Foreign Direct Investment Sector Scan
Agribusiness in Armenia

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1. Introduction

In 2016, over one third of the Armenian population lived in rural areas, with agriculture the primary source of income.[1] Significant poverty reduction and food security depend on agriculture and agribusiness achieving substantial growth in jobs, productivity, and income. Agribusiness covers activities that are both upstream and downstream from the production of crops and livestock and that frequently create higher value addition for an economy. However, as in many other developing countries, Armenia lacks the policy environment, as well as the financial and technical means required to effectively move into the production of agricultural inputs, such as seeds, machinery, and fertilizer; the processing of agricultural outputs for food and industrial inputs; and the provision of critical services, such as collection, grading, storage, machinery maintenance and repair, transportation, and marketing.

Definition of FDI

Foreign direct investment (FDI) is an investment made by a company or individual in one country in business interests in another country – either in whole or in part - in the form of either establishing business operations or acquiring business assets in the other country, such as ownership or controlling interest in a foreign company. FDI is defined as direct investor's ownership of 10% or more of the voting power in the direct investment enterprise.

Foreign direct investments can be made in a variety of ways, including the opening of a subsidiary or associate company in a foreign country, acquiring a controlling interest in an existing foreign company, or by means of a merger or joint venture with a foreign company. See Annex 1 for additional FDI terminology and principles.

The purpose of the presented sector scan report is to assess the potential for foreign direct investment (FDI) in agriculture and agribusiness and to make recommendations regarding how to capitalize on any promising FDI opportunities identified. As in many countries, FDI could serve as a potentially transformative force. For example, it could be a source of additional capital, jobs, skills, technology, and international market knowledge that are unavailable domestically; it could help to upgrade a country's production practices, introduce higher standards and certification for food and labour; and it could disseminate innovations such as integrated pest management and geotraceability.

Potential FDI opportunities in any sector or subsector, however, need to be assessed carefully and consider both, (a) attractiveness of value proposition for investors, and (b) the value that can be generated for Armenia. This report finds a low track record for FDI in agriculture and agribusiness, suggesting that the sector's value proposition for foreign investors so far has been limited, while some important investment climate barriers will also likely limit its growth going forward. The enormous international competition for FDI further complicates investment attraction efforts. Bringing "first movers" always takes more reform and promotion effort for Governments than focusing on the expansion of investors who are already present in the country.

Although the sector scan has identified two sub-sectors that could hold a viable investment proposition to potential foreign investors, none of the reviewed sub-sectors currently demonstrates strong enough features that could motivate FDI into a large-scale greenfield

[1] World Bank Development Indicators. Accessed online November 2017 via: https://tradingeconomics.com/armenia/rural-population-percent-of-total-population-wb-data.html

production in the short-run. The risks and benefits associated with targeting potential opportunities therefore need to be acknowledged and assessed carefully.

The policy implication is that the government could preferably conduct a broader sector scan to assess opportunities across multiple sectors (i.e. including ICT, textile and others) before embarking on investment promotion only in agribusiness. Such as broader assessment would provide a more accurate reflection of the potential FDI opportunities, including for attracting investment in export oriented sectors in line with the new government program that puts investment and exports at the centre of the reform agendas.

Another implication is that the relevant investment promotion agency, in the case of Armenia, the Development Foundation of Armenia (DFA), would need to have an appropriate operational model, resources and capacity aligned with the new focus on the promising sectors. Otherwise, the recommendations of the sector scan will not lead to the final and most important part, which is implementation.

Finally, while currently there are likely limits to Armenia's FDI attraction prospects in agribusiness, except for a few opportunities identified later in this report, this does not mean that the sector would not benefit from other governmental support. Many reforms some of which can be derived from this report are needed to nurture local investment to ensure opportunities for more value addition and job creation, including for women. All these efforts will contribute to prospective investment attraction efforts in the medium- to long-term as they will contribute to the overall value proposition of the sector. FDI can still provide a boost to these endeavours, although it may be better directed at the input activities (especially services) and infrastructure expansion to ensure connectivity and efficiency of local producers.

1.1. FDI motivation

Understanding the motivation that leads to FDI decisions is critical for investment promotion. Companies invest in foreign countries to make greater profits. Yet the underlining rationale for establishing foreign subsidiaries are invariably more complex. To grasp business opportunities outside their home country, a firm's decision-making process, designed to deliver its "international strategy", usually starts with identification of the business goals to be achieved by investing abroad. Broadly speaking, FDI can be motivated by three core motives:

- **Resources** – the firm is seeking particular and specific resources that can be obtained at a lower real cost than in the home or other countries (if, obtainable at all);
- **Market** – the firm wants to exploit a foreign market which is of some appeal to it, by supplying the market of the host country, for example, with nitrogenous fertilizers or poultry meat currently mainly imported into Armenia;
- **Efficiency** – the firm seeks access to export markets from a base offering cost-effective and productive factors better than it can achieve in other locations, e.g. cut flower industry.

Companies seeking to expand internationally will often compare several possible locations against a set of predetermined criteria to arrive at an objective determination of the best investment location for them. Criteria may be quantitative and qualitative and typically cover aspects of doing business like access to markets, operating costs, transportation and logistics,

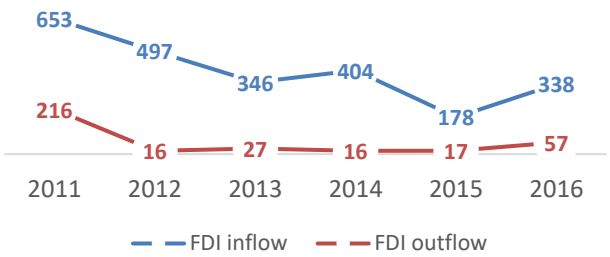
assessment of various risks and many other factors. Investors will benchmark Armenia against other potential locations before making their final location choice. By understanding this process, the governments can – to some extent – influence investors' site selection decisions.

1.2. FDI trends in Armenia

Since its transition to a market economy in the 1990's, Armenia has received very modest amounts of FDI with annual inflows not surpassing US$ 50 mil during the first decade, and remaining at the average annual level of US$ 150 mil until 2005. In the latter half of the 2000's, however, inflows began to increase, peaking in 2008 (US$ 925 mil).[2]

Classified as a landlocked developing country (LLDC),[3] Armenia has been largely bypassed by FDI, which in LLDCs typically focuses on natural resources. As in many other LLDCs, in infrastructure development, investor interest goes beyond pure FDI deals and embraces other forms of involvement, especially public-private partnerships (PPPs). Armenia, too, relied on a PPP to develop, for instance, a hydropower project worth $250 million at Vorotan. The recent FDI inflow trend is mostly declining although there is a positive FDI rebound in 2016 (cf. Figure 1), driven by large individual FDI projects such as the Vorotan hydropower cascade rather than multiple greenfield FDI.

Figure 1 FDI Flows (in mil US$)



Source: World Investment Report 2017, UNCTAD

The largest foreign investors in Armenia are those that have acquired interests in the telecommunications, mining, energy, air transportation, and financial sectors. The privatization of Yerevan's largest hotels, two historic brandy factories, the Zvartnots International (Yerevan) and Shirak (Gyumri) Airports, the telecommunications network, several mining assets, and much of the energy generation and distribution system accounts for the bulk of the foreign commercial presence in Armenia.

Similar to other LLDCs FDI flows are not the most important components of development finance to Armenia where remittances have been a crucial source of external capital flows.

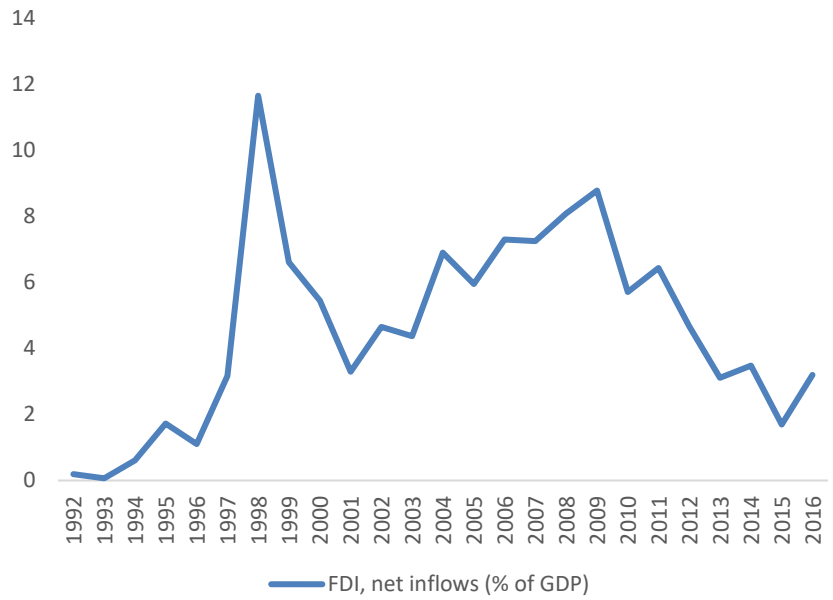
FDI flows as percentage of gross fixed capital formation have never reached the 2008 pre-crisis annual average (20%) and currently run at 8,2% (2015), and 15,2% respectively (2016), suggesting that FDI had lost its previous importance in Armenia's economy. Similarly, net FDI

[2] National Bank of Armenia, Balance of Payments

[3] United Nations Conference on Trade and Development List of Land-locked Developing Countries. Available online: http://unctad.org/en/pages/aldc/Landlocked%20Developing%20Countries/List-of-land-locked-developing-countries.aspx

inflows as a percentage of GDP have been in downturn since 2009 and dropped to 1,7% in 2015 (Figure 2).

Figure 2 FDI, net inflows (% of GDP)



Source: World Investment Report data

The official FDI statistics may not provide a complete overview of the FDI inflows as some of the investment projects have been run and/or funded by the Armenian diaspora. There is no record kept about the amount of diaspora FDI; some diaspora originated FDI may be in fact portfolio investment in Armenia which was later transformed into productive direct investment. Major sources of investment in the Armenian economy include the Russian Federation ($3,170 million USD), followed by France ($727 million USD), Greece ($479 million USD), United States ($378 million USD), Lebanon ($365 million USD), Germany ($357 million USD) and Argentina ($334 million USD). Russia, Switzerland and Luxembourg were the three biggest investors in Armenia in 2014-16. The number of announced new greenfield FDI projects have, however, decreased significantly recently (Figure 3).

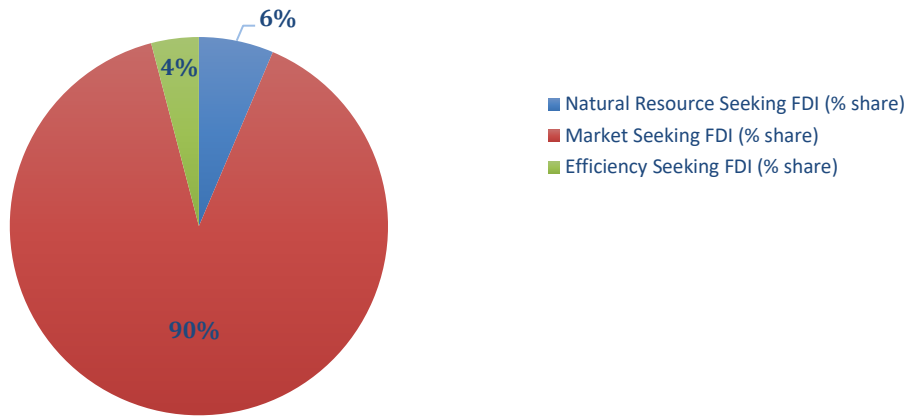
Figure 3 Number of announced new greenfield FDI projects

	2011	2012	2013	2014	2015	2016
# of GF projects	25	23	24	13	5	7

Source: World Investment Report 2017, UNCTAD

Moreover, the share of efficiency-seeking investment remains low. According to the "Concept Paper of the Investment Policy of the Republic of Armenia" (October 2015), GoA is seeking to attract more efficiency-seeking FDI given its potential to significantly upgrade knowledge and domestic productive capacity and help the local economy integrate more into international value chains. However, efficiency-seeking FDI still represents a small portion of overall foreign investments flowing into Armenia, both in regards to volumes and number of projects. This has implications on the sector targeting. Priority should be given to investment in sectors that positively impact exports, meaning to efficiency-seeking FDI sectors, or investment in goods and services that these sectors use as production inputs.

Figure 4 Greenfield FDI by number of projects in Armenia (Jan 2003 to Nov 2016)



*Source: World Bank Calculations based on **fDi** Markets and the Observatory of Economic Complexity data.*

To a certain degree, the geographic position of Armenia constrains its ability to expand its economy through trade and to take part in the international production systems of transnational companies (TNCs). All goods must transit through Georgia due to the embargo imposed by Turkey and Azerbaijan. For distant markets, access to sea is critical because land transport costs are much higher than those of shipping by sea. In the case of Armenia, where most of agricultural exports go to the Russian market and the goods are often of perishable nature, road transport is a viable option to sea transport, yet the transport costs along with border crossing and transit customs clearance capacities remain an issue.

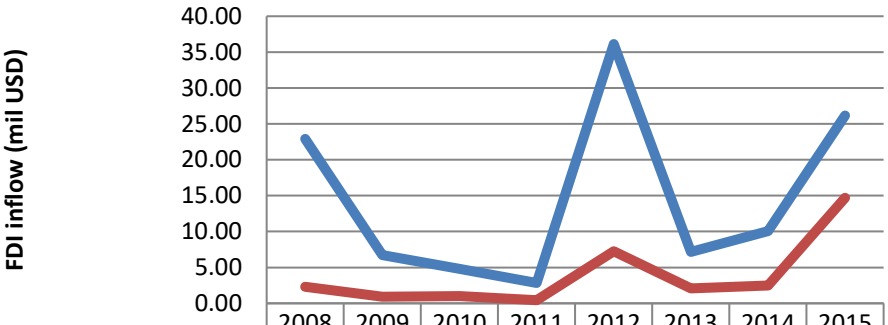
Long distances from the sea and ports entail high transport costs. According to UNCTAD estimates, LLDCs spend almost twice as much on average for transport (and insurance services) – as a percentage of their export earnings – than developing countries taken as a whole, and three times more than developed economies.[4] High transport costs therefore make Armenia less attractive for FDI that relies on trade, i.e. efficiency seeking FDI, yet, this type of investment is the most important one for the country, suggesting that reform efforts in investment, trade, PPPs and other policy domains should align around this investment type.

[4] United Nations, "Implementation of the Almaty Programme of Action: Addressing the Special Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries," Report of the Secretary General. July 2012. (http://unohrlls.org/UserFiles/File/LLDC%20Documents/67%20210%20English.pdf)

1.3. FDI in agriculture (agribusiness)

FDI in agriculture in Armenia has been negligible (Figure 5), with most recent projects going to viticulture and winemaking sectors. The share of FDI in agriculture in total FDI has on average been around 2%.[5]

Figure 5 FDI in agriculture in Armenia (2008 – 2015)



	2008	2009	2010	2011	2012	2013	2014	2015
FDI in agriculture	22.92	6.70	4.78	2.84	36.13	7.17	10.05	26.16
% of total FDI	2.29	0.92	0.99	0.43	7.27	2.07	2.49	14.70

Source: NSSA, 2016

Interestingly, none of the FDI projects in agriculture (agribusiness) which entered Armenia in the past decade were registered by the Financial Times **fDi** Markets, the most comprehensive online database of cross border greenfield investments available (Figure 6), suggesting either low visibility of FDI projects or insignificant size for each of the greenfield projects.

Figure 6 Number of recorded greenfield projects in agribusiness

Country	**Number of greenfield projects**	**Subsectors**	**Value of FDI (mil USD)**	**Number of jobs**
Georgia	4	Fruits & vegetables (2), dairy (1), grains & oil (1)	511	2141
Belarus	6	Fruits & vegetables (3), dairy (1), grains & oil (2)	86	654
Iran	1	Dairy (1)	45	270
Russia	73	Fruits & vegetables (22), dairy (19), grains & oil (21), crop (7)	8796	22168
Turkey	28	Fruits & vegetables (7), dairy (10), grains & oil (8)	3541	4916
Armenia	**0**	**N/A**	**0**	**0**

*Source: **fDi** Markets (data for Jan 2003 – Jun 2017)*

A small share of FDI in agriculture is, however, not unusual even in countries with successful agricultural export sectors such as the USA, New Zealand, Argentina, China, India, Thailand or Vietnam (cf. Figure 7). In all countries, investment in agriculture tends to be dominated by local investors as these are usually better positioned to access land, interface with local farmers, understand local climate, consumer tastes, etc. Foreign investors are often wary of investing in sectors where they may be subject to price controls or export restrictions by the government as often happens in the case of agriculture. The value of FDI in agriculture is also typically low compared to investments in manufacturing or extractives (with the exception of

[5] Exceptionally high share of FDI in agriculture as % of total FDI in 2015 was caused by low total FDI inflow rather than high FDI in agriculture.

large M&A deals or investments in buying and cultivating large tracts of land as seen in Latin America or Africa, but these types of investment cannot be realistically expected in Armenia).

A small domestic market of Armenia (ranked 118 out of 138 countries)[6] generally precludes significant market driven FDI flows. Like any other investment FDI requires a reasonable return on capital invested. There often are alternative strategies that allow the firm to access a foreign market or exploit its resources with higher return on investment and/or lower business risks. Instead of engaging in FDI, the firm can decide to resort to international outsourcing (for instance, in case of a ready-to-use vegetables production), franchising & licencing (as often the case of international food chains or beverages) or simply international trade (for example, the case of agricultural machinery imports).

1.4. International trends and implications for Armenia's investment prospects

Globally, trends in FDI in agriculture and food processing share some similar features and investment patterns:

- Most FDI in food processing stems from **cross-border M&As**. A large part of the deals are concluded by TNCs already involved in food processing and trade, emphasising the importance of vertical integration.[7]

During its economic transformation Armenia has attracted a few privatization-based FDI M&As projects in agribusiness, notably in the beverage sector (e.g. Ararat Brandy Company acquired by Pernod Ricard Group), yet there is a minimal prospect for further M&As. Privatization in agriculture has been largely completed and the existing domestic private companies prefer independent operation or are not large enough to attract interests of TNCs. The number of existing large domestic private agricultural producers is relatively small; most of agricultural output is generated by individual farmers and households (90% of the gross agricultural product is produced by small size households rather than private firms).

- In production, non-equity participation of TNCs in the form of **contract farming** or **production outsourcing** takes place more frequently than greenfield FDI. Contract farming has become the dominant form of TNC involvement to procure high quality low priced agricultural commodities, in particular when a specific quality and standard is required, commodities are easily perishable, efficient logistics and processing is needed and TNCs can increase control down the supply chain. It is less capital-intensive and less risky as production risk is spread over a large number of suppliers.

Despite its complex and mountainous relief, Armenia's agricultural production conditions are good; for instance, solar radiation, the most important climate factor, is very intense.[8] The

[6] The Global Competitiveness Report 2016-17, World Economic Forum 2016

[7] Heumesser, Ch., Schmid, E.: Trends in Foreign Direct Investment in the Agricultural Sector of Developing Countries: A Review, Vienna, 2012

[8] At noon in the Ararat valley, each cm2 of the surface receives on average 1.46 calories of heat per minute. The intensity of solar energy increases in line with the increase in altitude. At 3,000 m it increases to 1.54 cal/cm2. The annual duration of sunlight in the Ararat valley and Sevan basin reaches about 3000 hours; in the mid-mountainous forest areas of the north – about 2000 hours. Based on FAO Armenia Country Profile (http://www.fao.org/ag/agp/agpc/doc/counprof/Armenia/Armenia.htm).

access to consolidated arable land is, however, very limited given the existing land ownership structure and supply side constraints for food processing industries.[9]

However, the low farming intensity in Armenia, fluctuating seasonal supply of agricultural raw commodities and inconsistent volume and quality of supplies do not currently make contract farming an attractive value proposition to foreign investors. Poor transport links are also a barrier for this investment mode.

Anecdotal evidence shows that some non-equity investment has taken place (e.g. French Bonduelle has been sourcing part of its canned vegetables production for the Russian market in Armenia, Coca Cola Hellenic Bottling Company Armenia is a franchised bottler of The Coca Cola Company), however, the scope of the investment is small and difficult to scale up (non-alcoholic beverages are produced for the domestic market only; processed vegetable production is constrained by limited volume of locally produced raw materials).

- **Private institutional investors** (investment banks, hedge funds, private equity groups, sovereign wealth funds, etc.) have also shown interest in developing countries' agricultural sectors, holding both short and long investment positions. However, institutional investors are rather conservative investors who are unlikely to venture into new investment projects in a country whose natural endowments are subpar to alternative international investment locations. There is no known case of FDI by private institutional investors in Armenia.

To summarize, FDI in agriculture and related downstream processing industries in Armenia has been negligible and several important policy and regulatory barriers remain. Apart from a few privatization related projects (e.g. Pernod Ricard Group in brandy sector) and some non-equity investment (e.g. Coca Cola franchise), FDI in the agricultural sector is almost non-existent. Contract farming will likely remain limited given the currently small size and insufficient quality of local produce. Some recent diaspora funded investment projects (e.g. in berry or nut production) have taken place, yet indigenous enterprises are at an early stage of development across most sectors.

The Government of Armenia's desire to increase FDI in agribusiness is driven by three concerns:[10]

[9] Access to land and water is the key constraint for FDI in primary agricultural production. After the breakup of the Soviet Union, Armenia started a process of redistribution of land, farm animals, tools and machinery. The land was divided into small plots (from 0.2 ha - in the regions of intensive field-husbandry - to 1.5 ha - in the highlands) and distributed among the farmers. Only pastures were privatised. Farmers began to cultivate small plots of land. The scarcity of tools and machinery, absence of fertilizers, seeds, chemicals, and fuel wood had a negative effect on land use. Much of the area under crops was under-utilized and some of it was eventually abandoned. The system of agricultural management had a negative impact on crop production as well. While at the time the land reform functioned as an important buffer or cushion against the negative supply shock and poverty, this function seems to have diminished over the years, mainly because of the weak bargaining position of peasant farmers in markets. Currently, the high fragmentation of land is the main obstacle to FDI in a large scale primary agricultural production – a potential investor does not have an easy access to high quality (irrigated) arable land and would need to spend considerable time and resources to secure a consolidated piece of land. (FAO Armenia Country Profile).

[10] Based on Armenia Development Strategy for 2014-2025, RA Rural and Agriculture Sustainable Development Strategy 2010-2020 and interviews with representatives of Ministry of Economic Development and Investments, Ministry of Agriculture and Development Foundation of Armenia.

a) **need for more FDI and economic diversification** (the percentage of FDI going into agribusiness is a very small proportion of total FDI);
b) **need for more value-addition** (much of existing agribusiness in Armenia is not adding much value: with a few notable examples, companies are merely buying raw produce from farmers and households, doing basic primary processing for the domestic market or exporting non-value-added commodities, e.g. fresh fruit or juices);
c) **need for job creation, particularly among women** (with unemployment rate reaching almost 20%, and women representing a larger share of the registered unemployed).

While these are all legitimate and important policy objectives, the above highlighted international trends in agribusiness FDI and non-equity modes of investment suggest that currently there are limits to Armenia's FDI attraction prospects in the sector, with the exception of a few opportunities identified later in this report. This does not mean that the sector would not benefit from additional policy, regulatory and other support. As noted earlier, many reforms are needed to nurture local investment in the sector to ensure opportunities for more value addition and job creation, including for women. All these efforts will contribute to prospective investment attraction efforts in the medium- to long-term as they will contribute to the overall value proposition of the sector. FDI can still provide a boost to these efforts, although it may be better directed at the input activities (especially services) and infrastructure expansion to ensure connectivity and efficiency of local producers.

Figure 7 % of FDI stock in agriculture in the world's top 10 net exporters of agricultural products

Top Global Agriculture Net Exporters	% of Total Inward FDI Stock in Agriculture, Forestry & Fishery
US	0.15%
Netherlands	0.06%
Australia	0.21%
New Zealand	3.69%
Argentina	5.99%
Brazil	0.97%
Chile	0.93%
Mexico	0.42%
China	2.05%
India	0.26%
Thailand	0.06%
Vietnam	1.71%
Indonesia	1.72%
Malaysia	2.45%
Philippines	0.11%
Weighted Average	**0.99%**

Source: UNCTAD/ITC Investment Map; OECD FDI Statistics (2012 figures)

FDI also does not substitute public investment. To meet its food demand and economic development goals Armenia will need to see substantial investment in primary agriculture and necessary downstream activities, as well as in public goods like roads, electrification or irrigation. Most of the investment has to come from farmers themselves, but should be supported by public investment. Public investment should provide agricultural R&D; ensure agricultural institutions, extension services, infrastructure, power, storage and irrigation; and

support education, sanitation, water supply, food safety standards. FDI can contribute in bridging the investment gap, but government funding remains important.

2. Investor targeting

Investor targeting (i.e. proactively reaching out to investors identified as being desirable and likely to invest, in order to present them with tailored business cases for selecting a given location) is the main proactive element of any country's wider investment promotion strategy. Companies seeking to expand internationally are likely to compare several possible locations against a set of predetermined criteria to arrive at a determination of the best investment location for them. In general, criteria used by investors to compare locations for investment in any sector may be both quantitative and qualitative and typically cover aspects of doing business like access to markets, operating costs, various forms of risk, and quality of life. In the long term, the Government of Armenia can improve the country's competitiveness by improving its investment climate, infrastructure, work force, and policy support for attractive sectors. In the short term, the Government can improve its chances by making sure that (1) Armenia makes it onto potential investors' lists of possible investment locations and (2) potential investors have access to the most complete and positively framed information possible. Targeting seeks to accomplish these two tasks by seeking out and directly engaging investors identified to have a high potential for interest in a particular location.

Without well planned and proactive targeting, the country surrenders some of the little influence a government can wield over investor site selection decisions, and government allocation of valuable land assets may be driven by unsolicited proposals from investors of suboptimal merit. Targeting, if planned and delivered properly, can provide the Government of Armenia with some influence over the types of investment attracted, and whether successful or not, it invariably provides valuable insights into what Armenia can do to improve its attractiveness to investors. Without proactive outreach, Armenia's investment promotion depends on investors to "make the first move." However, many developing countries suffer from poor images or weak investment track records and may not be considered by the most attractive investors. These countries struggle to attract capital, jobs, technology, skills, and international business connections. Global evidence shows that outreach may be the only way for these countries to attract sufficient interest from potential investors who would otherwise not consider their locations.

Strategic targeting is generally regarded as the most effective method for the promotion of FDI, regardless of the economic background of the country. Empirical evidence demonstrates that targeting has been successful both in small regions and large countries, in emerging and mature economies, and by investment promotion agencies (IPAs) regardless of budget size.[11]

Investment targeting in agribusiness presents a particular challenge, with its diversity of subsectors and complicated stakeholder relationships. Agribusiness covers low-margin production of commodities, as well as R&D-intensive production of inputs, such as seeds and fertilizers or agribusiness related services (e.g. logistics, financing or extension services), requiring highly varied approaches to investment. Even the commodities covered range from rapeseed to livestock, often with completely distinct value chains, making it difficult for an investment promotion agency to maintain an adequately knowledgeable staff for agriculture and agribusiness as a whole. Furthermore, agriculture, and its implications for land and impact on the rural poor make agribusiness more controversial than most sectors.

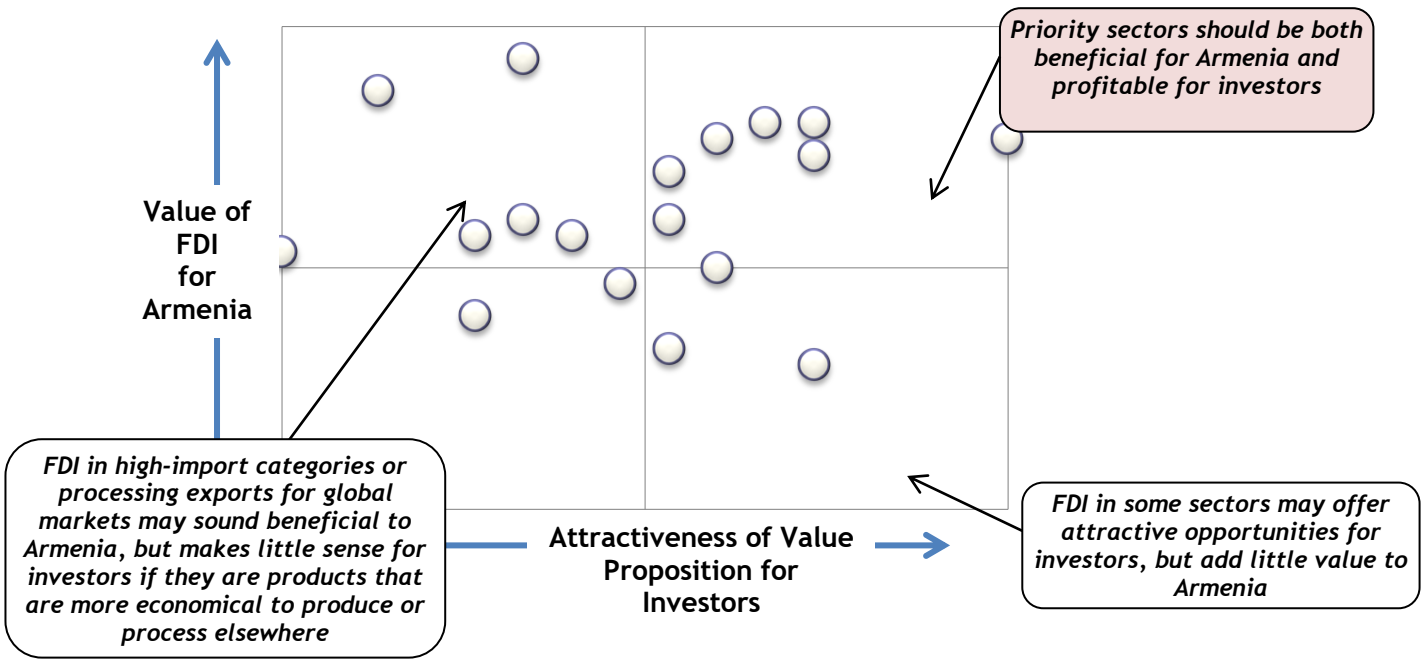
[11] See, for instance, Harding, T. and Javorcik, B. S. (2011), *Roll Out the Red Carpet and They Will Come: Investment Promotion and FDI Inflows*. The Economic Journal, 121: 1445–1476.

2.1. Sector scan – a tool for identification of competitive agricultural subsectors for FDI

This report describes the results of a review of agribusiness **sub-sector competitiveness for FDI** (known as a "sector scan") that has been undertaken by the World Bank. The sector scan attempts to identify those agricultural subsectors that have both sufficient competitiveness to attract FDI and that are likely to bring the desired development impact considering the current conditions in the international economy and Armenia. The scan is the first step towards investor targeting. By selecting the agricultural sub-sectors where FDI will add most value to Armenia and in which Armenia has a strong-value proposition to offer investors, the outcome of the sector scan is to provide the Development Foundation of Armenia (DFA) with a list of sub-sectors that the agency may target through proactive outreach effort (Figure 8).

As a principle, the priority sectors for promoting FDI should be always those that offer the most value to Armenia and the most value to investors (top right quadrant of chart). While attracting FDI into sectors that have high imports or that have the potential to export to regional and global markets may sound beneficial to Armenia, investing in those sectors could make little economic sense for investors, for example if they are products that are more economical to produce or process elsewhere (i.e. the commercial economics of the project do not stack up). On the other hand, FDI in some sectors may offer attractive opportunities for investors, but add little value to Armenia in terms of jobs, exports or productivity effects in line with national development objectives.

Figure 8 Illustrative example of framework for selecting priority sectors



In order to reflect government objectives for FDI attraction and the need to ensure that Armenia is a competitive location, the following methodological framework has been used to evaluate and select the priority agricultural subsectors for FDI promotion:

Figure 9 Sector scan methodological framework

To what extent:	Score	Evidence
1. Will additional FDI in this sector add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	1-5	• Quantity & quality of existing farmers/producers, SMEs and investors already operating in the sector; impact of new investors on local SMEs in the sector
• Will new investors create additional jobs? Will investment contribute to job generation among women?	1-5	• Potential jobs generated by new investments in the sector, in particular among women
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	1-5	• Improved opportunities for domestic firms to supply their goods/services to foreign investors and improved incomes generated by new investments in this sector
• Will new investors create increased export revenues or reduce imports?	1-5	• Potential export revenues or reduced imports generated by investments in the sector
• Will new investors improve the performance of the value chain as a whole?	1-5	• Potential impact on other parts of the value chain (improved inputs or improved sales opportunities for herders/farmers)
SUBTOTAL	**5-25**	
2. Does investment in this sector offer an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	1-5	• Demand, supply & price trends in Armenia and neighboring countries
• Is the global market attractive?	1-5	• Demand, supply & price trends in major global markets
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1-5	• Availability of suitable raw materials, land, climate, proximity to key markets, etc.
• Does Armenia have competitive infrastructure?	1-5	• Availability and cost of power, transport, manufacturing sites, etc.
• Does Armenia have competitive skills & supportive services?	1-5	• Availability & productivity of suitable workforce and supporting services
• Does Armenia offer a conducive business (regulatory/institutional) environment?	1-5	• Absence of regulatory of institutional barriers that might deter investors or hinder their performance
SUBTOTAL	**6-30**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

2.2. Identification of competitive agricultural subsectors

The sector scan has considered the following key agricultural sub-sectors with the largest output:

- Aquaculture
- Fruit & vegetable production (open field and greenhouse production)
- Flower production (greenhouses)
- Dairy sector (in particular cheese production).

Within these four sub-sectors, each value chain has been analysed by looking at a range of goods and services necessary for an agricultural product in each of the key subsectors to move from the farm / producer to the final customer or consumer (see Figure 10). The agricultural value chain typically includes inputs, production and primary and secondary processing. Following this approach, a total of sixteen sub-segments were included in the sector scan and were then assessed and prioritized according to the value addition to Armenia and value proposition to foreign investors using the methodological framework described in Figure 9.

Effective investment promotion needs to focus on sectors where Armenia represents a viable location in competition with other locations.

The sub-sector review and analysis is based on interviews with a cross-section of policy-makers, investors and other stakeholders as well as existing studies of the value-chain needs

and opportunities (see Annex 3 for a full list of interviewed experts and private sector representatives).

Figure 10 **Value chain in selected key sub-sectors**

<table>
<tr><th rowspan="2">Sub-sector</th><th rowspan="2">Inputs</th><th rowspan="2">Production</th><th colspan="2">Processing</th></tr>
<tr><th>Primary</th><th>Secondary</th></tr>
<tr><td>Aquaculture</td><td rowspan="2">12. Feed crops farming & feed processing

13. Animal meds/supplements, veterinary services</td><td>1. Intensive fish farming</td><td>2. Fresh fish processing (cooling, freezing, packaging)</td><td>3. Secondary fish products (canning, production of by-products, e.g. fish oil)</td></tr>
<tr><td>Dairy</td><td>4. Intensive dairy cattle breeding & ranching</td><td>5. Milk collection & treatment centres</td><td>6. Dairy products (cheese) manufacturing</td></tr>
<tr><td>Floriculture</td><td rowspan="2">14. Seed production

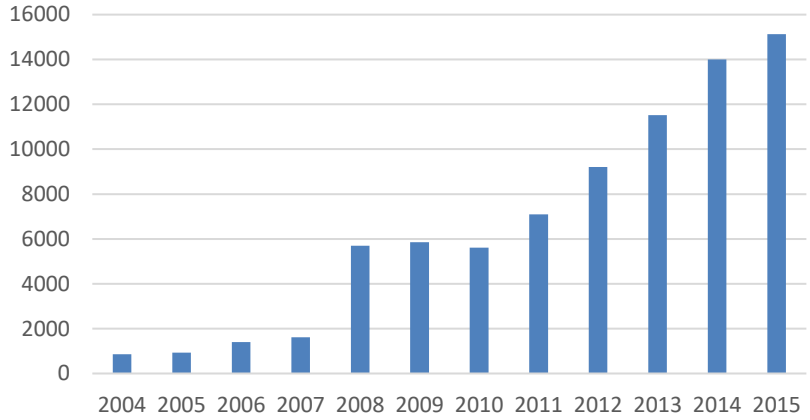
15. Agrochemical production (fertilizers, pesticides)</td><td>7. Flower growing</td><td colspan="2">8. Grading, packing, pre-cooling and cold storage, transportation</td></tr>
<tr><td>Fruits & vegetables</td><td>9. Intensive fruit & vegetable farming (9a) open field & (9b) greenhouses</td><td>10. Fruit & vegetable grading, storage / packing operations</td><td>11. Fruit & vegetable processing / freezing operations</td></tr>
</table>

3. Sector scan results

3.1. Aquaculture sector

Aquaculture production in Armenia (including caught and/or captive bred fish, crustaceans and products derived from them) is one of the dynamically developing sectors of Armenia's economy with high production and export growth potential. The industry has already demonstrated a high growth rate and marked profitability. Over the past decade, average annual production growth rate was 40 percent (Figure 11).

Figure 11 Fish production in Armenia (tons)



Source: RA National Statistical Service, RA Ministry of Agriculture

The main export products are chilled fish and crayfish. The main export destinations are Russia (chilled fish) and the EU countries (crayfish), and the export dynamics follow the increase in fish production output (Figure 12).

Figure 12 Fish export from Armenia (tons)[12]

Year	2009	2010	2011	2012	2013	2014	2015
Export (tons)	215	429	1600	1800	2400	2700	2013

Source: RA Ministry of Agriculture, Fish Farmers Union of Armenia

The aquaculture sector value chain consists of fish feed inputs, hatcheries, intensive fish farming and fish processing.

Fish production in Armenia largely depends on imported feed, although domestic producers also supply the market. The fish feed imports are mostly motivated by concerns of feed quality and safety. At the same time, fish feed is the single largest input cost – fish feed accounts for over the half of the expenses entailed in fish production (some producers claimed up to 70% of the overall production cost). The cost difference between domestically produced and imported feed is usually between 10-15%, however, unpredictable customs clearance procedures could further increase the input costs.[13]

[12] Fish Farmers Union of Armenia's figures are more conservative that data presented by the MoA.

[13] The application of „reference prices" rather than a declared transaction price usually increases the customs value by almost 40% and hence the customs duties and VAT on imported feed are distorted. This, in turn, leads to an increase in feed prices on the domestic market.

In 2013, there were over 250 fish farms in Armenia, most of them located in two regions (Ararat and Armavir). Total fish farming operations covered 3542 ha total water surface (four largest producers occupied almost 60% of the surface). Industrial, intensive fish breeding is the prevailing mode of operation, although not every producer has access to modern technologies for intensive fish breeding and some operations are outdated. Most of the existing fish production and export is fresh (chilled) fish, crayfish (wild caught, but not captive bred fish) and caviar. Export of fresh fish implies higher storage and transportation costs; fresh fish is also very perishable and the shelf life of the product is short, which carries higher business risks than production of processed products (e.g. sliced and packaged fish fillets, brined, dry-smoked or smoked fish products, and caviar). The major proportion of exports go to Russia (92,6%), yet the export of fish products from Armenia to Russia makes up only 0,2 percent of total Russian consumption. Most Armenian fish product is exported by air (passenger airplane) and by refrigerated trucks. The average cost of the air transport is almost double to that via trucks (US$ 800 vs. US$ 400-500 for the Yerevan - Moscow route), yet the transit route via Georgia is significantly slower than air transport, taking several days instead of several hours which could negatively impact on the quality of exported products.

Parental stock reproduction is usually organized by local aquaculture farms (approximately 43% of all farms are involved in the reproduction part of the value chain and supply the hatchlings to the remaining producers).

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, very little demand has developed for such storage. Nevertheless, some of the leading domestic transport and logistics companies (Spayka, Ice House) have recently started providing new cold storage and refrigerated transport services which are likely to meet growing demand in the future.

Access to water is the most critical factor for future sector development and investment. To promote environmentally-friendly technologies and efficient fish farming practices, in 2013 the Government introduced a requirement for businesses to use semi-closed water cycle farming. The eco-saving technologies require, however, a substantial investment that many domestic producers are unable to bear.[14] Water use is also subject to a water permit with a limited time validity (3 years) which limits the possibilities in developing long-term business plans and investment in the sector. At the time of writing this report, there was a Government ban on issuing new water permits, which further limits new greenfield investment in the sector. The drying out of artesian springs, which has many social consequences for nearby settlements, is being linked to aquaculture and the Government is likely to follow stricter water management rules in the future.

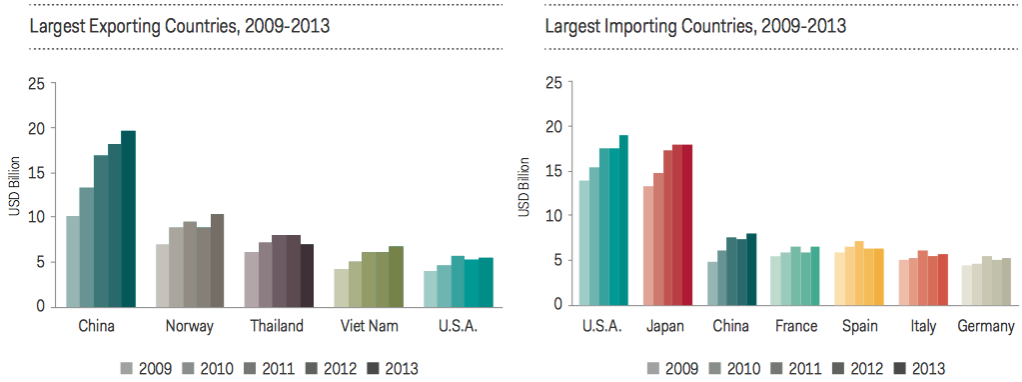
In addition, ongoing discussions about changes in aquaculture farming land reclassification could lead to further significant increases in land prices, land lease

[14] In 2015, for instance, one of Armenia's largest fish farms Unifish, was declared bankrupt as a result of Government's campaign to shut down illegal wells consuming huge amounts of artesian water (http://hetq.am/eng/news/63631/large-fish-farm-in-armenia-goes-bankrupt-fish-farmers-union-prez-criticizes-ministry-for-sector-indifference.html).

payments as well as land tax. Also, insufficient clarity of fish product classification leads to tax and administrative problems, and in general creates obstacles for the development of the aquaculture sector.

Domestic, regional and global demand for fish products is growing. Aquaculture is one of the fastest growing food producing sectors. Aquaculture accounted for approximately 45% of total seafood production in 2015 compared to around 15% in the early 1990s. Globally, aquaculture supplies more than half of all seafood produced for human consumption and this share is expected to continue to rise. Asia is by far the largest aquaculture producer accounting for 89% of total production in 2015. The Americas and Europe accounted for 4.3% and 3.9% of total aquaculture production, respectively. Asia is the only region that produces more fish from aquaculture than capture fisheries. In 2015, there were eight countries with total aquaculture production greater than 1.0 million tons (Figure 13). Together, these countries accounted for 87% of all farmed fish food production.[15] The majority of aquaculture production is concentrated in several dozen species. The largest farmed species by volume is carp, which represents around 30% of total aquaculture production. Other large species include tilapia, shrimp and oyster. While the volume of Armenian production is very small in comparison to some of the global leaders, the domestic aquaculture sector produces niche market fish (trout, crayfish and sturgeon) that is not often produced in other countries.

Figure 13 Largest exporting and importing countries (2009-2013)



Source: United States Seafood Market Report, 2017

Per capita consumption of seafood has increased steadily since the 1960s, reaching an estimated 20,4 kg in 2015. However, consumption varies widely among regions, reflecting differences in the availability of fish and other foods, local preferences, income levels and other factors. Annual per capita consumption of fish has grown steadily in developing regions, but is still considerably lower than in developed regions.

China has been responsible for most of the increase in per capita fish consumption in the last two decades, owing to the substantial increase in its fish production, in particular from aquaculture. Excluding China, annual per capita fish consumption in the rest of the world was approximately 15,3 kg in 2013. According to the OECD-FAO Outlook, total consumption is expected to increase to approximately 178 million tons in 2025.

[15] United States Seafood Market Report, Íslandsbanki Research, 2017

There is little data on global FDI flows in aquaculture as the statistics are usually masked through aggregation with FDI flows in the agricultural sector in official collections of statistics. In many countries, significant barriers on FDI in the fisheries sector (in particular wild capture) remain for sovereignty reasons, the perceived need to maintain surveillance and enforcement control over the fishing fleets operating in their sea exclusive economic zones, and protection for the domestic fishing industry and food security.[16] In contrast with the harvesting sector, there are fewer restrictions on FDI in the processing and aquaculture sectors. TNCs are one of the primary actors of the global aquaculture sector – Figure 14 shows the thirteen largest TNCs in the seafood industry that control a significant part of the global value chain.

Figure 14 Top TNCs in seafood industry

Company	Headquarters	Market
Maruha Nichiro	Tokyo, Japan	A globally operating seafood company active in most segments of seafood production
Nippon Suisan Kaisha (Nissui)	Tokyo, Japan	A globally operating seafood company active in most segments of seafood production
Thai Union Frozen Products	Samutsakorn, Thailand	The world's largest canned tuna producer and fifth largest shrimp farmer (2011)
Marine Harvest	Bergen, Norway	The world's largest salmon producer and the most actively traded stock in the seafood sector
Dongwon Industries	Seoul, South Korea	A national (75% of Korean canned tuna market share) and world leading tuna producer (together with Thai Union)
Skretting	Stavanger, Norway	A leading salmon feeds producer
Pescanova	Pontevedra, Spain	The world's second largest shrimp producer and the largest fishing company in the European Community
Austevoll Seafood	Storebø, Norway	The world's largest fishmeal company and second largest salmon producer
Pacific Andes	Hong Kong, China	The world's second largest fishmeal producer
EWOS	Oslo, Norway	A leading salmon feeds producer
Kyokuyo	Tokyo, Japan	Similar to Maruha Nichiro and Nissui, but with relatively more limited operations
Charoen Pokphand Foods (CP Foods)	Bangkok, Thailand	The world's largest shrimp farmer and the largest shrimp feeds producer
Trident Seafood	Seattle, USA	The largest seafood company in North America

Source: Österblom H, Jouffray J-B, Folke C, Crona B, Troell M, Merrie A, et al. (2015) Transnational Corporations as 'Keystone Actors' in Marine Ecosystems. PLoS ONE 10(5): e0127533.

Existing Armenian aquaculture operations create only a very small number of jobs, a typical 2 ha fish farm employs only 5 staff throughout the year in fish production and an additional 5 people in season. The gender issue is not relevant in this sector.

[16] Globalisation in Fisheries and Aquaculture: Opportunities and Challenges, OECD, 2010

Despite the growing output of the Armenian aquaculture sector, FDI opportunities in aquaculture are currently slim. With limited access to water resources, potential investors would need to acquire existing aquaculture operation in order to obtain a water use permit. Given the small size of existing operations, the initial investment in modern intensive fish breeding technologies would not generate a high return on investment (ROI) as the economies of scale would not be sufficient. According to information collected during the scoping mission, a growing number of existing aquaculture producers are willing to sell their operations – raising costs associated with tighter environmental regulations requiring use of new water and environment saving technologies bring the profit margin down.

DFA in cooperation with Ministry of Nature Protection of RA promotes several aquaculture investment projects worth estimated US$ 8,36 mil; however, these are more business ideas than well-structured investment projects with clear value propositions that could be immediately promoted to potential investors. The investment project proposals (www.investmentprojects.am/media/2017/05/244.pdf) do not contain sufficient preliminary business information for potential investors to consider investment. Moreover, while these business ideas may catch the eye of the Armenian diaspora community looking for a homeland business opportunity, the size of the proposed projects is too small to be of interest to any existing TNC or large company operating in the aquaculture sector elsewhere.

1. Intensive fish farming		
To what extent:	Score	Evidence
Will additional FDI in intensive fish farming add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	3	• New FDI could bring advanced technologies and new intensive fish breeding techniques that are currently unavailable in Armenia.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	1	• Investment projects of the size of existing aquaculture operations have little new jobs generation potential; for a substantial employment impact FDI would need to operate on a much larger scale which is unlikely to be achieved given the existing constraints.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	2	• New entrants are unlikely to generate significant supplier opportunities for domestic firms; some additional revenues may be obtained by purchase of imported fish feed.
• Will new investors create increased export revenues or reduce imports?	4	• New FDI could positively impact on export revenues as most of fish production is export oriented.
• Will new investors improve the performance of the value chain as a whole?	4	• Additional FDI could positively impact on upgrading of the whole value chain, in particular on parts which are currently not well developed (storage, refrigerated transport, fish processing).
SUBTOTAL	**14**	
Does investment in intensive fish farming offer an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	3	• Existing domestic per capita consumption of fish products is ten times below the EU or Russian average; which indicates that there is potential for Armenian domestic market for fish to grow.
• Is the global market attractive?	3	• The Russian market provides attractive business opportunities; Armenian products are competitive in the Russian market because farming the main export species (sturgeon and trout) in Russia's cold climate and cold waters is more difficult and economically less productive.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• Limited access to water resources is a major investment impediment, in particular for a large scale FDI
• Does Armenia have competitive infrastructure?	2	• High transport costs due to poor country connectivity increases operation costs.
• Does Armenia have competitive skills & supportive services?	2	• Limited skill base for a large scale FDI operations.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	2	• New environmental and water management regulations increase production costs, inconsistent tax/customs rules impact on cost of fish feed, land classification and fish products classification negatively impact on production costs.
SUBTOTAL	**13**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

2. Fresh fish processing		
To what extent:	Score	Evidence
Will additional FDI in fresh fish processing add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	1	• New fish processing technologies would slightly improve the value added in the aquaculture sector as many existing domestic firms already engage in basic fresh fish processing (slicing, packaging, labeling).
• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• Fresh fish processing industry is a moderately labour intensive sector that could contribute to new job creation, including the employment of women.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	2	• New fresh fish processing facilities mean only slightly improved sales opportunities for domestic firms as most of them engage in basic fish processing already.
• Will new investors create increased export revenues or reduce imports?	3	• New FDI could positively impact on export revenues as most of processed fish production is likely to be export oriented.
• Will new investors improve the performance of the value chain as a whole?	3	• Additional FDI would only moderately impact on upgrading of the whole value chain (storage, refrigerated transport), as basic fish processing is already developed in Armenia.
SUBTOTAL	**12**	
Does investment in fresh fish processing offer an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	3	• Existing domestic per capita consumption of fish products is ten times below the EU or Russian average; which indicates that there is potential for Armenian domestic market for fish to grow.

• Is the global market attractive?	2	• The Russian market provides attractive business opportunities, share of Armenian processed fish products is currently <1%.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• Existing domestically produced fresh fish output is insufficient for a new stand-alone fresh fish processing facility; fish for processing would have to be imported, which makes the processing economically unviable. Fresh fish processing is typically vertically integrated with fish breeding and production.
• Does Armenia have competitive infrastructure?	2	• Manufacturing sites are available although not necessarily close to the existing fish breeding operations. High transport costs negatively impact on ROI.
• Does Armenia have competitive skills & supportive services?	2	• There is a very limited skill base in the fish processing industry.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	2	• Food safety standards which are non-compliant with international standards and control may discourage investment; otherwise no significant regulatory barriers exist.
SUBTOTAL	**12**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

3. Secondary fish products

To what extent:	Score	Evidence
Will additional FDI in secondary fish processing add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	4	• New fish processing technologies would significantly improve the value added in aquaculture sector as most of the existing domestic firms produce/export only fresh fish without additional advanced processing.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• The fresh fish processing industry is a moderately labour intensive sector that could contribute to new job creation, including employment of women.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	4	• New fish processing facilities mean improved sales opportunities for domestic firms that could have their fish processed in the country as an alternative to fresh fish sales.
• Will new investors create increased export revenues or reduce imports?	4	• New FDI could positively impact on export revenues as most of processed fish production is likely to be exported.
• Will new investors improve the performance of the value chain as a whole?	4	• Additional FDI would positively impact on upgrading of the whole value chain (storage, refrigerated transport), as secondary fish processing is not well developed in Armenia.
SUBTOTAL	**19**	
Does investment in secondary fish processing offer an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	4	• Existing domestic per capita consumption of fish products is ten times below the EU or Russian average; which indicates that there is potential for Armenian domestic market for fish to grow.
• Is the global market attractive?	2	• The Russian market provides attractive business opportunities, share of Armenian processed fish products is currently <1% but Armenia is unlikely to reach the production volumes to compete with the major exporters.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• Existing domestically produced fresh fish output is likely insufficient for a new stand-alone secondary fish processing facility; fish for processing would have to be sourced elsewhere.
• Does Armenia have competitive infrastructure?	2	• Manufacturing sites are available although not necessarily close to the existing fish breeding operations. High transport costs negatively impact on ROI.
• Does Armenia have competitive skills & supportive services?	1	• There is a very limited skill base in the fish processing industry.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• Food safety standards which are non-compliant with international standards and control may discourage investment; otherwise no significant regulatory barriers exist.
SUBTOTAL	**13**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

Sources used: Aquaculture Sector Review Armenia, World Bank Group, 2016; Contemporary Aquaculture Technologies: Fish Markets and Export Armenia, World Bank Group, 2015; Review of Fisheries and Aquaculture Development Potentials in Armenia, FAO, 2011; Fish Breeding and Development Perspectives in the Republic of Armenia, 3 R Strategy LLC, 2011.

3.2. Dairy sector

Milk production in Armenia can still be classified as a low-input subsistence based system, although a few intensive stall-fed operations also exist in the country. There are around 180 thousand dairy farms in Armenia, and 95% of fresh cow milk is produced by farms that have less than 7 cows. This means that there are very few big dairy producers that operate on a commercial basis, and most of the milk production can be characterized as subsistence farming. There are several milk collection points across the country, where the farmers can bring their milk and store it in refrigerated containers and where dairy processors can pick up milk in larger volumes. Almost half of total annual milk production comes from three regions only (Gegharkunik, Shirak and Lori regions), the annual output has not increased significantly over the past decade (Figure 15).[17]

Figure 15 Milk production in Armenia (thous. tons)

	2008	2009	2010	2011	2012	2013	2014	2015
Milk production in thous. tons	661,9	615,7	600,9	601,5	618,2	657	700,4	728,6

Source: National Statistical Service of RA

Milk production is highly seasonal – starting from the late spring until mid-September the production volumes may double, because cows are sent to pastures high in the mountains for grazing. Calving is also timed for spring in order to maximize milk production that uses cost free or low cost grass inputs. This contributes to the excess production of milk during the summer months and the shortage of milk during the winter months. As a result, milk prices are inversely correlated to the production - milk prices rise in winter and drop significantly during the grass growing season – from the late spring to the early fall.

Although there are many milk producers, Armenia is still not self-sufficient in milk production; most of the milk or milk powder imports occur in the winter months, when local production volumes decline. More than 60% of milk produced is processed directly by the farmers themselves, and only 40% is acquired by processors.

Cheese production is one of the traditional sectors of the Armenian economy and the main dairy product produced from milk. Armenia produces more than two dozen types of cheeses (95% cow milk based), both traditional (Lori, Chanakh, Bryndza, and Chechil), and new types of cheese (Gouda, Emmental, Maasdam, Suluguni, and Mozarella). There are as of yet no Armenian cheeses with officially registered geographical indication or appellation of origin. The situation in the cheese sector is similar to that of the milk sectors with the prevalence of a large number of small, yet non-professional farmers and cheese producers. Most of these small holdings do not possess or have poor knowledge and skills in the areas of animal management and care, milking practices, and milk hygiene and safety.

[17] AGRICIS TRADE Country report: Armenia, ICARE 2015

The cheese production sector includes 50 registered enterprises and a large number of informal small holdings. More than 70 percent of total cheese production comes from the informal sector. Within the formal sector, the 10 largest producers represent around 90 percent of total formal production. In essence, formal and informal sectors compete for milk.

In the recent five-year period, cheese production capacities increased by about two and a half. A dozen medium and large dairy (and cheese) production factories were established and/or enhanced. A significant proportion of new medium and large production facilities are equipped with and operate modern, sophisticated technologies. Russia and the United States are the main export markets for Armenian cheese exporters. The main consumers of Armenian cheeses in foreign markets are Armenians in the diaspora. At present, Armenian exporters can benefit broadly from the opportunities provided by EEU membership; however, the competition in the Russian market is very intense. Despite the fact that, at present, Armenian cheese producers do have a cost advantage over their competitors in Russia, they must be prepared to compete with cheeses from Belarus, Ukraine (after resolution of political tensions), and Europe entering the Russian market through various channels. Production costs may increase when, for the purposes of the expansion of the cheese sector, investments are made to enhance production technologies and food safety systems. One of the main logistical issues usually mentioned by Armenian exporters is that border crossing and customs formality procedures at the Georgian-Russian Lars border crossing point are complicated and unpredictable (which also include informal “facilitation fees”).

In 2015, there was a sharp increase in cheese exports - from 1,500 metric tons in 2014 to 9,000 metric tons in 2015. In 2016, the export volume decreased to 5,500 metric tons, but still remained high. There are some speculations that these figures may include some re-export from third country producers.

Despite the positive dairy sector development trends, there are several binding constraints for further expansion and development of cheese production and export. The most critical impediment is insufficient quantity and quality as well as large seasonal fluctuations in the milk supply. The difference between minimum and maximum supply levels in different months of the year may be up to ten times. Unlike other dairy products, the high seasonality problem in cheese production cannot be alleviated by using milk powder.

The factors influencing the insufficient volume and quality of production include: low level of fodder and feed production, ineffective and inefficient use of pasture and grazing, poor genetic characteristic of animals, ineffective animal husbandry practices, poor veterinary control, inefficient import/export procedures for importing dairy industry equipment and animals and genetic materials.

Armenian dairy sector businesses report many administrative barriers related to setting out the necessary infrastructure. This is related particularly to the complex, lengthy, and costly administrative procedures that businesses face when trying to set up the electricity, water and gas supply lines for cheese production facilities. This topic is especially acute in the cheese sector, because for cheese producers it is important to

locate their production facilities close to milk collection centres, and the latter often are in territories not equipped with electricity, water and gas supply lines. Sector value chain studies underline that there is also a serious lack of knowledge and skills in the dairy sector. This is related particularly to the lack of knowledge and skills in animal care and management, animal reproduction, farm management and milking practices, cheese production technologies, product quality, and safety management.

The Armenian dairy sector profile is similar to some other Central and Eastern European countries that recently underwent a political and economic transition.[18] Poland and Bulgaria, for instance, also have had a very fragmented dairy sector consisting of mainly small-scale housed production (85% of all milk producers had a herd size of less than 5 cows), in contrast to Slovakia, where the ten largest dairy companies hold about 60% of milk market. Empirical evidence suggests that FDI inflows are larger in countries where the processing capacity and supply base have been more concentrated. While 77% of milk purchased in Slovakia is processed by foreign owned dairy companies, the combined market share held by foreign investors in Bulgaria and Poland is less than 10%. Foreign investors enter the dairy sector usually via mergers & acquisitions (M&As) rather than new greenfield operations – in fragmented markets with a large number of small producers and processors, the number of reasonably large investment targets is small. Similarly, the investment track record of some of the global dairy market leaders (Figure 16) implies M&As being the preferred investment mode.

Figure 16 Global dairy market leaders

Company	Country	Geographic presence
Nestlé	Switzerland	Global
Dean Foods	United States	U.S.
Danone (Dannon)	France	Global
Dairy Farmers of America	United States	U.S.
Fonterra	New Zealand	Global
Arla Foods	Denmark/Sweden	Europe/Middle East
Lactalis	France	Europe/North America/Middle East
Unilever	Netherlands/United Kingdom	Global
Kraft Foods	United States	Global
Parmalat	Italy	Global
Royal Friesland Foods	Netherlands	Europe/Asia/Latin America
Bongrain	France	Global
Campina	Netherlands	Europe, East Asia, South America

Source: Globalization of the Dairy Industry: Firms, Foreign Direct Investment, and Partnerships, 2014; Leading dairy corporations worldwide in 2015 (www.statista.com).

Under the current conditions, FDI in the Armenian dairy sector is unlikely. Insufficient quantity and quality as well as large seasonal fluctuations in milk supply prevents FDI in new production and processing capacities. Inexistence of large domestic processing operations open to acquisition precludes FDI in M&As. Although investment opportunities could be promoted in some of the upstream value chain sub-sectors, such as fodder and intensive dairy cattle farming, interest is most likely come from firms already operating in Armenia that are looking into vertical integration of their operations

[18] Liesbeth Dries: Vertical Coordination and Foreign Direct Investment: A comparative study of the dairy chains in Bulgaria, Poland, and Slovakia, Katholieke Universiteit Leuven, Belgium, 2004

rather than from large international companies. The Armenian diaspora may be interested in some small-scale dairy processing operations or in equity funding of some of the existing dairy operations. In order to stimulate future FDI in the dairy sector, the Government should resolve some of the export related regulatory barriers and weak quality infrastructure.

4. Intensive dairy cattle breeding & ranching		
To what extent:	Score	Evidence
Will additional FDI in intensive dairy cattle breeding & ranching add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	4	• Intensive dairy cattle farming is not widespread in Armenia, new market entrants could bring in new technologies, increase milk yield and quality milk supply.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	4	• Intensive farming is skilled labour intensive, although jobs created will be incremental. Dairy cattle farming usually has high female employment ratio.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	1	• Unlikely, as intensive dairy cattle farming will be in direct competition with existing milk supply produced by small producers and households.
• Will new investors create increased export revenues or reduce imports?	2	• Indirectly, if and once milk produced at intensive farms is further processed for use outside the domestic market.
• Will new investors improve the performance of the value chain as a whole?	4	• Additional investors may increase competition, improving input-process for dairy farmers or reducing prices for consumers and stimulate downstream value chain operations.
SUBTOTAL	**15**	
Does investment in intensive dairy cattle breeding & ranching offer an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	3	• Local market for milk is stable; market opportunities exist mainly outside the summer season or in dairy processing for export. Bulk of milk consumed outside urban areas remains in the form of customary milk products, price of milk fluctuates significantly throughout the year.
• Is the global market attractive?	1	• There is little global market demand for fresh, unprocessed milk.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	2	• Lack of domestically produced fodder is the key factors impacting operational costs of intensive dairy cattle farming. Intensive farming will also likely require introduction of new breeds of cattle with higher milk yield.
• Does Armenia have competitive infrastructure?	2	• Physical transport infrastructure is poor, intensive farming will be limited to areas in proximity of milk processing facilities.
• Does Armenia have competitive skills & supportive services?	3	• An intensive dairy cattle farming is not a well-developed sector in Armenia, dairy farming skills are limited.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• Poor veterinary control, otherwise no major barriers for entering the sector.
SUBTOTAL	**14**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

5. Milk collection & treatment centers		
To what extent:	Score	Evidence
Will additional FDI in milk collection & treatment centers add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	4	• New milk collection & treatment centres will add value, especially in remote areas with poor access to dairy processing facilities or in summer season with high supply of milk.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• Milk collection & treatment centres are not very labour intensive, yet likely to generate jobs for women.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	5	• More milk collection & treatment centres could generate income opportunities for households / small farmers.
• Will new investors create increased export revenues or reduce imports?	4	• If successful, more dairy outgrower programs & collection centres could lead to increased dairy products exports.
• Will new investors improve the performance of the value chain as a whole?	5	• More collection & treatment centres should improve opportunities for and improve supply downstream for processors & consumers
SUBTOTAL	**21**	
Does investment in milk collection & treatment centers offer an attractive proposition for foreign investors?		

Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	3	• Local market for dairy products is stable; bulk of milk consumed outside urban areas is not processed and remains in the form of customary milk products. Domestic dairy processors entering export markets or developing new products (e.g. dried or concentrated milk, cheese or other dairy products) may be able to absorb increased supply of milk.
• Is the global market attractive?	1	• There is little global market demand for fresh or treated milk.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• Outgrower collection systems are not always working (some existing milk processors report volume/milk quality issues in contracted supplies), inconsistent and low quantity of milk supply; households usually earn higher incomes from other activities. Milk supply fluctuates greatly between summer and winter seasons.
• Does Armenia have competitive infrastructure?	2	• Physical infrastructure is poor and it is a major limiting factor for supply of milk from rural areas outside the dairy factory transport range. Intensive farming is still only rudimental; milk supply comes more often from small households than larger farms.
• Does Armenia have competitive skills & supportive services?	2	• Not a well-developed sector in Armenia, so dairy industry processing skills are limited
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• No obvious barriers other than access to local milk supply, securing stable milk supply from households may be difficult.
SUBTOTAL	**12**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

6. Dairy products (cheese) manufacturing

To what extent:	Score	Evidence
Will additional FDI in dairy products (cheese) manufacturing add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	3	• A number of small producers and several mid-size companies operating in dairy products manufacturing already cover domestic market consumption using local milk & imported milk powder, often not fully using their production capacities.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• Additional investors will create more jobs but only marginal over existing investors.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	3	• More dairy product manufacturers could generate income opportunities for households / farmers; especially if able to process oversupply of milk in summer months (e.g. by producing dried milk powder).
• Will new investors create increased export revenues or reduce imports?	4	• Increase export revenues are likely if dairy products producers are able to meet food safety norms and marked demand in regional markets (outside Armenian diaspora markets).
• Will new investors improve the performance of the value chain as a whole?	4	• Additional investors may increase competition, improving input-process for dairy farmers or reducing prices for consumers, but impact will be marginal.
SUBTOTAL	**17**	
Does investment in dairy products (cheese) manufacturing offer an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	3	• Local market for dairy products is growing but relatively well supplied by local producers; import prices of cheese/butter are high but the bulk of milk consumed outside urban areas remain in the form or customary milk products. Only a small proportion of the total milk produced in the country is processed by industrial milk processing industry. Regional market outside Armenian diaspora presents limited business opportunities; for instance, Russia's domestic consumption of milk is declining, increasing prices on dairy products may result in further decline of consumer demand for high margin products, incl. cheese.
• Is the global market attractive?	2	• Growing Asian & global market for dairy products, but Armenia is unlikely to have scale/conditions to compete with the current major exporters (New Zealand, US, EU, etc.).
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• No, due to limited and fluctuating milk supply - summer oversupply and winter shortage of supply result in some dairy industry factories operating to less than 50% of their installed capacities. Milk quality is also often inconsistent.
• Does Armenia have competitive infrastructure?	2	• Physical infrastructure (milk collection and treatment points) is poor and it is a major limiting factor for supply of milk from rural areas outside the dairy factory transport range. Intensive farming is still only rudimental; milk supply comes more often from households than farmers.

• Does Armenia have competitive skills & supportive services?	2	• Not a well-developed sector in Armenia, so dairy industry processing skills are limited
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• Regulatory barriers for access to utilities and inconsistent classification of dairy products for VAT purposes.
SUBTOTAL	**13**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

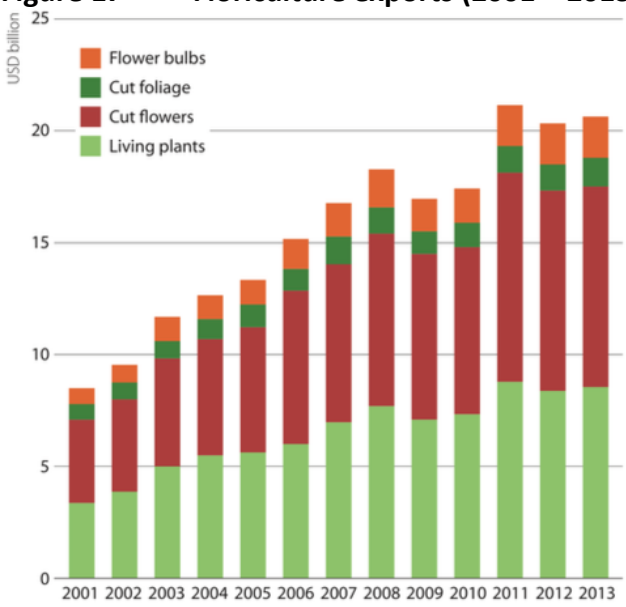
Sources used: Cheese Production and Export Supply Chain Armenia, World Bank Group 2017; AGRICIS TRADE Country report: Armenia, ICARE 2015; Russian Federation Dairy Products Annual (Import Embargo Provides Limited Benefits to Dairy), USDA Foreign Agricultural Service, 2016; Agriculture in Armenia Snapshot, Avenue Consulting Group, 2014.

3.3. Floriculture

The ornamental plant sector (floriculture) is very diverse and includes the production of floral crops such as cut flowers and cut foliage, flower bulbs, potted flowering as well as foliage plants and bedding plants. Global floral production value is estimated at USD 55bn. Tree nursery—the production of trees, shrubs and other hardy plants—is worth another USD 35bn.[19] But whereas cut flowers, cut foliage and flower bulbs are traded globally, mainly from south to north, bulkier live plants, such as potted plants and nursery products, are mainly traded regionally.

Recent global economic and financial turmoil has impacted global floriculture trade. The historically strong growth in global floriculture exports has taken a bumpier road from 2009 onwards (see Figure 17). In 2013, global exports of cut flowers, cut foliage, living plants and flower bulbs amounted to USD 20.6 billion against USD 21.1 billion in 2011 and nearly USD 8.5 billion in 2001. Cut flowers, which are traded worldwide, have always been the main group within the global floriculture trade, followed by living plants, which are traded more regionally. As geographic expansion of cut flower production as well as further developments in logistics make long-haul transportation more viable, the share of cut flowers in floriculture trade will likely grow.

Figure 17 Floriculture exports (2001 – 2013)

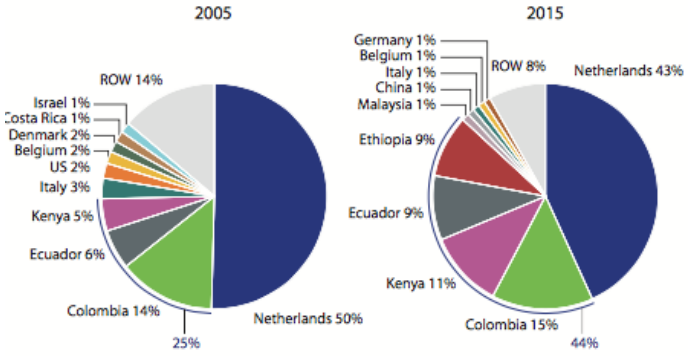


Source: UN Comtrade, 2014

[19] Rabobank's World Floriculture Map 2016

One of the main structural changes currently taking place in the world of floriculture is the increase in international competition, particularly for cut flowers. With a combination of locally produced flowers and imported flowers, the Netherlands is a dominant central market for global cut flower trade. However, the Dutch share in global cut flower exports is decreasing, declining from 50 percent in 2005 to 43 percent in 2015 (see Figure 18). At the same time, Kenya, Ecuador, Ethiopia, Colombia and Malaysia have increased their share in global cut flower exports. Growers in these countries are able to achieve large-scale production of good-quality flowers for competitive prices.

Figure 18 World's largest cut flower export countries (2005 vs. 2015)

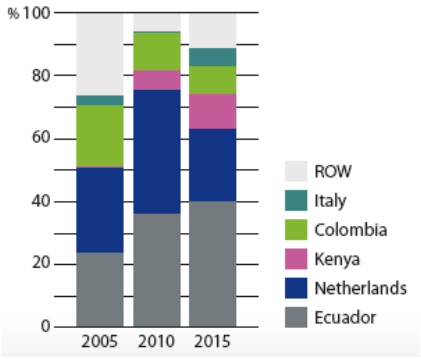


Source: UN-Comtrade, Royal FloraHolland, Rabobank, 2016

While roses are the main cut flower traded by these four countries, Colombia has a relatively diversified product range and is also the largest exporter of chrysanthemum and the second largest global exporter of carnations in the world. However, despite low production costs, a favourable climate, large farm size, and increasing efficiency and quality, it remains challenging to grow cut flowers in these countries. There is (hardly) any domestic demand, producers have to deal with (a lack of) air freight capacity and high transportation costs, volatile exchange rates, and challenging political and social circumstances.

On the consumption side of the business, although some regional floriculture markets (e.g. US market) are showing signs of recovery, the total global floriculture market is still rather fickle. The European picture is more diverse when it comes to both market development and overall expenditure levels. One of the main changes seen is Russia's decreasing appetite for (imported) flowers. Up to 2013, Russia's share in global flower imports rose steeply, but since the economic and political turmoil in Russia, imports have been declining. Moreover, the origin of trade flows to Russia has clearly changed (see Figure 19). Ecuador, Kenya and Italy have grown their market share in Russia's cut flower imports, mainly at the expense of the Netherlands. Russia has not banned flowers from the EU, but the decreasing value of the Russian rouble has made imported products more expensive, and on top of that, exporters have become more hesitant to do business in Russia. This has mainly hit Dutch floriculture exporters, yet it also opens new export opportunities for Armenia-based businesses that can benefit from the free trade access to Russia and are well accustomed to Russian market peculiarities.

Figure 19 Cut flower imports to Russia by origin, 2005-2015



Source: UN-Comtrade, 2016

Transport of cut flowers by sea container has become a major and an unstoppable development and has already become fairly substantial in a number of trade flows. Transport by sea container is not new to floriculture, although it has been historically restricted to products with a relatively long shelf life, such as cut foliage, flower bulbs and young plants. Expansion of container shipments in cut flowers is driven by various factors including the price difference between sea and air freight (the latter being roughly twice as expensive as the former), the ability to control conditions within containers, growing availability of port facilities and reefers, increasing knowledge of container transport and the best cut flower varieties to transport, and growing attention on sustainability issues.[20]

Greenhouse flower production is a relatively new, yet dynamic sector in Armenia. While most of the greenhouses in Armenia are small and do not use advanced technologies resulting in high cost, low productivity and production efficiency, there are some notable exceptions. For instance, Ecotomato Company ranks among the top five companies in the rose-growing market worldwide, according to its production volumes. [21] Greenhouses can be an important source of new jobs. On the average, one hectare of greenhouse creates 20-30 new jobs, with high female employment participation, which is especially important to solve employment issues in regions.

Existing domestic companies operating in the floriculture sector have experienced considerable growth. Armenian Harvest, located in the central Kotayk region, for instance, is planning to invest in the greenhouses 1.637 billion drams (3,3 mil USD). Of that amount 1.337 billion drams (2,7 mil USD) will be spent on purchase of equipment for the production of Dutch roses. The bulk of flowers is supposed to be exported to Russia, Georgia, Belarus, Kazakhstan and other countries. Their greenhouses occupying 11 hectares of land employ 90 workers.

[20] About 15 percent of total cut flower exports from Colombia are already shipped by sea. In 2013, Colombia shipped about 700 containers of mainly chrysanthemums to the United Kingdom (UK). One 40-ft container can be loaded with about 150,000 chrysanthemum stems. Other large container flows are from Vietnam to Japan and from Israel to Europe.

[21] According to company's management with a planned 15 ha greenhouse territory extension, the farm could become the world's largest greenhouse for rose cultivation. The land expansion will open up opportunities for the greenhouse to drop the production cost of roses by 20-22 per cent and double the export volumes.

Companies investing in floriculture in Armenia can benefit from a three-year deferment of VAT payment provided they import more than 300 million drams' worth of modern equipment or technology to expand their output and modernize production facilities.

With growing global exports, in particular to emerging markets (incl. Russia), a shift from traditional growers (NL) to new producers and strong regional trade lines, Armenia may be able to present a robust value proposition to potential foreign investors. The existing strong export performance of the domestic sector, availability of land (100 hectares Hrazdan site) and supportive government policies, DFA could build a case for promoting the country to potential foreign investors. Initial scoping outreach activities should be targeted at large existing floriculture producers with previous international investment track record. Figures 20 and 21 contain one possible source of information on selected Dutch producers and Kenya based exporters with foreign capital participations. DFA, however, may need to get access to specialized sector based databases of large exporters to gather more robust market intelligence about the potential target companies.

Figure 20 10 top Dutch cut flower companies

Company	Crop	Surface	Turnover
Van den Berg Roses	Roses	• 11 hectares in the Netherlands • 70 hectares in Kenya • 27 hectares in China	€ 45 mil
Porta Nova	Rose	• 10,7 hectares	€ 21.0 mil
Arcadia Chrysanten	chrysanthemum	• 21 hectares	€ 17 mil
Holstein Flowers	Gerberas	• 11 hectares	--
Wesselman Flowers	Tulips	• 4.7 hectares	€ 21.0 mil
Kreling Chrysant	chrysanthemums	• 23 hectares	about 100 mil stems
Germaco	Tulip	• 2.4 hectares	€ 9 mil
LG Flowers	Gerberas	• 10.4 hectares	€ 8 mil
LMC Middelburg Chrysanten	chrysanthemums	• 15 hectares	€ 13 mil
BredeFleur	lilies	• 11.5 hectares at two locations	€ 9.5 mil

Source: Hillenraad100 and Vakblad voor de Bloemisterij (at www.hortipoint.nl)

Figure 21 Top Kenyan cut flower exporters with foreign capital participation

Company	Crop	Foreign investor
Beautyline Kenya td.	cut flowers	Danziger "Dan" Flower Farm (Israel) / 600 employees
Bilashaka Flowers	Roses	Zuurbier & Co (Netherlands) / 29 hectares
Black Petals Ltd.	Roses	Black Tlup (UAE)/ 21 hectares
Fides Kenya Ltd.	cut flowers	Dümmen Orange (Netherlands) / 22 hectares, 700 employees

Fairly Flowers Kenya Ltd.	cut flowers	PKM (Denmark) / 3,5 hectares
Florensis	cuttings and seeds	Florensis (Netherlands)
Interplant Roses	Roses	Interplant (Netherlands)
Primarosa Zuri Flowers	Roses	Zuri Group Global (India) / 1500 employees

Source: Top 50 Flower Exporters in Kenya (at www.kenyatrade.org/flower-exporters)

7. Flowers cultivation		
To what extent:	Score	Evidence
Will additional FDI in flowers cultivation add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	4	• New investment, in particular in large scale greenhouse cultivation can significantly add value as most domestic producers run only small greenhouse operation with outdated technologies.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	4	• Yes, greenhouse floriculture is a labour-intensive sector, typically with a high female employment ratio.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	4	• New investment will bring initially only moderate sourcing opportunities for domestic firms and producers.
• Will new investors create increased export revenues or reduce imports?	5	• New FDI can have significant impact on export revenues; the large-scale greenhouse floriculture is almost entirely export oriented.
• Will new investors improve the performance of the value chain as a whole?	5	• Additional FDI will improve the performance of the whole value chain as it brings in advanced technologies, including specialized logistics.
SUBTOTAL	**22**	
Does investment in flowers cultivation an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	5	• While domestic market is small a saturated, the regional market could be interest with 10% annual increase rates in Russia. Flowers have low price sensitivity and the sector is not as much exposed to economic cycles as other sectors.
• Is the global market attractive?	3	• Global market has shown positive growth trends, although Armenia is unlikely to match the scale of the some of the current largest exporters (Kenya, Ecuador).
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	4	• Armenia has good climatic conditions for floriculture – high solar intensity and cultivation fields' altitude; although access to land is generally a constraint in Armenia there are several earmarked areas for greenhouse cultivation that could be used for FDI.
• Does Armenia have competitive infrastructure?	3	• High transportation costs and limited air cargo competition are limiting factors.
• Does Armenia have competitive skills & supportive services?	3	• Although the floriculture sector is developed in Armenia, firms report shortage of skills on the labour market.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	4	• Reasonable regulatory policies for greenhouse production are in place.
SUBTOTAL	**22**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

8. Flowers grading, packing, pre-cooling and cold storage		
To what extent:	Score	Evidence
Will additional FDI in flowers grading, packing, pre-cooling and cold storage add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	2	• New investment will add only modest value as most of existing domestic producers supplying domestic market do not require pre-cooling and cold storage facilities, while large exporter already have them integrated in their operation.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• Flowers grading, packing, pre-cooling and cold storage is a relatively labour intensive subsector that would generate new jobs, including jobs for women.

• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	2	• New grading, packing, pre-cooling and cold storage operations would increase business opportunities for flower producers as they extend shelf life of flowers.
• Will new investors create increased export revenues or reduce imports?	2	• New FDI is unlikely to significantly improve export opportunities for existing producers given their limited production output and cost structure.
• Will new investors improve the performance of the value chain as a whole?	2	• Additional FDI will moderately improve the performance of the whole value chain.
SUBTOTAL	**11**	
Does investment in flowers grading, packing, pre-cooling and cold storage an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	1	• Giving the small number of domestic producers who supply mostly directly only internal market, there is very small domestic market for pre-cooling and cold storage services.
• Is the global market attractive?	1	• Flowers grading, packing, pre-cooling and cold storage operation is usually integrated with the local production, provision of services to global market is non-applicable.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	2	• Access to industrial land in the vicinity of existing flower cultivation fields may be limited.
• Does Armenia have competitive infrastructure?	2	• Provision of utilities for industrial sites close to existing flower producers may be limited.
• Does Armenia have competitive skills & supportive services?	2	• Access to unskilled or low-skilled labour is sufficient, while technological and advanced skills in cold storage industry are missing.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• There are no significant regulatory or institutional barriers to this subsector.
SUBTOTAL	**11**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

Sources used: World Floriculture Map 2016, Royal Flora Holland, International Flower Trade Association, International Trade Centre

3.4. Fruit & vegetable production

Fruit and vegetable production are traditional Armenian agricultural sectors. Both vegetable sown areas and fruit orchards have been showing overall growth over the last decade. One of the crucial issues limiting further sector expansion is irrigation. Only 30% of arable lands are irrigated. Most of the vegetable production is concentrated in the Ararat valley.

Tomato is the most common vegetable cultivated in Armenia with a 25-30% share in the total sown vegetable area. Sown area has been fluctuating each year depending on results of the previous year (price and harvest). The sown area in greenhouses comprises about 40 ha, which makes up only 0.6% of total sown area and serves the off-season demand within the country.[22] Various tomato sorts are cultivated interchangeably. Open field tomato harvest periods depend on the altitude of the cultivation area: the Ararat plains yield between July and October, while low-lying and foothill areas yield between August and October. During the months of October-May, the market is supplied by imported and domestic greenhouse tomatoes. Tomato productivity is low (around 47-48 tons/ha), which indicates an inefficiency of the crop cultivation process: irrigation technology and volume depend on weather conditions, evaporation, altitude, and the slope of the cultivation area.

Sources of future sector growth include emerging exports of tomato paste and juices to CIS markets, especially to Russia, import substitution of ketchup and tomato sauces.

[22] 2013 figures

Cucumber yield had been growing steadily until it reached its peak of 71 thousand tons in 2009, followed by a drop of 23% in 2010, due to atypical weather conditions. Since then, yield has been showing an upward trend. Cucumber cultivation has a higher overall level of difficulty: it is very sensitive to irrigation and temperature and should be provided with the appropriate soil moisture and relative humidity. Below 10^{o} C, cucumber harvests may spoil. Consequently, cucumber cultivation is less attractive for farmers as compared to tomato cultivation. Cucumber is planted twice a year in the Ararat plain and harvested between June-July and mid-August to mid- October. It is also harvested from the foothill areas during mid-July through mid-September and from low-lying areas during mid-August to mid-October.

The only significant and stable fresh/chilled cucumber import comes from Iran (90% of import share, total import value is around 810 thousand USD). Imported fresh cucumbers supply off-season demand. Fresh cucumber export is negligible. Only a negligible part of the harvest (about 1%) goes through processing. Unattractive pricing for small-size cucumbers, demanded by processing companies, does not motivate farmers to harvest cucumbers at earlier stages.

Sources of future sector growth include limited pickled cucumber import substitution and export.[23]

Cabbage is the only vegetable with a concentrated cultivation outside of the Ararat valley and is the second largest vegetable group by sown area. Cabbage cultivation periods range from mid-June to mid-October for the Ararat plains, beginning in July to mid-August for low-lying areas and September to mid-August for foothill areas.

Cauliflower sown areas comprise only about 10% of total sown area. Only recently, few farmers have started cultivation of new, higher value cabbage varieties such as broccoli, Brussels sprouts, and red cabbage. Cabbage is typically sold by farmers fresh to final consumers, while industrial processing is very limited both in Armenia and globally. Armenian cabbage is exported only to the Russian Federation; exports started in 2010 due to drought in Russia, however the export value has been negligible ad decreasing as the Russian market saturates from other sources.

Sources of future sector growth include integration of high value cabbage varieties into agricultural production for export.[24]

Pepper cultivation was expanded as a result of increased demand of local food processing companies. There is a positive trend in sown area, which expanded by 80% during the last 5 years. This has been driven by increasing demand of food processing companies. Pepper is cultivated in both greenhouses and open fields. Due to its high price, greenhouse pepper is often sold in units. Greenhouse harvest is cultivated during December-May. Open field yield is collected during mid-July to September from the Ararat plain and low-lying areas, while it is harvested during mid-August to mid-September in foothill areas. Major products made from pepper in Armenia include canned red paper, ajika, pickled hot pepper, roasted pepper mixed with other vegetables

[23] Agriculture in Armenia Snapshot, Avenue Consulting Group, 2014
[24] Agriculture in Armenia Snapshot, Avenue Consulting Group, 2014

and paprika. Fresh pepper export volumes and values are small; the only export market is the Russian Federation. Armenia imports pepper mainly for off-season consumption (about 80% of imports from Iran).

Sources of future sector growth include marinated pepper export expansion and possibility to increase dried, crushed or ground pepper exports.[25]

Potential future demand in the vegetable sector includes high volume staple foods, high value fresh exports to the CIS, and niche products. In terms of bulk production, vegetables, and potatoes appear to offer Armenia the opportunity for the largest expansion in production.

Apple is the most widespread fruit around Armenia due to its wide range of varieties suitable for cultivation in different altitudes and weather conditions. Apple cultivation, in contrast to apricot cultivation, is possible in high altitudes, which explains its concentration outside Ararat valley (only 12% of orchards are located in Ararat valley).

Yield productivity differs significantly depending on climatic conditions; while in some regions (Lori, Kotayk), the average yield is low between 2 to 9 tons/ha, in other regions (Ararat, Armavir, Gegharqunik), the yield can be as high as 24 tons/ha. Average farmer price fluctuates significantly. Compared to other fruits, apple cultivation requires more extensive care and resources. The growing domestic market led to apple orchard extension; currently the Apple production fully satisfies domestic market needs, apple imports are very small and mainly in high value varieties (e.g. Granny Smith) which are not widely cultivated in Armenia. Expanded cold storage facilities extend shelf life of apples.

Apple is generally processed for juice, jam and baby food production. Juice is the only apple product exported from Armenia, however the export volumes are insignificant and so is Armenia's foreign trade of fresh apples. The largest export market is the Russian Federation (2/3 of export).

Apricot harvest is extremely unstable due to sensitiveness towards weather conditions, which is the main constraint for apricot cultivation expansion. Despite the volatility of harvests, the total orchard area remains stable as the weather-related cultivation risks are compensated by a low level of required maintenance and cost for cultivation and high market demand. Farmer gate price is highly correlated with the apricot harvest and ranges between 100 AMD to 680 AMD per kg. Planting new orchards requires long-term investments; apricot trees reach their highest harvest level 7-8 years after being planted. An apricot tree's life is 60-70 years in the Ararat plain.

Similar to apricots, **peach cultivation** carries a significant climatic cultivation risk, peach harvest fluctuates depending on weather conditions. However, since peach sprouts 10-15 days after apricot, its cultivation carries less risk of returned colds and rain damage. Yet, peaches are sensitive towards winter colds and requires considerably more effort to cultivate. These factors constrain the expansion of peach orchards.

[25] Ibid.

Peaches are cultivated between mid-July to mid-October in the Ararat plain, July-October in low-lying areas and mid-August – October in foothill areas. Long harvesting period and transportability of peach ease its realization in domestic and foreign markets.[26] Peach harvest is mainly consumed fresh with growing export orientation. Processed peach is generally consumed locally. Main products made from peach are preserves, jams, juice and dried fruit. Peach is also used for production of fruit vodka.

Processor procurement volumes vary significantly (between 200 tons and 7,000 tons) and so do farmer prices (range from 95 AMD to 470 AMD). Preserved peach export grew around five times within last two years. Peach juice export is estimated to have a growth trend too; yet, export volumes remain low reflecting relatively low popularity of the peach products in international markets.

Plum cultivation is the fastest growing traditional fruits sector. A surge in orchards and harvest is explained by growing domestic demand for prunes and fresh plum export opportunities. Within the last 10 years, many plum sorts have been imported to Armenia increasing the share of the sorts more suitable for fresh and processed consumption.

Plum is harvested within mid-June to August in the Ararat plain, mid-June to September in low-lying areas and mid-July to September in foothill areas. Plum requires attentive cultivation, but has the advantage of good transportability. Plum is used for making preserves, but its main application is dried fruit production. Plum processing output has been increasing. Similarly, fresh plum export has growing trend determined by competitive import prices in the Russian Federation, which remains the only export market for Armenian plum.

Berry orchards have grown over the past decade. Berry cultivation is triggered mainly by interest from food processing companies, which procure berries (mainly raspberry and strawberry) at higher prices than for other fruits. However, farmers often fail to meet demand from food processing companies. Having tremendous demand, berry cultivation, even though growing rapidly, is still at infancy stage. Some recent new market entrants (e.g. ArmBerry) are backed by diaspora capital and aim at exporting to high-end markets (e.g. the GCC region), yet their production volumes are still very low. The most popular crops in this group are raspberries, strawberries and currants; strawberries being the most common cultivated berry (out of 1635 ha used for berry cultivation, 1181 ha were used for strawberries).[27]

Berry harvest figures do not include wild berries. The National statistical service collects data only from the formal sector, data on wild harvest output are generally not available. While the wild harvest can increase the production volumes of fresh berries, the newly established berry orchards cultivating selected berry varieties adapted to Armenian climate and with extended shelf life, and using advanced cultivation technologies are more likely to advance the whole sector value chain and generate exports. As berries are high value added products with growing global demand, there has recently been some

[26] Peach sorts can be classified in three groups: early, intermediate and late maturing. Early maturing peach is juicy and has poor appearance. It is usually consumed fresh. Intermediate maturing peach sorts are firm and have attractive appearance. They are suitable for fresh consumption and processing. Late maturing sorts are largely very firm with low sugar concentration: they are best for dried fruit production.
[27] Data for 2014, based on Agro Investment Guide Armenia, Ministry of Agriculture, 2015

investment in this sector (including greenhouse production) by both domestic and diaspora investors.

Berries are consumed both fresh and processed. Berries are processed for making preserves and juices. Berries are sensitive towards heat and transportation. To be exported fresh, berries must be transported in cold, temperature-controlled environment or deep-frozen; currently only two firms in Armenia provide deep-freezing facilities. Existing berry export, both fresh and preserved, is insignificant (42 tonnes of berries in 2014); however, this is determined by limited supply. Current export markets include Russia and the UAE (air transportation). Fresh and processed berry demand is growing in international markets as consumers show significant interest towards healthy, niche products. Among fruit products berries are the fastest growing export products.

Nuts cultivation is a relatively new sector that recently saw investment interest from the Armenian diaspora. Armenia has favourable conditions for growing nuts, particularly hazelnuts, almonds and walnuts. The most common cultivated nut is walnut. The existing nut production is, however, insufficient to cover even domestic market needs; Armenia is a net importer of nuts. Walnut trees like a mild climate and soil that is wet but well drained, newly established plantations require a minimum of 100 hectares of land to achieve production economies of scale.

Wild harvest is a specific sub-sector in Armenia that includes collection of wild berries and medicinal & aromatic plants (MAPs). While wild harvest has been a traditional subsistence activity for many local households, it remains a sector with a weak value chain and many fragmented activities. There are currently about 60 domestic companies, mostly micro and small operations, that operate in the sector. Reportedly, many operations are not officially registered and the sector output figures may be underreported. MAPs raw materials are primarily used for therapeutic, aromatic and/or culinary purposes ("mountain tea"), they are also the starting materials for value-added processed natural ingredients such as essential oils, dry or liquid extracts and oleoresins. While there is a clear industrial demand for MAPs thanks to the increased production of herbal health care formulations;[28] herbal based cosmetic products and herbal nutritional supplements, Armenia has so far not been able to tap into this segment and almost all wild harvest sector output includes only basic processing (harvesting – drying – processing – packaging).

The main obstacle for extending the value chain into value-added industrial processing is limited input of raw materials, the volume of wild harvest output is insufficient and very much seasonal (some herbs are harvest for only a few days, even hours). Neighbouring Iranian MAPs output is significantly higher than that of Armenia and some local wild harvest processors even import Iranian herbs. There have been non-equity mode investment enquiries from foreign companies in the past (e.g. private label production of specialized tea for global hotel chains), however the domestic producers were unable to meet the expected production volumes. The sector suffers from a

[28] Annual growth rate of the global market for botanical and plant-derived drugs has been 11% between 2008 and 2013. Based on International Trade Centre data (at www.intracen.org/itc/sectors/medicinal-plants)

shortage of skills, not just of the processing side, but also in harvesting; interviewed domestic producers complained about the lack of wild collection skills leading to poor quality of the harvest as well as about little knowledge of various wild herb species among collectors. Some of the domestic processors recently started a move from wild harvest to MAPs plantation, which could leave in the future to higher yields, production outputs and better quality control. Even though the size of the sector is small, the producers have been able to export to some traditional markets with large Armenian diaspora (e.g. Russia or USA). However, there is currently no immediate prospect for FDI in this sector.

Although many fruit & vegetable sectors show increasing production and export trends, FDI in fruit & vegetable sectors outside greenhouse cultivation is unlikely. Open field cultivation requires access to large plots of consolidated land, which is currently not available in Armenia. Land market and land availability has been repeatedly identified as the key constraint for FDI in agriculture.[29] Missing information on available land (land cadastre), including community land, means additional risk and cost for potential investors who might be interested in open field cultivation. For low value fruits and vegetables produced during the main production season (e.g. tomato, cucumber, apricot, peach) high initial costs for establishment the plantation (land purchase, irrigation system, hail netting) together with limited cold storage facilities, inherent climatic risks and strong international competition in target export markets and high transportation costs, make FDI in primary production unlikely. Niche investment opportunities may exist in high value fruits & vegetables sectors (in particular berries and nuts) where there is higher export markets demand and higher ROI. Access to land and water irrigation is, however, critical for these sectors as well – recent diaspora investment in these sectors clearly show access to land limitations, no investment project acquired more than 100-200 ha of land.

Investment opportunities may also exist in greenhouse crop production – both low value crops that can be grown outside the main production seasons and high value crops. Greenhouse crop production has demonstrated a high growth rate and marked profitability, particularly during the recent four years, when the total area of greenhouse farms increased by nearly 2,5 times, from 510 ha in 2011 to 1220 ha in 2016.[30] At the same time, the technological sophistication of greenhouse farms has rapidly increased. Most newly built and under construction greenhouses are equipped with and deploy modern technologies. Armenian greenhouse enterprises produce and export vegetables (tomato and cucumber), mushrooms, berries (strawberry) and flowers (roses, gerberas, and carnations).

While the Russian market is currently the key export market for most fruit and vegetable exports and reportedly able to absorb an almost unlimited volume of Armenian agricultural production, it is not a risk-free market. Recently, the Russian Government announced and heavily promotes its import substitution strategy, uses trade embargos as political tools and non-tariff barriers (e.g. phytosanitary regulations) to protect its domestic producers even within the free trade Eurasian Economic Union space. Similarly,

[29] See, for instance: Promoting Investment into Agricultural Sector of Armenia (Policy Recommendation), ICARE, 2017

[30] Export Supply Chain of Greenhouse Crops Armenia, World Bank Group 2016

Iranian agricultural market is widely regulated and the government has imposed import duties and quotas on international exports to Iran, which severely limits motivation for Armenia based efficiency seeking FDI. [31]

With regards to female employment generation, the prospects for significant contribution of FDI are limited. While agriculture is traditionally a labour-intensive sector, modern advance intensive farming technologies used in efficient, resource-intensive agriculture minimize human work. Some of the new diaspora plantation projects (nut, berry cultivation) use only little of full time work that is topped by seasonal workers (mostly men) during initial plantation establishment or harvest time.

FDI in primary or secondary processing is very unlikely given the limited output of existing Armenian agricultural production. Most of the domestic processing companies are unable to fully use their existing production facilities or expand their operation due to limited supply of raw agricultural material, while processing imported fruits and vegetables does not make economic sense.

9a) Intensive fruits & vegetables open field farming		
To what extent:	Score	Evidence
Will additional FDI in intensive fruits & vegetables farming add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	3	• New investors may add value by introducing new fruits & vegetables varieties, cultivation techniques and distribution channels to new export markets.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• Open field intensive fruits & vegetables farming is a moderately labour intensive sector; new jobs increase will only be incremental.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	1	• There will be few opportunities for domestic firms to supply goods/services to new investors in intensive fruits & vegetables farming as many production inputs (seedlings, fertilizers, pesticides, hail nets, etc.) are not produced in Armenia and will need to be imported.
• Will new investors create increased export revenues or reduce imports?	3	• New FDI could increase exports, in particular in high value fruits & vegetables; for selected produce (e.g. nuts) increased local production could also reduce imports.
• Will new investors improve the performance of the value chain as a whole?	4	• Additional FDI in intensive fruits & vegetables farming could considerably improve the performance of the whole value chain by increasing the raw material outputs that could be used for further processing.
SUBTOTAL	**14**	
Does investment in intensive fruits & vegetables farming an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	3	• Local market in most fruits & vegetables is already well supplied by the existing production with some minor exceptions (e.g. nuts); regional market (Russia) has growing demand that could be met by Armenian production.
• Is the global market attractive?	1	• The global market is also growing, yet Armenia is unlikely to produce fruits & vegetables in volumes and qualities (+ match the international price) that are provided by other established large agricultural exporters.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• Access to land is a critical impediment that precludes large-scale investment in intensive fruit & vegetables farming.
• Does Armenia have competitive infrastructure?	3	• Agricultural infrastructure is generally poor and access to water (irrigation) is often a limiting factor for new investment.
• Does Armenia have competitive skills & supportive services?	3	• Lack of skills (agronomists), weak links to agricultural R&D and a poor agricultural extension system constrain new investments.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• Import of equipment, machinery and other capital goods from outside the EEU carries high tariffs.
SUBTOTAL	**14**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

[31] The agriculture and food market in Iran, The Trade Council of Ministry of Foreign Affairs of Denmark 2017

9b) Intensive fruits & vegetables greenhouse farming		
To what extent:	Score	Evidence
Will additional FDI in intensive fruits & vegetables farming add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	4	• New investors may add value by introducing new fruits & vegetables varieties, cultivation techniques and distribution channels to new export markets.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	4	• Greenhouse intensive fruits & vegetables farming is a moderately labour intensive sector; new jobs increase will only be incremental, yet could contribute to job generation among women.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	3	• There will be few opportunities for domestic firms to supply goods/services to new investors in intensive fruits & vegetables farming as many production inputs (greenhouses, seedlings, fertilizers, pesticides, hail nets, etc.) are not produced in Armenia and will need to be imported.
• Will new investors create increased export revenues or reduce imports?	5	• New FDI could increase exports, in particular in high value fruits & vegetables.
• Will new investors improve the performance of the value chain as a whole?	5	• Additional FDI in intensive fruits & vegetables farming could considerably improve the performance of the whole value chain by increasing the raw material outputs that could be used for further processing.
SUBTOTAL	**21**	
Does investment in intensive fruits & vegetables farming an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	3	• Local market in most fruits & vegetables is already well supplied by the existing production; regional market (Russia) has growing demand that could be met by Armenian production.
• Is the global market attractive?	3	• The global market is growing; Armenia may supply some high-end niche markets (e.g. berries to the GCC region) where higher production costs do not directly impact on product competitiveness.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	3	• Access to land is a critical impediment, yet for greenhouse production the land availability is a less limiting condition than for open field farming given the average size of land required (usually under 100 hectares).
• Does Armenia have competitive infrastructure?	2	• Agricultural infrastructure is generally poor and access to water (irrigation) is often a limiting factor for new investment. Cost of gas used for heating is high in comparison with some competing locations and could negatively impact on the project profitability.
• Does Armenia have competitive skills & supportive services?	3	• Lack of skills (agronomists), weak links to agricultural R&D and a poor agricultural extension system constrain new investments.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• Import of equipment, machinery and other capital goods from outside the EEU carries high tariffs.
SUBTOTAL	**17**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

10. Fruits & vegetables grading, storage / packing operations		
To what extent:	Score	Evidence
Will additional FDI in fruits & vegetables grading, storage / packing operations add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	2	• New storage / packing operation will not add substantial value; the existing storage facilities have sufficient additional capacities. There is little interest among existing producers to incur additional cold storage costs.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• New fruits & vegetables grading, storage / packing operations would not generate a significant number of new jobs given high automation of these operations.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	3	• Some new business opportunities could be created for firms operating in the logistics and cargo sector provided the storage facilities are not directly integrated into the logistics value chain.
• Will new investors create increased export revenues or reduce imports?	3	• Storage and packing operations could contribute to additional export revenues by extending shelf life of domestic agricultural production.
• Will new investors improve the performance of the value chain as a whole?	4	• Additional FDI would improve the operation of the whole value chain.
SUBTOTAL	**15**	
Does investment in fruits & vegetables grading, storage / packing operations an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		

• Is the local and regional market attractive?	1	• The local market is small and not used to use commercial cold storage facilities. A few existing cold storage providers have additional free capacities.
• Is the global market attractive?	1	• There are no market opportunities for global market given Armenia's limited connectivity with external markets.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• The geographical position of the country and limited global connectivity is a constraining factor.
• Does Armenia have competitive infrastructure?	3	• The country has sufficient number of industrial sites that could be used for construction of fruits & vegetables grading, storage / packing operations.
• Does Armenia have competitive skills & supportive services?	2	• There is a limited skill base for the sector, yet the skills and know-how transfer can be provided by the foreign investor.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• There are no regulatory obstacles in this sector.
SUBTOTAL	**11**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

11. Fruits & vegetables processing		
To what extent:	Score	Evidence
Will additional FDI in fruits & vegetables processing add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	3	• New investors will add value if bringing new processing technologies that are currently not available in Armenia.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• Fruits & vegetables processing could generate a moderate number of new jobs and increase female employment, yet given the high automation of processing industry, the increase will be only marginal.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	4	• New fruits & vegetables processing facilities present extended market opportunities for existing domestic producers who could diversify their output use.
• Will new investors create increased export revenues or reduce imports?	4	• New FDI could increase export revenues by extending market opportunities for Armenian producers.
• Will new investors improve the performance of the value chain as a whole?	4	• Additional FDI would improve the operation of the whole value chain.
SUBTOTAL	**18**	
Does investment in fruits & vegetables processing an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	3	• The domestic market is largely saturated; export opportunities exist on regional markets (Russia).
• Is the global market attractive?	1	• Global market is expanding, yet given Armenia's high transportation costs, the country is unlikely to be competitive in most export market.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• The existing agricultural raw material base is not sufficient; new processing facilities would need to import fruits & vegetables to full use their production capacities.
• Does Armenia have competitive infrastructure?	3	• The country has sufficient number of industrial sites that could be used for construction of fruits & vegetables grading, storage / packing operations.
• Does Armenia have competitive skills & supportive services?	3	• There is a limited skill base for the sector, yet the skills and know-how transfer can be provided by the foreign investor.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• There are no regulatory obstacles in this sector.
SUBTOTAL	**14**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

Sources used: Agriculture in Armenia Snapshot, Avenue Consulting Group, 2014; Promoting Investment into Agricultural Sector of Armenia (Policy Recommendation), ICARE, 2017; Export Supply Chain of Greenhouse Crops Armenia, World Bank Group 2016;

3.5. Animal sector inputs

Manufactured inputs and services for dairy husbandry (feed, fodder, animal medication and supplement, veterinary services) were the last part of the value-chain reviewed within the sector scan.[32] The current predominantly extensively managed, forage-based livestock production system uses grazing management strategies, while integrated crop-livestock production systems designed to support large animal livestock production are just beginning to emerge. Armenian livestock production has been and still is dependent almost solely on forage produced by natural pastureland.

Several factors impact on the insufficient availability of livestock feed and reluctance to invest in feed and fodder in Armenia - over reliance on standing crop of forage and poor quality hay, limited silage production since the demise of subsidized state farms, high cost of quality supplementary feeds, lack of knowledge among farmers about the nutritive quality and value of feed. The livestock feed industry is not sufficiently developed, existing feed production concentrates in large vertically integrated agricultural operations that typically supply feed to their daughter/sister companies.

The crop sector provides livestock feed primarily as a) native hay, b) planted hay from annual and perennial grasses and legumes, c) fodder crops such as barley, oats, corn, beans and sunflowers; and, d) crop by-products such as bran. These may be used in either unprocessed or processed forms. The challenge of sustainable crop production in Armenia is the need to develop crop rotations for soil conservation and disease control. The constraint is that no cash markets are sufficiently developed yet to absorb the production of the crops in rotation. While the livestock sector in Armenia needs to increase its use of animal feeds, the preponderance of poor households without cash for feed purchases restricts the development of the cash feed market. The small size of the domestic market (purchasing power) is likely to be a limiting factor for foreign investments both in feed crops and animal supplements.

Veterinary services are important to all livestock production systems. The Government of Armenia is responsible for control of infectious diseases that have potential to adversely affect large-scale livestock production and ensuring food safety. The private veterinary system has primary responsibility for production level veterinary care. Most livestock producers have little cash available to pay for services or inputs and much of the vaccines and medicines that are available are inferior imports, or are too costly. The economy of scale in animal medication production and veterinary services required for foreign investment to replace imports is unlikely to be achieved in Armenia any time soon.

12. Animal feed production		
To what extent:	Score	Evidence
Will additional FDI in animal feed production add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	5	• Animal feed processing is largely underdeveloped, new investment could add significant value to the country.

[32] Sector inputs covered in the sector scan include manufactured inputs that could be produced in Armenia and potentially exported. The scan did not consider services that are solely domestic market bound or make part of general services (e.g. finance, ICT, logistics).

• Will new investors create additional jobs? Will investment contribute to job generation among women?	3	• Additional processing facilities will create more jobs, but only marginal over existing agricultural employment.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	3	• With a very small and underdeveloped animal feed crops sector, animal feed processing is unlikely to have big impact on existing households/farmers
• Will new investors create increased export revenues or reduce imports?	2	• New feed factories will likely still have very large dependence on imports of ingredients
• Will new investors improve the performance of the value chain as a whole?	4	• New feed investors could drive prices for animal farmers down, but impact will be marginal
SUBTOTAL	**17**	
Does investment in animal feed processing an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	2	• Small market for animal feed with a limited purchasing power of local farmers.
• Is the global market attractive?	1	• Large & growing global market, but with imported raw materials, feed manufacturers in Armenia are not going to be competitive on global markets.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• Limited local supply of raw materials (corn, soya, etc.).
• Does Armenia have competitive infrastructure?	2	• Infrastructure for manufacturing is reasonably good, however production costs are likely to be higher than in competing locations.
• Does Armenia have competitive skills & supportive services?	2	• Industrial workforce skills rather limited, animal feed processing industry skills almost non-existent.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• No obvious barriers.
SUBTOTAL	**11**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

13. Animal meds / veterinary services		
To what extent:	Score	Evidence
Will additional FDI in animal meds / veterinary services add value to Armenia?		
• Will new investors add value that is not already provided by local farmers / producers & existing investors?	5	• Domestic production of animal pharmaceuticals & supplements in Armenia is almost non-existent; veterinary services are in need of upgrading.
• Will new investors create additional jobs? Will investment contribute to job generation among women?	2	• New investors will create more jobs, but given the size of the sector, their number will be marginal.
• Will new investors increase opportunities for domestic firms to supply their goods/services to foreign investors?	2	• New producers of meds could increase the quality of animal husbandry production, but farmers/households currently do not have cash available to pay for new veterinary services.
• Will new investors create increased export revenues or reduce imports?	2	• Some potential for substituting animal pharma imports, but the base compounds would still need to be imported.
• Will new investors improve the performance of the value chain as a whole?	2	• Additional investors will likely increase competition, but impact will be marginal as import animal pharma unit prices are not very high.
SUBTOTAL	**13**	
Does investment in animal meds / veterinary services an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	2	• Open domestic market for public procurement of animal pharma products, private market small given the purchasing power limits.
• Is the global market attractive?	1	• Growing global market, but Armenia based manufacturers are unlikely to be competitive on global markets given high share of import inputs.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	1	• Ingredients for animal meds/supplements are not available in Armenia, high import dependence.
• Does Armenia have competitive infrastructure?	3	• Advanced infrastructure for high-tech manufacturing is available, yet production costs are likely to be higher than in competing locations given the high transportation costs to export markets.
• Does Armenia have competitive skills & supportive services?	2	• Advanced industrial processing skills are missing.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	3	• Internationally unrecognized domestic animal meds safety certification means higher export costs.
SUBTOTAL	**12**	
Evaluation key: 5=very positive 4=positive 3=neutral 2=negative 1=very negative		

3.6. Fruit & vegetable sector inputs

The key inputs for the fruit and vegetable production sectors are seeds, fertilizers, hail netting and greenhouse technologies for greenhouse cultivation. Seed supply to farmers is mainly from the informal seed sector, from on-farm seed production and exchange. While local varieties of fruits and vegetables carry genes for resistance to drought and diseases, they generally have low yield. Seed sometimes include hybrid varieties that are not suitable for producing seed to be saved and used in following years. Seed production is not very productive in Armenia. Currently less than 50% of domestic market seeds needs are covered by local producers; seed production is further influenced by climatic conditions (e.g. droughts can lead to substantial drop in seed production). Seed producers are slowly moving towards more commercial production of crops and agricultural products such as honey and dairy, further reducing local seed production. Drought resistant, high quality varieties of crop seeds suitable for Armenia's harsh climatic conditions continue to be imported, in particular from Russia and China.

Armenia has an abundance of resources of traditional nutrients (animal manures) but it lacks necessary fertilizers for crop farming (nitrogenous, potash, and phosphate fertilizers). The average consumption of 40 kg of fertilizers per hectare of arable land is only about one third of global consumption. Use of fertilizers in Armenia is critical not only to increase production yields but also to improve soil fertility that has significantly decreased over the past 30 years due to loss of humus (monoculture crop production, overgrazing, unsustainable use of agricultural land).

Despite the fact that Armenia is rich in phosphorus reserves, it imports phosphate fertilizers, as it does nitrogenous fertilizers – most fertilizers imports come from Russia (62%), Uzbekistan (21%) and China (16%) (figures based on 2015 statistics). Foreign investment in large industrial fertilizer production facilities is unlikely given the high raw materials input import dependency and a small domestic market. A similar unlikely investment scenario is to be found in the agricultural machinery sector. While most of Armenian farmers utilize outdated agricultural machinery, market demand will continue to be covered by machinery imports by dealerships of companies such as Case New Holland, John Deere or Challenger rather than by foreign investment in a new in-country production facility.

14. Seed production		
To what extent:	Score	Evidence
Will additional FDI in seed production add value to Armenia?		
• Will new investors add value that is not already provided by local herders/ farmers & existing investors?	5	• Almost no cutting-edge seed/planting material production exists in the country; local traditional seed collection prevails, quality seeds continue to be imported.
• Will new investors create additional jobs?	3	• Seed R&D/production units generate few jobs, but high-skill/wage level.
• Will new investors increase herder/ farmer income?	1	• Better seeds will raise incomes, but imported vs FDI-produced seeds make little difference to farmers' income.
• Will new investors create increased export revenues or reduce imports?	2	• Import substitution is likely, yet the import bill for seeds is relatively small.
• Will new investors improve the performance of the value chain as a whole?	5	• Improved local varieties/availability/extension can significantly increase farmers' incomes and export values.
SUBTOTAL	**16**	
Does investment in seed production offer an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		

• Is the local and regional market attractive?	1	• A small market already well supplied by imports, lack of quality control on labelling, quality, trading conditions; price sensitivity of farmers/herders.
• Is the global market attractive?	2	• Global demand/prices trending upwards, yet Armenia is unlikely to be attractive for efficiency seeking FDI.
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	2	• Difficult climate for seed production; intensive production requires limited land.
• Does Armenia have competitive infrastructure?	4	• Sector does not require heavy infrastructure
• Does Armenia have competitive skills & supportive services?	2	• High-end R&D skills critical, Armenia likely to have a shortage of research canters' skills in seed genetics and production
• Does Armenia offer a conducive business (regulatory/institutional) environment?	1	• Lack of standards/enforcement is major disincentive for investors: concerns about IP protection, and limited market due to counterfeiting, unregulated trade, etc.
SUBTOTAL	**12**	

15. Agrochemical production (fertilizers, pesticides)		
To what extent:	Score	Evidence
Will additional FDI in agrochemical production add value to Armenia?		
• Will new investors add value that is not already provided by local herders/ farmers & existing investors?	5	• As fertilizers are mostly imported now, new FDI would add value to the agricultural sector.
• Will new investors create additional jobs?	4	• Fertilizer refineries generate relatively few jobs, but high-skill/wage levels
• Will new investors increase herder/ farmer income?	2	• More efficient use of fertilizers/pesticides will raise incomes, but imported vs FDI-produced agrochemical production makes little difference to farmers' income.
• Will new investors create increased export revenues or reduce imports?	3	• FDI could positively impact on import substitution; efficiency seeking, export oriented FDI unlikely.
• Will new investors improve the performance of the value chain as a whole?	4	• Better seeds will raise incomes, but imported vs FDI-produced seeds make little difference to farmers' income.
SUBTOTAL	**18**	
Does investment in agrochemical production offer an attractive proposition for foreign investors?		
Is the market (in terms of demand, supply and prices) attractive?		
• Is the local and regional market attractive?	2	• A small developing market with lower average consumption figures than elsewhere, farmer price sensitivity.
• Is the global market attractive?	1	• Global supply outstripping demand: major oversupply projected in coming years; well-entrenched leaders (China, US, India), with scale advantages
Does Armenia offer competitive supply conditions for investors in this sector?		
• Does Armenia have competitive natural endowments (land, climate, location, etc.)	2	• Armenia has phosphorus resources but depends on imports of other production inputs.
• Does Armenia have competitive infrastructure?	2	• Missing utilities infrastructure for large industrial production
• Does Armenia have competitive skills & supportive services?	2	• High-end skills critical, Armenia likely to lack the required skill base.
• Does Armenia offer a conducive business (regulatory/institutional) environment?	2	• Concerns about IP protection and market interference by the Government.
SUBTOTAL	**11**	

Figure 22 Summary of sector scan assessment matrix

Sub-sector	Value for Armenia					Value Proposition for Investors					
	Lack of existing investors	Extra jobs / female employ.	Firms' income/ suppliers	Trade balance	Impact on value-chain	Local market	Global market	Natural assets	Infra-structure	Skills & services	Business environ-ment
1. Intensive fish farming			**14**					**13**			
	3	1	2	4	4	3	3	1	2	2	2
2. Fresh fish processing			**12**					**12**			
	1	3	2	3	3	3	2	1	2	2	2
3. Secondary fish processing			**19**					**13**			
	4	3	4	4	4	4	2	1	2	1	3
4. Intensive dairy cattle farming			**15**					**14**			
	4	4	1	2	4	3	1	2	2	3	3
5. Milk collection & treatment centres			**21**					**12**			
	4	3	5	4	5	3	1	1	2	2	3
6. Dairy products manufacturing			**17**					**13**			
	3	3	3	4	4	3	2	1	2	2	3
7. Flowers cultivation			**22**					**22**			
	4	4	4	5	5	5	3	4	3	3	4
8. Flowers grading, packing/cold storage			**11**					**11**			
	2	3	2	2	2	1	1	2	2	2	3
9a. Intensive open field vegetable & fruit farming			**14**					**14**			
	3	3	1	3	4	3	1	1	3	3	3
9b. Intensive greenhouse vegetable & fruit farming			**21**					**17**			
	4	4	3	5	5	3	3	3	2	3	3
10. Fruit & vegetable grading / storage			**15**					**11**			
	2	3	3	3	4	1	1	1	3	2	3

11. Fruit & vegetable processing	**18**					**14**					
	3	3	4	4	4	3	1	1	3	3	3
12. Animal feed processing	**17**					**11**					
	5	3	3	2	4	2	1	1	2	2	4
13. Animal meds, veterinary services	**13**					**12**					
	5	2	2	2	2	2	1	1	3	2	3
14. Seed production	**16**					**12**					
	5	3	1	2	5	1	2	2	4	2	1
15. Agrochemical production	**18**					**11**					
	5	4	2	3	4	2	1	2	2	2	2

3.7. Overall sector scan results

Based on the sector scan results **the subsectors with the best investment proposition are linked to greenhouse production**:

- flowers greenhouse cultivation
- fruit and vegetable cultivation.

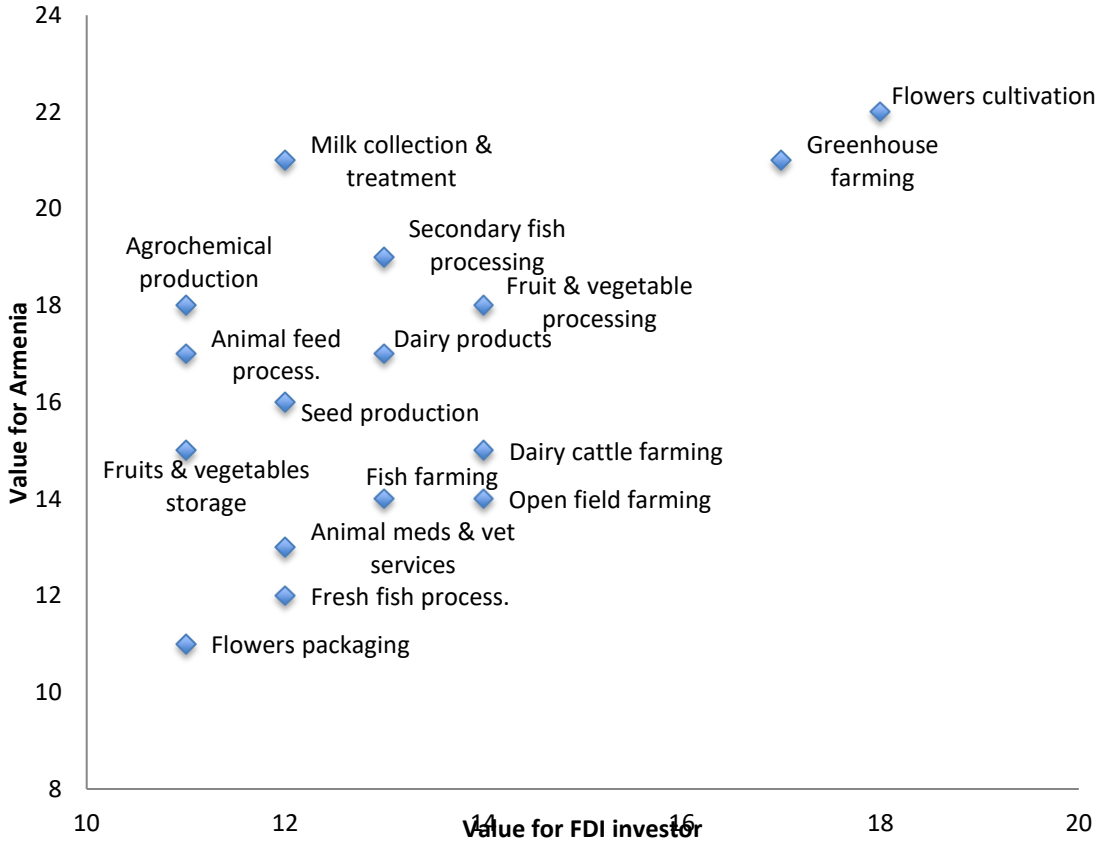
These subsectors have a good recent investment track (both domestic and diaspora linked investment), have a well-established production base, require relatively low levels of imported inputs (excluding the initial investment of imported greenhouse technologies which are not produced locally), entail potential export opportunities for both regional and global markets (especially in premium quality segments), and have competitive natural endowments.

These sub-sectors are the closest to priority sub-segments that could potentially be promoted to foreign firms for greenfield or joint venture investment. None of the remaining reviewed agricultural sub-sectors currently presents strong enough value proposition for immediate substantial greenfield FDI. In several other sub-sectors (in particularly in processing operations that add value to the existing low value domestic agricultural production, for instance in fruit and vegetable processing, dairy sector or fish processing) FDI would be very valuable for Armenia, yet the investment proposition for foreign investors is unclear. The assessment for all sixteen value chain sub-segments is summarized in Figure 22.

Armenia's weak raw agricultural material base is the main constraint for FDI in agri-processing. Most of the interviewed domestic processing companies reported difficulties in sourcing sufficient volume and quality of domestically produced agricultural raw materials (milk, fruits & vegetables). As a result, the domestic processing companies do not use their full production capacities and/or are unable to meet demand from export markets (including non-equity investment demand, for instance for outsourced production for TNCs or private label producers). Under these circumstances, FDI in processing would not be economical and profitable.

Limited access to land and irrigation is the main impediment for a large scale FDI in primary agricultural production/cultivation. Unlike diaspora investors, TNCs operating in primary agricultural production require access to large plots of agricultural land, which is currently not readily available in Armenia. While there have been some small to mid-size cultivation projects (nuts, berries) initiated by the Armenian diaspora, these are often start-ups that are not driven by existing producers and their business expansion needs but rather by businessmen looking for new business ventures. These start-up operations do not have the same level of know-how, technologies and skills as large foreign companies operating in the sector.

Figure 23 Prioritization of target sub-sectors for proactive FDI promotion



3.8. Sector linked investment impediments

While investment propositions may exist for greenhouse floriculture and horticulture, some critical investment climate issues remain that may hamper investment outreach in the short-term and these need to be addressed.

The two identified sub-sectors face similar constraints:

- Access to land and irrigation;
- Ambiguities and complexity of import procedures along the whole value chain (imports of seeds, fertilizers, pesticides, greenhouse systems and equipment, drip irrigation systems);
- Cadastral classification of greenhouse structures;
- Energy efficiency issues (cost and quality of supplied gas used for heating in the heating season).

During the sector scan the World Bank Group team gathered information (from sector studies and investor interviews) on Armenia's investment climate weaknesses specifically related to agribusiness and relative to competing locations that need to be addressed if the country is to start proactively promoting FDI opportunities in these sub-sectors.

While the foreign investor may be able to overcome some of the other impediments identified by domestic companies (poor availability and accessibility of finance, safety and quality of agricultural products, productivity and production technologies, selection of greenhouse structures), the above constraints cannot be removed by a private sector and require government regulation, enforcement and investment. Even though these are not new findings as these constraints have previously been identified by numerous sector and value chain studies and reports, they are critical in terms of attracting FDI. Foreign investors will not invest in a country with high, uncompetitive production cost structure and with a below an average regulatory framework, which directly impacts on profitability and return on potential investment.

3.9. General investment climate impediments

There are many factors affecting Armenia's attractiveness to investors. While the focus of this paper is primarily on investment climate issues related to investment in agribusiness, most of the identified crosscutting investment climate issues are relevant to other sectors as well.

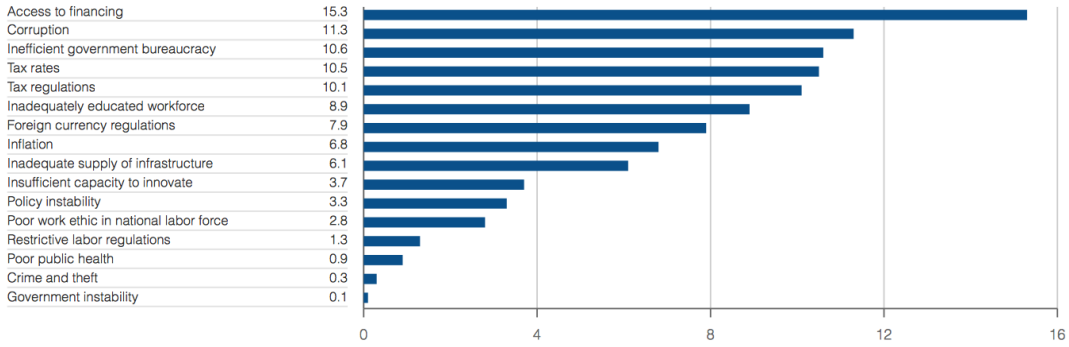
Consistent with its free-trade stance, Armenia has been open to foreign investment since the early 1990s and offers foreign investors high standards of treatment and protection. However, there are several legal provisions and institutional impediments that send

contradicting signals to investors and create an inconsistency with the liberal approach to investment adopted by the public administration.

Policy and regulatory uncertainty

Political uncertainty and instability impacts on efficiency of government bureaucracy. Companies interviewed during the sector scan reported that every time there is a transition of power in Armenia, the structure of government changes and so do government agencies and their staff involved in policy regulations. The transition process is very often lengthy and paralyses the relations with private sectors. Low efficiency of government bureaucracy is reflected in investors' perception surveys (Figure 24) and was confirmed during the WBG team's interviews during the fact-finding missions.

Figure 24 **Most problematic factors for doing business in Armenia**
(Global Competitiveness Index)



Note: From the list of factors, respondents to the World Economic Forum's Executive Opinion Survey were asked to select the five most problematic factors for doing business in their country and to rank them between 1 (most problematic) and 5. The score corresponds to the responses weighted according to their rankings.

Source: Global Competitiveness Index 2016-2017, WEF

More broadly, the World Bank has recently conducted an investor confidence survey with foreign investors in Armenia (the final report was submitted to MEDI in September 2017). The results indicate that investor confidence is still rather low, that the quality of investment policy matters to investors and that investors are dissatisfied with the existing Investment Law (1994) and its implementation, among others. This highlights the importance for the Government to advance reform efforts, such as the revision of the Investment Law; and involve investors in their consultations so that their concerns and grievances can be addressed. Investors' grievances and the related potential negative effects on business viability should be viewed as clear indicators of the importance to pursue reforms that go beyond investment promotion, such as to boost investor aftercare and improve implementation of law.

Access to export markets

Ease of market access is a critical site selection factor for foreign investors exploring investment opportunities in Armenia for export purposes. Removal of existing export barriers, in particular easing transit border crossing and customs formality procedures at the Georgian-Russian Lars border that are complicated, unpredictable and often involve informal "facilitation fees" should be prioritized in government's effort of improving the country's investment climate. Companies also report some problematic procedures related to applying the VAT on exported goods.

Armenia's Eurasian Economic Union (EEU) membership has raised expectations for improved export opportunities on the EEU's large internal market. At the same time, it also brought some changes and uncertainty into export procedures, e.g. provision of phytosanitary and additional sanitary certification or stricter food safety requirements. While large international investors have the skills and financial means to follow these regulations and requirements in their internal operation, the existing uncertainty as well as the reported arbitrary application of these requirements by (Russian) customs officials, increases business risks for FDI investors.

Shortage of skills

Most of the private sector agribusinesses interviewed during the data collection phase reported a shortage and/or mismatch of skills needed in today's markets. Limited supply of skilled and educated workers and staff is a severe concern for any investor, regardless its origin, but it is a critical investment site selection criterion for foreign investors that could potentially discourage FDI from considering Armenia. Improving the labour market skills more broadly, including for the selected target agricultural sectors (particularly among vocational education graduates) is an important part of the sector's value proposition enhancement.

4. Conclusions & recommendations

4.1. Greenfield investment in niche subsectors and joint ventures most likely sources of FDI in agribusiness

FDI inflow patterns in Armenian agriculture are unlikely to differ substantially from established investment trends seen globally elsewhere in agriculture and food-processing (i.e. most FDI in the form of mergers and acquisitions (M&As), non-equity participation of TNCs taking place more frequently than greenfield FDI, private institutional investors being interested in niche sub-sectors with an established track record of investment rather than complex value chains). Although the sector scan has identified two sub-sectors that could hold a viable investment proposition to potential foreign investors, none of the reviewed sub-sectors currently demonstrates strong enough features that could motivate FDI into a large-scale greenfield production in the short-run. Greenfield investment is likely to be on the small-scale side both in primary production as well as primary and secondary processing where supply side obstacles make large-scale business proposition implausible.

Diaspora seed capital is likely to continue being interested in supporting projects in some niche sub-sectors (e.g. berry or nuts cultivation), yet the economic benefits to Armenian economy will not be substantial and will be mostly limited to capital inflow. While technically FDI, the recent diaspora backed investment in agriculture is more about seed-capital financing than transfer of know-how/technologies or job creation.

Some of highly profitable domestic firms with established track record in agricultural production may be able to attract private institutional investors, in particular when extending their existing operation, for instance when increasing their domestic market share or expanding to foreign markets. A few of such investment projects are currently

already being promoted by DFA, in particular seeking access to low-cost, long-term financing

Joint ventures are the last category of possible FDI in Armenian agribusiness as they reduce foreign investors perceived investment risks by bringing capabilities of domestic investors to manage an unknown environment. Lowering perceived investment risks is an important investment decision-making factor; in particular in a country with very few reference FDI projects in agriculture. It must, however, be mentioned, that the average size of an Armenian agribusiness operation could be seen as too small by potential foreign joint-venture partners.

4.2. Institutional arrangements and the role of DFA

Provided that the Government decides to pursue the two niche subsectors with investment promotion, the presented rapid sector scan results may be used by DFA as an input for policy advocacy and to develop investor targeting, i.e. proactively reaching out to investors identified as being desirable and likely to invest, in order to present them with tailored business cases for selecting Armenia as their future investment destination.

Importantly, DFA's organizational structure would need to be adjusted to a new operational mode that would move the agency from primarily promoting packaged investment projects to promoting promising FDI sectors and sub-sectors.

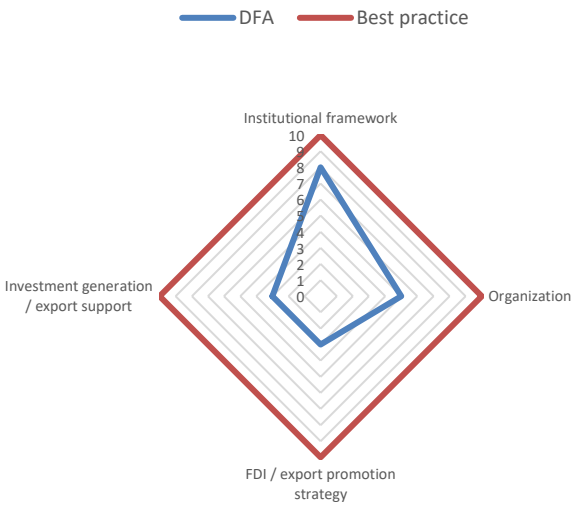
The agency currently primarily promotes packaged investment projects (http://investmentprojects.am) and acts as an investment broker who looks for potential investors willing to invest into domestic investment projects. Promoting supply driven investment projects is, however, considered a deviation from the best mandates for IPAs. Investment promotion agencies usually have scarce and precious resources which must be utilised for optimum effectiveness - investment wining and job creation. Resources redirected to promoting individual investment projects are lost to the IPA core mandated activities. Promoting investment projects consumes precious manpower and organisation bandwidth in activities, which may become ever more demanding from third party entities – ministries, etc. The reporting and management structure for promoting investment projects becomes complex, competitive and disruptive. Promoting individual investment projects also does not bring about any policy changes leading to improvement of the national investment climate nor to competitive positioning of the country on the international FDI market.

To make the full advantage of the presented rapid sector scan results, DFA needs to acknowledge its role in demand, rather than supply driven investment promotion and dedicate at least some resources to sector based investment promotion. Based on these findings, the WBG Team envisages that the build-up of future investment promotion efforts will be incremental and phased.

Moreover, recent assessment of DFA by the World Bank revealed some core competences gaps in comparison with the global best practice (cf. Figure 25), in particular:

- Absence of a mid-term FDI / export strategy outlining key (sub)sector / market priorities and services provided by DFA as a basis for annual operational planning
- Missing formalized internal systems, guidelines manuals (templates)
- No CRM system – limited data for the M&E mechanism
- Missing justification for supply driven FDI/FPI focus
- Unclear operation of the network of foreign representatives
- Weak sector focus / in-house knowledge and staff skills.

Figure 25 Summary of DFA institutional assessment (October 2017)



Source: Independent institutional assessment of DFA under WBG TPQI project, 2017

Closing the identified gaps will likely be a prerequisite for successful implementation of the rapid sector scan recommendations.

4.3. Recommendations summary

The primary objective of the FDI sector scan report was to provide the Government of Armenia with an assessment of potential FDI opportunities in the agribusiness sector and to suggest how this information can serve for the purposes of sector-specific investment promotion as well as investment climate reform. A similar exercise could be conducted in other sectors and sub-sectors.

More broadly, the report also finds that there is scope for significant upgrading of Armenia's investment promotion efforts from the more traditional reactive approaches, based on large and unfocused investor conferences, to a significantly more targeted and more proactive approach focusing on outreach to those sectors with the most competitive potential for Armenia.

In summary, the following reform steps can assist the Government in strengthening the effectiveness of its investment promotion efforts with respect to targeting promising FDI sectors and upgrading investment promotion capacity:

i. Government of Armenia should acknowledge the role of DFA in promoting internationally competitive sectors to foreign investors rather than just promoting packaged investment projects;

ii. GoA (MEDI and DFA) should run a similar rapid sector scan for additional sectors where Armenia already has a strong track record (e.g. IT or textile sectors)[33] and target investment promotion effort accordingly to yield the expected FDI results; as part of this process, it should decide whether the two identified sub-sectors in agribusiness should be pursued as priority targets for FDI attraction;

iii. DFA should prepare a mid-term FDI promotion strategy that sets the national policy context, sets objectives and structure of investment promotion, positions Armenia and selects internationally competitive sectors for proactive investment outreach next to promoting only selected packaged investment projects;

iv. As part of the FDI promotion strategy, the government should prioritize key investment climate reforms relevant for FDI priority sectors with a view to freeing up sectors for viable investment promotion; work jointly with all relevant actors, including the PM Office, MEDI, MoA and others on addressing them

v. DFA should prioritize development on internal processes and guidelines as well as introduction of a CRM system and sector market intelligence;

vi. DFA should establish a capacity building program to build skills and competencies for targeted sector promotion and facilitation within DFA and MoA with possible participation of Ministry of Foreign Affairs overseas staff;

vii. DFA should define sectoral value propositions, create tailored information and marketing materials (brochures and presentations) targeted at the identified priority sectors that provide sufficient level of detail on cost/quality of critical operational factors;

viii. DFA should strengthen its promotional website that investors can easily find and use, and upload and maintain investor-targeted information for priority sectors;

ix. If the Government decides to promote FDI in agribusiness, DFA should design and plan targeted international promotion in the two recommended subsectors (floriculture and greenhouse fruits & vegetables production) in

[33] Textile industry, for instance, has recorded relatively strong interest from foreign investors for non-equity investment and the sector competitiveness should be explored in more depth.

selected markets (e.g. the Netherlands, Israel). Ministry of Foreign Affairs and its network of commercial counsellors at Armenian foreign missions can potentially play an important role in foreign investor outreach. Similarly, Armenian sector associations could be instrumental in identifying high calibre domestic companies for international joint ventures and assessing contacts at global level via their membership at international sector associations; and

x. DFA should prioritize rollout of new aftercare initiatives for existing FDI projects with the aim to identify investment projects that have potential for in-country reinvestment or extension/enlargement of their existing operation.[34]

[34] While the existing aftercare program focuses mainly on troubleshooting and helping companies to resolve their operational problems, it should also identify and prioritize high reinvestment potential projects.

5. Annex

a. Annex 1 / FDI Terminology and Principles

Investment typically refers to private, productive investment. This is a private company establishing facilities and hiring people to produce goods or services that are sold in the marketplace. An individual investment may take the form of a manufacturing plant, service centre, sales office, distribution centre, research and development facility, or headquarters, among others. It does not refer to liquid portfolio investment in which an investor merely purchases equities of foreign-based companies but does not exercise any effective control or influence over the decision making of a foreign business. The term investment does not refer to public investment or international donor funds, although both public and private financial institutions, such as banks, governments, and IFC, may provide financing to the private companies that make these investments.

The source of investment may be domestic or foreign **investors**, a term that is often used interchangeably with "companies." The global pool of foreign investors is, of course, very much larger than the pool of investors based in Armenia, and they collectively possess all the value chain activities, investment capital, skills, technology, and market knowledge that Armenia might aspire to. For this reason, **foreign direct investment, or FDI**, is often seen as an indispensable means of catalysing sector growth and diversification.

Investment policy, if well-crafted, can enhance the attractiveness of a location by providing a transparent and predictable legal and regulatory framework (such as specifying where FDI is permitted and under what conditions), improving investor protections (for example, against expropriation, as minority shareholders), reducing operating costs through improved infrastructure, and streamlining government procedures (such as customs clearance, obtaining permits) to reduce associated costs and risks, and facilitating the full range of company operations. More loosely, investment policy can refer to any Armenian government policy that affects the relative competitiveness of particular sectors. For example, education and immigration policies may increase the numbers and skills of available workers. Together, all these factors affecting a location's attractiveness to investors comprise the **investment climate**.

However, simply having a good investment climate does not guarantee that a location will capture the attention of potential investors, that investors will not have trouble identifying and realizing investment opportunities, or that the investment climate cannot be improved further. **Investment promotion** is an umbrella term for all activities designed to make sure that these things happen. Most of these activities fall under the heading of one of five typical investment promotion functions: investor targeting, investment facilitation, investor servicing, investor aftercare, and policy advocacy.

FDI terminology and principles (continuation)

Investor targeting (a.k.a., **investor outreach** or **proactive promotion**) involves proactively reaching out to investors identified as being desirable and likely to invest, in order to present them with tailored business cases for selecting a given location. **Investment facilitation** attempts to convert investor interest into a decision to invest, through the provision of information and assistance during the site selection process. **Investor servicing** then helps convert that decision into an operational project.

Even after a company becomes operational, it remains a potential source for new investment, often called "reinvestment" when it comes from an existing investor. Identifying potential for reinvestment and facilitating its realization is a dimension of **investor aftercare**.

In any given location, there will be many institutions, both public and private, that undertake one or more of these various investment promotion functions. For example, a sector-specific ministry, such as a Ministry of Agriculture, may conduct investor targeting, and an agro processors' association might conduct investment facilitation and investor servicing. Any such institution might be described as **an investment promotion intermediary** (IPI). Wanting to ensure that all essential functions are performed in a coherent and strategic manner, most governments have designated one body to be its lead investment promotion body. This is sometimes an investment regulatory body or a subunit of a ministry, such as commerce, but it is frequently a stand-alone **investment promotion agency (IPA)**, which itself is a subcategory of IPI. In Armenia, the mandate of investment promotion agency rests with National Development Agency.

As IPIs are not generally policymakers, their investment climate reform efforts fall into the category of **policy advocacy**, whereby they identify obstacles to competitiveness and support relevant decision-makers and stakeholders with the formulation and implementation of solutions.

Based on *A Guide to Investor Targeting in Agribusiness*, World Bank, 2014.

b. Annex 2 / Illustrative example of an action plan for a sector based investment outreach program:

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9
Gathering sector data (cost, quality) for Armenia and comparator countries	DFA/MoA/MFA								
Developing sector based investment proposition			DFA						
Preparation of sector based marketing materials (web, printed materials, presentations)			DFA						
Development of investor tracking database	DFA	DFA	DFA/MFA						
Identification of potential domestic JV partners, preparation of companies' profiles testimonials		DFA/MoA/sector associations							
Identification of potential foreign investors in target countries	DFA / MoA /sector associations								
PR sector support in target countries				DFA / MFA / sector associations					
Outreach event (B2B meetings)						DFA/MFA			
Individual B2B follow-up							DFA / MFA		

c. Annex 3 / A full list of experts and private sector representatives interviewed (*in alphabetical order*)

Ancient Herbals	Armen Mehrabyan Owner & Creator
ARARAT Food Factory	Yervand Tarverdyan Director
Armberry	Avetik Chalabyan Chairman
Armberry	Harutyun Pakhchanyan Executive Director
BIGA	Aram Asatryan Head of Operation
Borisovka Cheese Production	Myasnik Grigoryan Owner
Business Support Centre	Samvel Gevorgyan Managing Partner
Centre for Strategic Initiatives	Aleksandr Khachaturyan Executive Director
Chamber of Commerce and Industry of RA	Andranik Aleksanyan General Director
Cheese Production Association	Armen Gigoyan Head of Association
DFA	Armen A. Avakian Chief Executive Director
DFA	Arman Udumyan Head of Institutional Fundraising and Grant Programs
DFA	Hayk Mirzoyan Head of Aftercare unit
DFA	Avetis Hovhannisyan Head of Project Team
DFA	Narek Aleksanyan Head of Sales Team

DFA	Armen Akhiyan Head of Marketing Team
District M Consulting	Garen Mikirditsian Managing Partner
Dutch Embassy	Maia Troda Economic Policy Officer
Ecotomato CJSC	Narek Ghazaryan CFO
EUROTERM	Vahe Ghazaryan General Manager
Greenhouse Association	Poghos Gevorgyan Director
Hayastan Investments	Babken Babayan Country Director Armenia
Honorary Consulate of Portugal in Armenia	San Samuelyan Honorary Consul
ICARE	Vardan Urutyan General Director
Ice House	Hasik Chakhalyan Director
Ice House	Armen Avetisyan Head of Operations
IFC	Gagig Gabrielyan Consultant
IFC	Arman Barkhudaryan Senior Investment Officer
MEDI[35]	Hovhannes Azizyan Deputy Minister
MEDI[2]	Vahagn Lalayan Investment Policy Department
MEDI[2]	Naira Karapetyan

[35] Ministry of Economic Development & Investments

	EAEU and Foreign Trade Department
Ministry of Agriculture	Ignaty Arakelyan Minister
Ministry of Agriculture	Armen Harutyunyan Deputy Minister
Ministry of Foreign Affairs	Robert Harutyunyan Deputy Minister
National Statistical Service	Kristine Poghosyan Balance of Payments and External Trade Statistics
National Statistical Service	Lusine Kalantaryan Labour Statistics
OXYGEN	Artur Gomktsyan Agribusiness Development Project Manager
Sahakian Law Bureau	Alexander Sahakian Attorney at Law
Sasuntsy David	Artur Hakobyan Director
Union of Manufacturers & Businessmen of Armenia	Eduard Kirakosyan Executive Director
Union of Manufacturers & Businessmen of Armenia	Haykaz Bakhshetsyan Vice President
Union of Manufacturers & Businessmen of Armenia	Krist Pilosyan Vice President
Women Entrepreneurs Network in Armenia	Lilit Asatryan President
World Bank	Emiliano Duch Lead Private Sector Development Specialist