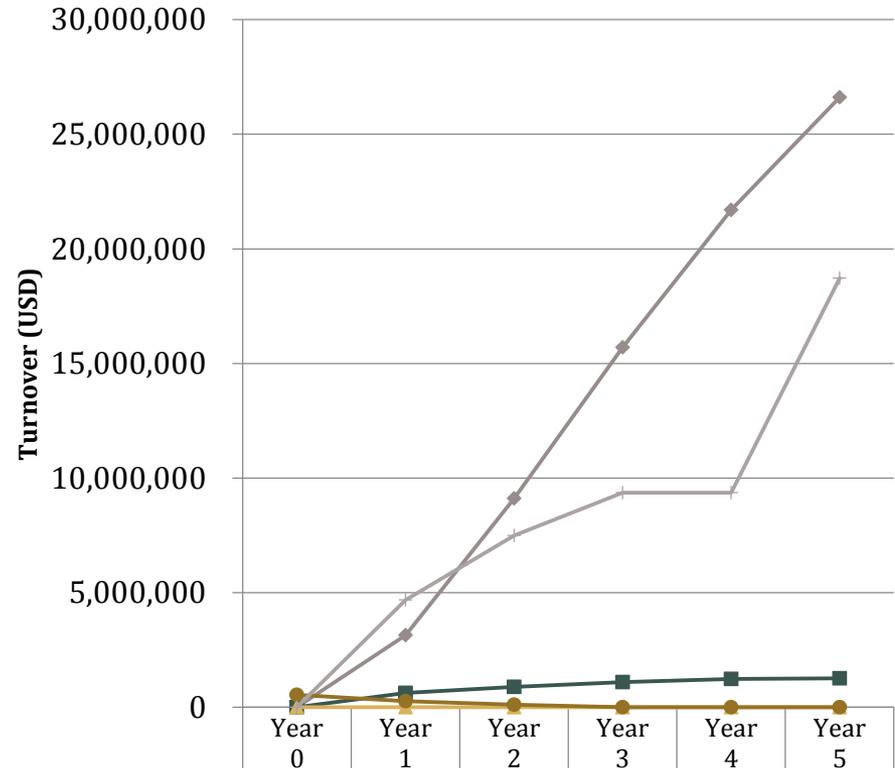
Grade 1 sales will increase from USD 3M to USD 26M over 5 years.

- Added Value Apple Product:

Apple chips sales start from Year 2. SSC will explore sales opportunities not only in Iran domestic market but also in GCC countries.

Sales of apple chips start from USD 4M and will grow to USD 18 M by Year 5.

Projected Sales Volume of Fresh Apples



	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
◆ Grade 1	0	3,152,0	9,118,7	15,704,	21,695,	26,607,
■ Grade 2	0	630,300	883,260	1,094,4	1,229,2	1,261,2
▲ Grade 3	0	0	0	0	0	0
● undersized apple	540,000	270,000	108,000	0	0	0
+ Apple Chips	0	4,680,0	7,488,0	9,360,0	9,360,0	18,720,

Year of Operation

Sales Channels (1/2)

- Various targeted campaigns to create brand awareness around the Semirom Seeb Company's products.
- Semirom Apple Festival and participation in food and fruit fairs to promote the brand and gain access to potential customers and business networks.
- Multimedia channels to reach a wide base of fruit and processed fruit product distributors, retailers and consumers.
- Tapping into Semiroms growing tourism industry and facilitating visits to orchards and SSC's processing and storage facilities to develop brand awareness.



Sales Channels (2/2)

Channel	Brief Description
Multimedia Channels	<ul style="list-style-type: none">• Develop the company's website (www.applesemirom.ir) to promote online purchasing options and company/product information• Utilize traditional (commercial leaflets and street posters) and digital media for advertisement
Semirom Apple Festival	<ul style="list-style-type: none">• Educate people on the improvements that have been made to the local apple industry and the benefits to the economy and farmers as a result of improved farm practices and knowledge transfer
Collaboration with tourism industry	<ul style="list-style-type: none">• Tapping into the local Semirom Governments push to develop the tourism industry• Partnering with local tourism companies to facilitate tours of orchard and apple sorting, processing and packaging facilities
Food and Fruit Fairs	<ul style="list-style-type: none">• Participation in local food and fruit fairs to increase brand awareness and opportunities in the domestic and international market
Event Sponsorship	<ul style="list-style-type: none">• Promotion of a healthy lifestyle in schools and universities across the country

Creating domestic and international brand awareness through targeted campaigns.

Product Diversification

After Year 2, opportunity to move towards higher value added products such as apple chips is expected to meet the growing demand as rising incomes, increased urbanisation and awareness of healthier lifestyles develop in Iran.

- Growing regional and international tourists (4.5 million in 2014) offers the opportunity for product diversification
- At present the industry in Iran has minimal high quality competitors
- SSC's storage and processing facilities ensures year round supply of fresh apples and apple products





Operational Plan

Summary

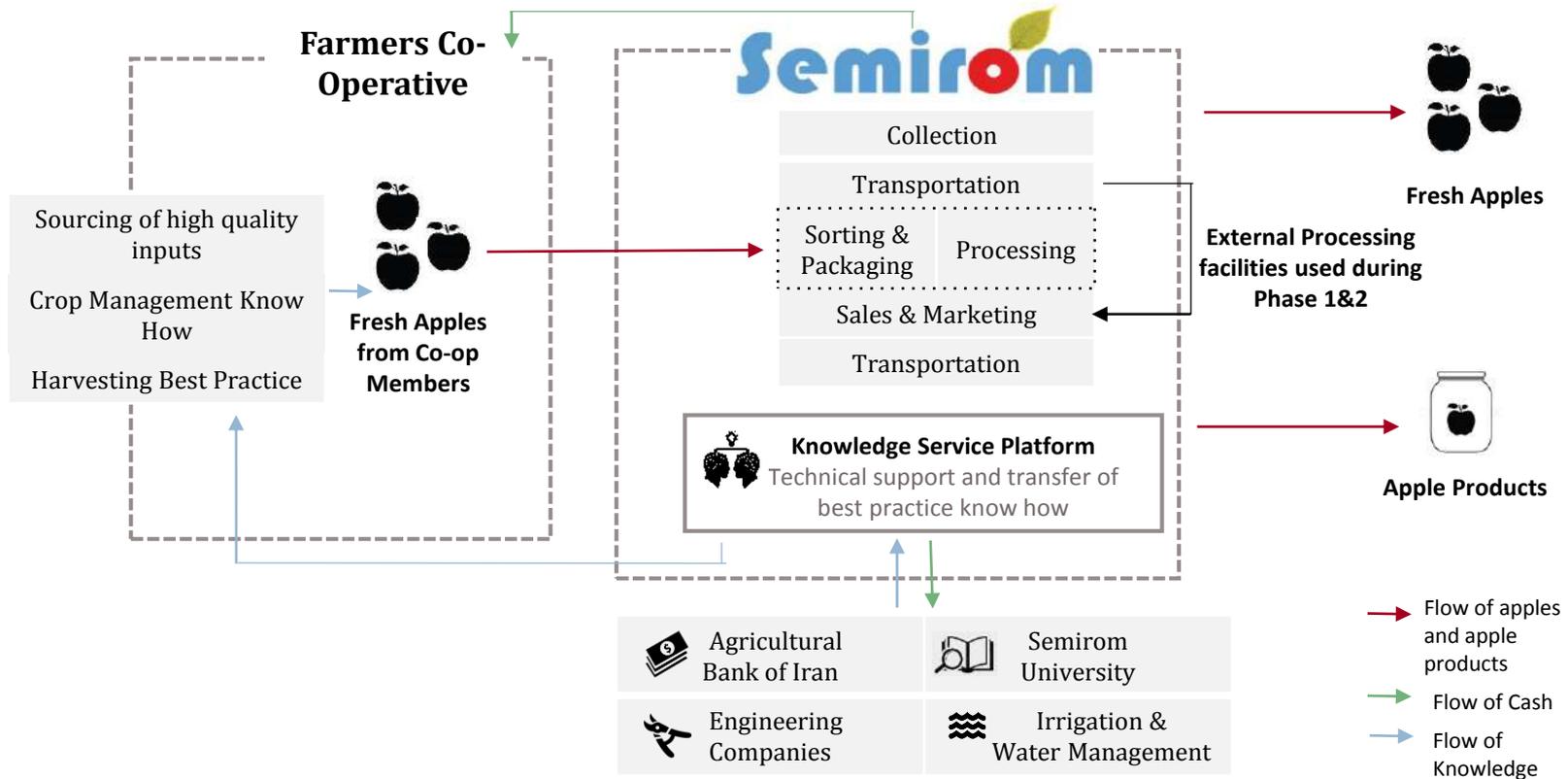
- Proposed that SSC focus on key area of the value chain for both fresh and processed apples including: collection, transportation, sorting and packaging and sales and marketing.
- SSC will initially focus on processing and marketing fresh apples and increasing the quantity of high quality apples produced in the region.
- The SSC will operate a **knowledge service platform** in partnership with government and universities which provides co-operative members access to information such as market pricing, crop and water management.
- It is proposed that during the initial stage of set up, the SSC outsource storage facilities. The company will additionally own half the transportation required and lease the remaining as required during 4 month harvest season.
- An emphasis will be placed on the company's contribution to local employment and thus the degree of mechanization will be limited.



Overview of SSC Operations (1/2)

Services offered by SSC	Brief Description
Sorting and Packaging	<ul style="list-style-type: none"> • Sorting of fresh apples is expected to be fully manual. • Packaging of fresh apples is expected to be manual for fresh apples and machine operated for apple chips.
Transportation	<ul style="list-style-type: none"> • During Phase 1, SSC to own an operate transportation needed during non-harvest season and to rent transportation as needed during harvest season. • Company to expand its transportation fleet during Phase 2 & 3.
Chips Processing and Cold Storage Facilities	<ul style="list-style-type: none"> • SSC to rent land needed for the set up of company facilities. • Cold storage facilities to be rented during Phase 1 & 2. Apple chips machinery to be owned by SSC. • During Phase 3, SSC will own their processing and cold storage facilities.
Facilitation of Knowledge Service Platform	<ul style="list-style-type: none"> • The SSC will operate a knowledge sharing platform in conjunction with government, technical experts and universities to provide co-operative members access to information such as market pricing and tools and techniques for effective crop and water management. <p><i>* Underlying assumption that these services would be made available to SSC at minimal cost and in some cases offered free of charge by technical partners and individuals.</i></p>

Overview of SSC Operations (2/2)



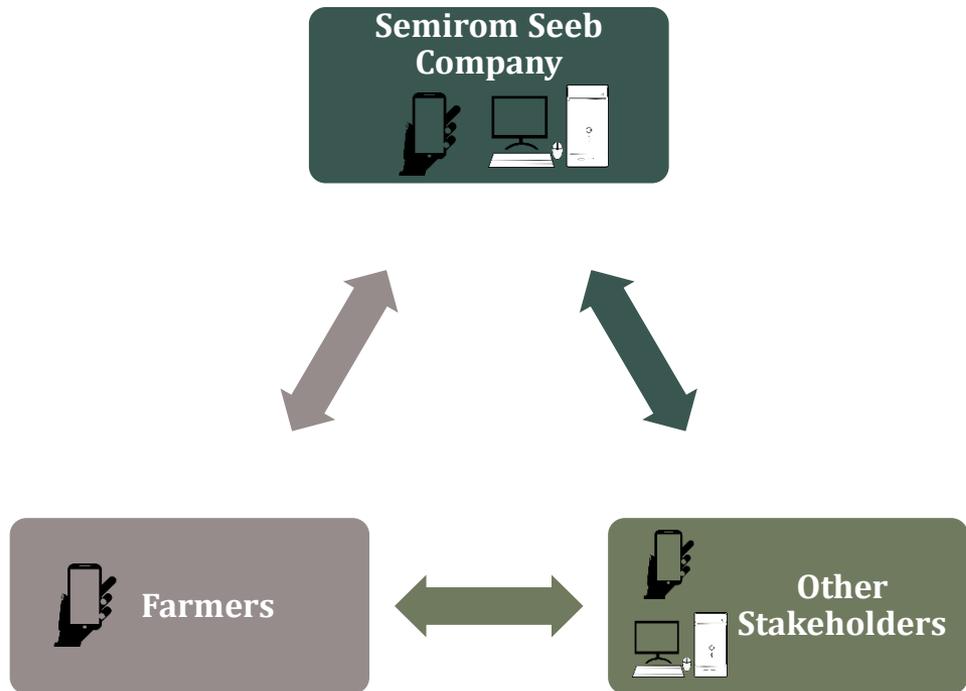
- In addition to sorting, processing & packaging and sales of fresh apples and apple products, the SSC will operate a **knowledge service platform** in partnership with regional stakeholders to provide technical support and best practice solutions to members of the co-op.
- The knowledge service platform will work with the Semirom branch of the Agricultural Bank, the Semirom University, engineering companies and irrigation and water management experts to provide solutions for challenges faced by farmers.

Knowledge Platform, IT-enabled

SSC will facilitate the transfer of technical advice and support through the knowledge service platform. Services will be provided to member farmers as an added non-financial benefit. Service providers will be compensated and facilitated by SSC and IT platforms will be leveraged to extend the reach and impact of engagements. SSC will work to access development-related funding or other resources to minimise costs.

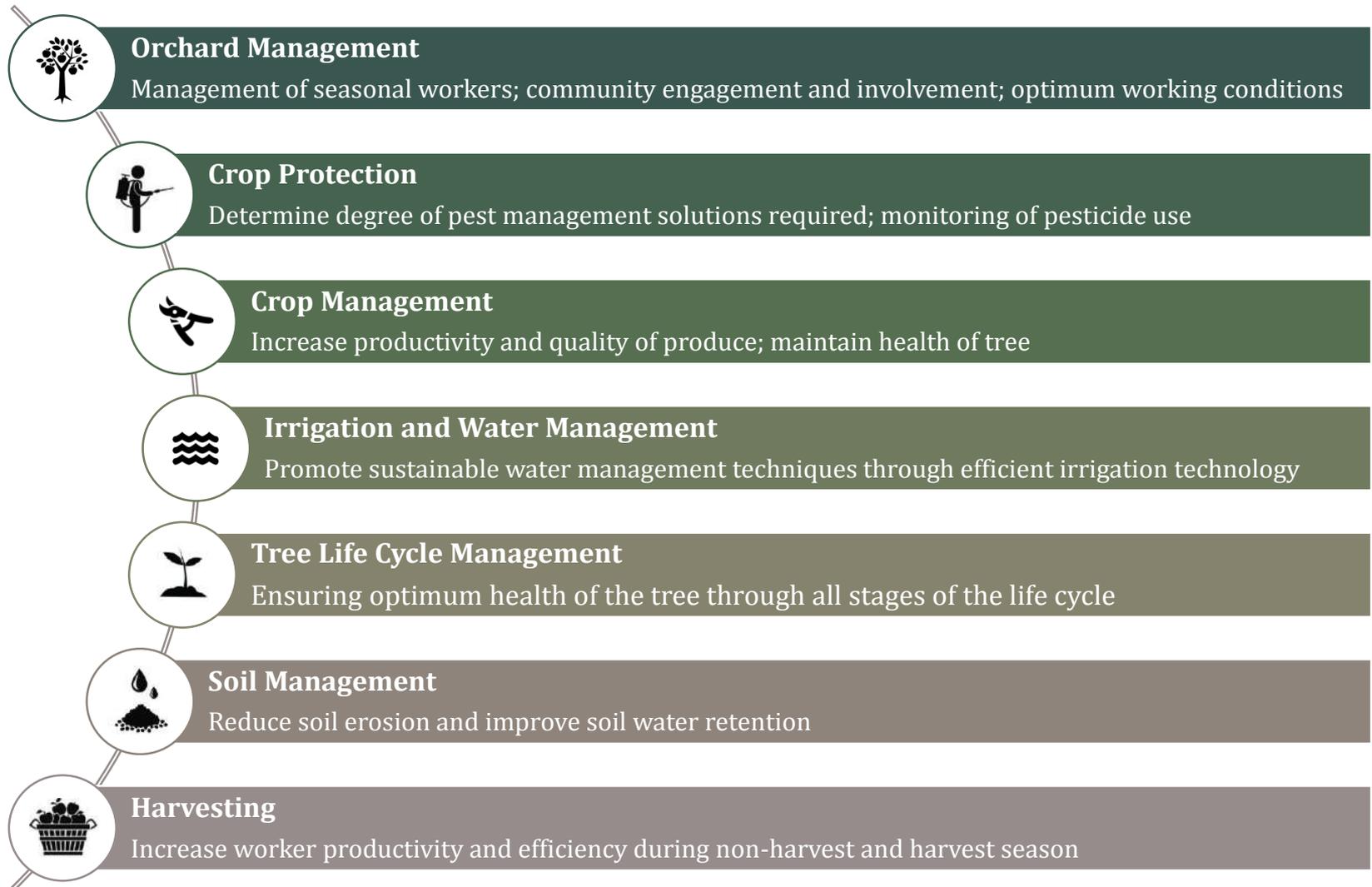
Services provided through proposed channels including;

- **Workshops:** Sharing best-practices; Conducted by experts from Agriculture University, regional consultants and others
- **Pilot project:** Demonstration garden with ongoing access for cooperative members
- **Hands-on techniques:** Land preparation, water management and innovative solutions to increase productivity
- **University Research and Development:** field studies conducted by Semirom University students and engaging Semirom apple farmers
- **Publication:** “All About Apples” publication with relevant information for farmers



** Underlying assumption that these services would be made available to SSC at minimal cost and in some cases offered free of charge by technical partners and individuals.*

Key Areas of Technical Support Provided



SSC to Facilitate Installation of Drip Irrigation Systems

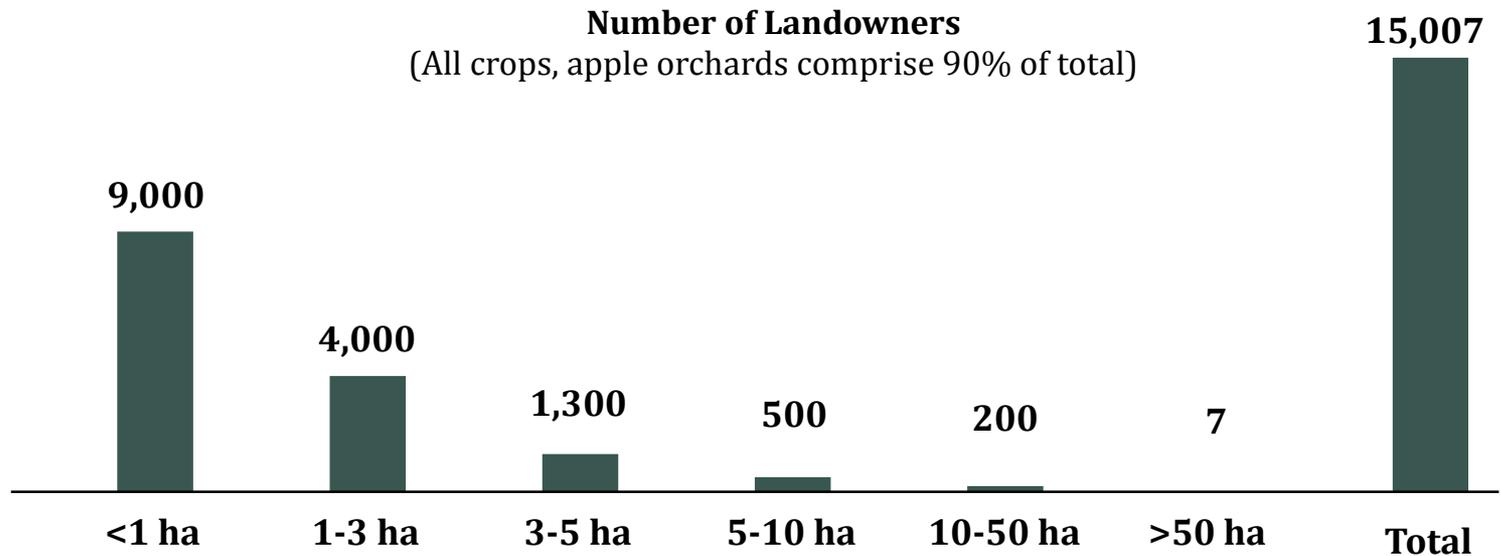
Water management on individual farms is among the most important factors for improved productivity and overall sustainability of agriculture in Semirom.

Semirom Seeb Company will facilitate the adoption of drip irrigation systems among the Farmer Cooperative members as a key element of its commitment to improving productivity and farmer livelihoods.

- Drip irrigation is recommended system for apple farmers in water-stressed region of Semirom
- Estimated costs of drip irrigation is \$200/ha
- Government of Semirom has indicated that it is willing to subsidise up to 80% of the upfront costs for such water efficient systems
- The remaining 20% cost or approximately \$40/ha will be contributed by SSC in exchange for supply commitments from among cooperative members
- SSC will also centrally manage supplier relationships, procurement and distribution of materials and installation of systems in order to streamline the process for farmers



Breakdown of Semirom Landowners



- Large orchards comprise landownership of 10 hectares or more.
- Average operating cost for owners of <1 hectares is USD 3,480, with profit of USD 2,900.

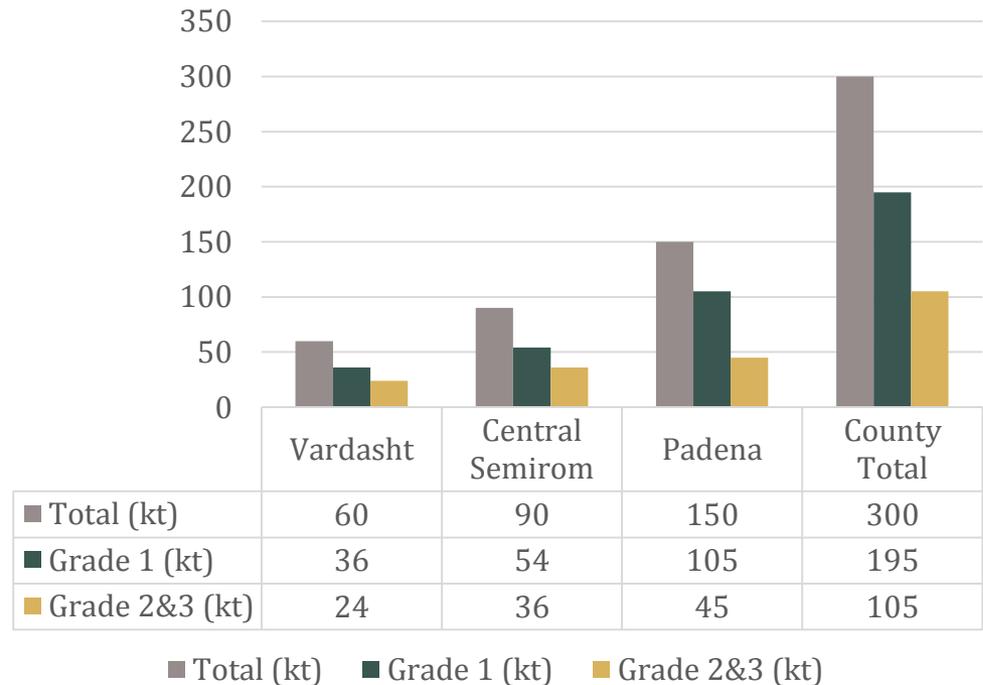
Semirom Apple Production & SSC Location

Semirom County is split into 3 key apple producing regions: **Vardasht**, **Central Semirom** and **Padena**.

It is recommended that the company be established in one of the two industrial zones located on the outskirts of Semirom. Exact location and company logistics to be considered in proximity to apple producing regions.



Semirom County - Apple Production (per annum)



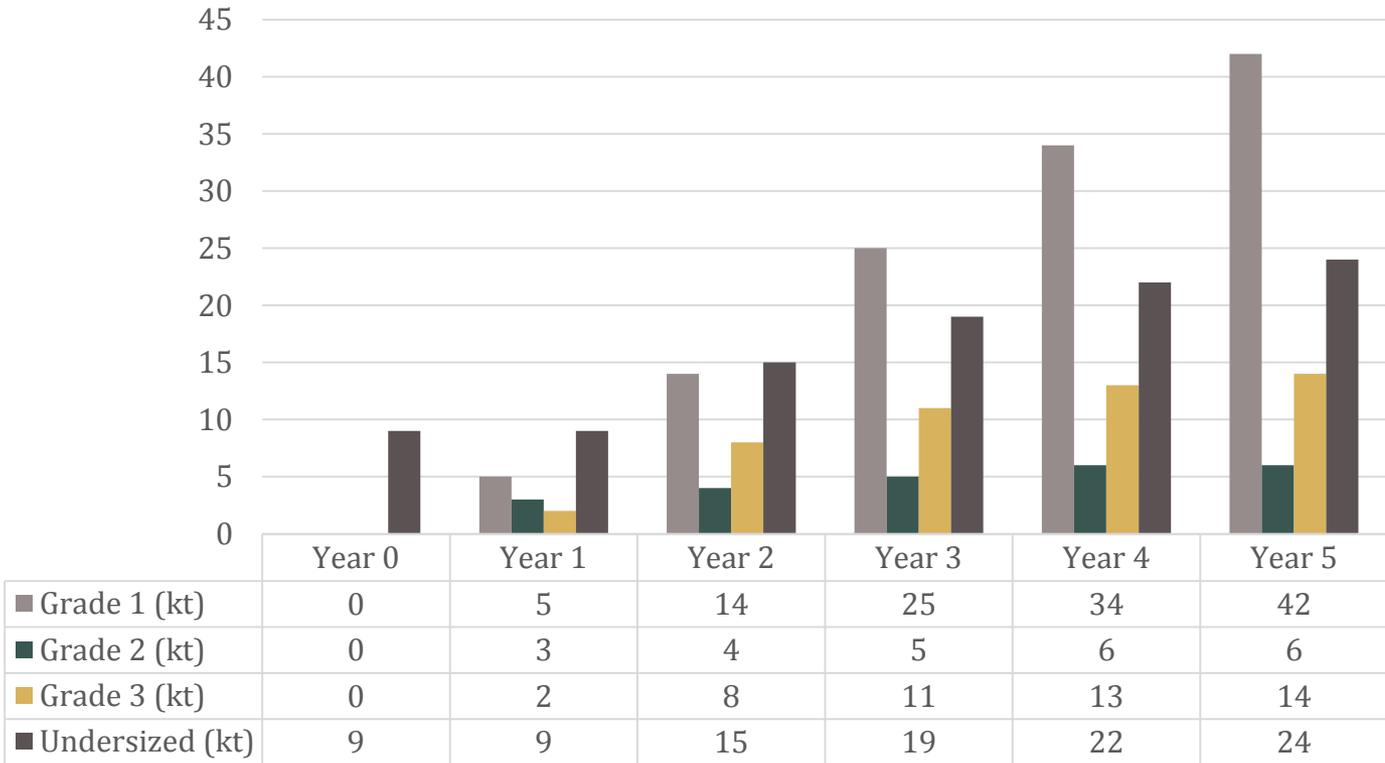
Map of Semirom County

SSC Apple Sourcing – Projection of Production

SSC will purchase fresh apples from members of the Farmers Co-operative and large independent farmers while sourcing excess apples (Grade 3 and undersized) from apple companies in the region.

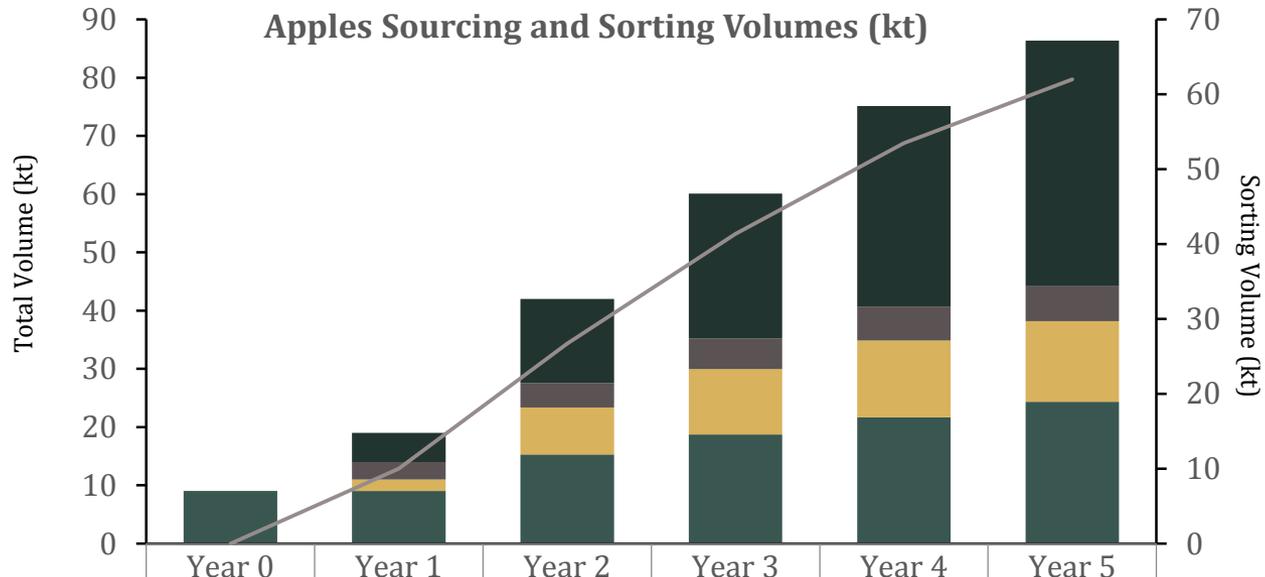
Overall volume of Grade 1 apples is expected to increase Year 1 to Year 5 based on the results of ongoing technical assistance, thus increasing potential for export-based revenue for SSC.

**Sourcing of Apples
(y0-y5)**



■ Grade 1 (kt) ■ Grade 2 (kt) ■ Grade 3 (kt) ■ Undersized (kt)

Fresh Apple Sourcing and Sorting Volumes



	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Grade 1	0	5	14	25	34	42
Grade 2	0	3	4	5	6	6
Grade 3	0	2	8	11	13	14
Undersized	9	9	15	19	22	24
Sorting Volume (kt)	0	10	27	41	53	62

- As positive impact of technical support is realised through the SSC's knowledge service platform, overall volume of Grade 1&2 apples will increase, allowing SSC to secure increasing quantities each year.

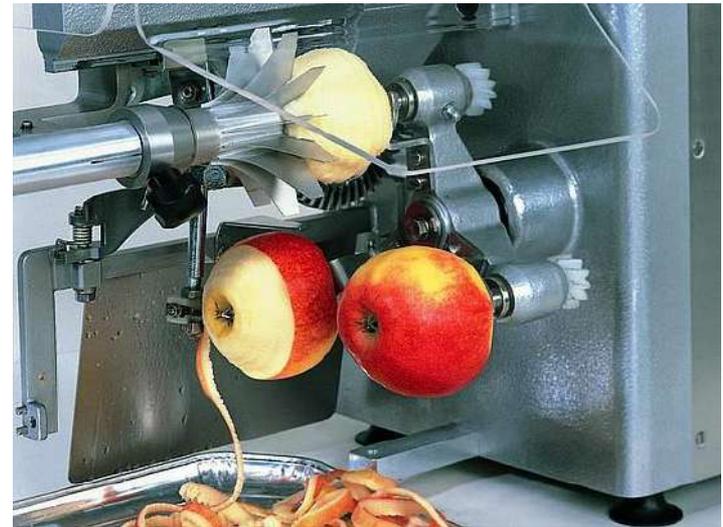
Apple Chip Production

During Phase 1, the SSC will produce apples chips utilizing Grade 3 and “undersized apples”. The company will own and operate these production facilities.

Apple Chip Production Line



- Based on dryer option analysis, SSC will use a full production train (air drying system). The technology selected is based on the following assumptions;
 - Quality of air dried apple chips is preferred by customers as these are the healthier alternative
 - Fixed product volume of 900 tonnes/annum
 - Commercially available processing machines are available for processing small sized apples
 - There is a 50% loss during the peeling, de-coring and cutting phases for the production of apples chips when utilizing small sized apples



Apple Chip Production – Equipment Recommendation



Full Production Train (Air Drying)

*Sample equipment - Guangzhou Daqiao Food Facility Co., Ltd

Equipment Specifications

Production capacity	1000 kg apple/hour
Process steps	Cleaning, peeling, coring, drying and packaging
Raw material	apple, packing material
Space	300 m ²
Power consumption	50kw, 380v-50hz
Steam consumption	150kg/h @ 1.0 Mpa
Compressed air consumption	0.4m ³ /min @ 0.8 Mpa

Apple Chip Production Business

It is expected that the SSC's apple chip production business in Semirom will track industry averages in volumes produced through stages of processing.



Estimated CapEx and OpEx

CapEx		OpEx	
Steam boiler	USD 150,000	26 fulltime employees salary @ USD500/month	USD 13,000/ month
Air dry production train (2x)	USD 500,000 each	Packaging cost	
Land	USD 140,000	Utilities (water, electricity) *Subsidized by government	~ USD 5,000
Building infrastructure	USD 1,150,000	Maintenance and repair (4% of CapEx per year)	USD 45,000/ year
IT	USD 300,000		



Financial and Investment Plan

Summary

- The launch of the SSC presents an excellent opportunity for investors, both local and international who wish to create significant impact in Iran's promising agriculture sector.
- This section includes worst, base and best case financial projections for the company's first six years of operations.
- SSC can take advantage of favorable regulatory policies and market opportunities to sell high quality fresh apples and apple chips to be a highly profitable business whilst creating social value within Semirom's apple sector.
- SSC requires an initial investment of US\$5.5 million to cover capital expenditures and expenses until profitability is achieved, which is the second year of operations for all three cases.
- The model shows that SSC offers investors an attractive IRR between 9% and 19% over a six year period.
 - Base Case assumes ~85% of fresh apples and 75% of apple chips sold
 - Best Case assumes ~85% of fresh apples and apple chips produced
 - Worst Case assumes 75% of fresh apples and apple chips sold
- Key underlying financial assumptions are highlighted on the following page.

Key Financial Assumptions

- Total production of apples in Semirom region: ~ 300,000 tons
- Share of total Semirom apple production captured by SSC:

Year	0	1	2	3	4	5
Grade 1&2	0%	5%	10%	14%	17%	19%
Grade 3 & Undersized apples	7%	7%	8%	9%	10%	12%

- Inflation rate: 14% (impacts cost of procuring apples but not selling price)
- Buying price (US\$/ton)
 - Grade 1: 435
 - Grade 2: 145
 - Grade 3: 150
 - Undersized apples:90

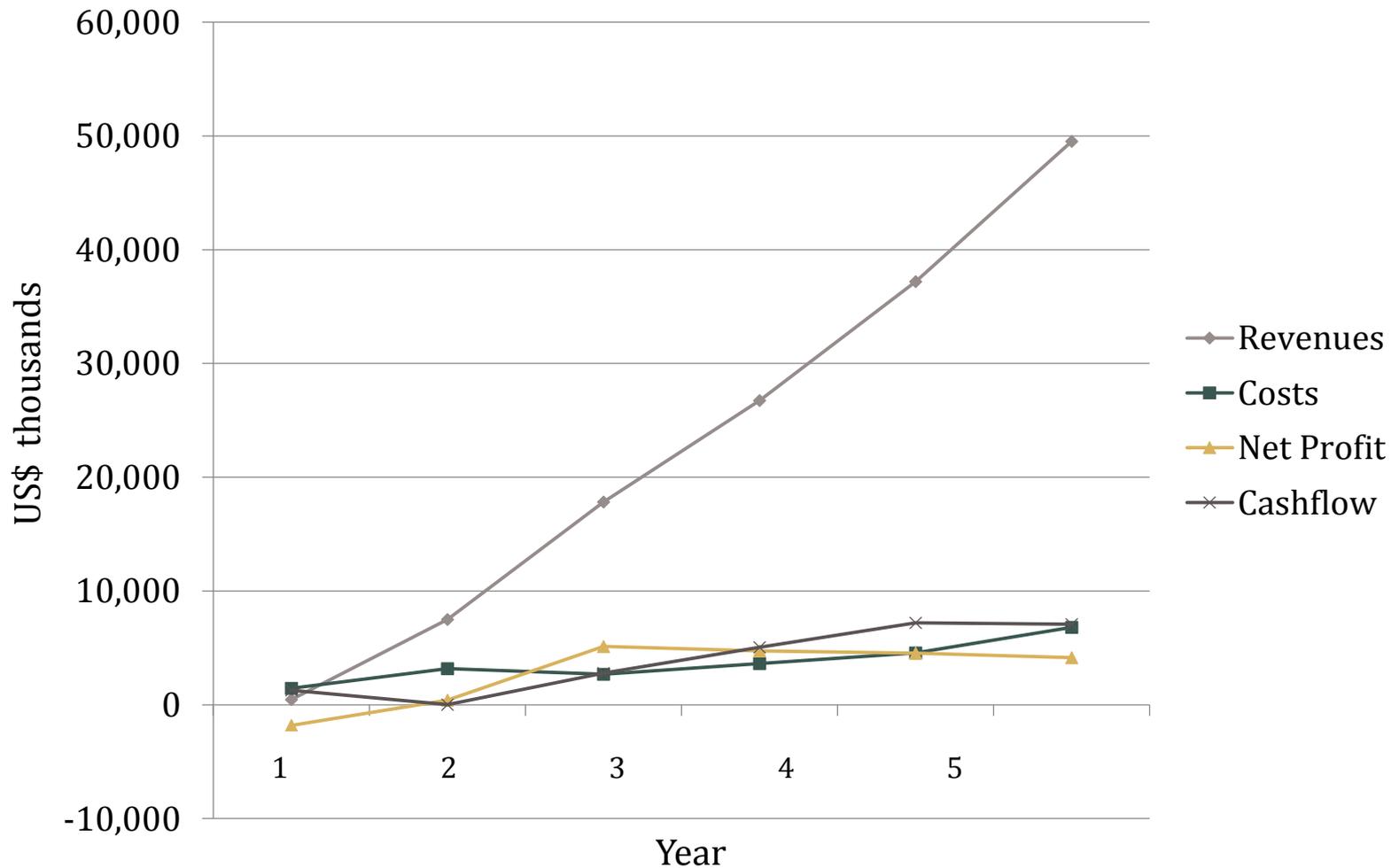
Note: Suggested purchase price for Grade 3 & Undersized apples based on assumed fair price to farmers in light of SSC value-add to produce packaged apple chips

SSC Financial Projection (Base case)

Year	0	1	2	3	4	5
(in US\$ thousands)						
Profit & Loss Statement						
Revenues	450	7,496	17,836	26,737	37,201	49,523
Cost of Goods	810	3,897	10,018	18,365	28,072	38,567
Production Cost	116	655	1,136	1,566	1,932	2,209
Gross profit	-476	2,944	6,682	6,806	7,196	8,746
Operating Expenses	1,326	2,530	1,537	2,048	2,638	3,224
Loan Interest	0	15,000	27,000	21,000	15,000	9,000
Profit before tax	-1,802	399	5,118	4,736	4,543	5,514
Tax (exempt for 5 years)	0%	0%	0%	0%	0%	25%
Net profit	-1,802	399	5,118	4,736	4,543	4,135
Dividend (50% from Year 3 onwards)	0	0	1,857	2,368	2,272	2,757

Cash Flow Statement						
Company Cash Flow						
Net cash from operating activities	4,018	-1,112	4,744	4,784	4,570	2,625
Net cash from financing activities	-2,740	-140	-1,997	-2,508	-2,412	-2,757
Total cash flow	1,278	-1,252	2,746	2,275	2,158	-132
Outstanding cash	1,278	26	2,772	5,048	7,206	7,074
Investor Cash Flow						
In Flow (Dividend)		0	1,857	2,368	2,272	2,757
Out Flow (Paid Up Capital)	-5,500	0	0	0	0	0
IRR (investor)	16%					

Base Case Financial Highlights



SSC Financial Projection (Best Case)

Year	0	1	2	3	4	5
(in US\$ thousands)						
Profit & Loss Statement						
Revenues	450	9,056	17,932	26,833	37,296	49,619
Cost of Goods	810	3,897	10,018	18,365	28,072	38,567
Production Cost	116	655	1,136	1,566	1,932	2,209
Gross profit	-476	4,504	6,778	6,901	7,292	8,842
Operating Expenses	1,326	2,842	1,537	2,049	2,639	3,225
Loan Interest	0	0	0	0	0	0
Profit before tax	-1,802	1,662	5,240	4,852	4,653	5,617
Tax (exempt for 5 years)	0%	0%	0%	0%	0%	25%
Net profit	-1,802	1,662	5,240	4,852	4,653	4,213
Dividend (50% from Year 3 onwards)	0	0	2,550	2,426	2,327	2,809
Cash Flow Statement						
Company Cash Flow						
Net cash from operating activities	4,018	-96	5,172	5,112	4,894	2,893
Net cash from financing activities	-2,740	-140	-2,690	-2,566	-2,467	-2,809
Total cash flow	1,278	-236	2,482	2,546	2,427	84
Outstanding cash	1,278	1,042	3,525	6,070	8,497	8,581
Investor Cash Flow						
In Flow (Dividend)		0	2,550	2,426	2,327	2,809
Out Flow (Paid Up Capital)	-5,500	0	0	0	0	0
IRR (investor)	19%					

SSC Financial Projection (Worst Case)

Year	0	1	2	3	4	5
(in US\$ thousands)						
Profit & Loss Statement						
Revenues	405	7,268	17,287	25,957	36,310	48,469
Cost of Goods	810	3,897	10,018	18,365	28,072	38,567
Production Cost	116	655	1,136	1,566	1,932	2,209
Gross profit	-521	2,716	6,133	6,025	6,306	7,692
Operating Expenses	1,320	2,485	1,531	2,041	2,629	3,213
Loan Interest	0	22,500	42,000	36,000	30,000	24,000
Profit before tax	-1,841	209	4,560	3,949	3,647	4,455
Tax (exempt for 5 years)	0%	0%	0%	0%	0%	25%
Net profit	-1,841	209	4,560	3,949	3,647	3,341
Dividend (50% from Year 3 onwards)	0	0	1,464	1,974	1,824	2,227
Cash Flow Statement						
Company Cash Flow						
Net cash from operating activities	3,983	-789	4,215	4,015	3,682	2,109
Net cash from financing activities	-2,740	-140	-1,604	-2,114	-1,964	-2,227
Total cash flow	1,243	-929	2,611	1,901	1,719	-118
Outstanding cash	1,243	314	2,924	4,825	6,544	6,426
Investor Cash Flow						
In Flow (Dividend)		0	1,464	1,974	1,824	2,227
Out Flow (Paid Up Capital)	-5,500	0	0	0	0	0
IRR (investor)	9%					



Policy Recommendations

Summary

Following a review of existing agricultural and financial policies at the provincial and county level certain enabling policies are suggested:

- The establishment of a research “centre of excellence”;
- Subsidy/ tax relief for technical services such as water and soil management and irrigation methods;
- Favorable regulations for improved farmer welfare support such as crop and health insurance;
- Tariff reduction for importing processing equipment and agricultural inputs;
- Governmental support for the establishment of the knowledge service platform.



Existing Policy Framework

- **Financial assistance** to any company in the agricultural sector which comprises of 200 farmer families or more. The government will provide a subsidy of 3% on the interest rate for loan to bring it down to 18% (instead of 21%)
- Agricultural banks (state owned) provide **credit** for developments in agriculture in Iran and allocates a minimum of 70% of all loans to agricultural sector
- When setting up a company by a foreign investor in the agricultural sector the government will provide a 10 year **tax relief** from date of establishment
- The government will provide **utilities** like electricity, water etc. at subsidised rate for apple farming on a case by case basis (e.g., electricity for agricultural activities currently – 70% compared to domestic usage, water free for most farmers)
- The government will provide **agricultural land** at a subsidised rate for apple farming and setting up of processing/storage units on a case by case basis



Proposed Enabling Policies for Semirom's Apple Production



- Subsidy or related incentives for provision of **technical services** such as soil management, water management/conservation techniques and crop management, pruning, etc which will be managed through SSC's knowledge service platform.
- Require **vocational training** for farmers in the field of crop and harvest management at specific intervals to be delivered and supported by Ministry of Agriculture.
- Tariff reductions for **import of machinery**, equipment or other inputs for apple farming (e.g., fertilizers, pesticides).
- Establish a local **laboratory** for research and development and testing purposes within the Semirom region.
- Support channel marketing for the Semirom Seeb Company and related initiatives through Ministry of Tourism in support of the Semirom brand to domestic and international tourists.
- Enact favourable domestic policies in support of locally produced agricultural products against foreign competitors.



Community Benefits

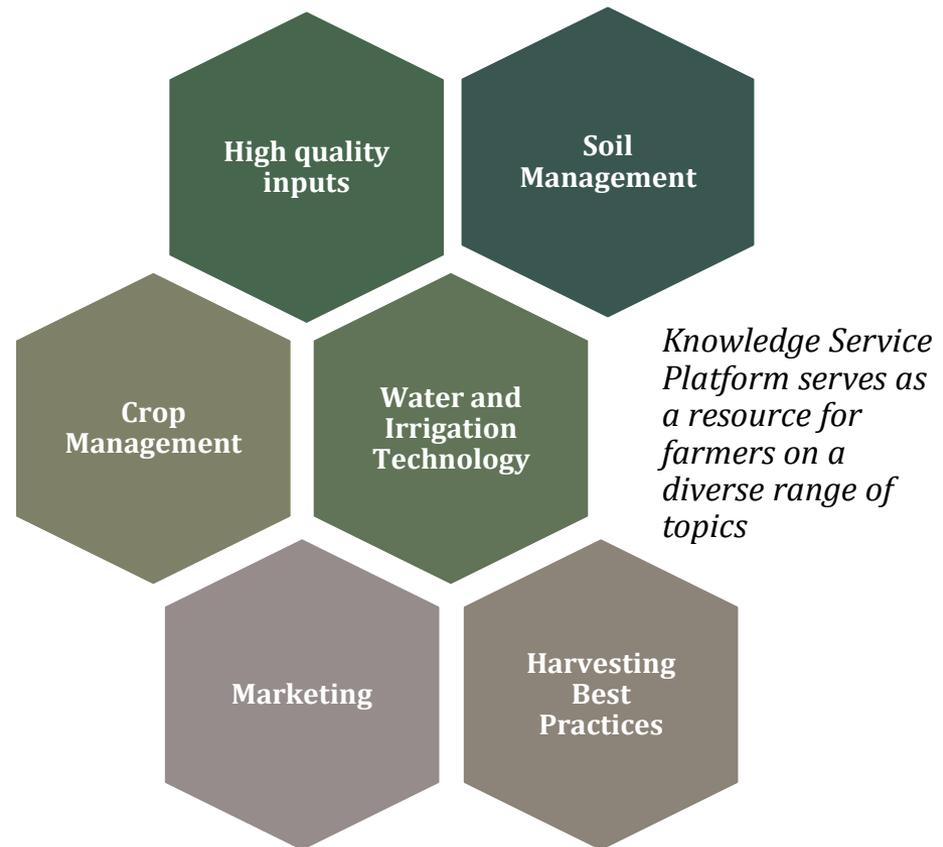
Overview of Community Benefits

- **Improvements to the apple supply chain**, particularly in post-harvest where most of the losses occur, carry benefits for farmers, the community and the country as a whole.
- Through the **knowledge service platform**, farmers will have access to workshops and training sessions on improving harvest and input management. Farmers will be able to increase the production of high quality apples and gain greater income security.
- In turn, farmers will enjoy **increased income** due to improved quality and yield, and dividends from the SSC. As SSC is established as a farmer-owned and operated company, overall improvements of the apple value chain will directly benefit farmers as the sector modernizes and becomes more export-led.
- Effective **irrigation and water management** technology and methods will reduce the environmental damage in the drought prone region
- Members of the Farmers Co-op will have a stake in the SSC incentivizing them to produce higher quality apples thereby ensuring the viability of the company.
- A **social impact measurement methodology** is proposed in order to capture and apply lessons learned to other regions of Iran.



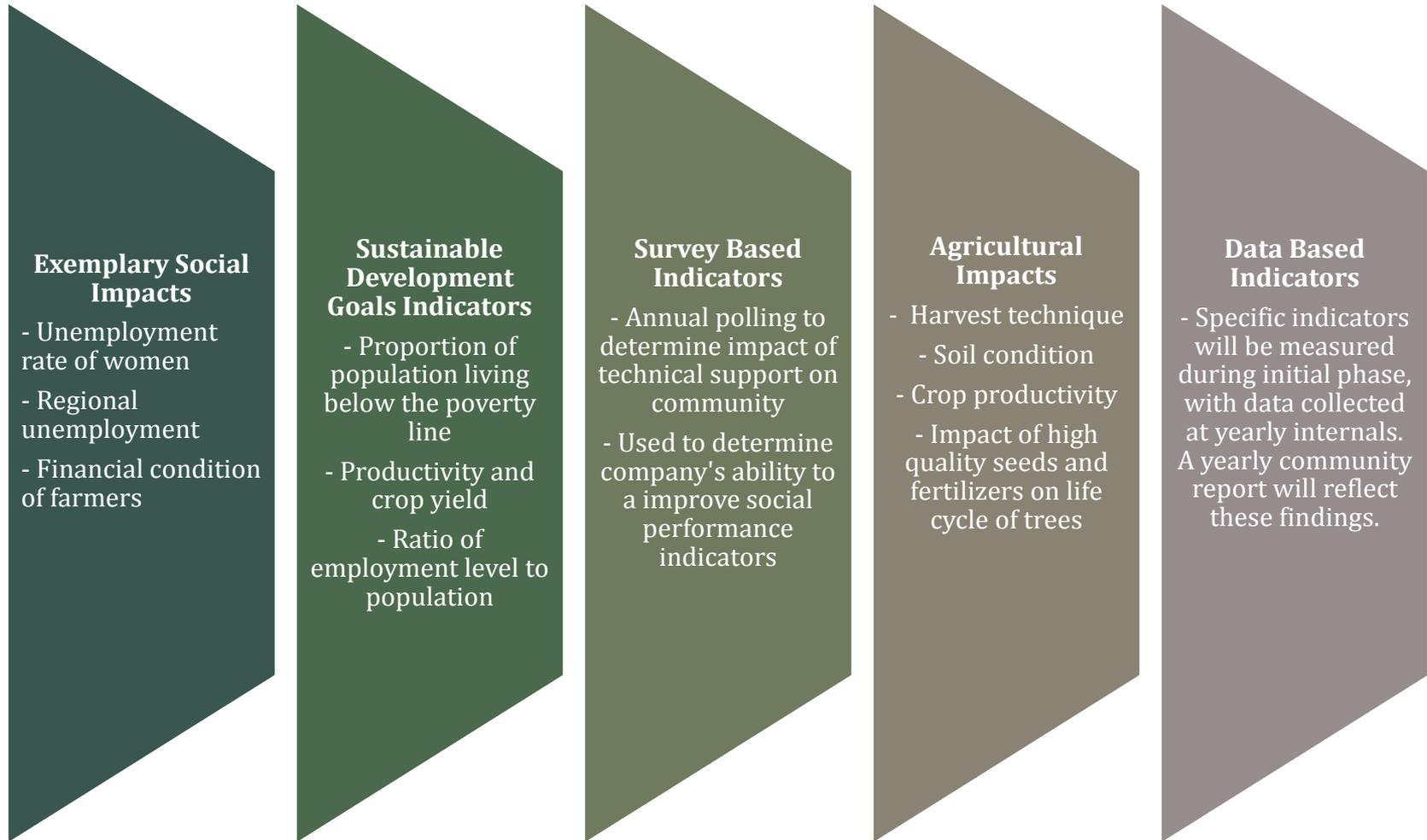
Commercial Entity Driving Social Impact

- Farmers will have access to services and resources to enhance their knowledge and skills in all aspects of apple farming.
- Greater financial security and enhanced status for farmers as business shareholders.
- Improved income will lead to social empowerment of farmers.
- Positive impact at the household and community level.



Semirom Seeb Company benefits farmers and the community through greater social empowerment

Measuring the Socio-Economic Benefits



Socio-economic impact will be measured in long term studies conducted by local universities, the ECCIMA and related organisations.



Risk Analysis and Mitigation

Risks and Mitigation Strategy (1/2)

Risk	Potential Cause	Likelihood	Impact	Mitigation
Production	Sub standard production and low productivity	Medium	High	Optimum technical support to increase yield
	Small farm holders lack capability & capacity to meet supply targets	Medium	Medium	Education & training
	Water issues which could be either drought or flooding	High	High	SSC to facilitate water management improvements
Transportation	Inadequate infrastructure from farms to storage/sorting facility	Medium	High	Ensure logistics team has transportation in place
Political	Delay in processing of license and permits	Low	Medium	Secure support of local government before implementation

Risks and Mitigation Strategy (2/2)

Risk	Potential Cause	Likelihood	Impact	Mitigation
Financial	Insufficient funding to finance initial capital investment and working capital	Low	High	Ensure sound investment sources and proper financial projection
Market	Low market demand for higher price products	Medium	High	Intensive marketing plan
Environmental	Damage of crops and soil due to inefficient management	Medium	High	Strict operational management and proper technical support
Social	Resistance from individual farmers to join the Co-op	Medium	Medium	Educate individual farmers on benefits of joining the Co-op
	Mismanagement of Farmers Co-op	High	Medium	Integration of Co-op within company to facilitate smooth functions



Implementation

Implementation Timeline

Focus Area	Phases	Year 1				Year 2	Year 3-5
		Q1	Q2	Q3	Q4		
Governance	Identification of and secure commitment from private investors, establishment of Farmers Co-op, secure permits and licenses and set up Semirom Seeb Company	■	■				
	Establish Board of Directors and management systems and procedures			■	■		
	Creation of auditing compliance task force					■	
	Review and optimize governance/organization structure						■
Human Resource	Secure key management, working with ECCIMA and other local resources	■	■				
	Recruitment of local workers and outsourced technical support			■	■		
	Review recruitment plan and increase manpower as needed					■	
	Reassess need for outsourcing of technical experts						■
Operations	Establish production plan, renting land for company facilities	■	■				
	Procure machinery, construction of facilities			■	■		
	Production of processed products to begin					■	
	Expand production to higher value added products including concentrate, juice, vinegar						■
Marketing	Market analysis and strategy development	■	■				
	Development of a recognizable Semirom brand; Link with tourism and related initiatives			■	■		
	Expansion to overseas markets					■	
	Expand and diversify product portfolio						■
Partnerships	Establish communication channels with community and local NGOs	■	■				
	Develop communication channels and deepen collaboration with NGOs			■	■	■	■
Government	Alliance with government for policy support	■	■				
	Obtain government preferential policy and regulatory support			■	■		
	Refine and expand on optimal regulatory framework						■



Conclusion

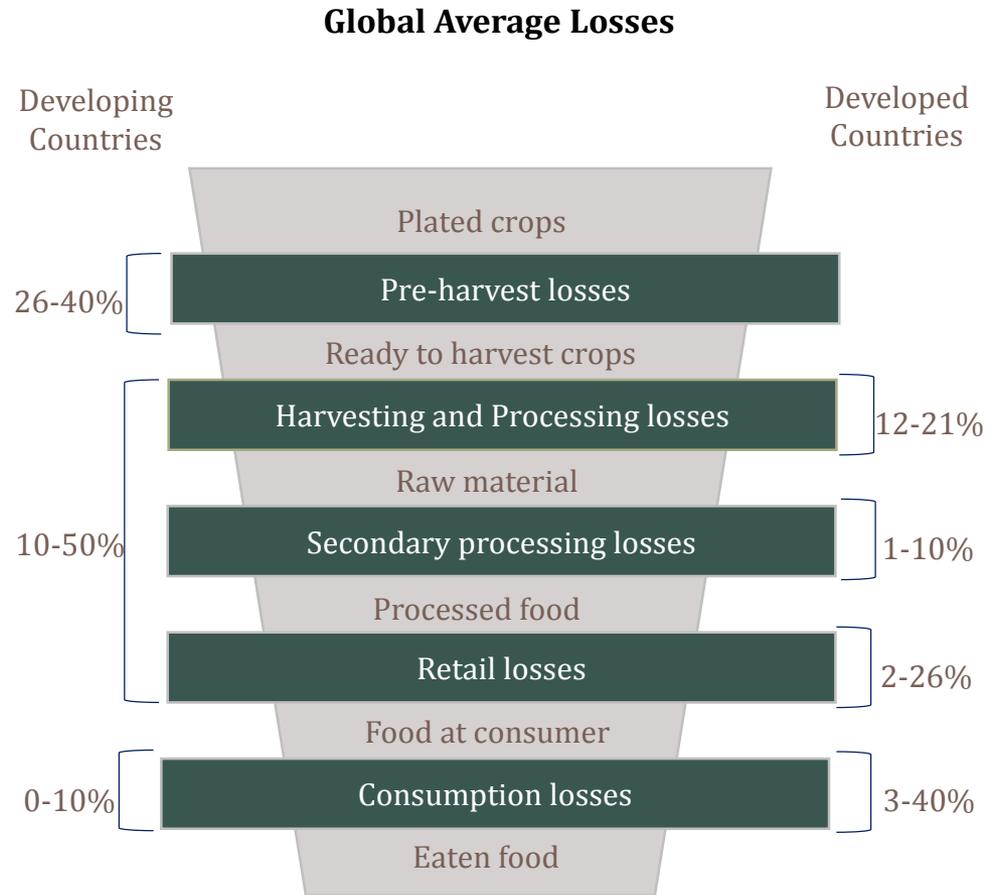
Conclusion

- Semirom has great potential in its climate, people and reputation as a clean, healthy origin for produce. Along with key interventions, the company can leverage these resources to become a market leader in the apple industry both in Iran and beyond.
- The Semirom Seeb Company offers a **unique corporate structure** that is commercially focused, and is also designed specifically for improving farmers livelihoods.
- By organizing small farm holders into modern supply chain and converting undersized apples into value-added products, SSC can align itself with the values and tastes of **Iranian youth and changing lifestyles**.
- Besides being a financially viable business, SSC has the potential to have a **direct positive impact** in a number of critical areas including efficient utilization of scarce water resources, improving the value of the output for apple farmers and sharing of modern apple farming techniques.
- With the lifting of economic sanctions, Iran will be able to take advantage of new markets and sources of capital thereby creating a huge **potential for local and foreign investors**.
- The **model is replicable**, creating business opportunities for scaling up operations, and including other neighboring regions.
- It is expected that the business model may be applicable to other regions of Iran, as well as other agricultural businesses.



Appendix

Global Average Food Loss Across the Value Chain



Source : World economic Forum, Driving Sustainable Consumption
Deloitte Touche Tohmatsu Limited. "The food value chain "

Irrigation and Water Management Technology

Water management is a critical challenge for apple farmers as parts of Semirom have suffered severe droughts in recent years and the area is still lacking effective irrigation technologies.

Surface, Sprinkler and Gravity Drip Irrigation Systems



The three most common irrigation systems in Iran are surface, sprinkler and gravity drip;

- **Surface irrigation** is the oldest and most common system. But it is wasteful and poor implementation can decrease yields.
- **Sprinkler systems** use half as much water as surface systems by reducing the amount lost by evaporation.
- **Gravity drip irrigation** is useful for farming in the desert, especially in sandier soil where common irrigation is unfeasible. This system has had good results with crops like apples, pistachios and grapes, and is more environmentally friendly, but is more costly to implement.

At present, **only 20% of plantation area in Semirom are equipped with proper irrigation technology.**

SWOT Analysis of SSC

