

RESEARCH ON THE STATUS OF FOOD SECURITY AND NUTRITION



ევროკავშირი
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OXFAM

RESEARCH ON THE STATUS OF FOOD SECURITY AND NUTRITION

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Executive Summary

This research provides an overview of the state of food security in the Caucasus, particularly in Armenia and Georgia. As part of the project 'Improving Regional Food Security through National Strategies and Small Holder Production in the South Caucasus', Oxfam conducted a baseline study of the food security situation in 2014. This research was intended to provide a snapshot of the major food security problems in the region, as well as a summary of the discourse on the subject. Both elements were intended to help direct project work and further research investigations in the area. This research is an update of that baseline and uses analyses of FAOs indicators, desk-based data analysis, a review of Oxfam-financed research, as well as expert interviews in both countries to collect data.

As in the baseline, the research is consistent with the Food and Agriculture Organization (FAO) assessment of food security. The FAO breaks food security in 4 main 'pillars': availability, accessibility, utilisation and stability. Food availability is the physical availability of food products. Accessibility is the physical accessibility, by transport as well as the economic accessibility. Utilisation is the degree to which the available food is used to provide citizens with a healthy and nutritious diet. Stability is the degree to which access to food can be lost or food prices can change in a short time.

In general, in terms of each of these, the main changes since the 2014 baseline have been connected to large economic and political changes in the world and the region generally. In the world as a whole, the price of food has improved since 2014. The World Food Price Index fell from 202 to 162 between 2014 and 2015. However, this improvement in prices has been mitigated by worsening regional economic circumstances, driven by dramatically reduced oil and gas prices as well as by sanctions against Russia.

This difficult situation has led to a 140% decline in the value of the Azerbaijani Manat, a 40% reduction in the value of the Georgian Lari, and a 20% decline in the Armenian Dram. These declines, of course, reduce the buying power of the local currencies for buying imported foods and make exports of locally-produced food more attractive.

The three countries of the Caucasus have also generally suffered from the regional economic decline more broadly. Azerbaijan has probably seen the largest financial hit from the reduction in the price of exports, but has some buffer from accumulated reserves. Armenia has largely suffered because of its remittances from and market dependence on Russia. Georgia has also experienced a down-turn in remittances, exports to Russia in some areas, and many families have suffered from higher repayments on dollarized loans. All of this will have negatively impacted the ability of the population to buy food.

At the same time, Armenia and Georgia have made shifts in their regional orientation which will, ultimately, have profound impact on their economic relations and food security. In 2014 Georgia joined the Association Agreement and Deep and Comprehensive Free Trade Area (DCFTA). This will give Georgian agricultural producers access to the EU's market as a possible destination for exports. More importantly in the medium term, the Association Agreement requires that Georgia come into alignment with the EU on a wide range of issues. Particularly relevant to food security, this includes phyto-sanitary issues. As a result, Georgia has also seen its foreign assistance from the EU increase.

Conversely, under pressure from the Russians on security issues, gas supply, and migration, at the beginning of 2015 Armenia joined the Russia-backed Eurasian Economic Union (EEU). The EEU currently includes Russia, Kazakhstan, Belarus, Kyrgyzstan and Armenia. Joining the EEU secured the continuation of market access for Armenian goods and migrants to Russia, but since this access had only been limited recently, there is little suggestion that it will bring significant economic benefits. On the downside, joining the EEU made it impossible for Armenia to join the EU Association Agreement. It also required an increase in Armenia's external tariffs on goods made outside of the region. This has pushed up prices on many goods considerably, although we have seen different developments in the three countries for the past 5-6 years. Armenia's Food

Price Indices have climbed steadily and in 2015 were 113% of their 2011 value, Georgia's have climbed more slowly to 106%, and Azerbaijan's have dropped to 96% of their 2011 value.

The timing of the agreement on EEU membership for Armenia has also been problematic. The year 2015 was the beginning of the regional financial crisis, so prices increased and agricultural exports to Russia decreased at exactly the time when Armenia became dependent on the region. Regardless of whether the two things were causally related, there is little doubt that the timing of EEU membership has created fairly strong negative feeling towards the EEU in Armenia.

In Azerbaijan, the impact of the drop in oil prices has, in some ways, been the most profound. Not only did the crisis create the biggest devaluation in currency value in the region, but that valuation has not recovered even when oil prices have improved. Russia, by contrast, has seen significant recovery, tracking with commodity prices. This is consistent with the idea that the Azerbaijani economic system is fairly fragile and has been both supported and negatively distorted by hydrocarbon revenue. As a result, while they are likely to be cushioned from the immediate impact of the financial crisis, if the crisis were sustained they might be the most vulnerable of the three countries, as state social support and state-supported agriculture are unprepared to exist without that support.

This research reviews the FAO categories of availability, accessibility, utilisation, and stability, and also provides overviews of dependency and the role of gender. Overall, most of these 'pillars' and the indicators associated with them have seen little change in the last three years. However, even where that is the case, this research updated our assessment.

The availability of food is broken down by the FAO into caloric intake, protein intake, and overall production per capita. According to these indicators, the average calorie intake is not a problem in any of the three countries. There may still be significantly marginal communities for whom the problem does still exist, particularly amongst the very poor or physically marginalized. However, the broader problem across the region is quality of diet. The FAO indicators suggests that protein intake is higher in Armenia than in Azerbaijan and Georgia.

This is consistent with the profile of production. All three countries have production problems that are consistent with small-scale, low-input and low-output subsistence farming. However, Georgia is significantly the lowest per-capita producer of the three countries with less than half the per-capita production of Armenia. This is strange given that Georgia has around double the rainfall of Armenia and Azerbaijan, and highlights that Georgia's agricultural production has only become a major focus of attention for the government in the last few years. This suggests that productive food insecurity in Georgia may be higher than in the other two countries. Though, it may also suggest that Georgia has the greatest opportunity for improvement.

In accessibility, the FAO distinguishes between physical access (such as availability of roads and railways) and economic access (such as food prices). In terms of physical access, the Caucasus all have a higher road and rail density than the rest of the region, reflecting the fact that they are smaller countries. In terms of the World Bank's Logistical Performance Index (LPI), Georgia ranks 130th and Armenia ranks 141st out of 160, suggesting that cost and time of transport to/from are high in both cases (Azerbaijan was absent from 2016 LPI ranking). That said, the Oxfam-financed research on Food Security in mountainous Georgia suggested that the biggest problem for physical accessibility in Georgia is the seasonal access for high mountainous regions with 200 villages that are inaccessible in winter, and significant areas where physical accessibility is difficult.

In terms of economic accessibility, the key indicator is 'food price level'. This is calculated to show how expensive food is relative to other purchases, so that a higher number suggests that food is relatively

expensive.¹ The domestic food price level index is currently only calculated in the Caucasus for Armenia, where it dropped from 9.07 in 2013 to 8.87 in 2014. This still makes food more than 5 times more expensive, relative to income, than it is in developed countries. Oxfam/ACT also support this conclusion, showing that around half of the average monthly income in Georgia is spent on food.

The FAO's utilisation indicators focus on the healthiness of the food preparation environment and some simple impacts of healthy eating. Generally, this suggests that access to improved water and sewer systems is high across the region, though the quality of water supply could be widely questionable.

Data that reflects the health consequences of poor nutrition is often very dated, but shows that the prevalence of stunting (being significantly smaller than mean), wasting (significantly lighter weight for height) and being underweight (significantly lighter weight for age) all show lower levels in Georgia than Armenia and Azerbaijan. This seems to conflict with the production information, but might just mean that production is more evenly distributed in Georgia. Anaemia is also a problem. Better data is needed to gain a clear picture of the problem and the need for government intervention. In Georgia, the National Centre for Disease Control started a pilot study in four municipalities in Georgia to collect information on anaemia and other issues. Although the results have not been fully processed and finalised yet, it seems that malnutrition among children under 5 is higher in rural areas across the region and worst in high mountainous regions.

Data on phyto-sanitary problems is extremely dated. The ACT/Oxfam survey in Georgia suggested that 25% of residents believe that they have been food-poisoned in the last year, although only 7% had that belief verified. There is preliminary information to suggest that this may be an endemic problem in Georgia but the government needs to track this better to assess the scale of the problem.

As for many of the other variables, FAO food stability indicators give a confusing picture since food supply variability does not track with food price variability. The data is also extremely dated. However, recent years seem to suggest that food prices are volatile, depending on a host of factors such as seasonality, the regional situation, and global market trends.

Production variability is particularly important, not just because it is reflected in overall prices, but also because production variability for subsistence farmers is a direct source of food insecurity. The mountainous nature of the Caucasus make it particularly dependent on irrigation and drainage, as rainfall/snowfall may be uneven and may not occur in the place where it is needed. Therefore, a highly functioning irrigation and drainage system is one of the best sources of agricultural insurance. All three countries have spent considerable resources improving this infrastructure in recent years. For example, the World Bank has lent USD 80 million to Armenia, USD 100 million to Azerbaijan, and USD 50 million to Georgia just in the past 5 years.

The other big source of insecurity is animal disease. Diseases may cause insecurity since they can lead to epidemics which wipe out large numbers of animals and drive up meat prices. They can also cause localised insecurity, since the death of an animal from disease can be debilitating to a subsistence farmer's calorie production and nutritional diversity. A range of animal diseases are endemic in the region and we have seen this expressed in occasional epidemics as well as in reduced milk yields and the banning of exports to some countries. This is a clear focus of attention for the EU in Georgia, though plans for reform have moved forward slowly.

We look at the question of 'dependency,' as import dependency is a clear focus of internal discussion about food security. The FAO assesses food dependency in two ways. First, it looks at overall food import levels relative to tradable exports. Armenia and Georgia have far higher levels of food import dependency than the rest of the region or the developed world. Azerbaijan's food imports are not only dramatically lower relative to exports than theirs, but are even lower than either regional or developed country averages. This

¹ This takes the food purchasing power parity index and divides it by the overall PPP. This shows the cost of food in comparison to other goods.

results from the fact that ‘merchandise exports’ include oil and gas and, of course, Azerbaijan is a massive exporter of these two commodities. If we look only at exports and imports of food products, then Armenia’s exports are almost identical to its food imports at just over USD 300 million a year, Azerbaijan’s imports are almost three times as much the food products that it exports (USD 274 million for exports and USD 675 million for imports), and Georgia exports about 60% of the value of its food imports (USD 317 million for exports and USD 527 million for imports).

The second way that the FAO looks at dependency is cereal import dependency, which is considered particularly important because cereals are a staple global commodity with fairly variable prices in recent years. According to the most recent estimates Azerbaijan imports more than a third of its cereals, Armenia more than half, and Georgia more than two thirds.

However, the connection between food security and local independence of production is extremely questionable. Most plans for increasing Georgia’s agriculture in a way that will create the greatest added value, focus on labour-intensive high-value products that take advantage of local microclimates. Growth in Armenian production and exports to Russia focus on increasing the production of vegetables, where Armenia has a regional comparative advantage with Russia. Neither would suggest that large-scale increases in wheat production would be the best use of resources. Many other examples also exist where producing high-value exports makes far more sense than substituting low value imports. However, as wheat is considered the most basic and the most important commodity in the times of crisis, experts and the government believe that its local production of wheat should be increased and self-sufficiency rate should be at least 30% in any given year.

We look at the issue of gender as a cross-cutting theme. Gender mainstreaming is not very common in policies and programs either in Armenia or in Georgia, and is usually limited to the programs of international organisations. Nonetheless, research conducted by multiple organisations has highlighted the central role that woman play in agricultural production. Previous research by GeoWel suggested that while women are often included in family decision making in farming matters, more efforts need to be made to train them and include them in technical issues, as agricultural education is often particularly hard for women to access and they are usually excluded from the technical side of farming. In Armenia, the situation in rural areas is that often men leave seasonally for construction or other works in Russia. This led Oxfam to focus particularly on women’s cooperatives through its cooperative support programs. Armenia has ratified most of the international instruments related to gender. Key national documents in the field include the Gender Policy Concept Paper adopted by the Armenian Government in 2010. In 2011, standing committees on gender issues were established in all the *Marzperatans* (regional governments) of Armenia. In 2013 the Government adopted the Law on Provision of Equal Rights and Equal Opportunities for Women and Men. These national instruments imply gender mainstreaming in the legislative field.

Civil Society Organisations in general have shown a better understanding of food security issues compared to the baseline study. In Georgia especially, the EU is supporting a number of projects aimed at increasing agricultural productivity, so many local and international non-governmental organisations have projects that address some component of food security. During the interviews, respondents often described food security as ability to produce more agricultural products and rely less on imports. Few respondents, however, demonstrated more nuanced understanding of what is food security is or connected it to a broader security discourse.

While there are few programs in Armenia and Georgia specifically focused on food security and nutrition issues, the media is paying increasing attention to these issues. Oxfam’s nutrition studies in Armenia and Georgia have earned much interest not only among food security programs, but in mainstream media programs as well. The general public and, subsequently, the media, seem to be getting more interested in Food Security and Nutrition (FSN) issues as they understand why it is important for country’s security and individual well-being. Most importantly, the public is shifting towards social networks, including mobile applications, which have very specific and important repercussions on how food security and nutrition issues have to be promoted.

Methodology

In September 2013, Oxfam GB in Armenia, Azerbaijan, and Georgia started the 4-year European Commission-funded project 'Improving Regional Food Security through National Strategies and Small-Holder Production in the South Caucasus.' As the Project approaches its end, Oxfam commissioned GeoWel to conduct Food Security and Nutrition (FSN) Status Update Research. The aim of the research is to assess the status of food security and nutrition conditions in South Caucasus with a link to the findings of the previous research conducted within the scope of the Project, as well as to learn about the awareness and capacity of the stakeholders in comparison with the baseline findings. The research assignment aims to answer three central research questions:

1. What is the current status of FSN-related issues in the South Caucasus (including the gender perspective)?
2. What is the current status of FAO Food Security Indicators in the South Caucasus in the 4 pillars and how it has changed since the baseline survey?
3. What is the current capacity of the stakeholders, as well as knowledge and attitudes towards FSN in comparison with the relevant baseline data?

The research follows the same structure as the 2014 baseline report; updating the FAO and other relevant indicators, reviewing and incorporating other research reports on food security, mainly produced with support of Oxfam, and assessing the changes in awareness, attitudes, and capacity of the main stakeholders.

We use FAO's four pillars as a jumping-off point. The FAO indicators are useful for identifying likely problem areas, but they are not very useful for understanding what has changed over the last three years as many of the indicators have not been updated in this time period. We used the reports on food security produced with the support of Oxfam, including:

- Research on DCFTA's Impact on Small-Holder Farmers In Georgia
- Gender Comparative Analysis on Nutrition Diversification in the South Caucasus
- Assessing Food Security Data Relevance and Collection Mechanisms in the South Caucasus
- Food Security and Nutrition Challenges in the High Mountains Regions of Georgia
- National Nutrition Research in Georgia and Azerbaijan
- Diagnostic Review of Existing Food Security Institutional Mechanisms and State Policy in Georgia
- Nutrition Diversification in Armenia
- Report on the Research Regarding the Nutritional Status of Republic of Armenia's Population
- Seven Food System Metrics of Sustainable Nutrition Security
- The Deep and Comprehensive Free Trade Agreement impact on Georgian smallholder farmers (brief paper)
- EEU Impact Internal Report for Armenia

We also review other relevant reports, government and international data, expert interviews, and interviews with CSOs to interpret that data and help provide a causal story behind each of the problems. In addition to the FAO's four pillars, we have a separate section on 'dependency,' since this is how stakeholders in the South Caucasus tend to think about food security. We also have a separate section on gender to capture gender-specific issues of food security.

For the field research, we conducted 25 interviews in Armenia and 20 interviews in Georgia. Interviewees included CSOs/networks, policy advocacy organisations, research organisations, government agencies, member of the private sector, and media organisations.

Figure 1: Break-down of interviews in Armenia and Georgia

	Government and state-controlled entities	CSOs/Media/Private companies	Total
Armenia	12	13	25
Georgia	6	17	23

In all interviews, we started out by asking how they understand food security and why it is important. We then asked questions about the role of their respective entities in food security and discussed particular food security issues relevant to their role. In addition to exploring how the awareness, attitudes, and capacity of the respondents have changed in the last three years, we also asked whether they could point us to additional data that we could use for the report.

The methodology and the tentative list of respondents had been discussed with Oxfam during preparation of the inception report. It was also decided that the report would cover all three countries of the South Caucasus when discussing international indicators, but there were no interviews in Azerbaijan due to the political environment in the country. Thus, information on Azerbaijan is far less detailed than information on Armenia and Georgia.

1 Conceptual Challenges

In the baseline report we highlighted that one of the key challenges for research on food security is that the concept means a range of different things to different researchers. In particular in the region there has been a tendency for food security to be equated with ‘production independence’ and more broadly, for ‘food security policy’ to be equated with ‘food production policy’.

In contrast, the Food and Agricultural Organisation (FAO) uses four main measures of Food Security:

- **Food availability:** The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).
- **Food access:** Made up of physical access and resource access. Physical access relates to the connection of individuals to markets; i.e. via roads or railways. Access by individuals to adequate resources (or entitlements) for acquiring appropriate foods for a nutritious diet.
- **Utilisation:** Utilisation of food through adequate diet, clean water, sanitation, and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of nutritional composition and infrastructure for food security.
- **Stability:** To be food secure a population, household, or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events.

This is not only a more nuanced understanding of food security, but it also focuses on the consumers, while most discussion of food security in the region tend to focus on producers. For the government, food security still comes down to increasing production. So the main indicator they are looking at are food ‘balance sheets’ which show the proportion of locally consumed food that is produced locally.

That said, while the orientation towards production as the main indicator of food security persists, discourse on many facets of food security is much more active now than it was 4 years ago. The research conducted by Oxfam and others has widened the narrative beyond simple production issues. For example, there now

is a section on importance of food security is in Georgia's Agricultural Strategy. There are also a number of new actors, such as the Georgian Alliance on Agriculture and Rural Development (GAARD), which uses its multi-stakeholder platform to bring together representatives of the government, parliament, civil society organisations, academic institutions, think tanks, and associations and develop a legal framework for food security in Georgia. In Armenia, the Center for Agribusiness and Rural Development (CARD) and other CSOs continue working on food security and respondents in general were more knowledgeable about the ideas behind the food security concept compared to 2014.

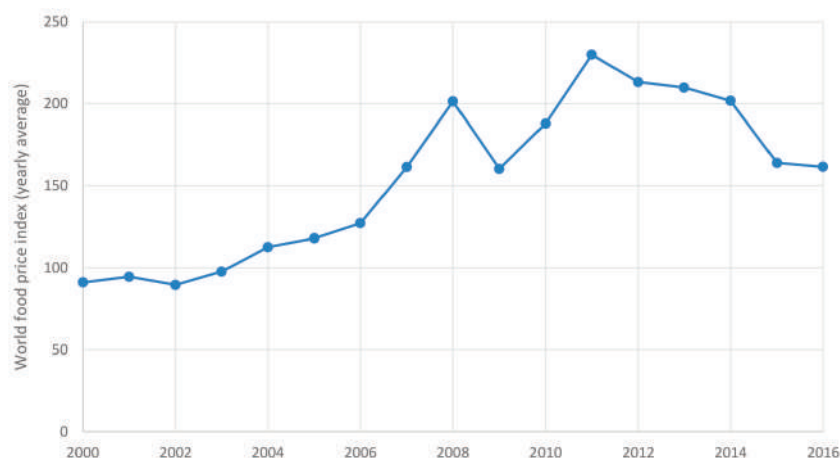
Consistent with the baseline, in this analysis we try and incorporate both the production and the consumption elements of food security. This is not merely done as a concession to the local interpretation. Food is easy to 'securitize' because its absence is an existential threat. This is most obvious from the point of view of the consumer, as absence of the right food is directly life-threatening. Seen from the point of view of the producer, however, food can also be securitized if changes in production create drastic changes to the livelihood and health of the producer. This is certainly the case in the region. Agricultural producers in the region are overwhelmingly small-scale, producing food that is largely consumed by the producing household with a small amount left over for sale in-season. As a result, fluctuations in production often directly create fluctuations in consumption.

Small-holder farmers are also vulnerable to variation in production simply because the income produced by small farming is so low. Therefore, low production and high variability in production and price can create changes in income that can be devastating for a household. Therefore, while the FAO definition of food security is strongly consumer-centric, in the Caucasus the tendency to focus on production may have value as well.

2 Changes in the Political/Economic Context to Food Security

In the baseline, the starting point for the discussion of food security was increasing global food prices. In the decade leading up to the 2011 peak, global food prices had more than doubled. In the five years leading up to 2014, the market had also been marked by dramatic volatility. Both the increase in price and the volatility in pricing increased the pressure to think about food in 'security' terms since it increasingly appeared as though countries that did not think about food security, food pricing, and reliability of supply might be taking risks with the health and welfare of their populations.

Figure 2: FAO global monthly real food price indices²



2 The FAO Food Price Index consists of the average of 5 commodity group price indices (the meat, dairy, cereals, oil, and sugar price indices) weighted with the average export shares of each of the groups. Data source: FAO, Food Price Index. <http://www.fao.org/worldfoodsituation/foodpricesindex/en/> Reviewed 27 February 2017

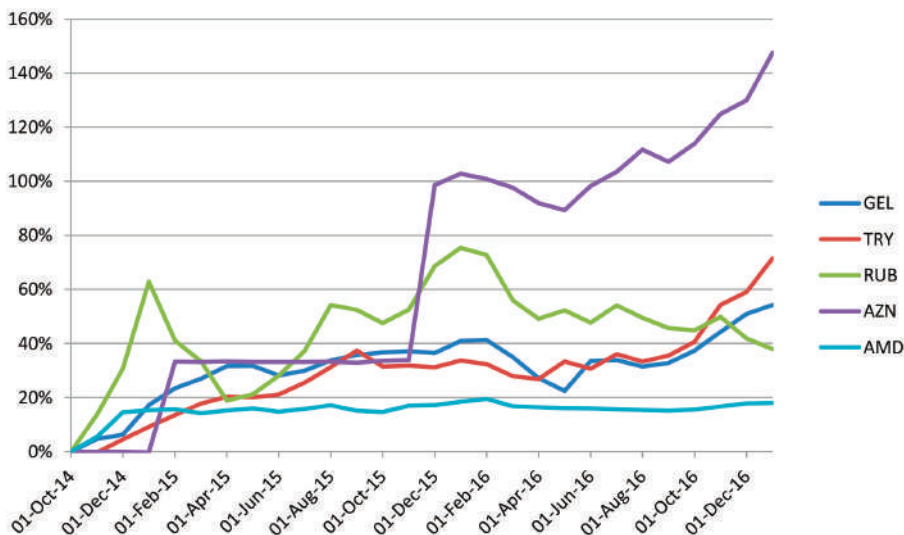
On the face of it, since 2014 the situation has improved significantly. This was largely driven by the reduction in the price of hydrocarbons that started in 2014 and saw crude oil Brent drop in value from over \$120 per barrel in 2014 to around \$30 per barrel in 2016.³ Globally, this reduction in the price of oil was important because oil and oil derivatives are key inputs into agriculture, and also because this price reduction signified a slowing in global growth which also took pressure off of the global food supply.

In the former Soviet space, however, the improvement in world food prices was significantly mitigated, or perhaps in some instances entirely overwhelmed, by the changes in economic circumstances. This was brought about by the same changes in commodity prices combined with several negative changes in regional international politics.

In Russia, the weakened commodity prices combined with the Western sanctions that were carried out in response to the Russian annexation of Crimea drove the Russian economy into a recession. Azerbaijan, which was even more dependent on oil and gas prices, was ultimately hit even harder than Russia. Following this Armenia and Georgia were impacted because of their economic dependencies on Russia and the region. Georgia was further damaged by its dependence on Turkey, which has suffered its own economic challenges following the 2016 coup attempt and political backlash that followed.

One of the easiest ways to see the impact of the regional economic difficulties is to see the change in regional currency prices.

Figure 3: Valuation of the Armenian Dram (AMD), Azeri Manat (AZN), Russian Ruble (RUB), Turkish Lira (TRY), and Georgian Lari (GEL) to USD since Oct 2014 (National Bank of Georgia Currency Data 2017)



The value of the currency compared to USD is important here because the devaluation of the currency relative to the dollar directly mitigates the reduction in the price of food in dollar terms. If we note from the first table, that the price of food globally (and priced in USD) has gone down by 1/3 in dollar terms, that means that it will have gone down in price in local currencies, only if the dollar/local currency remains in parity. If the currency has also dropped by more than 1/3 then local currency prices (for imports) will not have gone down at all.

3 NASDAQ, 'Crude Oil Brent, End of Day Commodity Futures Pricing' <http://www.nasdaq.com/markets/crude-oil-brent.aspx?timeframe=10y>
Reviewed 27 March 2017

However, at the same time, exporters of agricultural products who may have depended upon the value of these cash crops for income will have seen their markets shrink, if their currency devalued less slowly than the currency of the market that they export to.

Therefore, where the Manat has devalued by over 140% since 2014, local prices for imported foods must have gone up a considerably. At the same time, agricultural exports to Russia would have become considerably more competitive. This might have put further pressure on local prices as it would encourage the export of locally produced goods, though could have boosted the incomes of local producers. But since Azerbaijan exports relatively little primary food that is produced by small farmers, little benefit was achieved in the devaluation, particularly in food security terms.

In Armenia a relatively small devaluation occurred, as the Central Bank stepped in to support local currencies and the currency has stabilised since then because of an increase in mineral exports. The 20% reduction in local currency would therefore suggest that there was not imported food price inflation based on world food prices and international currencies. However, Armenia is unusually dependent on Russia. Therefore, the high devaluation of the ruble relative to the dram would have pushed up prices of Armenian produced goods and negatively impacted Armenian exports of food to Russia. This could help keep local prices low, but would also negatively affect the income of local producers. Selling Armenian wine in Russia became a particularly difficult issue for Armenia that has significantly affected the country's wine sector and the income of small-holder farms who had been growing grapes.

The overall recession in Russia would also have impacted the demand for Armenian goods directly. Overall, Armenian exports to Russia dropped from 24% of total exports to 14% between 2013 and 2015. Simultaneously remittances from Russia, which are valued at as much as 20% of GDP and which are received by as 30% of households, have faltered.⁴

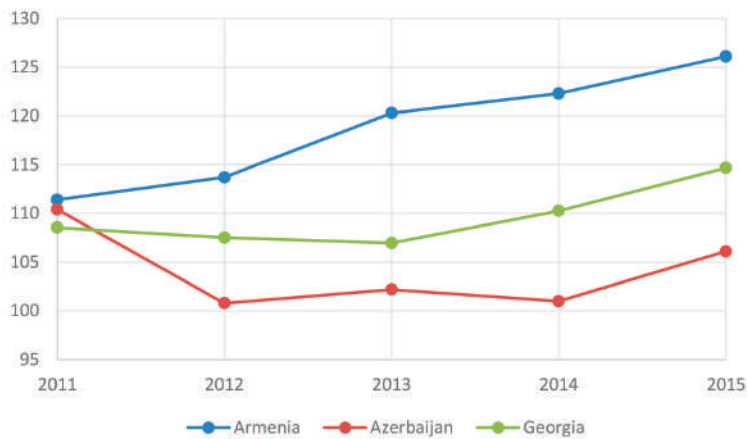
This has all happened at the same time as Armenia has made itself more dependent on Russia. At the beginning of 2013 it seemed as though Armenia was on track to join the EU Association Agreement, and with it form stronger trade ties with the EU with the implementation of a Deep and Comprehensive Free Trade Area (DCFTA). However, on September 3, 2013, after meeting with President Putin, President Serzh Sargsyan announced Armenia's intention to join the EEU instead. The customs union was re-negotiated as the Eurasian Economic Union (EEU) over the course of the following year and on January 2, 2015, Armenia joined. The EEU currently includes Russia, Kazakhstan, Belarus, Kyrgyzstan and Armenia.

Though relatively few people saw this shift coming, the literature has been fairly universal in their negative assessment of this deal. As David Tarr, a former lead economist of the World Bank highlighted, the EEU has not provided enhanced market access to Russia, as Armenia already had free access. Furthermore, in joining the EEU, Armenia adopted a pattern of external tariffs and quotas which were in line with the Russian system and harsher than those which it already imposed. This pushed up the prices of imports and shifted supply from outside the region to inside, strongly favouring the Russian Federation.⁵

4 Caucasus Research Resource Centers, The Caucasus Barometer data, <http://caucasusbarometer.org/en/datasets/> Reviewed 28 March 2017

5 Tarr, D.G., (2016). 'The Eurasian Economic Union of Russia, Belarus, Kazakhstan, Armenia, and the Kyrgyz Republic: Can It Succeed Where Its Predecessor Failed?' *Eastern European Economics*, 54 (1), pp 1–22.

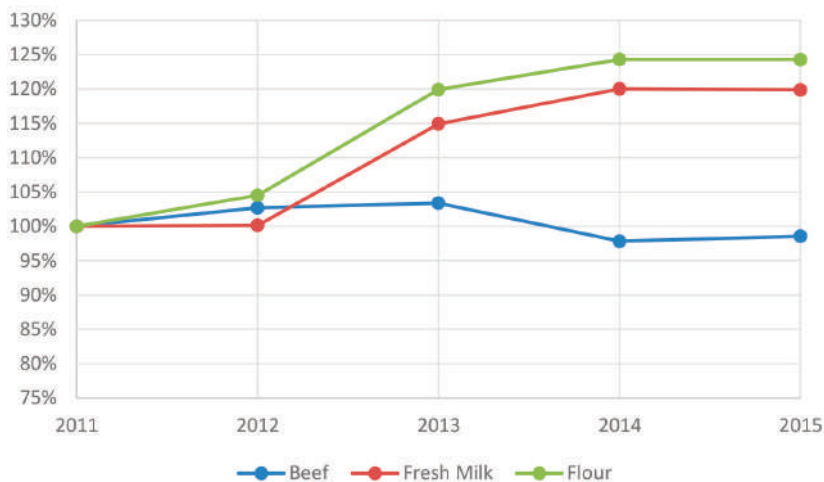
Figure 4: Food Price Indices (FPIs) for Armenia, Azerbaijan, and Georgia, 2011-2015



Food Price Indices for Armenia,⁶ Azerbaijan,⁷ and Georgia,⁸ which were nearly identical in 2011, have diverged since then. Armenia’s have climbed steadily and in 2015 were 113% of their 2011 value, Georgia’s have climbed more slowly to 106%, and Azerbaijan’s have dropped to 96% of their 2011 value, although all three countries saw similar increases during the last year on record.

Comparing the prices of three foods that are staples in all three countries – beef, milk, and wheat flour – shows that trends in price for individual items have been very different between countries. In Armenia the price of beef was no higher in 2015 than in 2011, while the prices of fresh milk and flour had risen to 120% and 125% of their 2011 values, respectively.

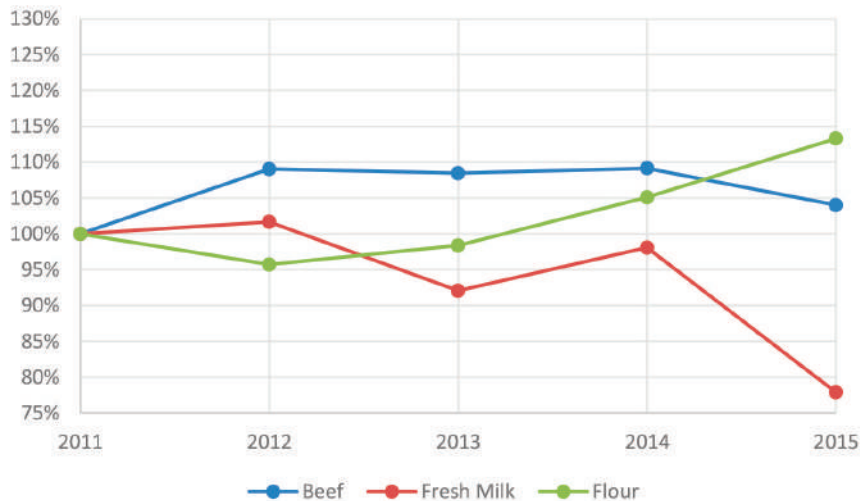
Figure 5: Prices of staple foods in Armenia in units of Armenian drams, 2011-2015, scaled to 2011 prices⁹



6 Prices and Price Indices in the Republic of Armenia for 2011-2015, published by the National Statistical Service of the Republic of Armenia, pp.17
 7 The State Statistical Committee of the Republic of Azerbaijan, , Level and dynamic of prices in consumer market, Price (tariff) indices of consumer goods and services, <http://caucasusbarometer.org/en/datasets/> http://www.stat.gov.az/source/price_tarif/indexen.php Reviewed 20 March, 2017
 8 National Statistics Office of Georgia, Consumer Price Index http://www.geostat.ge/index.php?action=page&p_id=128&lang=eng, Reviewed 20 March, 2017
 9 Prices and Price Indices in the Republic of Armenia for 2011-2015, published by the National Statistical Service of the Republic of Armenia, pp.18-19

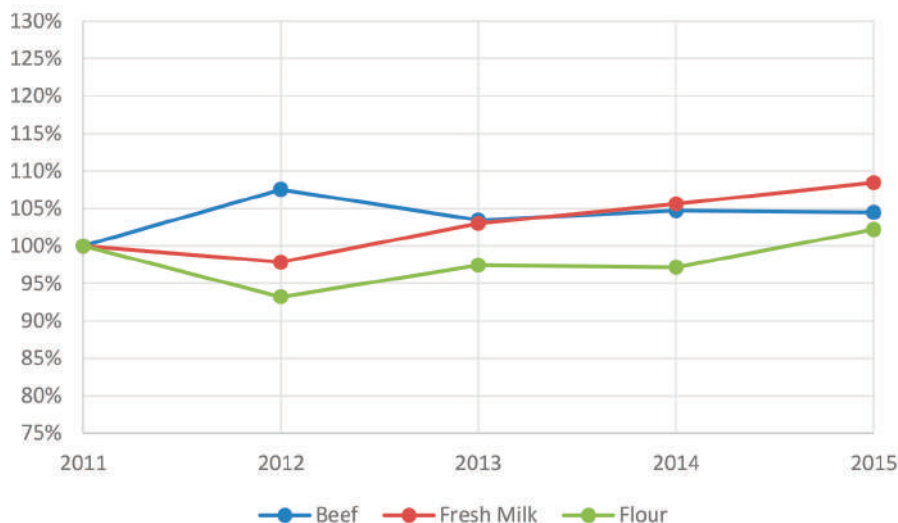
In Azerbaijan, conversely, the costs of beef and flour have both risen, flour more steeply, while the cost of fresh milk has recently dropped to only 78% of its 2011 value.

Figure 6: Prices of staple foods in Azerbaijan in units of Azerbaijani manats 2011-2015, scaled to 2011 prices¹⁰



In Georgia the prices of these three staple foods has climbed slightly, although none as much as the overall food price index.

Figure 7: Food Price Indices in Georgia 2011-2015, scaled to 2011 indices¹¹



10 The State Statistical Committee of the Republic of Azerbaijan, Level and dynamic of prices in consumer market, Average annual prices (tariff) of consumer goods and services rendered to population, in manat http://www.stat.gov.az/source/price_tarif/indexen.php, Reviewed 20 March, 2017

11 National Statistics Office of Georgia, Consumer Price Detail Indices, Consumer Price Detail Indices, http://www.geostat.ge/index.php?action=page&p_id=128&lang=eng Reviewed 20 March, 2017

An examination of the prices of other foods in Georgia during this time period (not shown) indicates that the prices that have increased most steeply in Georgia during this time period have been fresh fruits and vegetables;¹² these have presumably been driving the increase in Food Price Index.

Increasing prices and regional trade dependency at a time of regional economic hardship is clearly bad for the economy. However, how it impacted on food security is difficult to assess. During the build-up to joining the EEU, the Armenian government negotiated exceptions to the common external tariff structure that included most staple foods. However, the increase in prices of other goods will certainly have increased costs generally and left less money available for buying food.

In Georgia, on the other hand, lower dependency on Russia may have created less of an impact on the poor and had less of an impact on food security. A 50%+ devaluation of currency probably more or less cancelled out any reduction in global prices that has occurred over this period. So there may have been a little upward pressure on food prices, but not a lot. On the other hand, depreciation of the currency was less in Georgia for most of the 2014-2016 period than in Russia. Combined with the regional financial crisis, this would have been expected to negatively impact exports from Georgia to Russia.

However, exports of agricultural food stuffs to Russia had never really recovered since the Russian trade embargo with Georgia that finished in 2012. Since 2012 there has been dramatic growth in wine sales. This growth was significantly reversed by the regional crisis, which may have affected the sale of grapes in some parts of the country.

The biggest obvious impact on the population in Georgia created by the currency devaluation is that it has encouraged exports and discouraged imports. This might have helped reduce Georgia's agricultural trade deficit from US\$762 million in 2012 to \$497 million in 2015.¹³ It has also been the cause of an increase in the burden of debt repayments for anyone holding foreign currency debts. Georgia is a highly dollarized economy where debt is commonly held in dollars. For anyone holding that debt, devaluation of the local currency has meant that debt repayments have gone up. This is clearly not directly a food security issue. But for any marginal families, increases in this debt might have decreased their ability to buy food.

Also, in contrast to Armenia, Georgia joined the EU Association Agreement in 2014 and recently gained EU visa liberalisation. This has set the context for discussions of food security in three main ways. First, as part of this agreement Georgia has committed to come into alignment with the EU on a wide range of economic environment issues. One of the biggest of these areas is food safety, which encompasses everything from the standards for breeding, rearing, and slaughtering animals, to standards for the processing of meat, dairy and crops. Over time one would expect this to reduce the currently high levels of food poisoning and animal disease, and will be discussed further under 'utilisation'.

The EU is also relevant for food security because EU development financing has provided support to efforts to push agricultural development forward. EU-financed projects across the country are focusing on supporting the government of Georgia in its efforts to encourage agricultural development by working on supply chains, cooperatives, infrastructure improvement, skill training, and much more.

Finally, the EU Association Agreement and particularly the DCFTA sets the terms for trade with the EU. The DCFTA and its effects on Georgia are analysed by a study commissioned by Oxfam, so we will not discuss it here at length. However, fruit and vegetable exports from Georgia to the EU in 2015 were USD 167 million, most of which was nuts. Up until now expanding on this has been difficult, because Georgia has faced challenges in producing at the quality, quantity, and price that are required by EU food processors

12 National Statistics Office of Georgia, Consumer Price Detail Indices), http://www.geostat.ge/index.php?action=page&p_id=128&lang=eng

13 OXFAM (2013) Research on DCFTA impact on small-holder farmers in Georgia, p5 <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>

or supermarket chains. But exports of high-value products that require particular microclimates could offer niche opportunities for the future.

Another regional characteristic worth consideration within this context is the nature of the political environment in the three countries. None of the three countries scored well enough on The Economist's 2016 Democracy Index to be considered a full or flawed democracy.

Figure 8: The Economist's democracy rankings (out of 167 countries), indices, and component indices (all on a scale of 1-10) for Georgia, Armenia, and Azerbaijan in 2016.¹⁴

	Rank	Overall score (average)	Category	Electoral process and pluralism	Functioning of government	Political participation	Political culture	Civil liberties
Georgia	78	5.93	Mixed regime	8.67	4.29	6.11	5.00	5.59
Armenia	120	3.88	Authoritarian Regime	4.33	2.86	4.44	1.88	5.88
Azerbaijan	148	2.65	Authoritarian Regime	0.50	2.14	3.33	3.75	3.53

According to the Economist, Georgia ranked 78 out of 167 countries and is considered a hybrid regime with both democratic and authoritarian policies. Armenia, ranked 120, has just slipped below the cut-off index to be labelled a mixed regime and now finds itself in the authoritarian category. Both Armenia's and Georgia's lowest scores are in the categories of functioning of government and political culture. Azerbaijan ranks lowest at 148 out of 167 total countries and is considered an authoritarian regime, with few democratic structures that have any substance. These scores have seen slight declines for Armenia and Azerbaijan in recent years and improvements for Georgia, particularly following the 2012 election which saw Georgia's first peaceful transfer of power.

These scores are significant for our purpose, since they indicate the relative power and autonomy of the population or civil society to shape the political discourse and public policy. It is hardly surprising, given this context, that there has been extremely limited space for developing a broad discourse on food security in Azerbaijan and Armenia, with greater opportunity in Georgia.

It is also important because weak and undemocratic states tend to allow corruption. According to Transparency International's Corruption Perception Index Georgia has made significant strides and is now in the top 1/3 of the ranked countries. In 2013 it was ranked 48th among 168 countries and by 2016 had moved to 44th among 176 countries.

Armenia's, on the other hand, is in the bottom half of rankings and deteriorating. In 2013 it was ranked 95th among 168 countries but by 2016 was 113th among 176 countries. Azerbaijan's is the worst of the three and ranked 123rd among 176 countries in 2016, and it has changed little in recent years.

This has two main impacts on food and food security. First, the unofficial payments that are required to import goods into the two countries increase the price of food to the end consumer. Second, both in international trading and also inside the country, it is understood that some sectors are controlled by powerful monopolies. These sanctioned monopolies are also in a position to extract what economists call 'extra-normal profits' by raising prices.

¹⁴ The Economist Intelligence Unit (2016), Democracy Index 2016 Revenge of the "deplorables" http://pages.eiu.com/rs/783-XMC-194/images/Democracy_Index_2016.pdf Reviewed 17 March 2017

3 Food Security Indicators in the Caucasus

The FAO indicators provide a systematic, conceptually coherent, and internationally comparable set of metrics for considering food security. In the baseline, they were valuable for helping to shape the macro-overview and for giving context to priority issues. However, many of the data points are not regularly updated, so it is important to also triangulate this information with data collected from alternative sources. In the analysis that follows, therefore, we have taken the FAO indicators as a jumping off point for discussing each of the ‘four pillars’ of food security, folding in additional data where possible.

3.1 Availability

The FAO measures the level of food availability by looking at a range of different indicators that consider key components of diet and food production. Due to the FAO’s irregular data collection, the most recent data for each indicator was collected in different years. The data listed is the most recent for all the countries and regions listed, and the data for each indicator is presented from the same period for each country.

Figure 9: FAO food security indicators relating to availability (CCA refers to the Caucasus and Central Asia region)¹⁵

Indicator	Armenia	Azerbaijan	Georgia	Developed Countries	CCA
Average dietary supply adequacy (% , 2014-2016) ¹	120	127	116	136	123
Share of energy supply derived from cereals, roots and tubers (% , 2009-2011)	43	63	58	32	54
Average protein supply (g/day, 2009-2011)	85	88	75	103	83
Average supply of protein of animal origin (g/day, 2009-2011)	39	28	26	60	33
Food production index (\$/capita, 2011-2013)	348	266	161	491	337

The first thing to note is that ‘average dietary supply adequacy’ is over 100% in all three countries. This means that, on average, food consumption is generally sufficient in simple calorific terms and could even suggest that obesity may be a problem. (This is discussed in more detail later.) Furthermore, while this indicator is the only one updated recently, it appears to be growing at a high rate relative to that in developed countries. During the three years since our baseline report the index has increased by 4 percentage points in Armenia (from 116% in 2011-2013 to 120% in 2014-2016) and by 3 percentage points in Azerbaijan (from 124% in 2011-2013 to 127% in 2014-2016), Georgia (from 113% in 2011-2013 to 116% in 2014-2016) and the CCA region as a whole vs. by one percentage point in developed countries.

However, food availability is not just measured in terms of calories, it also takes into account micronutrients. To indicate the richness of the diet, the FAO also measures intake of different types of food. This offers a confusing picture. Azerbaijan has the highest level of staple dependency and a low level of animal protein intake, but the highest level of overall protein intake. Armenia has the lowest level of staple dependency and the highest level of animal protein intake, while overall protein intake is slightly lower than that of Azerbaijan. Georgia has the lowest levels of both animal and overall protein intake, but has a lower proportion of energy derived from cereals than Azerbaijan.

15 FAO, Food Security Indicators, www.fao.org/fileadmin/templates/ess/foodsecurity/Food_Security_Indicators.xlsx Reviewed 2 March 2017

One of the reasons why this data is hard to interpret, is that none of the countries offer clear accounts of food consumption in their countries. Geostat, in Georgia, used to provide break-downs of dietary supply. In the main household survey that the agency conducts they ask respondents what they had bought for the last 2 weeks, and they used to use this to deduce consumption based on the spending figure. For example, if a household had bought a certain quantity of meat within two weeks, Geostat would extrapolate that number for the whole year, and then deduce a calorie intake from meat (and other products) per day. However, this gave wildly erratic estimates and Geostat decided to stop employing the practice.¹⁶

Even though there are certainly poor and marginal groups for whom finding enough calories remains a problem, across the region the major issue is no longer undernourishment, but rather malnourishment.¹⁷ Significant portions of the population lack the *right* food, consuming a diet with low nutritional diversity. This is in turn reflected in several of the indicators of poor diet-related health outcomes.

However, while one may be able to say that on average populations are not suffering from undernourishment, there are still significant poor populations who might face undernourishment and who, as we will see later in discussions of food stability, may face food insecurity based on changing production and weather patterns. This is particularly concerning in the context of the regional economic downturn.

These numbers also highlight the importance of production. According to these figures, per capita production in the three countries is extremely divergent, with Georgia as the least productive, Azerbaijan as the next least productive, and Armenia as the most productive by far. This may seem strange, given that Georgia generally has a much higher level of rain.

Figure 10: Level of Precipitation ¹⁸

Country	Level of Precipitation (mm per year)
Armenia	562
Azerbaijan	447
Georgia	1026

However, as was highlighted in the baseline report, in line with general economic collapse Georgia fell further in agricultural production than the other two countries and has been the slowest to recover.¹⁹ One sees the poor levels of productive success reflected across the board.

¹⁶ Interview with Vasil Tsakadze, Geostat, February 28, 2017

¹⁷ Malnourishment is a condition that results from eating a diet in which nutrients are either not enough or are too much such that the diet causes health problems

¹⁸ World Bank, Average Precipitation in Depth, Reviewed March 4 2017

¹⁹ This is summarized in more details in our baseline report: <http://foodsecuritysc.com/publication/baseline-research-food-security-in-the-south-caucasus-summary-of-findings/>

Figure 11: Productivity (tons per hectare) for staple crops in 2014 and percent change in productivity since 2010²⁰

	Wheat		Maize		Potatoes		Tomatoes	
Georgia	1.3	+23%	2.3	+63%	11.9	+7%	11.4	+31%
Armenia	3.2	+52%	7.1	+52%	23.2	+37%	45.9	+19%
Azerbaijan	2.4	+24%	5.4	+19%	13.3	-8%	18.8	+11%
Kenya	2.2	-30%	1.7	-4%	14.1	-37%	18.1	-38%
Brazil	2.2	-22%	5.2	+19%	27.9	+8%	66.9	+11%
France	7.4	+14%	10.0	+14%	48.0	+14%	199.2	+97%

As one can see, in each of the product categories listed, Georgia is the least productive per hectare, Armenia is the most productive and Azerbaijan is in the middle. Total production also suggests that Georgia is lagging behind.

Figure 12: Production (tons) for staple crops in 2014 and percent change in production since 2010²¹

	Wheat		Maize		Potatoes		Tomatoes	
Georgia	50,200	+4%	347,200	+146%	216,200	-6%	65,100	+16%
Armenia	338,158	+84%	20,158	+58%	733,161	+52%	298,831	+19%
Azerbaijan	1,449,100	+14%	203,596	+50%	819,319	-14%	481,395	+11%

Armenia has seen the strongest increases in production across categories, while Azerbaijan has seen more modest increases, and even a decrease in potato production. While Georgia has also shown more moderate increases and a drop in potato production, the country's maize production has increased by nearly 150%, making it almost 2.5 times its volume five years prior.

This seems to offer evidence, prima-facia, for focusing on agricultural production as a means of improving food security and certainly one plus side of Georgia's disastrous productivity numbers is that there is a huge potential for improvement. Increase in production contributes to poverty elimination and other Food Security indicators.

However, it is not entirely straight-forward regarding why local high production should be seen as a strong indicator of food security. Though many in regional public policy tend to think of agricultural productive

20 FAO, Productivity Figures <http://www.fao.org/faostat/en/#data/QC> Reviewed 3 March 2017

21 FAO, Production figures, <http://www.fao.org/faostat/en/#data/QC> Reviewed 3 March 2017

independence as a synonym for food security, the FAO (as has already been mentioned) tends to focus on the consumer rather than the producer. The reason for the separation is that it is entirely possible to have a high level of local agricultural production, but still be vulnerable to food insecurity. For example, if a country were to be 100% self-sufficient in food production and had little access to foreign currency, then local food insecurity could be produced by the success or failure of a local harvest in a given year. To that extent, a certain level of international sourcing of food can provide a hedge against specific production variability in a given geography, if foreign currency reserves exist in the country to support it.

Nonetheless, in the Caucasus the significance of local production for food security is precisely because such a large proportion of the population depend on their own agricultural production to provide a significant proportion of their own subsistence. As a result, for many producers in the region their productive efficiency and the reliability of their production does dictate the amount of food they have. Therefore, their food security is directly tied to their own food production.

This situation is made worse by the fact that this agricultural production is the only source of income. Agriculture is responsible for 49% of those classified as 'employed' in Georgia,²² 33% in Armenia²³ and 36% in Azerbaijan.²⁴ Of course whether this should even count as employment is often disputed, since the International Labour Organization (ILO)'s definition of employment counts someone as employed even if they spend very little time generating economic value, and even if the result of the activity is very small.

To put this more simply, agricultural 'incomes' are often very low. The World Bank estimated in its 2009 poverty assessment that the average income of those self-employed in agriculture in Georgia (including in-kind consumption) is only around 20% of that of salaried urban workers.²⁵

Therefore, it has long been agreed by a wide range of agricultural experts across the region that increasing agricultural output, particularly in small subsistence farming, would be one of the best strategies for poverty alleviation and improvements in food security. As a result most pro-poor development work has considered agriculture and rural communities to be a priority focal area.

This report cannot, of course, provide an overview of the current situation facing agriculture in the region productively, as there are too many different issues impacting the agricultural value chains and too many different products facing different dynamics. The GeoWel team provided an overview of the sector in 2012, and it was 192 pages. Instead, we have duplicated below a list of the main issues that faced the two countries, described in the baseline in 2014.

Availability of reasonably-priced and quality inputs

- Veterinary medicine
- Water/Irrigation
- Seeds
- Fertilisers
- Pesticides
- Genetics
- Machinery

22 2016, ENPARD publication Rural Development Strategy of Georgia, 2017-2020 <http://enpard.ge/en/wp-content/uploads/2015/05/Rural-Development-Strategy-of-Georgia-2017-2020.pdf>, p5

23 Armstat (2015) Labour market in the republic of Armenia, 2011-2015 http://www.armstat.am/file/article/9.trud_2016_4.1.pdf, p51.

24 State Statistical Committee of the Republic of Azerbaijan (2015) data on labour resources and employment, Number of employed population by of statistical Classification of Economic Activities; sector includes forestry and fisheries. <http://www.azstat.org/MESearch/search?departament=22&lang=en> Reviewed 6 March 2017

25 World Bank (2009). Georgia Poverty Assessment, p7

Knowledge base

- Farmers lacking basic knowledge
- Lack of quality advisory services
- Out of date knowledge amongst existing experts
- Lack of professional training for experts
- Poor management, financial, and business skills

Buyer/processor problems

- Inconsistent application of phyto-sanitary standards
- Unreliable payment from processors
- Unreliable supply of products for processors

Internal access to markets

- Physical isolation in some areas
- Lack of traders in some areas/sub-sectors
- Unreliable production impacting producer/supplier relations
- Informal markets account for a large share of agricultural transactions

External access to markets

- Small volumes make transport expensive
- Quality and quantity of supply make western markets difficult to access

If we take each of these in turn, we can see development in almost all of these areas in Georgia in the period since the 2014 baseline, particularly as large EU projects have been directing considerable resources at each of the issues. As one of the main focal points for work, the ENPARD project has utilised cooperatives to help enhance supply chains and improve knowledge and market issues. Separately they have also provided extensive support in vocational education and to local government to facilitate more effective public programming. At the same time, because of the DCFTA, the EU has been supporting the Georgian government to bring production and processing into alignment with EU standards and, of course, the DCFTA hopes to improve issues of access to markets by providing Georgia with access to the 500 million-person EU market. On the other hand, while it will be hard for most Georgian businesses to take full advantage of the DCFTA provisions, the treaty also poses risks for small local production. Many of these elements will be discussed in more detail below. Armenia also continues to work closely with the EU on a range of issues that are similar to the work done with Georgia, but on a smaller scale because it is not an Association Agreement country.

According to the interviewees representing the Ministry of Agriculture, Armenia is quite self-sufficient. Armenia is at a 60% food self-sufficiency level. The Food Security Concept of Armenia for 2017-2021 is aimed at raising the food self-sufficiency level of the country. Over recent years, Armenia has registered growth the production of grains and vegetables. For example, the self-sufficiency ratio of wheat has increased from 47% in 2013 to 50% in 2015. However, Armenia still depends on imports for some of its main staples.

3.2 Accessibility

The FAO distinguishes between physical access (such as the availability of roads and railways) and economic access (such as food prices).

Figure 13: FAO Food security indicators relating to physical and economic accessibility (CCA refers to the Caucasus and Central Asia Region)²⁶

Indicator	Armenia	Azerbaijan	Georgia	Developed Countries	CCA
Percentage of total roads that are paved (no longer updated)	96.8 (1998)	55.6 (2011)	36.4 (2009)	69.4 (2004)	84.7 (1998)
Rail lines density (km per 100 square km of land area)	2.8 (2014)	2.4 (2014)	2.3 (2014)	1.3 (2014)	0.6 (2014)
Road density (km per 100 square km of land area)	26.1 (2011)	21.9 (2011)	27.1 (2011)	32.7 (2011)	7.3 (2007)
Domestic food price level index ²	8.87 (2014)	No Data	No Data	1.68 (2014)	No average

Some of the FAO indicators relating to physical and economic accessibility have been updated since our last report in 2014. However, closer examination of the numbers shows that neither of the indicators relating to roads has been updated, and the index relating to railways has been updated with no changes.

The rail density indices are higher than that in developed countries and much higher than that in the CCA region as a whole, which is unsurprising since the Soviet Union invested heavily in railway infrastructure and the Central Asian countries' populations are relatively sparsely distributed over large areas, pushing down the CCA average compared to that in the much smaller South Caucasian countries.

The road density indices are also unsurprising, as they are lower than that in developed countries but much higher than those in the CCA region as a whole for the same reason. The proportion of paved roads is lowest in Georgia, although the country's total road density is higher. Azerbaijan has a more moderate proportion of paved roads but a lower road density overall, and the CCA region has a higher proportion of paved roads than even developed countries but a much lower road density. These numbers suggest that as one moves from west to east and the countries become larger and more sparsely populated, that roads become less dense but more likely to be paved.

We looked at the three largest International Financial Institutions, the World Bank (WB), the Asian Development Bank (ADB) and the European Investment Bank (EIB) to see how much of their lending has gone to construction and rehabilitation of the roads in the South Caucasus since 2011.

²⁶ FAO, Food Security indicators www.fao.org/fileadmin/templates/ess/foodsecurity/Food_Security_Indicators.xlsx Reviewed 7 March 2017

Figure 14: The volume of roads projects funded by the World Bank, Asian Development Bank and European Investment Bank, in million US dollars²⁷

Armenia (total)	266
Asian Development Bank	150
European Investment Bank	116
Azerbaijan (total)	1635
Asian Development Bank	1495
World Bank	140
Georgia (total)	1308
Asian Development Bank	334
European Investment Bank	531
World Bank	443

Azerbaijan has received the most finances from International Financial Institutions in the region for roads projects, even though the European Investment Bank is not working in Azerbaijan. Also, because of its oil and available financial resources, Azerbaijan also funds some roads projects directly from its budget without taking loans.

FAO indicators do not take into account international accessibility, but this is particularly relevant considering the high import dependency of these three countries internationally, as inaccessible transport infrastructure translates into higher-priced imported food. The World Bank assesses the ease of trade with and within countries using the Logistics Performance Index (LPI), which consists of six sub-indices including an index of infrastructural quality.²⁸ This ranks the three South Caucasus countries in terms of the quality of their ports, railroads, roads and information technology. According to their 2014 calculations Azerbaijan was by far the best with a ranking of 68th, Georgia ranked 100th, and Armenia 107th. The World Bank's 2016 overall LPI rankings place Armenia and Georgia far lower at 141st and 130th, respectively, but the set of 160 countries ranked is not the same, making a comparison difficult, and Azerbaijan is not included at all.²⁹

Figure 15: Components of the 2016 overall LPI rankings for Armenia, Georgia, and Azerbaijan³⁰

	Armenia	Georgia
Customs	148	118
Infrastructure	122	128
International shipments	146	131
Logistics quality and competence	137	146
Tracking and tracing	147	112
Timeliness	139	117
Overall LPI ranking	141	130

27 From the country websites of the Asian Development Bank (ADB), European Investment Bank (EIB), and the World Bank (WB). Reviewed April 4 2017

28 World Bank, Logistics Performance Index, <http://lpi.worldbank.org/> Reviewed 26 March 2017

29 World Bank, Logistics Performance Index, <http://lpi.worldbank.org/> Reviewed 26 March 2017

30 World Bank, Logistics Performance Index, <http://lpi.worldbank.org/> Reviewed 26 March 2017

Neither Armenia nor Georgia is even in the top 100 countries (out of 160) in any of the components of the LPI ranking. Still, Armenia is performing best in infrastructure (122nd), slightly ahead of Georgia (128th), while Georgia has best scores in tracking and tracing (112th).

Accessibility is also an important part of the food security issue in the South Caucasus, because patterns of food production are still hampered by changes in border access. When the South Caucasian countries regained their independence, administrative boundaries became state borders. In the case of Georgia's northern highlands these changes have disrupted the seasonal sheep migration from Georgia to the pastures of the Northern Caucasus and have broken up traditional food supply chains between the Southern and Northern Caucasian highlanders.³¹

As one of the Oxfam-funded pieces of research explains, 'Traditional food supply chains broke up when the Northern Caucasian highlanders brought their products to the valleys of Georgia and sold (or often bartered) them for the products they needed.'³² As a result, sheep herders from northern parts of Georgia (Kazbegi, Tusheti) now have to use pastures in the southern parts of Georgia (Shiraki) for winter grazing. These grazing areas are far more scarce and much further away from the summer pastures than the pastures of Dagestan.

The most important part of physical accessibility, however, is not international, it's local. There are food markets or super markets in most of the South Caucasus' villages or municipalities, so most of the population can physically access food. According to the survey National Nutrition Research³³ conducted by Oxfam and ACT in Georgia in 2015 (but published in 2016), in general, 'households in Georgia do not have problems in this regard'.³⁴ However, the study also notes exceptions. In particular, 'inhabitants of high mountainous areas have access to food products mainly in agricultural markets and supermarkets in their municipality centres'.³⁵ In the Oxfam-supported study which specifically focuses on mountainous areas, findings suggest that seasonality can severely affect some of the high mountainous regions. Access to food-selling locations increases in summer and autumn, and decreases in winter and spring. There are about 200 villages in Georgia that are inaccessible in winter.³⁶

In the National Nutrition Study in Armenia, survey results show that in the capital and urban areas most people are able to buy food on a daily basis due to the proximity of stores and supermarkets.³⁷ In rural areas stores are fewer in number and often far away. There are mobile food sellers as well, but they tend to be more expensive and might not always come. Only 37% of respondents in rural areas in Armenia buy food in their respective communities every day.³⁸ About 30% of the population in rural areas buy food in a near-by town.³⁹

31 Oxfam/RAPDI (2016) Food Security and Nutrition Challenges in the High Mountains of Georgia. <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 9

32 Oxfam/RAPDI (2016) Food Security and Nutrition Challenges in the High Mountains of Georgia. <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 9

33 Oxfam/ACT (2016) National Nutrition Research in Georgia, <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>

34 Oxfam/ACT (2016) National Nutrition Research in Georgia, <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>, p4

35 Oxfam/ACT (2016) National Nutrition Research in Georgia, <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 4

36 Oxfam/RAPDI (2016) Food Security and Nutrition Challenges in the High Mountains of Georgia. <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p25

37 Oxfam/APR (2015) Report on the Research Regarding Nutritional Status of RA population <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 51

38 Oxfam/APR (2015) Report on the Research Regarding Nutritional Status of RA population <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 51

39 Oxfam/APR (2015) Report on the Research Regarding Nutritional Status of RA population <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 51

Nonetheless, while rural farmers may be poorer generally and less employed than their urban equivalents, our interviews suggested that they might be considered more food-secure. Rural areas are mainly made up of farmers with small land plots. These small farms are not economically efficient for commercial profits, but can provide an opportunity for subsistence farming. Therefore it is common to hear the idea that it is easier to feed yourself in the village compared to the city. For example, one interviewee suggested that ‘Access to food is a more serious issue in urban areas. In rural areas, if a person is not lazy, they have crops to feed themselves.’⁴⁰

This is, of course, not necessarily true. Small-holders with no access to regular sources of cash may be able to provide for their own subsistence, but their situation can be very precarious as a localised drought, flooding, animal or crop sickness, sickness in the family, or any of a dozen localised problems can result in a poor crop with little back-up for feeding one’s family. Also, large families that subsist this way may be more dependent on a more restricted range of food-stuffs that are even more limited out of season. This may explain why food-related diseases in children are higher in rural areas (below).

In terms of economic accessibility, the key indicator is ‘food price level’. This is calculated to show how expensive food is relative to other purchases, so that a higher number suggests that food is relatively expensive.⁴¹ The domestic food price level index is currently only calculated in the Caucasus for Armenia, where it dropped from 9.07 in 2013 to 8.87 in 2014, while that for developed countries dropped from 1.71 to 1.68. Thus, while food affordability in Armenia has increased slightly, it is still more than five times more expensive there than in developed countries (relative to income). To provide additional perspective, food in Armenia is more than twice as expensive (relative to income) as in Russia, more than five times as expensive as in France, as almost nine times as expensive as in the United States.⁴²

For Georgia, although there is no FAO food price index available, we can use other indicators. According to the Oxfam/ACT National Nutrition study, the share of expenditure on food is high in Georgia. Average monthly income is GEL 575 and almost half of it (GEL 270) is spent on food. Expenditure percentages for “low-income” households is 65%, for “medium-income” households is 52%, and for “high-income” households is 35%. Also, the majority of people buy food on credit. Every third household doesn’t have enough money to buy the food they want (usually meat).⁴³

Food prices in high mountains tend to be higher. ‘The increase in price is caused mostly by logistical constraints such as the long distance from storage facilities, high transportation costs, underdeveloped infrastructure and retail network, etc.’⁴⁴

3.3 Utilisation

FAO’s utilisation indicators focus on the healthiness of the food preparation environment and some simple impacts of healthy eating. We start by exploring the two indicators *access to improved water sources (%)* and *access to improved sanitation facilities (%)*. We then move on to exploring additional FAO indicators which focus specifically children. Access to improved water sources refers to the percentage of the population with reasonable access to an adequate amount of water from an improved source, such as a household connection, public standpipe, borehole, protected well or spring, and rainwater collection. Unimproved sources include vendors, tanker trucks, and unprotected wells and springs.

40 Interview with Vardan Torchyany, Strategic Development Agency, 21 March 2017

41 This takes the Food purchasing power parity and divides it by the overall PPP. This shows the cost of food in comparison to other goods.

42 The FAO’s 2014 indices were 4.3 for Russia, 1.7 for France, and 1.0 for the United States, which is used as the baseline cost.

43 Oxfam/ACT (2016) National Nutrition Research in Georgia, <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>

44 Oxfam/RAPDI (2016) Food Security and Nutrition Challenges in the High Mountains of Georgia. <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research p7>

Reasonable access is defined as the availability of at least 20 litres per person per day from a source within one kilometre of the dwelling. Access to improved sanitation facilities refers to the percentage of the population with at least adequate access to excreta disposal facilities that can effectively prevent human, animal, and insect contact with excreta. Improved facilities range from simple but protected pit latrines to flush toilets with a sewerage connection. To be effective, facilities must be correctly constructed and properly maintained.

Figure 16: Access to improved water and sanitation sources in the Georgia, Armenia and Azerbaijan, as well as international comparisons

	Access to improved water sources (%)		Access to improved sanitation facilities (%)	
	2013	2015	2013	2015
Armenia	99.9	100.0	89.5	89.5
Azerbaijan	85.3	87.0	86.3	89.3
Georgia	99.0	100.0	87.5	86.3
Developed Countries	99.2	99.2	95.5	95.6
CCA	88.4	89.1	95.6	96.0

The table shows that most people have access to sanitation and improved water sources, although it is curious that the level is significantly lowest in Azerbaijan even though Azerbaijan is the richest of the three. There have not been significant changes since the baseline.

We also looked at the FAO indicators which are specifically focused on children under 5 years of age. There are three indicators concerning stunting, wasting, and being underweight. The indicator on stunting refers to the percentage of children aged 0-5 years that fall below minus two standard deviations from the median *height-for-age* of the WHO Child Growth Standards. The indicator on wasting refers to the percentage of children aged 0-5 years that fall below minus two standard deviations from the median *weight-for-height* of the WHO Child Growth Standards. The indicator on underweight children refers to the percentage of children aged 0-5 years that fall below minus two standard deviations from the median *weight-for-age* of the WHO Child Growth Standards.

Figure 17: Additional FAO food security indicators relating to utilisation (CCA refers to the Caucasus and Central Asia Region)⁴⁵

Indicator	Armenia	Azerbaijan	Georgia	Developed countries	CCA
Percentage of children under 5 years of age who are stunted	20.8 (2010)	18.0 (2013)	11.3 (2009)	Montenegro 9.4 (2013)	Kyrgyzstan 12.9 (2014)
Percentage of children under 5 years of age who are affected by wasting	4.2 (2010)	3.1 (2013)	1.6 (2009)	Montenegro 2.8 (2013)	Kyrgyzstan 2.8 (2014)
Percentage of children under 5 years of age who are underweight	5.3 (2010)	4.9 (2013)	1.1 (2009)	Montenegro 1.0 (2013)	Kyrgyzstan 2.8 (2014)

45 FAO. Food Security indicators. www.fao.org/fileadmin/templates/ess/foodsecurity/Food_Security_Indicators.xlsx Reviewed 4 March 2017

Only indicators for Azerbaijan have been updated since the baseline report. Azerbaijan used to have the worst results among the three countries, but the indicators suggest that there has been improvement. The percentage of stunted children has decreased from 26.8% in 2006 to 18.0% in 2013, the percentage of wasted children has decreased from 6.8% to 3.1% during the same period, and the percentage of underweight children decreased from 8.4% to 4.9%. The table also shows that stunting is a problem in all three countries. It is caused by long-term under-nutrition, inadequate food intake, and prolonged disease.

In Armenia, the prevalence of stunting has been slightly increasing from 17% in 2000 to 18% in 2005 and 19% in 2010. However, according to the latest Armenia Demographic and Health Survey, stunting has more than halved for 2015-2016 years.⁴⁶ The ratio of overweight children increased from 11% in 2005 to 15% in 2010 and then slightly decreased to 14% in 2015-2016.⁴⁷ In both cases, the reason is a diet with a low protein and/or high carbohydrate content which can be a consequence of poverty and a shortage of food, as well as insufficient knowledge and an incorrect practical approach regarding healthy nutrition by mothers.⁴⁸ Stunting is more prevalent in rural areas (22% in villages and 17% in towns), among children whose mothers have a low level of education (22%) and among children from extremely poor households (26%).⁴⁹

In addition to stunting and obesity, anaemia is also a problem. Anaemia is largely a result of iron-deficiency and only 1/3 of the population, according to the National Nutrition study in Georgia, eats iron-rich food (estimated based on animal food consumption).⁵⁰ In order to gather better data on this, among many other issues, in 2016 the National Centre for Disease Control started to conduct pilot studies in four towns in Georgia: Tbilisi, Batumi, Lagodekhi and Martvili. One women's clinic and one children's hospital was selected in each of the municipalities, and the data from the all regular check-ups is recorded in a database.⁵¹ The results will go through detailed scrutiny in Georgia and the United States. Preliminary results show unusually high levels of anaemia in Lagodekhi.⁵² Other patterns are being analysed.

In terms of utilisation, the FAO tries to keep track of levels of undernourishment.

46 National Statistics Service of Armenia (2016) Armenia Demographic and Health Survey 2015-2016 <https://dhsprogram.com/pubs/pdf/PR79/PR79.pdf> p 41, Reviewed 28 April 2017

47 National Statistics Service of Armenia (2016) Armenia Demographic and Health Survey 2015-2016 <https://dhsprogram.com/pubs/pdf/PR79/PR79.pdf> p 41, Reviewed 28 April 2017

48 Oxfam/APR Group (2015) Report on the research regarding nutritional status of Re[public of Armenia population <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 21

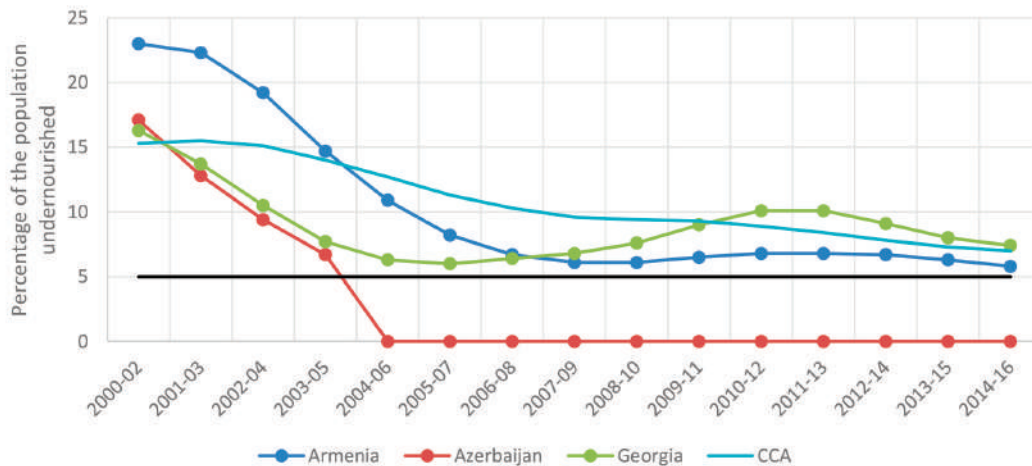
49 Oxfam/APR Group (2015) Report on the research regarding nutritional status of Re[public of Armenia population <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 22.

50 Oxfam/ACT (2016) National Nutrition Research in Georgia, <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>, p 6

51 Interview with Tamar Ugulava, UNICEF, 2 March 2017

52 The information was not verified with the National Center For Disease Control of Georgia

Figure 18: Percentage of the population that is undernourished in Armenia, Azerbaijan, Georgia, and the CCA region as a whole.⁵³



In Armenia, the percentage of the population suffering from undernourishment (estimated at 5.8% for 2014-16) has decreased slightly in the last two years, although overall progress during the past decade has been negligible. Georgia shows a similar early pattern with rapid decreases in undernourishment until the rate was just over 5%, although in Georgia it then rose again to more than 10% in 2011-12, decreasing only to 7.4% since then. The data from Georgia is puzzling because while undernourishment is highest here compared to the other countries of the South Caucasus, the share of underweight children is lowest here. If statistics for Azerbaijan are accurate, then the proportion of the population there that is undernourished decreased to a level below 5% (below which the FAO data does not distinguish), and has remained there for the past decade. The trend in the Caucasus and Central Asia region as a whole since 2000 has been a steady decrease.

Indicators measuring the imbalance in food access between different economic sectors of the population are more difficult to come by, although they are perhaps more relevant. UNICEF publishes the prevalence of underweight children under five years old for the richest and the poorest 20% of the population in countries where data is available. There are no statistics published for Georgia,⁵⁴ the most recent available data for Armenia (2008-2012) suggests that the rate among the country's poorest quintile is 7.9%, 5.3 times that of its wealthiest quintile.⁵⁵ In Azerbaijan's poorest quintile the percentage of underweight children is 15%, 7.5 times that of its wealthiest.⁵⁶

There is also an urban-rural divide in these prevalences. Georgia's rural rate of underweight status in children under five is 1.4%, 1.6 times the urban rate.⁵⁷ Armenia's rural rate is 7.4%, 2.6 times the urban rate,⁵⁸ and Azerbaijan's prevalence of underweight children under five in rural areas is 12%, 3.0 times its prevalence in

53 Note: FAO data does not include statistics of less than 5% and figures for Azerbaijan since 2003-05 then are simply reported to be in this category.

54 UNICEF, Disparities by Household Wealth, Georgia https://www.unicef.org/infobycountry/georgia_statistics.html, Reviewed 12 March 2017

55 UNICEF, Disparities by Household Wealth, Armenia https://www.unicef.org/infobycountry/armenia_statistics.html, Reviewed 12 March 2017

56 UNICEF, Disparities by Household Wealth, Azerbaijan https://www.unicef.org/infobycountry/azerbaijan_statistics.html, Reviewed 12 March 2017

57 UNICEF, Disparities by Household Wealth, Georgia https://www.unicef.org/infobycountry/georgia_statistics.html, Reviewed 12 March 2017

58 UNICEF, Disparities by Household Wealth, Armenia https://www.unicef.org/infobycountry/armenia_statistics.html, Reviewed 12 March 2017

rural areas.⁵⁹ These indicators suggest that Azerbaijan has the largest disparity in terms of economic access to food, that and that Armenia's and Georgia's are less but still substantial.

While the national average for undernourishment in Armenia and Georgia is 5-8%,⁶⁰ it is more prevalent in the high mountainous areas. According to Oxfam's report *Food Security and Nutrition Challenges in the High Mountains of Georgia*, the percentage of the undernourished population is 9-13% in the highlands of Georgia, compared to the country's average of 7.4%.⁶¹ According to the Armenia Nutrition Study, differences in terms of accessibility between mountains and lowlands is especially apparent during the off-season in winter and spring, when some food products are scarce.⁶²

In relation to sickness from food, tracking data still remains very difficult, there is strong evidence that levels of food-poisoning are high in the region. As we reported in the baseline report, according to data from the WHO, in 2009 there were 9 Salmonella cases reported per 100,000 Armenians in 2006 and 5 cases reported per 100,000 Azeris in 2003.⁶³ The WHO reports that Georgia also had 5 cases of Salmonella reported per 100,000 in 2006, but other reports indicate that Salmonella is not the only bacteriological food poisoning infecting people. The rate of botulism in Georgia has been previously cited as the highest in the world. Although it is unclear what year this is referring to, it is certain that Georgia had one of the fastest growing rates when the number of cases rose over 300% during the early 2000s.⁶⁴

On the one hand, this would make sense, since many people are eating locally-produced food that is definitely not produced according to high phytosanitary standards. However, local production and quick local consumption can actually mitigate against some of the worst forms of food poisoning that can result when industrial phytosanitary standards fail.

ACT/Oxfam's 2016 survey found that, at 25%, there were fairly common reports of food poisoning, but only 7% had a confirmed medical diagnosis.⁶⁵ Industrial-level food poisoning has been rarer, as explained at NCDC⁶⁶ they only have managed to track down few cases of mass food poisoning. One example was that about 180 out of 200 people were poisoned at the same wedding in Marneuli.

Certainly, whatever the baseline, the intensive work of the EU to improve phytosanitary standards seems likely to improve the situation, and up until now the EU seems to have been sensitive to local concerns and they will likely assist during the transitional period with active information campaigns and trainings to the impacted local food producers. Such measures can also help in preventing sudden increases in food prices. However, rising quality and rising prices do seem inevitably likely to increase food prices at some point, as the country progresses.

59 UNICEF, Disparities by Household Wealth, Azerbaijan https://www.unicef.org/infobycountry/azerbaijan_statistics.html, Reviewed 12 March 2017

60 Oxfam/APR Group (2015) Report on the research regarding nutritional status of Republic of Armenia population <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> and Oxfam/ACT (2016) National Nutrition Research in Georgia, <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>

61 Oxfam/RAPDI (2016) Food Security and Nutrition Challenges in the High Mountains of Georgia. <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>

62 Oxfam/APR Group (2015) Report on the research regarding nutritional status of Republic of Armenia population <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>

63 WHO (2009) 10 Health Questions about Caucasus and Central Asia. http://www.euro.who.int/__data/assets/pdf_file/0015/43323/E92744.pdf Reviewed 12 March 2017)

64 Varma, Jay et al. (2004) Foodborne Botulism in the Republic of Georgia. *Emerging Infectious Diseases* <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3320295/> Reviewed 12 March 2017

65 Oxfam/ACT (2016) National Nutrition Research in Georgia, <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research>

66 Interview with Levan Baidoshvili, National Center for Disease Control of Georgia, 7 March 2017

3.4 Food Stability

The final indicator of food security, according to the FAO, is food stability. This is measured both directly and indirectly.

Figure 19: FAO food security indicators relating to food stability (CCA refers to the Caucasus and Central Asia region)⁶⁷

Indicator	Armenia	Azerbaijan	Georgia	Developed Countries	CCA
Domestic food price volatility index ³	11.9 (2014)	No data	No data	3.9 (2014)	No data
Per capita food production variability (\$, 2013) ⁴	29,7	7,7	14,8	7,2	15,9
Per capita food supply variability (kcal/day, 2011) ⁵	28	37	87	16	22

The only two indicators/areas for which updated estimates were available were domestic food price volatility in Armenia and in developed countries. While the food price volatility index for developed countries dropped from 4.8 to 3.9 between 2013 and 2014, in Armenia it increased from 10.6 to 11.9, making its index three times that of developed countries. It is not clear how this relates to variability in food production or supply. The variability in Armenia's per capita food production is roughly double that of Georgia and the CCA region as a whole, whose variability is in turn roughly double that of Azerbaijan and developed countries. However, all three countries have greater variability in food supply than developed countries or the CCA region as a whole, with Azerbaijan's index more than double that of developed countries and Georgia's index more than five times greater.

Instability in production can be caused by a range of factors. Most obviously, variability in weather can create significant changes in harvests. This is particularly significant in the region, as the majority of water falls in the winter in the form of snow, and often needs to be taken from mountain rivers to agricultural land. Another problem in the region that can cause significant variability in production is animal disease. For this reason, efforts to improve irrigation and animal health should not only be seen as attempts to improve agricultural production, but also to ensure stability of supply. For that reason, in the baseline we paid special attention to the consideration of irrigation/drainage and animal disease. We will therefore consider these issues again here.

Irrigation/drainage

Agricultural systems heavily depend on water resources. The three countries significantly differ from each other in terms of water availability.

Figure 20: Rainfall comparatives⁶⁸

Country	National Rainfall Index (mm/yr, 2012 & 2014)
Armenia	562
Azerbaijan	447
Georgia	1 026

⁶⁷ FAO Food Security indicators www.fao.org/fileadmin/templates/ess/foodsecurity/Food_Security_Indicators.xlsx Reviewed 17 March 2017

⁶⁸ World Bank, Data Bank <http://databank.worldbank.org/data/reports.aspx?source=2&series=AG.LND.PRCR.MM&country=#> Reviewed 22 March 2017

As one can see, Armenia has only slightly more than half of Georgia's rainfall and Azerbaijan has less than half. This makes Georgia relatively wealthy in water resources – ranking at about the mid-point of the World Bank ranking, but makes Armenia and Azerbaijan relatively water-poor – ranking in the final quartile of countries.

Georgia's total cultivated area was estimated at 617,000 hectares in 2014, an increase of 92,000 hectares from the previous estimate in 2012 but still only 60% of the figure a decade earlier; the country's total cultivated area appears to have dropped drastically in the early years of the new millennium.⁶⁹ Armenia's cultivated area has remained steady at about 505,000 hectares for the past decade,⁷⁰ and Azerbaijan's cultivated area increased only slightly from 2.13 to 2.16 million hectares, continuing its general trend of slow but steady increases.⁷¹

The percentage of arable land that is irrigated is high in all three countries. The most recent FAO statistics (for 2012-2014) are 97% in Georgia, 75% in Azerbaijan, and 61% in Armenia. The Caucasus and Central Asia region as a whole has only 30% irrigated, and developed countries only 11%. Georgia appears to have drastically extended irrigation coverage during the early years of the millennium, when its statistic rose from less than 60% to more than 90%. However, as the FAO defines arable land as land under cultivation of temporary crops⁷² and the country's reported total arable land dropped drastically during this time period,⁷³ so the statistic appears to be reflecting the discontinuation of farming activities in non-irrigated areas rather than an actual increase in irrigation coverage.

Moreover, these statistics do not reflect the efficacy of irrigation systems, which depend on Soviet-era infrastructure and are widely accepted to be poorly functioning. The United Nations International Fund for Agricultural Development (IFAD)'s "Strategic Opportunities" paper for Armenia (2003⁷⁴) explains that "... irrigation inherited from the pre-transition period, is often inappropriate in terms of scale, cost and service requirements." The document for Azerbaijan (2010⁷⁵) reports that in 1995 "only 3.6 per cent of the canals were made of concrete, and the irrigation efficiency is estimated at 40-50 per cent."

Rehabilitation of these irrigation systems has been the target of a considerable amount of investment by the international community. The World Bank has spent USD 228.5 million on irrigation projects in the region since 2011.

69 FAO, Geography, climate and population database, Georgia http://www.fao.org/nr/water/aquastat/countries_regions/GEO/ Reviewed 22 March 2017

70 FAO, Geography, climate and population database, Armenia http://www.fao.org/nr/water/aquastat/countries_regions/ARM/, Reviewed 22 March 2017

71 FAO, Geography, climate and population database, Azerbaijan http://www.fao.org/nr/water/aquastat/countries_regions/AZE/, Reviewed 22 March 2017

72 "Land under temporary crops (double-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than five years). The abandoned land resulting from shifting cultivation is not included. Data for arable land is not meant to indicate the amount of land that is potentially cultivable." (http://www.fao.org/nr/water/aquastat/countries_regions/GEO/)

73 FAO, Geography, climate and population database, Georgia http://www.fao.org/nr/water/aquastat/countries_regions/GEO/ Reviewed 22 March 2017

74 International Fund for Agricultural Development (2003), Country Strategic Opportunities Paper, Republic of Armenia <https://www.ifad.org/documents/10180/5a197b13-8fae-4770-8ea8-3b206330f36c> Reviewed 24 March 2017

75 International Fund for Agricultural Development (2003), Country Strategic Opportunities Programme, Republic of Azerbaijan <https://www.ifad.org/documents/10180/d0522075-1942-4d44-99c9-fe5844624972> Reviewed 24 March 2017

Figure 21: World Bank projects in the irrigation and drainage sector approved during 2011 or later⁷⁶

Project Title	Commitment Amount (millions USD)	Current Status	Approval Date
Armenia			
Armenia Fourth Development Policy Financing	50.0	Active	08.12.2016
EDB Irrigation pr preparation	0.5	Active	25.03.2014
Irrigation System Enhancement Project	30.0	Active	22.05.2013
Additional Financing to IREP	18.0	Closed	25.10.2011
Azerbaijan			
Water Users Association Development Support Project	80.0	Active	26.04.2011
Georgia			
Irrigation and Land Market Development Project	50.0	Active	23.05.2014

There is currently a \$50 million project operating in Georgia, an \$80 million project operating in Azerbaijan, and there have been nearly \$100 million in projects financed in Armenia since 2011. Other large ongoing projects are also targeting irrigation infrastructure in the region; for example, a consortium of donors led by IFAD is currently funding the Infrastructure and Rural Finance Support Programme in Armenia (\$52.8 million⁷⁷) and The Agricultural Modernization, Market Access and Resilience (AMMAR) project in Georgia (\$30.8 million⁷⁸).

All of this spending might be associated with increases in productivity that were highlighted in the 'Availability' section of this report. It is, of course, difficult to dissociate work in agricultural infrastructure from the many other areas of work over the last few decades. Nonetheless, attention to this issue and rising agricultural productivity do seem to suggest that food stability should improve.

To look at changes in animal disease we compared the prevalences of animal diseases listed by the World Organisation for Animal Health.

⁷⁶ From the country websites of the Asian Development Bank (ADB), European Investment Bank (EIB), and the World Bank (WB). Reviewed April 4 2017

⁷⁷ International Fund for Agricultural https://operations.ifad.org/web/ifad/operations/country/project/tags/armenia/1690/project_overview Reviewed 24 March 2017

⁷⁸ International Fund for Agricultural https://operations.ifad.org/web/ifad/operations/country/project/tags/georgia/1760/project_overview Reviewed 24 March 2017

Figure 22: Animal Diseases Reported for Armenia, Azerbaijan and Georgia (2008-2013, 2014-2016)⁷⁹

Animal Disease	Azerbaijan		Georgia		Armenia	
	2008-2013	2014-2016	2008-2013	2014-2016	2008-2013	2014-2016
Acaraposis of honey bees		X	X	X		X
African swine fever	X	X	X	X	X	X
American foulbrood of honey bees	X	X	X			
Anthrax	X	X	X	X	X	X
Avian chlamydiosis	X	X				
Bovine anaplasmosis	X	X		X		
Bovine babesiosis	X	X		X		
Bovine tuberculosis	X	X		X	X	X
Brucellosis (<i>Brucella abortus</i>)	X	X	X	X	X	X
Brucellosis (<i>Brucella melitensis</i>)	X	X		X	X	X
Brucellosis (<i>Brucella suis</i>)		X		X	X	X
Echinococcosis (<i>granulosus</i> or <i>multilocularis</i>)	X	X	X	X	X	
Enzootic abortion (chlamydiosis)	X	X				
European foulbrood of honey bees	X	X	X			X
Fowl typhoid	X	X				X
Haemorrhagic septicaemia	X	X			X	
Mycoplasmosis (<i>M. gallisepticum</i>)	X	X				
Newcastle disease	X	X		X		X
Ovine epididymitis (<i>B. ovis</i>)	X	X		X		X
Pullorum disease	X	X				
Rabies	X	X	X	X	X	X
Sheep pox and goat pox	X	X		X		X
Theileriosis	X	X	X	X		X
Varroosis of honey bees	X	X	X	X	X	X
Total N of animal diseases reported	22	24	10	16	10	15

In the past three years Azerbaijan has reported two new diseases. Georgia has reported seven new diseases and has reported one less of its previously reported diseases for a net gain of six. Armenia has also reported seven new diseases and has reported two less of its previous diseases for a net gain of five.

It is hard to know how to interpret this information without knowing the relative effectiveness in reporting on the prevalence of these diseases. It could be that Azerbaijan is just more likely to report. The same is true for interpreting the sharp rise in the incidence of disease in recent years, this may simply reflect improved reporting and data collection. However, taken at face value it does suggest that all three countries have problems with severe animal disease, and that Azerbaijan appears to be the worst.

Without reliable data it is hard to quantify the problem. However, there are a number of reasons to believe that it is a significant source of food insecurity. First, there have been instances of major epidemics that have wiped out entire populations of farm animals. The most extreme case of this in recent times was the

⁷⁹ World Organisation for Animal Health, https://www.oie.int/wahis_2/public/wahid.php/Countryinformation/Animalsituation Reviewed 27 February 2017

incident of swine fever, which hit all three countries in 2006–2008. As Azerbaijan raises very few pigs the impact there was minimal, but in Armenia and Georgia it was dramatic.

Figure 23: Pork Production (tonnes) 2005–2015⁸⁰

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Arm	9 400	14 100	13 300	7 500	7 200	7 900	9 400	9 500	12 600	16 200	17 500
Geo	33 340	31 100	21 400	11 400	8 200	12 800	11 600	11 800	14 900	15 500	16 900

If we take 2006 as the base year, then pork production in Armenia had recovered and even increased by 24% in 2015, but in Georgia it has just barely recovered to half its former volume. It is hard to know the reason for this difference, though some reports have suggested a shift to industrial pig breeding in Armenia. This has been tried in Georgia but failed.⁸¹ This has had a predictable impact on prices. Prices are for January of each year, they can be regarded as closing price of the previous year and therefore 2006 price can be taken as the baseline:

Figure 24: Pork Prices (USD/tonne)⁸²



In Armenia prices have recovered and risen since the epidemic; in 2015 they had even doubled compared to 2006. The situation is similar in Georgia, but with a slightly less dramatic increase. Also, pork prices in Armenia are slightly more volatile than those in Georgia.

On top of this, endemic brucellosis in cattle has often been cited as a contributing cause of low milk yields and a range of other diseases form a background to regional animal husbandry, not only allowing for occasional epidemics but dramatically increasing the insecurity of small-hold farmers because it increases the likelihood of random animal death.

80 Armstat, RA National Food Balances by Food Commodity, Indicators and Years. http://armstatbank.am/pxweb/en/ArmStatBank/ArmStatBank__7%20Food%20Security/FS-1-2015.px?rxid=002cc9e9-1bc8-4ae6-aaa3-40c0e377450a (Reviewed 31 January 2017); GeoStat (2016), Production of Animal Husbandry. http://www.geostat.ge/index.php?action=page&p_id=428&lang=eng (Reviewed 30 January 2017)

81 Information based on discussions with agricultural investors in Georgia, June 2014.

82 Armstat (2010), Socio- Economic Situation of RA, January 2010, p36. <http://www.armstat.am/en/?nid=81&id=1125> (Reviewed 1 February 2017); Armstat (2014), Socio-Economic Situation of RA, January 2014, p39. <http://www.armstat.am/en/?nid=81&id=1533> (Reviewed 1 February 2017); Armstat (2015), Socio-Economic Situation of RA, January 2015, p40. <http://www.armstat.am/en/?nid=80&id=1645> (Reviewed 1 February 2017); GeoStat (2016), Production of Animal Husbandry. http://www.geostat.ge/?action=page&p_id=427&lang=geo (Reviewed 1 February 2017)

3.5 Dependency

As was suggested earlier in this report, most non-experts, politicians, and commentators often consider ‘food production independence’ and ‘food security’ to be the same thing. Although it is not part of the FAO’s four pillars of food security, it is still important to consider because food dependence may be a factor in determining food security for a range of reasons. In addition, food independence is often the central goal of agricultural policy, it is worth considering here. Because of its potential impact on food ‘availability’ and food ‘stability,’ the World Bank collects data that relates to dependency.

Figure 25: FAO food security indicators relating to dependency (CCA refers to the Caucasus and Central Asia Region)⁸³

Indicator	Armenia	Azerbaijan	Georgia	Developed Countries	CCA
Value of food imports over total merchandise exports (2011-2013)	41	3	37	6	6
Cereal import dependency ratio (% , 2009-2011) ⁶	56	38	69	-18	-3

The FAO assesses food dependency in two ways. First, it looks at overall food import levels relative to tradable exports. This ratio is important because it shows how likely the country is to be able to continue paying for its imports in the medium term. Therefore, of course, this variable is as much a reflection of the economies overall successfulness as an exporter, as it is a reflection of overall aggregate food imports. If the ratio is high then it suggests that anything that negatively impacts exports or increases the price of imported food could leave a country simply unable to import the goods it was accustomed to.

Armenia and Georgia have far higher levels of food import dependency than the rest of the region or the developed world. Azerbaijan’s food imports are not only dramatically lower relative to exports than theirs, but are even lower than either regional or developed country averages. This results from the fact that ‘merchandise exports’ include oil and gas, and of course Azerbaijan is a massive exporter of these two commodities. The long-term ‘security’ of this situation will be discussed below.

Cereal import dependency is considered particularly important because cereals are a staple global commodity with fairly variable prices in recent years. The cereal import dependency ratio, essentially the percentage of domestically consumed cereals that are imported, is much higher in all three countries than it is in the rest of the region or in the developed world. According to the most recent estimates Azerbaijan imports more than a third of its cereals, Armenia more than half, and Georgia more than two thirds, while the CCA region overall is actually a net exporter of cereals.

The dynamics of these numbers over recent years is worth examination:

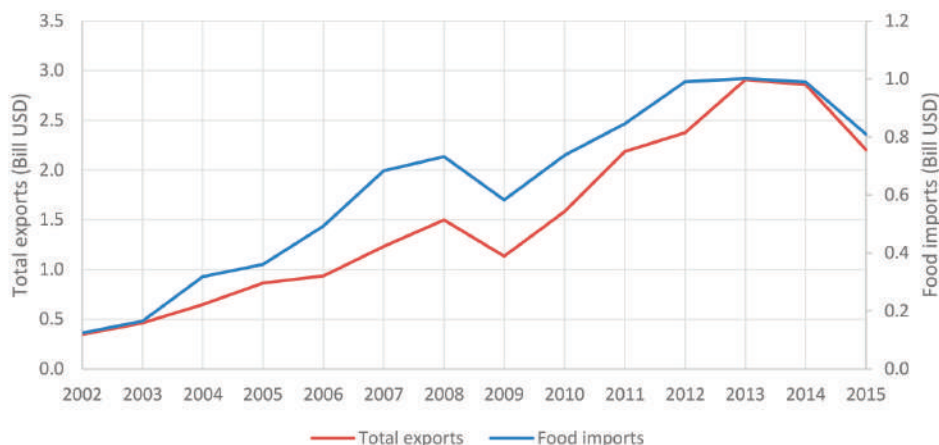
⁸³ FAO Food Security Indicator www.fao.org/fileadmin/templates/ess/foodsecurity/Food_Security_Indicators.xlsx Reviewed 27 March 2017

Figure 26: Trends in the values of food imports over total merchandise exports for Armenia, Azerbaijan, and Georgia⁸⁴

Country	2002 - 2004	2003 - 2005	2004 - 2006	2005 - 2007	2006 - 2008	2007 - 2009	2008 - 2010	2009 - 2011	2010 - 2012	2011 - 2013
Armenia	25	23	23	26	35	45	50	48	43	41
Azerbaijan	10	9	8	9	3	3	3	3	3	3
Georgia	56	54	55	54	55	54	49	44	41	37

This shows that Armenia doubled its food import dependency ratio over the seven years to from 2002-2009, and although the ratio decreased over the next four years it still increased by more than 60% during the decade. Georgia's dependency held fairly steady for the first six years and then decreased substantially over the last four, leaving it at two thirds of its value at the beginning of the period. While this most recent trend seems to be positive for both countries, examination of UNDP's food import and total export data⁸⁵ shows that particularly for Georgia the values of food imports and total exports have fluctuated much more dramatically than the ratio of one to another:

Figure 27: Georgia's total exports and food imports, 2002-2015⁸⁶



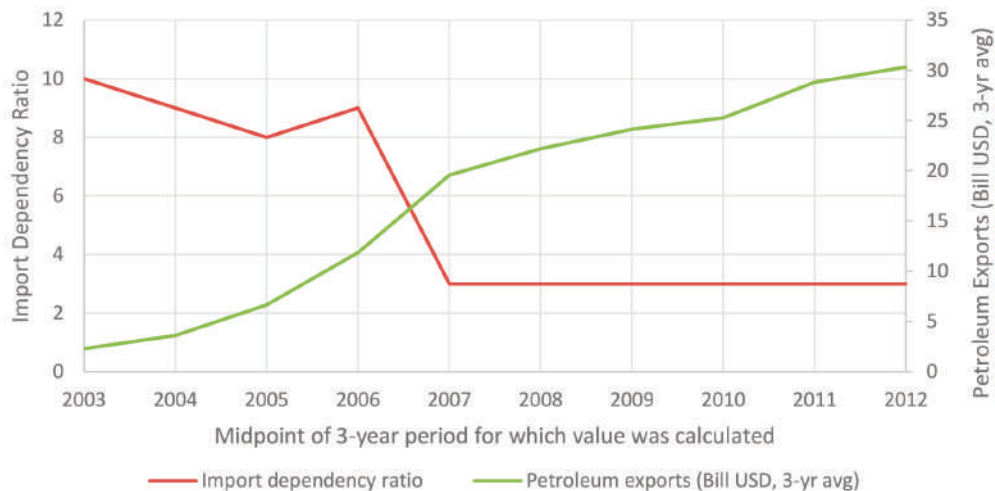
Both times in recent years when total export values dropped from one year to another; 2009 and 2015, food imports dropped with them. Thus, it appears that Georgia's consumption of imported food is directly dependent on its income earned from exports.

Azerbaijan's indices over the period, on the other hand, reflect the dynamic of petroleum exports. The following chart compares the country's import dependency ratio to the value of its petroleum exports (also shown as a 3-year running average to match the indicator), suggesting that in the case of this country whose economy is completely dependent on oil the indicator is simply inversely tracking the value of its export.

84 FAO Food Security Indicators www.fao.org/fileadmin/templates/ess/foodsecurity/Food_Security_Indicators.xlsx Reviewed 27 March 2017

85 which differs from the FAO's indices but shows the same trends

86 UN Conference on Trade And Development <http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx> Reviewed 27 March 2017

Figure 28: Azerbaijan's import dependency ratio and its total petroleum exports, 2003-2012⁸⁷

This means that Azerbaijan had the resources to pay for its imports several years ago, but may have difficulty when the revenue from these resources inevitably diminishes. Even in the last few years the value of the country's petroleum exports has dropped drastically with world oil prices. 2015 export values were less than half those of 2012⁸⁸ and although data for 2016 has not been published it appears that it will be approximately one third of the 2012 value. It would be reasonable to expect that the country's import dependency ratio has increased accordingly.

To give us a different perspective on this issue, all three countries produce self-sufficiency numbers for agricultural products. This generally reflects the level to which local production covers local consumption needs in any given year. Azerbaijan claims to have quite high levels of self-sufficiency in many primary foodstuffs. In crops, 98% self-sufficiency for potatoes, more than 100% for vegetables and 64% for grains.⁸⁹ In meat and dairy they claim 92% self-sufficiency in meat, 76% for milk and dairy and 97% for eggs.⁹⁰

In Armenia one can see a similar profile, though the biggest difference is that grain self-sufficiency seems to be lower. Wheat self-sufficiency has gone up from 33% from the 2012 figure in our baseline report to almost 50% in 2015.⁹¹ Self-sufficiency in vegetables is at 100%; milk is 83%; eggs is almost 100%. In meat, beef self-sufficiency is high at 92%, pork is 58% and poultry is 22%.⁹² In all key products, Armenia's self-sufficiency ratio have increased since the baseline report.

87 FAO, Food Security Indicators. www.fao.org/fileadmin/templates/ess/foodsecurity/Food_Security_Indicators.xlsx (accessed March 2017); UNCTAD <http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx> (accessed March 2017)

88 UNCTAD, <http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx>, Reviewed 27 March 2017

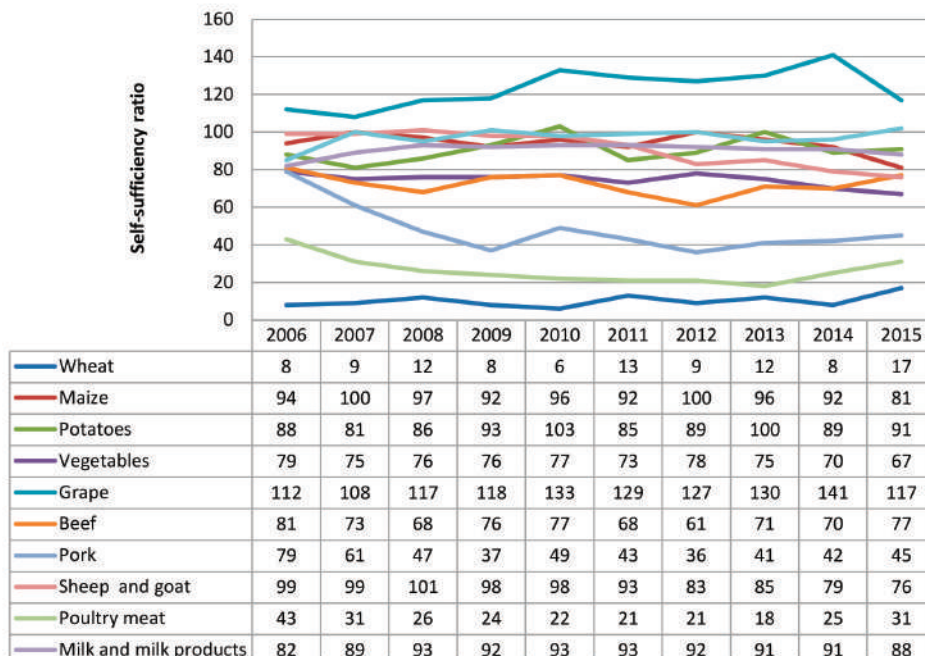
89 Government of Azerbaijan (2014), Food Balances of Azerbaijan, Baku, p74

90 Government of Azerbaijan (2014), Food Balances of Azerbaijan, Baku, p76

91 National Statistics Service of the Republic of Armenia (2015). Availability of food, http://www.armstat.am/file/article/f_sec_4_2016_3.pdf p 73, Reviewed 27 April 2017

92 National Statistics Service of the Republic of Armenia (2015). Availability of food, http://www.armstat.am/file/article/f_sec_4_2016_3.pdf pp 74-75, Reviewed 27 April 2017

Figure 29: GeoStat's self-sufficiency ratios of the 11 key agricultural products in Georgia, 2006-2015



In Georgia, it seems as though while there is a huge import of food generally, particularly of grains and processed foods, there is significant self-sufficiency in the areas where Georgia has a comparative advantage like fresh fruit and vegetables. Therefore, while there is scope for import substitution, it is not as dramatic as commonly believed.

In addition, in neither vegetables, meat, nor grain is the dependency story simple. To start with vegetable imports, there is a sense in the general population that Georgia is a large importer of fruit and vegetables. Not only is this not true generally, as suggested by relatively high self-sufficiency ratios in this area, but where imports do occur they only occur at a particular time of the year.

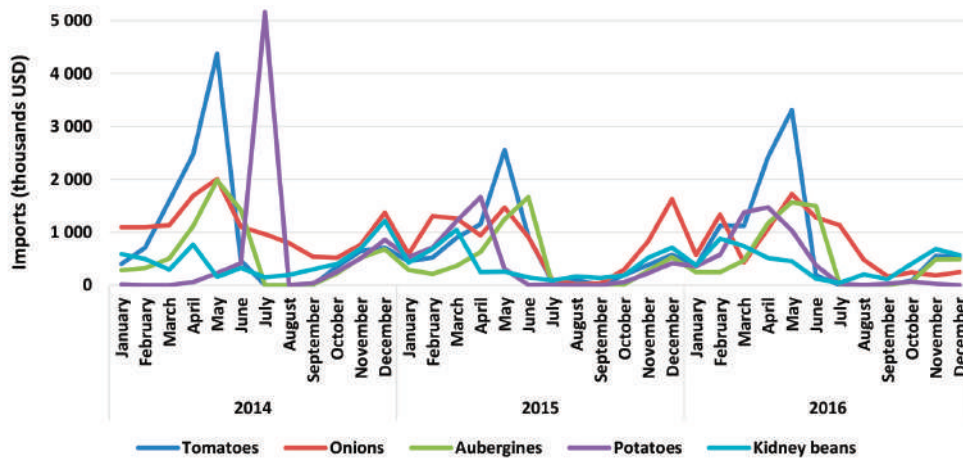
As in 2013, in 2016 Georgia's 5 biggest imported fresh vegetables were tomatoes, onions, aubergines, potatoes and kidney beans. However, now, instead of potatoes, tomatoes are the largest imported fresh vegetables. And imports of potatoes (one of, if not the most, staple vegetable) have decreased by more than half, it was only the 4th most imported vegetable in 2016.

Figure 30: Georgia's leading fresh vegetable imports (thousands of USD), 2013-2016⁹³

	2013	2014	2015	2016
Tomatoes	9 600	11 731	7 795	9 718
Onions	11 548	13 089	9 376	8 857
Aubergines	6 362	7 065	5 228	6 260
Potatoes	13 123	7 544	5 160	5 348
Kidney beans	4 545	5 588	4 633	5 115

Moreover, if we briefly look at exactly when these goods were imported:

93 GeoStat (2016), Georgian Imports by Commodity Groups (HS 4 Digit Level). http://www.geostat.ge/index.php?action=page&p_id=134&lang=eng Reviewed 3 March 2017

Figure 31: Georgia's leading fresh vegetable imports by month, 2014-2016⁹⁴

The graph suggests that fresh vegetable imports are highest just before the start of the season in Georgia. These pre-season fresh-vegetables are mostly coming from Turkey, produced in unheated greenhouses and priced cheaply. The graph also shows that during the main growing season from July to October, there is almost no import of vegetables. During winter, although the production of fresh vegetables locally is almost non-existent, import levels are still very low as they tend to be produced more in greenhouses and are more expensive at this time of the year. Thus, to increase self-sufficiency in vegetables, more greenhouses need to be built in the country to extend the season for producing vegetables locally.

With meat, the situation is also complex. For sheep and goats, the self-sufficiency ratio was over 90% until 2011, but then Georgia started to export large quantities of live sheep to Azerbaijan, Iran, and Middle East, driving the self-sufficiency ratio down to 76% in 2015. This underscores that exports have to be carefully thought out and planned to make sure that Georgia reaches sustainability in terms of producing and exporting sheep. The beef self-sufficiency ratio has been volatile with 81% in 2006, going down as low as 61% in 2012, and then bouncing back to 77% in 2015. The reason for the upward trend in the recent years is tighter rules on slaughtering animals and government and donor-supported projects to fight diseases such as brucellosis and foot and mouth.

Wheat is most often referred as the most important product for food security (more so in Georgia than in Armenia),⁹⁵ and the government and experts are concerned that self-sufficiency ratio for wheat is usually only around 8-12%. However, in 2015 there was an unusually high self-sufficiency ratio for wheat in Georgia, reaching 17%.

There is a serious question about whether self-sufficiency would really lead to greater availability and stability of food. As we have also highlighted, all three countries in the region have fairly volatile production patterns, particularly Armenia. This does not seem to suggest that greater local dependence would necessarily result in greater security.

When analysing self-sufficiency ratios, it is also important to consider currency flows. Low self-sufficiency ratios are less of a problem if economies receive high levels of Foreign Direct Investment and remittances; for example, as has been the case in Armenia and Georgia.

94 Geostat (2016) Georgian imports by commodity groups (HS 4 digit level) http://www.geostat.ge/index.php?action=page&p_id=134&lang=eng Reviewed 3 March 2017

95 Interview with Mikheil Jibuti, Association of Economists of Georgia, 14 March 2017

3.6 Gender and food security

In the baseline report we outlined the role that gender plays in food security. In what follows, based on our interviews and the collected data we will summarize the gender situation in relation to food security in Armenia and Georgia.

Gender mainstreaming is not very common in policies and programs either in Armenia or in Georgia, and is usually limited to the programs of international organisations. During our interviews with public officials in Armenia, often gender-specific questions would not be taken seriously by the respondents. In Georgia, respondents would usually highlight that while women are also involved equally or to a greater degree in everyday agricultural activities, usually men are the ones who make decisions and reap most benefit,⁹⁶ or that the role of women is important because of child care (feeding children with the right foods).⁹⁷

Earlier research by GeoWel suggests that this picture is over-simplified. During a piece of research on the role of gender in agricultural value chains in Georgia we found that while men were always acknowledged to be ‘the head of the household,’ families usually made big decisions together. Furthermore, women exercised considerable power and were often day-to-day decision makers over family finances to a larger degree than men. We found that women were largely marginalised from technical areas, like dealing with veterinary care or machinery. We also found that women were restricted in their locale of operation or personal development by social norms that restricted women from travelling by themselves outside of the village, but inside the village they exercised considerable power.⁹⁸

Nonetheless, both in Armenia and Georgia there are attempts to empower women through cooperatives, with strong EU support through its ENPARD projects. In Georgia, Women’s Information Centre (WIC) has a project that specifically focuses on the promotion of agricultural cooperatives among women.⁹⁹ The environment is better in Georgia than in Armenia in terms of cooperatives because the government has started a massive cooperative support program. There are more than 1,500 agricultural cooperatives now registered with the Agricultural Cooperatives Development Agency in Georgia.¹⁰⁰ In Armenia such efforts are relatively scarce, although it has been acknowledged that supporting cooperatives would be beneficial. For example, as one government official said in Armenia, ‘Women farmers work better in cooperatives. OXFAM has successful experience with that.’¹⁰¹

In Armenia, a pro-media NGO supported by OXFAM focused specifically on women and their role in food security. The organization runs an online information portal WomenNet.am, and publishes newspaper insert “Women and Politics.” With support from Oxfam, in its publications ProMedia includes a special focus on food security, highlighting the role of women. Stories also cover the successes of female farmers. In addition to the online portal WomenNet, in the scope of the same project, ProMedia administers a Facebook group “Food safety is in women’s hands,” which has 123 members. According to the head of ProMedia, their work covering issues related to food security is far-reaching. They develop interest among journalists to cover food security-related material outside of their work in the NGO. Most of the journalists that work with the NGO are also working for various other media outlets.¹⁰² Agricultural Alliance initiated by OXFAM also works on mainstreaming gender in the agricultural development strategy.

96 Interview with Irakli Kasrashvili, Mercy Corps, 1 March 2017

97 Interview with Dani Tabukashvili, Elkana, 27 February 2017

98 GeoWel (2013) Assessment of the Role of Gender in Agricultural Value Chains in Georgia and Armenia, http://www.geowel.org/index.php?article_id=84&clang=0#sthash.2qWBMrjG.dpuf Reviewed 10 March 2017

99 Interview with Elene Rusetskaya, Women Information Center, 13 March 2017

100 Agricultural Cooperatives Development Agency, <http://acda.gov.ge/index.php/eng/static/118> Reviewed 26 April 2017

101 Interview with Hrachya Tspnetyan, Ministry of Agriculture, Department of Agricultural Development Programs, 14 March 2017

102 Interview with Tamara Hovnatanyan, Head of ProMedia-Gender NGO, Editor-in-chief of the Newspaper Insert “Women and Politics” and Website WomenNet.am, 20 March 2017

Armenia has ratified most of the international instruments related to gender. Key national documents in the field include the Gender Policy Concept Paper adopted by the Armenian Government in 2010. In 2011, standing committees on gender issues were established in all the *Marzperatans* (regional governments) of Armenia. In 2013, the government adopted the Law on Provision of Equal Rights and Equal Opportunities for Women and Men. These national instruments imply gender mainstreaming in the legislative field. Based on Armenia's (de facto) commitment to gender equality, Oxfam prepared a Manual Methodology for Situation Assessment of Women's and Men's Equal Rights and Equal Opportunities.¹⁰³ The Manual has been officially adopted by the Ministry of Social and Labour Affairs. The Agricultural Development Strategy of Armenia will also include a gender mainstreaming component.¹⁰⁴

Women's nutritional needs are highlighted in the Oxfam study 'Gender Comparative Analysis of Nutrition Diversification in the South Caucasus.' One of its key recommendations is to pay particular attention to women's dietary diversity, as 'insufficient nutrient intakes before and during pregnancy and lactation can impact the nutrition and health of both women and their infants.'¹⁰⁵

4 Government Capacity on Food Security in Armenia and Georgia

In Georgia, the food security concept is highlighted in a section of the national agricultural strategy. However, there are no other documents which specifically deal with food security. The Georgian Alliance on Agriculture and Rural Development (GAARD) is developing a draft of a legal framework for food security, but it is not clear whether, when, or in what form the parliament will adopt it.¹⁰⁶ Part of the problem here is that since the government equates 'food security' with 'food production,' any agricultural development plan is simultaneously a security document, and there is no need for a separate law.¹⁰⁷

Armenia, on the other hand, has several state documents related to food security:

- The Law of the Republic of Armenia about Ensuring Food Security - May 7, 2002
- The Food Security Concept of the Republic of Armenia - May 18, 2011
- The Strategy for Sustainable Agricultural and Rural Development for 2010-2020 - November 4, 2010

The Government approved the first Action Plan based on the Food Security Concept on October 2011. The Action Plan based on the Food Security Concept for 2017-2020 was approved on December 1, 2016. The Action Plan addresses all four pillars of food security. One of the main implementers of the Action Plan is the Ministry of Agriculture. The Department of Agricultural Development Programs has a Food Security Division (we interviewed the head). The Ministry of Agriculture also has a Food Safety Division and a State Service for Food Safety, and we interviewed the heads of each.

103 Oxfam (2015) Manual Methodology for Situation Assessment of Women's and Men's Equal Rights and Equal Opportunities http://foodsecuritysc.com/wp-content/uploads/2016/05/Oxfam_Manual_Evaluation-methodology_Eng_Final-1.pdf

104 Interview with Hrachya Tspnetsyan, Ministry of Agriculture, Department of Agricultural Development Programs, 14 March 2017

105 Oxfam (2016) Gender Comparative Analysis of Nutrition Diversification in the South Caucasus, <http://foodsecuritysc.com/publications/?wpv-publicationcategory=project-research> p 8

106 Interview with Iveri Akhalbedashvili, Parliament of Georgia, Committee for Agriculture, Head of Staff, 7 March 2017

107 Interview with Nodar Kereselidze, Deputy Minister of Agriculture of Georgia, 6 March 2017

The law and the concept were mentioned only by the main implementer, the Ministry of Agriculture.¹⁰⁸ Each of the ministries and departments deal with their own part and there seems to be limited coordination. Moreover, there seems to be a general lack of information on the activities of the ministries. Even the international agencies working in the field do not seem to have a complete picture of the relevant policies, programs, and projects.

Coordination issues were also highlighted by the experts in Georgia. For example, while the Ministry of Agriculture sets the agricultural policy of the country, the ministry of Economy and Sustainable development actually owns most of the lands, and the National Agency for Public Registry (under Ministry of Justice) is responsible for cadastres and records.¹⁰⁹ Land registration reform is progressing slowly in Georgia, making it more difficult to provide a clear picture and subsequently to attract investors. More importantly, land titles would allow small holders to invest in their own land and would improve their welfare and food security.

Land reform in Armenia is also going slowly. Farming remains unprofitable, and farmers leave their lands idle and engage in seasonal migration. ‘We need land reform, so people who do not cultivate their land, can legally sell it. That way we would have large farms that are involved in production, and the rest would work in the service field.’¹¹⁰

The State Service for Food Safety of Armenia is the main agency implementing monitoring of food safety. According to Vahe Danielyan from the State Service for Food Safety, ‘Food inspection in the whole world is viewed as an audit tool, while in Armenia it is used as a punishment mechanism.’¹¹¹ He also added that ‘over the last few years the number of inspections has decreased due to the lack of financial resources, which has prevented us from producing positive results. Due to the lack of financial resources we are unable to conduct appropriate monitoring.’¹¹² This underscores the importance of adding consultancy functions rather than only inspecting businesses.¹¹³ According to at least three interviewees, the state inspections are not very effective and bribery and protectionism is common within the agency.

A similar entity in Georgia is the National Food Agency. After the Association Agreement with the EU Georgia is supposed to tighten food safety control. However, to date we have only seen this in the milk sector. Other sectors are supposed to follow by 2020, but, according to Vakhtang Kabaladze from the Eurasian Fund, the government is reluctant to expand control over small farmers.¹¹⁴

Another actor, both in Armenia and Georgia, is the National Centers for Disease Control. Their functions include education, awareness raising, and promotion of healthy eating.¹¹⁵ Such entities have led to more discussions on food safety and healthy eating in the public, but there is still more work done to change people’s healthy eating habits. ‘In Yerevan people hear more about healthy eating, but it will take years till we see actual change. It is the new generation that may be different.’¹¹⁶

108 Interview with Hrachya Tspnetsyan, Ministry of Agriculture, Department of Agricultural Development Programs, 14 March 2017

109 Interview with Mikheil Jibuti, Association of Economist of Georgia, 14 March 2017

110 Interview with Hrachya Berberyan, Agrarian Union of Armenia, 10 March 2017

111 Interview with Vahe Danielyan, State Service for Food Safety, 21 March 2017

112 Interview with Vahe Danielyan, State Service for Food Safety, 21 March 2017

113 Interview with Vahe Danielyan, State Service for Food Safety, 21 March 2017

114 Interview with Vakhtang Kabaladze, Eurasia Fund, 24 February 2017

115 Interview with Romela Abovyan, National Center for Disease Control and Prevention, 16 March 2017

116 Interview with Romela Abovyan, National Center for Disease Control and Prevention, 16 March 2017

5 NGOs' Capacity in Food Security

During the baseline, it was important to identify organisations conducting projects relevant to food security. In this update our aim is to assess how the situation has changed since the baseline report.

We have interviewed an almost identical number of non-governmental entities in each country as for the baseline report in 2013-2014; 13 in Armenia and 17 in Georgia. The scope of this report didn't include field-work in Azerbaijan, however, so the total number of interviews is significantly smaller than during the baseline research.

Since the baseline report, the key development in Georgia has been active engagement with the EU and the resulting Association Agreement and the Deep and Comprehensive Free Trade Agreement between Georgia and the EU. As part of this close engagement, the EU has allocated EUR 102 million to Georgia for 2013-2019 to help develop its agricultural sector. One of the results of this is that a number of international and local organisations are now implementing wide-ranging projects across all regions of Georgia, including Oxfam, Care International, Mercy Corps, People in Need, the Food and Agriculture Organization (FAO), the United Nations Development Program (UNDP), HEKS EPER, the Association Rural Development for Future Georgia (RDFG), the Georgian Institute for Public Affairs (GIPA), and the Georgian Farmer's Association. In addition to the main partners, there are also other organisations which are involved in this project in various capacities. For example, Oxfam and People in Need are partnering with Elkana to bring in their agricultural experience.

One of the key foci of the ENPARD project is to enable agricultural businesses be more efficient. To this end, the government's newly established Agricultural Cooperatives Development Agency has been an active partner of the ENPARD projects. The vision of the government is that the country has to move towards larger and more efficient agricultural entities, as subsistence farming is not enough for adequate production, development, and food security.¹¹⁷

Specifically for food security, BRIDGE, Oxfam's sister and successor organisation in Georgia, coordinates a platform Georgian Alliance on Agriculture and Rural Development (GAARD). The platform includes agricultural associations, individual experts, think tanks, and other civil society actors to advocate and lobby food security reform. Recently it has developed a draft legal framework for food security, with involvement from the government. However, it is not clear when the draft law will be presented in the parliament, as representatives from the majority do not see the need for such law at the moment.¹¹⁸

Overall, there is a much better understanding of what food security is. If before only a handful of organisations even had an idea about the concept, now there are a number of projects in Georgia which specifically focus on food security. However, in discussions with many NGOs the focus is usually on the production side and on the strengthening of small farmers or cooperatives, although UNICEF and Eurasia Foundation stand out in focusing more on utilisation side of food security. Local CSOs often understand food security in terms of country's ability to produce more agricultural products and rely less on imports. Few respondents, mostly international NGOs such as Mercy Corps, People in Need, CARE International, and obviously FAO and the WFP have a more nuanced and deeper understanding of the concept, connecting it to the general security context as well.

Food Security is a broad concept, and various aspects of it are captured by many different organisations which makes it hard to document it. However, there are a number of organisations which have important projects on agricultural development in Armenia, such as CARD, iCARE, SDA and the Food Safety Consumer's Union. There is also a spin-off organisation from Oxfam's Food Security project, OxYGen. It builds on Oxfam

¹¹⁷ Interview with Nodar Kereselidze, Deputy Minister of Agriculture of Georgia, 6 March 2017

¹¹⁸ Interview with Iveri Akhalbedashvili, Parliament of Georgia, Committee for Agriculture, Head of Staff, 7 March 2017

projects, and has a specific youth and gender focus. The name “OxYGen” reflects its roots in Oxfam, and its intention to focus its work on youth and issues of gender.¹¹⁹

Most of the local CSOs in Armenia and in Georgia primarily focus on production improvement. The Strategic Development Agency in Armenia, for example, is supporting dairy production. They do talk about food security from the safety of production perspective; that the facilities, technology, and staff have to follow sanitary standards. The Center for Agribusiness and Rural Development (CARD) is a well-established organisation, originally founded with the support of USDA’s Marketing Assistance Program (USDA-MAP) in 2005. CARD’s mission is to assist farmers and agribusinesses in the production and marketing of food and related products to increase incomes and create jobs leading to sustainable livelihoods for rural populations and thus to contribute to poverty reduction. In Georgia, in addition to BRIDGE, which is a spin-off from Oxfam’s project and is primarily focusing on food security issues, there is also Elkana which covers almost all of the country and offers many different projects related to agriculture and agro-tourism. They also have a specific project on food security which is funded by Oxfam, Improving Regional Food Security through National Strategies and Small Holder Production in the South Caucasus.

Farmers associations both in Armenia and Georgia are quite strong and are promoting local production. The Agrarian Union of Armenia has 1,200 large farmers as members. There are small and medium-sized farmers as well that are supported by the Union, although they are not members. In total, 27,000 farmers are supported by the Union. The union produces 60% of the potatoes in the republic.¹²⁰ In Georgia, there is a relatively recently established Farmer’s Association, which is also an umbrella organisation for many specific associations such as the Potato-Growers Association, the Wine-Makers Association, the Milk and Dairy Products Association, and the Livestock Association. Georgia’s Farmer’s Association is strongly connected to various EU and USAID projects to help local farmers access new technologies and information.

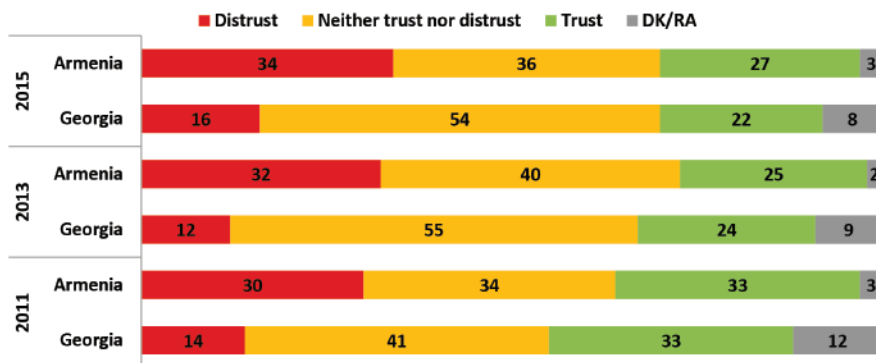
In terms of research, there are a number of organisations in Armenia and Georgia that cover different aspects of food security, although for specific areas of focus there are very few experts who often get contracted by these organisations. In Armenia the APR group has produced the national nutrition study. The Armenian branch of the Caucasus Research Resource Centres (CRRC) does nation-wide polling, sometimes on agricultural issues. In Georgia GeoWel has produced a number of agriculture and food security reports. ISET’s agricultural arm focuses specifically on agriculture. The polling firm ACT has contributed to the nutrition study, as they have strong quantitative component. For quantitative studies, CRRC Georgia also has a strong record. Oxfam has also cooperated with the Rural and Policy Development Institute, which has experienced experts from the agricultural sector.

6 The Media

Both in Armenia and in Georgia the media in general is considered to be one of the least trustworthy institutions. The Caucasus Research Resources Centers (CRRC) conducts an annual survey where they ask how much the respondents trust media, among other social and political institutions.

119 OxYGen website <http://oxygen.org.am/index.php/en/what-we-do> Reviewed 27 April 2017

120 Interview with Hrachya Berberyan, Agrarian Union of Armenia, 10 March 2017

Figure 32: Level of trust towards media in Armenia and Georgia, 2011, 2013, and 2015 years¹²¹

The graph shows that while trust towards media in general has decreased since 2011 and is roughly at the same level in both countries, more people distrust the media in Armenia than in Georgia. In Georgia, most people take either a neutral position ('neither trust nor distrust'), or refuse to answer.

In both countries we see that the media landscape is changing and an increasing number of people are using the internet and social media networks. This has important effects in the field of agriculture and food security as well. In Georgia, for example, a recently launched platform, Traktor, is producing video tutorials for small-holder farmers in rural areas. They also provide additional services, such as village-tailored weather forecasts, consultations for farmers, and an online shop for agricultural inputs. Before going full-scale, they conducted focus groups with farmers on how they wanted to receive information. A significant proportion of the farmers said that they use smart-phones.¹²² Moreover, according to CRRC's Caucasus Barometer, internet access is 94% in Armenia and 85% in Georgia (2013 data).¹²³ This emphasizes the fact that in order to promote the food security awareness agenda, traditional mainstream media will not be enough.

In Armenia and Georgia there are very few programs that specifically cover food security issues, but slightly more that focus on nutrition issues as they relate to everyday consumption of food and there is a greater public demand for such programs. There are general agricultural and news programs which periodically discuss issues related to food security.

All of the major media sources like TV, radio, print media, and online media have at least partial coverage of food security issues, but not many of them have programs or sections dedicated to such issues. Occasionally morning talk shows discuss topics that can be categorized as relevant to food security such as agricultural news, food safety, and agricultural economics. It is not unusual that success stories of agricultural producers are shown in order to promote agriculture. It should be mentioned that quite often, success stories that are covered by these programs are about agricultural businesses that are operated by women.

There are few food security-related programs in Armenia. Among the main channels, Ketron TV has two programs on health, which sometimes cover nutrition. Shant TV also has a program on health, which also sometimes covers nutrition. Public TV has a cooking show. Public TV also has a program called First Economic, a 5-10 daily program, which covers economy-related issues, including food production. Below is a list of food security-related programs in Armenia:

121 Caucasus Research Resources Centers, Caucasus Barometer 2011, 2013 and 2015. Available online at <http://caucasusbarometer.org/en/cb2015/TRUMEDI/> Reviewed 4 May 2017

122 Interview with Nino Keshelava, 8 May 2017

123 Caucasus Research Resources Centers, Caucasus Barometer 2011, 2013 and 2015. Available online at <http://caucasusbarometer.org/en/cb-am/WEBHOME/> Reviewed 4 May 2017

List of current TV and radio programs on agriculture/food issues in Armenia

#	Channel	Name of the program	Day	Airing time	Coverage	Focus
1	1 Public TV Company of Armenia	AgriTime	Saturday	9:30AM	Nationwide	Promotion of agriculture Initiated by the Armenian Ministry of Agriculture.
2		The Quality of Taste	Saturday	12:30AM	Nationwide	Food safety The program is implemented in association with the State Service for Food Safety of the Ministry of Agriculture of RA.
3		First Economic	Weekdays	7:30 PM	Nationwide	Economy, with coverage on production as well
4	Shant TV	Med Info	Mondays, Tuesdays, Wednesday, Friday, Saturday	6:15 PM, 1:20AM, 3:15PM	Nationwide	Health, with some coverage on food
5	Kentron TV	Sanatorium	Friday		Nationwide	Health, with some coverage on food
6		Dr. David	Sunday, Wednesday		Nationwide	Health, with some coverage on food

Promedia NGO, with OXFAM's support, ran online publications specifically devoted to food security issues and women's role in them.¹²⁴ However, after the end of the funding, the head of the organization told us that the topic will no longer be the organization's primary focus. In the scope of the same cooperation with OXFAM, Promedia also created the Facebook group Food Safety in Women's Hands. There are also other food security-related initiatives on Facebook; for example, the 'Safe food - Healthy generation' group, administered by the 'For Education and Science' NGO was created in February 2017 and already has 364 members, 'Baby food/recipes' has 9,398 members who share healthy baby food options, and 'Baby food' has around 3,000 members.

124 Women and Society <http://womensnet.am/en/category/trending-topics/%D5%BC%D5%B8%D5%B2%D5%BB-%D5%BD%D5%B6%D5%B6%D5%B8%D6%82%D5%B6%D5%A4%D5%A8-%D6%87-%D5%AF%D5%A1%D5%B6%D5%A1%D5%B5%D6%84/>.

In Georgia, the Georgian Public Broadcaster has several such programs through 1TV and Radio one that it operates. In Tbilisi there is also TV1 (not to be confused with the Public Broadcaster), which has a weekly section in its daily program every Tuesday, co-hosted by Nino Zambakhidze, head of the Farmers' Association. There is a regional TV channel Adjara TV that has nation-wide coverage and offers two weekly programs, one program that airs twice per month, and another program that airs once a month. There are also small regional TV channels that have coverage limited to their locations. One such channel is TV9 which operates in Akhaltsikhe, and coverage is limited to the Samtskhe-Javakheti region. Below is a list of food security-related programs in Georgia:

List of current TV and radio programs on agriculture/food issues in Georgia

#	Channel	Name of the program	Day	Airing time	Coverage	Focus
1	Georgian Public Broadcaster (GPB) - 1TV	Farm	Sunday	12:45	Nation-wide	Promotion of agriculture
2	(GPB) - Radio 1	Farmer's hour	Sunday	15:00	Nation-wide	Promotion of agriculture
3		Morning in the Country	Sunday	9:10	Nation-wide	Promoting rural life and agriculture
4		Eco-Meter	Wednesday	16:10	Nation-wide	Food safety
5	TV1	Business Morning	Tuesday	9:15	Nation-wide	Agricultural news
6	Akhaltsikhe TV channel 9	Farmer's Hour	Wednesday	20:30	Samtskhe	Agricultural news with focus on the region
7		Pharma Advices	Monday, Wednesday		Samtskhe	Short news on Food safety
8	Adjara TV	One day in a Village	Saturdays	21:20	Nation-wide	Promoting rural life and agriculture
9		I am farmer	Tuesdays	14:30	Nation-wide	Promotion of agriculture
10		Agro Advices	once in a month		Nation-wide	Promotion of agriculture
11		Agro Business	Every other Thursday	21:40	Nation-wide	Promotion of agriculture

On the webpage of GPB there is an archive of programs where people can access previous shows and radio recordings of these programs. Adjara TV also gives its web-page visitors access to these programs. Topics on food price volatility, lack of access to food markets, the and country's dependence on food imports are often discussed by multiple media sources. Different research organizations offer blog posts, printed media, and occasional articles on food prices.

Various aspects of food security are currently covered in the general news, usually either as a response to an epidemic outbreak (food poisoning) or a natural disaster that impacts harvest.

In Armenia and Georgia Oxfam has hired Action Global Communications Company to develop an effective communications and advocacy campaign. The campaign includes organising conferences, food fairs, and producing multi-media material. Some specific numbers have been quite frequently repeated not only in social media networks, but also in the mainstream media. For example, the numbers on how many households buy food on credit from the National Nutrition Studies were widely cited in news and analytical programs. Representatives of Oxfam were also invited to talk-shows to discuss various aspects of food security and nutrition. For example, Levan Dadiani, Oxfam's Agriculture and Food Security Policy Program Manager in Georgia, was invited one of the most popular business talk shows on the Rustavi 2 TV channel, where he also provided recommendations on food security.¹²⁵ In Armenia Oxfam has also worked with the State Services for Food Safety (SSFS) which has helped to promote food safety issues in the mainstream media, as well as on social media networks. The program Quality of Taste is run in association with SSFS, which serves as an effective platform for promoting food safety and nutrition issues.

Overall, the focus on agriculture has increased since the start of the Oxfam project three years ago. There are a number of factors contributing to this. First, both Georgia and Armenia are advancing in implementing trade regulations, with the EU and the Customs Union, respectively. This means that there is more demand to understand what changes will need to take place in these countries. So, while there are not that many new programs specifically focused on agricultural issues, mainstream media in general seems to be paying more attention to agricultural news and regulations. Second, social media networks seem to be gaining more popularity in both countries and farmers in the rural areas have more and more access to the internet and smart phones. Thus, different kinds of the agricultural services are now more accessible than they were a few years ago. And third, people from other international organizations produce reports on various agricultural topics that are also available in local languages, which is matched with enhanced interest in and access to by the general public.

¹²⁵ Excerpt from the June 11, 2016 program can be seen in Georgian at <https://www.youtube.com/watch?v=gCMYaAdRRao> Reviewed 7 May 2017

7 Annex 1: List of respondents

#	Organisation	Respondent	Country
1	Action Global	Maia Chitaia	Georgia
2	Agrarain Committee of the Parliament	Iveri Akhalbedashvili	Georgia
3	Agrarian Union of Armenia	Hrachya Berberyan	Armenia
4	Agricultural Cooperatives Development Agency (ACDA)	George Misheladze	Georgia
5	Ambebi.ge online journal	Lali Patsia	Georgia
6	Armenia TV	Sona Danielyan	Armenia
7	ARMNEWS	Artak Aleksanian	Armenia
8	ArmStat Agriculture Statistics Division	Arsen Avagyan	Armenia
9	ArmStat Food Security Division	Anahit Avetisyan	Armenia
10	Association of Economists	MIkheil Jibuti	Georgia
11	Business Time Georgia	Ketevan Mghebrishvili	Georgia
12	CARD	Zaruhi Davtyan	Armenia
13	CARE International	Gia Glonti	Georgia
14	Cheese-makers Association	Ana Mikadze	Georgia
15	Chir CSC	Tigran Tsaturyan	Armenia
16	Elkana	Dani Tabukashvili	Georgia
17	EPF	Vakhtang Kobaladze	Georgia
18	FAO	Zaza Chelidze	Georgia
19	FAO	Vahan Amirkhanyan	Armenia
20	Farmers Association	Nino Zambakhidze	Georgia
21	Federation of Agricultural Associations	Nazeli Vardanyan	Armenia
22	Georgia Public Broadcaster, program "Ferma"	Demetre Ergemlidze	Georgia
23	Geostat	Vasil Tsakadze	Georgia
24	ISET	Salome Gelashvili	Georgia
25	Mercy Corps	Irakli Kasrashvili	Georgia
26	Ministry of Agriculture, Department of Agricultural Development Programs	Hrachya Tspnetsyan	Armenia

27	Ministry of Agriculture, Department of Food Safety	Ashkhen Shirvanyan	Armenia
28	Ministry of Agriculture, Department of Food Security	Armenak Aghajanyan	Armenia
29	Ministry of Agriculture; Deputy Minister	Nodar Keserelidze	Georgia
30	Ministry of Agriculture; Policy Analysis Department	Ekaterine Zviadadze	Georgia
31	Ministry of Health, National Center for Disease Control and Prevention	Hovsep Hovhannisyan	Armenia
32	Ministry of Health, National Center for Disease Control and Prevention	Romela Abovyan	Armenia
33	Ministry of Social and Labour Affairs, Department of Social Assistance	Astghik Minasyan	Armenia
34	Ministry of Social and Labour Affairs, Department on Issues Related to Elderly	Anahit Gevorgyan	Armenia
35	National Association of Consumers	Melita Hakobyan	Armenia
36	National Disease Control Center	Amiran Gamkrelidze	Georgia
37	Oxfam	Benoit Trudel	Georgia
38	Oxfam	Nana Takvarelia	Georgia
39	PiN	Buba Jafarli	Georgia
40	Pro-media	Tamara Hovnatanyan	Armenia
41	Radio liberty	Hrayr Tamrazyan	Armenia
42	SME DNC	Artak Dadoyan	Armenia
43	State Service for Food Safety	Vahan Danielyan	Armenia
44	State Service for Food Safety (Press Secretary)	Nvard Arakelyan	Armenia
45	Strategic Development Agency	Vardan Torchyan	Armenia
46	Traktor.ge	Nino Keshelava	Georgia
47	UMCOR	Gohar Grigoryan	Armenia
48	UNDP	Hripsime Manukyan	Armenia
49	UNICEF	Tamar Ugulava	Georgia
50	WFP Armenia	Luca Molinas	Armenia
51	Women Information Center	Elena Rusetskaya	Georgia
52	Yerkir Media	Anna Davtyan	Armenia

8 Annex 2: References

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(Footnotes)

- 1 The country's or region's average supply of calories for food consumption divided by the average dietary energy requirement estimated for its population; essentially the percentage of needed calories consumed. Values are averaged over three-year periods.
- 2 The domestic food price level index is an indicator of the relative price of food in a country. Specifically, the ratio of food and non-alcoholic beverages expenditure to actual individual consumption is calculated in purchasing power parity terms relative to the United States.
- 3 The average standard deviation in the monthly food price level index over the preceding eight months
- 4 The average standard deviation in the annual per capita food production values over the preceding five years
- 5 The average standard deviation in the annual average daily per capita food supply values over the preceding five years
- 6 The percentage of the domestic supply of cereals that are imported (negative values indicate that the country is a net exporter of cereals)

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