

MARKET PROFILE



Market profile

AQUACULTURE
IN GEORGIA



Purpose of the study :	AQUACULTURE IN GEORGIA
Date :	October 2021



This document is part of the general framework of COLEACP's partnership with VCA4D, and more specifically of the pilot market profiles.

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The Europe-Africa-Caribbean-Pacific Liaison Committee (COLEACP) is a private sector, non-profit interprofessional association, established in 1973 by stakeholders in the international fruit and vegetable trade. A network of businesses, professional organisations and experts committed to inclusive and sustainable agriculture, COLEACP supports sustainable and inclusive private and public sector development through technical cooperation and capacity building programmes in 50 ACP countries, funded by international donors (mainly the European Union).

COLEACP's mission is to develop an inclusive and sustainable trade in fruit and vegetables and food products, focusing on ACP countries' trade with each other and with the European Union.

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1. CONTEXT

This market profile was produced as part of the collaboration between COLEACP and Value Chain Analysis for Development ([VCA4D](#)). VCA4D is a partnership between Agrinatura and the European Commission, to carry out agri-based value chain analyses in EU partner countries, for which the methodology can be found [here](#). The objective of VCA4D's work is to assess the extent to which value chains contribute to inclusive economic growth and are socially and environmentally sustainable. It evaluates the Georgian aquaculture market and opportunities, at local, regional and international level.

This study mentions a number of stakeholders in the aquaculture market. More details on main stakeholders on the local market can be asked to COLEACP.

II. SUPPLY

1. Presentation of the product

Georgia enjoys favourable conditions for the development of aquaculture, thanks in particular to the length of the fish growing season and an important hydrological network.

For the time being, aquaculture in Georgia is still in the development stage. The sector produces mainly **trout** in small-scale fish farms using flow-through systems, and **carp** (and other fishes of the cyprinid family) in ponds, lakes and reservoirs. Georgia was nevertheless an important player in the aquaculture sector before the end of the USSR and has therefore a potential to develop it again.

The main freshwater species¹ one can find in Georgia are:

- Rainbow **trout**
- Lake **trout**
- Romanov lake **trout**
- Common **carp**
- Silver **carp**
- Grass **carp**
- Crucian **carp**
- Bighead **carp**
- **Barb**
- Wels **catfish**
- **Vendace**
- European **chub**
- Various **barbels**

In Georgia, there are cold water fish farms in the mountains and warm water exploitations

in the lower plains. The species of fish raised in warmer water farms are mainly carp, silver carp, grass carp and other cyprinids. In the high altitude areas, where the colder water ponds and basins are, rainbow trout are mainly raised.

One of the major obstacles to the development of the sector is the absence of good quality local trout feed. Aquaculturists need to import feed products at high prices, which undermines the competitiveness of these small companies. The lack of professional farming skills, of disease control, infrastructure and logistics (e.g. for product differentiation) are also factors which slow down the development of the aquaculture sector.

2. Main regional aquaculture producers

Georgia is a small player in terms of aquaculture production. Even in its own region it is dwarfed by big countries such as Turkey, Russia or Iran. The case of the neighbouring country, Armenia, however is an interesting example on how the untapped potential of Georgia could be valorised in a short time. Armenian aquaculture production was at a similar level of Georgia only about ten years ago. It followed a very similar trajectory with a bloom during the soviet period and a collapse in the 1990's. From 2005 onwards, however, the Armenian aquaculture production grew almost exponentially and reached 17000 ton/yr in 2018. This is more than 7 times the size of the Georgian production while Armenia is a smaller and landlocked country. Among the factors that have enabled the strong growth of Armenian aquaculture production are the

¹ *FAO - National Aquaculture Sector Overview : Georgia*

investments and technological innovations brought in by large foreign private investors with extensive experience in the production of fish and efficient management skills. Apart from grow out ponds, some of these new companies established hatcheries, fish processing facilities, and sales and distribution networks within the country and abroad. Currently, frozen and processed Armenian fish and caviar are exported to the United States, Georgia, Russia, Ukraine, and several countries in the Middle East. The strong dependency on the Russian market, together

with sustainability challenges, especially in terms of ground water use, on the other hand, are major constraints for the Armenian aquaculture sector.

If Georgia is compared to its regional competitors in terms of freshwater aquaculture species composition it can be seen that Georgia still produces a relative large share of lower value carps while fast growing countries in terms of aquaculture such as Armenia have shifted their production for a large share to high value species such as trout and sturgeon and its caviar.

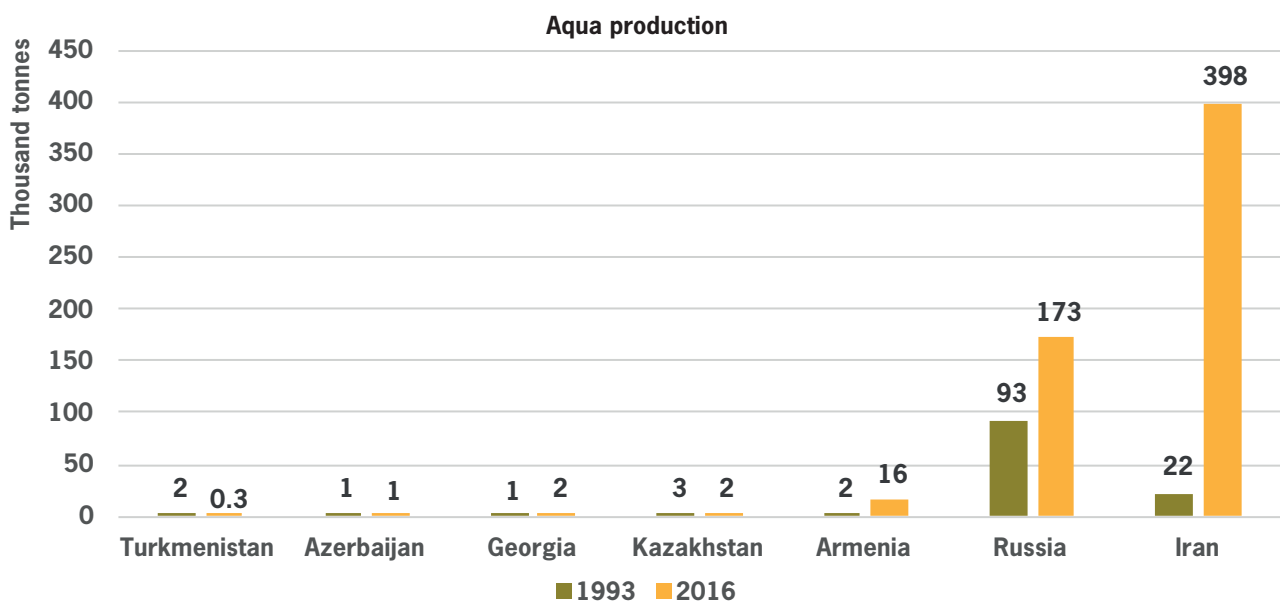


Figure 1: Annual aquaculture production volumes in the region of Georgia. A comparison between 1993 and 2016. Data source: FAO WAPI Aquaculture Production Module (WAPI-AQPRN v.2018.1).

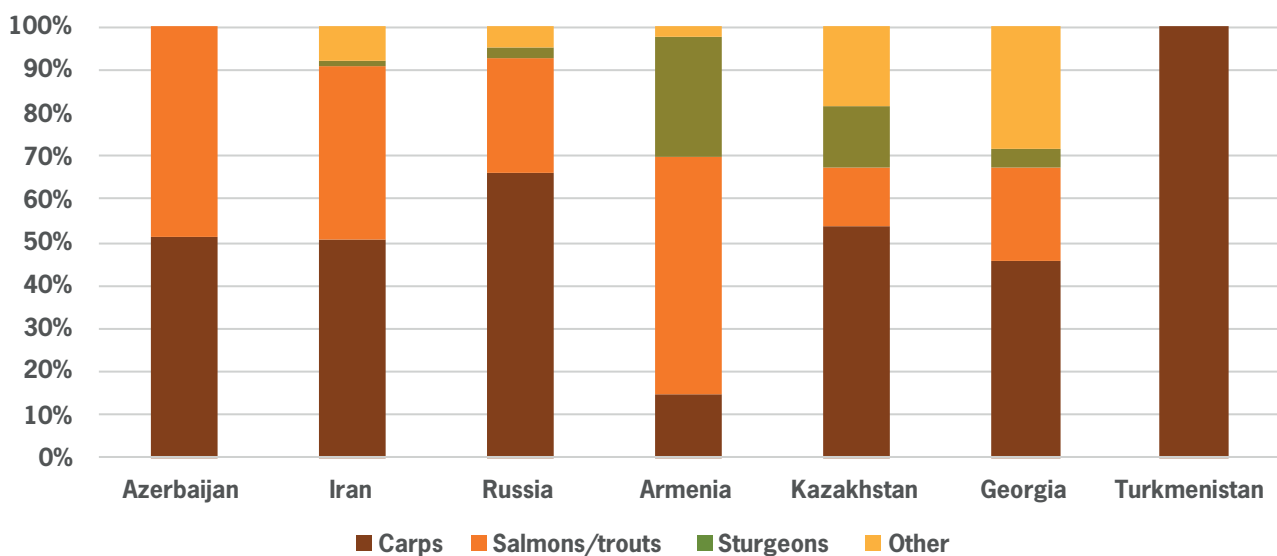


Figure 2: Freshwater aquaculture species composition in 2018, volume shares. A comparison of Georgia with other regional producers. Data source: FAO WAPI Aquaculture Production Module (WAPI-AQPRN v.2018.1).

3. Production trends:

Georgia has a long tradition of aquaculture. The sector flourished in the 1950's but gradually declined afterwards. In the beginning of the 1990's, what remained collapsed. This was, among other factors, due to the lost access to the large former consumer market of the Soviet Union, the difficult social and economic situation in the country and the mass privatization and stop of government support of the aquaculture farms. Currently

aquaculture is becoming again attractive. There is a large untapped potential for freshwater aquaculture. According to research conducted in 2018 by the sectoral and regional development company of Georgia, production capacity of freshwater aquaculture is 5.4 thousand tons per year, ponds production is 47 thousand tons, production in artificial pools is 8.9 thousand tons and fish production in lakes is 9.9 thousand tons. Although this might be a high estimation, the difference with the total production in 2018 of 2.3 thousand tons per year is very large.

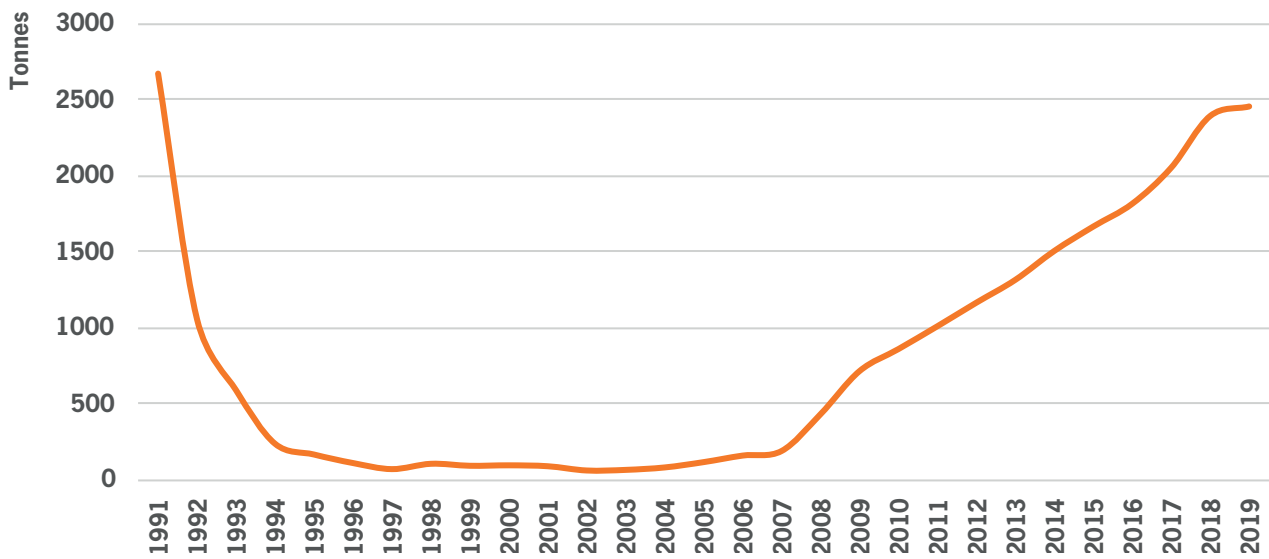
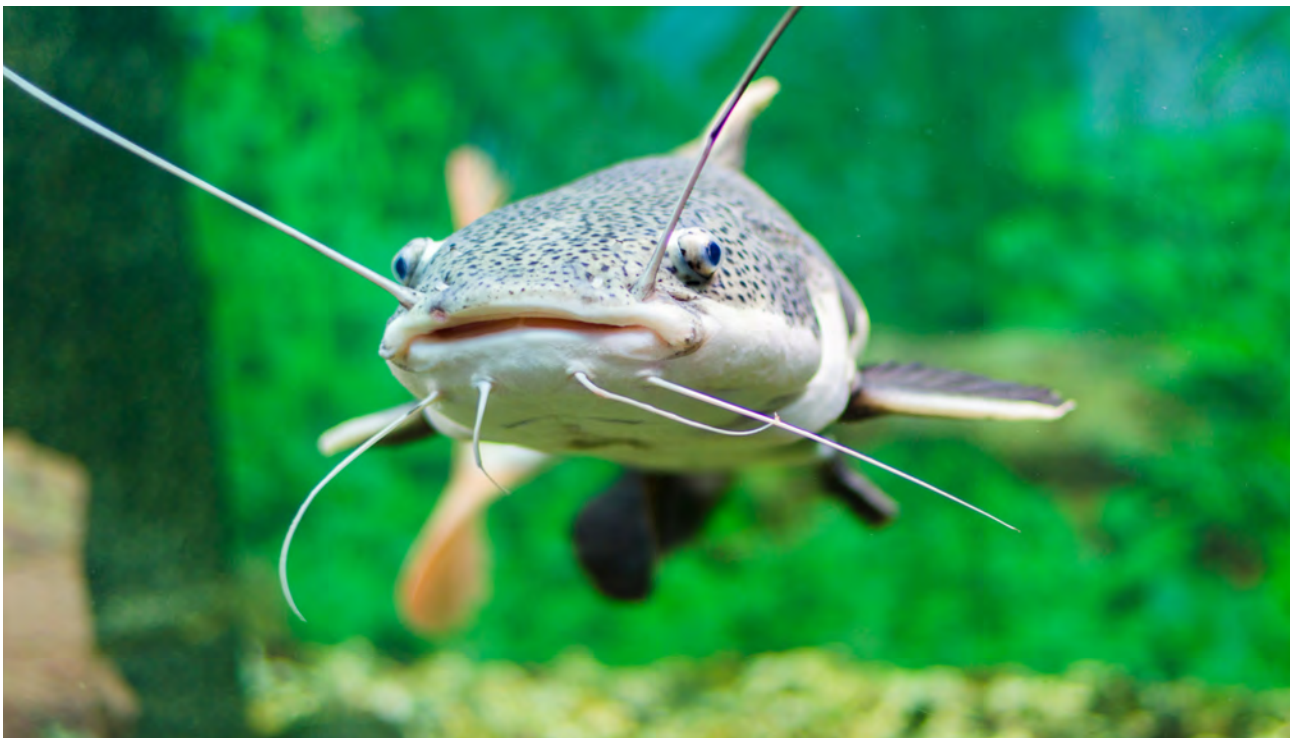


Figure 3: Total annual aquaculture production volume trend in Georgia.
Data source: FAO FishStat



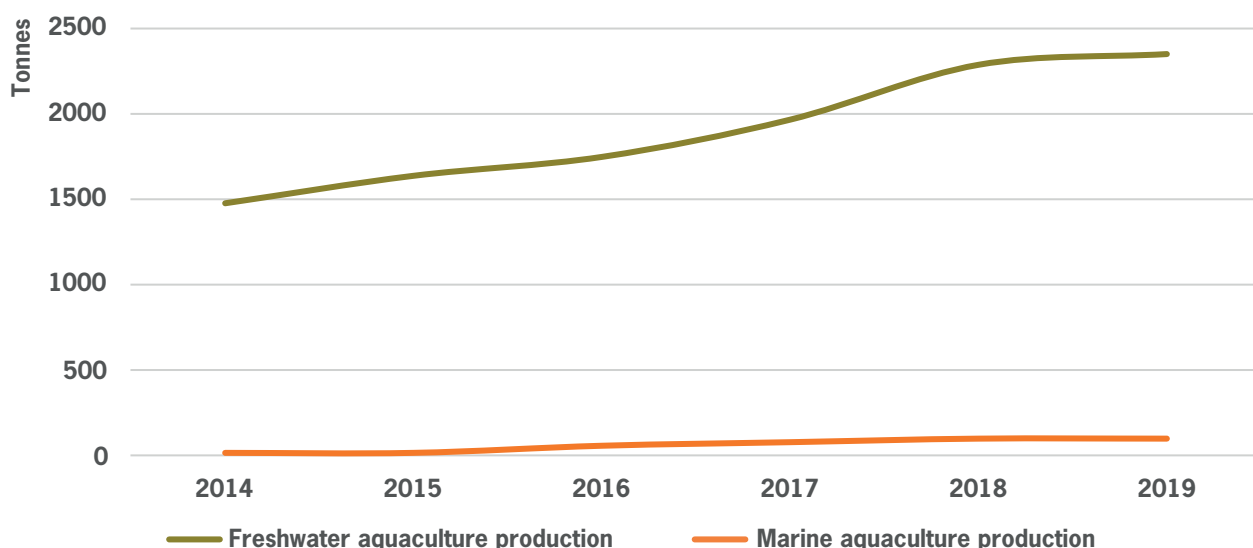


Figure 4: Freshwater aquaculture annual production volume trend vs annual marine aquaculture production volume trend in Georgia. Data source: FAO FishStat



Marine aquaculture (either mollusks and oysters or seabass and seabream) has started around 2014 in Georgia and production volumes are estimated by the FAO at 100 tons in 2019. Marine aquaculture represented only 4% of the total Georgian aquaculture production in 2019.

4. Main aquaculture producers in Georgia

It is difficult to point out what are the main aquaculture companies as the sector is composed of a multitude of small-scale companies. In 2019, the total number of recognised active companies was 60 (medium and large) in the fresh water subsector. As a reminder, trout is raised in such waters and constitute the main production of the country. Besides these officially recognised companies, a large amount of small, family owned fish farms is active in Georgia. There are few recent figures but about 350 small producers are estimated to be present together with total of

719 holdings with reservoirs for aquaculture². There is little to no data available about the production or sales amounts by these small farmers. Due to the small volume of their production they sell their products directly at their farms to individual buyers, local wholesalers or restaurant owners. Many also take their products themselves for sale at local retail market within their municipality.

We can highlight that large (foreign) private actors have been investing significantly in the recent years. A recent publication of the Georgian Ministry of Environmental Protection and Agriculture³ states that Ukrainian investors have allowed the establishment of three companies aiming to export.

- **Aqua Farm Village Khashmi** is exporting fish to the CIS and EU countries. The company plans to expand its production and to acquire black sturgeon next year.
- **Rioni Sturgeon Factory** produces salmon. The production of trout caviar is also underway.
- The third company, **Club Admiral** operates in the same way.

² FAO. 2020. Smallholders and Family Farms in Europe and Central Asia. Regional Synthesis Report 2019. Budapest.

³ Ministry of Environmental Protection and Agriculture of Georgia - The Minister of Environmental Protection and Agriculture of Georgia, Levan Davitashvili visited fish ponds created by Ukrainian investments in Khashmi and Tbsi villages (2019)



III. DEMAND

1. Market trends for freshwater fish in the EU and Russia

Total EU28 imports of carp and trout have increased by 30% over the period between 2012 and 2019. Fresh trout is the most imported followed by frozen trout. Carp imports are much lower but have increased much faster (by 166% and 717% for fresh and frozen carp respectively between 2012 and 2019) The demand for fresh increased by 30% while frozen trout imports reduced with 4% over the period between 2012 and 2019. A general overview of the European fish and seafood market can be accessed at <https://www.cbi.eu>.

Russian imports of both fresh and frozen trout have decreased by 77% and 17% respectively between 2012 and 2019. Although there has been a strong reduction in imports, a recovery seems to have started from 2017 onwards. Imports of fresh or frozen carp by Russia must be very small. Only a few tons of frozen carp were recorded for the whole period between 2012 and 2019.

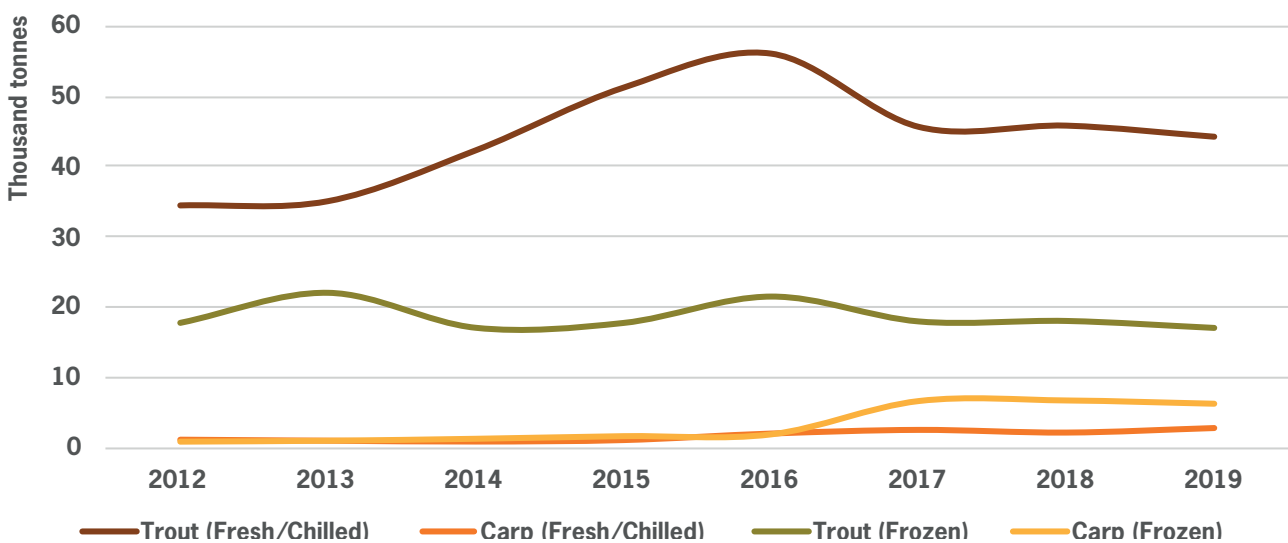


Figure 5: Total annual import volume trends for fresh and frozen trout and carp on the EU28 market. Data source: EUROSTAT

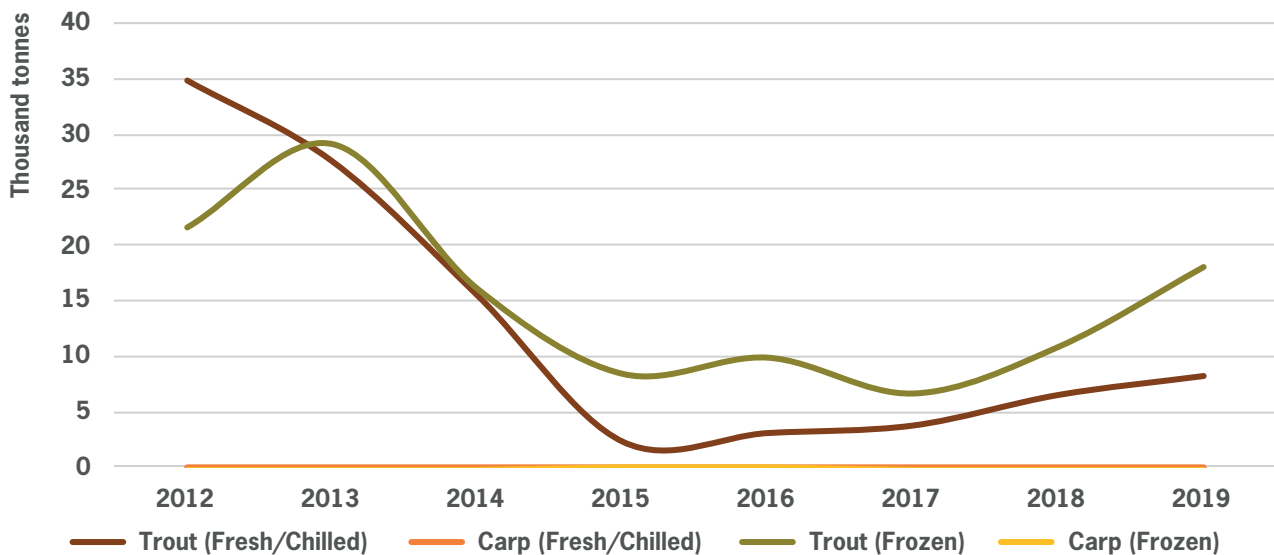


Figure 6: Total annual import volume trends for fresh and frozen trout and carp on the Russian market.
Data source: COMTRADE

Notwithstanding the negative trend on the longer term for Russia it can be concluded that there is a good potential for fresh and frozen trout on both the European and Russian markets. Carp is much less imported and the market seems small and even non-existent for the case of Russia. In Europe the import in carp grew slightly since 2016 but seems to have stabilized again.

2. Georgian export trends and markets:

EU market:

No recent trade records are found of Georgian freshwater aquaculture exports to the EU28. The only marine aquaculture export recorded,

was of 5 tons of fresh mussels (*Mytilus* spp.), exported to Greece in 2018.

Other international markets:

Frozen trout (Brown trout: *Salmo trutta* and Rainbow trout: *Oncorhynchus mykiss*) is currently the most exported aquaculture product by Georgia. The main export market is Russia. Smaller quantities are exported to other countries within the region such as Azerbaijan, Turkmenistan, Ukraine, Armenia and Kazakhstan. In 2019, the total export volume of 21.8 tons of frozen trout were exported to Russia. Export data from 2015 and 2016 include re-exports of frozen trout imported from Chile to Russia.



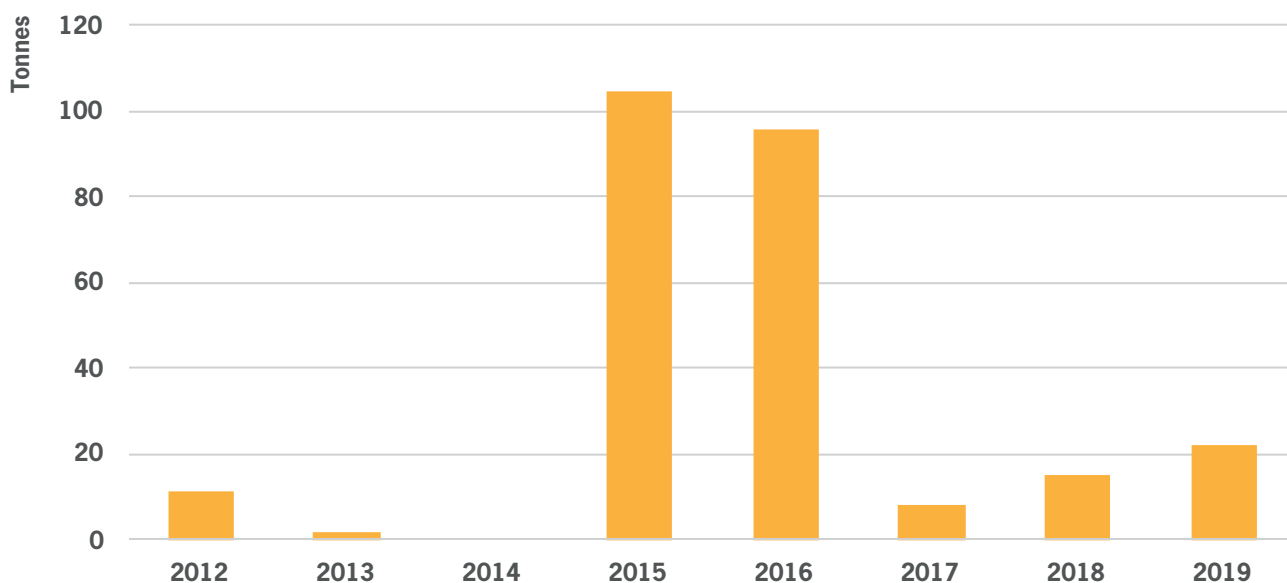


Figure 7: Total annual export volumes of frozen trout by Georgia to the rest of the world.
Data source: COMTRADE

Fresh or chilled trout is only occasionally exported in small amounts. 4, 2 and 1 ton of fresh trout was exported to Azerbaijan in resp. 2008, 2014 and 2019. A slightly larger amount of fresh trout (40 tons) was exported in 2019 to Russia.

Carp or other aquaculture products are not present in the recent (2008-2020) international trade records of Georgia. The production must be entirely oriented to the domestic markets.

Domestic markets:

Fish markets are present in all major cities of Georgia. The largest is the one of Tbilisi where, besides fish from the Black sea and imported fish, also a large amount of the trout from aquaculture farms in Georgia is sold. Cold storage facilities exist in Tbilisi, Kutasi and Poti. The higher value aquaculture products such as sturgeon, salmon and trout, are also sold directly to restaurants by intermediaries and the producers themselves.

Supermarkets sell an increasing share of fishery products, especially in the larger cities with a growing middleclass. Repacked imported fishery products are sold most as they are still considered of better quality. However, live trout from Georgian aquaculture farms is in great demand. The Khvamli supermarket in Tbilisi or the Nikora supermarket chain stores, for example, that are present in different cities and offer live trout with guaranteed daily delivery.

Common and grass carp produced in aquaculture are mainly sold locally in rural markets. Only small quantities reach Tbilisi or other big cities during the main harvest periods.

Market prices of fresh fish tend to be lower in September, October when it is the optimal harvesting season, higher volumes are sold during the winter period. To satisfy the domestic demand fresh and preserved trout is also imported.

3. Georgian import trends and origins:

In Georgia fresh trout is imported from Turkey and Norway:

Frozen trout is imported from a diverse group of countries, of which the main are Chile (65% of the cumulative imports between 2008 and 2019), Denmark (21%), Norway (6%) and Russia (3%).

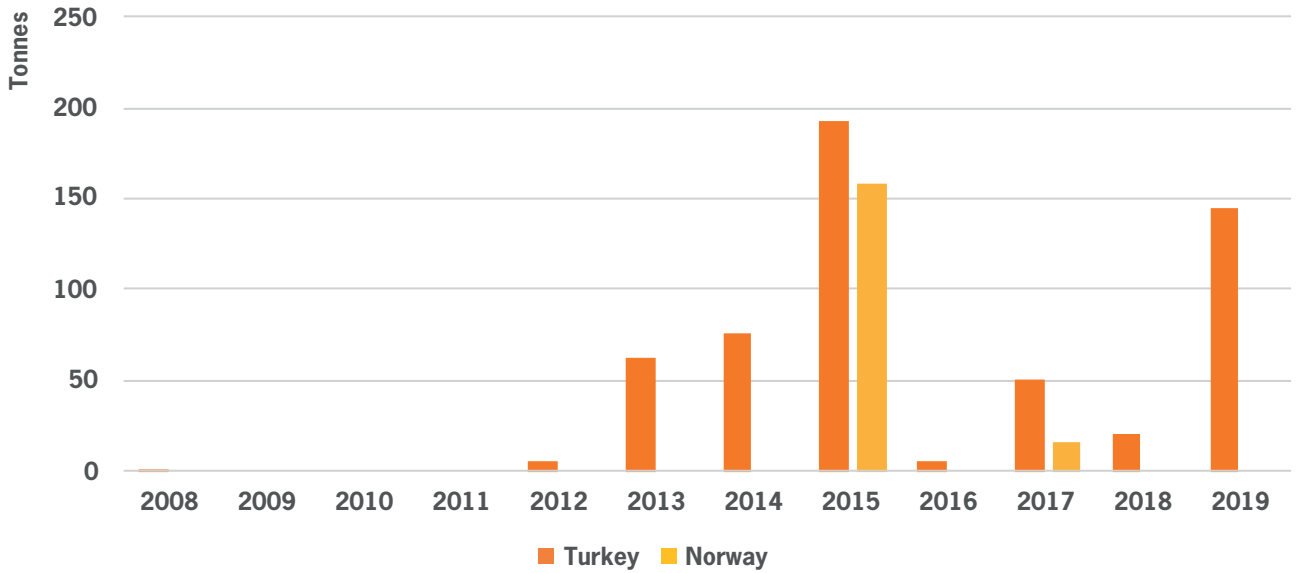


Figure 8: Total annual import volumes of fresh or chilled trout by Georgia and by origin. Data source: COMTRADE

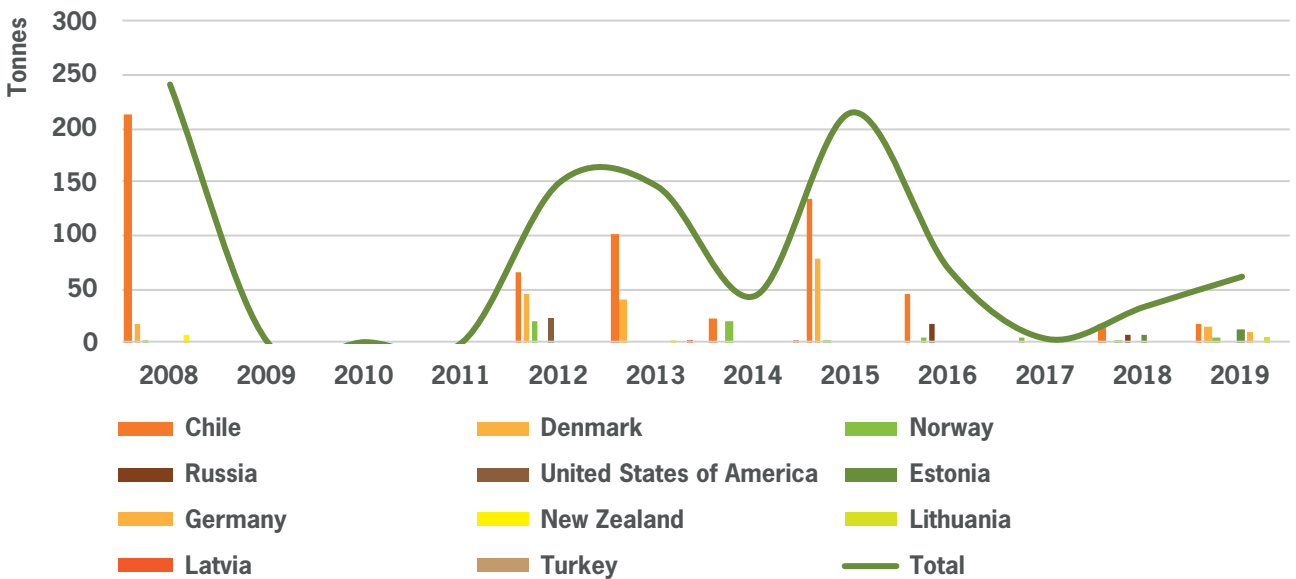


Figure 9: Total annual import volumes of frozen trout by Georgia and by origin. Data source: COMTRADE

IV. MARKETS

1. Consumption

The evolution of the population and consumption behaviors in Georgia are stimulating the growing demand for aquaculture products on the local market. The population and the income are indeed growing, and the urbanization of the country is bringing new consumption patterns, more diverse and with attention to healthy foods. The average consumption of fish per year was estimated at 8.2 kg in 2016, which is still much lower than the average European consumption, estimated at 21.3 kg in 2017. However, compared to the countries in the region (Eastern Europe and Middle East), the fish consumption in Georgia is in the high range.

Per capita fish consumption in 2013	
Countries	kg/capita/year
Azerbaijan	2.8
Armenia	4.5
Georgia	8.6
Iran	10
Kazakhstan	4.7
Turkmenistan	3.6
Russia	22.8
Western Asia	8
Landlocked developing countries	4.2
World	19.9

Data source : FAO WAPI Fish Consumption Module (WAPI-FISHCSP v.2018.1)

More generally, aquaculture is expected to become in 2030 as important as fisheries in providing fishes to the Georgian consumers, and even more important in the future, even if, in terms of production, capture fisheries (mainly Black Sea anchovy *Engraulis encrasicolus* L.) currently represent 99% of the annual Georgian fisheries production. There is a general consensus that the Georgian aquaculture sector will continue to grow and offer opportunities for the future⁴.

⁴ World Bank, FAO, IFFPRI, AES - Fish to 2030. Prospects for fisheries and aquaculture (2013)

2. Market Prices

Fresh and frozen trout:

Average annual export prices (based on the total annual export values and volumes, which were mainly oriented to Russia and for a smaller share the countries neighbouring Georgia) of frozen trout fluctuate between 5 and 8 USD/kg and 3 and 6 USD/kg for fresh trout (2016-2019, FOB). Average annual import prices (2016-2019, CIF) are slightly lower and have a range between 3 and 5 USD/kg both for fresh and frozen trout. Domestic market prices in Georgia for fresh trout fluctuated between 8 and 12 GEL (1.97 EUR/kg and 2.96 EUR/Kg) in 2015.

The majority of fish farmers are selling their production either directly in local markets or through wholesalers or resellers. In fact, the first option occurs much less than the second. The producers might also sell their fishes to other types of buyers, such as restaurants and other food stores. In these cases, they have direct relations with the buyers. The common characteristic of all these chains is that the value and the amount of command are very volatile and the prices are negotiated for each command.

3. Market access

As a food product, fishes need to be controlled by State authorities –the **National Food Agency** in Georgia. This agency aims to control sanitary conditions, feed quality, processes, existed quality control systems, etc. However, most of the fishes sold by production farms seem to not undergo any control. Indeed, the Agency publishes each year a list of the controlled units and there is no singular fish farm in the list.

This kind of passivity regarding sanitary checks still allows to access the national market but the following standards are however important to gain shares in other export markets:

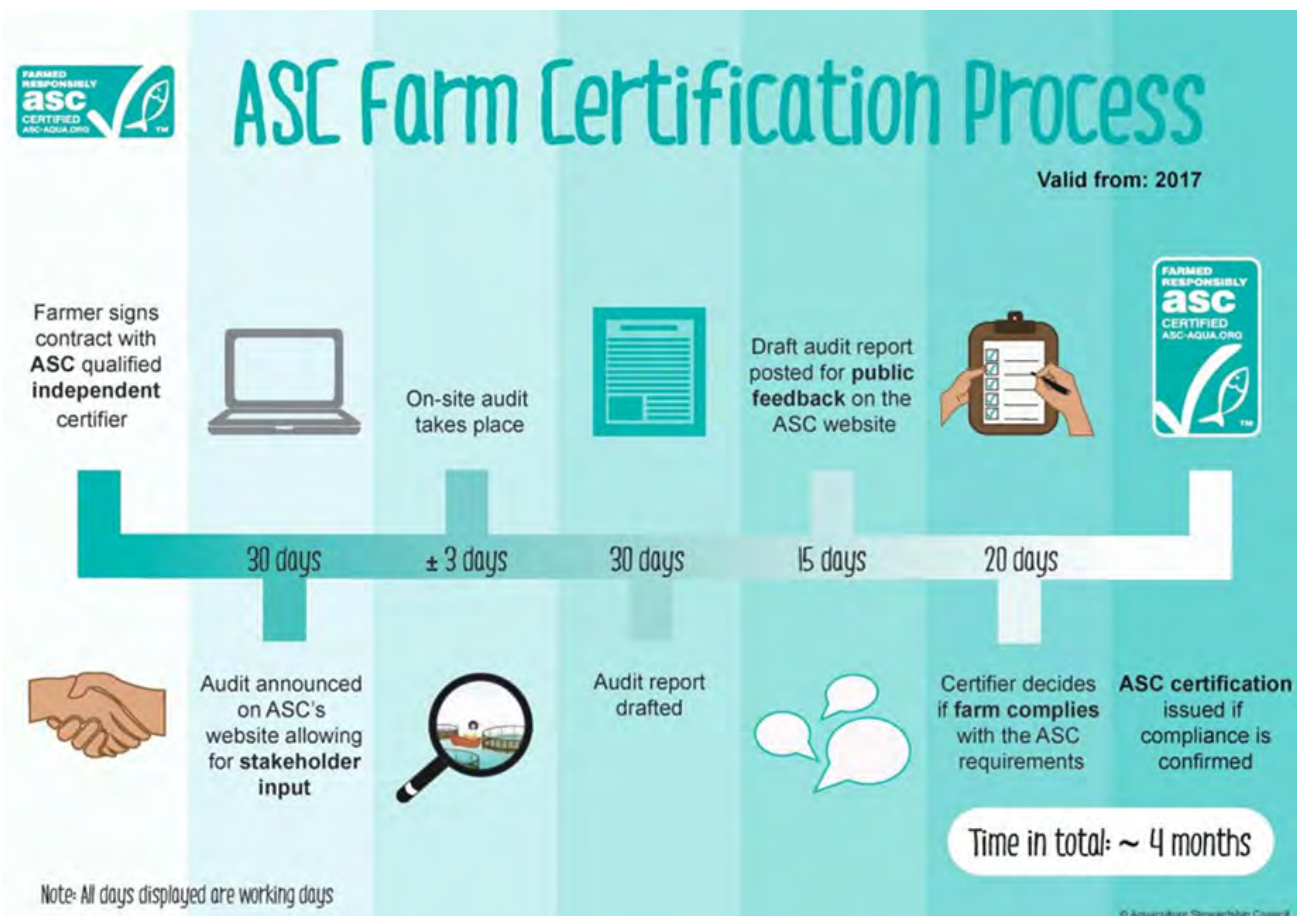
The **Aquaculture Stewardship Council** certification is the major certification related to fish farming. Briefly, this certification aims to guarantee :

- The protection of the environment
- The protection of the biodiversity
- The protection of water resources
- Good working conditions and payroll

It covers a total of 12 species which might be raised in aquaculture, including trout which has its own referential.

In the words of the organisation, “ASC certification helps aquaculturist to position the brand as a leading player in a competitive marketplace. The ASC logo sends a message to consumers about the environmental and social integrity of the product on which it is affixed and gives the product added value over other aquaculture seafood products.” Consumers, especially in Europe, are very sensitive to these values and this kind of label is then an important marketing argument. As there is still no Georgian fish farms ASC certified for the time being, according to the ASC website, this could be an interesting marketing argument on the national market too.

GLOBALG.A.P has also developed standards for the aquaculture activity, and it is possible to get certified if a company complies with the exigences of the organisation. The label is the **GGN label**. The species covered by this label are primarily farmed salmon, trout, mussels, and shrimp. Once again, this label is an important marketing argument at the export level. Some importers give a lot of importance to it which reflects the desire of the consumer to consume food consciously.





Access to the EU market

The EU-Georgia Deep and Comprehensive Free Trade Area (DCFTA) is providing new export opportunities for Georgian aquaculture products to the European Union. The entire Georgian veterinary control system was recognized by the European Commission in 2017. From 2017 onwards, 10 Georgian fish processing plants were certified and received an EU export permit number. Nine out of these were located at the port city of Poti at the Black Sea and probably process marine fish. One out of the 10, Geo-Fish, is located at the town Chokhatauri, more inland. Geo-Fish is a fish farm producing among others sturgeon and black caviar, mullet, African catfish and trout. In 2019 Georgia also submitted a residue-monitoring plan for its aquaculture to the EU for approval. It is not clear to the authors whether a visit to Georgia and on-site inspections by the EU Food and Veterinary Office in respect of fulfilment of EU requirements has already taken place and if based on the results of the paper work and on-site inspection, DG SANCO submitted a recommendation to the EU member-states to include Georgia in the list of

countries holding an EU export authorization. If this was done and the EU member states would not object, Georgia would be authorized to export fish to the EU.

The certification of the Georgian processing plants involved the introduction and application of internationally recognized best practices and systems covering food safety and quality regulations, such as Best Aquaculture Practices (BAP) of the Global Aquaculture Alliance; Aquaculture Stewardship Council's (ASC) standards (see previous paragraph); 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 the strengthening of the workforce's capability to use BAP, GAP, GMP, GHP and HACCP along with other qualitative practices and systems. Any other Georgian company willing to export to the EU will be forced to introduce new or improve existing safety systems in their production processes, which, in turn, will require investment and staff training.

4. Opportunities

According to the National Statistics Office of Georgia, the local production of fishes only satisfies 10 to 15% of the local consumption. Therefore, before thinking to export –which is more stringent, namely in sanitary terms–, there is a lot of potential on the domestic market. This only implies to produce more and more efficient, as it seems that there are not a lot of losses in the production. The challenge for the country is then to develop the infrastructures, the logistics and farming skills in the population. Ensuring good disease and sanitary controls should probably also reassure the buyers and consumers.

There is also the potential for the development of marine aquaculture in the Black Sea coastal area. Oysters, mussels, mullet, flatfish, seabass, seabream and rapana offer interesting prospects, and could allow to diversify the production, which is currently mainly oriented towards trout and carp.

When it comes to export, the gap between the products currently offered and the customs and consumer exigences (especially in Europe) seems still large for the moment. Moreover, carp and trout are not very popular in the European

market. Products from marine aquaculture might be more interesting for this market, but the country need to invest in this sector to be competitive with fisheries and other producing countries. Developing a stringent disease, quality and sanitary control is also a sine qua non condition to access the EU market.

To optimally seize export opportunities it is critical to diversify 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. Investments for such diversifications should be promoted.

There are also good opportunities for sturgeon and trout on the Russian market. The farming of these in the cold climate (and cold waters) of Russia is more difficult where the right water temperature can only be achieved in closed-cycle production. This is however more expensive. Thanks to the favorable climate conditions allowing open and therefore less expensive production systems, Georgian sturgeon and trout could command in the Russian market, undercutting the Russian production costs.



V. SWOT

Strengths:	Weaknesses:
<ul style="list-style-type: none"> ▪ Favorable natural environments are present, both for marine aquaculture as freshwater aquaculture, both colder and warmer areas suitable for e.g. carp, trout and sturgeon production. ▪ Abundant high-quality water is available for trout and sturgeon production. ▪ The local climate conditions allow trout and sturgeon production in natural spring waters. ▪ Main feed ingredient (anchovy fish) is locally available. ▪ The sector generates employment for rural people. 	<ul style="list-style-type: none"> ▪ Low productivity of many smallholder farms. ▪ Low availability of good quality locally produced feed. ▪ High price of imported feed from e.g. Italy or Turkey and price fluctuations due to changes in the exchange rate. ▪ Lack of knowledge of disease control (which is among the main export barriers); lack of research. Currently there are several private and public laboratories in Georgia, but they do not have the resources to perform tests on all types of viruses and bacteria that fish can have. ▪ Many pond facilities are still primitive. There is a general lack of modern facilities/technology/equipment. ▪ Absence of product diversification in many farms. ▪ Lack of a well-organized supplier network and aquaculture gear accessibility ▪ Lack of knowledge on fish processing and marketing ▪ Poor national infrastructure (roads, bridges, etc.). ▪ Limited access to bank credits/loans. ▪ Low institutional development in the sector (few associations low visibility).
Opportunities:	Threats:
<ul style="list-style-type: none"> ▪ Product diversification and local processing e.g. sliced and packaged fish fillets, brined, dry-smoked or smoked fish products, and caviar. ▪ Domestic market for trout is developing and can significantly increase the added value that can potentially be realized. The demand on the domestic market is increasing due to a growing middle class in the larger cities. ▪ The possibility to produce organic aquaculture fish and supply the EU market under the DCFTA and other premium markets. ▪ The government's initiatives to develop the aquaculture sector, current policy aiming for entrepreneurship development in rural municipalities. ▪ The interest and direct investments by foreign private investors, bringing in new technology, knowledge, experience and employment opportunities in the aquacultural sector. ▪ Marine Aquaculture could be developed. E.g. the production of seabass and seabream could be considered (although there might be a strong competition from large producers such as Greece and Turkey). They are the most important species for trade in the Mediterranean and Black Sea countries. Trade of both species has increased significantly over the last decennia (the export value of seabass and seabream by Mediterranean and Black Sea countries surged from USD 300 million in 2003 to USD 956 million in 2013). 	<ul style="list-style-type: none"> ▪ Price fluctuations on inputs and outputs ▪ Vulnerability to changes in water temperature and quality ▪ Changes in national legislation – land taxes, water license, etc. ▪ Natural disasters due to global warming, e.g. flooding, heat waves, droughts, landslides. ▪ Competition from neighboring countries.

VI. CONCLUSIONS

The aquaculture sector is still in a development stage in Georgia but there is a large potential, mainly thanks to the abundance of natural resources and the possibility to develop marine aquaculture. There is an interest both by the Georgian government as by foreign direct investors and development organizations in the Georgian aquaculture sector. Considering the example of Armenia this could result in a very strong growth in the coming years. This will however require some major investment to develop fish farming skills inside the population, build infrastructures and facilities adapted to a larger production, diversify the production and reach higher quality and sanitary standard.

This would allow the sector to gain market shares on the local market, as a first step in the development of the sector. The second step is to get certifications and build networks with importers and retailers. The CIS market might be easier to reach in terms of exigences. However, the fish consumption in these countries is still lower than in Europe. But, to reach the very competitive European market, Georgia will need to increase and diversify the production and be irreproachable in terms of quality and sanitary control. Otherwise, the risk is to see the EU ban Georgian fishes and undermine their reputation of the sector.



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COLEACP

Belgium - Avenue Arnaud Fraiteur 15/23 - B-1050 Brussels
France - Rue de la corderie, 5 - Centra 342 - 94586 Rungis Cedex
Kenya - Laiboni Center, 4th floor, P.O. BOX 100798-00101, Nairobi
network@coleacp.org | www.coleacp.org