THE ROLE OF THE AGRICULTURAL SECTOR IN ECONOMIC DEVELOPMENT AND POVERTY REDUCTION IN THE RURAL AREAS OF THE REPUBLIC GEORGIA

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by

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Abstract

The main purpose of this paper is to study what role the development of the agricultural sector plays in the poverty reduction and inclusive economic growth in Georgia. The paper provides an analysis and evaluation of the current challenges and potential future benefits of the agriculture sector development in the Republic of Georgia together with an analysis of the role of the agriculture sector in the structural transformation process.

The focus of the paper is the period 1991-2016, a time when Georgia gained independence from the Soviet Union, resulting in an end to central planning of the economy and its replacement by a market economy. In particular, the paper analyzes the role of agricultural development in the following three main areas:

- ✓ The role of the agriculture sector in the poverty reduction;
- ✓ The role of agriculture sector development in improving the food security;
- ✓ The role of agriculture sector development in the economic empowerment of the rural population and creation of non-farm employment;

The study finds that the impact of the agriculture sector development on poverty reduction in Georgia is very high. Namely, the development of the smallholder farmer oriented agriculture sector supported poverty reduction in rural areas of Georgia in the initial stage and at later stage it facilitated the development of the non-agriculture sector in rural areas by creating demand for the non-agriculture products and the services. In terms of food security, the importance of the agriculture sector was particularly high at the initial stage of the economic development (1991-1995) as international trade was limited due to the political and economic reasons and therefore the majority of foods were produced domestically. It is important to note that the agriculture sector is still the major source of income and employment for the rural population of Georgia.

Biographical Sketch

Gaga Nikabadze was born in 1986 Gaga Nikabadze was born in Georgia in 1986. He received the bachelor degree (with honors) in agriculture economics from the Agrarian University, Tbilisi, Georgia in 2006 and the master degree in agribusiness management (with honors) from the Agrarian University, Tbilisi, Georgia in 2008. In 2017 Gaga joined the Cornell University, the college of agriculture and life science (CALS) and enrolled in the master of professional studies program in international development.

Gaga has been working in international development during the last 10 years in different countries across the world. His main areas of expertise are the topics related to agribusiness value chain development, access to finance system development and agriculture extension systems development.

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Finally, I would like to extend thanks and my highest appreciation to my parents who are the most important people in my world and I dedicate this thesis to them.

List of Abbreviations

ADA	Austrian Development Agency
IFAD	International Fund for Agriculture Development
FAO	United Nations Food and Agricultural Organization
GOG	Government of Georgia
GDP	Gross Domestic Product
GNP	Gross National Product
GeoStata	National Statistics Office of Georgia
MOA	Ministry of Agriculture of Georgia
MOE	Ministry of Economic Development of Georgia
SiDA	Sweden International Development Agency
SDC	Swiss Development Cooperation
UNDP	United Nations Development Program
USAID	United States Aid for International Development
WB	World Bank

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1. Introduction

Georgia is located at the crossroads of the Western Asia and Eastern Europe. To the west it is bounded by the Black Sea, to the north by Russia, to the south by Turkey and Armenia, and to the southeast by Azerbaijan. According to the 2014 national statistical census the population of Georgia is 3.7 million. The capital and the largest city of the country is Tbilisi with the population of 1.8 million people.

After the break- up of the Soviet Union in 1991, Georgia started building a new democratic society with its own independent public institutions and an economic system based on the market principles. The transition from a centrally planned to a market economy turned out to be very difficult and the newly elected Government of Georgia (GoG) was not ready to address the challenges that accompanied the transition period. Moreover, in contrast to other post-soviet countries, Georgia has suffered from two civil wars in South Ossetia and Abkhazia. The civil wars which lasted for two years created very serious barriers to the country's economic development.

The development of the agriculture sector became one of the top priorities for the GoG. The assumption of the GoG was that the development of smallholder farmer oriented agriculture would support poverty reduction in rural areas in the initial stage and at later stage would facilitate the development of non-agricultural sectors. To ensure the sustainable development of the agriculture sector the GoG increased public expenditures on the infrastructure projects considerably (roads, irrigations, drainages system and mechanization). Furthermore, the international aid organizations (WB, USAID, IFAD, UNDP SDC, SiDA and ADA) started

implementation of the agriculture development projects to support the GoG during the transition period.

The reforms in the agriculture sector in Georgia have been implemented in three waves. The first wave of reforms started in 1991 with the main focus on agriculture land privatization and infrastructure development in rural areas. The second wave of the reforms started in 1994 with the main focus on agriculture infrastructure development. The third wave of reforms began in 2004 year and was mainly targeted to attract the FDI in agriculture. The GDP of Georgia at the beginning of 2004 was 5.2 billion USD (Geostat, 2006) During the last twenty years total investments in the agriculture sector amounted to 3 billion USD (Geostat, 2016). The investments were made through public expenditures as well as private sector and international development aid funds.

Despite the increased investments in the agriculture sector the poverty level in Georgia has not decreased considerably. According to the national statistics office (Geostat,2016) the national average poverty level in Georgia was 15 percent of the total population (highest among the Eastern European countries) in 2016. The majority of poor people live in rural areas, exclusively depending on agriculture as a main source of income.

2. Methodology

This chapter of the paper describes actions taken to investigate the research problem and the rationale for the application of specific procedures or techniques used to identify, select and analyze the information applied to understand the problem. Specifically, the research focuses on the government policies and the enforcement of the regulations in the agriculture sector. Furthermore, the paper focuses on the analysis of the main macroeconomic indicators and the role agriculture sector development played in poverty reduction in Georgia.

The collection of appropriate, methodologically valid and recent statistical data was a very important factor to enable the development of the relevant findings and recommendations related to the research problem. The paper is built on the reviews and detailed economic analysis of the statistical data of the ten year period ending in 2016. In addition, in order to ensure that the data is reliable and valid, different sources (both international and local) have been used. More specifically the data collection of the research design of the paper consists of the following main components:

1. Literature review
    - ✓ Review of the literature written by international aid and non-governmental organizations.
    - ✓ Review of scientific articles and publications.
    - ✓ Review of official reports of the government of Georgia.
2. Overview of the economic outlook and agriculture sector performance.
    - ✓ Review of the economic outlook of the Georgia.
    - ✓ Review of the agriculture sector outlook in Georgia.

- ✓ Review of the foreign direct investment inflow in the economy with particular focus on agriculture sector.

3. Data analysis.
    - ✓ Review of the main macroeconomic data.
    - ✓ Review of the agriculture production and productivity data.
    - ✓ Review of the agriculture export and important substitution data
    - ✓ Review of the data related to nationwide and rural poverty.

The main purpose of this research methodology is to learn what are the main linkages between agriculture sector development in Georgia and poverty reduction. Besides, the research methodology focuses on the analysis of what type of policy level interventions the Government of Georgia could implement in the future to ensure sustainable economic development in rural areas. The findings as well as recommendations are stated in the last section of the paper.

It is important to note that this paper does not attempt to construct a statistical model of causality to analyze these issues. Even the best of such models invariably suffer from an inability to conclusively determine causality in what is essentially an endogenous relationship. That is, there are channels of causality going in both directions; i.e. not only does government policy and foreign investment affect agriculture sector outcomes, but these outcomes can also affect government policy and investment decisions.

Accordingly, this study acknowledges that there is likely to be endogeneity in the data while presenting the most accurate statistical picture possible of the relationship between the variables. The conclusions drawn are consistent with this statistical picture but of course are subject to the caveats that arise from the potential for two-way causality.

However, one very strong defense of the approach taken is that the switch from a command economy to a market oriented one was very much an exogenous event in the Republic of Georgia. That is, the initial opening of the economy and subsequent wave of foreign aid and investment were clearly a result of the outside forces and not a result of the internal dynamics. Thus, a case can be made that the potential for endogeneity to complicate the statistical analysis is minimized during this time period.

3. Literature Review

3.1 Background

Poverty reduction and sustainable economic development of the least developed countries has been one of the top priorities in the agenda of policy makers and development specialists during the last several decades. Particularly, the study of the agriculture sector in economic development and poverty reduction generated an enormous literature of both theoretical and empirical studies. Much of the literature written by development economists focuses on the process of structural transformation of economies, from the least developed where economic activity is based largely on agriculture, to developed countries where industry and service sectors dominate.

3.2 International Research Articles and Scientific Papers

A declining share of agriculture in national employment and GDP is an inevitable consequence of economic progress (Debraj Ray, 1998). This is largely due to higher income elasticities of demand for non-agricultural goods and services. According to the Debraj Ray's analysis, as incomes grow consumers increase their consumption of manufactured goods and services faster than their consumption of food. The process is usually accompanied by rising incomes and a lower incidence of poverty among those who depend on agriculture for a living.

Lewis (1955) was one of the first development economists who tried to explain the different stages of economic development. He viewed the economic development as a process of relocating factors of production from an agricultural sector characterized by low productivity to a modern industrial sector with higher productivity. The theory proposed by Lewis advocates industrialization and was seen by many as justifying government policies that favored protection for domestic industries.

The activity termed "agriculture" encompasses several different elements such as crops, livestock, fisheries, aquaculture and forestry. Spedding (2012) notes that the first issue to clarify is "What is agriculture?" Although there is general agreement as to the types of things, people, plants and animals that can be included in the concept, this is inadequate if the objective is the measurement of agricultural sustainability. Several attempts have been made to formulate a precise definition that is measurable, nationally relevant and internationally comparable.

Smith and McDonald (1997) consider the scope of agriculture in terms of four aspects, emphasizing that at the field scale agriculture is largely concerned with soil conditions, nutrient levels, water availability and plant growth. At the farm scale, agriculture is concerned with crop and livestock production and management, and the organization and viability of farm operations. At the regional scale, agriculture is a major factor in natural resource use and land use. And at the national and global scales, agriculture involves trade, equity (such as equitable distribution of income) and the supply of sufficient food.

Rao and Rogers (2006) state that an agro-ecosystem is an ecological and socio-economic system comprising domesticated plants and animals and the people who husband them with a view to producing food, fiber or other agricultural products. Agro-ecosystems defined in this way are hierarchical, starting from cropping systems and livestock systems to farming systems, village systems and global-level systems.

The importance of agriculture sector development to reduce the poverty and promote inclusive economic growth is the main research focus of the book published by Bresciani and Valdes (2007). The main purpose of the study is to quantify the relationship between agriculture and poverty. To do this authors link agriculture growth to poverty with the following macroeconomic indicators:

- ✓ Labor market-both on farm and off farm employment;
- ✓ Farm income –both income from agriculture activities and non-agriculture activities
- ✓ Food prices;

According to the findings of the study when both the direct and indirect effects of agricultural growth are taken into account, such growth is more poverty reducing than growth in non- agricultural sectors.

3.3 Local Publications and International Development Reports

The annual report produced by the UNDP (2004) emphasizes the close correlation between the rate of poverty reduction and smallholder farmer oriented agriculture sector development in the South Caucasus region. The authors of the report see links between agriculture and poverty reduction with the following interconnected mechanisms:

- ✓ Direct impact of improved agricultural performance on rural incomes;
- ✓ Impact of cheaper food for both urban and rural poor;
- ✓ Agriculture's contribution to growth and the generation of economic opportunity in the non-farm sector;
- ✓ Agriculture's fundamental role in stimulating and sustaining economic transition, as countries shift away from being primarily agricultural towards a broader base of manufacturing and services;

According to the conclusion of the report the potential for future poverty reduction in the South Caucus region through these mechanisms depends on the extent to which agricultural productivity can be increased where it is most needed.

United Nations Development Program (UNDP) the South Caucasus office (2007) conducted a study among 12,000 rural households across Georgia. According to the results of the study, non-farm incomes accounted for only 15 percent of household income in rural Georgia on average. Moreover, according the study the only source of non-farm employment for rural population was public sector (municipalities, local high schools and healthcare service) only 3 percent of the population at average was working in the business sector.

The World Bank country development report (2010) points out that the contribution of economic growth to poverty reduction is different across sectors in Georgia. According to the report the growth originating in agriculture is on average significantly more poverty reducing than growth originating outside the agriculture. The reports makes the conclusion that in Georgia the agriculture sector rather than the manufacturing or service sectors was the real driving force in success against absolute poverty.

4. Economic Outlook

4.1 Background

After the collapse of the Soviet Union in 1991 Georgia was one of the first countries which declared independence. The first years of the formation of an independent, market-based economic system were especially difficult for Georgia. The civil unrest, armed conflicts in Abkhazia and South Ossetia, energy and transport blockades from Russia, the loss of old, traditional markets and suppliers led to unprecedented economic stagnation, hyperinflation and an increase in unemployment during the first few decades of Georgia's independence.

In order to address the above-mentioned problems and facilitate the sustainable economic growth the newly elected government of Georgia started the implementation of swift and radical economic reforms. However, the development of a new market based economic system and independent public institutions was a very difficult process. Firstly, the government of Georgia did not have experience in assessing how an effective market economy should function as well as did not have enough experience in implementing the relevant economic policies. Secondly, the implementation of market based economic reforms needed very strong support from the population which was not case in Georgia. Lastly, there was no political stability in the country which is a very important precondition to implement the successful economic reforms.

In general, the economic policy of the Government of Georgia was based on three main principles:

- ✓ The first principle implied ensuring fast and efficient economic growth driven by development of real (production) sector of the economy.
- ✓ The second principle implied the implementation of economic policies that would facilitate the inclusive economic growth.

- ✓ The third main principle was based on the rational use of natural resources, ensuring environmental safety and sustainability.

4.2 Economic and Institutional Reforms

The economic reforms implemented in Georgia can be divided into three waves: 1) early transition (1991-1994), 2) later transition (1994-2004), 3) post rose revolution (2004-20016).

Early Transition (1991–94)

After gaining the independence, Georgia lost important economic benefits such as well-established markets for its exports and subsidies from Moscow. By late 1993, industrial output had fallen by more than half. Partial reforms undertaken by the government were insufficient to stem the decline. The country was deeply indebted and the trade system was near the collapse. Between 1989 and 1994, GDP fell by a cumulative 72 percent; inflation reached a peak of 15,600 percent in 1994 (Geostat, 2005). The fiscal base collapsed as the ratio of total public revenues to GDP decreased from 15 percent in 1992 to 2.3 percent by 1993 (Geostat, 2003)). By 1994, the improving political situation made it easier for the authorities to start a stabilization program with the support of the international community. The program consisted of a broad set of actions aimed at liberalizing the economy and improving public sector performance. The adjustment program succeeded in its initial phase: government expenditures fell, the economy resumed growth, hyperinflation was brought under the control, and privatization of the state-owned enterprises progressed.

Later Transition (1995–2004)

The government maintained macroeconomic stability and a liberal trade and payments system and carried out some reforms in the financial sector. However, weak tax collection and the 1998 Russian financial crisis disrupted the momentum and as a result the local currency (

lari) depreciated sharply, growth slowed, and inflation rose. Droughts in 1998 and 2000, increases in the price of imported energy in 2000, and the Turkish financial crisis of 2001 also contributed to the slowdown. Poor budget preparation, inadequate controls, and bad cash management resulted in the expenditure arrears, including pensions, wages, and social allowances. The financial market remained underdeveloped, and there were few indirect monetary instruments. Privatization advanced all but ceased: only one large enterprise, the Tbilisi electricity distribution company (TELASI), was privatized.

Overall, despite the stability and some growth, living conditions improved little. Daily life was marred by corruption, poor public services, and political and economic uncertainty. A severe energy crisis caused serious disruption in the electricity supply and heating, particularly in winter.

Post Rose Revolution (2004–20016)

The new government, which took over in January 2004, rapidly and forcefully executed an ambitious reform program, producing fast results in many directions: less corruption, more tax revenues, better business environment, and successful implementation of institutional and legal reforms. Following a creditworthiness assessment conducted in November 2007, in February 2008 Georgia was officially declared eligible for the International Bank for Reconstruction and Development (IBRD) financing, starting from July 2008 (the start of the World Bank fiscal 2009).

The main factors behind the economic growth during the second wave of reforms years were governmental investments and foreign direct investment (FDI), a significant part of which was directed towards the infrastructure projects and the agriculture sector. Many expected that significant inflows of FDI would lead to increased knowledge and transfer of technology - both

key to boosting and diversifying exports and creating new jobs. Although, the country achieved economic growth due to increased FDI still the poverty reduction and inclusive economic growth were problems facing the long-term sustainable economic growth.

Furthermore, the increase in FDI did not have a considerable effect on decreasing the unemployment rate. On contrary, compared to 2006 year the unemployment rate increased by 4 percent in 2013 (Geostat, 2014). However, as official website of Geostat explains in 2008 the methodology of the calculation the unemployment was updated and this is reason for this negative difference between 2006 and 2013 years. According to the official data published by Geostat in 2013, Georgia's unemployment rate peaked at 16.9 percent in 2009, stabilizing later at 15 percent in 2012. About two-thirds of the workforce is self-employed—predominantly in the agricultural sector, where most people are engaged in the subsistence farming.

One of the biggest problems during the third wave of the reforms was the degree to which these reforms improved the living conditions of the poorest people in the country. Although thanks to effective tax and property rights related reforms Georgia experienced rapid economic growth in 2004-2012, the level of poverty did not decrease. Economic growth did not have much impact on the poverty rates, which have largely remained unchanged. In terms of inequality, Georgia is one of the most unequal countries in the Eastern Europe.

5. Agriculture Sector Overview

5.1 Background

The current situation in agriculture is a reversal of what prevailed during soviet times, when agriculture sector annual growth rates were strong, based on the production of high value products. Georgia ran a large net trade surplus in the agriculture - agricultural exports exceeded imports by 70% (Geostat, 2016). After the collapse of the Soviet Union the picture has been one of a continuing decline in agricultural production and declining contribution to GDP with an increasing number of rural inhabitants classified as self-employed in agriculture (Geostat, 2017).

More than 3 million hectares of the whole territory of Georgia is designated as agricultural land, which also includes pastures and meadows. Georgia has a wide variety of ecological and climatic zones conducive to the growth of temperate climate and sub-tropical crops. From a climatic zones perspective, the Georgian biosphere is very diverse with 12 different zones and 49 types of soils. From the farming industry standpoint, the diversity is accompanied by difficulties like temperature swings, active erosion and excessive precipitation in some regions.

The agriculture sector accounts for about 52% of the country's labor force and 85% of farmers are subsistence farmers with average agricultural land holding of 1.5 hectare per household (MoA, 2014). After the collapse of the Soviet Union, Georgia implemented comprehensive nationwide land reform. The implementation of land reform caused fragmentation of the agricultural land and transformed Georgia into a purely smallholder farming country. Furthermore, the agricultural land owned by households are in most cases divided into 2-3 different parcels in different locations which makes agricultural work more difficult and costly. According to the agricultural census of 2014, 76.9% land users owned about 0.1-1 hectares of land, 23.3% - 1 to 5 hectares, and only 0.15% owned more than 50-500 hectares.

Like the economic and institutional reforms, agricultural development in Georgia can be grouped into the following three time periods: 1) early transition (1991-1994), 2) later transition (1994-2004), 3) post rose revolution (2004-20016)

5.2 Early Transition (1991–1998)

The reforms of the first phase of the economic transformation period, which were aimed at destroying the large-scale socialist land-use system and creating small-scale farming units, were implemented in order to help farm households meet their subsistence requirements through the privatization of their land plots. Having been divided into a number of small farms, agricultural production units suffered an efficiency loss and hence the sector saw a gradual decrease in the production. Insufficient investment in the sector also contributed to its de-capitalization.

Nevertheless, agriculture remained an economically viable sector during this period. In 1993, as a result of a significant economic decline in industrial production, agriculture's share in Gross Domestic Product increased to 42%, but agricultural productivity and efficiency were still declining annually (Geostat, 2003). Inadequate supplies of equipment, chemicals, seeds, fertilizer and relevant technological resources further impeded the development of this sector of the economy.

The implementation of agricultural reforms, with land privatization as one of its major components, began in the first half of the 1990s, but setting up a system of efficient farming remained one of the major problems facing the industry. During this period the transition to private ownership based system occurred spontaneously, and the major obstacles to this process were the macroeconomic instability and hyperinflation caused by the military conflicts in Abkhazia and South Ossetia, the inadequacy of the state fiscal policy, corruption and lack of access to finance due to the underdeveloped banking system. All these factors, along with an energy

deficit and the destruction of the transportation system, created unfavorable conditions for the development of the agriculture. Though retaining control over the prices of some agricultural products, the state was still unable to design and implement an efficient privatization strategy.

In 1992 Georgia began its land reform program. Land distribution took place prior to elaborating the legal basis of land ownership. The land remained in *de jure* state ownership and private farmers still did not have their rights duly defined. In order to create a land market and ensure the rational use of the land owners needed to hold unrestricted and unlimited rights to the land distributed to them under the land reform.

It should be mentioned that the land distribution started during the period of the Civil War, when ethno- political conflicts were taking place all over the Georgia, which explains why the pace of land distribution differed according to regions. Managed by local village committees and collective farms, it failed to include the qualitative differentiation of lands**.**

Overall, the land reform led to a cumulative increase in the number of privately owned land parcels and the share of all agricultural commodities produced on privately owned farms. The private sector has progressively become the driving force of agricultural development. In 1994 the private sector already accounted for almost the entire Georgian production of livestock, potatoes, vegetables, fruit, citrus fruit and grapes, and more than half the production of crops. However dilapidated and split up farms did not have the capacity to replicate the production levels of large-scale Soviet farms, and agricultural production capacity progressively decreased. It eventually became impossible to promote agriculture development by focusing all effort on land redistribution.

As a result of the economic liberalization of 1994 consumer prices for all basic products except milk and bread were technically set by the market forces of supply and demand. In 1996 the state stopped regulating prices on these products. These reforms stimulated the recovery of the agricultural production. However, the low prices set by the processing industry (wineries, for example) and the decline of the canning industry and food production became significant factors impeding agricultural development.

5.3 Later Transition (1998–2004)

In the second half of the 1990s the share in GDP accounted by agricultural and food production gradually decreased, while other sectors experienced growth and economic recovery. In post-Soviet countries free markets generally increased competition, a challenge which agricultural production in Georgia failed to meet due to the low quality of its products (for example, the tea distributed and sold in the former Soviet Union) and logistical issues, namely inadequate storage, processing and transportation facilities (for example, for the variety of citrus fruits supplied through Abkhazia).

The rapid transition from socialist collective farming to commercial agriculture laid bare a number of the factors impeding agricultural development: the shortage of technical and technological resources, lack of infrastructure, a lack of skills and knowledge, an inadequate market infrastructure, a destroyed transportation system and worn out agricultural machinery and equipment. Reorganization of the supply of fertilizer and chemicals failed to have a positive impact on land cultivation efficiency due to the low quality or counterfeit products used.

Agricultural infrastructure, like the whole agricultural sector, suffered from the de-capitalization, which was only addressed by some insignificant reinvestments from the public and private sectors. At the beginning of the 2000s the state began the rehabilitation of the infrastructure

and the irrigation/melioration systems with the support of the World Bank. All these interventions proved insufficient, and the government continued to largely disregard the sector while de-capitalization damaged the farms.

The major obstacle to infrastructure development was the shortage of financial resources, though this was accompanied by a significant reduction in the supply of irrigation water, weak management and administration of water resources and the absence of a water market, which caused irrational water waste. The infrastructure system was still not privatized and market principles had not yet been introduced.

On the whole, the agricultural reforms failed to ensure the development of the agricultural infrastructure. After the collapse of the Soviet supply chain system peasant farmers were left vulnerable, with no access to seeds, fertilizer, chemicals and other means of production. The majority of households experienced problems accessing good quality seeds, fertilizer, chemicals and veterinary services. In these years a number of vineyards were damaged by the distribution of fake fertilizer.

One more problem facing the agriculture sector was the lack of agricultural machinery and equipment. Distributed through the highly centralized Soviet-style system of supply, the agricultural machinery in use had not been renewed since the 1990s and very little of it was operational. The sector experienced a disastrous drop in mechanization levels.

5.4 Post Rose Revolution (2004–2016)

The new government which came to power after the Rose Revolution targeted state property privatization and building a favorable business environment in the country. This privatization process included handing state-owned lands over to the private sector through the

sale or long-term renting. The privatization of forests and other natural resources would also take place on the basis of issuing long-term trade licenses.

Since 2003, despite the new transfers of land into private ownership, the condition of agriculture has become even more aggravated and real production has again diminished. The structure of the agriculture has also changed, and the production of specific products (hazelnuts, cattle, grain, milk and dairy products) has acquired priority significance. Nevertheless, Georgia was still dependent on imports of agricultural products, as a result of which the index of food self-sufficiency in the country remains very low.

A steady decline in the share of foreign trade accounted by agricultural products has manifested the low competitiveness of the agriculture sector. Despite the significance role of agriculture commodity trade in the development of the economy, no market diversification has occurred and little attention has been paid to it when developing the economic policy.

The fragmentation of land into small plots has made effective use of equipment and machinery difficult, especially in the production of grain and other annual crops. The weak marketing channels (farmers do not have permanent providers and clients) and the non-existence of a storage infrastructure has increased the production costs. Due to the scarcity of the investment funds, farmers buy cheap, low-quality seeds and other inputs, which naturally affect the quality and quantity of their final products. Underdeveloped infrastructure increases production risks, while unstable logistics, lack of infrastructure and insufficient support for trade create sales risks. High risks, in turn, produce a worsening of loan terms. Weak investments and high interest rates on bank loans have significantly diminished the capacity of farmers to use technology and expand production capacity.

In 2011 the Government of Georgia began to recognize agriculture as one of the strategic directions of the country. In March 2012 the Government presented the Strategy of Development of Georgian Agriculture (2012-2022), a document which envisaged the priority development of agriculture over the course of ten years and the formation of an efficient, competitive and stable agro-foodstuffs sector, which would rely upon a unified complex of enterprise value chain development.

This strategy did not define the milestones to be achieved, nor did it include an analysis of the available resources, and the proposed methods of implementation of the set objectives were mentioned only superficially. It was based neither upon current trends nor a detailed analysis of the various branches of agriculture, nor an assessment of human, material and financial resources and risks. The strategy failed to present a detailed analysis of the needs of farms of various sizes in different sectors and regions, etc.

One positive aspect was that, for the purpose of its implementation, the authorities envisaged the mobilization of additional funds from the state budget and the formation of an "Agriculture Development Foundation" which would be responsible for attracting private investments and project implementation.

In conclusion it should be noted that in the 1990s the Georgian economy was damaged by the collapse of the degraded Soviet economic system. Agrarian policy implemented during the subsequent period proved unsuccessful in both economic and social respects, since it did not consider the socio-economic interests of the half of the Georgian population whose livelihoods directly related to the agriculture sector. Due to the collapse of this sector the potential of agriculture-related industries in the regions, including the processing and food industries,

remained untapped. As a result of the underdevelopment of both agrarian and industrial production, trade expanded but more and more products were imported.

The fragmentation of large farms into small land plots reduced their effectiveness, and consequently the majority of the household production became oriented towards the self-sufficiency. Small farms could have been quite efficient had there been an operational infrastructure. The higher effectiveness of small farms compared to large farms is predetermined by the operational status of their infrastructure. Finally, in conditions of global competition, increasing the competitiveness of this branch and the effectiveness of numerous small household economies is possible through the implementation of agricultural processing, food industry and tourism-oriented initiatives alongside the transportation logistics and infrastructure development.

6. Foreign Direct Investment

Foreign direct investment (FDI) is essential to a country's economic development. In particular, the role of FDI is very important for developing countries like Georgia where the rate of savings by local citizens is very low and therefore the FDI represents an essential component of economic growth. Moreover, FDI is a benchmark for measuring the presence of foreign-owned business in a country, and is an important indicator of a countries ability to attract foreign investors, to attract new technologies, capital, workforce skills, and job opportunities.

The main purpose of the third wave economic and institutional reforms which started in 2004 was to replace obsolete Soviet style regulations with more liberal and business friendly legislation. Notable progress has been achieved in reforming police, education and tax collection systems and the corruption which was previously deeply rooted in the public sector, was almost fully eradicated. As a result the international businesses slowly started investing money in Georgia and by 2007 the total amount of FDI in Georgia was 75 percent higher compared to 2003 (Geostat, 2009).

Compared to 2004 the absolute value of FDI in the agriculture sector in Georgia has increased by 75 percent in 2016 and amounted USD 120 mln (Geostat, 2017). However, the percent share of FDI in the agriculture sector has not exceeded 2 percent of total FDI (Geostat, 2017). Land ownership issues, infrastructural and social capital problems made the agricultural sector less attractive for foreign investors. However, despite the above mentioned challenges the GoG managed to attract several international agribusiness investors to Georgia by providing them specials tax incentives and infrastructure development support. The names of international

investors in Georgian agriculture and food processing sector include: Perdue, USA (poultry); Hipp, Germany (fruit and juices); Wimm Bill Dann, Russia (dairy); Ferrero, Italy (nuts).

As a response to the lack of investments in the agricultural sector, the GoG established a sovereign fund with USD 1 billion of capital. The primary goal of the fund is to promote private investments in the economy and address the acute shortage of the long-term funding available in the agriculture sector. The fund is focusing to invest in the projects with the potential for the import substitution and export development. Priority sectors of the fund include post-harvest infrastructure development, off-season production development, grape and wine value chain, primary production of walnuts and nuts, livestock sector and agro tourism development. The fund intends to invest from 25% to 75% out of the total equity investment of the project but the funding is available only for the large scale projects with the minimum investment of USD 5 million (MoA, 2015). In 2014, the fund launched the investment project in diary production. The fund in cooperation with Dutch company "The Riesian" intends to build a dairy in western Georgia. Project envisages production and processing of 100 tons of milk daily which will be enough to substitute 25% of the dairy production imports (MoA, 2015).

7. Data Analysis

7.1 Introduction

This chapter of the paper describes the main economic trends in Georgia in the period of 2006-2016. Particularly, the chapter analyzes what impact the macroeconomic and agricultural policies implemented by the Government of Georgia made on the poverty reduction and rural development. To do this nine main indicators have been analyzed and studied what are the main economic development trends in Georgia and if these trends have been inclusive so that most poor people have received benefits from economic development.

This chapter of the paper includes the presentation of the quantitative statistical data for the selected nine indicators. In addition, for each of the indicator it provides the detailed review of the data and as well the economic analysis of the indicators.

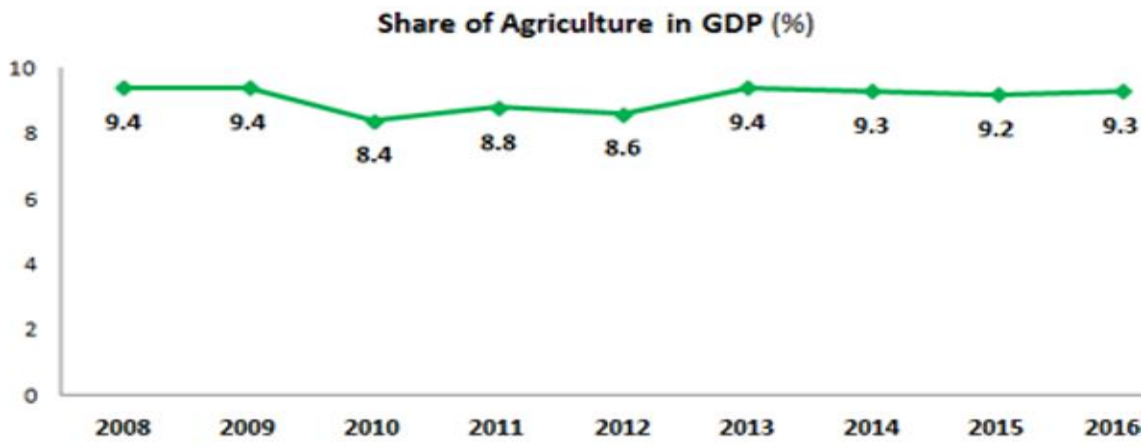
7.2 Review of the Indicators

Indicator N1: Share of Agriculture in Gross Domestice Product (GDP)

Agriculture remains a critically important sector in Georgia. In the last eight years the share of agriculture in total GDP has not changed and stayed close to 9 percent (Geostat,20012). However, from 2010-2012 the share decreased by one percent which was mainly caused by two reasons. Firstly, the Russian embargo on the Georgian agricultural products considerably decreased the export of agriculture products. The farmers, agricultural commodity processors and retails did not manage to find alternative markets in such a short period. As a result, the prices in local market decreased because of increased supply. Secondly, in 2010 in western Georgia, which is the main producer of staple crops, around 30% of the harvest was damaged because of the unprecedentedly low level of rainfall (MoA, 2012). From 2013 as a result of the export market diversification and specific governmental subsidy policy targeted to farmers in the

West Georgia the share of agriculture product in GDP went back to 9.4 % and in last four years has stayed at this level (Geostat,2014).

Figure 1. Share of Agriculture in Gross Domestice Product (GDP)



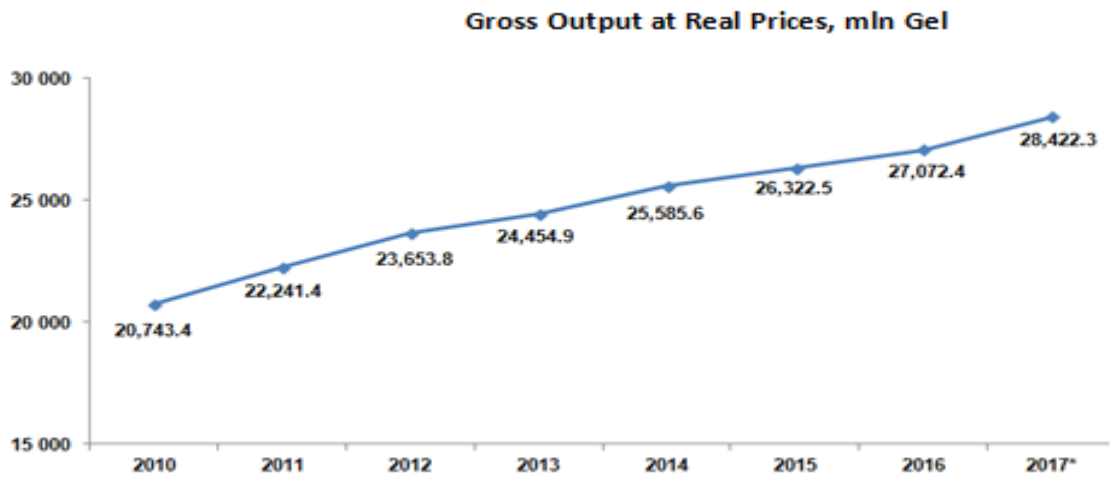
Source: National Statistics Office of Gergia (GeoStat)

Indicator N2: Agriculture Gross Otuput at Current Prices

In Georgia the majority of the rural population are employed in the agriculture sector. The development of agriculture sector not only is important from a purely economic standpoint but also has a huge impact on decreasing the food insecurity in rural areas. The agriculture sector is the main source of income for rural population as well being the main way to have access to food. The majority of farmers in Georgia are smallholders farmers with 0.5-1.5 hectare of agriculture land. According to the results of the agricultural census conducted by Georgia statistics office (Geostat,2014) around of 65 % of the agriculture harvest is used for family and livestock consumption by smallholder farmers. For this reason the intensification of primary production in the agricultural sector is very important to address the problem of high poverty level in rural areas. In last 7 years gross agricultural output at current prices has been increasing at the same rate.

The reason for this increase is caused due to two main factors. Firstly, in 2009 the government of Georgia started implementation of heavy agriculture subsidy policy which included distribution of financial incentives and as well the reduction of tax on agricultural land by 20 percent (MoA, 2016). Secondly, the increased inflow of foreign direct investments in the agriculture sector facilitated the private sector development.

Figure 2. Agriculture Gross Otuput at Current Prices



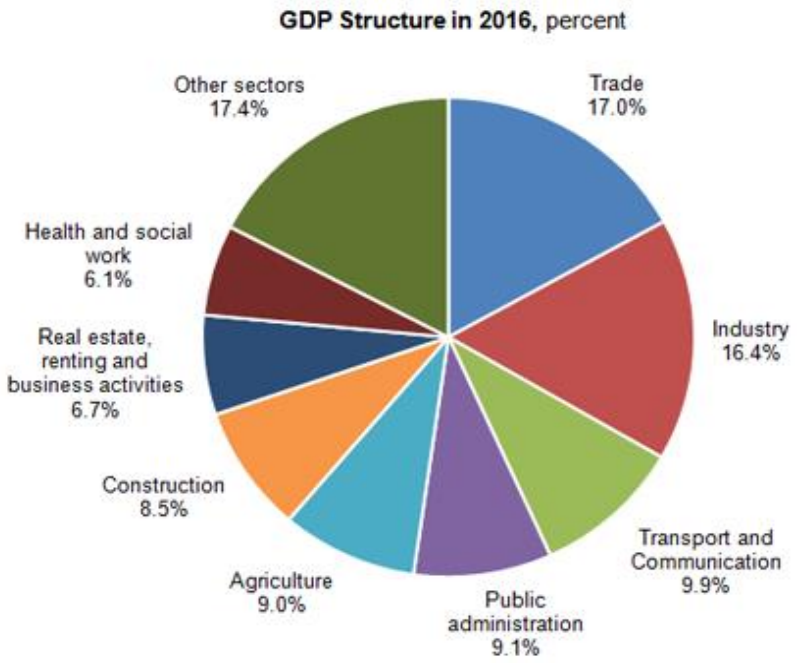
Source: National Statistics Office of Gergia (GeoStat)

Indicator N3: Structure of Gross Domestic Product (GDP) in 2016

The largest shares of GDP by activity are held by industry (16.4 %) and trade services (17 %), followed by agriculture, hunting and forestry, fishing (9.9 %) and transport and communication services (9.8 %). The economy of Georgia is quite diversified and consists of five main economic sectors. The industry sector and financial services are the main contribution in GDP composition. The agriculture sector has the fourth position in GDP composition with 9.0 %. However, in rural areas the agriculture sector has the first place in GDP composition as it is

the main source of employment and even in most rural areas the only sector where people can do economic activities.

Figure 3. Structure of Gross Domestic Product (GDP) in 2016



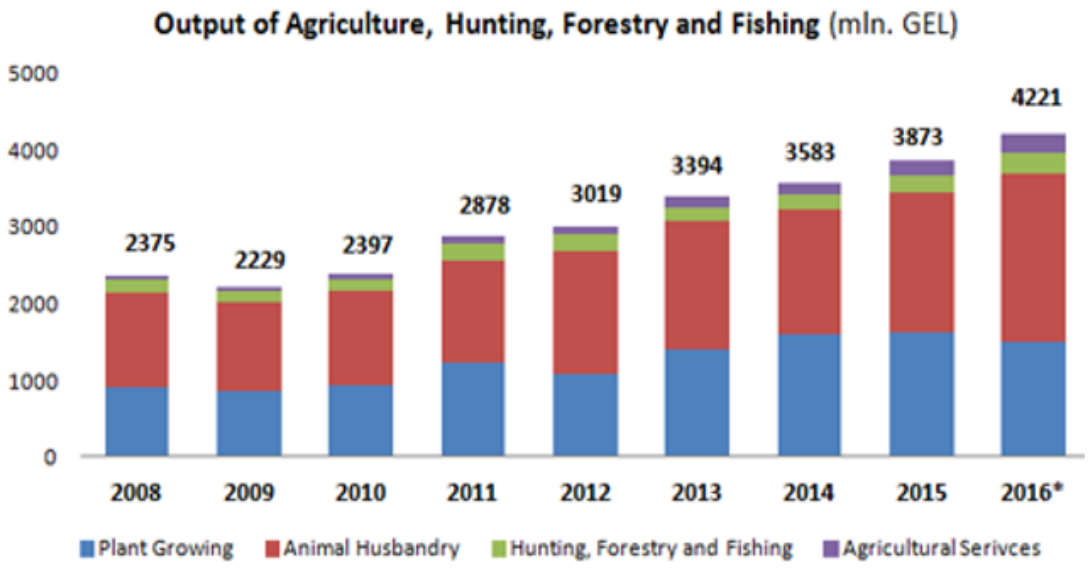
Source: National Statistics Office of Gergia (GeoStat)

Indicator N4: Components of the Agriculture Sector

The agriculture sector in Georgia consists of three main components. The first component and the biggest is the primary production of agricultural commodities and livestock. Although primary production in Georgia is very diversified the biggest portion comes from staple crop production, the hazelnut value chain and the livestock sector. The second component is the processing of agricultural products. Wine production is the leader in the processing component. However, in recent years the processing of natural juices has also been developing. The third

component and the lowest is the provision of agricultural services related to the extension and knowledge transfer.

Figure 4. Components of the Agricultural Sector



Source: National Statistics Office of Gergia (GeoStat)

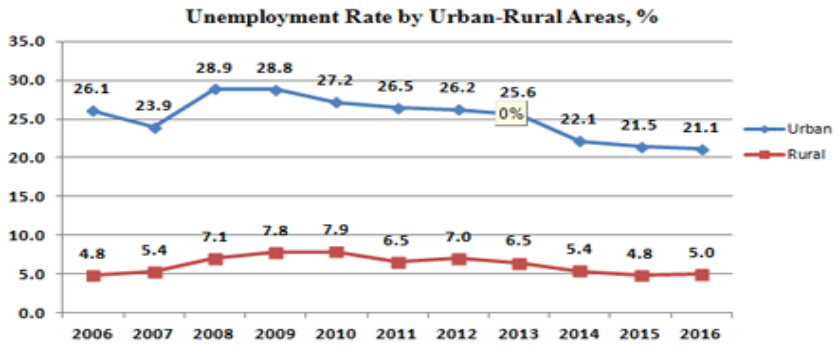
Indicator N5: Unemployment Rate by Urban-Rural Areas

Compared to urban areas in 2016 the unemployment in rural areas was 16% less. It should be highlighted that the way the national statistics office of Georgia (Geostat) calculates the unemployment in rural areas is misleading. According to the Geostat everyone who owns agricultural land in rural areas is considered to be employed in the agriculture sector. For example, if a person has registered land but has not cultivated the land during the last ten years he/she is still considered as employed in the agriculture sector. Another example is when a

person lives in and works in an urban area and owns the unused agricultural land he/she is still considered as employed in the agriculture sector.

The unemployment rate in urban areas has been decreasing over the past several years in Georgia. During the last ten years the unemployment rate in urban areas has decreased by 5%(Geostat,2014). In 2008 the unemployment rate increased and reached the historical maximum 28.8% (Geostat, 2012). This increase had two main reasons. The first was that due to the global financial crisis foreign direct investments in Georgia decreased and as result the economic activity in the business sector decreased. The second reason was the Georgian-Russian war in August 2008. After the war Russia put an embargo on Georgian exports and as result the Georgian businesses which were Russian export oriented considerably decreased their activities. However, after 2012 the unemployment rate in urban areas started to decline and reached the historical minimum of 21% in 2016 year (Geostat, 2017).

Figure 5. Unemployament Rate By Urban-Rural Areas

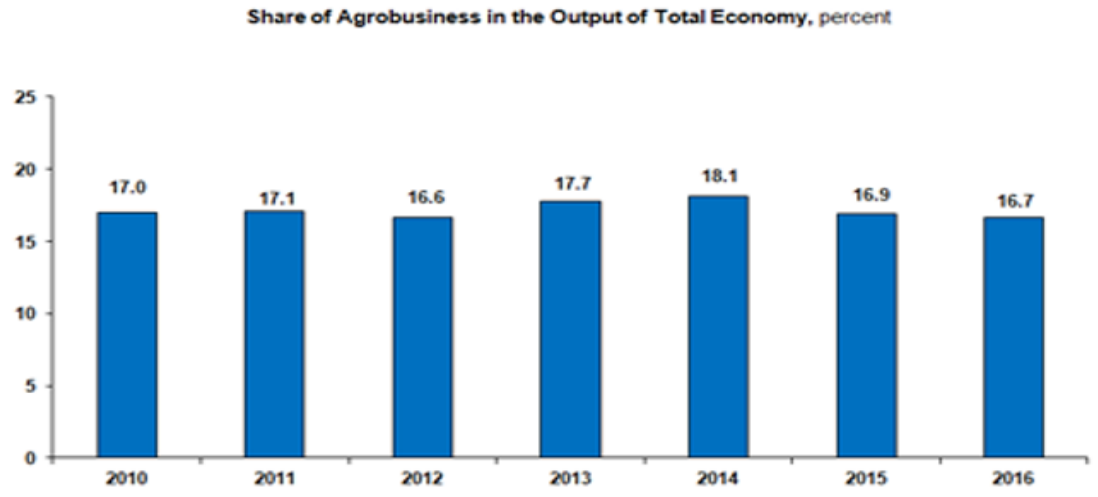


Source: National Statistics Office of Gergia (GeoStat)

Indicator N6: Share of Agribusiness in the Output of the Total Economy

The agribusiness sector in Georgia is a very important factor in the development of the Georgian economy. Particularly, the agribusiness development has a huge impact on the poverty reduction in rural areas. The majority of people who live in rural areas are employed in agribusiness. Although the biggest portion of employment in the agribusiness comes in primary production, in recent years the processing component has also become more important. The contribution of the agribusiness in total economy during the last 8 years has been constantly on the same level of average 17% (Geostat, 2017). Particularly, the agribusiness is well developed in the West Georgia. Unlike other regions in the West Georgia both primary production and processing components are equally developed. This can be explained by two main reasons. The first reason is that the tourism sector is very developed in the west and as a result the demand for the local agriculture commodities is very high. The second reason is that due to the subtropical climate the primary production of hazelnut as well as the processing of them is very developed in the West.

Figure 6. Share of Agribusiness in the Output of the Total Economy



Source: National Statistics Office of Gergia (GeoStat)

Indicator N7: Production of Annual Crops

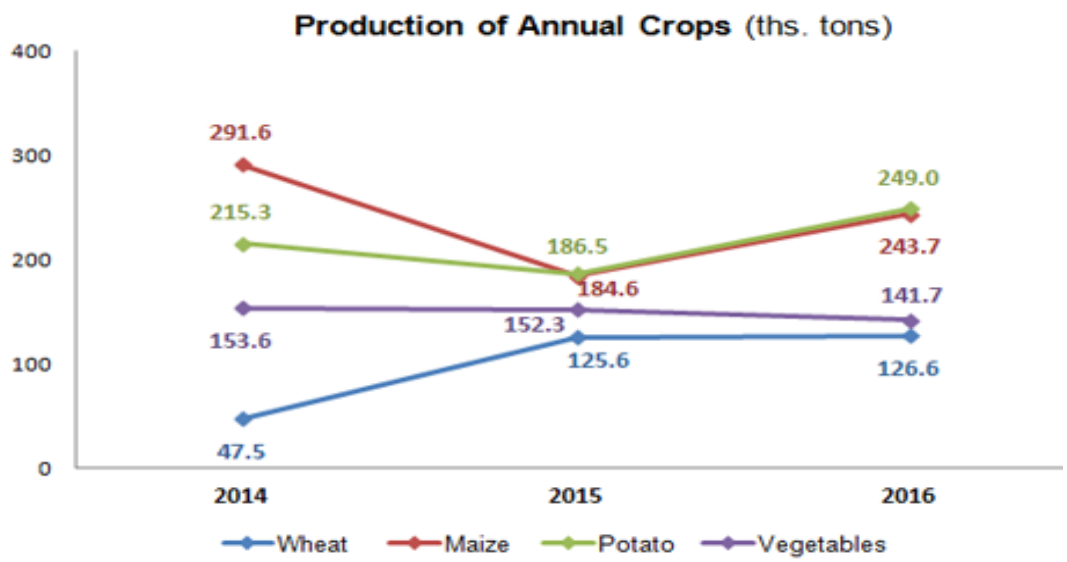
The production of annual crops is mostly developed in the West and East regions of the country. Due to the climate conditions and special soil conditions of the agricultural land, maize and wheat production dominates in the West Georgia. Both the wheat and the maize are very important staple foods in rural areas and the development of these value chains is very important for improving the food insecurity conditions in rural areas. Particularly important is the maize production because apart from using maize as a consumer product farmers also use it to feed the livestock.

In 2014 the government of Georgia started a new project related to the support of wheat value chain development in the West Georgia. Farmers received high yield hybrid seeds with a 70 % price reduction. On one hand the positive effect of the program was that in 2015 the production of wheat doubled. However, on other hand it had very negative effect on the maize production as all farmers who used to produce maize due to cheap seed switched to wheat production. As a result the production of maize decreased. Besides, due to lack of storage infrastructure around 25% of the harvest was damaged. To address this challenge the government in 2015 started a new program targeted to maize production. In addition, the government started development of wheat and maize storage facilities and by the end of year 2015 the GoG built six regional storage centers.

Potato and vegetable production is mostly developed in the East Georgia. In 2017 year the government of Georgia started new program targeted to the vegetable greenhouse business development in East Georgia. The main purpose of the program is to support the off season

production of the vegetables in the country. Although there is no official statistical data available yet about the production vegetables in 2018, the Ministry of Agriculture forecasted that annual production of vegetables in 2018 will increase by 75% and imports will go down by 35% during the off season period.

Figure 7. Production of Annual Crops



Source:

National Statistics Office of Gergia (GeoStat)

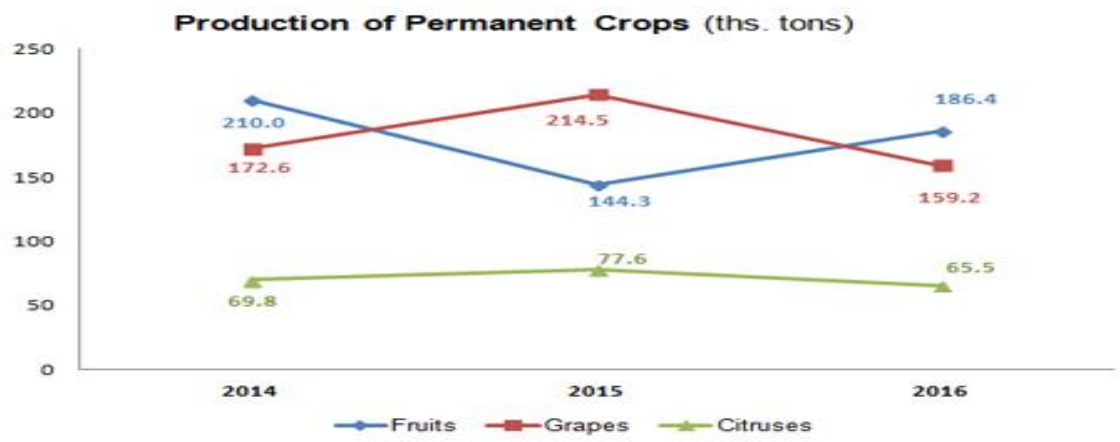
Indicator N8: Production of Permanent Crops

The production of permanent crops is mostly dominated by grapes in Georgia. Although grapes are produced in all regions of the country, grape production is particularly developed in the East Georgia. The main reason for the development of grape production is high demand for

Georgian wine particularly in the post-Soviet Union countries. Historically, Georgia was always famous for the high quality wine production. For example, during the Soviet era Georgia wine was positioned as a top quality wine and Georgia was the major supplier of high class wine in the market. After the collapse of the Soviet Union the demand for Georgian wine continued to increase in the post-Soviet union countries. Besides, Georgian wine producers started the export of wine to Europe, China and the USA. As a result the demand for high quality grape increased in Georgia and lots of farmers in the East Georgia started development of new grape orchards. In 2014 the Government of Georgia introduced new tax incentive for the grape producers and introduced a zero profit tax on the commercial grape production.

Due to the subtropical climate conditions citrus production is well developed in the West Georgia. Although the majority of citrus orchards are old and as a result the productivity of farmers is low, citrus production is still one of the main economic activities in the rural areas of West Georgia. Apart from low productivity one of the biggest problem in the citrus value chain in Georgia is the lack of storage facilities. Unlike, grape value chain the processing sector in citrus value chain is not developed and as a result country cannot receive additional economic benefits from the value addition. The majority of citrus is exported in Russia and Ukraine.

Figure 8. Production of Permanent Crops



Source: National Statistics Office of Gergia (GeoStat)

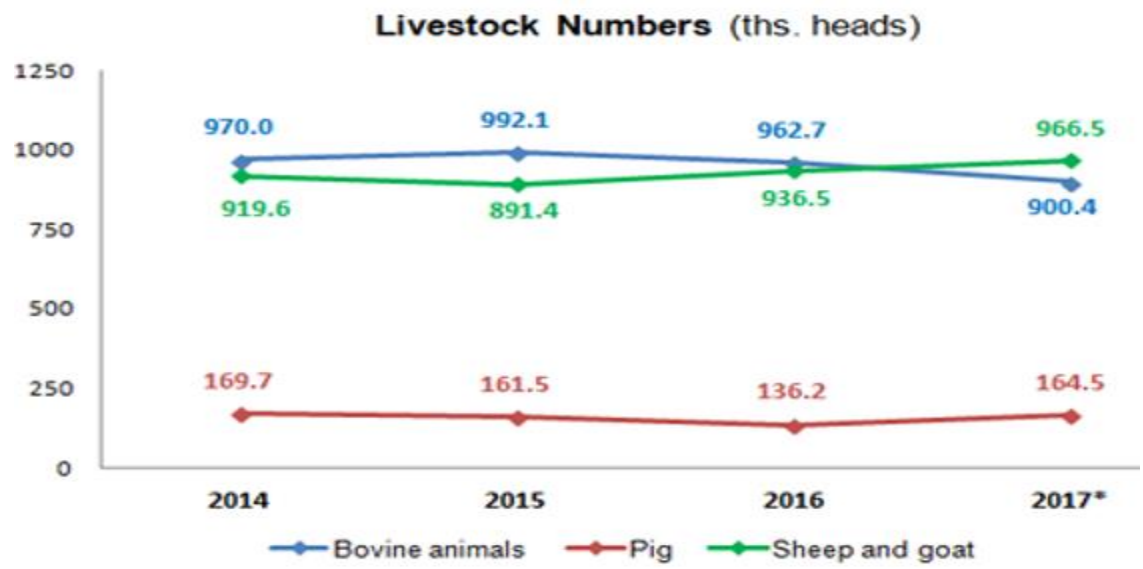
Indicator N9: Livestock Numbers

The livestock value chain is well developed both in the West and East regions of Georgia. The sheep and goat value chain is more important in the mountainous part of the East Georgia while bovines are more dominant in the West Georgia. The pig value chain is equally developed in all regions of Georgia with the only exception being the regions where the muslim population lives.

The majority of farmers engaged in the livestock sector are smallholder farmers. Productivity in the livestock farming is very low. For example, compared to Ukraine the annual milk production per cow in Georgia is 65% lower and in comparison to European countries the productivity is 85% lower (MoA, 2016). In addition, the price of imported frozen meat from Brazil and Argentina is 35% lower compared to locally produced fresh meat(Geostat, 2015). However, the quality of the fresh meat is better than frozen meat but the demand for the frozen meat is high in the restaurants and cafes which are consumers of 45% of meat in the country (Moa,2016).

Historically, the livestock sector has never been a major agricultural activity in Georgia. Traditionally, families in rural areas had only enough livestock to satisfy family consumption. Later, when Georgia became part of the Soviet Union the meat and dairy products were mostly imported from Russia and Ukraine where large scale livestock farming was more developed. Although in recent years the government of Georgia tried to promote the development of commercial livestock farming because of the high competition from the imported meat from Ukraine, Brazil and Argentina, the private sector did not express much interest in engaging in commercial livestock farming.

Figure 9. Livestock Numbers



Source: National Statistics Office of Gergia (GeoStat)

8. Findings and Recommendations

This chapter of the paper describes the main findings of the paper and recommendations for the policy implementation related to the pro-poor and poverty reduction oriented agriculture sector development in Georgia. Given the lack of progress in the poverty alleviation, the question is therefore a negative one: Why has policy failed to significantly affect poverty rates in rural Georgia?

The chapter will first present four main findings and then based on these findings will present the list of the recommendations that can be used to address the main challenges revealed in the findings.

8.1 Findings

Finding N1: The reforms in the agriculture sector in Georgia are mostly targeted to the regions which are geographically close to the capital and other big urban areas.

The agriculture support programs implemented in Georgia are in most cases targeted to the rural areas which are located close to the capital and large cities of the country. As a result the reduction in poverty in rural areas in the regions located close to the capital is more visible.

For example, in 2012 the government of Georgia implemented the agribusiness small and medium enterprise (SME) development program. The purpose of the program was to support the establishment of start-up SMEs in the rural areas in the five selected agriculture value chains. To do this the Government of Georgia (GoG) in cooperation with the commercial banks issued so called cheap loans to the selected beneficiaries of the program. The interest rate on loans were subsidized by the government and start-up SMEs paid only 2 percent annual interest rate. However, instead of implementing the program in all Georgia, most of the beneficiaries (75%) of the program were from the two regions (MoA, 2016). Another example of the unequal distribution of state budget resources is the implementation of the agricultural infrastructure projects. In the regions which mostly produce the staple crops and are located close to the capital and large cities agriculture infrastructure such as irrigation, drainage, internal village roads and as well the basic public services are much more developed.

At least partly as a result of this, rural to urban migration from the mountain regions is very high. According to the latest population census the population of the mountains regions decreased by 35% in last ten years (Geostat, 2015). Furthermore, the migration of youth population is even higher and reached 55% in the last ten years (Geostat, 2016). However, the development of agriculture in the mountain regions will not completely solve the problem of internal migration though it will almost certainly reduce the migration of the people from the rural areas. For comparison, in the regions where the government of Georgia (GoG) have implemented the agriculture support programs the decrease in population is 25% less than in the mountain regions (MoA,2014).

Finding N2: The reforms in the agriculture sector in Georgia are mostly public sector oriented and as a result the presence of the private sector in the agriculture sector is very limited apart from the large number of the smallholder farmers.

Private sector engagement in the commercial agriculture sector is very low in Georgia. This problem is particularly obvious in the agriculture processing sector and also in the provision of the agriculture services such as mechanization and extension.

The Government of Georgia (GoG) in recent years made very substantial investments in the mechanization service development. However, instead of facilitating the private sector engagement the GoG in 2011 established twelve publicly owned mechanization service centers in the regions. The centers were financed by the state budget and the management was done by the MoA. The centers operated for three years but because of the bad management and the lack of motivation from the staff to work effectively and efficiently the centers were closed.

The limited engagement of the private sector is also a big problem in the agricultural processing. For example, in 2009 the GoG established a publicly owned fruit processing company. As a result the small processing companies engaged in the fruit processing due to the potential non-fair competition from the GoG either closed or downsized the operations. Furthermore, public processing companies have a very negative influence on foreign direct investment inflows in the sector. In general, foreign investors seem to be reluctant to invest money in the sectors which are very highly regulated or where they see the potential for competition with the Government.

Finding N3: Access to finance is the least developed component in the agriculture sector with very few policy interventions on the part of the Government.

One of the biggest problems in the agriculture sector in Georgia is that the smallholder farmers do not have access to the finance they need to increase the scale of operations, to buy more productive agricultural inputs or to make the capital investments.

The commercial banks refuse to finance the smallholder farmers due to high risks and high operational costs. Furthermore, in Georgia 45% percent of the agricultural land is not officially registered and therefore farmers cannot use their agricultural land as collateral for loans (Moa, 2015). However, even those farmers who have officially registered agricultural land complain that commercial banks estimate the value of agricultural land at only 80% of the true market price (MoA, 2016).

The only financial institutions that work with smallholder in Georgia are microfinance organizations. However, the annual interest rate is very high in the microfinance institutions. For example according to the National Bank of Georgia (NBG) report the average annual interest rate on the agriculture loans in the microfinance organizations is 45% while at the same time commercial banks issue agriculture loans at 19% annual interest rate (National Bank of Georgia, 2016). It is important to notice that during the last ten year the inflation rate in Georgia was in the range of 3-5% (National Bank of Georgia, 2015)

Finding N4: The absence of the nationwide agriculture extension and knowledge transfer system is one the main reasons for low productivity in the agriculture sector.

One of the main reasons why the agricultural productivity level is low in Georgia is that farmers and particularly the smallholder farmers are using outdated agriculture practices. The majority of the farmers in Georgia do not have either university level education nor vocational education in agronomy or in veterinary. Moreover, after the collapse of the Soviet Union the farmer training centers which operated in the villages were closed.

Nowadays, the only way farmers can get the information about modern agricultural practices is through the private input supply companies. As part of the marketing campaign input

suppliers organize workshops for farmers to promote specific inputs. Hoverer, these workshops are not systemic and do not cover all the regions of the country.

There is no official governmental institution either at the central nor at the municipality level which is responsible for the provision of the policies related to the development of nationwide agricultural extension and knowledge transfer systems development. Although the Georgian Agrarian University (GAU) has the division of agriculture research and development, their work is mostly related to basic scientific topics and they put less emphasis on the agricultural extension.

8.2 Recommendations

Recommendation N1: Development of an agriculture support program for the mountains regions.

In the mountain regions the agriculture sector is the main source of economic activities. Unlike other regions which are close to the capital or to other large cities, local people cannot travel daily to the urban areas for the employment and as a result they start migrating to urban places.

The development of an agriculture support program tailored to the needs of smallholder farmers needs in the mountains region could address the high level of poverty and as result reduce the migration from the mountain regions. The most promising sectors to develop in the mountain regions are agro-tourism and also the livestock value chain. In terms of the policy intervention the introduction of a special tax incentive package for the private sector which will invest in the mountain regions would be the most effective approach. Besides, the development of infrastructure and basic public services should be the important component of the policy interventions. Particularly, important are the development of internal roads in the villages, access

to water and electricity and the development of basic public services such as healthcare services. Lastly, the overall approach in the policy implementation should be oriented on achieving the desired results in the long run and therefore it is critical that government ensure that these policy interventions are continuing in the long-run.

Recommendation N2: Development of smallholder farmers needs oriented agribusiness value chain financing program.

Agricultural value chain finance offers an opportunity to reduce cost and risk in financing, and reach out to smallholder farmers. For the financial institutions, the value chain finance creates the incentive to look beyond the direct recipient of the finance to better understand the competitiveness and risks in the sector as a whole and to craft products that best fit the needs of the businesses in the chain. Besides, the value chain finance will help the chains to become more inclusive, by making resources available for the smallholders farmers to integrate into higher value markets. Lastly, agribusiness value chain finance offers an opportunity to expand the financing opportunities for agriculture, improve efficiency and repayments in financing, and consolidate value chain linkages among other participants in the chain.

Recommendation N3: Development of agribusiness public private partnership (PPP) models to facilitate private sector engagement in the agriculture sector.

The development of the PPP mechanism would address the issue of affordability by pooling funds from the various sources to overcome the limited funding available in the agriculture sector. The mechanisms for achieving this goal can be structured in different ways to suit the specific purpose of the PPP and may include co-equity investments, in-kind contributions, matching grants and concessions for the private sector.

Recommendation N4: Development of public agriculture extension system targeted to the needs of smallholder farmers.

The total majority of the population in rural areas in Georgia are smallholder farmers. For this reason, it is very important to develop functional agricultural extension system that will increase the access to modern agriculture knowledge and skills. Although there are several private input supplying companies which offer agricultural extension services to farmers the outreach of these companies are very limited and they mostly work with large scale farmers. It is very important that the Ministry of Agriculture will lead the process of establishment the public agriculture extension system. The critical point in the design of the public agriculture extension system is that the offices of the extensions centers should be located in the villages so that farmers have easy access to the centers.

9. Conclusion

The development of a pro-poor and inclusive growth oriented agriculture sector is very important for the poverty reduction in Georgia. Particularly, the role of agriculture sector development in poverty reduction is very important in the rural areas. The majority of the population who live in the rural areas are engaged in the agriculture. Furthermore, in most cases the agriculture sector represents the only source of income for the rural population. The development of agriculture sector is also important from the food security standpoint as the majority of food produced by the households in the rural areas are used for the family consumption.

After the collapse of the Soviet Union the economy of Georgia has experienced difficult times. The transition period from the planned economy to the market economy principles has brought the need for the structural transformation in the economy. The agriculture sector in the Soviet Union was production oriented and farmers did not have any experience related to the main principles of the market economy such as marketing, competition, management and finance. Hoverer, due to the heavy financial support from the international organizations in the last twenty years the Government of Georgia (GoG) managed to implement the set of important agriculture policies targeted to the pro-poor oriented agriculture development. As a result the poverty level in the country and particularly in the rural areas has decreased considerably compared to what it was in the initial stage after the collapse of the Soviet Union.

Despite the considerable progress achieved in the agriculture sector the level of the development is still very low if compared to the economic and productivity indicators of the developed countries. The poverty level is still high in the mountains regions of the country and as a result the level of migration from the rural to urban area is still high.

The important component of the agriculture sector that need more focus and specific policy interventions are the smallholder farmers oriented access to finance system development and as well the development of nationwide agricultural extension and agricultural knowledge transfer systems. Besides, it is very important that Government of Georgia (GoG) develop specific set of the agricultural policy interventions for the mountains regions. Lastly, the facilitation of the private sector involvement in the agriculture sector is very important for the sustainability of the sector.

10. Limitations

This chapter describes the main limitations in the research design. The limitations are classified in three main categories and for each of the limitations a detailed explanation is provided.

Firstly, the availably of relevant data to conduct in depth economic analysis is limited. Geostat currently does not have statistics about performance of specific agricultural value chains at the municipality level. In case of availability of this data a more holistic understanding of the effect of agriculture sector development on the poverty reduction in Georgia could have been possible.

Furthermore, the methodology the national statistics office of Georgia (Geostat) uses in calculating the rural unemployment rate is biased and does not allow relevant analysis of how agriculture sector development has influenced the unemployment rate in rural areas. Unfortunately, there is no other official source which can be used to get the information about unemployment rate.

Lastly, the paper does not include a comprehensive survey component and is fully built on the review of available academic and professional literature and reports written by international organizations and by the national office of the statics of Georgia (Geostat).

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Annex

Figure 1. Share of Agriculture in Gross Domestice Product (GDP)

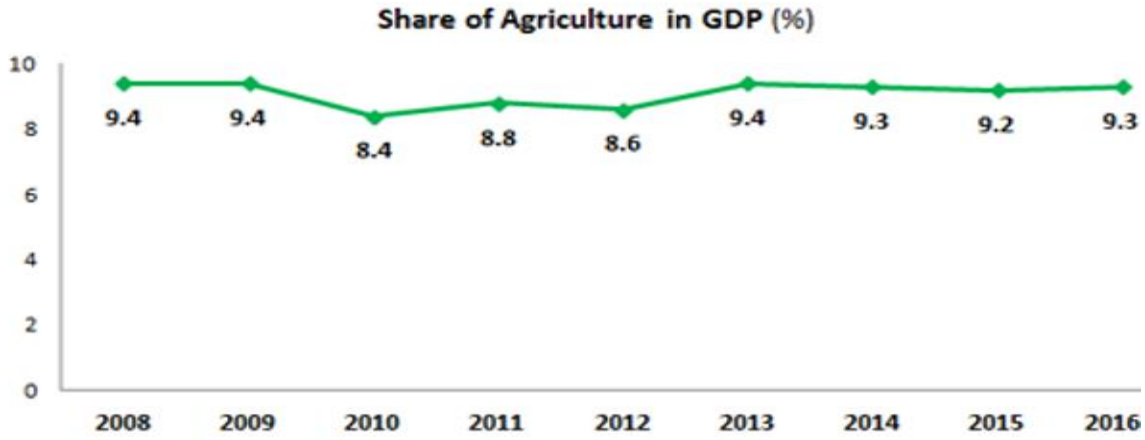


Figure 2. Agriculture Gross Otuput at Curren Prices

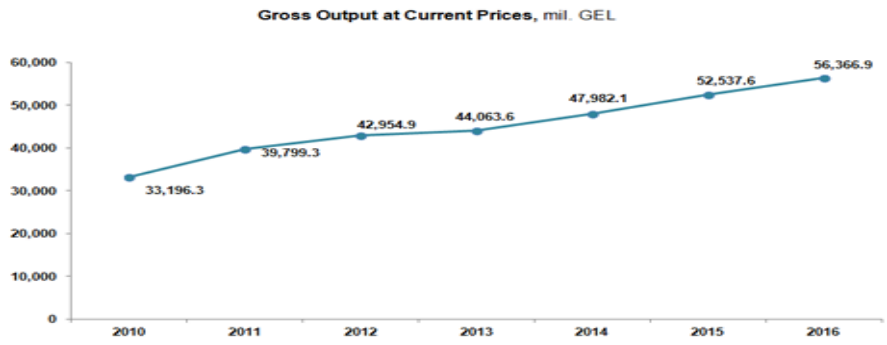


Figure 3. Gross Domestic Product (GDP) strucutre in 2016

Figure 4. Components of Agriculture sector

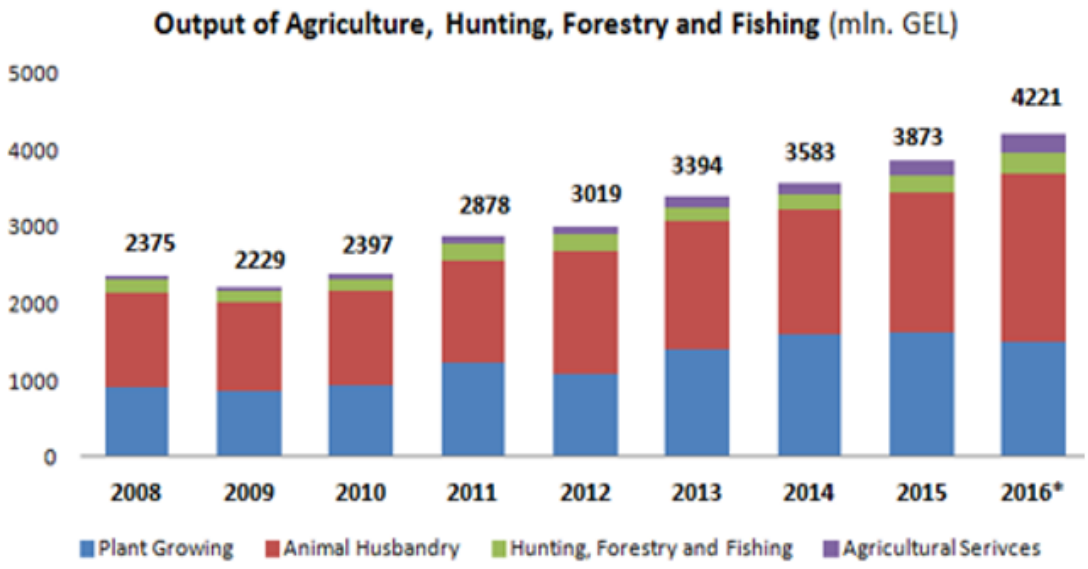


Figure 5. Unemployament Rate By Urban-Rural Areas

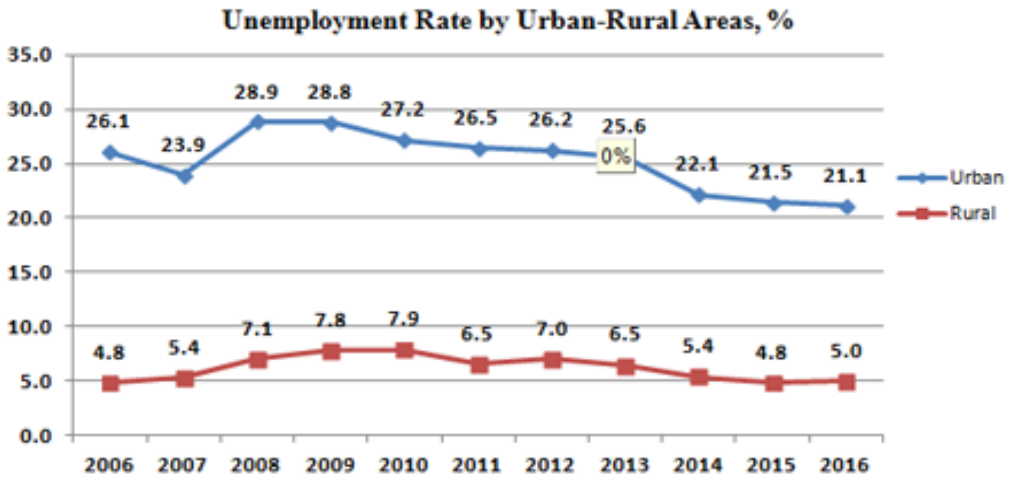


Figure 6. Share of Agribusiness in the Total Output

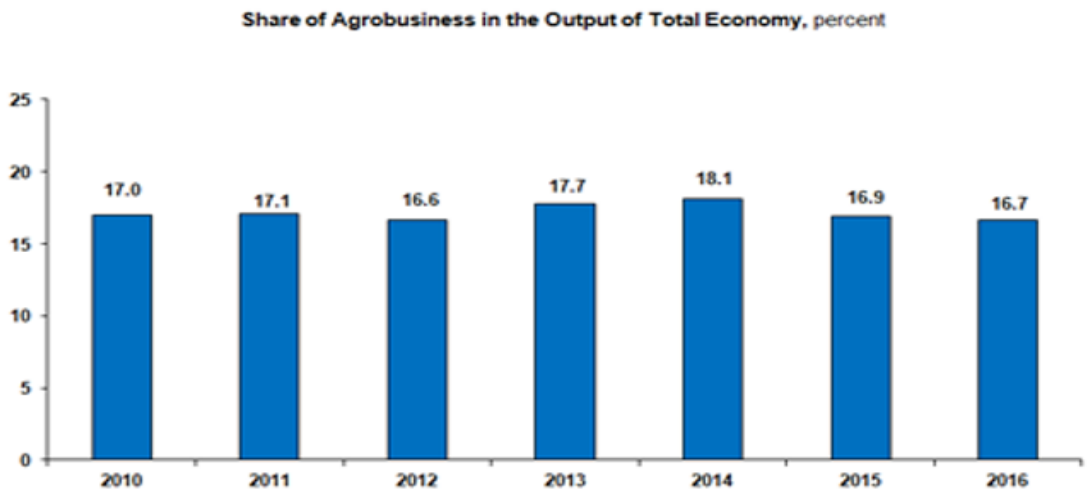


Figure 7. Production of annual crops

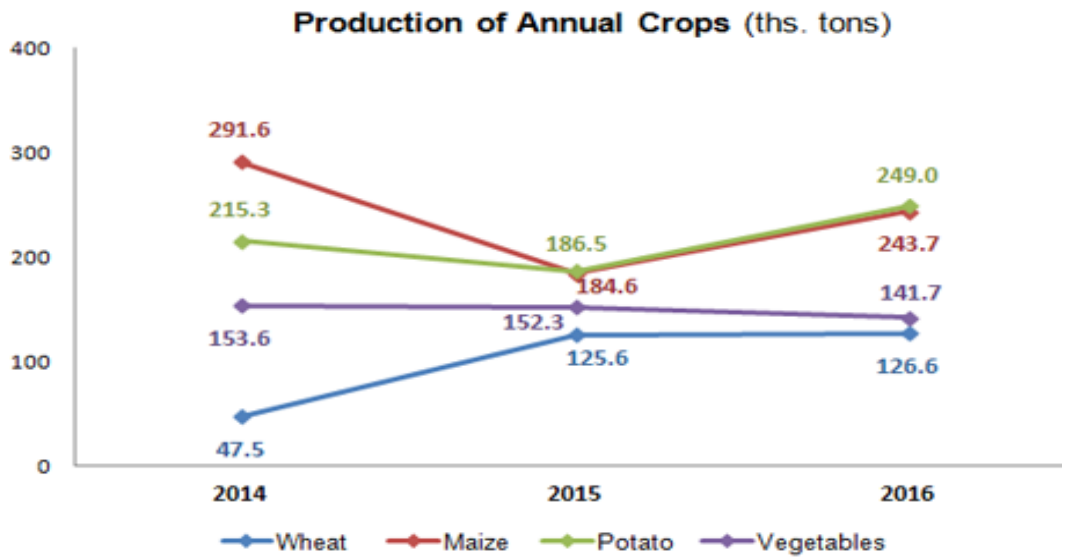


Figure 8. Production of permanent crops

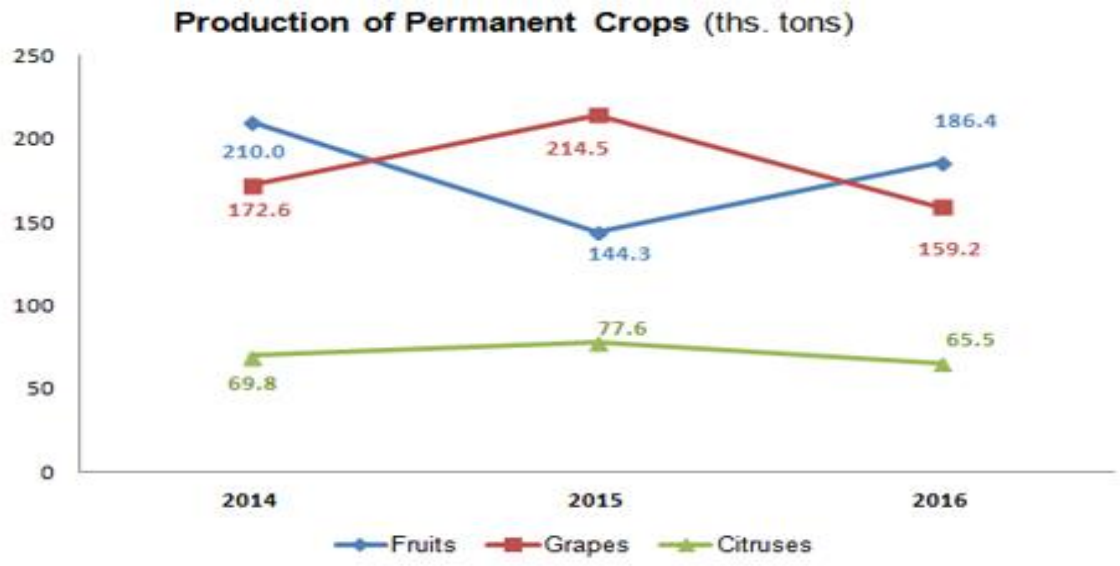
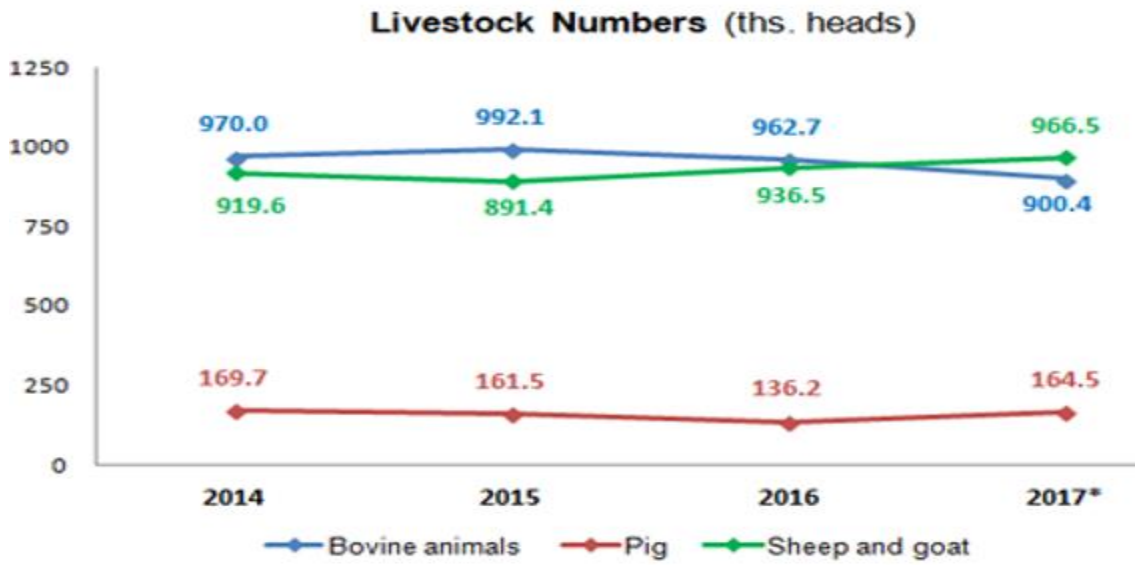


Figure 9. Livestock Numbers



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Annual crops production in holdings of all categories
(ths. tons)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Wheat, total	69.7	74.9	80.3	53.9	48.4	96.8	80.7	81.0	47.5	125.6	126.6
Of which:											
Winter wheat	…	…	…	…	…	…	…	…	…	…	121.0
Spring wheat	…	…	…	…	…	…	…	…	…	…	5.6
Barley, total	30.6	40.3	49.3	19.9	23.3	30.3	20.7	35.0	26.7	40.9	47.2
Of which:											
Winter barley	…	…	…	…	…	…	…	…	…	…	26.4
Spring barley	…	…	…	…	…	…	…	…	…	…	20.8
Oats	1.3	1.6	2.9	4.2	2.0	0.7	1.6	3.4	5.1	5.1	6.5
Maize	217.4	295.8	328.2	291.0	141.1	269.6	267.0	363.9	291.6	184.6	243.7
Haricot Bean	7.6	10.5	11.6	10.2	5.8	8.9	9.6	10.5	7.6	5.5	5.8
Sunflower	12.3	16.1	15.1	2.3	2.6	4.0	3.0	8.6	1.6	4.3	3.2
Potato	168.7	229.2	193.4	216.8	228.8	273.9	252.0	296.6	215.3	186.5	249.0
Vegetables, total	179.7	190.3	165.0	170.3	175.7	185.8	198.5	204.8	153.6	152.3	141.7
Of which:											
Cabbage, floral cabbage, broccoli**	35.5	34.3	41.9	39.6	27.1	35.2	34.5	26.0	19.3	21.8	19.7
Spinach	…	…	…	…	…	…	…	…	…	…	1.1
Greens	8.0	7.4	5.2	8.3	9.1	11.4	10.1	12.7	7.9	13.4	7.7
Tomato	69.9	80.2	62.6	51.4	56.0	61.6	63.9	75.0	54.9	58.1	54.1
Cucumber	19.4	20.3	18.6	30.9	28.6	25.5	38.7	31.5	24.3	22.2	18.7
Green bean	…	…	…	…	…	…	…	…	…	…	4.5
Eggplant	11.6	13.0	5.1	10.2	11.4	11.2	10.6	6.7	7.2	4.5	4.2
Pepper	4.6	4.3	5.8	3.2	3.3	5.6	3.8	4.0	4.6	2.6	5.2
Red beet	3.5	10.9	3.1	3.6	4.3	3.4	6.6	7.7	4.1	4.3	2.5
Carrot	1.2	2.8	5.6	4.1	5.5	8.5	2.9	9.9	4.9	2.6	1.8
Onion (dry)	16.0	12.1	11.1	10.2	19.0	14.6	17.8	17.0	16.5	12.8	18.5
Garlic	3.0	3.1	2.3	2.4	5.7	5.0	5.7	7.2	6.0	5.5	2.9
Other vegetables	7.0	1.9	3.7	6.4	5.7	3.8	3.9	7.1	4.1	4.6	0.8
Melons	37.8	73.5	52.8	43.7	40.9	42.8	36.7	66.4	86.1	72.5	72.8
Hay of annual grasses	26.5	20.5	5.0	14.6	11.2	18.1	5.0	2.7	5.9	9.4	5.9
Hay of perennial grasses	25.8	8.8	30.2	23.0	25.9	48.5	31.9	38.4	35.6	51.8	49.2

Structure of GDP
(Percentage)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*
Agriculture, hunting, forestry and fishing	12.8	10.7	9.4	9.4	8.4	8.8	8.6	9.4	9.3	9.2	9.3
Indusrty	17.0	16.5	15.5	15.4	16.1	17.1	16.7	17.3	16.9	16.5	17.1
Construction	7.9	7.8	6.4	6.5	6.1	6.7	7.8	6.7	7.1	8.0	8.3
Trade	15.6	14.8	16.2	15.1	16.8	16.9	16.7	17.3	17.5	16.6	16.3
Transport and communication	13.2	12.1	11.0	11.2	11.5	10.5	10.6	10.5	10.4	10.7	10.1
Other branches	33.5	38.1	41.5	42.4	41.1	39.9	39.5	38.8	38.8	39.0	38.9

Output of agriculture
(current prices, mln. GEL)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*
Output of agriculture, total	2134.2	2250.9	2202.9	2072.2	2241.8	2674.0	2807.2	3210.0	3387.5	3667.4	3942.1
Plant growing	911.3	1051.7	918.1	868.3	932.1	1237.9	1087.0	1405.2	1613.4	1689.6	1498.3
Animal husbandry	1165.3	1138.8	1227.6	1140.5	1240.3	1336.8	1610.3	1665.8	1613.4	1784.1	2195.1
Agricultural services	57.5	60.5	57.2	63.5	69.4	99.3	109.9	139.0	160.7	193.6	248.8

Livestock and beehive numbers in holdings of all categories
(as of end of year, ths. heads)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cattle	1080.3	1048.5	1045.5	1014.7	1049.4	1087.6	1128.8	1229.7	970.0	992.1	962.7
Of which above 2 years	...	...	...	...	...	...	...	...	...	...	577.7
Of which cows	591.2	541	560.5	537.6	561.7	587.7	602.4	641.1	563	545	509.3
Pigs	343.5	109.9	86.3	135.2	110.1	105.1	204.3	191.2	169.7	161.5	136.2
Sheep and goats	789.2	797.1	769.4	673.8	653.9	630.4	742.6	856.8	919.6	891.4	936.5
Of which sheep	696.8	711.0	690.0	602.3	596.8	576.8	688.2	796.0	865.9	841.6	875.9
Poultry, ths. heads	5400.7	6149.7	6682.3	6674.8	6521.5	6360.2	6159.1	6760.7	6657.8	8308.6	8237.8
Beehives, ths. hives	146.3	183.8	206.7	256.5	311.5	328.0	347.5	398.6	190.7	197.1	205.3

Production of grapes by regions
(ths. tons)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Georgia	**162.5**	**227.3**	**175.8**	**150.1**	**120.7**	**159.6**	**144.0**	**222.8**	**172.6**	**214.5**	**159.2**
Tbilisi	…	…	…	…	…	…	…	…	…	…	1.2
Adjara AR	…	…	…	…	…	…	…	…	…	…	1.5
Guria	…	…	…	…	…	…	…	…	…	…	2.0
Imereti	36.3	54.5	43.7	30.3	25.0	26.3	36.2	36.6	11.7	28.6	21.7
Kakheti	80.2	118.6	100.0	82.7	64.7	98.1	70.8	129.5	124.3	150.3	111.0
Mtskheta-Mtianeti	…	…	…	…	…	…	…	…	…	…	3.9
Racha-Lechkhumi and Kvemo Svaneti	…	…	…	…	…	…	…	…	…	…	2.8
Samegrelo-Zemo Svaneti	…	…	…	…	…	…	…	…	…	…	2.4
Samtskhe-Javakheti	…	…	…	…	…	…	…	…	…	…	1.0
Kvemo Kartli	…	…	…	…	…	…	…	…	…	…	3.4
Shida Kartli	10.9	16.0	8.1	16.4	8.6	10.2	13.6	18.7	16.3	17.7	8.4
The remaining regions	35.1	38.2	24.0	20.7	22.4	25.0	23.3	38.1	25.0	22.2	

Average annual food prices
(GEL/kg)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Beef	6.92	6.82	7.48	7.43	7.94	10.97	12.10	11.59	12.68	12.55	12.43
Pork	7.24	6.60	9.82	11.05	9.07	11.15	12.24	10.62	11.70	12.18	11.83
Poultry meat	6.59	6.59	7.07	6.45	6.71	7.16	6.92	6.53	6.41	6.56	6.37
Boiled sausage	4.97	5.59	6.23	6.59	6.88	7.27	7.66	7.58	7.40	7.58	7.69
Frozen fish	4.22	4.59	4.56	4.79	5.19	5.73	5.67	5.77	5.35	5.55	5.70
Tinned fish, 0.250 kg	0.85	0.83	0.95	1.10	1.22	1.25	1.82	2.11	2.58	2.84	3.06
Sunflower oil, 1 liter	2.46	2.90	4.20	2.89	3.35	4.19	3.78	3.54	3.22	3.63	3.79
Fresh milk, 1 liter	1.14	1.40	1.77	1.82	1.40	2.04	1.78	2.29	2.38	2.42	1.84
Imeretian cheese	4.85	5.25	6.27	5.50	6.16	7.01	7.49	7.31	8.02	7.87	7.60
Eggs, 10 units	2.85	2.49	2.80	2.73	2.88	3.10	3.04	3.00	2.90	2.99	2.99
Sugar	1.38	1.24	1.18	1.48	1.97	2.26	1.80	1.54	1.55	1.58	1.89
Wheat flour	0.98	1.17	1.52	1.34	1.40	1.73	1.55	1.62	1.63	1.69	1.70
Bread (of high quality flour)	0.96	1.09	1.33	1.25	1.32	1.56	1.49	1.55	1.56	1.59	1.60
Rice	1.40	1.48	2.01	1.67	1.81	1.87	2.12	2.12	2.04	2.37	2.27
Macaroni	2.00	2.28	3.01	3.02	2.58	3.01	3.20	3.06	3.09	3.54	3.43
Potato	0.76	0.89	0.86	0.79	0.89	1.22	0.87	0.92	1.32	1.11	0.95
Cabbage	0.64	0.61	0.68	0.54	0.73	0.89	0.67	0.65	0.69	0.85	0.59
Onion	0.87	0.94	0.80	0.94	1.45	1.34	0.96	1.09	1.11	1.25	1.18
Apple	1.05	1.82	1.16	1.71	1.60	2.68	1.56	1.70	1.62	2.01	2.39
Haricot beans	2.78	3.15	3.11	2.71	3.38	3.78	3.72	4.08	4.58	4.44	4.34

DISTRIBUTION OF GROSS VALUE ADDED BY REGIONS
(at current prices, mil. GEL)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Tbilisi	5,653.9	7,009.5	7,913.6	7,274.3	8,472.6	9,914.3	11,194.2	11,300.9	12,147.1	13,450.9	14,297.5
Kakheti	708.2	789.6	981.8	833.8	973.3	1,149.7	1,161.3	1,331.5	1,459.1	1,519.9	1,700.0
Shida Kartli and Mtskheta-Mtianeti	773.6	917.1	981.3	906.8	1,124.9	1,334.6	1,337.1	1,426.4	1,485.2	1,592.5	1,812.7
Kvemo Kartli	1,228.5	1,400.5	1,347.7	1,325.3	1,537.6	1,790.6	1,917.5	2,063.1	2,162.9	2,346.8	2,348.7
Samtskhe-Javakheti	425.2	454.8	526.7	477.4	562.6	665.0	646.2	693.8	724.6	780.2	883.7
Adjara	738.8	966.9	1,224.3	1,185.3	1,378.9	1,621.9	1,675.4	1,798.1	2,039.7	2,194.3	2,498.5
Guria	311.9	354.1	326.1	308.6	380.4	437.6	434.4	476.9	584.4	648.2	644.1
Samegrelo-Zemo Svaneti	918.2	1,047.7	1,185.8	1,216.3	1,359.0	1,509.6	1,478.7	1,574.0	1,807.4	1,995.1	2,064.6
Imereti, Racha-Lechkhumi and Kvemo Svaneti	1,288.5	1,670.8	2,034.6	2,018.5	2,225.2	2,551.9	2,660.4	2,670.4	2,685.2	2,940.5	3,074.1
GDP at basic prices	**12,046.9**	**14,611.1**	**16,521.8**	**15,546.3**	**18,014.4**	**20,975.4**	**22,505.3**	**23,335.0**	**25,095.7**	**27,468.4**	**29,323.9**
(+) Taxes on products	1,800.6	2,454.3	2,639.3	2,530.9	2,834.3	3,492.7	3,790.0	3,659.5	4,203.6	4,445.4	4,873.2
(-) Subsidies on products	57.6	71.6	86.3	91.3	105.3	124.1	128.0	147.2	148.8	158.3	168.6
GDP at market prices	**13,789.9**	**16,993.8**	**19,074.9**	**17,986.0**	**20,743.4**	**24,344.0**	**26,167.3**	**26,847.4**	**29,150.5**	**31,755.6**	**34,028.5**

FDI in Georgia by Economic Sectors

1000 USD

Sectors	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total	**1,750,242.6**	**1,564,311.1**	**658,895.0**	**813,837.5**	**1,048,233.2**	**911,285.7**	**949,917.0**	**1,763,041.4**	**1,575,966.7**	**1,583,783.6**
of which:										
Agriculture, fishing	14,194.3	7,844.3	22,326.9	8,631.9	14,907.6	16,119.3	11,857.4	12,290.3	14,577.6	7,974.6
Mining	78,769.5	18,105.2	15,023.4	53,435.9	40,219.6	4,862.2	43,704.9	42,781.5	88,027.8	48,950.7
Manufacturing	285,269.7	188,287.8	124,781.7	175,334.5	120,339.7	167,906.5	99,765.1	205,417.4	67,174.6	124,471.5
Energy sector	331,441.9	294,864.8	-2,130.6	21,877.9	203,951.6	179,402.6	244,745.1	189,941.9	123,663.8	117,297.0
Construction	157,129.4	56,725.3	105,218.8	4,705.9	48,112.2	41,839.2	49,847.5	316,588.1	110,678.4	129,488.1
Hotels and restaurants	221,286.0	181,939.2	37,542.3	17,121.8	22,705.6	17,652.3	-13,360.1	124,851.8	138,815.3	52,431.9
Transports and communications	313,611.9	422,970.8	98,926.5	215,116.2	126,517.2	72,828.9	140,104.4	433,654.7	584,648.7	671,893.0
of which:										
Transports	...	...	...	...	...	...	...	...	605,297.6	611,135.5
Communications	...	...	...	...	...	...	...	...	-20,648.8	60,757.5
Health and social work	418.9	550.6	289.1	1,182.4	16,827.0	17,550.8	720.0	-9,507.6	140,325.6	28,764.5
Real Estate[1]	2,822.5	277,837.7	147,410.3	119,253.0	155,585.7	52,805.6	42,294.6	132,018.1	89,940.4	111,405.6
Financial sector[2]	145,011.4	10,959.6	49,663.4	106,747.3	167,881.4	162,273.7	174,400.6	126,581.0	190,020.5	149,114.1
Other sectors[3]	200,287.0	104,225.8	59,843.3	90,430.7	131,185.5	178,044.8	155,837.4	188,424.2	28,094.1	141,992.5

Numbers of beehives by regions
(ths. hives)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Georgia	**146.3**	**183.8**	**206.9**	**256.5**	**311.5**	**328.0**	**347.5**	**398.6**	**190.7**	**197.1**	**205.3**
Adjara AR	14.6	6.8	9.1	21.2	37.4	49.3	55.2	61.9	17.1	17.0	14.1
Imereti	22.8	29.6	27.8	27.6	27.0	26.4	15.2	13.9	38.0	44.1	41.9
Kakheti	28.6	41.7	57.4	52.9	39.0	37.3	34.4	46.9	35.7	45.4	45.4
Samegrelo-Zemo Svaneti	16.9	47.8	49.7	70.2	100.7	109.1	113.9	125.7	23.8	23.4	28.2
Samtskhe-Javakheti	16.7	16.7	12.6	17.9	22.3	26.2	30.7	33.4	17.7	14.7	17.9
Kvemo Kartli	12.4	11.6	10.6	15.6	15.8	21.5	15.4	21.4	13.8	14.9	20.2
Shida Kartli	...	...	...	...	...	...	...	...	...	...	10.2
The remaining regions	34.3	29.6	39.7	51.1	69.3	58.2	82.8	95.3	44.6	37.6	27.4

Numbers of poultry of all types by regions

(as of end of year, ths. heads)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Georgia	**5400.7**	**6149.7**	**6682.2**	**6674.8**	**6521.5**	**6360.2**	**6159.1**	**6760.7**	**6657.8**	**8308.6**	**8237.8**
Tbilisi	...	...	...	...	...	...	...	...	...	...	422.5
Adjara AR	...	...	...	...	...	...	...	...	...	...	86.4
Guria	...	...	...	...	...	...	...	...	...	...	292.3
Imereti	1211.6	1159.4	1318.3	1186.3	1237.3	1056.8	1039.5	1214.5	1089.2	971.0	1007.7
Kakheti	878.7	804.8	1004.4	1088.5	1088.0	1025.4	945.4	1117.2	1177.5	1201.7	1186.8
Mtskheta-Mtianeti	...	...	...	...	...	...	...	...	...	...	223.0
Racha-Lechkhumi and Kvemo Svaneti	...	...	...	...	...	...	...	...	...	...	48.6
Samegrelo-Zemo Svaneti	1013.9	1471.0	1359.2	1207.8	1073.4	1016.2	1058.1	1133.8	1095.8	1069.2	876.7
Samtskhe-Javakheti	...	...	...	...	...	...	...	...	...	...	193.1
Kvemo Kartli	1211.7	1572.5	1641.4	1644.9	1536.8	1739.3	1733.1	1727.5	1561.8	3212.0	3454.7
Shida Kartli	265.1	266.3	314.7	446.8	464.6	443.3	434.3	502.5	489.6	557.2	446.0
The remaining regions	819.7	875.7	1044.2	1100.5	1121.4	1079.2	948.7	1065.2	1243.9	1297.6	

Numbers of sheep by regions

(as of end of year, ths. heads)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Georgia	**696.8**	**711.0**	**690.0**	**602.3**	**596.8**	**576.8**	**688.2**	**796.0**	**865.9**	**841.6**	**875.9**
Imereti	...	...	...	...	...	...	...	...	29.3	28.4	27.4
Kakheti	266.1	313.9	300.2	269.4	276.0	294.3	368.5	468.6	494.1	474.4	482
Mtskheta-Mtianeti	57.1	67.0	79.8	50.0	43.6	40.7	41.4	37.6	46.9	53.3	61.7
Samtskhe-Javakheti	90.0	72.8	61.7	87.4	74.8	72.2	81.0	78.1	80.5	69.0	71.8
Kvemo Kartli	230.0	210.1	206.8	131.8	149.1	123.2	148.6	160.7	187.8	185.2	203.7
Shida Kartli	...	...	...	...	...	...	...	...	20.7	23.6	22
The remaining regions	53.6	47.2	41.5	63.7	53.3	46.4	48.7	51.0	6.6	7.7	7.4

Production of hazelnuts by regions

(ths. tons)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Georgia	**23.5**	**21.2**	**18.7**	**21.8**	**28.8**	**31.1**	**24.7**	**39.7**	**33.8**	**35.3**	**29.5**
Adjara AR	...	...	...	...	...	...	...	...	...	...	1.5
Guria	5.7	4.5	4.2	3.7	3.7	6.8	5.9	9.0	6.2	6.2	7.2
Imereti	3.2	3.2	3.9	3.2	2.4	4.8	3.4	5.6	3.2	4.2	3.4
Kakheti	...	...	...	...	...	...	...	...	...	...	1.2
Mtskheta-Mtianeti	...	...	...	...	...	...	...	...	...	...	0.1
Samegrelo-Zemo Svaneti	13.5	12.0	9.3	11.4	20.8	15.8	11.8	20.5	20.7	18.8	15.3
Kvemo Kartli	...	...	...	...	...	...	...	...	...	...	0.5
Shida Kartli	...	...	...	...	...	...	...	...	...	...	0.1
The remaining regions	1.1	1.5	1.3	3.5	1.9	3.7	3.5	4.6	3.6	6.1	0.0

Production of walnuts by regions

(ths. tons)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Georgia	**3.9**	**11.8**	**6.2**	**8.2**	**6.1**	**5.7**	**4.8**	**10.8**	**4.2**	**5.6**	**3.6**
Tbilisi	…	…	…	…	…	…	…	…	…	…	0.0
Adjara AR	0.4	1.3	0.7	0.4	0.5	0.7	0.6	1.4	1.0	1.2	0.8
Guria	…	…	…	…	…	…	…	…	…	…	0.4
Imereti	1.0	1.9	1.6	2.1	1.6	1.3	0.9	2.2	0.3	0.7	0.4
Kakheti	0.7	1.9	1.0	1.0	0.7	0.5	0.8	1.5	0.9	0.6	0.5
Mtskheta-Mtianeti	0.4	1.2	0.3	1.0	0.3	0.3	0.3	0.9	0.1	0.2	0.2
Racha-Lechkhumi and Kvemo Svaneti	0.6	1.5	1.0	0.8	1.2	0.5	0.3	1.0	0.1	0.4	0.2
Samegrelo-Zemo Svaneti	0.4	0.5	0.2	0.3	0.5	0.2	0.4	0.4	0.4	0.7	0.1
Samtskhe-Javakheti	…	…	…	…	…	…	…	…	…	…	0.2
Kvemo Kartli	0.3	1.4	0.2	0.3	0.3	0.5	0.2	0.5	0.2	0.2	0.4
Shida Kartli	0.0	1.0	0.7	1.1	0.7	1.0	0.7	1.5	0.4	0.8	0.4
The remaining regions	0.1	1.1	0.5	1.2	0.3	0.7	0.6	1.4	0.8	0.8	