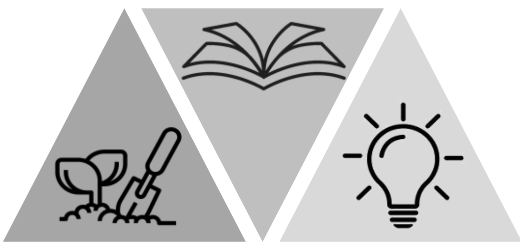
TECHNICAL NEEDS ASSESSMENT

among entrepreneurial households and micro-/smallholder farmers in the agricultural production and processing sector in Armenia

EXECUTIVE SUMMARY: Prepared by Civitta Armenia

March 2022



Foreword

Dear Reader,

The German Sparkassenstiftung (German Savings Banks Foundation for International Cooperation, DSIK) is a non-profit development agency acting in the spheres of rural and MSME development, financial literacy, green finance and institutional capacity building worldwide. DSIK was commissioned by the German Government to implement a regional program in the South Caucasus and Ukraine on promoting rural entrepreneurship and rural finance for sustainable MSE development. The German Federal Ministry for Economic Cooperation and Development (BMZ) has commissioned DSIK with the implementation of the orientation phase of the above-mentioned project.

The nation-wide technical needs assessment, conducted in close cooperation with CIVITTA Armenia (EV Consulting) among entrepreneurial households and micro-/smallholder farmers in the agricultural production and processing sector in Armenia provides a detailed overview and deeper understanding of major challenges and demands of certain agricultural areas in Armenia. DSIK wants to thank CIVITTA Armenia and the independent agricultural consultant Karen Gevorgyan for rendering the survey in a highly professional and dedicated manner as well as for the continuous constructive and efficient exchange throughout all phases of the cooperation. The gratitude extends to a multitude of representatives of state authorities, international development programs, non-governmental organizations as well as private enterprises, which greatly contributed to the high quality of the survey findings through participation in stakeholder discussions. DSIK is confident that the findings and recommendations of this survey will support both activity-planning and decision-making for relevant stakeholders and institutions.

Eric Boettcher
Country Representative
DSIK Armenia

Preface

The current study is aimed at the technical needs assessment among entrepreneurial households and micro-/smallholder farmers in agricultural production and processing sector in Armenia. Furthermore, the aim is to get deeper understanding of the key challenges that targeted people, within the selected agricultural value chains, experience in the long-run. Herein, technical needs assessment has been conducted aimed at subsequent capacity development measures, to effectively address the training as well as advisory support needs of the target groups in Armenia.

In Armenia, in terms of rural economic development, farm and rural non-farm incomes are low and labor is underutilized. While over 22% of the entire labor force is engaged in agriculture, it only contributed to 11.2% of GDP due to low productivity (2020)[1]. In the regions, agriculture is a primary employment sector along with low job opportunities in secondary and tertiary sectors of the economy. Nonetheless, certain employment in rural areas is mainly covered by vulnerable jobs in agriculture: considerable employment in agriculture is a manifestation of underemployment (de facto inactivity/ unemployment).

In Armenia, 63% of population lives in the regions, while 37% live in in rural areas.

Widening disparities in wealth and - income have led to noticeable socio-economic divide between urban and rural areas. Poverty remains a serious problem; and it is estimated that 33% of the rural population lives at or below the national poverty line (2019), an increase from 30% in 2015. Social hardships and insufficient employment opportunities, particularly in the regions, have triggered outmigration.

The households and micro/small/medium-sized enterprises (MSME[2]) in the rural regions, often have comparably low access to financial products. The range of underlying reasons includes high collateral requirements, gaps in business planning and financial management skills, over-indebtedness, and poor credit history. In the Armenian economy, MSME make around 99% of the businesses. They also account for estimated ~65% of the total business employment and ~60% of value added of

[1] Statistical Committee of the Republic of Armenia. Link: https://www.armstat.am/en/
[2] RA Law on support for small- and medium-sized enterprises (SME) defines the following:
Micro - legal entities or sole proprietors with less than 10 employees and AMD 100 million turnover / asset value;
Small - legal entities or sole proprietors with less than 50 employees and AMD 500 million turnover / asset value;
Medium - legal entities or sole proprietors with less than 250 employees and AMD 1500 million turnover and AMD 1000 million asset value.

the business sector. Moreover, 94% of the Armenian enterprises are micro, (i.e., enterprises with less than ten employees) with 3 out of 5 being non-employers. Around half of all MSME in Armenia are situated outside of Yerevan, in ten regions of the country.

The global outbreak of the Covid-19 pandemic and the war with neighboring Azerbaijan have hardly hit the Armenian economy contributing to a 7.6% decline in GDP in 2020. Moreover, the financial sector will have to deal with a deteriorating lending portfolio. Overall, Armenia is forecasted not to enjoy high rates of economic recovery in the upcoming years due to the adverse long-lasting consequences of both 2020 war and the Covid-19. This is a major challenge as the country needs high rates of economic growth to overcome the large set of socio-economic problems on the path of development.

In the aftermath of outbreak of COVID-19 pandemic, low-income households and MSME were affected the most.

German Sparkassenstiftung for International Cooperation has been commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) with conducting the introductory stage of the "Promotion of rural finance for sustainable MSE development in the South Caucasus and Ukraine" project. It is targeted to enhance access to and use of financial services in rural regions for individuals and entrepreneurs. This is expected to improve resilience to external shocks such as the impact of Covid-19 pandemic and climate change.

Household farmers along with processors and service providers within selected agricultural value chain and commercially oriented micro and small farmers in rural areas are the target group on the demand side. The overarching goal of the program is to enhance the economic engagement of the target groups of beneficiaries via better access to and improved use of financial services in rural regions. Herein, the program supports the sustainable advancement of living standards and the reduction of rural exodus.

Methodological Approach

In the framework of the Study, two quantitative surveys were conducted aimed at agricultural producers and processors in the following categories: fruits, vegetables, grains and berries. Furthermore, 10 focus groups were conducted and 15 interviews were held with the key stakeholders in 2021 September- November period from all regions of Armenia.

Producer Survey

The main objective of the survey was to explore the current state of agricultural activities among farmers, the challenges and opportunities they face, level of their financial and business literacy, training needs and expectations.

Overall, 534 producers (households, small and micro registered farmers) participated to the survey. All regions of Armenia were covered; Northern - Lori, Shirak and Tavush; Central - Ararat, Aragatsotn, Armavir, Gegharkunik and Kotayk; Southern - Syunik and Vayots Dzor. 364 surveys were conducted in face-to-face format, 170 - in the format of telephone interviews.

Dedicated questionnaire and guide were developed for the interview team who have undergone a detailed training. Prior to launch of the survey, the questionnaire was piloted among potential respondents and was discussed with stakeholders, based on which, it was finalized. Quality control was done by field supervisor and quality check calls made to 15% of the respondents to verify the responses.

Processor Survey

Overall, 66 processors participated in the survey, in rural and peri-urban areas. All regions of Armenia were covered.

The survey was conducted predominantly in the format of telephone interviews. Dedicated questionnaires and guides were developed for the interview team who has undergone a detailed training. Prior to launch of the survey, the questionnaire was piloted among potential respondents based on which, it was finalized. Quality control was done by field supervisor and quality check calls made to 15% of the respondents to verify the responses.

Focus Group

The focus groups served to further elaborate the information gathered by the quantitative surveys of producers and processors and test the preliminary hypotheses developed. The discussions reflected the following topics:

- General: Lori, Tavush, Gegharkunik and Aragatsotn regions.
- Challenges: Kotayk, Syunik, Shirak and Armavir regions.
- Financial and entrepreneurial literacy: Vayots Dzor and Ararat.

Dedicated discussion guides were developed. Each focus group was aimed at the following cohort of participants.

- Representatives of regional administration, municipalities and Ministry of Economy engaged in the sphere of agriculture (2-3).
- Farmers (2-3 participants).
- Processors (2-3 participants).
- Value chain representatives (3-4).

In total, around 100 participants were engaged in the focus groups. 2 focus groups – in Syunik and Vayots Dzor, were held online due to COVID-19 situation and the concerns of the participants. The focus groups in Shirak, Lori, Tavush, Ararat, Aragatsotn, Tavush, Gegharkunik, and Armavir were held face-to-face.

The discussions were held at a dedicated hall in the building of the regional administrations due to the site accessibility and convenience to attract variety of participants from the region. Experienced moderators held the discussions.

Stakeholder Interviews

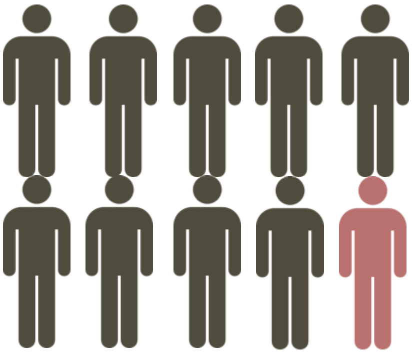
The main stakeholder groups included:

- State authority - Ministry of Economy;
- Regional administrations and municipalities;
- Higher education sector;
- Sectoral associations and NGOs, international donor organizations

Dedicated discussion guides were developed for each stakeholder group. The purpose of the discussions was to learn stakeholder views on the current state in agriculture (particularly, with regard to the target clusters), value chain developments, interventions by state and donor organizations, challenges and opportunities, support and training needs.

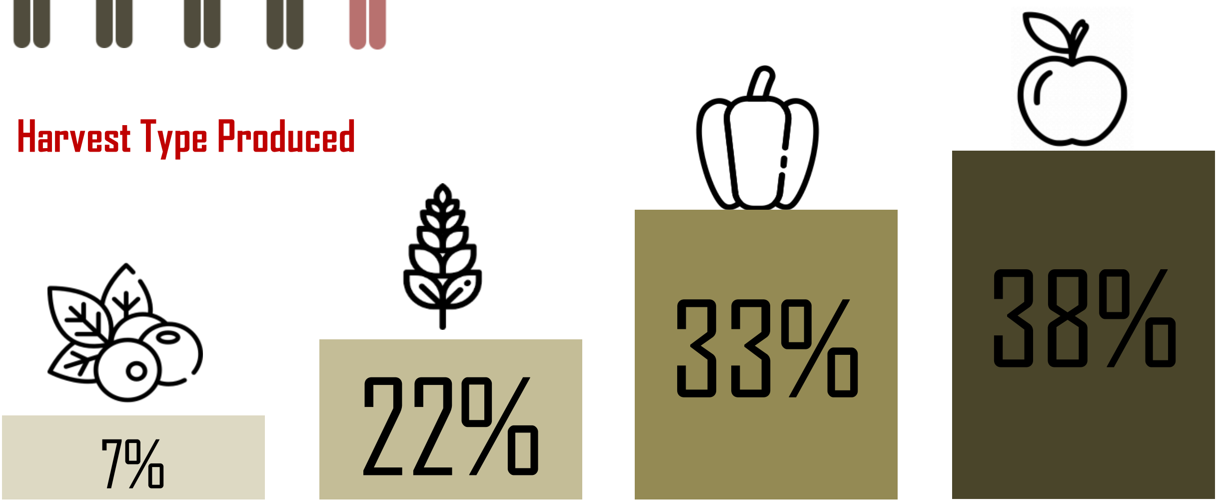
Producer Survey in Brief

Gender of Respondents



9 in 10 respondents are **male**, reflecting the men-dominated hierarchy in agriculture. To a certain extent, this is due to societal **stereotypes** and customs, where men are considered as the head of the **household**, especially in the regions, in charge of agricultural activities of the household.

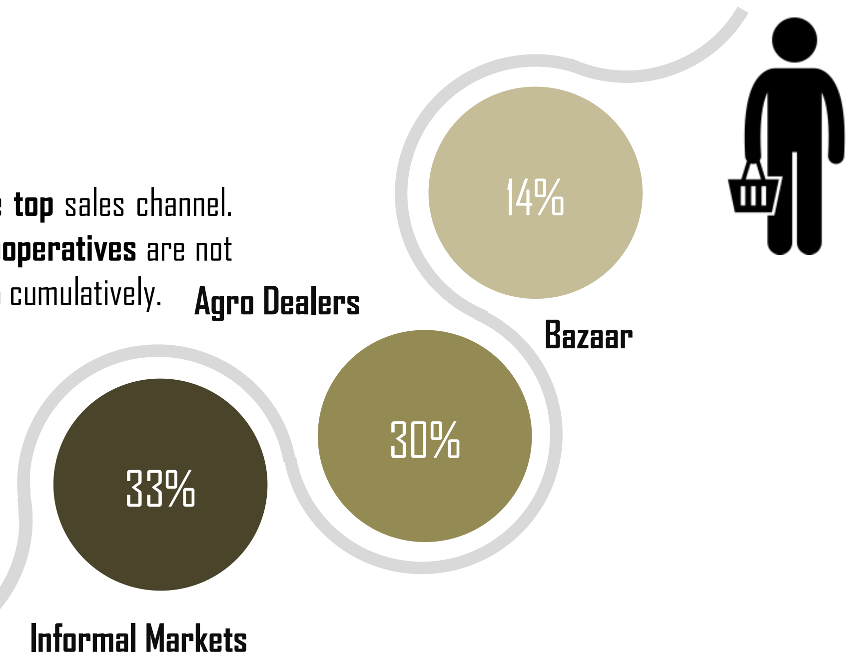
Harvest Type Produced

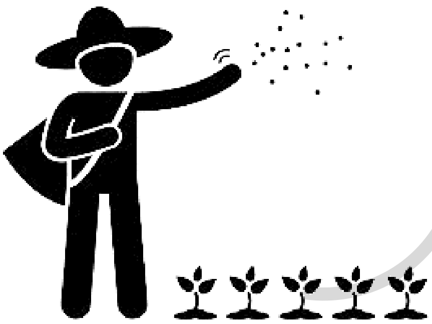


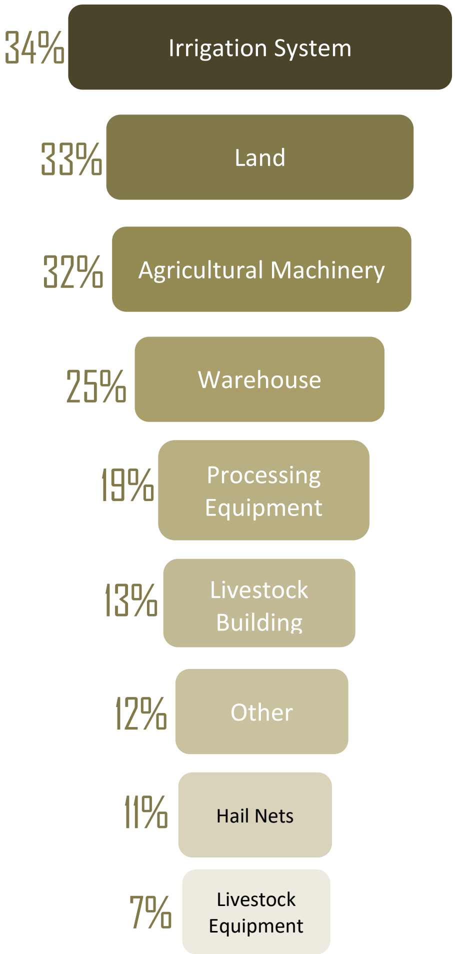
Fruit production is predominant among the respondents, 38%, followed by vegetable production. In the Northern and Central regions, production patterns are similar. In the Southern region, 6 in 10 of respondents are engaged in fruit production.

Sales Channels

Informal markets are the **top** sales channel. **Contract farming** and **cooperatives** are not widespread, less than 10% cumulatively.







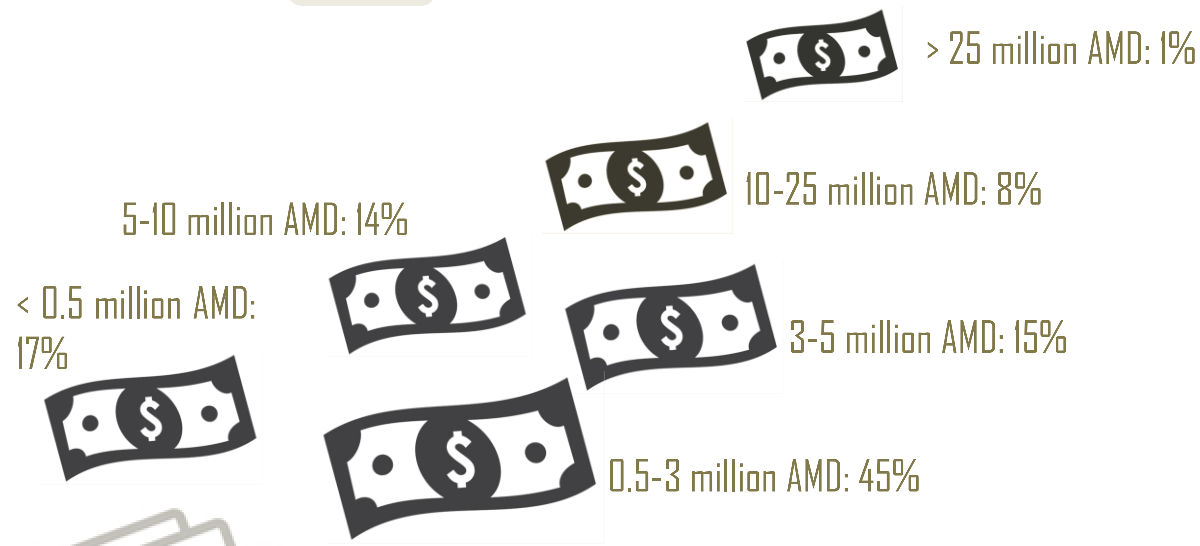
Future Investments

Irrigation system, land and **agriculture machinery** are **top** planned investment **areas** for the respondents, one-third each. Land investment plans are relatively low in central region. Investment plans in agricultural machinery are relatively higher in southern region.

Hail nets are more prioritised by berries producers; irrigation system – by fruits producers.

3 in 5 registered entities plan to invest in agriculture machinery.

Revenues from Production

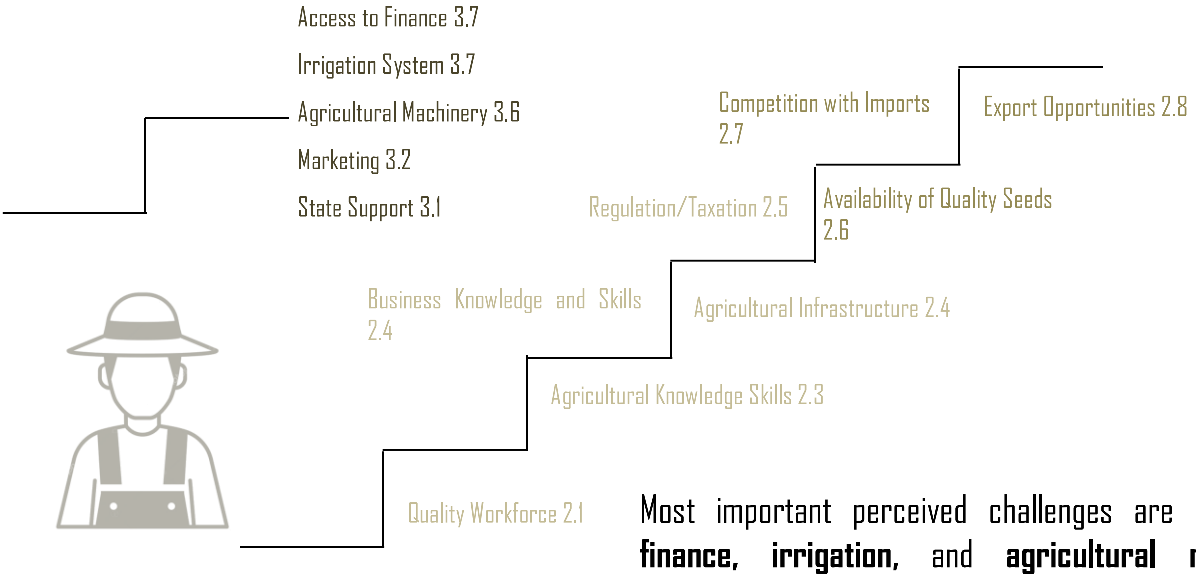


Nearly **half** of the respondents have annual income from agriculture in the range of **0.5-3 million AMD**. 1 in 6 generates an income of up to 0.5 million AMD.

One-third of respondents' annual income mainly comes from agricultural activities.

For half of the **berry** producers, 75-100% of income comes from agriculture, compared to 1 in 3 of the **grain** producers.

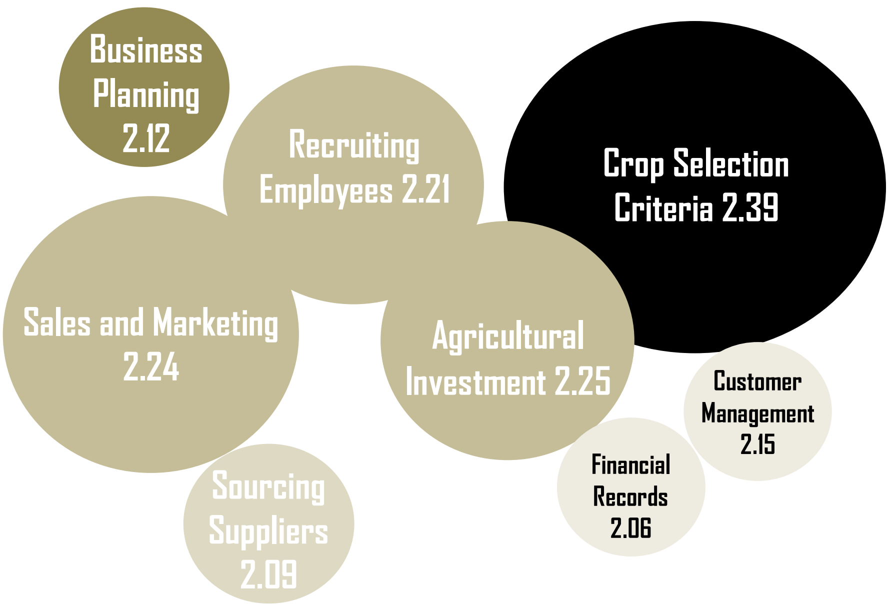
Challenges



Scale from 1-5, with 5 being the largest challenge

Most important perceived challenges are **access to finance**, **irrigation**, and **agricultural machinery**. **Business** knowledge and skills are less, but still important. Access to finance was rated highest in **northern** regions, irrigation in the **central** regions. Marketing is considered a larger issue in the **southern** regions.

Entrepreneurial Literacy



Scale from 1-3, with 3 having sufficient knowledge

The respondents have the **highest** knowledge in **crop selection**.

The respondents have the lowest knowledge in **business planning and financial records.**

Training Needs

The vast majority (**85%**) of the respondents or their family members have **not undertaken** any **trainings** on topics related to agricultural activities/business in the last 12 months.

In the case of registered businesses, this indicator is a little lower at 80%.

Overall, the non-participation rate is relatively high in central region, 9 in 10.

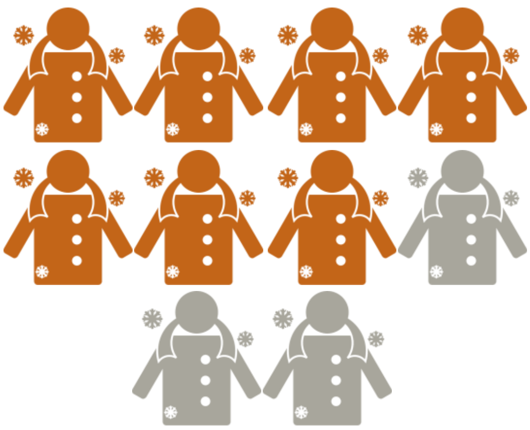
The main areas of trainings have been in **agricultural** aspects such as technologies, seeds, and agribusiness. **Sales and marketing** and **financial trainings** have been **rarer**.

In the context of desired training topics for agricultural activities, pure **agricultural** topics **top** the list – **agro processing, agro investments** and **costs**, **production** and **management** technologies. **Entrepreneurial skills** come next. Areas like **sales** and **marketing** and financial record keeping and accounting are in the **bottom** part of training needs. Legislation, taxation and computer literacy are the **lowest** ranked.

The pattern is **similar** in the **northern** and **central** regions. In **southern** region, **entrepreneurial skills** and sales and marketing rank **2nd** and 3rd, respectively, after agro processing.

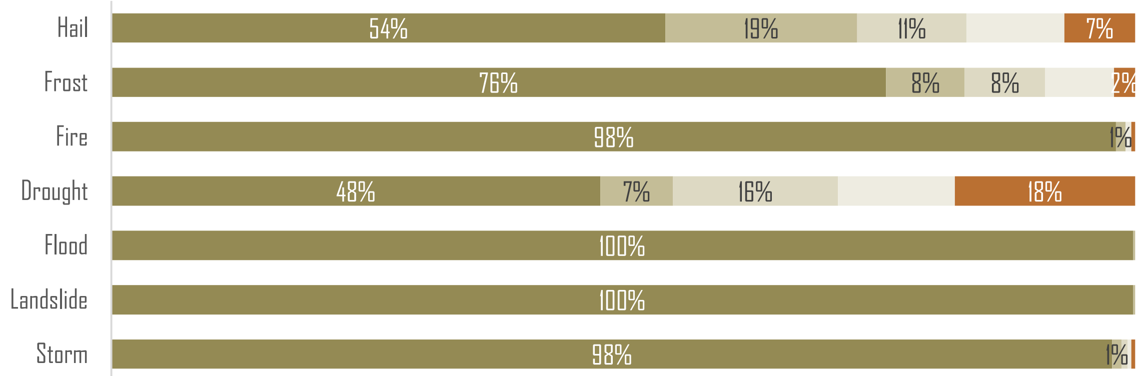
Scale from 1-5, with 5 having the highest need

Desired Time and Duration of Training



7 in 10 respondents are in favour of trainings with **duration of less than a week**. Winter season is the most popular for trainings.

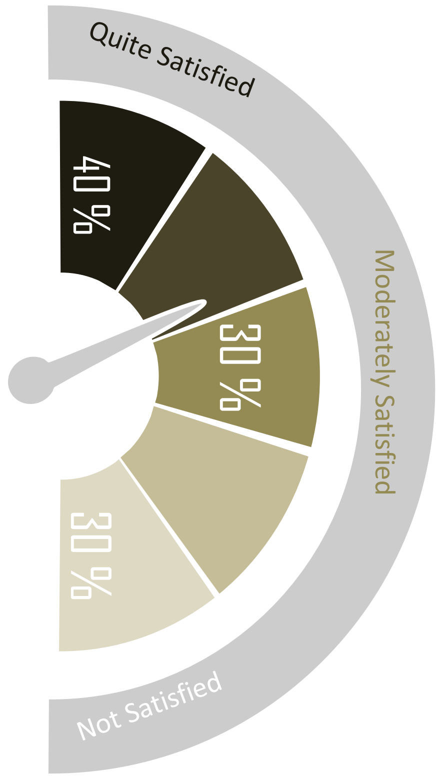
Percentage of Crops Affected by Natural Disasters*



Hail, frost and drought are the most devastating acute climate-related risks perceived by farmers, which had a negative impact on the **yield of crops in the previous 12 months.** However, in the Northern region, the majority of the respondents state that drought has not had an impact is higher.

Hail, frost, and **drought** are the natural disasters with the **largest adverse** impact on the physical volume of crops. Hail has affected over half of the physical volume at 1 in 5 respondents (larger proportion in the central region), drought 1 in 4 (larger proportion in the north) and frost 1 in 10.

Agricultural Insurance



More than 90% of respondents do not possess an agricultural insurance. The lowest level of insurance coverage is in berries production (2%).

The majority of those respondents having an agricultural insurance are satisfied with it. Nearly half of fruit producers are dissatisfied.

Around **1 in 3** respondents who do not have agricultural insurance **do not believe in benefits** that this financial product may bring. 1 in 3 respondents state the **lack of awareness** as main reason for not obtaining an agricultural insurance. Generally, the level of mistrust in the benefits of an agricultural insurance among registered entities is higher than that of households.

Awareness level and mistrust issues are more common among fruit and vegetable producers. On the other side, **insurance premium** is larger issue for **berries** and **grain** producers.

***The question in the survey was the following:** Please, select from the following climatic disasters those that have affected the physical volume and monetary value of your production/harvest in the previous 12 months and estimate the losses.*

Most Important Support Directions

Score	Support direction
4.2	Subsidizing Loan Interest Rate
3.4	Support for Acquisition of Agricultural Equipment, Machinery
3.3	Support for Acquisition of High-Quality Seeds and Planting Materials
3.1	Subsidized Lease Interest Rate/Reduced Down Payment
3.1	Improving Irrigation System
3.0	Loan Guarantee Provision
2.6	Sales Support
2.2	Agricultural Insurance
2.1	Specialized Agricultural Production Advisory Services
1.8	Financial Knowledge

The most important support direction is **subsidizing loan interest rate,** particularly in north and south regions. Another significant support dimension is the support for acquisition of agro equipment. Irrigation is of comparatively less importance in southern regions.

Financial knowledge and **business skills** development are perceived by the producers as areas of low importance compared to above-mentioned topics. However, results of the stakeholder interviews show the opposite.

Scale from 1-5, with 5 being the most important support. Rated on self-assessment, subjective judgement.

Processor Survey in Brief

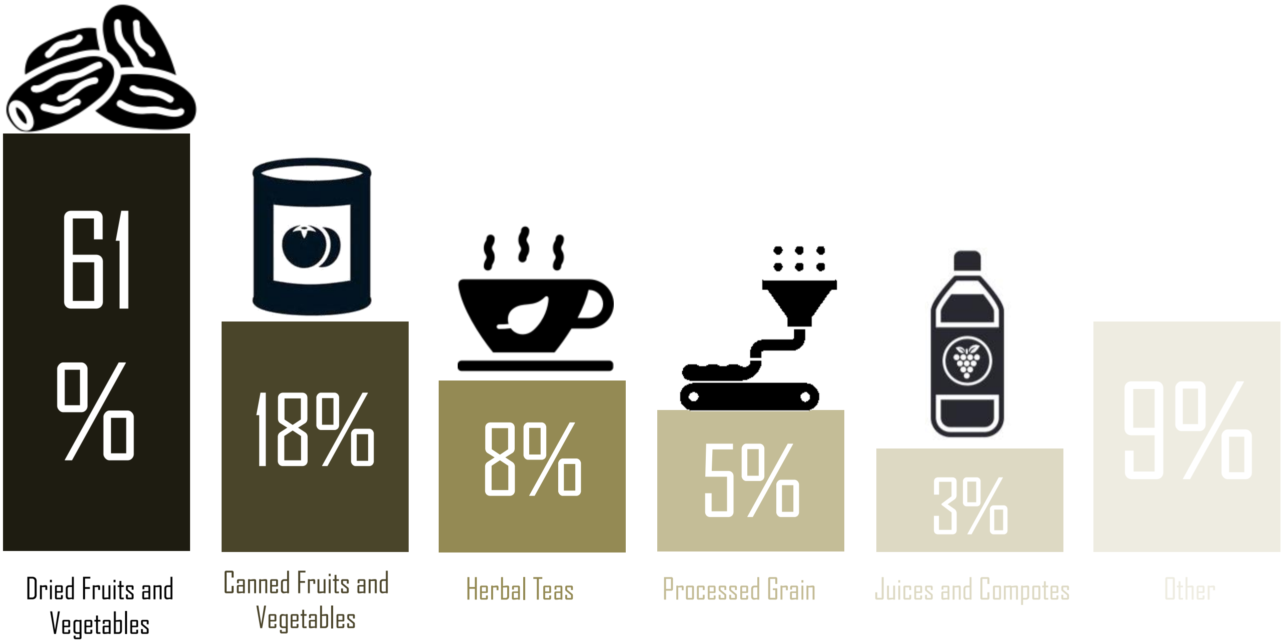
Legal Status of Processors

Nearly all surveyed processors have registered the legal status: half are LLCs and around 40% are sole proprietors, the rest – OJSC, CJSC, etc.

Around 85 % have 4 and more years of experience in processing, while 1 in 3 has over 10 years of experience.

The fact that the majority of the survey respondents have many years of experience in the processing activities is advantageous as they have vast information on challenges validated by own experience, know the market and common capacity gaps, and can better define the needs and improvement areas.

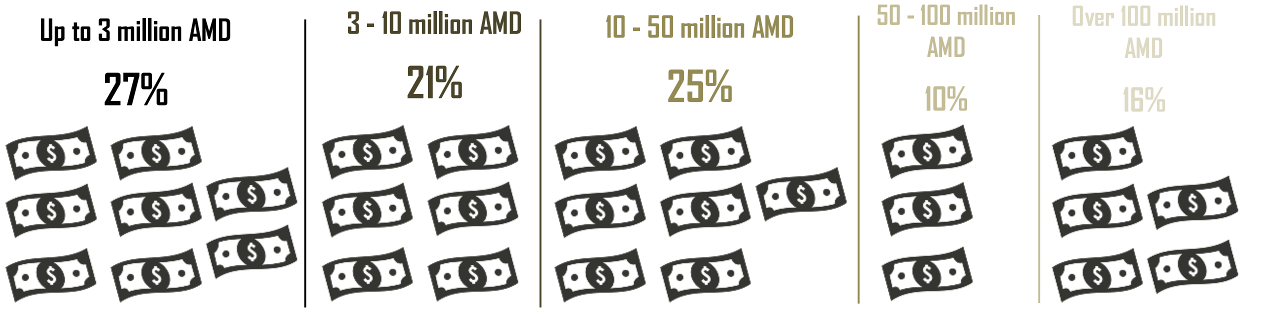
Types of Processed Products



All processors are engaged in food processing. 3 in 5 produce **dried fruits and vegetables**, 1 in 5 make **canned fruits and vegetables**. In case of dried fruits and vegetables, about 90% of the production is sold. The average yearly revenue from dried fruits and vegetables is around 20 million AMD.

With regard to the **canned fruits and vegetables**, the average share of sold production is 80%. The average yearly revenue received from the canned fruits and vegetables is around 300 million AMD.

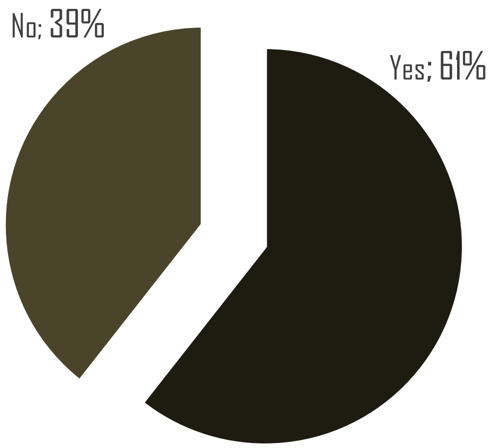
Income Received from Processing Activities



3 in 4 processors generate **yearly income** of up to 50 million AMD. The processors that make an annual average income of over 10 million AMD are mainly from central regions. Processors generating more than 100 million AMD average annual income are mainly engaged in canned fruits and vegetables production.

Half of the processors obtain **76 to 100%** of their total income from food processing activities. 2 in 3 processors have **loans from financial institutions**, mainly from banks.

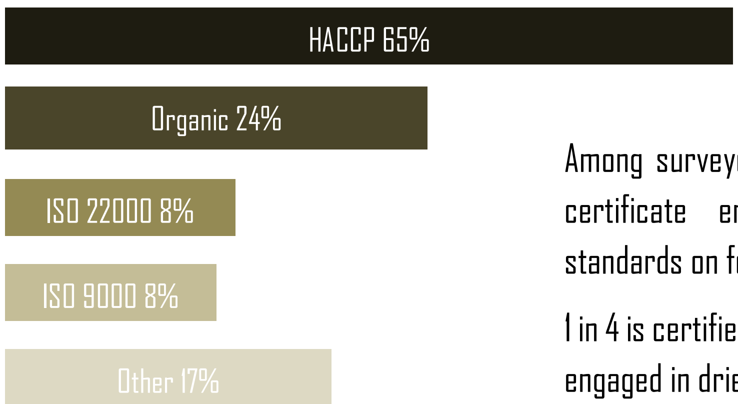
Producers Engaged in Exporting



3 in 5 export some portion of their production. The main export market is Eurasian Economic Union.

3 out of 4 processors that have more than 10 employees export their production. The regional comparison shows that 4 in 5 processors in **northern regions** export, while the lowest share is in **southern regions** with only 2 in 5. In case of processors that produce canned fruits and vegetables, 4 in 5 export. In case of dried fruits and vegetables, the proportion is 3 in 5.

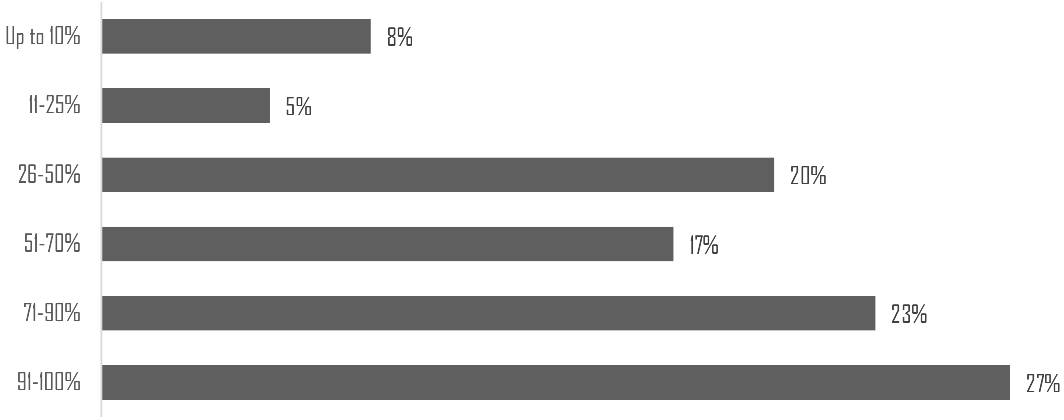
Certification of Processors



Among surveyed processors, **2 in 3** possess a **HACCP** certificate ensuring compliance with international standards on food safety in production processes.

1 in 4 is certified for **organic** food processing and is mainly engaged in dried fruits and vegetables production.

Production Capacity Used



In 2021, many more businesses started to operate at over **70** % of the capacity. In 2021, **half** of businesses operate at up to **half** of the capacity (75% in 2020). The **rise** in capacity used in 2021 is **higher** among **smaller** size processors with less than 10 employees (**2.5-fold** times fewer small processors used 71-100% of production capacity in 2020).

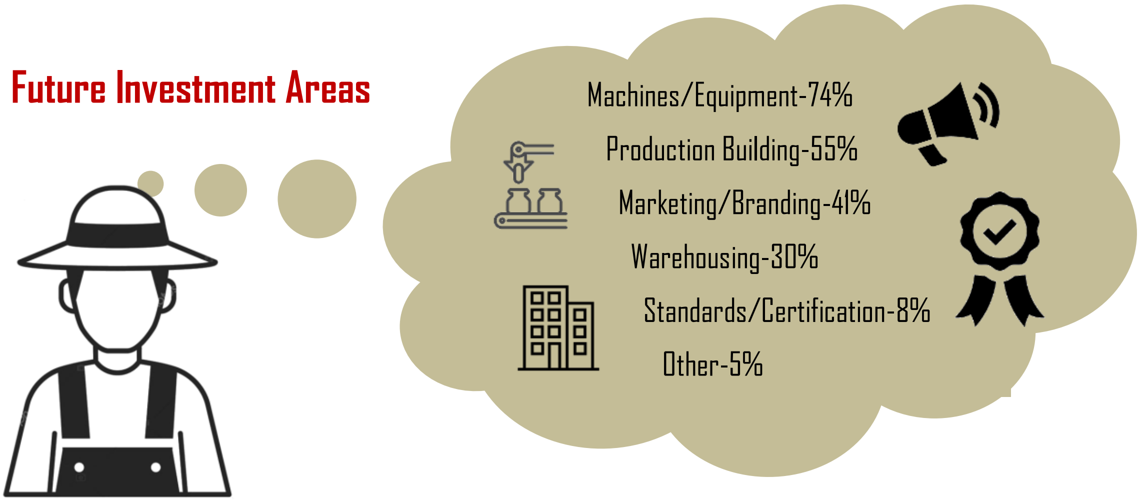
2 in 3 of comparatively **bigger** processors in 2021 use **71-100** % of capacity while in 2020 the same indicator was just 2 in 5. Among businesses producing **dried fruits and vegetables**, the share of using **71 to 100** % of production capacity has **increased** from 1 in 4 to half in 2021 compared to 2020. The share of the businesses that used only up to **25** % capacity is **three** times **less** in 2021.

Ability to Increase the Production in Case of Demand

2 in 3 processors engaged in **dried fruits and vegetables** processing have experienced **increased demand** in the previous 12 months, compared to 2 in 5 processors of **canned fruits and vegetables**. 2 in 3 respondents state that in case of need they will be able to increase the production volumes, 1 in 3 is uncertain.

Among businesses with **no ability to increase production** in case of demand, proportionally more companies are from **southern regions** of Armenia. 55% of processors that export will be able to increase production in case of risen demand. In case of non-exporters, the indicator is only 1 in 5.

Future Investment Areas



9 in 10 processors plan to **expand** and **invest** more in processing activities in the future, while the remaining continue at the same level. 3 out of 4 processors plan to invest in **machinery** and **equipment** in the upcoming 5 years. 2 in 5 plan to invest in **marketing** and **branding**. The needs and future investment plans vary based on the size of the business and number of employees. Processors with more than 10 employees tend to invest in machines /equipment and marketing and branding more than the processors with fewer employees.

Challenges

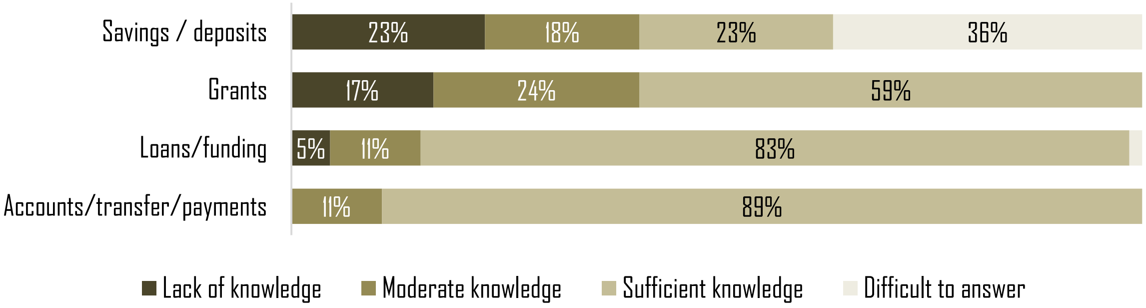
Regulations, taxation, marketing of products and state support are ranked to be the top challenges. Entrepreneurial knowledge and skills are mid-ranked, while production knowledge and skills are perceived to be the least important issues.

The ranking of the challenges for the processors looks **different** in case of being **exporters**. Herein, export opportunities are top, followed by state support and marketing of products. In case of not-exporting processors, regulations / taxation, competition with imports and the production infrastructure are the top challenges.

For **small-size processors** with less than 10 employees the top challenges are regulations/taxation, competition with imports, and production infrastructure. In case of **larger processors**, the top issues are export opportunities, state support and marketing of products.

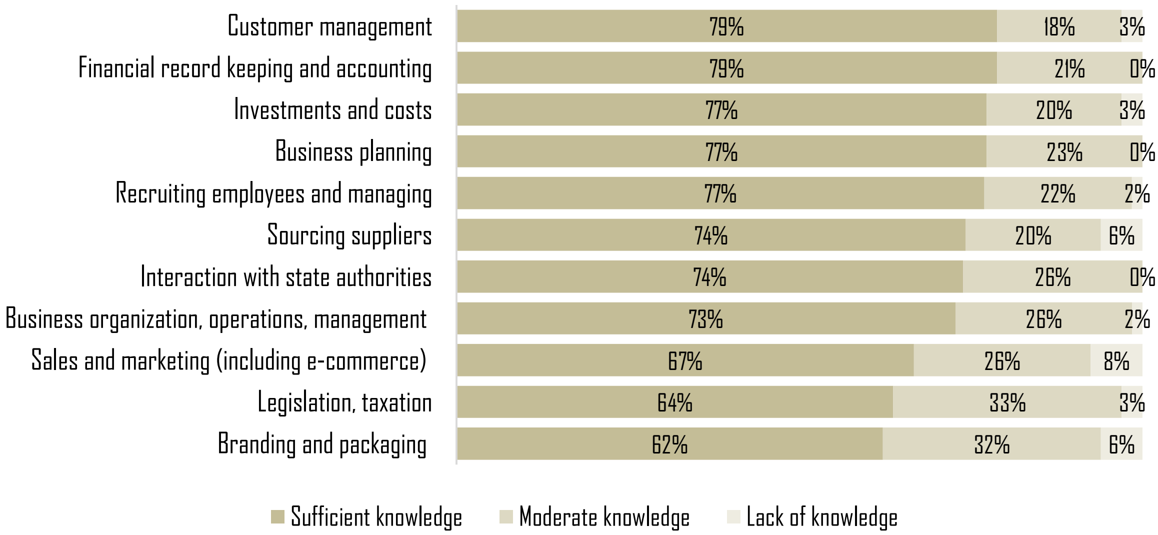
Scale from 1-5, with 5 is the highest importance.

Knowledge of Financial Institutions and Products



Within the assessment, the processors have self-evaluated their financial and entrepreneurial literacy. Processors **lack knowledge** mainly in savings and deposits, as well as in grants. Commonly, processors reported sufficient knowledge on loans, payments, transfers, and accounts.

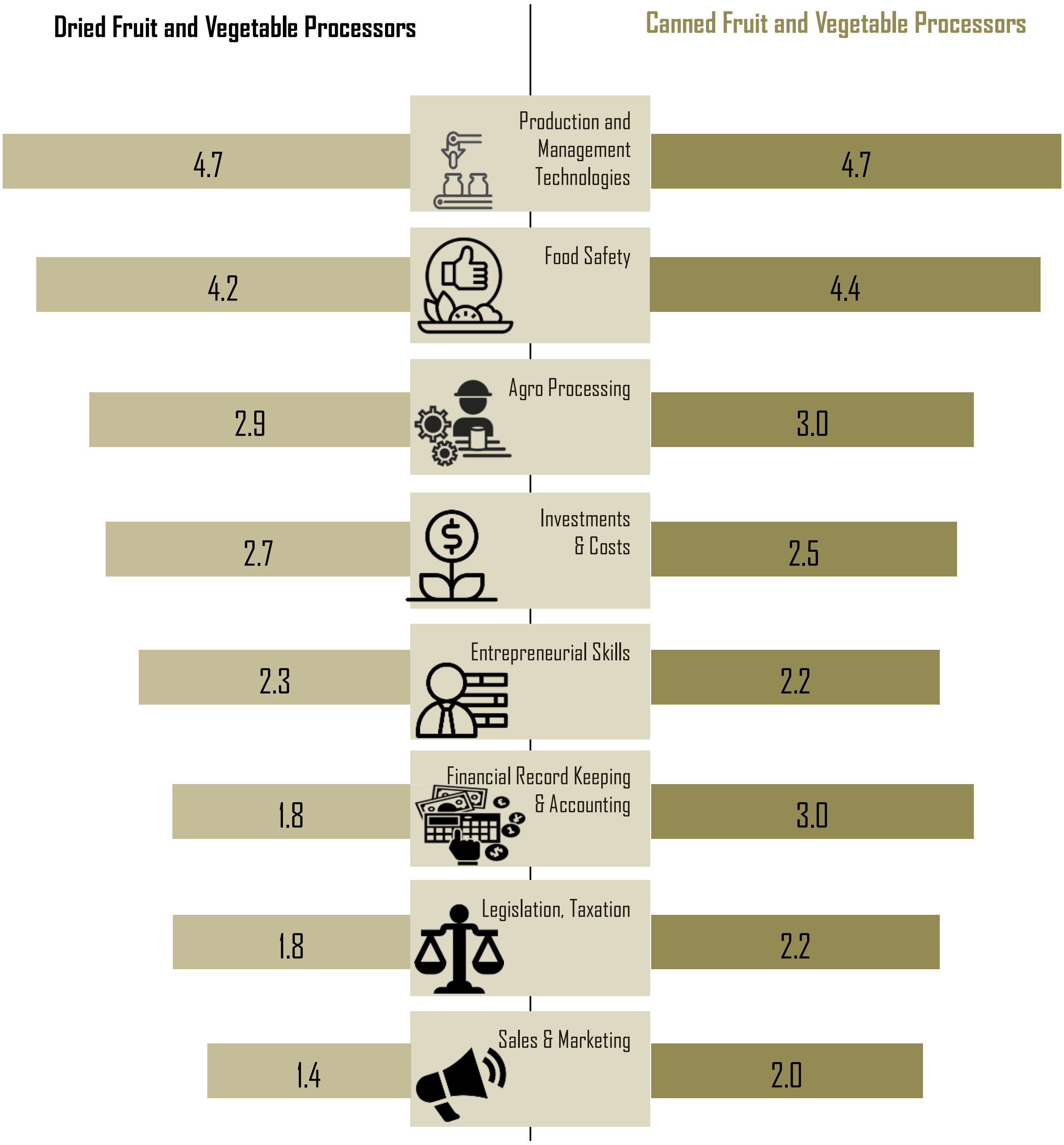
Entrepreneurial Literacy



The self-reported **financial and entrepreneurial literacy** rates show similar patterns across different regions in Armenia. The respective knowledge is relatively **higher** in case of the processor being an exporter, particularly, regarding aspects as business, organizational and operational knowledge, recruitment and interaction with the state authorities.

In terms of **production type**, knowledge of financial institutions and products is relatively high at processors of canned fruits and vegetables. Processors of **dried fruits and vegetables** have higher literacy rates in business planning, financial record keeping and accounting, recruiting and managing employees. On the other side, processors **of canned fruits and vegetables** have higher literacy rates in business organization, operation and management, branding, sourcing suppliers, customer management, legislation and taxation.

Training Needs



Scale from 1-5, with 5 being of highest importance.

Processors of **dried fruits and vegetables** have slightly higher need for trainings in investments and costs and entrepreneurial skills. Processors of **canned fruits and vegetables** have higher demand for trainings in food safety, financial record keeping and accounting, as well as legislation and taxation.

In case of **processors with more than 10** employees, training need in **agro processing**, **legislation** and **taxation** is highlighted. Nearly half are ready to provide **up to 1-week** time for the **trainings**. **Around 15%** will **not** have time for trainings at all. Larger processors and exporters are more likely to be ready to dedicate less than 1 week.

Support Areas

- **4.8** Subsidizing Loan Interest Rate
- **3.9** Subsidizing Lease Interest Rate
- **2.8** Support for Acquisition of Production Equipment
- **2.4** Support for Acquisition of Raw Materials
- **2.1** Participation in Trade Fairs/Expos (Local and International)
- **1.9** Sales Support
- **1.9** Specialized Technologies Advisory Services
- **1.6** Loan Guarantee Provision
- **1.5** Financial Knowledge
- **1.2** Entrepreneurial Skills Development

Scale from 1-5, with 5 being the most important support

Financial knowledge, support for acquisition of **raw materials** and production **equipment** are **higher** rated among processors of **canned fruits and vegetables** producers. On the other side, **entrepreneurial** skills development, **sales** support, and specialized **technological** advisory are highlighted by **dried fruits and vegetables** producers.

The pattern of ranked importance of support areas is generally **similar** for **exporters** and **non**-exporters. The latter more prioritizes **sales** support, whereas exporters - participation in **trade** fairs/expos.

Sales support is by **two-third** more important support area for processors with **over 10** employees.

Challenges

POOR ACCESS TO FINANCE

Participants on all layers of the value chain – farmers, processors and other participants (agro mechanization, storage/cold storage services providers, guesthouses, gastro yards, etc.), face considerable difficulties in accessing soft-term loans/leasing. Main issues are already high loan burden, high collateral requirements and binding conditions. This impedes modernization and growth prospects.

GAPS IN MARKETING AND SALES

Effective marketing and sales is a considerable gap in the sector. This particularly refers to smaller size producers and processors that lack proper branding, packaging and labeling features, due to costs, and to awareness level, to a certain extent. The consequence is low-price sales in wholesale market and low return.

POOR AGRI-, FINANCIAL AND BUSINESS KNOWLEDGE

Producers self-report certain gaps in agricultural, financial and entrepreneurial knowledge. Nevertheless, this is not considered to be a major challenge, compared to financial and infrastructural needs. Stakeholders, on the contrary, identify the aforementioned gaps as major constraints for production scale-up. On the other side, processors find entrepreneurial knowledge and skills (e.g., business planning, operations and management; financial record keeping and accounting, sourcing suppliers; customer management) to be a larger challenge for agribusiness operations.

LOW PROFITABILITY

Low and volatile profit margins hamper operations of both producers and processors. Agricultural activities, especially, crop planning, are done by “rule of thumb”. The assumptions are based on short-term observations of market prices and demand leading to market instability – periodic shortages or surpluses in the market. When the market is over-saturated, the producers experience sales difficulties or sales on extremely low prices. Shortages increase the prices of raw materials.

EXTERNAL SHOCKS: COVID-19 AND NAGORNO-KARABAKH WAR

All value chain participants have been affected by COVID-19 pandemic and Nagorno-Karabakh war in the last couple of years, to a certain extent. Producers encountered shortages of workforce and agriculture inputs (fertilizers, seeds, etc.). According to the survey results, in 2021, the processors have entered a post-shock recovery period as the demand has risen.

Training Needs Assessment

Producers, processors and other participants of the agricultural value chain underwent a self-assessment process of technical, agricultural, financial and entrepreneurship knowledge and skills. Majority of the respondents have self-reported sufficient knowledge and skills. Nevertheless, deeper discussions, i.a. with relevant stakeholders from the sector, have demonstrated a contrary image. The positive outcomes of the self-assessment are considerably due to low awareness rates and biased reflection. Furthermore, a considerable set of the challenges that value chain participants face is often connected with low awareness level and knowledge gaps. Overall, the following knowledge gaps and training needs were identified:

AGRICULTURAL & TECHNICAL TRAINING TOPICS

KNOWLEDGE & SKILLS GAP	TRAINING NEEDS	TARGET GROUP	EXPECTED RESULTS	TARGET REGION
-Crop selection is conducted on vague criteria (not considering land condition, weather predictions, yield rates, etc.).	-Workshop on crop selection criteria, international best practices, and tools. -Practical exercises on crop planning (digital tools, spreadsheets, and registers).	Producers, extension services.	-Farmers are able to select the optimal types of crops and ensure high yields. -Farmers are able to collect relevant data, analyze data, register assumptions and plan crop production process.	Throughout Armenia.
-Low awareness on high-value, high-yield, and non-traditional crops.	Training series on best practices of high-value, high-yield, and non-traditional crops farming (from seeding to harvesting and post-harvest care).	Producers, extension services.	-High awareness on high-value, high-yield and non-traditional crops farming practices. -Higher yields and farm-level productivity increase.	Central and southern regions.
-Ineffective use of fertilizers and other chemicals.	-Theoretical sessions on fertilizers and chemicals (content, toxicity level, effectiveness, etc.). -On-site practical demonstration of fertilizers and other chemicals' application.	Producers, extension services.	-Farmers have sufficient knowledge on different fertilizers and chemicals. -Farmers can apply fertilizers following food safety and environmental regulations.	Throughout Armenia.
-Ineffective post-harvest handling and storing practices.	-Theoretical sessions on post-harvest management practices (reduction of product loss, spoilage, or shrinkage).	Producers, extension services, storage/ cold storage facilities manufacturers.	Farmers have sufficient knowledge on post-harvest management practices and avoid product loss, spoilage, or shrinkage.	Primarily in the south and north with extension to central regions with the least developed agricultural practices.

KNOWLEDGE & SKILLS GAP	TRAINING NEEDS	TARGET GROUP	EXPECTED RESULTS	TARGET REGION
-Low awareness on modern agro-processing technologies and equipment. -Resource-inefficient technologies.	Theory and practical work on agro-processing trends and innovations.	-Producers, processors. -Dried and canned fruits & vegetables producers.	-Producers are able to start small-scale processing. -Processors utilize up-to-date and innovative processing practices.	Throughout Armenia.
-Knowledge gaps in food safety regulations and best practices	Upskilling training sessions aimed at presentation of good manufacturing practices, sanitation procedures, HACCP and other measures.	-Storage, processors, food technologists. - Processors with no HACCP certification. Primarily producers of canned fruits and vegetables.	Food safety regulations are followed.	Throughout Armenia.

CLIMATE CHANGE RELATED TRAINING TOPICS

-Awareness gaps in climate change adaptation and weather extreme events, risk mitigation, climate change resilient farming practices.	Theoretical training session on climate change impact on agriculture and climate change adaptation practices.	Producers.	Farmers know and apply climate change adaptation measures and are more resilient to weather extreme events.	Throughout Armenia.
-Knowledge and skills gaps in climate change adaptation measures, i.a. mulching, anti-hail nets, new crops/sorts, etc.	Multiple on-site practical exercises and demonstrations of the climate change adaptation measures.	Producers.	Farmers have sufficient knowledge on the adaptation measures to apply specific measures.	Throughout Armenia.
-Awareness gaps in agricultural insurance, coverage and terms.	Awareness raising meetings in close cooperation with state representatives and insurance companies.	Producers.	High awareness level on agricultural insurance coverages, terms and benefits.	Throughout Armenia.

FINANCIAL TRAINING TOPICS

-Knowledge and skills gaps in product costing	Practical exercises on product costs calculations.	Producers.	Producers understand the cost structures for agricultural production and can perform proper product costing.	Primarily in the north, with extension to other locations.

KNOWLEDGE & SKILLS GAP	TRAINING NEEDS	TARGET GROUP	EXPECTED RESULTS	TARGET REGION
-Business and investments are not well-thought and planned.	-Intensive training courses on business and investments planning. -Basic financial statements.	Producers, processors, cold storage, guesthouses, agro-machinery services, etc.	Producers and processors are able to make right business decisions.	Throughout Armenia.
-Knowledge gaps in financial products (loans, leasing, etc.) offered by financial institutions.	Short and regular workshops/consultations on different financial offerings.	Producers, processors, cold storage, guesthouses, agro-machinery services, etc.	Higher awareness on financial products.	North and south.

ENTREPRENEURIAL SKILLS TRAINING TOPICS

-Knowledge and skills gaps in products diversification.	Several workshops on development of product line diversification strategy.	Processors.	Higher abilities to diversify product lines and enter new markets.	Throughout Armenia
-Ineffective marketing and branding practices	Short training courses on offline and online marketing campaigns, digital marketing and branding	Producers, processors	Producers and processors understand marketing and branding terms and are able to cooperate with experts/agencies.	Throughout Armenia
-Gaps in safe/appealing packaging and labeling practices.	-Workshops on international best practices of safe food packaging and labeling. -Workshops on products certification and labeling.	Packaging and labeling companies. Small producers.	Processors and packaging/labeling companies know best practices of packaging and labeling and are able to productively cooperate	Throughout Armenia.
-Knowledge gaps in organizational and legal frameworks of contract farming.	- Theoretical training sessions on contract farming - Main concepts, stakeholders and organizational and legal frameworks as a marketing strategy.	Producers, processors, cold storage, etc.	Producers, processors and cold storage facilities have sufficient knowledge on contract farming and are able to productively cooperate with each other.	Throughout Armenia.
-Low bargaining power and abilities to make profitable sales.	Training sessions on marketing cooperatives, operational guidelines, international best practices and success stories.	Producers, processors, cold storage, guesthouses, agro-machinery services, etc.	Enough knowledge for creating marketing cooperatives.	Throughout Armenia.
-Value chain participants lack computer and digital skills.	Basics of digital literacy.	Producers, processors, cold storage, guesthouses, agro-machinery services, etc.	Higher abilities and increased access to digital technologies.	Throughout Armenia.

Prioritization of Training Topics

!!! **High Priority** !! **Medium Priority** ! **Low Priority**

AGRICULTURAL & TECHNICAL TRAINING TOPICS

-Workshop on crop selection criteria, international best practices and tools.

-Practical exercises on crop planning (digital tools, spreadsheets and registers)

!!!

-Training series on best practices of high-value, high-yield and non-traditional crops farming (from seeding to harvesting and post-harvest care)

!!

-Theoretical sessions on fertilizers and chemicals (content, toxicity level, effectiveness, etc.),

-On-site practical demonstration of fertilizers and other chemicals' application.

!!

-Theoretical sessions on post-harvest management practices (reduction of product loss, spoilage or shrinkage).

-On-site practical demonstration of post-harvest care and storing.

!!

-Theory and practical work on agro-processing trends and innovations.

!!

-Upskilling training sessions aimed at presentation of good manufacturing practices, sanitation procedures, HACCP and other measures.

!

CLIMATE CHANGE RELATED TRAINING TOPICS

-Theoretical training session on climate change impact on agriculture and climate change adaptation practices.

!!

- Theoretical sessions on risk reduction measures (disaster risk management plan, financial reserves, etc.) (online/offline).

!!!

-Awareness raising meetings in close cooperation with state representatives and insurance companies.

!

FINANCIAL TRAINING TOPICS

-Practical exercises on product cost calculation.

-Theoretical sessions combined with practical exercises on keeping records and expenses, double entry system, etc. (online/offline).

-Intensive training courses on business and investments planning,

-Basic financial statements.

-Short and regular workshops/consultations on different financial offerings.

ENTREPRENEURIAL TRAINING TOPICS

-Several workshops on development of product line diversification strategy.

-Workshops on international best practices of safe food packaging and labeling,

-Workshops on product certification, labeling (organic, fair-trade, etc.) as marketing strategy.

-Short training courses on offline and online marketing campaigns, digital marketing and branding.

-Training sessions on marketing cooperatives, operational guidelines, international best practices and success stories.

-Theoretical training sessions on contract farming, main concepts, stakeholders and organizational and legal frameworks.

-Basics of digital literacy.

GUIDING NOTES ON TRAINING ORGANIZATION

Training sessions need to be on-site, practical and short. Farmers, processors, and other value chain participants have busy work schedules. Their operations are time-intensive and consuming, especially during the peak season. Therefore, maximum 1-week-long training programs shall be considered. Winter season is the preferred time for trainings and similar measures. **On-site training** sessions and workshops shall be organized to cover the local context and demonstrate the recommended practices in-house. Visits to demonstration sites and experience-sharing events shall be regularly organized to demonstrate agricultural best practices and success stories of other farmers. **Learning-by-doing methods and tools** will be effective to engage during the training sessions. **Farmer-to-farmer training programs** will encourage innovative and experienced farmers to provide advisory and mentoring services to peers.

Concluding Remarks

Armenia's agriculture sector traditionally has played a vital role within the countrywide economy (accounting for 11.2% of GDP, one-third of the workforce, one-quarter of exports). In particular, the sector has critical significance for the regional development of Armenia, taking into account that 40% of the population lives in the regions.

Improvement of the sector is critical as it accounts for food security in the country and provides income for hundreds of thousands of smallholders in the regions, given the absence of alternative job and income opportunities.

On the other side, a set of inter-related issues adversely affect the sector performance and jeopardize growth opportunities. Challenges as fragmented land plots with lack of irrigation, obsolete equipment and technologies impede productivity. Under-developed sales channels restrict income earning opportunities. Furthermore, external issues such as natural factors and climate change as well as country-level shocks as Covid-19 pandemic and the Nagorno-Karabakh war generate novel impediments for sector performance and expansion potential.

Nevertheless, agriculture, as a fundamental economic sector, is seen to continue keeping its dominant role in the regions acting as a main source of living for the smallholders. In this context, a considerable number of challenges are shaped by gaps in the financial literacy, entrepreneurial skillset and agricultural knowledge of the value chain participants on all levels. Lack of awareness and knowledge capacity constrain improvement and growth potential.

According to RA Government 2021-2026 program in the field of agriculture the Government of the Republic of Armenia i.a. aims to:

- promote agricultural value chain interaction and cooperation;
- support producers in the global market, by fostering the role of associations and cooperatives;
- maximize the productivity of the different supply chain participants;
- increase access to financial services;
- support risk mitigation and climate change adaptation;
- identify and promote climate-smart adaptation measures;
- Initiate adaptation of law on agricultural leasing;
- improve seed and planting material information system

The findings and recommendations of the nation-wide training and technical needs assessment among micro- and small-scale agricultural producers and processors can hopefully contribute towards development and implementation of strategies and activities aimed at promotion of the agricultural sector taking into consideration the aspects above-mentioned. Enhancement of the knowledge and skillset, with the trainings and capacity building proposed in the Study, will help the sector participants navigate through uncertainties, develop ways of coping with and managing the tasks. Careful design of trainings as a means for upgrading knowledge and skillset, effective awareness raising and engagement of target beneficiary cohort will help enhance productivity in the sector, unleash potential, open up new avenues for growth and increase living standards for thousands of families in the regions.

TECHNICAL NEEDS ASSESSMENT

among entrepreneurial households and micro-/smallholder farmers in the agricultural production and processing sector in Armenia

german cooperation
DEUTSCHE ZUSAMMENARBEIT

German Sparkassenstiftung
SOUTHERN CAUCASUS AND UKRAINE

CIVITTA