

The Role of Family Farming in the Sustainable Development of the Agricultural Sector and Poverty Reduction in Georgia

Authors:

Salome Gelashvili
Irakli Kochlamazashvili
Ia Katsia
Phatima Mamardashvili

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Abbreviations

ACDA	Agriculture Cooperatives Development Agency
ACF	Action Against Hunger
CENN	Caucasus Environmental NGO Network
DCFTA	Deep and Comprehensive Free Trade Agreement
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GeoStat	National Statistics Office of Georgia
GFA	Georgian Farmer Association
IFAD	The International Fund for Agricultural Development
ISET	International School of Economics at Tbilisi State University
MoA	Ministry of Agriculture of Georgia
MOLI	Market Opportunities for Livelihood Improvement
NGO	Non-Government Organization
OECD	Organization for Economic Co-operation and Development
REAP	Restoring Efficiency to Agriculture Production
TSU	Tbilisi State University
USAID	United States Agency for International Development

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Summary

Family farming is the predominant form of agriculture in both developing and developed countries. According to Georgian law, family farming is defined as the set of agricultural activities that aim to improve family welfare by the joint use of housing and management and the distribution of required resources, incomes and expenses for the benefit of the family (Law on Ownership of Agricultural Land). Family holdings produce the majority of agricultural products in Georgia.

Although there is no formal typology of Georgian farms, some studies have attempted to classify Georgian farmers. For instance, a USAID study distinguishes between three categories of farmers in Georgia: (i) subsistence farmers, (ii) semi-commercial farmers, and (iii) commercial farmers and agribusinesses (USAID, 2011).

This study assessed the role of family farming with regard to the three dimensions (economic, environmental and social) of sustainable development in Georgia. A literature review, a SWOT analysis, individual interviews with stakeholders, and case studies were conducted in order to define the role of family farming in the sustainable development of Georgian agriculture.

In order to evaluate the economic sustainability of family farming, this study looked at the role family farms play in providing food security and eliminating poverty. It also considered the productivity and competitiveness of family farms. Although family farms cannot currently be considered a guarantee of food security for the country, they still provide food for their own households and save the vast majority of the population from poverty and hunger.

The first reason for the low productivity of family farms is privatization-induced land use patterns. A large majority of family farmers in Georgia own very little land, which is fragmented into several smaller plots. Another main driver of low productivity is a lack of knowledge about modern technologies and a lack of professionals in the field of agriculture. Apart from this, a lack of access to quality inputs and finance contributes to the low productivity of family farms. Low productivity, paired with low commercialization and weak linkages in value chains, reduces the competitiveness of family farms and hinders their chances to capitalize on the opportunities presented by the DCFTA.

From the environmental point of view, the role of family farms was assessed with regard to biodiversity, soil health, pollution and issues related to climate change. The impact of family farms on the environment has raised controversial opinions among experts. Some argue that family farms have a small positive or a negligible impact on the environment. Others emphasize a somewhat negative impact due to the lack of knowledge among family farmers about environmentally sound agricultural practices. According to

experts, family farms tend to have a positive effect on biodiversity, but a negative effect on soil health. Due to the lack of knowledge about environmentally-friendly practices, family farms pollute the environment and are vulnerable to natural disasters caused by climate change.

Lastly, this study looked at the social aspects of family farming by emphasizing the importance of the image of agriculture in Georgia and people's attitudes towards it. The experts we consulted emphasized that the image of agriculture is rather poor. Rural life is associated with poverty and family farming is not perceived as a job opportunity. Few people recognize that family farming is a main contributor to maintaining the population in rural areas and preserving historic cultural values.

This study showed that modern and competitive family farms conforming to the European model of agriculture can be a great complement to larger scale commercial agribusinesses in Georgia. In order to achieve this, **targeted agricultural and rural development policies** should be put in place. Targeted agricultural policies should help semi-commercial and commercial family farmers upgrade their knowledge and skills, become more integrated in value chains, and thus enhance their productivity and competitiveness. Such policies should create an enabling environment for innovation and commercialization, support agricultural education and research, develop advisory services, increase awareness and focus on Public-Private Partnerships (PPP). Since these policies target semi-commercial and commercial farms, other farms should be targeted by rural development policies. This would ensure a sustainable transition of those non-commercial farms that lack the potential and willingness to work in agriculture to non-farm employment. Modern family farming in the regions will advance Georgia's goal of moving towards integration with Europe.

1. Introduction

The United Nations declared 2014 as the International Year of Family Farming (IYFF) in order to recognize the importance of family farming in reducing poverty and improving global food security. The IYFF aims to promote new development policies at both the national and, to a lesser extent, regional levels that will help smallholder and family farmers eradicate hunger, reduce rural poverty and continue to play a major role in global food security through small-scale, sustainable agricultural production.

Family farming is the predominant form of agriculture in both developing and developed countries. Family farms vary considerably in terms of size and additional labor force hired, ranging from large scale farms and land holdings to the small scale farms common in Georgia. Sometimes several families work together and share machinery.

Due to the high complexity and heterogeneity of farmers worldwide, there is currently no consensus on the definition of family farming. Below, we present some suggested definitions and closely related terms.

1.1. Definition of Family Farming

According to the FAO's definition, family farming is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production that is managed and operated by a family and predominantly reliant on family labor - both male and female. According to the IFAD definition, family farming includes all family-based agricultural activities and is linked to several areas of rural development.

Subsistence farming is one form of family farming in which the majority of livestock and crops are raised to satisfy the needs of the family, leaving little or nothing to be marketed. These families usually own or use little land, employ primitive technology, and produce a limited marketable surplus. The main objective of subsistence farming is to have enough food to ensure the survival of the individual family. If the family produces extra food, it can be sold locally on the market, or to other families or individuals.¹

Small scale farms are run by small producers. There are approximately 500 million small family farms worldwide, 280 million of which are in China and India alone (Hazell et al., 2007). Although family farmers and small producers are not identical groups, they share much common ground and hence face a series of similar issues (Hazell et al., 2007). Most small farms are family farms, but not all family farms are small.

The term family farming is also closely intertwined with the term "peasant farming". A peasant is a smallholding farmer, producing crops for family consumption and market exchange, using family labor

¹ <http://education-portal.com/academy/lesson/types-of-agriculture-industrialized-and-subsistence-agriculture.html#lesson>

throughout the farming cycle (Markson, 2010). Depending on the literature, peasant farming is used to describe various types of farms, ranging from poor subsistence to modern family farms.

1.2. Importance of Family Farming Worldwide

Family farms produce food that feeds billions of people. According to the FAO, in many developing countries family farms represent up to 80% of all farm holdings. Local and global food security depends on them.

The importance of family farming is reflected in its following functions (FAO, 2014a):

- Food and income generation for rural populations;
- Job creation for women, men and young people, both within their own family farms and in related enterprises along the food and agricultural value chains;
- Provides models of adaptability and resilience for more sustainable food production;
- Preserves traditions and cultural heritage;
- Safeguards and protects environmental assets, natural resources and biodiversity.

1.3. Goals and Objectives of the Study

The development of agriculture is one of the most important preconditions for ensuring inclusive growth and pro-poor economic development. Agriculture is responsible for 53% of employment in Georgia. However, the level of productivity continues to be very low. Land plots are generally small and unproductive, demonstrating a low-input/low-output model of production. As a result, many small farmers and rural communities remain poor and insecure.

After the collapse of the Soviet Union, the countries of the South Caucasus undertook a fundamental privatization of agricultural land. As a result of this privatization, a large number of small scale farmers emerged. Most of these farmers occupy agricultural land area of 0.5-1.5 hectares, most of which are fragmented into smaller plots.

Family farming represents the biggest source of income in rural areas in the South Caucasus. This is because the majority of the rural population in the region is involved in the primary production of agricultural products. Apart from food security and the purely economic benefits, the sustainable development of family farming is very important from social and environmental perspectives.

The main purpose of this study is to assess the role of family farming in the sustainable development of the agriculture sector and poverty reduction in Georgia.

More specifically, the objectives of this study are:

- To assess the economic, environmental and social benefits provided by family farms in Georgia;
- To analyze the current challenges facing family farms in Georgia;
- To analyze the influence of family farming on poverty reduction and inclusive growth development in the rural regions of Georgia;
- To develop specific policy level recommendations with a focus on the role of government, the private sector and the international community.

2. Family Farming in Georgia

2.1. Definition of Family Farming in Georgia

According to the National Statistics Office of Georgia (GeoStat), a family holding is defined as a holding operated by a household. This group also includes holdings operated by several households without any formal agreement between them.

According to Georgian law, family farming is defined as the set of agricultural activities which aim to improve family welfare by the joint use of housing and management and the distribution of required resources, incomes and expenses for the benefit of the family (Law on Ownership of Agricultural Land).

This analysis of family farming in Georgia relies on the GeoStat definition outlined above. The terms family farmer and family holding will be used interchangeably.

2.2. Historical Overview of Family Farming in Georgia

Over the last 20 years, Georgia's economy has been under transformation. One of the most noticeable points of that transformation was the land reform that started after the collapse of the Soviet Union. The land privatization fund included 850,000 ha of land, of which 200,000 ha were household farmsteads and the remaining 650,000 ha were distributed among households. A total of 30% of Georgia's total agricultural land was allocated for privatization. The goal of this reform was to resolve the social issues that emerged following the collapse of the Soviet Union. Due to its economic difficulties, the government was forced to distribute very small parcels of land to a population that did not know much about farming and lacked experience in agriculture.

The land reform saved the Georgian population from hunger during the 1990s. However, the Georgian agricultural sector has been steadily declining since the collapse of the Soviet Union and has become very dependent on family farms, which currently produce around 90% of total agricultural goods (GeoStat, 2014).

The period of transformation can be divided in two main phases: from 1990-2003 and from 2004-present. During the first phase (1990-2003), under a series of controversial economic policies, the agricultural sector was not only maintained by its employees, but had even achieved significant growth by the end of the 1990s. However, the commercialization of the sector was extremely low and its main function was limited to the self-consumption of produced goods (EI-LAT, 2012).

Land privatization, paired with the lack of knowledge and experience in farming, led to subsistence farming and low productivity becoming the major features of Georgian family farms. Insufficient levels of investment allowed for a marked depreciation of capital employed in this sector.

During the second phase, after 2004, economic policies started to incorporate the ideas of economic liberalization and modernization. The “libertarian” paradigm proposed by the then-new government ruled out any possibility of sectorial policies, which excluded the existence of any clear, targeted economic policy for the agricultural sector (EI-LAT, 2012). This was reflected in worsened living conditions for people living in the rural areas of the country. Only after 2008 did the government focus on the development of agriculture and in the years 2010-2012 the agricultural sector became one of the main priorities of government policy.

One noticeable project implemented by the government in recent years is the rebuilding of the stock of agricultural machinery in Georgia through the government-owned “Meqanizatori” Ltd. company, which was founded in December 2009. The main goal of the project was to improve farmers’ access to agricultural machinery as well as to provide them with consultations and advice.

Another important state-initiated project was the creation of the government-owned Georgian Agriculture Corporation (GAC) in March 2010. This aimed at increasing the competitiveness of the agricultural sector through the effective use and synergy of human, material and technical resources.

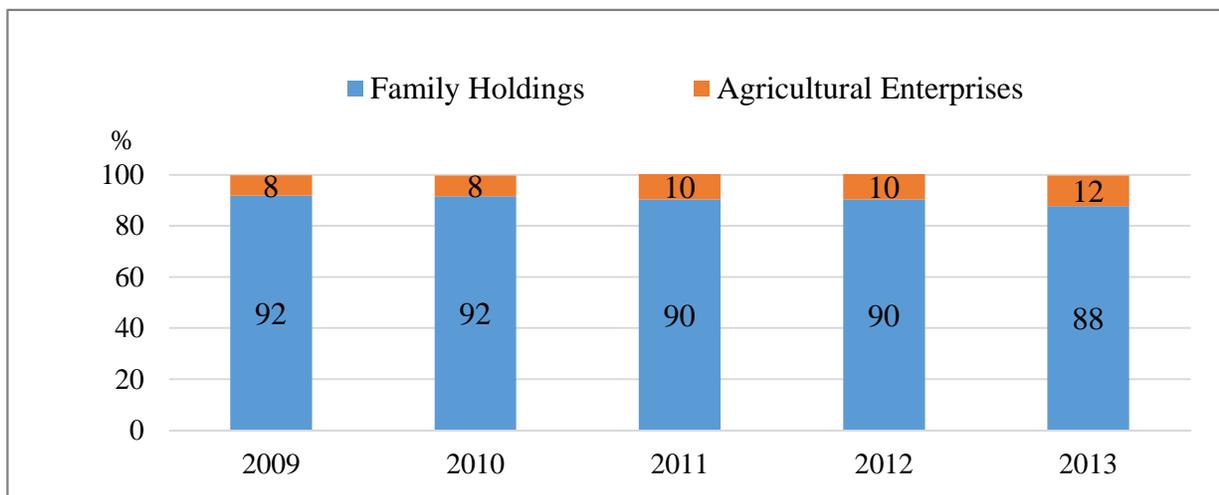
The provision of agricultural loans, which started in March 2013, and the development of agro-insurance from September 2014 are the most recent agriculture-related initiatives from the government of Georgia.

2.3. Current Situation of Family Farming in Georgia

Almost half of the Georgian population lives in rural areas. People living in about 3,500 villages are directly linked to agriculture and the majority of those people have formed family farms.

The importance of family farming in Georgia is emphasized by the fact that most agricultural products are produced by such farms. Just a small portion of products are produced by larger-scale agricultural enterprises. The average size of land of a family holding is 1.05 ha, consisting of 2.3 land plots with an average size of 0.45 ha per plot. The average size of land owned by agricultural enterprise is 110.81 ha, consisting of 3.1 land plots with an average size of 36.70 ha per plot (Agricultural Census 2004, GeoStat). Although agricultural enterprises operate on much larger plots of land than family farms, there are much fewer enterprises than family farms and they thus produce much less than the family holdings. Figure 1 shows the share of different holdings in the agricultural production of Georgia.

FIGURE 1: SHARE OF DIFFERENT HOLDINGS IN AGRICULTURAL PRODUCTION IN GEORGIA



Source: Geostat, 2014

As can be seen, family holdings produce the majority of agricultural products in Georgia. Although the production share of family farms are a bit lower for eggs and tea leaves, the overall tendency is highly skewed towards family holdings. This follows a historical trend. Family farming has traditionally accounted for a very large share of total production. The share of family holdings in sown areas, livestock population and the production of different agricultural products in Georgia are presented in the Annex (Tables A1 and A2).

2.3.1. Diversity in Production by Region

Family farms usually have diversified production strategies. They produce quite a lot of products in small quantities. However, it is still possible to distinguish those products specific to particular regions of Georgia. One example is the Samegrelo-Zemo Svaneti region, especially the Samegrelo part, which is known for the production of hazelnuts. Another example is the Kakheti region, which is known for grape production. Table 1 shows the set of products produced in the different regions of Georgia.

TABLE 1: PRODUCTION OF DIFFERENT AGRICULTURAL PRODUCTS BY REGION IN GEORGIA

Agricultural products by category	Specific agricultural products	Major regions in terms of production volumes
Annual Crops		
Grain and Leguminous Crops	Wheat	Kakheti
	Barley	Kakheti
	Maize	Imereti
Potatoes, vegetables and melons	Haricot Beans	Imereti
	Potato	Samtskhe-Javakheti
	Vegetables	Shida Kartli
	Melons	Kakheti
Permanent Crops		
Fruits and nuts	Fruits	Shida Kartli
	Nuts	Samegrelo-Zemo Svaneti
Grapes	Grapes	Kakheti
Citrus	Citrus	Adjara
Tea	Tea	Samegrelo-Zemo Svaneti
Animal Husbandry		
Livestock	Cattle	Samegrelo-Zamo Svaneti
	Pigs	Samegrelo-Zemo Svaneti
	Sheep	Kakheti
	Goats	Kakheti
Poultry	Poultry	Kvemo Kartli
Beehives	Beehives	Samegrelo-Zemo Svaneti

Source: Authors' compilation based on data from Geostat

From Table 1, it can be concluded that most regions are characterized by diversified production patterns. For example, not only grapes are produced in the Kakheti region – it is also the leading region in terms of wheat, barley, melons, sheep and goats. Other regions also have diversified production patterns, however,

it should be noted that there are almost no mountainous regions mentioned in the table. Such regional production patterns could be used for the development of a typology of farmers.

2.3.2. Towards a Typology of Family Farms in Georgia

A farm typology is a description of different types of farms and the classification of each farm into the type that best describes the farm. Such a typology can be used to prioritize particular types of farms in order to learn from them and undertake in-depth analysis of livelihood systems. This is crucial for designing a specific development strategy and/or research recommendation for each type of household, farm or production unit (ICRA, 2014).

In the EU, farm holdings are classified based on the type of farming and economic size. Classification follows the Standard Output (SO) approach, resulting in five general types of farming: specialist holdings with field crops, specialist horticultural holdings, holdings with permanent crops, specialist grazing livestock holdings, and specialist granivores holdings (Kinsella, 2009). In the US, 2.1 million farms are divided into eight mutually exclusive and relatively homogeneous groups: limited resource farms, retirement farms, residential/lifestyle farms, etc. Those eight groups are then collapsed into three further categories: rural residence farms, intermediate farms and commercial farms (Economic Research Service, USDA).

As for Georgia, there is no formal typology of farms and no clear rules about how to classify farms by type. However, there is a classification of general households in Georgia. Households are divided by demographic composition and size; structure and number of employed members; social aspects and ethnicity. According to these criteria, there are complete and incomplete; simple and complicated; small, medium and large; ethnically homogenous and mixed households (Gelashvili et al., 2013).

A USAID study classifies Georgian farmers into three categories: (i) subsistence farmers, who are not economically viable because of small plot sizes, a lack of knowledge or information, and/or limitations related to technology and capital; (ii) semi-commercial farmers, who have the motivation and potential to develop and expand their businesses; and (iii) commercial farmers and agribusinesses, who have sufficient amounts of land to produce and accumulate high levels of income from production (USAID, 2011). It should be mentioned that none of these categories are a homogeneous group, they include family farms existing in widely varied conditions.

2.3.3. Market and Political Environment

Export-import situation and self-sufficiency

According to the Georgian National Investment Agency (GNIA), the trade balance of agricultural products was -406 million USD in 2013. This balance improved compared to previous years, in which the following balances were observed: -652 USD (2012), -651 USD (2011), -521 USD (2010) and -408 USD (2009). The ratio of the agriculture trade balance (export/import) in recent years were as follows: 65.6% (2013), 44.1% (2012), 40.2% (2011), 40.1% (2010) and 43.6% (2009). It can be concluded that in 2013 Georgia experienced a big increase in agricultural exports, which was mostly due to the re-opening of the Russian market.

Food product exports amounted to 774 million USD (processed 54%, raw 46%), which was about 26.6% of total Georgian exports in 2013. Similarly, agricultural product imports have been increasing by an average of 13.4% since 2009, which keeps the agriculture trade balance negative (GNIA, 2013).

The main agricultural products for export are nuts and alcoholic beverages, and the main export markets for Georgian agricultural products are CIS countries, with Russia and Ukraine leading. As for agricultural product imports, the leading products are wheat and meat with CIS countries again at the top of the list, led by Russia and Ukraine.

To conclude, exports are less diversified in terms of both products and countries. Agricultural trade (both exports and imports) is highly dependent on CIS countries, mostly on the Russian and Ukrainian markets. Unfortunately, both markets have become less stable due to the political and economic situations in these countries. More details about the export-import patterns can be found in the Annex (Tables A3 to A5).

The self-sufficiency ratio reflects the ability of a country to produce different agricultural products. It provides useful insights into the food security of the country. According to GeoStat, the self-sufficiency ratio is calculated as “local production divided by local production plus import and minus export and multiplied by 100”.

Georgia’s self-sufficiency ratio for agricultural products is about 34%, which is quite low in terms of food security. This is quite problematic, particularly for a low income country like Georgia, where 53% of the population is employed in agriculture and about 40% of income is spent on food (MoA, 2014, p.5).

For several Georgian agricultural products the self-sufficiency ratio is particularly low. For example, self-sufficiency in wheat is 12%, in poultry meat 18%, and in vegetables 75% (GeoStat 2014). More details on the self-sufficiency ratios for agricultural products can be found in the Annex (Table A5).

Current strategy for agricultural development

The projects implemented by the government of Georgia (mentioned in the previous section) provide some insights into the current situation in agriculture.

In 2014, the Ministry of Agriculture developed the Strategy of Agricultural Development in Georgia 2014-2020.² According to this strategy, the first priority is the enhancement of the competitiveness of farmers and rural entrepreneurs through the improvement of farmer knowledge and information and the delivery of effective extension service support. Other strategic objectives include institutional development; amelioration and soil fertility; value chain development; ensuring food security; food safety; veterinary and plant protection; taking care of the environment and biodiversity. Each objective is directed towards achieving the ministry's vision "to create an environment that will increase agricultural competitiveness, promote stable growth of high quality agricultural production, ensure food safety and security, and reduce rural poverty through the sustainable development of agriculture and rural areas" (MoA, 2014).

A brief analysis of the ministry's budget spending for 2013 and 2014 shows that the majority of the funds in 2013 were spent on the modernization and renovation of agricultural machinery and irrigation systems, and the development viticulture and wine-making. As for 2014, the modernization of the irrigation system remained a priority and two more important issues, preferential agro loans and the financing of spring works of small scale farmers, were implemented.

In order to fulfill its vision and mission, the Ministry of Agriculture implements different policies. In many cases, these are aimed at solving not only issues related to agriculture, but also a number of social issues. Agricultural policies are often used to address social problems. The previous strategy of the ministry set food security and poverty alleviation as its first priority: "It is Government's intention to ensure sufficient, safe and nutritious food supply fulfilling the dietary needs and food preferences of the Georgian population by developing social protection schemes that will specifically assist vulnerable groups. Government will continue to monitor food security and encourage a gradual movement away from subsistence farming towards commercial agriculture" (MoA, 2014).

From an economic point of view, it is more efficient to implement purely agricultural strategies in the field of agriculture and not to mix them with social projects. However, it is hard to follow this path because the majority of people involved in agriculture in Georgia are poor and socially vulnerable.

² An updated version of the strategy for 2015-2020 is under development.

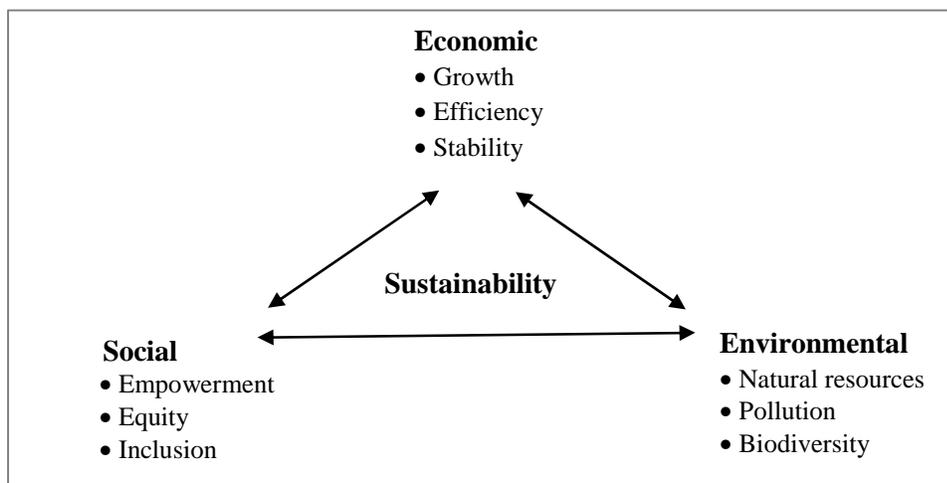
3. Methodological Framework

3.1. The Concept of Sustainable Agriculture

This study assesses the role of family farming with regard to the three dimensions (economic, environmental and social) of sustainable development in Georgia. The concept of sustainable development and its link to agriculture and family farming is outlined below.

At the 1992 Earth Summit, the international community made a normative agreement on sustainable development that defined the actions for equitable ecological, economic and social development for present and future generations (UNCED, 1992). Though sustainability is a complex concept and there is no common viewpoint about its definition and dimensions, most of the literature distinguishes between three main dimensions: economic, environmental and social sustainability. Figure 2 presents the sustainability triangle outlining these three dimensions and some related topics.

FIGURE 2: SUSTAINABILITY TRIANGLE



Source: Adapted from Munasinghe (2013)

The idea of sustainable development recognizes that ensuring economic growth alone is not sufficient. Rather, all three aspects of sustainability (economic, environmental and social) should be taken into account simultaneously. Finding the right balance between competing demands on natural and social resources without sacrificing economic growth is a complex challenge for governments worldwide. It calls for the widest possible integration of different sectors to best understand the possible impact of our actions on society, the economy and the environment (OECD, 2008).

In this context, sustainable agriculture must meet present and future needs for its products and services while insuring profitability, environmental health, and social and economic equity (FAO, 2014b). The sustainable development of agriculture is a holistic concept. Positive, neutral, or negative relationships and many complex interactions can exist between the individual goals of each sustainability dimension. Furthermore, different aspects might be more prevalent at various levels (at field, farm, national and global levels).

Family farming might support sustainable agricultural development as it is linked with all three aspects of sustainability: food security (economic), preserving the countryside (social) and safeguarding agrobiodiversity (environmental).

Most countries have policy elements supportive of sustainable agriculture, including measures such as pesticide reduction, equilibrated nutrient balances, and zero-tillage farming. However, such policies are not always integrated across different agricultural sectors. Switzerland provides a good example of an integrated national policy for sustainable agriculture. The multifunctional role of Swiss agriculture is anchored in the Swiss Federal Constitution. According to Article 104 on agriculture, the Swiss government shall ensure that a sustainable and market-oriented approach to agriculture contributes to: (a) ensuring food supply, (b) maintaining natural resources and preserving the countryside, and (c) maintaining decentralized settlements in rural areas (Swiss Federal Constitution, 101: 30f).

3.2. SWOT Matrix

It has been decided to use SWOT analysis as the tool to evaluate the main challenges and opportunities facing family farming in Georgia. In order to do this, we utilised statistical data and reviewed studies conducted by the government, donor community and research centers in Georgia. In addition, we collected primary data from stakeholder interviews (described in the next section).

SWOT stands for Strengths, Weaknesses, Opportunities and Threats. According to Lombriser & Abplanalp (2005), SWOT analysis combines the key elements of environmental analysis with the strategic skills of an enterprise. SWOT can be applied to analyse whole sectors. Both the environment of the chain (opportunities and threats) and its specific characteristics (strengths and weaknesses) are studied, ensuring that current influences and potential future developments are shown in one single analysis, usually depicted as a matrix (Da Silva, 2007).

This study uses a SWOT matrix structured into economic, environmental and social dimensions. This approach has two advantages: the matrix is more clearly arranged and this classification facilitates a

sustainability assessment to be carried out. The data used for this in-depth analysis was obtained mainly through stakeholder (experts and farmers) interviews and, to a lesser extent, through a literature review. On the basis of this systematic investigation, strategies have been elaborated that try to use strengths for maximizing opportunities and minimizing threats. The ways of assessing Georgian family farming used in this report are based on representations similar to those as used by Sorg (2012) in a study of the Georgian hazelnut value chain, and by Kochlamazashvili et al. (2014) in a value chain analysis of the Georgian sheep sector. Table 2 presents the SWOT matrix used in this study.

TABLE 2: SWOT MATRIX

	Strengths (internal factors) <ul style="list-style-type: none"> • economic • environmental • social 	Weaknesses (internal factors) <ul style="list-style-type: none"> • economic • environmental • social
Opportunities (external factors) <ul style="list-style-type: none"> • economic • environmental • social 	SO strategy	WO strategy
Threats (external factors) <ul style="list-style-type: none"> • economic • environmental • social 	ST strategy	WT strategy

Source: Based on Lombriser & Abplanalp, (2005, p.198)

3.3. Agricultural Value Chains

Although there is no universally accepted definition of an agricultural value chain, the term normally refers to the whole range of goods and services necessary for an agricultural product to move from the farm to the final customer or consumer (Kaplinski, 2004). At the heart of the agricultural value chain concept is the idea that actors are connected along a chain producing and delivering goods to consumers through a sequence of activities (Henriksen et al., 2010). However, this “vertical” chain cannot function in isolation and an important aspect of the value chain approach is that it also considers “horizontal” linkages in the chain, as well as supportive services, such as input and finance provision, extension support and the general enabling environment.

The family farming market environment engages various actors involved in agricultural value chains: input suppliers, service providers, family farmers, collectors, processors, traders (whole and retail), transporters, exporters/importers and consumers. Beside this, there are many organizations that provide support and services. This study looked at the overall position and role of family farms in agricultural value chains in

Georgia. Stakeholder interviews were used to investigate the main vertical and horizontal linkages between the different actors in the value chains.

3.4. Stakeholder Interviews and Case Study

Based on a review of the existing literature and available statistical data, information gaps were identified and guidelines for interviews were elaborated for the different stakeholders: farmers and farmer organizations, agribusinesses, representatives of the MoA, financial institutions, the donor community, academia, and independent experts.

Expert interviews can be approached either quantitatively or qualitatively. Quantitative interviews are structured, formal and investigate quantifiable variables, such as household expenditures on food. Qualitative interviews, meanwhile, are open-ended, semi-structured and interactive (Carvalho & White, 2007). They reveal attitudes and preferences and the variables investigated cannot be quantified.

Efficient interviewing needs control in the sense of management, but can still allow a wide variety of approaches to be undertaken, ranging from almost unstructured to structured interviews (Gillham, 2000). Research objectives determine the form and style of an interview. The interview guidelines for this study were composed by first analyzing knowledge gaps, then compiling questions by following the guidelines for questionnaires from the literature (e.g. Da Silva, 2007), conducting pilot-testing and subsequently updating the questions.

The term ‘guided interviews’ well describes the type of interviews used in this study. The questionnaires were structured according to different subtopics. Questions focused on trends, changes and developments as well as on static situations. The questionnaires were adapted to specific situations so as to allow relatively free conversations. Interviews were conducted at all levels of expertise. The interviewees were found through either personal contacts or via the internet. The interviews were conducted either face-to-face or via telephone in different regions of Georgia. In total, 37 interviews were conducted, including 16 with farmers and 21 with other stakeholders. Table A6 in the Annex provides more information (names, positions) on the stakeholders interviewed.

In addition, a *case study* of a family farmer in the village of Ude, in the Adigeni municipality of the Samtskhe-Javakheti region was conducted.

4. Results

This section describes the results from the literature review and stakeholder interviews. First, the main thematic topics related to the economic, environmental and social sustainability of family farming in Georgia are presented. This is followed by the results of the SWOT analysis and a summary of the vertical and horizontal linkages in agricultural value chains.

4.1. Main Thematic Areas Related to the Sustainability of Family Farming

4.1.1. Economic Aspects

The economic sustainability of family farming is a topic of debate. According to some respondents, family farming cannot be considered a sustainable commercial activity due to limitations related to farm size, technology and knowledge. Others emphasize the importance of family farming for food security. This section discusses the impact of family farming on food security and poverty, as well as the productivity and competitiveness of family farms.

Food Security and Poverty

Food security, as a condition related to the ongoing availability of food, is an important aspect of family farming (FAO, 2003). Family farms have been acknowledged as a key link in the effort to build nutritious food systems that allow people to lead healthy, productive lives, as well as being a cornerstone in the global fight against poverty (FAO, 2014a).

In spite of the relatively low productivity of family farms in Georgia, they provide food for their own households and save the vast majority of the population from poverty and hunger. Family farms produce a variety of products including fruit, vegetables, meat and dairy. Family farms in Georgia are mostly small scale farms with a diversified portfolio of products. They tend to produce at least 2-3 products on a regular basis, but do so in small amounts. Due to the limited scale of production, Georgia is not self-sufficient in most products, which means that family farms in Georgia cannot currently be considered to be a guarantee of the country's food security.

Agricultural Productivity and Competitiveness

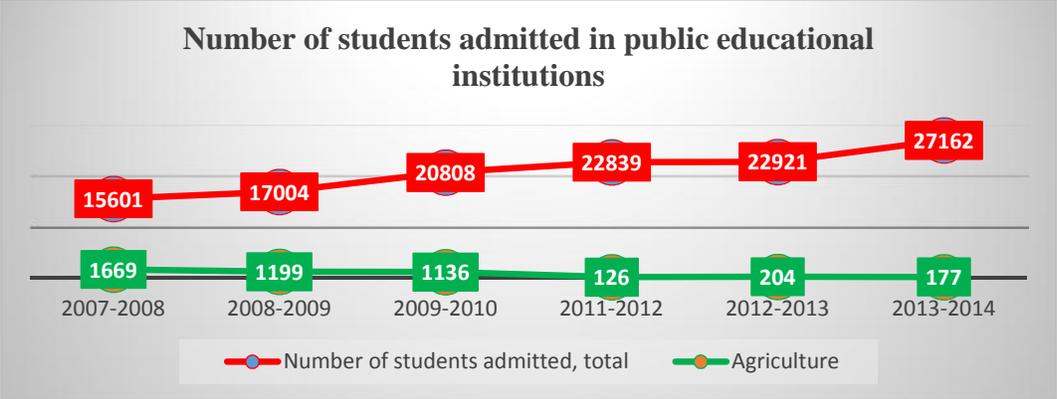
The productivity of family farms is reportedly very low. According to respondents, in some cases the productivity of the majority of Georgian farms is one quarter of that of the European norm. The problem of low productivity is very complex and its causes are interrelated. Privatization-induced land use patterns hinder the productivity of farms. A large majority of family farmers in Georgia own very little land, which tends to be fragmented in several plots. Another driver of low productivity is a lack of knowledge about modern technologies. Farmers often apply the same techniques used by their ancestors. In some cases, this

happens because farmers consider these technologies to be superior; in other cases, they do not have information about advanced technologies or are priced out of the market. Extension centers, which should be promoting modern technologies, spreading information and providing advice, are rarely used by farmers. Some farmers do not even know about the existence of extension centers. According to several respondents, extension centers mostly collect statistical information and hardly provide any advice to farmers. The qualifications of the staff at the extension centers was questioned by some respondents. Since education requires motivation from both providers and recipients, it should be noted that farmers themselves are often not motivated or sufficiently interested to discover new technologies. Being proactive is key to success. However, it is difficult to find proactive farmers in Georgia. Those who are proactive usually have bigger family farms and may have even transformed them into agricultural enterprises.

A lack of knowledge about modern technologies results in the seasonality of local production. Although agriculture is seasonal by nature, modern techniques like greenhouse production and drip irrigation allow farmers to avoid seasonality and ensure a stable supply of agricultural products to markets. This is not the case in Georgia. Few farmers use greenhouses or try to stabilize the supply of their products.

Another reason for low productivity is the lack of professionals in the field of agriculture. There is a shortage of agronomists in Georgia. According to one respondent, only 2% of students (in both private and public institutions) enroll in agrarian courses. These courses are not popular and are considered to provide few prospects. The lack of educated agronomists and other agriculture-related specialists has been emphasized by agro enterprises as well. Due to the lack of local specialists, in some cases enterprises have to use the services of foreign professionals. Figure 3 presents the number of students admitted to agricultural faculties in Georgia.

FIGURE 3: NUMBER OF STUDENTS ADMITTED IN PUBLIC EDUCATIONAL INSTITUTIONS IN GEORGIA



Source: GeoStat, 2014

Lack of access to quality inputs and finance is another reason behind low productivity. Although there are several private companies providing seed, fertilizers, insemination services, etc. farmers have difficulties

accessing them. Some farmers do not know about artificial insemination, for example, and others do not have sufficient financial resources to use advanced practices and thus increase productivity. The government of Georgia tried to solve the problem of access to inputs by distributing vouchers to farmers. In order to solve the problem of access to finance, the government subsidized cheap agricultural loans. However, lack of finance is still an issue as most family farmers in Georgia are not bankable. They either do not have the required collateral or are not willing to put their houses up as collateral. On the other hand, those farmers who are bankable are constrained by very high interest rates. Although interest rates for agro loans subsidized by the government are quite low, interest rates charged by commercial banks and microfinance institutions are high. In addition, the procedures to approve loans for some farmers take a long time and requests for collateral from banks for a large amounts of loans is also an issue. According to the interviews, the effective interest rate for agro loans from commercial banks reaches 32%, which is quite high.

Low productivity heavily affects the incomes of family farms, as well as the competitiveness of local products compared to imported ones. Due to small production volumes, local products are usually priced higher than imported ones. Farmers try to receive maximum income from a limited amount of production. Sometimes they are able to sell their products for a higher price to consumers who perceive Georgian products to be of higher quality than imported ones, but in most cases, even if Georgian products are of good quality, there are many other reasonably priced imported brands of the same or better quality. Another important aspect is that the majority of local Georgian products have high prices, thus even if consumers would like to purchase Georgian products they are sometimes unable to as a result of low incomes. These reasons, along with the issues mentioned above, lead to the low incomes of family farms in Georgia.

The main feature of family farming in Georgia is its small scale and the lack of commercialization. The small scale of farms is explained by land ownership patterns. As was noted before, after the collapse of the Soviet Union the level of unemployment in the country was very high and the distribution of land to people was considered a possible solution to the problem. A lot of people received small plots of land without any guidance on what they should do with it. It was believed that a family with land would at least be able to have sufficient food for their own consumption. Although several years have passed since this land reform, family farms have not changed very much. The vast majority of them are small scale and small plots of land is one of the main limitations of Georgian farms.

Subsistence farming is another issue. A low level of commercialization is a distinctive feature of Georgian farms. There are only two agricultural products (hazelnuts and grapes) that are exceptions to this trend. Hazelnuts and grape growing farms and vineyards are both highly commercialized. An orientation towards

exports presumably played a significant role in the commercialization of those sectors. However, this is not true for other products produced by family farms.

One issue hindering the commercialization of family farms is a lack of basic skills necessary for running a business. Most farmers cannot do basic calculations and have only vague ideas about the production costs of their produce. A typical family farm in Georgia does not differentiate between profits and revenues from sales, which makes it difficult to run their farms like a commercial business. The lack of such business and entrepreneurial skills brings the discussion back to the lack of education.

The competitiveness of Georgian family farms might become even lower after the requirements of the Deep and Comprehensive Free Trade Agreement (DCFTA) are enforced. In order to comply with those requirements, Georgian producers need to significantly improve their practices. These improvements are likely to be quite costly, but the outcome of those efforts might prove worthwhile. The outcome of the DCFTA will be new markets, investors and partners, but it will bring higher competition as well. Some family farms with very low levels of commercialization might not be affected by the DCFTA at all, however, farms with higher levels of commercialization, of which there are a few in Georgia, are likely to be affected in both positive and negative ways. The magnitude of both effects is subject to further study.

It is obvious that one of the significant positive effects of the DCFTA is the possibility to position Georgian products in international markets by occupying particular niches. Two potential niches are the production of organic products and the production of traditional products that are unique to Georgia. Since the majority of family farms in Georgia are quite poor, they usually do not have enough financial resources to purchase fertilizers and pesticides. However, they may have the potential to produce organic products, which are in high demand in Europe and have started to gain popularity in Georgia too. The price of organic products are significantly higher than regular products, and this might be beneficial for poor family farms that need to increase their incomes. Other products that can be successfully positioned in international markets are those associated with traditional farming in Georgia. One example of such a product is Georgian “Qvevri” wine. This type of wine reflects the particular traditions of wine making in the country. These traditions and images can be used for positioning Georgian traditional products in international markets.

4.1.2. Environmental Aspects

Proper management of natural resources is very important for the development of Georgian agriculture. Some experts believe that because of the limited development of Georgian family farms, these farms do not significantly affect the environment. Others argue that family farmers’ lack of knowledge and awareness about environmentally friendly practices (crop rotation, proper tillage, adequate fertilization, etc.) might

harm the environment. This section examines the environmental aspects of Georgian family farming by looking at biodiversity, soil health, pollution and issues related to climate change.

Biodiversity

It is believed that family farming protects biodiversity and the environment. Family farming is a source of genetic diversity that uses seed varieties and livestock breeds well adapted to various environments. It also promotes the use of agro ecological and traditional techniques, thus supporting the healthy functioning of ecosystems (Quintana, 2014). However, it should be acknowledged that not all family farming methods positively affect the environment.

Farming practices used by Georgian farms are made less environmentally friendly due to a lack of knowledge amongst the farmers. Most family farmers do not consider the environmental impact of their activities when making farming-related decisions. In spite of this, biodiversity is still well-preserved because family farms in Georgia usually diversify their production to reduce risks. This automatically leads to the preservation of different varieties of seeds and breeds. Although this is not a conscious preservation of biodiversity, it definitely makes a positive contribution.

Soil Health

Soil is a living and life-giving natural resource. As the world's population and demand for food products continue to rise, keeping soil healthy and productive is of paramount importance (Natural Resources Conservation Service, USDA). Unlike biodiversity, in some cases family farms in Georgia negatively affect soil health. Land degradation is reflected in soil erosion and overgrazing.

Soil erosion is a huge problem in Georgia. One can differentiate between wind erosion and erosion caused by water logging. Wind erosion happens as a result of the destruction of windbreaks. This often takes place because trees are cut down for household needs. Few farmers consider the possible negative effects of these actions. Landslides are probably the most frequent result of those activities.

Another cause of soil erosion is waterlogging, which refers to the saturation of soil. Soil may be regarded as waterlogged when the water table of the groundwater is too high to conveniently permit agricultural activity. Various crops need air (specifically, oxygen) to a greater or lesser depth in the soil. Waterlogging of the soil stops air getting in. In irrigated agricultural land, this is often accompanied by soil salinity as waterlogged soil prevents leaching of the salts imported by the irrigation water. The Samgerelo-Zemo Svaneti region suffers from this problem a lot because it is a lowland region and there are no functioning drainage systems.

Another cause of soil degradation is overgrazing. Pasture management is an important topic of discussion among policy makers and the international community. Family farms experience a lack of pastures, which causes significant overgrazing and soil damage. Overgrazing leads to landslides, which are dangerous for life and have significant economic costs.

As in the case of the low productivity and low competitiveness of Georgian farms, a lack of education significantly affects farmers' activities regarding land. Farmers lack knowledge about the proper application of fertilizers and pesticides. They frequently apply very large amounts of fertilizers to get a greater harvest and do not consider the negative effects that has on the soil. Another issue negatively affecting soil health is the lack of soil research. Even if farmers desired to change their practices, it would be extremely difficult for them to find updated information about the quality and main features of soil in Georgia.

Pollution

A lack of knowledge not only causes soil degradation, but pollution as well. Waste management practices are almost non-existent in Georgia, especially in the rural areas. Farmers do not have information about advanced techniques that can positively affect both productivity and the environment. The possibility of using compost is a good example of a cheap method that contributes to an increase in productivity and reduces waste at the same time. These kind of practices are rarely applied by Georgian farmers.

Outdated water and sewage infrastructure also increases pollution. There are no sewage systems in many Georgian villages and many family farms are unable to properly manage their waste and therefore pollute their neighborhoods and rivers. Apart from this, they also experience problems in terms of access to both drinking water and water for irrigation. The usage of water is not well regulated or controlled, which causes a waste of water resources. For instance, drinking water is sometimes used for irrigation by family farms.

Climate Change

Family farming is likely to be resilient to climate change due to the knowledge accumulated over many years (Quintana, 2014). However, this is not necessarily the case in Georgia. Many regions of Georgia experience the negative effects of climate change. Climate change particularly affects agriculture, which is heavily dependent on weather. Almost every year different regions of Georgia suffer from droughts, hail, floods and other natural disasters. Their frequency increases as time passes and climate change becomes more evident. In the past, droughts were observed once every 15-20 years in Georgia, but they have become more frequent in recent years. Droughts of different intensity and duration have been observed in various regions of Georgia, including in Imereti, Shida and Kvemo Kartli, and Kakheti. The rising incidence of droughts hampers agricultural activities and causes the economic situation in both the regions and the country as a whole to deteriorate.

4.1.3. Social Aspects

Many experts consider family farming to be a way of life. This section is devoted to the social aspects of family farming.

Survival Strategy or Lifestyle Preference?

In Georgia, most family farms are run by people who do not have other job opportunities. It is extremely hard to find farmers who are honestly dedicated to their farms, so-called “farmers by vocation”. For most farmers in Georgia, family farming is merely a survival strategy, for only a few of them it is a lifestyle choice. Those who consider farming to be a survival strategy are more willing to have off-farms jobs and are less likely to be motivated and proactive. These are “farmers by default”. The productivity of such farmers is low, whereas those who consider family farming as a lifestyle choice are, in most cases, successful farmers with large plots of land. They are highly commercialized and produce for both self-consumption and sale. They are proactive and more willing to apply advanced technologies and to increase their knowledge.

Image of Agriculture and the Aging of the Farm Population

In Georgia, farmers are mostly associated with peasants who have a low level of education and income. Being a farmer is not prestigious in Georgia because everyone is expected to have a “diploma”. Most people living in rural areas of Georgia do not want their children to grow up and continue living in the village. Parents try to make sure that their children enter university and settle in the city. Agricultural studies are not popular, even among rural students. Most farmers became involved in agriculture by accident and do not have any education in this regard. They thus have little potential or incentives to become modern farmers. Furthermore, farm succession is not happening and some traditions and good practices are being lost as they are not transmitted to new generations. Rural life is associated with poverty and a lack of opportunities. There are a lot of young unemployed people in villages who would prefer to be unemployed instead of working on a farm, either their own or someone else’s. They do not perceive family farming as a job opportunity. In general, only a few people recognize that family farming is a main contributor to maintaining the rural population and preserving historic cultural values. A lack of amenities and services in rural areas also limits the possibilities for farmers to socialize and pursue leisure activities.

Gender Issues

Georgian society and culture can be described as being male dominant. That is why it is important to look at gender issues in family farming. Some of the experts believe that roles and responsibilities are fairly divided between men and women in households, whereas others think that the most important decisions are usually made by men, even in the case when most of the work is done by women. The involvement and interest of women in agriculture is a topic that raises controversial opinions among different stakeholders.

Another important aspect mentioned by respondents in the social context is the role of ethnicity and religion. The roles and responsibilities of men and women differ according to their ethnicity and religion. They also differ among the Georgian population by region.

4.2. SWOT Analysis and Derived Strategies

This section presents the SWOT analysis and the strategies derived from this analysis.

4.2.1. SWOT Analysis

Table 3 presents the results of a SWOT analysis based on interview answers and the literature review.

TABLE 3: RESULTS OF SWOT ANALYSIS

STRENGTHS	WEAKNESSES
<p>Economic</p> <ul style="list-style-type: none"> • Suitable climate conditions for diversified agricultural production • Economies of scope • Lower transaction costs than in farms with hired workers due to the fact that family members have a strong incentive to work for the sake of their own families' well-being • Possibility to earn income via sales of produced goods • Food Security – Products produced on family farms have been providing food for many families and saved many lives during the difficult transition period 	<p>Economic</p> <ul style="list-style-type: none"> • Limited knowledge about modern technologies and best practices (low utilization of vet services, low genetic potential of livestock, problems with livestock nutrition, etc.) • Low productivity, limited scale of production • Low bargaining power • Limited commercialization • Limited access to finance and lack of financial investments • Lack of small size machinery (limited availability, high prices) • Limited possibilities for risk management (lack of access to agro insurance) • Land fragmentation • Lack of cooperation • Low level of food safety • No participation in national agricultural policy • Access to information (market prices) • Lack of infrastructure (transport, storage, irrigation etc.) • Low integration and weak linkages in value chains
<p>Environmental</p> <ul style="list-style-type: none"> • Building ecological resilience • Preserving biodiversity • Preserving the landscape • Better knowledge of the environment due to intergenerational connections to it 	<p>Environmental</p> <ul style="list-style-type: none"> • Relief in some regions • Poor pasture management • Limited knowledge about the proper usage of fertilizers and pesticides • Crop rotation • Tillage

<p>Social</p> <ul style="list-style-type: none"> • Tradition of agriculture • Cultural functions include the transmission of identity, symbolic and religious values of resources and territories • Contribution to employment • Decentralized settlements (people living in villages) 	<p>Social</p> <ul style="list-style-type: none"> • Lack of access to education in the regions • Inequitable intra-household distribution of resources and responsibilities in family farms, especially with regard to women and children • Usage of child labor • Aging of members of family farms and loss of human capital • Social image of agriculture and social acceptance • Bad working conditions • Underdeveloped amenities in rural areas
<p>OPPORTUNITIES</p>	<p>THREATS</p>
<p>Economic</p> <ul style="list-style-type: none"> • Intercropping possibilities • Potential for greenhouse production due to existence of thermal waters • Diversification of production • Poverty reduction • Export potential to sell agro products on the EU market under the AA/DCFTA agreement • Potential for labeling organic products • Government's willingness to foster agriculture • Possibility to attach agritourism at family farms • Cooperation, creation of farmer groups, associations, etc. 	<p>Economic</p> <ul style="list-style-type: none"> • Dispersion of low quality agricultural inputs • Political instability • Trade barriers (e.g. sanitary requirements) • Policy environment supporting nonviable family farms for a long time (encouraging too many workers to stay in agriculture for too long) • Low diversification of agro export market, high dependence on Russian and Ukrainian markets
<p>Environmental</p> <ul style="list-style-type: none"> • Existence of natural conditions for organic production • Possibilities to establish biosphere reserves and insure harmonic coexistence between nature and man 	<p>Environmental</p> <ul style="list-style-type: none"> • Dispersion of plant diseases • Natural disasters • Land consolidation might be damaging ecology • Overgrazing • Production intensification
<p>Social</p> <ul style="list-style-type: none"> • Supporting family farms is a viable option for NGOs and government to reach many families (inclusive growth, poverty reduction outreach) • Building rural-urban relationships to raise awareness of "sustainable" consumption 	<p>Social</p> <ul style="list-style-type: none"> • Intensification of "farming" in family farming might lead to the disappearance of "family" farming

4.2.2. SWOT Strategies

One of the main goals of conducting a SWOT analysis is to derive strategies based on the findings of the analysis. The most common of these are: Strengths-Opportunities (SO), Strengths-Threats (ST), Weaknesses-Opportunities (WO), and Weaknesses-Threats (WT) strategies. The strategies derived are summarized in Table 4.

TABLE 4: SWOT STRATEGIES

DEFINITION OF STRATEGY TYPE	SUGGESTED STRATEGY	STRATEGY DETAILS
The SO strategy refers to strategies to make use of opportunities through the sectors' strengths.	Identification and promotion of agricultural products with high potential to be positioned on lucrative niche markets.	<ul style="list-style-type: none"> - Organic products - Region specific/traditional/UNESCO cultural heritage products (e.g. Qvevri wine, Dambali Khacho, etc.) <p>This strategy builds on opportunities related to the production of organic and specific products for international markets through the usage of traditional of agriculture, resulting in the further development of traditional products unique to Georgia.</p>
The ST strategy refers to strategies to prevent threats through the sector's strengths.	<p>Development of targeted policies for supporting family farms by vocation to capitalize on specific features of family farms, enabling them to be more competitive.</p> <p>Facilitation/promotion of part-time family farms by creating off-farm jobs and developing rural areas.</p>	<p>This strategy relies on the specific features of family farms (economy of scope, low transaction costs) as a strength that can be used in order to maintain family farms and save them from disappearance.</p>
The WO strategy refers to strategies that make use	Promoting farmer groups (associations, cooperatives) in	Cooperation and coordination among farmers is emphasized in this strategy

<p>of opportunities in order to minimize weaknesses.</p>	<p>order to overcome the problem of land fragmentation, improve family farms’ bargaining power and their position in the value chain.</p>	<p>as an opportunity that can be used to address such weaknesses as high land fragmentation, low bargaining power, weak linkages and the position of family farms in value chains. Cooperation might also contribute to an increase in farmers’ knowledge due to the possibility of sharing knowledge and experience. The latter will also address the issue of low productivity and thus the low scale of production. In other words, cooperation might be considered to be an opportunity that can eliminate a lot of the weaknesses of family farms.</p>
<p>The WT strategy refers to strategies for minimizing the potential dangers lying in fields where weaknesses meet threats.</p>	<p>Supporting family farms to overcome non-tariff trade barriers and meet food safety requirements by improving family farms’ access to information, technology, infrastructure (transport, storage, etc.).</p>	<p>The suggested strategy helps to overcome the combination of one of the weaknesses of family farms, a lack of knowledge about modern technologies and best practices, and a threat such as trade barriers.</p>

More strategies focused on other points mentioned in the SWOT analysis (Table 3) can be derived depending on the priorities and resources available to implement those strategies.

4.3. Family Farms in Agricultural Value Chains

4.3.1. Horizontal Relationships in the Value Chain

During the interviews, the main horizontal linkages in the value chains of agricultural products in Georgia were identified. The results are presented in Table 5.

TABLE 5: HORIZONTAL RELATIONSHIPS IN AGRICULTURAL VALUE CHAINS

Relationship	Description of relationship
Among input and service providers	The situation is quite competitive among input suppliers (fertilizers, pesticides, feed, medicine, etc.), but the quality is low and the price is high. All credit suppliers are quite competitive, but they keep the interest rate for farmers very high. There is a shortage of competent agronomists and veterinarians.
Farmers to farmers	There are about 800,000 family farms in Georgia. Apart from a few exceptions, relationships between family farmers are quite good and friendly. However, they do not cooperate closely and do not have strong collective marketing efforts.
Collectors to collectors	The horizontal relationship between collectors is weak. At the same time, the relationship is sometimes quite strong in terms of setting prices and using market power.
Traders to traders/transporters	The relationship between traders/transporters is quite good and strong; they trust and help each other in setting prices.
Exporters to exporters	There is competition among exporters in general, but they cooperate when setting prices.
Among consumers	There are some consumer organizations in Georgia, but these are not strong enough to defend consumers' rights. Since the purchasing power of the majority of Georgians is quite low, they frequently purchase cheap, low quality products.

4.3.2. Vertical Relationships in the Value Chain

The main vertical linkages of the agricultural value chains in Georgia were also identified, and are summarized in Table 6.

TABLE 6: VERTICAL RELATIONSHIPS IN AGRICULTURAL VALUE CHAINS

Relationship	Description of relationship
Hired labor force and family farmers	The majority of Georgian family farms do not hire agricultural workers and family members are usually involved in farming. Only a small number of farms employ additional labor. Demand for additional labor is particularly high during the agricultural season. The relationship here is quite good.
Input suppliers and farmers	Inputs are provided by many different entities, but the quality is frequently unreasonable. Some farmers, for instance, apply vaccinations themselves and do not necessarily consider all the rules. Agro loans are very expensive for farmers as a result of very high

	interest rates. Nevertheless, the government preferential agro loans have reached some small/family farmers.
Farmers and collectors	The relationship between farmers and collectors exhibits a lack of trust. There are no concerns about long-term relationships. Buying with credit and paying back these debts on time is a problem. There is also limited use of formal contracts.
Traders/ collectors and exporters	Quality and timing are the main problems between these actors. There is low trust as well.
Exporters and service providers (e.g. storage facilities)	The quality of supply chains is low and the process is slow, which results in a deterioration of the quality of products (a lack of storage facilities; if there are any, the price is very high). Exporters have problems executing their orders on time and delivering high quality products.
Agro products' wholesalers, retailers and consumers	Agricultural product wholesalers and retailers lack innovation and creativity (mainly in the bazaar); they do not know how to promote their products and sell for a better price (e.g., sorting, packaging, diversifying the products, etc.). There are improper sanitary and hygienic conditions in many places where agro products are sold.

There are different external services that influence the linkages in agricultural value chains. Some of these services are described below.

Knowledge and skills have been provided to family farmers by various governmental or non-governmental programs. Unfortunately, most of these programs comprise short training sessions that do not really give farmers appropriate skills for well-grounded development. It is necessary to provide farmers with modern skills that are well adopted in developed countries.

Financial institutions (micro finance organizations and banks) are well-developed in Georgia, but interest rates on loans are very high. The requirement for assets with high liquidity in the form of collateral is another obstacle for farmers.

Although the Agricultural Strategy for 2015-2020 states that small farmers should be developed, there is no clear detailed plan about the particular actions that the government is going to undertake to support small scale farmers (MoA, 2014).

4.4. Case Study in Ude

Petre Peikrishvili, 27, lives with his family in the village of Ude in the Adigeni municipality in the Samtskhe-Javakheti region of Georgia. Together with his parents, his wife and the family of his brother, he runs a cattle farm. The family owns fifty heads of cattle and produces cheese for sale. Petre is a small scale farmer who owns less than 1.5 ha of land and rents around 9 ha. Although the family falls into the category of small scale farmers in terms of land owned, Petre's family has the largest number of cattle in the village.

His family has owned a farm for seven years and they started with only a few cows. They then purchased more cows and expanded their farm. Similar to other Georgian farms, their activities are quite diversified. In addition to cheese production, they provide different machinery services (like baling and mowing) to their neighbors, which is quite profitable during agricultural season.

“If we do 1,000 bales per day, we get a revenue of 500 GEL and, with production costs of 150-200 GEL, this amounts to a net profit of 300 GEL a day. We produce 18-20 kg of cheese per day during the season. Selling 1 kg for 6 GEL results in 120 GEL.” Petre Peikrishvili.

Cheese from the farm was initially sold to different intermediaries, but during the last two years the family has dealt with a single intermediary who comes to the farm and buys cheese. Thus they do not need to worry about a market for their cheese. Although there is no formal contract between the family and the intermediary, their partnership is quite stable and both parties are happy with the arrangement. According to Petre, building reliable linkages in the value chain was quite time-consuming and took a couple of years. The family eventually succeeded and now enjoys stable access to the market.

Compared to other Georgian farmers, Petre is quite exceptional. Petre holds a master's degree in Agribusiness Management from the Akhatsikhe branch of Tbilisi State University and he worked for the international NGO Mercy Corps for almost five years. He has started as an agricultural advisor and then became a business development officer for livestock breeding interventions. According to Petre, this job gave him the opportunity to apply theory in practice and to acquire new skills necessary for the management of his own farm.

“Working at Mercy Corps provided me with the financial resources I used for my farm. Most importantly, it provided me with knowledge and access to information. I can now manage my farm much better.”

Petre's example is a classic example of part-time farming. According to Petre, the main benefit of part-time farming is the possibility to earn money by being employed somewhere else and to get in touch with many people, to learn and use the knowledge gained for the benefit of the farm. Petre believes that part-time farming is a good start for a farmer because, in the absence of alternative employment that complements

farming, it is hard for a farmer to earn money and build linkages in the value chain, access up to date information and modern technologies.

Petre currently feels that he can rely on his farm as the major source of income and does not worry about complementary employment. He states that he would even quit his job for the sake of his farm if necessary.

The whole family considers themselves employed in agriculture and they continuously invest in the development of their farm. Duties and responsibilities are divided between all family members and vary depending on the abilities. The women usually milk the cows and make cheese, whereas the men do jobs requiring physical strength and the use of machinery.

“Everybody should be doing what he/she is good at. To me it does not make sense to move to the city and work as a taxi driver when I can be successful in the village. Somebody should live in the village as well.”

Although Petre considers himself to be a successful farmer, he notes that there are a lot of challenges faced by family farms in Georgia. Access to information and finance, as well as a lack of proper agricultural insurance, are believed to be major constraints.

“It would be good if farmers could share experiences with each other. Demonstration farms and visits to successful farmers would improve farmers’ knowledge... Long-term agro loans would be very beneficial for farmers. The government has a project related to agro loans, but those loans are, in most cases, short-term loans. Banks require collateral for long-term loans and this is not a good option for farmers...”

5. Conclusions and Recommendations

5.1. Summary of Main Findings

5.1.1. Sustainability Aspects

Economic sustainability

Family farms contribute to the economic sustainability of the agricultural sector by ensuring food security at the micro level and so-called “social insurance” at the macro level. This means that family farming as a means of organizing activity is addressing the issue of food security on the country and global levels and is a source of income for many families in rural areas, where family farming acts as social insurance. As was mentioned before, at the current stage of development family farms cannot guarantee food security and Georgia remains highly dependent on imports. As for social insurance, family farming is definitely a major

source of income for the rural population of Georgia, but as poverty rates in those areas are still high this signals the underdevelopment of family farms and low competitiveness caused by a lack of commercialization.

Environmental sustainability

In terms of environmental sustainability, family farming tends to be eco-friendly when it is well managed and diversified. Specific features of family farms allow them to create less harm to nature, but a lack of knowledge and awareness about environmentally friendly practices leads to Georgian family farms having a negative impact on the environment in the country. Lack of coordination in managing natural resources exacerbates the situation and causes a significant negative impact.

Social sustainability

From the social point of view, family farming plays an important role in the sustainable development of Georgian agriculture. There is a strong tradition of agriculture in Georgia, which is reflected in the existence of many traditional products and production practices. Family farming is the best way to preserve the countryside and a traditional way of life. However, such a way of life is currently under threat due to prevailing poverty in rural areas, outmigration and the low image of agriculture. Fewer young people are interested in agriculture and the countryside in general. Increased migration to the big cities of the country and abroad might lead to the disappearance of family farming.

5.1.2. Challenges Faced by Family Farms in Georgia

This study revealed a number of challenges faced by family farms in Georgia. Due to the Soviet past, some of the main challenges are byproducts of the Soviet era. Privatization-induced land use patterns and the lack of knowledge about farming are examples of such byproducts. Small and diversified land plots are considered to be one of the main challenges and constraints facing Georgian farmers today. Small plots of land located in different places, sometimes not even close to the farmer's house, hinder the expansion and development of farms. The location of land is an issue that can be resolved with land swaps, but problems with land registration and ownership make this difficult. There are still a lot of farmers who consider their land as their own property just because it was used by their ancestors. Farmers often do not have any legal documents proving ownership of land. The other important byproduct is the lack of knowledge about farming. As was mentioned before, after the collapse of the Soviet Union many families received plots of land but did not know anything about farming.

These two major challenges are related and cause many other challenges, such as the lack of access to finance. In many cases, farmers are not bankable and agriculture is considered to be quite risky. Although

the government has initiated an agro insurance project, which could contribute a lot to the increase in the bankability of farmers, there are still a lot of issues to be resolved.

Limited innovation and low adoption rates of new technologies is another challenge to family farms. In addition, family farms have limited access to markets (e.g. input markets) and services (e.g. veterinary, machinery, etc.). All of which contribute to the weak position of family farms in the value chains.

Lastly, it should be mentioned that the quality of services and amenities in rural areas of Georgia are very low. This negatively affects family farms, agricultural enterprises and the rural population in general. Larger enterprises have greater power to cope with those challenges, whereas due to their constraints family farms are quite weak and cannot cope with the lack of rural development without assistance from the government and donor community.

5.1.3. Different Types of Farms in Georgia

Georgian family farmers might be classified into two main categories: (i) farmers who are not economically viable because of the small size of their land and a lack of knowledge and motivation for farming (“farmers by default”), and (ii) farmers who are already commercial or semi-commercial and have the potential and motivation to further develop their farms (“farmers by vocation”). It should be mentioned that neither of these categories is a homogeneous group, each includes family farms in widely varied conditions.

According to USAID’s “Analytical Foundations Assessment - Agriculture”, there are three types of farming in Georgia. As was mentioned above, after privatization farmers were left with land sizes that were commercially unviable. There are 521,240 families in Georgia who own 219,451 ha of land, with the average plot size being 0.42 ha. These are mainly subsistence farmers who consume the majority of the food they produce. This kind of farming is generally not well organized and in most cases these family farms are commercially unviable (USAID, 2011).

Another type of farming is defined as semi-commercial farms. In Georgia there are approximately 164,600 households owning 280,700 ha of land with an average plot size of 1.7 ha. For these farmers, land ownership is a kind of guarantee of self-sufficiency. Semi-commercial farms have high potential for becoming successful if they have proper infrastructure and access to information (USAID, 2011).

The third type of farms are commercial farms and agribusinesses that received more than 5 hectares on average during the first wave of privatization. The second wave of privatization dramatically increased the size of the land plots of those farms. This happened due to the fact that many of those large-scale farmers who received large plots during the first wave started to lease land, which resulted in the privatization of

larger plots of land compared to the past. There are 17,303 commercial farms and agribusinesses in Georgia which own 590,887 ha of land and, on average, they are 34.1 ha in size. Most farmers of this type have sufficient land to produce and accumulate high income from production. They usually hire external labor and are mainly oriented on exports (USAID, 2011).

5.1.4. Possible Development Paths for Family Farms in Georgia

There might be several paths for continuing family farming in Georgia:

- a. Small farms with a higher degree of commercialization (more integration to markets)
- b. On-farm diversification
- c. Off-farm diversification

It is hard to say which type of family farm has the highest potential in terms of income generation and sustainability. Each strategy outlined for the continuation of family farms could be successful if well implemented.

Recent Policy Framework

The government of Georgia has adopted a broad-based/unimodal strategy of agricultural development. This strategy covers the large majority of small farms without favoring particular types. The main argument for using this strategy is the alleviation of poverty.

Different policies measures are in place to promote the development of agriculture sector and poverty reduction in Georgia. These include agriculture related subsidies, measures for promoting cooperation, and general income support.

Despite some improvement in recent years, evidence shows that existing policies have not been sufficient to develop a competitive agriculture sector and alleviate poverty in Georgia. The most important challenges remaining are: (i) increasing productivity, (ii) improving the quality of services and amenities in rural areas, (ii) promoting the sustainable transition to non-farm employment.

Towards a “European Model of Agriculture”?

Modern agriculture is not only a provider of food, but is increasingly charged with other services like the contribution to biodiversity, landscapes and amenities (positive externalities), and with controlling the unintended negative impact (negative externalities) of farming (Morris and Rurgess, 2012). Over the past decades, agricultural policies in industrial countries have induced farmers to fulfill those **multifunctional** tasks. Recent reforms of the Common Agricultural Policy (CAP) of the European Union (EU) consider

further “greening” the direct payments system by conditioning 30% of direct payments to the provision of environmental goods and services (EC, 2011: 7f).

Importance of Quality Products in the EU and Worldwide

Ensuring the high quality of agricultural products that European and other developed countries’ markets require is difficult for Georgian farmers, especially for family farms. There is an opportunity for Georgian farmers to sell their products to the EU market under the Association Agreement (namely under the Deep and Comprehensive Free Trade Agreement [DCFTA]), but most of them are not ready to meet the standards set by this market. On the other hand, demand of domestic consumers towards high quality products is slowly but steadily increasing. Most family farms in Georgia cannot produce high quality products, at least in the short-run, due to a range of issues (e.g. a lack of knowledge, money, etc.). Focusing on supplying domestic markets would thus be a good short-run strategy for many family farms. In addition, they have to consider upcoming consumer trends on both the domestic and EU market (more exigent/demanding, greater demand for high quality products). By adopting quality standards (e.g. HACCP), Georgian family farmers might become suitable producers for high-value markets. Agricultural projects/programs should be lined-up with the requirements of the EU market, considering all food safety related issues like sanitary and phytosanitary norms, geographical indication, traceability, etc. This will help Georgian farmers to produce safer and more competitive products for both domestic and international markets.

5.2. Recommendations

5.2.1. Targeted Agricultural Policies

Modern and competitive family farms conforming to the European model would be a great complement to larger scale commercial agribusinesses in Georgia. **Targeted agricultural policies** should help semi-commercial and commercial family farmers to upgrade their knowledge and skills, and become more integrated in value chains, thus enhancing their productivity and competitiveness. Such competitive family farmers in Georgia could provide high quality goods (e.g. organic, hygienic, region-specific) desired by consumers in Europe and in Georgia, allowing these farmers to capitalize on the DCFTA and thus gain an external market share on domestic and international markets. Furthermore, modern family farms in Georgia would help preserve the countryside and unique regional cultures, would have great synergies with the tourism sector, and could thus contribute to the economic development and social stability of the country. To increase the productivity of semi-commercial and commercial farmers (“farmers by vocation”) in Georgia, the following measures could be employed:

An enabling environment for innovation and commercialization

First of all, this refers to a coherent agricultural policy that should be well thought out and serve the long-term vision of the government. The policy and strategy should be supported by a properly managed legal and regulatory environment where the issue of property rights is very important. Establishing preferential tax and other legal conditions for encouraging the involvement of youth and women in agriculture would contribute a lot to an enabling environment. These kind of legal conditions also attract foreign investors who might be a source of knowledge and new ideas.

Neither foreign and local investors nor family farms can operate successfully unless both physical and market infrastructure related problems are resolved. Access to information on the price of different goods and services is vital in decision making and is an integral part of the enabling environment. The same can be said about good governance, which reflects the process of decision making and stakeholders' involvement in this process.

As for commercialization, some possible ways to achieve this include the encouragement of horizontal coordination (cooperation) or vertical coordination in value chains (e.g. contract farming).

Agricultural education and research

As one of the main challenges facing family farming concerns the lack of knowledge about best practices, enhancing agricultural education and research is highly recommended. In order to achieve this goal, more professionals (like agronomists and veterinarians) should be educated. Knowledge of such subjects is very important, but the possession of agro-business skills is essential for the successful management of family farms. Preparing professionals with agro-business skills would contribute to the sustainable development of family farming.

Working directly with farmers to improve their business skills is also recommended. This can be done through vocational education and training farmers to help them develop non-farm skills, finance skills and on-farm diversification skills (vocational education for non-farm skills would allow farmers diversify their incomes and carry out part-time farming).

Another aspect for consideration is to maintain close interaction with family farms and collaborate with farmers' organizations in order to combine the traditional knowledge of farmers with research.

Advisory services

Properly developed advisory services can support family farming in many ways. The government has already established extension centers in the regions of Georgia to provide advice to farmers and improve their access to information. The next step would be to strengthen those centers and develop a unified action

plan for them in order to fully utilize their potential. Extension services should be accessible for small scale farmers and should apply extension models emphasizing participatory approaches.

In terms of the content of information provided to farmers by extension centers, it is recommended to place more emphasis on:

- Facilitating entrepreneurship by introducing farmers to advanced technologies and developing leadership and entrepreneurial skills;
- Encouraging part-time agriculture, allowing individuals to keep family farming alongside non-farm employment;
- Supporting the enlargement of farms by encouraging cooperation, association, groups, etc. through the provision of information about the benefits of coordination and working as a group/team.

Awareness raising

First of all, it is recommended that the involvement of youth and women in agriculture, and in family farming in particular, should be promoted. According to the results of the study, young people tend to avoid agricultural jobs. In order to address this issue, it is necessary to promote the image of the farmer, and of agriculture in general, as a good employment opportunity. This can be achieved through demonstration activities, sharing success stories, and developing platforms for sharing knowledge about good agricultural practices.

Apart from raising awareness about economic and social issues, it is also important to ensure that awareness is raised about environmental issues and the role of family farming in regard to the environment.

Public-private partnerships (PPPs)

Government support paired with private sector initiatives is one of the best ways to address the challenges faced by family farms.

PPPs might be particularly beneficial when identifying value chains with the potential for higher value added for farmers. Value chains perfectly reflect linkages between different stakeholders and show the roles and importance of the government and private sector as well as emphasizing possible means of cooperation between those parties. The Georgian government is currently involved in an analysis of different value chains with the aim of improving them.

PPPs are quite suitable for investments in collection centers or processing and packaging factories. These would welcome government assistance due to existing infrastructural problems with agricultural enterprises. Improving the capacity of factories would have an indirect but significant positive effect on family farms that deal with collection centers and factories.

Another important area where PPPs are most frequently present is the financial sector. Targeted preferential credits and long-term agro loans to better-off family farmers are highly recommended in order to improve access to finance. The government of Georgia has already partnered with many commercial banks and agro loans are provided to farmers. However, it is recommended that the payment terms and conditions of those loans be improved. The further development of agro insurance is also recommended in order to improve the bankability of farmers.

In addition, more PPPs in the tourism sector are recommended, with an emphasis on the attachment of agro tourism to agriculture and its promotion on both domestic and international markets. This is closely linked to finding a niche market and branding (e.g. regional, traditional products), producing and marketing high value added products in international markets.

To ensure the contribution of family farming to the sustainable development of Georgian agriculture there is a need to develop policies and institutions that provide incentives for the adoption of sustainable practices. Small scale farmers might occupy niche markets associated with sustainable production (e.g., organic and region-specific products). Both private and public institutions could be engaged in the development of a national organic certification system and regional branding strategies.

As can be concluded from above, there are a lot of important initiatives that can be implemented through public-private partnerships. The level of stakeholder engagement and collaboration is vital for better coordination and implementation of those initiatives.

5.2.2. Rural Development Policies

Broader rural development policies should be employed to ensure the sustainable transition of the majority of Georgian family farmers to non-farm employment. These policies will facilitate economic diversification and modernization in rural areas. For example, rural dwellers could get further training in crafts that could then be marketed to employers in both rural and urban areas.

Every region of Georgia is rich in tradition and authenticity, and rural development policies should focus on uncovering the unique economic potential of each region.

The quality of services and amenities available to rural dwellers should be dramatically improved to overcome the stigma of agricultural employment. This is essential in order to keep a strong population base in rural areas and to overcome the rural-urban divide. This would ensure the economic health and social stability of the country.

Georgia might learn from European countries that employ a broad array of regional development policies. However, in most European countries regional development policies were introduced at a stage when a

certain level of development had already been achieved. This reduces Georgia's ability to learn from their experience. In addition, these policies were, and are, tremendously costly for taxpayers. Nevertheless, Georgia should strive for a sustainable transition so as not to repeat the mistakes of other countries. The necessary structural change should ensure that the environment is not harmed (environmental sustainability) and that rapid economic development does not cause excessive income disparities between the rural and urban populations (social sustainability). In several countries (Switzerland and other European countries) structural change decelerated because it was politically desired (to move towards sustainability). This led to developing part-time farming as a sustainable model of farming. Part-time farming keeps the population in rural areas, whilst the off-farm work of part-time farmers ensures that their incomes become comparable with other sectors of the economy.

The Role of Agriculture in Rural Development Policies

Rural development policies must include agriculture as an important engine for the economic modernization of rural areas. Several off-farm employment possibilities might be related to agriculture. Becoming further integrated in value chains (processing and packaging) and working in the agricultural service sector might offer new job opportunities for several family farmers in Georgia.

Agriculture is not only about farming, it also has a multifunctional role. Agricultural production is a joint product of proper agricultural goods and several ecosystem services (positive externalities). Positive externalities from agriculture, such as preserving unique landscapes and contributing to better rural amenities, are highly interconnected with the goals of rural development policies. It is clear that rural development policies have to include agriculture as an essential element. However, these policies should strive to be less sector-specific in order not to lose their effectiveness. Rural development policies should mainly focus on the creation of new businesses, thus ensuring economic diversification in rural areas.

Therefore, there is a need for a shift from narrow agricultural development models to integrated and territorial³ models for sustainable development, which consider synergies with tourism, energy and other sectors of the economy.

To increase their effectiveness, government policies should be more integrated (meaning that they should not hinder, but support each other). The government of Georgia should recognize the multifunctional role of family farmers in order ensure their economically, environmentally and socially sound development. This requires multi-level coordination and close collaboration between different ministries, public agencies and other stakeholders.

³ According to the EEA, "territorial development is a comprehensive concept used as an objective of public policies for comprehensive results in economic, social, environmental and cultural improvements" (2010, p.73).

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Annex

TABLE A 1: SHARES IN SOWN AREAS BY HOLDING TYPE, CROP GROUPS AND YEAR

	2006	2007	2008	2009	2010	2011	2012	2013
Grain and Leguminous Crops	93.8	94.5	95.7	96.7	95.2	96.2	96.6	95.6
Potato and Vegetables	94.5	99.3	99.8	99.8	99.8	99.1	99.2	99.0
Other Crops	91.9	97.8	93.5	96.8	92.9	99.0	94.0	97.5
In total sown area	93.9	95.7	96.1	97.2	95.9	97.3	96.9	96.3

Source: Geostat, 2014

TABLE A 2: SHARE OF FAMILY HOLDINGS IN THE PRODUCTION OF AGRICULTURAL PRODUCTS IN GEORGIA

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	2010	2011	2012	2013								
Wheat	73.0	86.0	89.0	91.0	91.0	88.0	89.0	-	81.0	86.0	86.0	90.0
	85.0	90.0	94.0	84.0								
Maize	94.0	98.0	96.0	94.0	96.0	97.0	97.0	-	99.0	99.0	99.0	99.0
	99.0	98.0	98.0	97.0								
Potatoes	90.0	99.0	99.0	88.0	88.0	99.0	97.0	-	78.0	100.0	100.0	99.0
	100.0	98.0	99.0	100.0								
Citruses	98.0	99.0	99.0	99.0	100.0	100.0	100.0	-	99.7	100.0	99.5	99.9
	99.9	100.0	99.9	100.0								
Grape	97.0	99.0	99.0	88.0	99.9	97.0	99.0	-	92.4	91.2	95.2	94.5
	92.3	93.8	91.5	96.3								
Tea	45.0	43.0	34.0	93.0	74.0	76.0	64.0	-	68.2	73.3	72.2	70.7
	68.0	55.0	57.7	24.2								
Vegetab.	87.0	97.0	99.0	95.0	93.0	98.0	97.0	-	100.0	99.0	100.0	100.0
	100.0	100.0	98.0	96.0								
Fruit	99.0	99.6	99.0	99.8	99.8	98.0	99.5	-	99.5	98.9	99.5	99.8
	99.7	99.2	99.7	99.6								
Meat	99.3	99.6	99.4	99.4	99.9	99.9	99.1	-	97.8	94.7	91.3	90.9
	95.4	88.4	85.1	86.4								
Milk	98.9	99.3	99.5	99.7	99.7	99.8	99.9	-	99.6	99.7	99.9	98.9
	99.7	99.7	99.5	99.7								
Eggs	99.1	99.1	98.8	97.4	90.5	85.4	80.9	-	86.2	42.9	40.3	43.6
	43.7	37.5	39.0	36.8								
Wool	94.1	94.1	94.4	100.0	100.0	100.0	100.0	-	100.0	96.5	98.3	93.6
	94.4	98.5	96.4	97.8								

Source: GeoStat, 2014

TABLE A 3: TOP AGRICULTURAL EXPORT PRODUCTS IN 2013

Product Rank	Product Name	Export Value (USD mln.)	Share in total export (%)
1.	Hazelnuts	167	22
2.	Alcoholic beverages	128	17
3.	Wine	124	16
4.	Water	100	13
5.	Live Animals	63	8
6.	Wheat	48	6

Source: GeoStat, 2014

TABLE A 4: TOP AGRICULTURAL IMPORT PRODUCTS IN 2013

Product Rank	Product Name	Import Value (USD mln.)	Share in total import (%)
1.	Wheat	184	16
2.	Meat	128	11
3.	Oils and fats	91	8
4.	Sugar	68	6
5.	Chocolate	62	5
6.	Dairy products	51	4

Source: GeoStat, 2014

Note: This data has limitations as it includes re-exports. For instance, wheat appears in the top 6 export goods as well as in the import products. This is due to the re-export of wheat through Georgia. This factor should be taken into account while analyzing the export-import data.

TABLE A 5: SELF-SUFFICIENCY RATIOS FOR GEORGIAN AGRICULTURAL PRODUCTS

#	Product	Self-sufficiency ratio, % (2013)
1	Wheat	12
2	Maize / Corn	96
3	Potato	100
4	Vegetables	75
5	Grapes	130
6	Beef	71
7	Pork	41
8	Sheep and goat's meat	85
9	Poultry meat	18
10	Milk and milk products	91
11	Eggs	95

Source: GeoStat, 2014

TABLE A 6: LIST OF RESPONDENTS

	Organization	Name/Surname	Position	Location	Date of Interview
1	Heifer	George Murvanidze	Director	Tbilisi	6.11.2014
2	Mercy Corps	Irakli Kasrashvili	Country Director	Tbilisi	12.11.2014
3	Mercy Corps	Giga Sarukhanishvili	Program Manager	Tbilisi	11.11.2014
4	FAO	Rati Shavgulidze		Tbilisi	5.11.2014
5	GFA	Nino Zambakhidze	Chairwoman of the Georgian Farmers' Association	Tbilisi	13.11.2014
6	ACF	Maia Gabedava	Program Manager	Tbilisi	13.11.2014
7	MOLI	Carsten Schulz	Team Leader	Tbilisi	21.11.2014
8	Credo	Tornike Beradze	Credit Officer	Kutaisi	12.11.2014
9	Independent Expert	Mari Natsvaladze	Professor at TSU	Tbilisi	7.11.2014
10	Independent Expert	Simon Appleby	General Director, YFN Georgia LLC	Tbilisi	7.11.2014

11	Independent Expert	David Jijelava	Deputy Director, Geo Wel	Tbilisi	7.11.2014
12	Independent Expert	Kateryna Poberezhna	Environmental Officer at CENN	Tbilisi	6.11.2014
13	Independent Expert	Adam Pellillo	Professor at ISET	Tbilisi	27.11.2014
14	Independent Expert	Luiza Namicheishvili	Deputy Chief of Party at REAP	Tbilisi	18.11.2014
15	Farmer	Mari Kodua	Agribusiness	Samegrelo,Darcheli	13.11.2014
16	Farmer	Nina Petrova-Dzneladze	Agribusiness	Tbilisi	13.11.2014
17	Farmer	Sulkhan Turmanidze	Agribusiness	Shida Kartli	13.11.2014
18	Farmer	Vladimer Xodeli	Agribusiness	Shida Kartli, vil. Tortiza, Tbilisi	13.11.2014
19	Farmer	Dinara Absandze	Family Farmer	Samegrelo, Akhalkakhati	13.11.2014
20	Farmer	Amiran Khakhishvili	Cooperative	Kvemo Kartli, Mokhisi	13.11.2014
21	Farmer	Nato Davargulia	Family Farmer	Samegrelo/Dzveli Abastumani/Zugdidi	13.11.2014
22	Farmer	Giorgi Bigvava	Family Farmer	Samegrelo/Oktomberi/Zugdidi	13.11.2014
23	Farmer	Naira Gorgaslidze	Family Farmer	Racha-Lechkhumi/Usakhelo/Tsageri	13.11.2014
24	Farmer	Petre Peikrishvili	Family Farmer	Samtskhe-Javakheti, Ude	27.11.2014
25	Farmer	Cicino Pesvianidze-Kakulia	Family Farmer	Imereti/Samtredia	17.11.2014
26	Farmer	Levan Kiladze	Family Farmer	Imereti/Ianeti/Samtredia	17.11.2014
27	Farmer	Basil Bashinuridze	Family Farmer	Kakheti/Kvemo Alvani/Akhmeta	15.11.2014
28	Farmer	Giorgi Gonashvili	Family Farmer	Kakheti/Dedoplistskaro	16.11.2014
29	Farmer	Levani Shoshikelashvili	Family Farmer	Kakheti/Nasamkhrali/Telavi	16.11.2014
30	Farmer	Badri Kochlamazashvili	Family Farmer	Kakheti/Kvemo Alvani/Akhmeta	15.11.2014
31	Farmer	Gogia Vepkhiaidze	Family Farmer	Kakheti/Kvemo Alvani/Akhmeta	15.11.2014
32	MoA	Genadi Jangidze	Deputy Head of Policy and Analytical Department	Tbilisi	17.11.2014
33	MoA	Lasha Zivizivadze	Head of Policy and Strategy Division	Tbilisi	17.11.2014
34	MoA	Tamaz Kunchulia	Adviser to the Minister	Tbilisi	17.11.2014
35	MoA	Mariam Gelashvili	Deputy Head of Department	Tbilisi	17.11.2014
36	Agriculture Cooperatives Development Agency	Giorgi Teliashvili	Senior Specialist	Tbilisi	1.12.2014
37	Parliament of Georgia	Gigla Agulashvili	Chairman of the Agrarian Issues Committee	Tbilisi	17.11.2014