Aquaculture Sector Review
Armenia
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FOREWORD

The IFC Armenia Investment Climate Reform Project (World Bank Group) is pleased to present Armenia’s Aquaculture Sector Review, which details government policies and regulations and considers challenges that impact trade logistics, particularly pre- and post-farm gate activities. While there are relevant on-farm activities that impact the competitiveness of agribusinesses, the report focuses on domestic and international standards, inspections and certification, duties and fees, customs clearance, and documentation requirements.

Armenia’s aquaculture sector is an important employer, a key food provider, and an engine for export-driven economic growth, and this sector review aims to help tap the country’s significant potential and further Armenia’s economic development.

In addition to this report, the IFC Armenia Investment Climate Reform Project plans to conduct capacity building trainings for relevant stakeholders and publish promotional materials. Moreover, the Project expects to do a value chain mapping of greenhouse agribusiness products in order to enhance competitiveness and export performance.

We look forward to continued cooperation with our partners to contribute to strong economic growth in Armenia.

Arsen Nazaryan
IFC Armenia Investment Climate Reform Project Manager
World Bank Group Trade and Competitiveness Global Practice
Dear Colleagues,

Improved productivity and international competitiveness are key preconditions for economic development in any country, as is better export promotion. To develop and implement related policies it is necessary to engage all sectors with development potential, collect information about factors contributing to or hindering the development, and conduct a comprehensive analysis of the issues.

Armenia’s Aquaculture Sector Review, jointly developed by Armenia’s Ministry of Economy and IFC’s Armenia Investment Climate Reform Project, which is implemented by the World Bank Group’s Trade and Competitiveness Global Practice, could make a significant impact.

A comprehensive analysis, including comparisons with international experiences and recommendations for solutions, will be an invaluable tool for developing Armenia’s fish industry and for improving and implementing procedures to stimulate export performance.

I am confident that both policymakers and relevant businesses will find this study of great value and use.

Sergey Avetisyan
Deputy Minister of Economy
The Republic of Armenia
ACKNOWLEDGMENT

This aquaculture (fish farming) sector review was prepared by Gagik Gabrielyan, Consultant, World Bank Group, with the support of the team of the IFC Armenia Investment Climate Reform Project, which is implemented by the World Bank Group Trade and Competitiveness Global Practice. The review was developed at the request of the Ministry of Economy and the Development Foundation of the Republic of Armenia (RA).

The authors would like to thank their World Bank Group (WBG) colleagues for reviewing this aquaculture sector review and offering their valuable comments and suggestions, particularly Heinz-Wilhelm Strubenhoff, Senior Operations Officer, Artavazd Hakobyan, Consultant, Gohar Gyulumyan, Senior Economist, Loraine Ronchi, Senior Economist, and Emiliano Duch Navarro, Lead Financial and Private Sector Development Specialist.

The Project team would also like to thank all those organizations and individuals that so readily gave of their time and expertise, thereby making a significant contribution to the Project: in particular, the Ministry of Economy of the RA, the Ministry of Agriculture of the RA, the Development Foundation of the RA, the State Food Safety Service of the RA, the State Water Resource Management Agency under the Ministry of Nature Protection of the RA, the Union of Armenian Fish Producers and Exporters, PUM, the Netherlands Senior Experts Program, as well as a large number of business entities (fish producers and exporters, importers of feed and others in the industry, and customs brokers).
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EXECUTIVE SUMMARY

This aquaculture sector review (with supply chain mapping) has been implemented within the framework of the IFC Armenia Investment Climate Reform Project implemented by the World Bank Group Trade and Competitiveness Global Practice, in partnership with Austria’s Federal Ministry of Finance and Hungarian Partnership Funding/Hungary EXIM Bank.

This Project aims to contribute to improving the country’s investment climate and thereby to attract investments into selected branches of its economy. One of the Project’s aspects is to increase the investment attractiveness of Armenia’s agribusiness sector and to promote the export competitiveness of selected agricultural products by identifying issues in export supply chains and targeting interventions directed at solving these issues. The Ministry of Economy of the Republic of Armenia (RA) has prioritized aquaculture products as having great potential, especially for export.

Consequently, this aquaculture supply chain review aims to:

1. Identify issues now present in the fish supply (export) chain, specifically pinpointing market imperfections as well as legal and regulatory obstacles;
2. Develop recommendations to resolve the problems/challenges so identified, and thus contribute to the improvement of the business and investment environment by reducing costs and increasing productivity;
3. Contribute to enhancing the competitiveness and investment attractiveness of the Armenian fish industry as a whole.

This analysis focuses on both policy and market imperfections as well as constraints along the aquaculture supply chain and the impacts these have. Additionally, the mapping considers the agribusiness export supply chain and its efficiency from the business perspective of exporters/importers, farmers, retailers, transporters, and freight forwarders. In order to compile the necessary information, discussions were held with private (and public) supply chain stakeholders. Meetings were also held with those international donor organizations active in the Armenian agribusiness sector in an effort to learn from their relevant experiences and views. ¹ The analysis used local and international information sources, official statistical data, and local and

¹ The meetings took place between January and May 2015.
international reviews and analytical materials pertaining to aquaculture. The draft report was discussed in (and revised based upon) a stakeholder workshop organized at the request of the Ministry of Economy.

The report comprises three sections: an Executive Summary, a Fish Export Supply Chain Analysis, and their relevant Annexes. The Executive Summary can also serve as a standalone document and summarizes key finding, along with recommendations to resolve the challenges. Details regarding the aquaculture export supply chain, and the key findings attending thereto, are presented in the following section and annexes.

The review’s key findings and recommendations are as follows:

**A. Key findings**

Aquacultural production in Armenia (including caught and/or captive bred fish, crustaceans and products derived from them, collectively defined as fish product) is one of the dynamically developing sectors of Armenia’s economy, high production and export growth potential and therefore attractive for investors. The industry has already demonstrated a high growth rate and marked profitability. Over the past decade, average annual production growth rate was 40 percent.

Moreover, promoting the environment-friendly production and export of fish products is an important focal point in the Government of Armenia’s agenda, meaning that the government, as reflected by a number of its strategic documents and programs (see the section of Fish Export Supply Chain Analysis), aims to achieve sustainable development in this sector and enhance of its international competitiveness. Nevertheless, a number of challenges need to be met by the government as well as by private sector entities. Specifically, these can be further broken down as follows:

**Pre-production phase:**

1. The short duration validity of water use permits coupled with cumbersome permit procedures limit the possibilities in developing long-term business plans, and so have a contiguous negative effect on investments in Armenian aquaculture.

2 The list of used materials and sources is introduced in Annex 3.
2. Similarly, flaws in the importation process have an adverse impact on prices and the overall efficiency of the crucial supply chain of fish feed, medicines, and equipment. This is exemplified by the application of “reference prices” used in the customs evaluation of imports, plus various slowdowns during the import process at the seaport in Poti (in Georgia), and the frequent unloading and re-loading of imported cargo.

**Production phase**

1. There is a need to expand processed fish production and exports in parallel in order to minimize some risks inherent in focusing only on fresh fish, namely perishability and logistics issues. These led to difficulties in the Russian market in 2014.

2. There is also a need for improvements in productivity, output quality and safety standards to sharpen the Armenian product’s competitiveness and gain greater access in export markets for it. Essentially this entails establishing international best practices in tandem with the equivalent quality and safety systems (such as GMP, HACCP, BAP, GHP, among others).

3. The insufficient clarity of fish product classifications in Republic of Armenia legislation has led to tax and administrative problems, which in turn creates extra obstacles for the broad development of the aquaculture sector.

4. Environmental problems bound up with the development of aquaculture in Armenia are related to:
   - The drying up of artesian springs, which may trigger various adverse environmental effects and have social consequences for nearby settlements;
   - The discharge of water polluted by fish farming into the natural habitat;
   - Likewise the pollution of Lake Sevan (with fish feed residues).

5. There is also a need to strengthen business associations (unions) and/or cooperatives to enable them to work effectively in addressing the major needs/challenges of the sector.
Export phase

1. Resolving the insufficient clarity and inconsistent application of procedures related to Russian export permits. The frequent restrictions and excessive inspections conducted by Rosselkhoznadzor\(^3\) create obstacles for exporters and producers.

2. Serious attention is required to address the challenges, as well as opportunities, associated with Armenia’s recent accession to membership in the Eurasian Economic Union (EEU), for instance concerning the uncertainty of clearance procedures, or the implementation of new food safety requirements such as the mandatory use of HACCP systems. These changes will require fish producers to either introduce new or improve existing safety systems in their production processes, which, in turn, will require investment and staff training.

3. At the same time, to enter the European Union (EU) market it is necessary to obtain the relevant authorization, which, before this can happen, will require recognition of a competent Armenian authority by the European Commission, along with certification of the selected businesses and their inclusion in the list of third country economic operators permitted to export to the EU.

4. Expanding the export of processed products (see point 3 above).

5. Concomitant with all these items, is the need to strengthen broad industry knowledge and capabilities in marketing and distribution channels as part of any exploration of export opportunities; and more precisely what is needed is knowledge about requirements in potential export markets, and a thorough understanding of the techniques involved in entering into export markets and developing distribution channels.

6. There are also issues related to transportation and export procedures. These include, particularly, complicated and unpredictable customs clearance procedures at the Russian border (Lars border crossing point between Georgia and Russia), routinely leading to extra costs for businesses; abnormally high transportation costs; and difficulties related to VAT refunds after export.

\(^3\) Federal Service for Veterinary and Phytosanitary Surveillance of the Russian Federation.
B. Short- to medium-term recommendations

Short-term (12-18 months)

1. Improving export and import procedures will help increase the competitiveness of both raw materials and finished aquaculture products. Improvements can be achieved in the following ways:
   ▲ Improving risk management in the context of the customs formalities system, (for example enhancing risk profiling procedures), and improving/simplifying customs valuation procedures;
   ▲ Simplifying non-customs procedures concerning fish feed importation (specifically, simplifying phytosanitary control);
   ▲ Improving weighing procedures during the import of fish feed (based on effective risk assessment);
   ▲ Simplifying and accelerating the procedures around refunding VAT to exporters;
   ▲ Simplifying some export procedures, in particular the provision of food safety certificates (which are, for example, presently required for each batch of exported fish product).

2. Raising the awareness and specific skills-training of businesses regarding important fish production and exporting activities, as follows:
   ▲ Upgrading processed fish production and the relevant ancillary technologies (for example, slicing and packaging fish fillets, dried or smoked fish products, caviar, et al), with a view to promoting the expansion of processed fish production. This can be achieved through seminars and workshops with the participation of fish industry experts and the development and dissemination of relevant materials;
   ▲ Assessing present production and supporting facilities/infrastructure (warehouses, cold storage facilities, refrigerated trucks, and the like) relevant to starting and developing the production of processed fish products, and ensuring the necessary awareness levels of businesses;
   ▲ Strengthening industry human resource capacity to integrate the advanced modern technologies that are now an important part of fish farming, handling and processing (particularly in terms of semi-closed and closed-cycle production), along with the use of GMP and GHP
practices, and HACCP systems;
> Likewise building the capacity to apply modern, effective marketing and supply chain management tools;
> Ensuring awareness of the know-how around effective production and export finance instruments and resources.

3. Conducting study/research to explore the business opportunities arising from Armenia’s membership in the EEU, as well as identifying and reducing the risks associated with the various uncertainties and problems associated with new procedures and requirements. Similarly ensuring a cogent awareness among the relevant public authorities and private sector representatives. This may relate pointedly to issues concerning customs procedures, food safety requirements, food safety control procedures, country of origin requirements applicable to exported food, or other issues of a similar nature.

4. Study, and where appropriate, reform the fish industry regulatory and legislative framework, including such areas as:
> Water use and water use-permit granting procedures (particularly in terms of simplification and clarification of the various procedures, and setting out (in water use permits) the requirements leading to the necessary clearances for reducing environmental pollution;
> Clarifying and harmonizing agricultural product classification, especially in regard to fish products, for agricultural, tax and accounting purposes;
> Introducing effective and environment-friendly technologies, and promoting the investments this entails;
> Ensuring fair competition;
> Considering the necessity of drafting and adopting a law on fish farming.

5. Making a thorough study and raising the awareness among businesses of potential export markets and their business environments, regulatory requirements and the procedures applied in those markets, plus the advantages and disadvantages of using of various modes of transport for exporting fish products from Armenia (particularly by air and trucks).  

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4 In this regard, potential export markets of interest to Armenian businesses, as they identified during stakeholder discussions, are those in China, Japan and the Middle East. Additional market studies are needed to assess these and other export opportunities.
**Mid-term (18 months-3 years)**

1. Implementing steps towards completing the process of getting permission to enter the EU market. This has already started, in fact. Presently, the Republic of Armenia State Service for Food Safety has submitted a plan for monitoring residual amounts of chemical substances in fish products (a residue monitoring plan) for EU approval. Once this is approved, business entities will get a chance to apply and obtain authorization to export to the EU market. This sequence of steps is described in more detail in the main section of this paper (box 2, page 32).

2. Developing the instruments needed to promote effective marketing and supply chain management, while encouraging businesses to use such instruments.

3. Taking measures to simplify export procedures for EEU markets while expediting the transition to new requirements and procedures. Specifically, this refers to:
   - Measures effecting a smooth transition while reducing or eliminating possible difficulties associated with the new food safety and sanitary control requirements and procedures. These will come into force after the one-year transition period;
   - Developing comprehensive and simpler export procedure guidelines for businesses pertaining to EEU markets (Russia in particular);
   - Continuing collaboration, and reaching agreements, with the relevant Russian and Georgian authorities, the main goal being to ensure simple, clear and consistent procedures being applied at the Lars border crossing point.

4. Strengthening the associations (unions) and forging cooperatives of businesses involved in fish farming, processing and export. The intent here is to enable addressing strategic and practical issues, which businesses cannot address by themselves.

5. Developing and then using effective financing instruments for export and investment, and, similarly, for environment-friendly technologies and advanced systems of food safety control in fish production; (these would include working on capital financing, the funding of projects, and trade financing instruments, such as credit lines and insurance).
AQUACULTURE EXPORT SUPPLY CHAIN ANALYSIS

For mapping purposes, viewing the chain and assessing its effectiveness from a business perspective, and in particular that of primary fish farmers, exporters, retailers and wholesalers, along with processors, transporters, and other relevant parties involved. This export chain includes both the pre-production (meaning the acquisition and/or importation of raw materials, as well as the relevant permits), along with the various post-production aspects, such as product transportation, packaging, storing, and the various export-related procedures. (See the diagram in Figure 1).

1. Brief Aquaculture Sector Review

Aquaculture production (including caught and/or captive-bred fish, crustaceans and the products derived from them; in other words, the fish product) in Armenia is an economic sector with both high production and export growth potential, and, therefore, attractive for investors. The industry has already demonstrated a high growth rate and marked profitability. Over the past decade, average annual production growth rate was 40 percent. (see
In 2014, the production of fish products reached about 14,000 tons, and from 2010 to 2014, the value of this production increased by 2.5 times - from $27.4 million to $69 million. Businesses involved in the sector claim that Armenia, with its current production capacity, could produce around 300,000 tons of fish product annually.

From 2010-2013, the volume of fish product exported increased over five times - from 1,265 to 6,578 tons, with a concomitant increase in export value of over four times from $7.7 million to $32.5 million.

The main export products are fresh chilled fish and crayfish. The main export destinations are Russia and European Union member states.

Exports to the EU consist mostly of crayfish. Table 1 illustrates fish product exports by FEACN classification.

**Figure 1. Fish production, tons**

<table>
<thead>
<tr>
<th>Year</th>
<th>Fish Production (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>2,000.0</td>
</tr>
<tr>
<td>2005</td>
<td>4,000.0</td>
</tr>
<tr>
<td>2006</td>
<td>8,000.0</td>
</tr>
<tr>
<td>2007</td>
<td>10,000.0</td>
</tr>
<tr>
<td>2008</td>
<td>12,000.0</td>
</tr>
<tr>
<td>2009</td>
<td>14,000.0</td>
</tr>
<tr>
<td>2010</td>
<td>16,000.0</td>
</tr>
<tr>
<td>2011</td>
<td>18,000.0</td>
</tr>
<tr>
<td>2012</td>
<td>20,000.0</td>
</tr>
<tr>
<td>2013</td>
<td>22,000.0</td>
</tr>
<tr>
<td>2014</td>
<td>24,000.0</td>
</tr>
</tbody>
</table>


6 Products in the table are categorized according to their Foreign Economic Activity Commodity Nomenclature (FEACN) classification, including their respective four-digit codes. FEACN is a goods classification system applied in CIS (Commonwealth of Independent States) countries. It is similar to the HS classification system applied.
Table 1. Exports of fish products, in tons

<table>
<thead>
<tr>
<th>EXPORT OF FISH PRODUCTS in tons</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live fish</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>11.3</td>
<td>10.8</td>
<td>13.0</td>
<td>16.9</td>
<td>24.8</td>
<td></td>
</tr>
<tr>
<td>Frozen fish</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>13.0</td>
<td>22.2</td>
<td>49.5</td>
<td>11.3</td>
<td>186.5</td>
<td>567.3</td>
<td>2193.0</td>
</tr>
<tr>
<td>Fish fillet</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Fish, dried, salted or in brine; smoked fish</td>
<td>2.3</td>
<td>2.3</td>
<td>2.3</td>
<td>2.3</td>
<td>2.3</td>
<td>2.3</td>
<td>2.3</td>
<td>2.3</td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Crustaceans</td>
<td>804.8</td>
<td>804.8</td>
<td>804.8</td>
<td>804.8</td>
<td>804.8</td>
<td>804.8</td>
<td>804.8</td>
<td>804.8</td>
<td>804.8</td>
<td>804.8</td>
</tr>
<tr>
<td>Molluscs</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>842.1</td>
<td>842.1</td>
<td>842.1</td>
<td>842.1</td>
<td>842.1</td>
<td>842.1</td>
<td>842.1</td>
<td>842.1</td>
<td>842.1</td>
<td>842.1</td>
</tr>
</tbody>
</table>

Source: National Statistical Service (NSS) of Armenia, www.armstat.am

Promoting the production and export of fish products is an important part of the government’s current agenda. Under the Government programs cited below, the intention is to multiply fish production and export volumes (by as much as three times from 2012-2017), while gradually introducing advanced water-saving technologies and practices in fish farming. These goals also include ensuring access to affordable financial resources for businesses involved in the sector.7

Within this overall framework of aquacultural development, the government has initiated a Program for the Recovery of Commercial and Endemic Fish internationally.

Species in Lake Sevan. Indeed, a pilot project using four nets has already been implemented as a result of the government allocating three billion Armenian dram (about $6.25 million) for that purpose. If the results prove positive, they plan to move this production measure up to 70 nets, targeting 50,000 tons of annual production by 2022. The estimated budget for this phase of the project is 66 billion Armenian dram (about $137.5 million).

Back in September 2013, the government took a decision requiring businesses to introduce water- and eco-saving technologies in fish farming, meaning semi-closed water cycle farming. As the businesses involved report, introducing such technologies in a fish farm environment will require from $700,000 to $1.5 million, depending on the size of the farm.

To promote environment-friendly technologies and efficient fish farming practices, it is anticipated that a pilot fish farming project using semi-closed water cycle technology will be tried in the Ararat Valley, in collaboration with and funded by the UN Food and Agricultural Organization (FAO).

To promote the export of fish products to the EU market, the RA State Service for Food Safety has taken measures to approximate the standards set by the relevant EU legislation and thereby to set about getting Armenia included in the list of third countries permitted to export to the EU.

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8 The Program was adopted by Government Decision No 1755-N of December 9, 2010.
9 United Nations Food and Agriculture Organization (FAO).
10 In particular, this approximation has been made pursuant to the following legal acts: (1) Council Directive 96/22/EC of April 29, 1996, concerning the prohibition of the use of certain substances having a hormonal or thyrostatic action and of beta-agonists in stock farming, and (2) Council Directive 96/23/EC of April 29, 1996 on measures to monitor certain substances and residues thereof in live animals and animal products. Based on those directives, Government Decision N 898-N of August 21, 2014 defined the maximum amounts of veterinary medicine residues in animal origin food exported from Armenia to the EU, as well as the procedure for acquiring the required sampling to assure effective control over residual substances in foodstuff of animal origin exported from Armenia to the EU.
2. Pre-production Phase

2.1 Water

To use water for fish production, EU from the Water Resource Management Agency of the RA Ministry of Nature Protection.11 The maximum validity period of this permit is three years; and after the lapse of this specified period, the water use permit must be extended or renewed.12 The procedure for obtaining water use permits is described in Annex 1.

In Armenia, the payment for the use or extraction of fresh water (surface and subterranean) is one Armenian dram per cubic meter of water used.13 Since January 1, 2014, nature utilization (water use) and the environmental expenses attending fish farming have increased. In particular, for the Ararat and Armavir regions, where most fish farms are concentrated, the base rate

12 According to Article 33 of the RA Water Code.
13 Fee charged are defined by Government Decision No 864-N of December 30, 1998.
used to calculate the water use payment has increased ten-fold. Thus, from the perspective of increasing water use efficiency, the accurate measurement and control of water use volumes is important for both government bodies and businesses. However, from a technical perspective, the installation of water meters and the introduction of a control system may require significant investment.

2.2 Fish feed

Fish production in Armenia largely relies on imported feed. There are local sources of supply as well; with fish, feed start-up mills now being operated in Yeghvard and Zovuni. Presently 10-12 businesses are engaged in fish feed import, sourced from more than ten countries, including EU states, the USA, and Chile. The feed is mainly imported through Georgia’s Poti seaport then trucked through that country to Armenia. According to businesses engaged in the trade, when importing feed from EU countries, once the cargo arrives in the port, it takes at least five days for delivery. Vessels often queue for as long as three days to enter the seaport and unload.

As to feed import customs formalities, as reported by these businesses, the so-called “reference price method” (or the method four under the Customs Valuation Agreement of the WTO) of determining the customs value is often applied, instead of the transaction value method.

14 Changes in the sizes of environmental and nature management payments have been made by the RA Law “On Making Amendments to the Law of the Republic of Armenia on Nature Protection and Nature Utilization Payments”. According to that amendment, the base for calculation of the nature utilization payments in the Ararat and Armavir regions has increased from 5 percent of extracted subterranean water stock to 50 percent.

15 Government Decision No 1071-N of July 7, 2011 defines the procedure for installation of water-meters. At present, the possibility of introducing automated water use control systems is under government consideration.

16 Fish feed is imported from such companies as “Coppens”, “Skretting”, “Aller Aqua”.

17 Shipment of fish feed in containers from Rotterdam seaport to Armenia takes, on average, 40-45 days (50-55 days in winter). The average cost of shipment to Armenia is $3,600 per 25-ton container.

18 This does not comply with the WTO Customs Valuation Agreement (precise name of the agreement is Agreement on Implementation of Article VII of the General Agreement on Tariffs and Trade 1994). The agreement defines six methods of customs valuation and requires that the first method of customs valuation should...
The import of fish feed is subject to veterinary and phytosanitary control. Before importation, it is necessary to obtain preliminary permission from the RA State Service for Food Safety; and while importing, a veterinary certificate issued by the competent authority of the exporting country must be submitted.\textsuperscript{19}

For phytosanitary control, it is necessary to submit a certificate of origin of the product and a phytosanitary certificate issued by the competent authority of the exporting country: based on these documents, the importer must obtain an internal phytosanitary certificate. Further details of fish feed import are described in Annex 2.

It is worth mentioning that after joining the Eurasian Economic Union (EEU), to import fish feed from an EEU member state, or from third countries (meaning countries other than EEU member states), the fish feed manufacturing organization is required to be registered in the respective third country, or in the unified EEU register.

In 2013, the average selling price of fish feed in Armenian market was 820 Armenian dram (about $2) per kilogram. Fish feed accounts for over the half of the expenses entailed in fish production (on average, 1.2 of kg fish feed is needed to produce 1 kilo of fish). The price of 1 kg of locally produced fish feed is nearly 100 Armenian dram (or about $0.25 less than that of imported fish food).\textsuperscript{20}

be the transaction value method. For cases in which there is no transaction value, or where the transaction value is not acceptable as the customs value because the price has been distorted as a result of certain conditions, the Agreement lays down five other methods of customs valuation, to be applied in the prescribed hierarchical order. The six methods of customs valuation are based on: (1) transaction value of imported goods, (2) transaction value of identical goods; (3) transaction value of similar goods, (4) deducted value; (5) computed value; (6) any other means consistent with the principles and general provisions of the Agreement.

\textsuperscript{19} The feed import procedure is regulated by the RA Customs Code, the RA Law on Feed, as per Government Decision No 1442-N of October 21, 2010 (Defining the Procedure of Import, Export, Transit Shipment of Agricultural Animals, Animal Origin Raw Material, Food, Feed, Complementary Feed, Compound Feedstuff, Feed Additives, Foodstuff, Food Contact Substances, Nutritional and Biological Active Additives, and repealing the Government Decision No 1228-N of August 19, 2004 and the Government Decision No 1901-N of November 9, 2004).

\textsuperscript{20} However, fish-breeding farms mainly use imported feed, mostly motivated by considerations of feed quality and safety.
Figure 2. Fish Export Supply Chain

- Fish feed
- Fertilized eggs, juvenile
- Medications
- Equipment/tools
- Water
- Land
- Fish feed
- Fertilized egg production
- Hatchery and nursery
- Caviar production
- Fish production
- Ice production
- Handling (cleaning, slicing, chilling, packaging)
- Fish market, wholesale
- Processing
- Transport
- Storing
- Storing
- Retail sales
- Public food serving entities
- End consumer
- Export
- Transport
- Customs formalities

- Import permit
- Import: customs procedure
- Water-use permit
- Nature utilization and nature protection fee
- Land categorization
- GMP
- GHP
- Sanitary rules & norms
- Certification
- Electricity and other costs
- Financing
- Transport costs
- Refrigerated trucks
- Airport procedures
- GMP
- GHP
- Sanitary rules & norms
- Certification
- Cold storage facility
- GMP
- GHP
- Sanitary rules & norms
- Certification
- Cold storage facility
- GHP
- Sanitary rules & norms
- Certification
- Cold storage facility
- Customs procedure
- Transport costs
- Refrigerated trucks
- Airport procedures
- Trade financing
2.3 Land

The cadastral classification of lands is essential in determining the charges and taxes levied on businesses for the lands they use. Most of the land (meaning water surface) that comprises fish farms is located in the Ararat and Armavir regions (over 95 percent). And lands under fish farms are classified as “Other” in terms of their grouping as agricultural lands.

Over the last few years, the changed classification of lands used for fish farming – from “non-agricultural” to “production” - has been a topic of discussion between the public and private sectors. That is because such a change may significantly increase the land price and land lease payments, as well as the amount of land tax due. At present, the government has not yet changed this land classification, taking into consideration the development potential of the fish industry and the official goal of promoting this industry’s development.
2.4 Main Issues

**Water use and water use permits:** (a) the 3-year validity of water use permits limits the possibilities in developing long-term business plans and therefore investments in fish sector. Which is to say it creates uncertainty, since in cases of rejection of applications or re-applications to extend or renew their permits, fish producers may lose their investments and businesses; (b) the permit extension or renewal procedure needs simplification or facilitation; (c) as well, according to businesses, there are significant amounts of informal “facilitation fees” that need to be paid for provision or renewal of water-use permits.

**Raw material imports:** There are a number of imperfections in the importation process, which have an adverse impact on prices, and efficiencies in the supply chain of fish feed, medicines, and equipment or tools. In particular, these include:

- The application of “reference prices” in the customs’ evaluation of imports increases the customs value ascribed to imported feed, and hence, the customs duties and the VAT on imported feed are distorted. This, in turn, leads to an increase in feed prices on the domestic market, since Armenian fish producers mostly rely on imported feed;21

- The slowdown of the import process at Poti Seaport (in Georgia) due to vessel queues and port clearance procedures is another impediment to cost efficiencies in the industry;

- The same is true of the frequent unloading and re-loading of cargo during the process of weighing the fish feed imported to Armenia; time is wasted and additional costs are unnecessarily incurred.

**Water use technologies:** Water-saving water-use technologies, such as closed or semi-closed water recirculation technologies, have yet to find widespread application on Armenian fish farms.

**Investment and access to finance:** The insufficient availability (and affordability) of investment funds and other financial resources required for production and export is an ongoing issue.

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21 According to economic entities, the “reference price” applied by the Customs Service is usually higher than the average transaction price by around 36 percent. It is important to note that the share of fish feed vis-a-vis the overall cost of fish production amounts to more than half (around 70 percent), according to producers.
3. Production Phase

There are nearly 40 species of fish in Armenian waters: 15 of these are used for industrial purposes, in particular, salmonids (rainbow and golden trout, Gegharkuni, river trout-Karmrakhayt), sturgeon (Acipenseridae, Siberian and Russian), silurus, whitefish, carp, crucian carp. The majority of fish harvested in the Armenian industrial fish farming and export industry are those from the salmonid family (trout) and sturgeon (Siberian and Russian species).

The water (and in particular the temperature of artesian springs in the Ararat Valley) is favorable for trout and sturgeon fish aquaculture.

In 2013, there were over 250 fish farms in Armenia: 83 percent were located in the Ararat and Armavir regions. As well, there are 4-5 operating fish farms in the Aragatsotn, Lori, Syunik, Vayots Dzor, Tavush regions. Total fish farming operations covered 3,542 ha of total water surface, with 70 percent located in the Ararat and 29 percent in the Armavir regions.22 The total surface of the four largest fish- farms amounts to 2,000 hectares (or 57 percent of the total).23

22 As of the summer of 2013, there were 3,314 functioning artesian wells (springs) in the Ararat Valley.
There are a few fish farmer/producers associations/unions registered in Armenia. However, they are either non-operational or have very limited capacities and so are unable to address major challenges of the sector.\(^{24}\)

In the past decade, the average annual growth rate of production stood at 40 percent (see Figure 1).\(^{25}\) In 2014, the production of fish products reached about 14,000 tons. In 2010-2014, the value of the production of fish products increased by 2.5 times – from $27.4 million to $69 million. According to businesses operating in the sector, Armenia can produce around 300,000 tons of fish products annually with its current production capability.

One of the important factors affecting the efficiency of the fresh fish supply chain is the feed-weight gain ratio. After reaching a certain weight (for instance, 800 grams for trout), the feed-weight gain ratio begins to decrease, meaning the fish eat more and grow less. From the point of productivity management and the efficient organization of the supply chain, it is important to catch and deliver the fresh fish to the consumer within a specific short time period. Otherwise, costs in the fresh fish supply chain go up, reducing profitability.

Meanwhile, environmental issues around the evolution of fish production in Armenia are related to:

\(^{\downarrow}\) The drying out of artesian springs, which may well trigger various environmental, as well as social consequences for nearby settlements; for example, peasant farmers may be unable to effectively irrigate or cultivate their lands due to water shortages;

\(^{\downarrow}\) There is also the issue of the discharge of waters polluted due to fish farming into natural streams, aquifers and the like;

\(^{\downarrow}\) Of particular concern is the pollution of Lake Sevan, as a result of fish feed residues;

\(^{\downarrow}\) The Government Decision No 703-N of May 22, 2003 defines the procedures and environmental principles of using water resources for the needs of fish farms. In particular, the decision defines the following:

\(^{\downarrow}\) Use of water by fish farms shall not impede or hinder the activities of other

\(^{24}\) For instance, the Union of Armenian Fish Farmers; Union of Fish Producers of Armenia; Union of Armenian Fish Producers and Exporters. Details can be found at: www.e-register.am, electronic registry of legal entities of Armenia.

Water use by fish farms shall exclude any change in the level of subterranean waters, and any swamping or drying of the terrain;

The list of the aqua holdings to be used for commercial fish production is defined by the government;

Extraction of water in aqua holdings for commercial fish production shall be equipped with a fish passage barrier;

Use of water resources for fish farm needs without artificial structures shall be permitted only for the farming of such species as are typical of the particular water-ecosystem.

### 3.1. Main issues

**Product diversification:** At present, Armenian companies produce and export mainly fresh (chilled) fish. This results in some weaknesses with regard to marketing and especially export in the sense that: (a) fresh fish imply higher storage and transportation costs; (b) fresh fish are very perishable so the shelf life of the product is short, which leads to significant constraints. For instance, at the end of 2014, due to the fluctuation of exchange rates, exporters intent on preventing spoilage had to market the product in Russian markets at lower than their usual prices. However, Armenian exporters could have avoided, or significantly reduced their losses, had the product been processed with a view to giving it with a longer shelf life. The lesson learned was that, the production and export of processed products (for example, sliced and packaged fish fillets, brined, dry-smoked or smoked fish products, and caviar), in parallel with fresh products, and the more effective promotion of the investments required for it, will be critical for the competitiveness of aquaculture production and exports going forward. And discussions with business entities has revealed that there is a knowledge gap concerning processed fish production and the relevant technologies involved.

**Productivity and quality:** To increase product competitiveness and to enter export markets (in particular, the EU market, where strict food quality and safety requirements apply), there is a need for improvements in productivity

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26 In parallel to a productivity increase, it is critical to pay due attention to ensuring that production is firmly backed by actual market demand and access to that market that is needed (whether export or domestic) to sell it.
and product quality and safety. This can be achieved through: (a) the introduction of modern fish farming, handling and processing technologies (for example semi-closed or closed-cycle production), (b) the introduction and application of internationally recognized best practices and systems such as Best Aquaculture Practices (BAP) of the Global Aquaculture Alliance; Aquaculture Stewardship Council’s (ASC) standards; Global GAP (Good Agriculture Practice), GMP (Good Manufacturing Practice), and GHP (Good Hygiene Practice) and introduction of the HACCP (Hazard Analysis and Critical Control Points) system, and (c) the strengthening of the workforce’s capability to use BAP, GAP, GMP, GHP and HACCP along with other qualitative practices and systems.

Classification of fish products: As indicated by those business entities engaged in fish production and export, the insufficient clarity of fish product classification in the RA legislation leads to tax and administrative problems and in general creates obstacles for the development of the aquaculture sector.

27 “The Global Aquaculture Alliance is an international, non-profit organization committed to feeding the world through responsible, sustainable aquaculture. Representing dozens of individuals, associations and businesses associated with aquaculture and seafood around the world, GAA works to improve practices and increase output across the entire aquaculture production chain”. In 2004, the Global Aquaculture Alliance created BAP certification, which defines the most important elements of responsible aquaculture and provides quantitative guidelines by which to evaluate adherence to those practices for processing plants, farms, hatcheries and feed mills. Website: http://gaalliance.org/what-we-do/bap-certification/

28 The Aquaculture Stewardship Council (ASC) was founded by the World Wide Fund for Nature (WWF) and IDH (Dutch Sustainable Trade Initiative) in 2010. It is an independent, not-for-profit organization with global influence. ASC aims to be the world’s leading certification and labeling program for responsibly farmed seafood. The ASC’s primary role is to manage the global standards for responsible aquaculture, as developed by the WWF Aquaculture Dialogues.

29 In Armenian – Արցախային ծնողներին մշակույթ գործոնական

30 In Armenian – Հանքային թարգմական և հանքային թարգմական գործոնական

31 In Armenian – Արցախային ծնողներին մշակույթ և կերպարվեստ գործոնական

32 In particular, definitions of agricultural products are unclear and lack harmonization in Article 36 of the RA Law on Profit Tax, RA Law on Food Safety, and RA goods classifications (Decrees of the RA Economy Minister No 874 and 875 of September 19, 2013), leaving room for differing interpretations. In international practice, particularly in the EU, (Regulation (EC) No 852/2004) and in the framework of World Trade Organization (WTO Agreement on Agriculture), sliced, chilled and frozen meat is considered agricultural product. This same approach is used in International Accounting Standard 41, Agriculture.
For instance, there is confusion regarding the classification of fresh fish and fish fillet (chilled or frozen), as a result of which they are considered to be “non-agricultural”, meaning preferential tax treatment (for agricultural products) is not applied to them. Obviously, this creates an additional, and in their view unfair, tax burden.

**Environment:** To ensure the sustainable development of the aquaculture sector in Armenia, serious attention should be paid the environmental issues cited above.

- The drying out of artesian springs, which may well trigger various environmental, as well as social consequences for nearby settlements; for example, peasant farmers may be unable to effectively irrigate or cultivate their lands due to water shortages;
- There is also the issue of the discharge of waters polluted due to fish farming into natural streams, aquifers and the like;
- Of particular concern is the pollution of Lake Sevan, as a result of fish feed residues.
4. Post Production Phase

4.1 Selling into the local market

Over the past several years, the average annual per capita consumption of fish products in Armenia reached nearly 1.8 kg. Compared with international norms, this level is rather low. For example, the same metric in Russia and the European Union for 2010 was 20 kg and 21 kg, respectively. Partly this reflects the fact that the consumption of fish products in Armenian diet does not play as important a role as it does in Russia or the European Union. Nevertheless, it also indicates that there is potential for the Armenian domestic market for fish to grow; and therefore it is important that businesses prioritize the promotion of local demand for fish products.

4.2 Export

Exported fish product varieties and volumes

Armenian businesses predominantly export chilled fish and crayfish. Caviar, especially sturgeon caviar, is a product of great interest for export.

33 Source: RA NSS.
Chilled fish is a perishable product (with a shelf life ranging from several days to a month), which means that all processes pertaining to shipping, logistics, and delivery (to consumers) must be highly organized, in other words in a way where speed is of the essence. For example, the shelf life of trout chilled in ice is 9-11 days.  

In 2010-2013, the export volume of fish product grew five-fold from 1,265 to 6,578 tons; this meant that the export value also increased over four times from $7.7 million to $32.5 million.

The main export products are fresh chilled fish and crayfish. The main export destinations are Russia and the European Union (EU) member states. Exports to the EU were mostly crayfish. Table 1 presents exported fish products, by FEACN classification.

### Export markets

The geographic scope of fish product exports included the CIS countries (Russia, Ukraine, and Georgia) and the EU countries (Belgium, Germany, Luxemburg, France, Italy, Austria, Poland, and the Czech Republic). The major portion goes to Russia (92.6 percent). The export shares to Ukraine and Belgium are 3 percent and 2 percent, respectively. It is worth mentioning that Armenia exports mainly crayfish to EU countries, since it only has permission to trade in that one product. The issue of obtaining permission to export fish to EU countries is expanded on below.

The large size of the Russian market would seem to ensure practically unlimited export possibilities for Armenian businesses. Annual fish product consumption in Russia amounts to more than 3 million tons. In 2013, the export of fish products from Armenia to Russia made up 0.2 percent of total

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36 Products in this table are described according to Foreign Economic Activity Commodity Nomenclature (FEACN) classification, including their respective four-digit codes. FEACN is a goods classification system applied in CIS (Commonwealth of Independent States) countries. It is similar to the HS classification system applied internationally.
37 Source: RA NSS
consumption in that country.\textsuperscript{39}

Armenian products are competitive in the Russian market because the main species exported there are sturgeon and salmonids (trout), the farming of which in the cold climate (and cold waters) of Russia is more difficult and so economically less productive. Favorable water temperature can be achieved in closed-cycle production. However using this means more expense.

According to expert estimates, the price certain fish from Armenia can command in the Russian market, namely sturgeon or trout, undercuts the comparable Russian production price by at least $1 per kilogram. In terms of competitiveness compared to production in other countries of the region (Georgia, Azerbaijan), there is no significant production of sturgeon in Georgia. Georgian trout can successfully compete with the Armenian product, though. Armenian sturgeon, on the other hand, is cheaper than the sturgeon harvested from the Caspian Sea in Azerbaijan.

Nevertheless, the difficulties faced by Armenian businesses in the Russian market since the end of 2014\textsuperscript{40} have clearly demonstrated that it is very important for Armenian producers and exporters to diversify the geographic reach of their exports.\textsuperscript{41}

\textbf{Export permits}

At present, the procedure for authorizing export to the Russian market is regulated under the respective interstate memorandum signed in 2009.\textsuperscript{42} To export fish products to Russia, fish farms/enterprises must be certified and registered on the list of organizations, which have the right to export to that market. These certificates and permits are issued by Rosselkhoznadzor

\footnotesize
\begin{itemize}
  \item \textsuperscript{39} In 2013, the export of fish products from Armenia to Russia stood at about 6,100 tons.
  \item \textsuperscript{40} At the end of 2014, the Russian economy faced a high fluctuation in exchange rates (due to the geopolitical situation and economic sanctions against Russia). As a result, to prevent spoilage, exporters had to market their products in Russian markets at lower than usual prices. However, Armenian exporters could have avoided or significantly reduced their losses, had the product been higher value-added, meaning processed to gain a longer shelf life.
  \item \textsuperscript{41} In this regard, potential export markets of high interest for Armenian businesses, as identified during stakeholder discussions, are the Chinese and Middle Eastern markets.
  \item \textsuperscript{42} Memorandum on exporting fish products from Armenia to Russian Federation, signed in 2009.
\end{itemize}

\normalsize
Box 1. Export permits to Russia

To be included in the list of Rosselkhoznadzor, Armenian economic entities must be recognized as enterprises acting in compliance with applicable Russian requirements and included in the corresponding list. For that purpose, economic entities must apply to the RA State Service for Food Safety Service (SSFS), and the latter, in its turn, must submit an application to Rosselkhoznadzor. There are two procedures for making a decision on inclusion in the list:

(a) Based on the application of the SSFS, the particular economic entity is included in the list without prior on-site inspection; yet later, employees of Rosselkhoznadzor carry out on-site inspection, to check the compliance of operations with requirements applicable in Russia;

(b) Based on the application of the SSFS, employees of Rosselkhoznadzor visit the business of the Armenian economic entity, carry out on-site inspection and, if no problems are detected, include the economic entity in the list.

(Federal Service for Veterinary and Phytosanitary Surveillance of the Russian Federation). As of December 2014, the list of companies enjoying the right to export to Russia includes 26 Armenian companies, of which 6 are subject to restrictions, and another 4 are subject to strict controls.43

It is expected that after 2015, due to Armenia’s membership to the Eurasian Economic Union, a unified EEU list will be introduced, and procedures for including businesses into the list will become more straightforward. However, making these changes may take some time. Therefore anticipating immediate improvements may be unrealistic.

At this writing, Armenia has permission to export crayfish to the EU (wild caught, but not captive-bred fish). To this point, the country’s other fish products lack the official permission required to market there. Since 2010, however, the government has been taking measures directed at receiving EU export permission, in accordance with the Government Decision No 835-N.44


44 Government Decision No 835-N of October 11, 2010 “On Approving the Timetable of Measures Regulating the Export of Fisheries and Other Aquaculture
Box 2. EU market export authorization

To access the EU market, it is necessary to obtain the relevant authorization in accordance with the 854/2004 EU Regulation of April 29, 2004.

To obtain such authorization, the following is required: (1) recognition of the Armenian competent authority by the European Commission, (2) certification of specific economic entities and their inclusion in the list of economic entities or businesses holding such permission: in other words, providing these economic entities with an EU export number.

The process of obtaining such authorization includes the following steps:

1. Submission of a request by the national authority of an exporting country (Armenia, in this particular case) to the Directorate-General for Health and Consumer Protection of the European Commission (DG SANCO) for permission to export fish products to the EU.
2. Submission of answers to the questionnaire sent by the DG SANCO on legal, institutional and other fields of the exporting country.
3. Submission of a residue monitoring plan tailored to Armenia’s fish industry vis-a-vis the EU, and its approval.
4. A visit to the exporting country and on-site inspections by the EU Food and Veterinary Office in respect of fulfillment of EU requirements.
5. Based on the results of the paper work and on-site inspection, the DG SANCO submits a recommendation to the EU member-states as regards including the particular country in the list of countries holding an EU export authorization.
6. If the EU member-states do not object, the country in question is included in the list of countries authorized to export to the EU.
7. After the country is included in this list of eligible countries, it may apply for its economic entities to be included on the EU list of eligible establishments (economic entities) enjoying export permission; and such economic entities shall be subject to corresponding inspections and certification.
The State Food safety service of has developed a honey and fish testing program for 2015-2017\(^45\) in compliance with the EU’s reference method of testing.

At this stage, the RA SSFS has submitted for EU approval a plan for monitoring residual chemical substances in fish products (specifically, a formal residue monitoring plan). Assuming this is approved, several other procedures will be required before receiving the targeted EU authorization.

In addition, in October 2014, the RA SSFS provided the Directorate-General for Health and Consumer Protection of the European Commission (DG SANCO) the answers required by their preliminary questionnaire, which was an analytical survey of countries already holding permits to export fish products to the EU.

The sequence of steps required for obtaining EU market export authorization are described in detail in Box 2.

**Transportation routes and means**

Most Armenian fish product is exported by air (passenger airplane) and ground transportation (in refrigerated trucks).

Air transports is fast, of course, which is a very important advantage in the export of fresh fish. Fish shipped this way is packed in boxes with ice. The average cost of air transport from Armenia to Russia (Moscow) is $800 per ton. It is important to note that this transportation price is for transport by passenger (and not cargo) airplanes. Shipping costs via cargo airplanes would be significantly higher (according to businesses involved, at least 3-4 times). Export by passenger airplane has also limitations, especially in terms of volume. There are 10 daily flights from Yerevan to Moscow, which implies a capacity limit 10-15 tons of fresh fish.

In recent years, fish export businesses started using refrigerated trucks, along a transit road through Georgia and entering Russia at the Lars border checkpoint. It is significantly slower than air transport, however, taking several days instead of several hours. The average cost of transporting via trucks is $400-500 per ton.\(^46\)

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\(^{45}\) The Program was approved by Government Decision N 700-N on July 30, 2014 “On approving 2015-2017 Mid-Term State Expenditures Program”.

\(^{46}\) An additional $ 0.2, per each kilogram of unofficial payments must be added to cross the customs border point in Russia (Lars BCP), as detailed below.
The storage and transportation of fresh fish products requires the use of ice. As a rule, Armenian fish producers and exporters produce their ice in-house, meaning they do not outsource their supplies of same. Ice is subject to control to ensure compliance with food safety requirements. At meetings, businesses did not identify any issues or difficulties related with ice production or related food safety control procedures.

As well, shipment by ferry through Georgian seaports is a future possibility. But it is yet unexplored and unused. However, it could become important in the export of processed fish products (for example, frozen).

### 4.3 Main issues

**Russian export permits:** Businesses report that the process of obtaining Russian export permits (issued by Rosselkhoznadzor) is complicated and often includes rules that are insufficiently clear and/or inconsistent in terms of their application. Also, frequently applied restrictions and excessive inspections add to uncertainties and unpredictability, and so create obstacles for exporters and producers.

**Challenges and opportunities associated with the EEU membership:** Since January 1, 2015, Armenia has been a signatory to the Eurasian Economic Union (EEU), which along with an expected improvement in export opportunities has also brought uncertainty into export processes. And this, in turn, creates hindrances for exporters from Armenia to EEU markets. As an example, businesses are often unaware of expected changes in procedures affecting the actual export flow to Russia or other EEU markets.

It is worth emphasizing that after the year already cited as a transitional period, changes are expected in fish export procedures pertaining to the EEU, and in particular fish production requirements:

- In addition to veterinary certification, an additional mandatory sanitary certification requirement for fish product will be introduced (which implies corresponding documentation requirements as well);
- Stricter food safety requirements will be introduced into the production of fish for export, and of particular interest, a new mandatory requirement to introduce the HACCP system in fish production.

Incorporating these changes will require fish producers to introduce new,
or improve existing, production safety systems; and this, in turn, will require extra investment and staff training.

EU market: To enter the EU market, it is necessary to obtain a relevant permission (authorization), which requires: (1) recognition of a competent Armenian authority by the European Commission, (2) certification of businesses and their inclusion in the list of third country economic operators permitted to export to the EU (in other words, provision of EU export number to the business entity).

Product diversification: (see under Production phase issues).

Knowledge and capacity: There is a need to strengthen the knowledge, marketing capacity and distribution channels early on, at the exploration stage in search of export opportunities. This includes the key techniques needed to gain entry to such export markets and developing distribution channels. As an example, the difficulties faced by Armenian fish farmers and exporters due to their shortage of cash are, among others, caused by the fact that exports are concentrated in the Russian market, and distribution strategies rank low in terms of their sophistication. In these circumstances, there are difficulties in collecting payments from buyers (in the Russian market) on time, which leads to an obvious deterioration in fish farmers’ ability to pay (for their fish feed in particular). Over time, this cannot help but distort the performance of the whole supply chain.

To avoid such problems, Armenian fish producers and exporters need to address new challenges, such as diversifying their export markets, being able to effectively search out and enter new markets; and so prioritize the garnering of information about new markets, as well as enhancing all existing marketing and distribution capabilities and know-how.

Transportation and export procedures:

▲ Clearance procedures at Russian border crossing points are both complicated and unpredictable; as evidenced at the Lars border crossing point. Businesses report that, when exporting to the Russian market, so-called informal “facilitation fees” are collected for customs’ work among other formalities.47

▲ Fish transportation costs are high; they are detailed on pages 22-231; but it

47 At the amount equal to $0.2, per each kilogram of product.
must also be noted that on top of those costs businesses report another levy of $200 of unofficial fees per ton at Lars BCP.

Exporters mention that in some cases procedures pertaining to the VAT refund on exported commodities is problematic and lengthy. Getting a VAT refund may take up to six months, 48 which again, considerably decreases availability of cash (working capital) and distorts opportunities of using cash effectively (and profitably). There have been instances when the tax authority has initiated tax inspections in companies after they have filed their VAT refund applications.

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48 Articles 16 and 25 of the RA Law on Value Added Tax, Attachment 1 to RA Law on Taxes.
5. Supporting Facilities And Infrastructure

5.1 Warehouses and storage

Armenia’s present fish products supply chain lacks cold storage facilities and warehouses, since the country mainly markets and exports fresh and chilled fish products in ice. Thus, demand has never developed for such storage.

However to spur fish industry development and the production of processed fish products, Armenia will need to develop adequate handling, processing, and cold storage facilities, which will in turn require (a) the attraction of investments and resources, and (b) the training of a corps of relevant specialists and a critical mass of capacity development.

5.2 Financing and financial institutions

In general, the shortage of, and the difficulty of accessing long-term and affordable financial resources restricts the growth and development of all kinds of businesses. Interviews with these companies show that the application of improved export and investment finance instruments (such as turnover capital financing, funding of projects, trade finance instruments, and expedients like credit lines, insurance, effective monitoring, among many others) needs to
expand a good deal further still, if it is to really fuel quantitative and qualitative increases, aquaculture production and export development. Doing so while integrating environment-friendly technologies and advanced systems of food safety control in fish production adds another layer of challenges.

5.3 Main issues

Investment and access to financial backing: The insufficient application of improved investment instruments and the best available export financing is conditioned, among other factors, by the following:

▲ A shortage of, or insufficient accessibility to, effective financial instruments designed to promote investments; and the export and use of environment-friendly technologies and advanced systems of food safety control in fish production;

▲ Insufficient knowledge, among economic entities, about improved modern financial instruments.
Promoting the production and export of fish products is an Armenian government priority. Their program for 2012-2017 aims to triple the production of, and export volumes of fish products sold, to promote the introduction of water-save and water-use advanced efficient technologies and practices, and thereby secure the availability of the necessary financial resources.49

Within the framework of the fish industry’s development, the government has adopted a Program for Replenisment of Industrial Fishstock and Restoration of Endemic Fish Species in Lake Sevan.50 They are at present implementing a small-scale fish farming pilot project that began with 4 nets. In 2014, they allocated 3 billion Armenian dram (about $6.25 million) for that purpose. If the results of this pilot project prove positive, present plans call for expanding production to 70 nets (meaning actually fish farming to scale), with a target of 50,000 tons of annual production by 2022. The costs of this


50 This Program was adopted by Government Decision No 1755-N on 9 December 2010.
project have been estimated at 66 billion Armenian dram (or about $137.5 million).

In September 2013, the government took a decision to require businesses to introduce water- and eco-saving technologies in fish-farming, in particular semi-closed water recirculation production. In the opinion of businesses in the sector, introducing such technology on a fish farm will require from $700,000 to $1.5 million, depending on the size of the farm.

At present, the country does not have a law on fish farming in place. Adoption of such a law would help to resolve a number of industry-related issues, which along with other concerns, influences fundamental business decisions as regards their making investments in the Armenian industry.

6.1. Main issues

Technology enhancement: In order to introduce technologies to comply with implemented regulatory requirements to use environment-friendly technologies as well as enhanced food safety and quality requirements, businesses will have to address further challenges related to:

▲ Acquiring the additional financial resources needed for the acquisition, installation and exploitation of these new technologies, and

▲ A growing need for additional knowledge and skills, and so for much-enhanced human capability development.

Regulatory environment: There is a need for a study, and where appropriate, regulatory reforms in areas such as:

▲ Water use and water use permit granting procedures;

▲ Introduction of effective and environment-friendly technologies and promotion of the investments required thereto;

▲ Ensuring a fair competitive environment;

▲ Considering the necessity of developing and adopting an updated law on fish farming.
**ANNEX 1. Procedure for acquiring a water use permit**

Government decision No 217-N of 07.03.03 defines the procedure of receiving water use permit (WUP).

Submission of WUP application, attached with required documents, to the RA Ministry of Nature Protection

Preliminary evaluation of application at ARC*, (30 days)

Application conforms**

 YES

Notification of the public (5 days)

Final discussion of application at ARC (30 days)

Application conforms**

YES

Documentation and issuance of the WUP to the applicant (5 days)

Signing of WUP by the applicant and submission to the RA Ministry of Nature Protection (30 days)

Signing and approval of WUP (5 days)

Registration of WUP at State Water Cadastre (10 days)

**In case of necessity conditioned by results of notification of the public, submission of application to the consideration of the National Water Council (60 days)**

* “Application conforms” means the application conforms with (and does not contradict) the RA Water Code.

** Application Review Commission (ARC) - Commission for preliminary evaluation and final discussion of water use applications.
Extending the validity term of Water Use Permits (WUP)

According to Article 33 of the RA Water Code, if the terms and conditions of the WUP have not been breached and its renewal does not contravene laws, or other legal acts or water basin management plans, the Water Resources Management and Protection Body shall renew the water use permit under the same terms and conditions.

A state duty of 1,000 Armenian dram (about $2) should be paid for acquiring a water use permit for physical entities and 10,000 Armenian dram (about $20) for legal entities.
ANNEX 2. Feed import procedures

INCOMING DOCUMENTS
- Transportation doc (CMR)
- Invoice
- Entry of Form (T1)

PROCEDURE
- CUSTOMS CONTROL (beginning)
  1. The lorry is weighted and the weight slip is provided
  2. The importer enters the T1 into the system
  3. The importer submits docs to the customs officer
  4. The customs officer checks the docs
  5. Where appropriate, the customs officer requires veterinary control

- VETERINARY CONTROL
  1. The importer submits docs to VET inspector and applies for conducting control
  2. The VET inspector checks the docs
  3. The VET inspector carries out identification of cargo
  4. If necessary, the VET inspector may carry out examination and sampling of the cargo
  5. In case of sampling, a protocol shall be produced
  6. If violations related to cargo are not detected, the VET inspector makes relevant notes in the VET import certificate and/or seals it.

- PHYTOSANITARY CONTROL
  Procedure similar to veterinary control procedure
  All cargo of phytogenic origin is subject to physical check

OUTGOING DOCUMENTS
- T1’s registration number
- Internal VET certificate (completed)
- Protocol of taking samples
- Certificate of origin (original copy)
- PHYTO certificate, with note
- Testing protocol

INCOMING DOCUMENTS
- PHYTO certificate, with note
- PHYTO certificate, with note
- VET certificate with note and seal
- C - Sample taking protocol
- Transportation doc (CMR)
- Certificate of origin
- Invoice
- PHYTO certificate, with note

PROCEDURE
- CUSTOMS CONTROL
  1. The Customs Service conducts documentary checks
  2. The Customs Service conducts cargo identification
  3. If necessary, the Customs Service scans the cargo
  4. If necessary, the Customs Service may open the lorry, conduct check, sampling and testing by making relevant notes in T1.

- TRANSPORTATION TO DESTINATION
  CUSTOMS WAREHOUSE
  1. If necessary, the Customs Service may accompany the cargo/lorry from customs border to destination customs warehouse.

OUTGOING DOCUMENTS
- Form (T1)
- Customs check protocol
- Testing protocol

INCOMING DOCUMENTS
- PHYTO certificate, with note
- Product/consignment certificate
- VET/PHYTO sample taking protocol
- Transportation doc (CMR)
- Invoice
- Form (T1)
- Weight slip
- Customs check protocol
- C - sample taking protocol

PROCEDURE
- PHYTOSANITARY CONTROL
  For customs clearance and marketing of the product, the importer must substitute the external PHYTO certificate with internal PHYTO certificate issued at the Phytosanitary Inspection.

OUTGOING DOCUMENTS
- PHYTO certificate, with note

Conventional signs
- VET/PHYTO control doc
- Customs control doc
- Doc, if samples are taken
- Not mandatory
ANNEX 3. Reference sources and literature

Analytical materials


Official websites

1. RA National Statistical Service: www.armstat.am
2. RA Ministry of Agriculture: www.minagro.am
3. RA Ministry of Nature Protection: www.mnp.am
4. RA State Service for Food Safety: www.sfss.am
6. UN Food and Agriculture Organization (FAO): www.fao.org

RA legal acts

Water use

1. RA Water Code
2. RA Law on Rates of Nature Protection Payments
of Fishing Basins”

**Fish Production and Fish Products’ Safety Technical Requirements and Standards**
4. RA Law On Animal Fodder

**Taxes applied to marketing fish products**
1. Official clarification of the Chairman of the State Revenue Committee at Government, dated February 13, 2003: “About application of tax remissions for marketing fish product as defined by Article 36 of the RA Law on Profit Tax, Article 11 of the RA Law on Income Tax, effective until January 1, 2013, as well as Article 8 of the RA Law on Income Tax effective since January 1, 2013”

2. RA Law on Value Added Tax
3. RA Law on Taxes

**Import and export requirements and procedures**
Nutritional and Biological Active Additives, and repealing the Government Decision No 1228-N of August 19, 2004 and the Government Decision No 1901-N of November 9, 2004

2. Government Decision No 835-N of October 11, 2010: “On approving the timetable of measures regulating the export of fish and other aquacultural products from Armenia to the EU and declaring invalid No 150-A Decision of the RA Prime Minister of March 10, 2010”

**Government Programs**

1. Government Decision No 511-A of May 19, 2014 on RA Government Program


3. Government Decision No 1755-N of December 9, 2010 on “Approving the Program for Replenishment of Industrial Fishstock and Restoration of Endemic Fish Species in Lake Sevan”