



Ministry of Agriculture of Georgia



STRATEGY FOR AGRICULTURAL DEVELOPMENT IN GEORGIA 2015-2020

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DEVELOPMENT
IN GEORGIA 2015-2020



Ministry of Agriculture of Georgia
2015

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List of Abbreviations

DCFTA	Deep and Comprehensive Free Trade Area Agreement
FAO	Food and Agriculture Organization
GIS	Geographic Information System
Global Gap	Independent certification system for Good Agricultural Practice (G.A.P); Organization, that sets voluntary standards for the certification of agricultural products
GSP	Generalized System of Preferences
HACCP	Hazard Analysis and Critical Control Points; A management system in which food safety is addressed through the analysis and control of biological, chemical and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
LPIS	Land Parcel Information Systems
OIE	World organization for animal health; (Office International des Epizooties)
WTO	World Trade Organization
FDI	Foreign Direct Investment
EPPO	European and Mediterranean Plant Protection Organization

Glossary

N	Term	Definition
1	Agro biodiversity	Agro biodiversity is qualitative parameter characterizing variety of organisms existing in agriculture
2	Geographic Indications	The historical or contemporary name of a geographic location, region, municipality, and in exceptional cases, of a country used for marking of goods a) derived from a geographic location; b) exceptional quality and traits of which are totally or mostly determined by the natural environment of the geographic area and human factor; c) production processing or input supply to which is concentrated within its geographic boundaries
3	Accredited Laboratory	In accordance with the rules defined by the Georgian legislation, the laboratory accredited by the LELP Accreditation Centre, which is entered into the unified state accreditation system registry or the laboratory (including those from other countries) accredited internationally
4	Business Operator	Entity, activities of which are related to production of food/animal feed, animals, plants, animal and plant products, veterinary preparations, pesticides, agro chemicals, their primary production, processing, distribution, as well as rendering services in veterinary and plant protection, and being responsible for compliance with the particular requirements set by Georgian legislation
5	Biological Production	Unified system of managing an enterprise through methods ensuring biodiversity, environmental balance, protection of environment, efficient use of natural resources and meeting the requirements of biological, production in its manufacturing, storage, packing, transportation, labelling/marketing, distribution, and sales activities confirmed by the certificate of compliance
6	Gene Bank	Storage for plant and seed material useful for reproduction, deeply frozen tissues, sex and somatic cells
7	Geographic Indication	A geographic indication (GI) is a name or sign used on certain products, which corresponds to a specific geographic location or origin (e.g. a town, region, or country). A product's quality, reputation or other characteristics can be determined by where it comes from.

8	Electronic Integrated Disease Surveillance System	The aim of Electronic Integrated Disease Surveillance System (EIDSS) is to improve monitoring and prevention of animal and human health within the framework of the One health concept. Through the system the disease cases, active surveillance campaigns, sampling efforts, laboratory diagnostics procedures are entered into the unified database and analyzed.
9	Value Chain	In agriculture, the term Value Chain describes the full range of value adding activities required to bring a product or service through the different phases of production, including processing, packaging, storage, transportation and distribution
10	Drainage System	A system of watercourses or drains for carrying off excess water
11	Endemic Species	An endemic specie is one whose habitat is restricted to a particular area. The term could refer to an animal, a plant etc.
12	Epidemiology	Epidemiology is the science that studies the patterns, causes and effects of health and disease conditions in defined populations
13	Epizootic	An epizootic is a disease that appears as new cases in a given animal population, during a given period
14	Agricultural Extension	Agricultural extension is an informal educational process directed toward the rural population. This process offers advice and information to help them solve their problems. Extension also aims to increase the efficiency of the family farm, increase production and generally increase the standard of living of the farm family.
15	Validation	To confirm the validity of assay or test using the appropriate scientific approach
16	Veterinary	Veterinary medicine is the branch of medicine that deals with the prevention, diagnosis and treatment of disease, disorder and injury in animals (including poultry). Veterinary science helps human health through the monitoring and control of zoonotic disease, as well as producing safe animal products and ensures trustworthiness veterinary in the country.
17	Veterinary Reliability	The ability to confirm the existence of a diseases in animal population on a defined territory

18	Veterinary Certificate	In accordance with the codes of the World Animal Health Protection Organization (OIE), the document issued by the representative authority of the country of origin or the exporting country
19	Zoonotic Disease	Infectious disease (disease invasion) transmitted from non-human animals to humans
20	Crop Rotation	Successive cultivation of different crops in a specified order on the same fields
21	Invasion Diseases	Diseases stemming from parasitic organisms
22	Inspection	State control mechanism, by which facilities, processes and equipment are examined to make sure they comply with government laws and regulations.
23	Good Agricultural Practice	Practice of agricultural production that ensures environmental, economic, and social sustainability
24	Crisis Situation	Unexpected and dangerous situation caused either by nature or humans and which creates serious hazards for human and animal life and health, plant health, infrastructure, and environment requiring urgent actions
25	High Mountainous Region	A geographic area, which falls under the definition of high mountainous areas as per the Law of Georgia on Social, Economic, and Cultural Development of High Mountainous Areas
26	Traceability	Possibility of obtaining the information for production, processing, and distribution stages of food/animal feed and their ingredients, food/feed related packaging material, animal, health, veterinary preparations, pesticides and agrochemicals.
27	Land Cadaster	Collection of graphical (maps, plans) and textual information on land parcels, which reflects location of a parcel, its configuration, area, legal status (owner/user, form of ownership, restrictions), and name of owner, as well as usage, category, and qualitative information
28	Soil Fertility	Property defining soil productivity and its ability to satisfy plant needs for development and access to water, air, heat, and nutrients throughout the vegetation period

29	Pesticides	Chemical and biological substances used against plant diseases and their vectors, pests, diseases of stored agricultural produce, rodents and parasites, as well as regulation of plant growth, for the purposes of removal of leaves prior to harvesting (defoliant) and drying (desiccants), sanitation of storages, warehouses, and plants and other products under phytosanitary control
30	Primary Production	Process that comprises of plant growing (including harvesting), animal raising and breeding prior to slaughtering, and milking. Primary production also includes hunting, fishing and gathering of wild plants
31	Risk	Based on the presence of hazard, probability and extent of harmful impact on human, animal, and plant health
32	Leasing Company	Entity, no less than 70% of annual income of which is derived from leasing of property
33	Amelioration System	Complex of interconnected infrastructure providing plants with water, air, optimal heat regime and fertility conditions
34	Amelioration Measures	Projection, construction, reconstruction and exploitation of hydro technical infrastructure, implementation of pasture watering, forestry amelioration, technical, re-cultivation, chemical, agro technical, soil protection and fertility improvement measures and their placement on scientific and economic foundation
35	Breeding Activities	System of activities aimed at production of animals capable of transferring the highest qualitative and useful traits to subsequent generations
36	Irrigation System	A system of hydrotechnical infrastructure, that stores, intakes, transports and distributes water to different areas on demand
37	Agricultural Cooperative	Legal entity that is granted the status of the agricultural cooperative in accordance with the Law of Georgia on Agricultural Cooperatives
38	Food Security Early Warning System	System for collection and processing of technical information created by Food and Agriculture Organization (FAO)
39	Serology	Science that studies physical, chemical, and biological characteristics of blood serum with the aim to detect markers for exposure to infectious agents in the host (animals or humans).

40	Rural Development	Rural development is the coherent set of measures aiming to meet the wide range of economic, environmental and social challenges that rural areas face, by fostering the competitiveness of agriculture; ensuring the sustainable management of natural resources, and climate action; and achieving a balanced territorial development of rural economies and communities including the creation and maintenance of employment.
41	Phyosanitary Reliability	Inexistence of pathogenic organisms
42	Animal Identification/Registration	Attaching a unique identification number to an animal or a group of animals, its marking and its placing in registry
43	Breeds testing	Comparative study of biological, zootechnical, and economic characteristics of breeds existing in similar natural and economic environment at a given period
44	Subsistence Farming	Subsistence farming is self-sufficiency farming in which the farmers focus on growing enough food to feed themselves and their families

Introduction

Full utilization of Georgian agricultural potential is vitally important for the Georgian economy. For this purpose, the Government intends to create a favorable business environment, attract investments to agriculture and carry out policies that would actively promote further commercialization and growth. Along with that, most important is to ensure food safety and security, which is the main duty of the Government, and in particular the MoA.

According to the UN forecast, a drastic increase in the world population is expected. It will total 9 billion instead of the present 7 billion. Simultaneously, political developments in the world, as well as global climate changes, create additional challenges to provision of enough food of acceptable quality to the global population. These problems are becoming even more acute given current global economic and financial crises.

It is apparent that Georgia being a part of the global economy cannot be left untouched by the current developments. Despite some transformational dynamics of the economy, the issue of the poverty and provision of food to the population is still very severe. Therefore, the key objective for the upcoming years is to create a developmental model for the country's agricultural sector that will ensure provision of affordable and quality food to the Georgian population, as well as maximizing the use of its export potential in commodities where the country has a competitive advantage. This document is a part of country's unified state development policy presenting main medium-term strategic directions and specific measures, which if employed will help to ensure a sustainable development of agriculture.

The Ministry of Agriculture of Georgia acknowledges the support provided in the preparation of the Strategy document by the Georgian National and Agricultural Academies' of Sciences, various state institutions, donor organizations, the Food and Agriculture Organization and the project "Capacity Development of the Ministry of Agriculture" funded by the European Neighborhood Program for Agriculture and Rural Development in Georgia.

1. Vision

The vision of the Agriculture Development Strategy of Georgia is to create an environment that will increase competitiveness in agro food sector, promote stable growth of high quality agricultural production, ensure food safety and security, and eliminate rural poverty through sustainable development of agriculture and rural areas.

2. Current Situation and Trends

Georgia is rich in agricultural tradition, which is an integral part of its history, mentality and cultural heritage. Agriculture played an important role in formation of the Georgian statehood and contributed much to its economic development.

43.4% (more than 3 million hectares) of the whole territory of Georgia is designated as agricultural land, which also includes pastures and meadows. 43% of the remaining area is covered with forest. Georgia has a wide variety of ecological and climatic zones conducive to the growth of for temperate climate and subtropical crops. Those crops include cereals, early and late vegetables, melons and gourds, potato, technical crops, grapes, subtropical crops, fruit varieties etc.

From climatic zones perspective, Georgian biosphere is very diverse that is determined by the existence of 12 different zones and 49 types of soils. Many endemic species create a perfect source for the development of plant growing and cattle breeding. The country is rich in amelioration and potable water resources.

From the farming industry standpoint, the diversity is accompanied with difficulties like temperature swings, active erosion and excessive precipitation in some regions. The existing situation takes specific measures to be addressed.

Given specific features of its terrain, Georgia is characterized by altitudinal zonality. Only 39% of arable land is located on elevation of 500 meters above the sea level, 29% - 500-1000 meters above the sea level, 21%- 1000-1500 meters and 11% is located over 1500 meters above the sea level.

Georgia has favorable climatic and natural conditions conducive to development of agriculture. However, within past decades Georgian agriculture and food production has been lagging well behind other sectors of the economy.

Due to certain developments after the declaration of independence, the sown and planted areas of annual and perennial crops have reduced, as well as livestock numbers. (Table 1).

Table 1: Sown Area, Livestock Numbers, and Share of Agriculture in GDP 1990-2013* 1

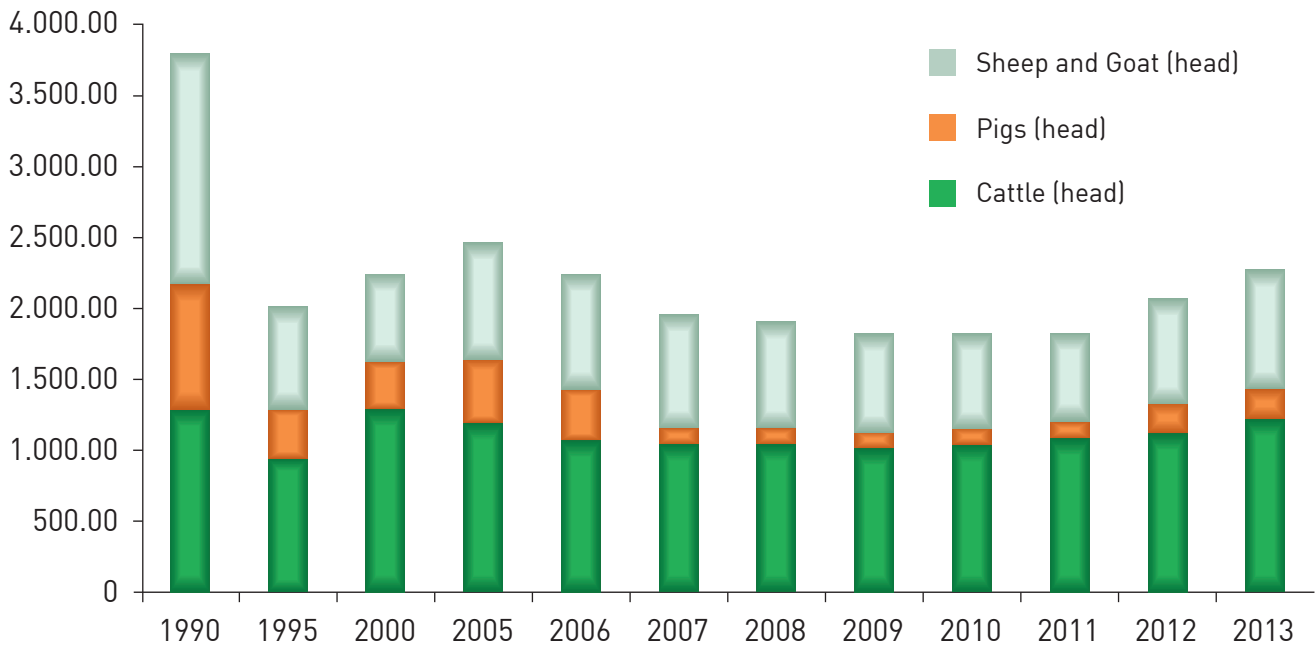
Year	Sown Area (Ha)	Cattle	Pig	Sheep and Goat	Share of Agriculture in GDP
1990	701,900	1,298,300	880,200	1,618,100	31.6%
1995	453,100	944,100	352,600	724,800	44.4%
2000	610,800	1,177,400	443,400	627,600	21.9%
2005	539,600	1,190,600	455,300	815,300	16.7%
2006	330,200	1,080,300	343,500	789,200	12.8%
2007	297,200	1,048,500	109,900	797,100	10.7%
2008	329,300	1,045,500	86,400	769,400	9.4%
2009	289,700	1,014,700	135,200	673,800	9.4%
2010	256,700	1,049,400	110,100	653,900	8.4%
2011	262,400	1,087,600	105,100	630,400	8.8%
2012	259,600	1,128,800	204,300	742,600	8.6%
2013	310,700	1,229,700	191,200	856,800	9.3%

* Agriculture comprises of primary production, forestry, and fishery

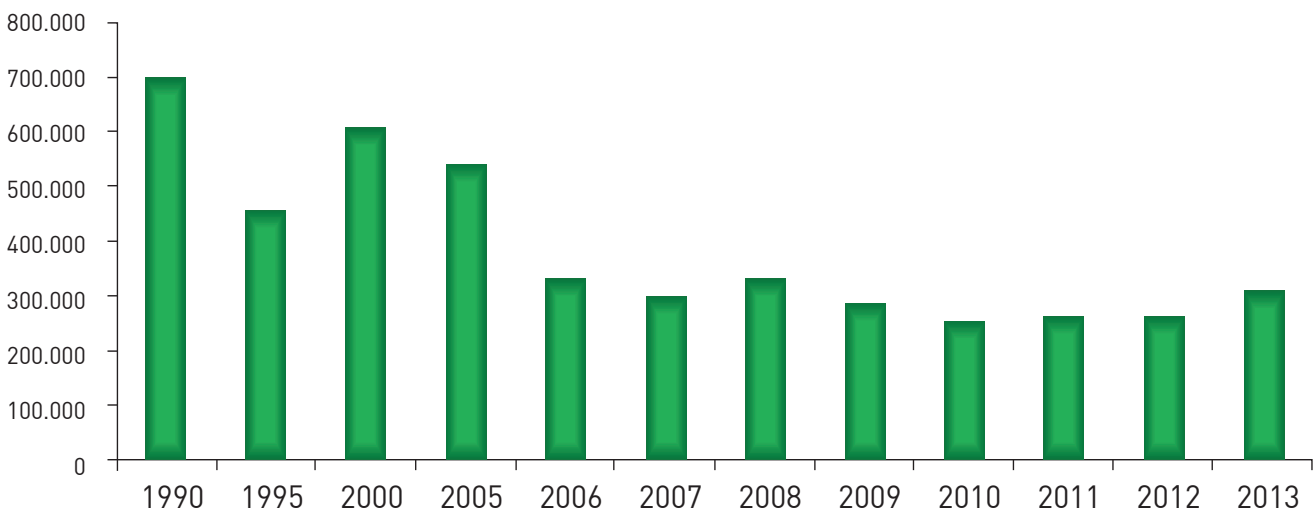
Source: GeoStat

1 The striking decline of sown areas is probably associated with change of statistical methodology by GeoStat for the period of 2005-2006

Livestock Numbers



Sown Area (ha)



Recently, the cost of agricultural products imported in the country exceeded one billion USD. A negative trend of local production minimization is being observed along with the growth of imports. Food self-sufficiency ratio of almost all types of products has decreased creating significant implications for food security. This trend is particularly alarming in terms of the UN and the World Bank forecast, according to which in 1940-1950-ies of the current century an acute global food crisis is expected.

Due to seriousness of these challenges developed countries have to revise their agricultural policies, meanwhile import dependent countries are destined to face serious problems unless they take adequate steps.

Table 2.

Product	Production of Some Key Agricultural Products (in kg, liters) per Capita								Self-sufficiency ratio in 2013
	2007	2008	2009	2010	2011	2012	2013	% change in 2013 compared to 2007	
Wheat	17	18	12	11	22	18	18	6%	12%
Corn	68	75	66	32	60	59	81	19%	96%
Potato	52	44	49	51	61	56	66	27%	100%
Vegetables	43	38	37	39	41	44	46	7%	75%
Meat	17	13	12	13	11	9	11	-35%	39%
Milk	142	147	126	132	130	131	135	-5%	91%

Source: GeoStat

In 90-s the majority of agricultural enterprises ceased their operation. Their machinery was sold for scrap prices, buildings and structures collapsed and qualified workers and specialists quit working.

The wrong agricultural policy destroyed agricultural science. Higher educational and vocational institutions deteriorated. Experimental farms, laboratories and thematic museums were destroyed as well.

The land reform implemented amid a hardest political situation (in 1992), caused fragmentation of households and naturalization of production. According to the Agricultural Census of 2004, 66.9% 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 (table 3). The problem is also aggravated by the fact that one hectare of land owned by households is divided into 2-3 parcels.

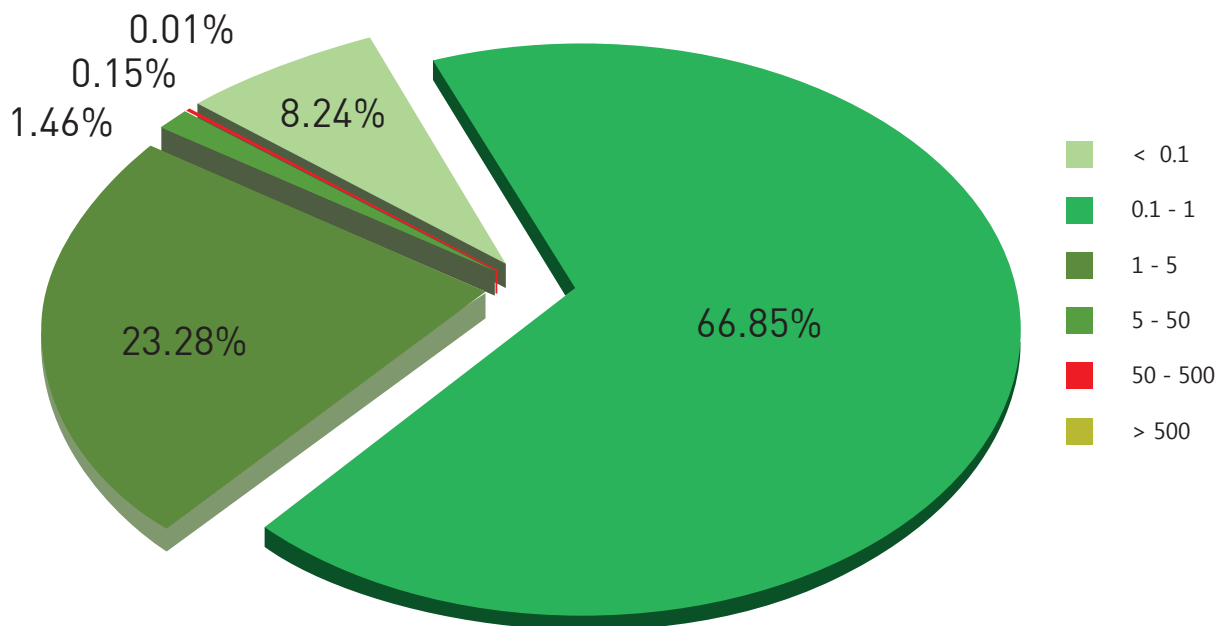
Obviously, under such circumstances it is impossible to organize intensive agricultural production without land consolidation. In the nearest future the agricultural cooperatives should greatly contribute to resolve this problem.

Table 3. Number of Farms and Area in Georgia

Farm Size (Ha)	Number of Farms	%
←0,1	57,019	8.24
0.1-1	462,340	66.85
1-5	160,993	23.28
5-50	10,112	1.46
50-500	1,041	0.15
→500	72	0.01
Total:	691,577	100.0

Source: GeoStat, Agricultural Census of 2004

Distribution of Agricultural Holdings by Areas



Arable land is now mostly privatized but land registration, a particularly pressing issue decisive for the development of a commercial agriculture market is still unresolved. In order to efficiently pursue land and other development policies it is vital to properly segregate state-owned, and/or municipal land from privately-owned. To acquire a legal title to a land it has to be registered.

The communally owned grazing land, when not clearly delineated, definitely creates problems with under-management and, particularly, overgrazing. This contributes to problems in animal sector, like low milk yielding capacity and slow weight gain. Communal grazing also makes invasive disease control more difficult.

The cadaster system existing in the country comprises only of geographic and legal aspects and only 20-30% of the agricultural land is officially registered by the National Agency of Public Registry. Since the dissolution of State Department for Land Use in 2004, the land inventory has never been counted. Likewise, the unregistered changes of declared use of land are noteworthy. As a result of these problems both the total area of agricultural land and allotments distributed among the population are unknown as well as the precise area of land retained in the state ownership. These factors complicate planning and execution of steps to be taken. It is necessary to create an efficient cadaster system and introduce modern electronic system of land use.

Soil fertility has depleted over the time due to lack of technologies, capital and basic skills and practices. Irrigation and drainage systems require significant rehabilitation. For this reason only a small number of farmers² and rural community organizations succeed in managing land or water resources, providing inputs (services), marketing outputs or exploiting any kind of agricultural or rural support services.

Buying and selling land, accessing appropriate technologies, inputs (machinery/fertilizers/chemicals/seed/planting material/irrigation/artificial insemination/feed) and services is still an issue. Despite govern-

- 2 Acting legislation does not define the status of a land user/farmer. Therefore a special commission will be created to create the rules for granting the status of the farmer and their registration based on the relevant criteria.

mental programs that considerably increased the agriculture portfolio of the banks, the availability of cheap financial resources still remains low.

Agriculture still accounts for about 52% of the country's labor force while 98% of farmworkers are considered self-employed.³ Therefore, the key objective for the upcoming years is economic diversification by means of creating off-farm jobs, promoting family farming as well as agritourism.

The current situation in agricultural sector significantly affects poverty indicators. According to GeoStat, the average annual salary of a farmworker amounted to only 64% of national average in 2013. At the same time, the income gap between urban and rural residents widened substantially. It is noteworthy that rural population does not have many alternative employment opportunities. The income derived from hired farmwork is increasing during the last years but its volume is still small, whereas income derived from the selling of agricultural produce constituted only 11.6% of the total income for the year of 2013, which indicates that agriculture production is largely oriented towards self-consumption.⁴

It should be mentioned that the percentage share of elderly population in rural areas is increasing that complicates the demographic situation there. For this purpose, retaining and further increasing current production level and its competitiveness will be difficult without long-term agricultural development policy (that implies promotion of employment of youth as well).

Agriculture, in general, is very sensitive to natural hazards, which negatively impact agricultural development. Natural hazards occurring in Georgia (earthquakes, floods, landslides, mudflows, abrasions, avalanches, hail, showering rains, gails, droughts, and etc.) harm agricultural production,, and hence, the economy of the country. Thus, based on existing risks, it is necessary to prepare and generate the specific detailed multiannual data for prognosis of natural disasters in space and time.

Before 2012 agriculture has not been viewed as priority and governmental spending on the agricultural sector has been erratic. At its low-point in 2010 spending on agriculture was 0.44% of total government spending (table 4). From 2007-2010 the majority of the large expenditure items in the Ministry of Agriculture budget were social support of one kind or another, providing hand-outs of flour, food and fuel.

In 2000-2007 the number of the MoA employees dropped by 87%⁵ and this significantly reduced its ability to carry out even its most basic statutory responsibilities. 19 regulatory and inspection departments and municipal branches reporting to MoA were closed.

3 GeoStat

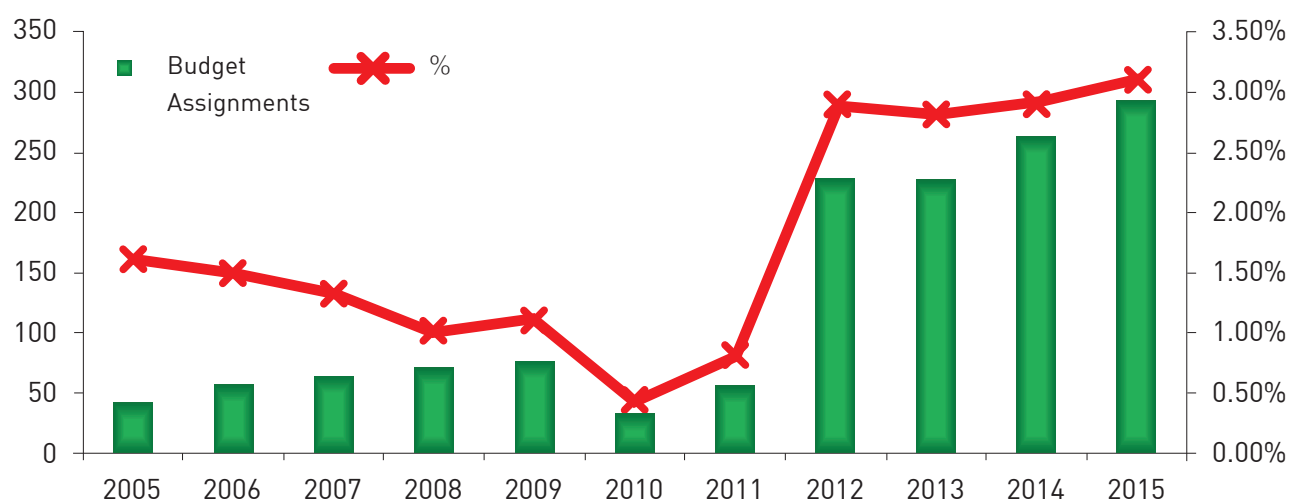
4 GeoStat

5 Ministry of Agriculture of Georgia (2008), Overview of the Budget of the Ministry of Agriculture 2000-2007 p.13

Table 4. The Budget Allocation Dynamics for Agriculture (Million GEL)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Allocations the MoA	41.4	59.2	65.5	70.9	75.2	30.6	57.8	228.4	227.4	263.5
Total Budgetary Allocations	2,618.6	3,822.5	5,237.1	6,758.8	6,754.1	6,972.4	7,459.2	7,806.8	8,104.2	9080.0
%	1.6%	1.5%	1.3%	1.0%	1.1%	0.4%	0.8%	2.9%	2.8%	2.9

Dynamics of the Budget Assignments of Ministry of Agriculture (Million GEL)



Source: The ministry of Finance of Georgia

The new Government that came to power through elections in 2012, drastically changed the attitude toward the development of agriculture sector. The sector was declared as a top priority and the financing of the MoA increased substantially. The main consideration was given to improving amelioration infrastructure, purchasing and use of the agricultural technologies, implementation of the small farmers' assistance project, implementation of preventive measures for cattle diseases, the allocation of funds to purchase laboratories equipped to the level allowing their international accreditation. The main attention is given to international market diversification.

Concerted efforts by the government, private sector and the donor community in 2013-2014 resulted in positive tendencies related to production growth, enhancement of export markets, and increase of investments. In addition, a number of institutional reforms is underway which in the long run will lead to sustainable development of the sector.

The Georgian parliament adopted the law on Agricultural Cooperatives, pursuant to which Agricultural Cooperatives Development Agency was created. The Agency will promote entrepreneurial activities of agricultural cooperatives, and assist them in cultivating their lands and bring them into the country's economy.

NNLE Projects' Management Agency was created under the MoA. As a result of its activities the bank sector significantly increased financial allocations to agriculture.

In 2014, LEPL Scientific-Research Center of the Ministry of Agriculture was created to develop agriculture and food production, promote the preservation of animal and plant agro biodiversity, reconstruction of the breed selection stations, support animals artificial insemination process and breeding activities, develop seed/planting material standardization and certification system, introduce new technologies, provide extension services to farmworkers, conduct risk assessment in food safety, veterinary and plant protection fields, and provide support to the development of biologically clean agriculture etc.

It is worthwhile to mention that in 2013-2014 the total sown area increased substantially, largely due to state-sponsored programs. However, sustaining these results will be extremely difficult in the longer run unless the private sector comes in place of government initiatives.

Starting from 2014, Georgia embarked on a full-scale implementation of a cadaster program for vineyards. This measure targeted at modernization of grape-growing and wine production sector in the country. The program stipulates for precise inventory of the areas under vineyards, their registration, and passportization and undertaking measures to define the boundaries for specific production zones. The relevant software, which should be filled by the specific information from wine production zones, has been already purchased. The first stage of cadastral and surveying activities is already accomplished in Racha-Lechkhumi region. Currently, the similar works are underway in Akhmeta rayon. Subsequently, these works will be accomplished for the rest of Kakheti and other wine producing regions of the country. The data on the vineyards cadasters will be applied for monitoring of the grape-growing sector and for specifying its boundaries of zones and sub-zones.

Some systemic measures instigated in 2013 led to diversification of the existing markets and opening of new ones, the nomenclature and monetary volume of exported agricultural goods increased considerably. From 2000 to 2013 food exports rose from GEL 184 million (USD 93 million) to GEL 1317.5 million (USD 775 million). There are promising trends of growth in nuts, spirits, wines, mineral waters, citruses, fruits and vegetables.⁶ In case of implementation of relevant supportive measures, Georgian agricultural sector potential can be further strengthened.

Georgia is a member of WTO and has Most-Favored-Nation (MFN) status with member countries. Georgia has GSP agreements with the US, Canada, Switzerland, Norway and Japan. Georgia has a free trade agreement with Turkey and Ukraine and preferential access to the most countries of the former Soviet Union. Georgia also has a Deep and Comprehensive Free Trade Area Agreement (DCFTA) with the EU, which implies that agricultural products exported from Georgia will freely reach the EU market. There are a number of important issues constraining agriculture and rural development in Georgia and requiring urgent solutions. It is therefore important for the Government to have short term measures aimed at addressing the most immediate issues affecting agricultural production and rural communities as well as a strategy for the development of agriculture for the medium to long term and so enable sustainable growth and development of the sector and reduce poverty. Georgian agriculture and agribusiness should play a much more profound role as a driver of economic growth and social stability.

6 GeoStat

3. Main Strategic Directions and Measures

In order to put into practice the vision of the Strategy for Agricultural Development in Georgia seven main objectives have been defined. These are summarized below and will be detailed in a separate action plan specifying terms of implementation and funds.

Strategic Direction 3.1: Enhanced competitiveness of rural entrepreneurs

Measure 3.1.1 - Improved farmer knowledge and information and the delivery of efficient agricultural extension service support

Upgrading the skills and technical capabilities of farmers and rural entrepreneurs to improve overall farm management and competitiveness is a fundamental objective of the Ministry of Agriculture. Currently, most of farmers are using outdated technologies and receiving no formal consultancy. They don't have access to any information on modern technologies. New municipal information and consultancy centers have been created to improve communication with farmers, define priorities and provide support services. In order to improve working process and services, the needs of farmers and stakeholders will be considered to the fullest possible extent.

One of the main functions of LEPL Scientific-Research Center of the Ministry of Agriculture of Georgia is provision of extension services to those employed in the agrarian sector. The center undertakes scientific researches and develops information/extension packages in collaboration with information consultancy centers. These packages will provide farmers and rural entrepreneurs with necessary measures for efficient plant and livestock production in order to increase their incomes and competitiveness. Target groups will receive handouts research and analysis findings in printed and illustrated form. The lectures and seminars will be conducted in the regions. The demonstration plots will be created and demonstration days organized. For encouraging to use modern technologies and innovative methods in practice an agricultural extension strategy will be developed in collaboration with academia (the Georgian National Academy of Sciences and the Georgian Academy of Agricultural Sciences), international organizations and the private sector.

Measure 3.1.2 - Improved quality of vocational educational training (VET), university education and research within the food and agricultural sector

Previously the agricultural education was organized as a multistep system. Specifically, it was comprised of vocational schools, higher education and research institutions, which trained highly qualified specialists. Currently, the system is fully destroyed and there is an acute shortage of agrarian specialists. This problem is exacerbated by lack of interest from youth towards agrarian sector. Therefore, a thorough reconsideration of vocational training, education and research in Georgian agriculture should be undertaken. Priorities need to be set and special curricula developed to shape a retraining system both in theory and practice.

Special incentives shall be created to induce young people's interest towards particular specializations where currently there is a shortage of technical skills.

The findings of LEPL Scientific-Research Center of the MoA will be used to improve farmer awareness and provide beneficiaries with the training materials.

The Ministry of Agriculture will closely cooperate with the Ministry of Education and Science of Georgia, the Georgian National and Agricultural Academies of Sciences, vocational education institutions, and Georgian and international education and research service providers, including relevant NGO-s for the purpose of strengthening agricultural education, research and science both within Georgia, regionally and internationally.

Measure 3.1.3- Developing agricultural land market and introducing modern approaches in land use

For developing an efficiently functioning agricultural land market it is imperative to ensure rational management of available land assets, further cadaster registration for all agricultural lands, introduce GIS and streamline the legal framework.

Land consolidation is one of the key requirements for having a fully operational land market. There is a number of deterrents in this area, namely: a small number of registered parcels, grey areas between the parcels, unavailability of information on soils quality, absence of regulatory framework and of an authorized institution responsible for land consolidation.

There will be developed a Strategy and Action Plan of land consolidation and pilot projects implemented in collaboration with relevant state institutions. Legislation related to the land will be improved. A geo-information system, an analog to the Land Parcel Identification System (LPIS) existing in EU member countries will be introduced. This system will support planning and implementation of land consolidation programs, raise the level of awareness both qualitatively and quantitatively, ensure simplification and transparency of decision-making process and rational use of human resources. In order to reach these objectives, international experts and donor organizations should be involved in this process.

Measure 3.1.4- Developing specific tools to strengthen the agricultural credit and leasing system

Based on risks existing in agriculture and agri-business, interest rates on bank loans still remain high. The leasing service is not yet sufficiently developed in Georgia, while this mechanism is one of the important sources of finance for private sector in other countries. Credit and leasing systems are of decisive importance for improvement of production, processing and post-harvest handling processes. Since 2013, the MoA started implementation of Concessional Agro Credit Project aimed at supplying cheap, long term and affordable loans to farmers and entrepreneurs involved in agriculture. This project will support increase of modern technologies and infrastructure capacities (warehouses and cold storage facilities, slaughterhouses, wholesale and retail agricultural markets, milk collection points, processing enterprises, and, etc.) and facilitate integration of product life cycle and value chain.

The Government will promote easing of lending opportunities and loan procedures, and will work with financial institutions to train credit officers, to better understand, agriculture and commercial agri-business. The training and advice will be provided to farmers and loan officers. Information consultation centers will be actively involved in the information dissemination process on lending opportunities and loan procedures.

Measure 3.1.5- Supporting development of agricultural insurance market

Agricultural insurance is one of the key elements to development of agriculture. Insurance of agricultural risks is one of the most complicated areas in insurance business and requires deep knowledge of agronomy. Given this, insurance companies abstain from working in such a high risk area. In addition, there is a lack of statistical data and analytical information. This further complicates decision making in this area. Vast majority of farmers in the country farms small parcels of land, which increases costs to insurance companies and accordingly, they prefer to interact with larger farm owners.

On September 1, 2014, following the initiative of the Ministry of Agriculture, a pilot agri-insurance program has been launched, within which the Government finances a considerable part of the insurance premium. A detailed review of agri-insurance schemes employed in the world will be made. Pilot programs will be analyzed and improved in collaboration with private insurance companies.

The Ministry will continue implementation of agri-insurance program and devote serious attention to elaboration of risk management mechanisms (e.g. amelioration, hail, soil erosion and other measures) and further development of insurance market. The trainings and advice will be provided to farmers, through regional information-consultation centers on possibilities and potential for agricultural insurance, that will promote the linkage of insurance companies with consumers.

Measure 3.1.6- Supporting the development of cooperation in agriculture

Currently, institutional arrangement comprising support to agriculture cooperation generates most sustainable results in terms of sustainability. This enhances competitiveness and provides an opportunity for farmers to have affordable access to agricultural inputs, services and markets. Active work of cooperatives bolstered by efficient, systematic and result-oriented support of the Government, in a long-term perspective, will result in improvements in some crucial directions, such as: improvement of the quality and quantity of agricultural products; increasing growth rates of sales (both on domestic and international markets). Measures for support of cooperation include development of the product life cycle incorporating primary production, processing, packaging, storage and marketing, as well as funding and providing services to the members. The value of production increases at each of the stages and the members of cooperatives will be able to get considerably more income as a result of selling of the final product. Establishment of product life cycle within the framework of cooperation is probably one of the best mechanism of risk reduction. This creates opportunities to supplement existing commercial credit available to agriculture with other schemes of financial support or some other combined models.

Also, agricultural cooperatives provide the best platform for poverty reduction. Development of cooperation improves involvement of vulnerable groups, women and young farmers in economic activities.

Currently, vast majority of cooperatives lack the necessary information for better planning of their activities and forecasting of anticipated results. Within the framework of strategy implementation LEPL Agriculture Cooperative Development Agency will create efficient, mobile and flexible communication tools with cooperatives, target groups and wider public. For awareness raising purposes the Agency will actively collaborate with media, NGOs, business representatives and other stakeholders.

For encouraging local agricultural production, LEPL Agriculture Cooperative Development Agency will introduce the unified IT system and information bank. This will simplify all the activities related to production, marketing, planning and, etc.

Relevant measures will be undertaken to transform LEPL Agriculture Cooperative Development Agency into a membership based organization, as well as to establish sustainable structures that will support cooperatives.

The programs targeted at capacity building of the cooperatives will be a key priority. This will comprise programs for capacity building to members/managers of cooperatives, improvement of marketing capacity, financial support of cooperatives and, etc. Special measures to promote Georgian farmers at local, regional and international levels will be developed.

The Law of Georgia on Agriculture Cooperatives triggered introduction of new and rational organizational forms to agriculture. This will bring direct benefits to Georgian population. Although, the dynamics of agriculture cooperatives development, the need of undertaking measures prescribed by the strategy, and international experience demonstrated the necessity for further upgrade of legal framework.

Measure 3.1.7- Developing tools to increase awareness of agricultural investment opportunities

Georgian agriculture needs investment to be able to improve competitiveness and hence living standards for farmers and the wider rural community. There is a need to work closely with the private sector lending and insurance companies, specialized foundations, international financial institutions and donor countries to develop innovative, sustainable and appropriate models that will help in attracting investments in the sector.

The MoA will collaborate with relevant state institutions, international trade agencies and potential investors in order to promote agricultural sector. Research will be conducted of commodity investment opportunities in specific regions. Printed and electronic investment information packages will be prepared and investment opportunities presented at international exhibitions, forums, conferences, trade fairs and bilateral meetings.

Measure 3.1.8- Implementing national agri-food promotions and marketing program

Currently Georgia imports a large portion of its food and has an opportunity not only to substitute much of these imports with domestic production but also to export a lot more than it does now. The MoA will work closely with the private sector to promote competitive Georgian products to potential buyers and consumers on domestic and international markets.

Domestic production will be promoted by media advertising and information materials. Georgian farmers and entrepreneurs will be able to participate in local and international exhibitions.

Relationships will improve between Georgian and international trade organizations. Collaboration with Georgian diaspora and diaspora organizations will foster popularization of Georgian agrarian produce, as well as its appellations of origin and geographic indications overseas.

This process will help to identify and moderate main obstacles for agricultural export trade. Georgian export potential will further spin up. The MoA is going to explore potential export markets, study the demand existing there, scrutinize possibilities of intervention to those markets, obtain information on competitors, analyze transportation costs and customs procedures, and etc.

Some measures have been already implemented in wine sector. Short and long term programs as well as marketing strategic plans aiming at raising awareness of foreign customers have been already developed. There is an intention to create a platform for branding Georgian wines and disseminating messages targeting demand on strategic markets and mentality of their customers. Similar activities are planned for other sub-sectors of agriculture.

Strategic Direction 3.2: Institutional Development

Measure 3.2.1- Improved MoA organizational structure and human resource management and training system

There is a need for the Ministry to improve its capacity and capability to efficiently implement the Strategy for agriculture and the associated Action Plan. A review will be made of the organizational structure of the Ministry of Agriculture, its agencies and regional information consultancy centers and an appropriate managerial and operational structure put in place, including clear individual and department responsibilities of the Ministry. Based on their specificity, performance reviews will be carried out on an annual basis, to compare progress against agreed actions.

A modern HR evaluation system will be introduced in the MoA for improving productivity and quality of work done by the Ministry employees.

An assessment will be made of the training and development needs of the Ministry and its agencies' staff. Training priorities will be determined in specific relation to the implementation of the Action Plan. A training and human resource development plan will be prepared and implemented. Training will include "on the job" support, as well as attendance at relevant workshops. There will be established an educational center where the Ministry's staff will take relevant training courses.

Measure 3.2.2- Supporting an efficient market information collection, processing and dissemination among the different stakeholders actively engaged in the agricultural sector

A market information system is very important in improvement of competitiveness of farmers, entrepreneurs and exporters. Without market information, the value chain actors find themselves in uncompetitive position. This largely concerns local farmers who do not have the information on prices of their produce, quality requirements, general trends in the market, and innovation technologies.

The MoA intends to review the availability of existing information on products, prices, suppliers and markets. A strategy will be developed for collecting, disseminating or simply better utilizing information on markets. The MoA will collaborate with the private sector to prepare recommendations and actions for better market data collection, analysis and processing to ensure that farmers and policy makers have quality information for decision making and marketing. Information will also be available for farmers on standards and requirements for sale into export markets, including trade agreements and obligations.

The Ministry of Agriculture of Georgia will systematically and continuously analyze agriculture market in order to study competitiveness of the locally produced products.

The MoA requires upgrading of information system and improvement of quality of databases. The software for data collection analysis will be upgraded and overall quality and precision of the statistical databases will be improved as well as analytical capacity of data exchange and processing operation. Stronger emphasis will be placed on qualitative indicators, analysis of tendencies, forecasting and visualization of numerical information. Gender specific information will be collected for the further detailed analysis purposes. In close collaboration with National Statistics Office of Georgia the statistical data about agricultural sector will be improved.

Measure 3.2.3- Creating farm registry

Currently, in Georgia there is no unified farm registry system, which would be aimed at collection of information on exact location and area of farms, as well as their activity profile. Creation of such a system will support planning and implementation of specific programs. It will improve communication between farmers, state institutions and suppliers. It is also to be mentioned that the current legislation does not define the status of a land user/farmer. Thus, based on relevant criteria a special commission charged with duties to grant the status of the farmer and register will be created.

Workshops will be conducted for farmers in order to provide them with information and simplify their registration process. Communication between farmers and Government institutions will be improved. Relevant software will be used to make data collection and analysis as efficient as possible and training provided to operators.

Measure 3.2.4- Strengthening coordination between the MoA, donor community and other stakeholders

The Government recognizes and appreciates the efforts and support provided by the international donor community in development of agriculture and rural communities across Georgia. That is why the main consideration will be given to sharing their recommendations and experience, as well as successful examples.

The MoA will take over the donor coordination function in order to better plan and execute the Agriculture Development Strategy and Action Plan.

Donor coordination committees and meetings will be arranged to strengthen working groups made of donors, the private sector and farmers.

Strategic Direction 3.3: Amelioration and Soil Fertility

Measure 3.3.1- Improved irrigation and drainage systems

Given the particularities of the Georgian climate, construction, operation and management of irrigation and drainage infrastructure is vital for efficient and intensive agricultural production. In the eastern part of Georgia due to its dry climate, the fields need to be irrigated, while in the western part of the country, which has a higher rainfall, drainage infrastructure is necessary.

Deterioration of the amelioration system resulted in reduction of meliorated areas. In Georgia, the total area covered by gravity irrigation was about 280 K hectares, while the drained area amounted to 105 K Ha. Unfavorable conditions created in the country, as well as improper approach to the sector resulted in destruction of most of the system. Thus, by 2012 only 45 K hectares were covered by irrigation and the drained area amounted to only 14 K Ha. As a result of measures undertaken by MoA in 2012-2014 (rehabilitation and exploitation works) the irrigated area increased to 88 K Ha, and the drained area to 25 K Ha. It is planned to triple total irrigated and drained areas by 2020.

Preference will be given to rehabilitation and modernization schemes in order to increase their technical conditions and to improve their efficient technological and organizational capacities. Measures to be undertaken are the following: construction and rehabilitation of water reservoirs for irrigation purposes; rehabilitation of irrigation infrastructure and specific headworks; rehabilitation of drainage infrastructure and primary channels; undertaking of detailed studies of modern technologies and management approaches for efficient water use; improvement of hydrometric service; These measures are also aimed to support rehabilitation of drip and sprinkle irrigation systems; fair and optimal allocation of water resources and improvement of tariff system; ensuring involvement of water-user groups in the rehabilitation and maintenance of internal systems; promotion of farmer organizations and institutional arrangements; establishment of demonstration plots arranged up to international standards and demonstrating advantages of ventilation techniques and combined usage of integrated pest management and agro technical measures; improvement of geo information system databases and relevant software application; improvement of billing system; development of cadaster of ameliorated areas.

The main priority for the sector to become viable and sustainable is to commercialize and transform LTD Georgian United Amelioration Systems Company into a profitable organization.

Modernization of irrigation and drainage infrastructure aims at improvement of water management, water removal from flooded areas, increase of the area covered and make the soil fit for plant growing. The rehabilitated irrigation and drainage infrastructure, as well as use of modern agricultural technology will ensure guaranteed harvest of agricultural crops.

Measure 3.3.2- Rational use of soil

Research (inventory) of soils under agriculturally used areas is very important for development of agriculture. The findings of these studies will serve as a basis for planning and implementation of the subsequent rehabilitation measures. Accordingly, field and laboratory tests of soils will be conducted in order to support rational use of soils. Assessment of soil conditions is also very important in planning and implementation of land consolidation projects.

The main consideration should be given to the wind breaks reconstruction in order to prevent soils from erosion. Hence, the regulatory document on wind break issues will be developed in collaboration with the Ministry of Environment and Natural Resources Protection of Georgia. The above document will distribute the competencies and management responsibilities among relevant agencies.

In order to conduct a full scale inventory of soils in Georgia, the respective number of laboratories and personnel is required. Thus, within LEPL Scientific-Research Centre a modern laboratory for soil analysis will be created. For the purpose of improvement of soil fertility safe/progressive technologies will be introduced and the relevant legislative framework upgraded.

Special attention will be paid to investigation of degraded soils (saline, acidic, erodible, damaged and contaminated due to mining) and restoration of their fertility. There will be developed scientifically proven activities to promote the above investigation and implement it through targeted State programs in the Scientific-Research Center. Significant attention will be given to the current world wide problem - the climate change and its impact on the soil degradation and desertification processes. A special research will be carried on the soil fertility changes and its improvement measures.

Strategic Direction 3.4: Regional and sectorial development - value chain development

Measure 3.4.1- Defining and supporting rural development and investment strategies for each region

During the implementation of the Strategy and the action plan the need for development of rural areas as units of territorial and social arrangements of the country will be considered. Rural development depends on multiple factors, such as infrastructure necessary for agricultural activities, as well as on health and education accessibility. Based on this, in collaboration with other entities and local authorities MoA will draft rural development policy, which will be based on local, social, economic and cultural peculiarities. A unified action plan will be developed incorporating short, medium and long-term measures. Special attention will be given to high mountainous and border regions. Based on specialization of production zones the relevant sectorial programs will be created and implemented.

Clearly, agriculture by itself cannot generate sufficient employment and job opportunities to generate sustainable enterprise and incomes for the entire rural population. Therefore, the Government intends to promote and develop a concept of non-farm rural enterprise development in areas such as, services (shops, repair, crafts etc.), processing enterprises or agro-tourism (hunting, fishing, historical monuments etc.). Successful initiatives at regional and local level will be identified and examples disseminated of successful practices. The Ministry of Agriculture will work with other branches of Government to look at the potential for technical or financial programs of support and to facilitate their realization.

A research will be conducted of production practices and commodity investment opportunities in specific regions and with the aim to identify priorities agro-development and investment areas. Once defined these priorities will be presented to relevant stakeholders for potential agricultural development and investment programs, and updated as new research and information becomes available.

The main consideration will be given to development of sectorial and regional programs, in which for the purpose of enhancement of agricultural competitiveness, emphasis will be given to utilization of new technologies, improvement of institutional structure and investment climate etc.

Measure 3.4.2- Development, implementation and monitoring of sectorial agricultural programs

New vision and solutions are required for development of approaches to support specialization, optimum matching of sectors and region specific development needs. Local natural and economic conditions, as well as market requirements will be taken into consideration in this endeavor.

The MoA will analyze and evaluate sectors and their export and import substitution potential as well as food security and will develop specific programs to promote their development. A detailed analysis of the current situation will be made and an Action Plan will be developed.

Given scarcity of resources, the key to success is proper prioritizing. The conducted sectorial and competitiveness studies will lay a foundation for identification of measures to be undertaken at the first stage and the Action Plan.

Measure 3.4.3- Supporting the further development of geographic indication schemes and appellations of origin

The MoA actively collaborates with the National Intellectual Property Center (Sakpatenti) to protect Georgian geographic indications and appellations of origin in local and international markets. The agreement on Protection of Geographic Indications signed between Georgia and EU is active since April 4, 2012. Georgia has already registered 18 indications for wine, 3 indications for mineral waters, 14 indications for cheese, chacha and churchkhela.

For the purpose of protection of geographic indications and brands, the agreements are already signed with EU, CIS countries and other large countries importing Georgian produce. Work in this direction still continues.

International best practices for the development of geographic indication schemes and product branding are already being identified and assessed and information guidelines prepared and distributed to relevant stakeholders. In collaboration with private sector geographic indication schemes will be further developed and production list prepared for ensuring their protection on national and international markets and intellectual property rights. In order to harmonize Georgian laws with the EU legislation, the regulatory principles of this sector will be upgraded, including the law of Georgia "on Appellations of Origin and Geographic Indications of Goods" and law of Georgia "on Vine and Wine". The MoA has an intention to create self-regulatory organizations the members of which will be the representatives of the private sector. These representatives will determine the relevant licensing requirements to be approved by the MoA.

Measure 3.4.4 – Supporting the development of seed and planting material production

Fostering seed and planting material production is one of the keys to agricultural development. Proper selection of annual crops and seed production relatively easily ensures intensity of production.

Crop yields depend on availability of high reproduction seed and planting material. Currently, there is a lack of high quality seed and planting material. Farmers use low-grade seed, which results in sharp decline of yields and low quality of production. The major local producers (corn and wheat) market annually only 500 tons of seeds, whereas, according to expert estimates the total demand amounts to 7 K tones. Thus, it is necessary to undertake concrete measures for rehabilitation of seed production sector.

A catalogue will be created to incorporate the assessment of seed/planting material appropriate for soil and climatic conditions of Georgia. Along with the implementation of certification system, it will become one of the key elements for rehabilitation of the sector. Also, it will be possible to retain and develop domestic plant varieties and species.

The seed and planting material production schemes will be based on international and European standards. The costs and benefits of existing technologies will be assessed. Based on this the information packages will be prepared for farmers and investors. Production guides will also be prepared and together with examples of best practices included from within and outside Georgia. Farmers and field advisors will be trained in seed and planting material production. Field demonstrations and visits will be arranged to introduce new varieties.

Measure 3.4.5- Supporting the seed/planting material certification process

Experience of advanced countries demonstrates that the certification process guarantees quality of seed/planting material. Hence, the detailed analysis for existing schemes of certification of seed and planting material will be conducted and relevant measures developed for improvement of certification system, through creation of accredited national organizations. The MoA will empower those organizations. The system will be incorporated into the national and/or international accreditation systems.

The standards for certification and breed testing along with methodologies and instructions will be developed in accordance with EU and international standards. Seed quality testing laboratory will be created and specific works for getting international accreditation conducted. Seed and planting material catalogue will be created and permanently updated. Information center will be created in order to increase stakeholder awareness and render relevant advice.

The seed/planting material certification process will further be strengthened by means of training of the inspectors and relevant laboratorial capacities for field inspection systems.

Private sector will increase production in virus-free seed/planting material, which is reliable and controlled during the production and monitoring process. This will lead to improvement of overall quality of seed/planting material available to farmers. Farmers and interested parties will be trained for the purpose of increase of awareness in benefits of usage of certified seed/planting material.

For these purposes, LEPL Scientific-Research Center of seed/planting material certification standards will be appropriately equipped. The existing infrastructure, laboratories, and annual and perennial demonstration bases will be used. (Mtskheta, Jigaura, Tsilkani, Akhalkalaki etc.)

Measure 3.4.6. Development of Breeding System

Ignoring breeding activities and absence of the relevant infrastructure resulted in deterioration of livestock genetic pool. The problem of poor genetic quality of local breed is compounded by unbalanced and limited feeding results in low productivity of animals and their vulnerability to diseases. Hence, average annual milk yield of a cow of uncertain breed is 1100-1200 liters, and the meat yield does not exceed 45-50% of total weight. The service of artificial insemination is very limited and inaccessible for the cattle owners, both financially and territorially. The low awareness level of farmers in animal health and welfare, as well as undeveloped private veterinary services, result in the increase of epizootic risks in the country and hinder development of this sector.

In order to solve the above-mentioned problems, special attention should be paid to investigation, restoring and improvement of farmed animals, birds, fish, insects of local breeds and populations; establishment of genetic and information bank. In order to improve animal and bird species the establishment of breeding farms, unified breed registration system, and service centers for breeding activities and animal artificial insemination will be promoted in all municipalities. Local breeding methodology will be developed, seed bulls, assessment of genotype at the early stages of development, identification and subsequent use of potential animals with breed improvement capacity.

In order to develop high intensity cattle breeding, highly productive breeds of the animals brought from abroad and tested, and recommendations for their zonal allocation developed.

Selection programs for improving the breeds of agricultural animals and birds and new standards for breeds will be developed.

Special attention will be paid to investigation of epizootic situation and existence of invasive diseases in the zones of allocation of introduced animals and birds; the relevant recommendations will be developed.

In order to establish solid feeding base, natural pasture and meadows will be studied and diversity of species retained; diversification of feeding crops and production of environmentally safe feed.

Trainings will be provided to technical workers in animal artificial insemination and breeding specialist will be retrained. Specific trainings will be delivered to employees of information consultancy service centers in order to improve awareness of the farmers.

For the purpose of study of populations of local breeds, their rehabilitation and further improvement, veterinary laboratory of the department for animal breeding, veterinary, and food production of the LEPL Scientific-Research Center will be equipped.

Measure 3.4.7- Strengthening post-harvest services, facilities, and operations (handling, storage, grading/sizing, packing, processing, marketing)

In accordance with the internationally recognized standards, agricultural produce requires post-harvest handling, which includes cleansing of runts, sorting, grading, packing, and labelling. In this case, the capacities of individual producers and farmers are limited, whereas access to modern markets implies existence of well-developed networks for realization of the produce.

It is the intention of the MoA to conduct research of the national and regional demand for post-harvest handling, distribution, and processing facilities. The feasibility study for these investments will be undertaken and made available for all related parties. The recommendations for arrangement and exploitation of infrastructure for warehouses and cold storage facilities for primary and processed products and logistics (wholesale consolidation) will be made available, which will help extend storage period, retain quality and marketability, as well as widen distribution channels. For this reason, it is important to promote involvement of farmer organizations, including cooperatives.

A number of workshops and training events will be held to discuss and promote investments into value chain through investments into post-harvest equipment, processing (including on farm small scale processing) and for integrating and improving all parts of a defined value chain. Cost sharing and matching grant support possibilities for encouraging investments into these areas will be explored and, where feasible and economically sensible, be developed.

Measure 3.4.8- Improved access to input supply services

Productivity indicators in Georgia are much lower than in developed countries. For improvement of productivity, it is necessary to have access to high quality inputs and services. One of the key problems in this area is lack of availability of relevant quality inputs and services, which leads to severe financial complications to the farmers.

Based on needs of the specific regions, the Ministry of Agriculture will aim to create an improved environment for farmer access to appropriate machinery/seed/planting material/fertilizers/feed/plant protection/medicines etc.

Support will be given to monitor and ensure compliance with trade standards for input sales and to the development of seed and planting material production. The mechanism for ensuring their availability and quality control will be created. The Government will consider further strengthening of the legislation, enforcement and penalties for traders not complying with trade standards, safety, labeling or provision of proper information on the use of inputs for sale.

Measure 3.4.9- Improved access to agricultural machinery

Improvement of productivity in primary production and product cost reduction largely depends on usage of quality agricultural mechanization. Currently, the major part of agricultural machinery in the country is technically unreliable, and outdated, which hinders timely implementation of agricultural activities, increases costs of production, worsens harvest quality, and reduces yields.

The mechanization centers created for supplying high quality services to farmers are successfully functioning in the regions of the country. One of these is Meqanizatori LTD, which provides high quality mechanization services to farmers.

The MoA will continue working in this direction. A special attention will be given to provide agricultural sector with modern agricultural technologies and improve the service. A detailed analysis will be conducted on agriculture machinery needs and priorities for development across Georgia. Support will be given to the development of technical infrastructure for equipment purchase and, in particular, tractors. Trainings will be organized for machinery operators, as well as for farmers through vocational training centers. Collaboration will continue with the private sector to create an increased awareness of machinery availability and costs and to stimulate further investment into appropriate equipment purchase, lease, use, servicing, spare parts and maintenance. Consideration will be given to the privatization of LTD “Meqanizatori” or its transformation into organization operating on a public-private partnership scheme. An efficient and flexible management system will be developed that can help to increase ploughed areas within the agricultural timelines and minimize the shortage of machinery. For the purposes of reduction of prices on agricultural machinery and increase of its availability, consultations will continue with machinery manufacturers for the purpose of supporting local production of relatively simple equipment.

Strategic Direction 3.5: Ensuring Food Security

Measure 3.5.1- Monitor food security

Ensuring food security implies creation of condition, in which every citizen at any time has access to sufficient, safe and nutritious food supply fulfilling his/her dietary needs and food preferences and enabling to live an active and healthy life. At the national level, the key aspects of food security are availability, access, and affordability of food. In this case, quantitative availability of foodstuffs implies permanent readiness of the government to ensure the necessary minimum availability of food to the population. Cereals are one of the key components of food security, which is also affected by market stability and production levels of other products such as grains, beans, meat, milk and dairy products, fish, sugar, vegetable oil, potato, eggs, fruits, vegetables as well as different types of beverages. The MoA will continue monitoring food security and also support subsistence farms to reduce their risks. The further encouragement will be given to the process of commercialization of subsistence farms. Special programs will be developed to increase incomes of farm-workers. The working group will be created within the MoA with the purpose to develop recommendations to resolve existing problems. The implementation of the Strategy of Agricultural Development will promote to raise the level of food self-sufficiency of the country, food market stability, and diversification of import and export markets. The Government will also develop food security action plan for emergency or crisis situations. Levels and availability of basic foodstuffs will be monitored.

The MoA will develop and implement an early warning system for food security and in particular for the most vulnerable regions and parts of the population, continue improving the information collection and analysis system and train data collectors and the Ministry staff. A rapid and efficient method of response to food crises will be developed, including food distribution, and in line with the National Plan of Response to Emergency Situations and in association with the Ministry of Internal Affairs, other relevant Ministries and international partners.

Strategic Direction 3.6: Food Safety, Veterinary and Plant Protection

Measure 3.6.1- Developing efficient and flexible food safety system that will be consistent with EU legislation and reflecting specific features of the Georgian agricultural market

Food safety implies compliance of all the stages of food production, processing and distribution to the “farm to fork” principle. This stipulates for provision of consumer market with safe food, as well as elimination of potentially negative simultaneous, short-term, and long-term health effects of foodstuffs prepared in improper conditions on the consumer. Also, this legislation is aimed at prevention of negative impact of consumption of improperly prepared foodstuffs on future generations.

State control over food safety aims at protection of human life and health, as well as interests of consumers. It is based on risk principle relying on planned and random inspection, surveillance, monitoring, testing, and documentation inquiries.

The inadequate legislative framework existing in previous years, shortage of human and technical resources, and insufficient programmatic budgetary financing resulted in lack of efficiency of state control over food safety.

The process of upgrading of the legal framework has been underway since 2012. Namely, the Georgian Strategy for development of the food safety system and legal approximation to standards is already well defined by the MoA and these standards are consistent with EU legislation. The code for food/animal feed, veterinary, and plant protection alongside other legislative acts was adopted.

Technical regulations were developed and will come into force in 2015 on “milk and dairy products” and “Honey”. These regulations will promote the determination of unified principles at the stages of production, processing and distribution as well as will protect consumer interests.

The efficient system for food safety management and traceability at production, processing, and distribution stages will be created based on legislation. In accordance with the Georgian legislation, it will become necessary for business operators to undertake food safety procedures in compliance with hazard analysis and critical points (HAACP) system.

Since 1998, the country has been a member of codex alimentarius committee and participates in the process of developing international standards with a voting right. Given the fact that World Trade Organization adheres the standards and documentation developed by this committee it is important to continue activities in this direction.

The risk assessment service was established in the LEPL Scientific-Research Center, which will ensure risk assessment on scientifically identified data and supply recommendations to entities responsible for control and risk management.

In 2015-2020 within the framework of approximation to the EU legislation, the mechanisms for state control over food safety, including simplified control, will be established. The collaboration and information sharing mechanisms between institutions involved in risk analysis (NFA, Revenue Service, and the Risk Assessment Service of the Scientific-Research Center) will be further improved. The sustainable and flexible system will be created for the purpose of streamlining the registration procedures for businesses. The NFA will be enabled to have direct access to the database of business operators in order to precisely determine their number and activities. The risk-based state control will be maintained through the relevant mechanisms and frequency. The results of state control revealed that awareness level of business operators needs to be raised. Inconsistent and inappropriate practices are continuously revealed by the state control of slaughterhouses, meat and processed meat production enterprises, milk collection points, milk production and processing enterprises, food units of kindergartens and schools, food suppliers, including fast food out-

lets, and water supply systems in rayon's and villages. Based on the results of inspections, the Agency staff undertakes the prescribed measures. Based on risk and priorities, all the business operators will be examined at production, processing, and distribution stages, which will lead to adherence to highest food safety standards and considerable reduction of food-borne diseases. State control over food of animal origin, food units of education and health providers, and primary production enterprises will be regarded as a priority.

The food safety laboratorial research capacities will be upgraded and international research methods introduced. On an annual basis, the number of samples to be taken, food products to be analyzed and relevant research parameters will be identified. This will support protection of consumer markets and increase in exports.

A continuous training system will be established in LEPL National Food Agency to promote the awareness raising and competence of authorities.

The awareness of business operators will be raised and their skills upgraded. This will lead to production and selling of safe food in the market. Important steps will be taken for support of biologically clean production. Interested parties will be supplied with the information on the role of competent state agencies responsible for food safety. The awareness raising campaigns for private sector representatives, farmers, media, and consumers will be continued.

In order to efficiently implement the DCFTA agreement and maximize its benefits, it is important to increase the awareness of private sector on DCFTA food safety requirements and to develop auxiliary instruments to smoothly adapt to these requirements.

Measure 3.6.2- Veterinary

Functioning of a reliable and efficient system for animal health protection, surveillance and monitoring is necessary for production of safe and quality food. This comprises of introduction of countrywide surveillance software in order to avoid the spread of contagious and potentially dangerous diseases to animals and humans. Both public and private sectors will be engaged in the process of efficient veterinary services provision. Relevant preventive and eradication programs against infectious animal diseases will be developed and implemented based on the current and expected risk analysis. LEPL Scientific-Research Center will be actively involved in this process. State veterinary control will be conducted on risk based results.

The comprehensive food safety strategy and the process of harmonization with EU requirements stipulate for approximation of the national veterinary legislation in the areas of animal identification/registration, testing of health conditions of live animals, veterinary certification of live animals and animal products, animal feed hygiene, its uses, market placement, registration of veterinary medicines, control mechanisms etc.

Improved livestock identification and registration systems will be created, in order to ensure protection of livestock and population health, manage epidemiological situation, provide consumers with reliable information about origin and safety of animal products, supply information on animal movement within country and implement veterinary control on exports and imports, ensure labelling, transparency and traceability in meat trade and also, improve breeding.

With the help of donor organizations and experts the national program for animal health is developed. Based on this program, strategic measures against infectious diseases will be prepared. By 2020, the OIE is supposed to award the country a disease-free status based on the analysis of implemented measures and seromonitoring results. This will help to lift live animals and animal products import barriers to EU countries.

In subsequent years, the samples will be taken and laboratory testing conducted for the purpose of detection of infectious diseases. Mandatory vaccination will be conducted in case of emergence of the disease,

along with disinfection and other veterinary and sanitary measures. Registration and control schemes of pharmaceutical and biological products will be developed and animal food safety and quality control mechanisms created, in accordance with the EU and OIE requirements and recommendations. In accordance with OIE requirements, the schemes for creation and issuance of veterinary certificates will be improved, which will promote export of non-food products of animal origin from Georgia. The modern system for disposal of biological waste, including cadaver destruction, will be created. This will reduce to the minimum the spread of the disease vectors and contamination of environment with various pathogenic microorganisms.

In order to meet veterinary service requirements, it is important to staff it with qualified personnel. For this purpose, the veterinary academic education system will be improved in accordance to the modern requirements.

The mentioned measures will lead to improved reliability in disease management, improvement of availability of food of animal origin to population, promotion of exports of live animals and animal products, and increased trust of local animal products from customers.

Measure 3.6.3- Plant protection and phytosanitary reliability

Adherence to phytosanitary requirements is an important mechanism for attainment of phytosanitary reliability and food safety in the country. For the purposes of minimization of damage to crops and retention of harvest, in accordance with international phytosanitary standards, it is necessary to strengthen the directions of control over the size of population of quarantine and highly pathogenic organisms, as well as their diagnostics, identification of zones free of quarantined pathogenic organisms and proper planning of relevant measures. These will support exports of Georgian produce to EU. In September 2014, Georgia became a member of the European and Mediterranean Plant Protection Organization (EPPO) that will promote the increase of phytosanitary reliability in the country.

The comprehensive strategy and legal approximation program stipulates for the following:

- Approximation of the existing phytosanitary and plant protection legislation to EU legislation;
- Upgrade of system for registration of pesticides and chemical substances allowed for use in the country;
- In accordance with the EU standards and for the purpose of selection of pesticides less harmful to humans and environment, creation of a program for re-assessment of the existing assortment of pesticides.

In the regions of intensive pesticide use the pesticide impact on plants and environment will be reduced through introduction of system for preliminary prognosis of spreading of pathogenic organisms.

It is planned to support the use of biological means of pest management and conduct farmer training.

For the purpose of protection of the country territory from invasion and spread of pathogenic organisms, the practices of their diagnostics, prognosis, and implementation of relevant preventive measures against them will continue.

A business register will be created for all operators dealing with processing and marking of wooden packing material, production, processing, storage, exports, and imports of plant products under phytosanitary control. In order to support plant and plant products exports the phytosanitary certification system will be upgraded.

There is an acute deficit of qualified plant protection specialists in the country. For this purpose, there is no new generation of specialists in the place of existing ones. It is necessary to restore the education process of the fundamental agronomic science subjects (such as Phytopathology, entomology, chemical plant production, plant quarantine). To overcome this problem the MoA will actively collaborate with the Ministry of Education of Georgia and the Georgian Agricultural Academy of Sciences.

Measure 3.6.4- Laboratory Capacity Enhancement and Establishment of Modern Testing Techniques Compliant with the International Standards for Food Safety, Animal Health and Phyto-sanitary Control Programs

Laboratory network of Ministry of Agriculture- consisting of 11 laboratories (3 zonal-diagnostic, 8 field) was renovated and upgraded by the Biological Threat Reduction Program during the period of 2005-2009 under the Agreement between the governments of Georgia and USA. BTRP implementation in Georgia started in 2003 and was aimed at establishing the laboratory surveillance capabilities for detection, diagnostics and response to especially dangerous zoonotic disease cases; the laboratories were provided with the modern diagnostics equipment, staff became involved in large scale, multi-year training programs, modern testing techniques were implemented; international standards of bio-safety and bio-security have been applied to the laboratory practices.

Despite having such a strong laboratory base in the country, its full potential was underused for promoting the goals of public health system and /or agricultural production. This failure mainly was caused by the radical deregulation policies in the fields of veterinary, food safety and phyto-sanitary control declared and practiced by the Georgian Government during the period of 2005-2012.

After 2012, as the agricultural sector in general and, animal / plant health and food safety sectors in particular, became the top priority areas, a new era in development of the Laboratory of Ministry of Agriculture has started. Since the beginning of 2014, fundamental changes have occurred at LMA; among them: receiving the international accreditation, and implementing the ISO 9001 compliant Quality Management System by the head laboratory; significantly expanding the scope of microbiological and biochemical tests for food and water quality; replacing the old Soviet "GOST" based testing methods with the modern ones- according to the international standards (ISO).

LMA has implemented the molecular diagnosis of rabies and introduced new serological test for diagnostics of brucellosis.

Increasing integration of Georgia's economy into the World economy, as well as international trade, growth of tourists' number and transit traffic, leads to the increased threats of infectious diseases' (zoonotic, food and water-borne and/or anthroponosis) and plant quarantine diseases' spread in Georgia and creates the risks for country's economy.

Safety of population, animals, plants, food and water is one of the most important factors for the development of agricultural sector, export of the food products of animal and plant origin, for population's safety and economic security. Strengthening of the laboratory network capabilities is planned in order to meet these challenges; specifically- laboratory network of the Ministry of Agriculture will be restructured into the National Reference Center for Animal, Plant Health and Food testing. Planned changes will involve development of the new organizational structure and technical maintenance and procurement systems in accordance with the needs of National Reference Center; getting the whole network of LMA ISO 17025 accredited and ISO 9001certified; construction of the new building for Plant Disease Diagnostics Department and installation of laboratory equipment; implementation of modern research methodologies and accreditation according to the international standards.

In order to comply with EU requirements for Food/feed testing new laboratory equipment will be procured

and installed, applicable testing methods implemented and accredited; personnel will be engaged in training programs; new methods will be validated and techniques shared with the private and government laboratories working in the field of food safety; the future reference center will be responsible for organizing and conducting the ring-tests for animal and plant disease diagnosis and food/feed testing; cooperation with the international (including EU) reference laboratories; planning and implementation of program for achieving the OIE Reference Center status for selected priority diseases; improvement of detection and diagnostics of highly pathogenic zoonotic diseases endemic or exotic to Georgia based on "One Health" (environment-plant-animal-human) approach; establishment of Animal Health research programs on BSL-3 level at the Lugar Center; development of the disease reporting database compliant with the International Health Regulations' requirements; creation and update of GIS database for the confirmed EDP cases; implementation of full spectrum of analytical chemistry tests for animal feed, pharmaceutical drugs and pesticide quality control; development of the training programs and professional development courses in the fields of International Accreditation, Laboratory Quality Control, Bio-safety/Bio-security .

These activities will result into creation of an internationally accredited powerful national laboratory network that will provide laboratory-testing results valid for the international trade purposes throughout the country in food safety, animal and plant health sectors.

Measure 3.6.5- Review and develop border control veterinary and phytosanitary inspection points for agriculture import/export monitoring

Prior to 2006 the MoA structures undertook the functions of quarantine and phytosanitary border control. In 2006, this function was transferred to the Revenue Service of the Ministry of Finance, which undertakes control in accordance with the rules established by international organizations FAO, OIE, and IPPC and policies put in place by the MoA. As a result of collaboration between the specialists of the revenue service and the MoA, the rules of phytosanitary and veterinary border control were updated by relevant amendments. The control mechanisms and the list of commodities and items under control upgraded. Also, the list of items requiring permits was updated and information sharing principles agreed upon.

Training will be provided to staff at border control and inspection points on food product and coordination improved between LEPL Revenue Service of the Ministry of Finance and the LEPL National Food Agency of the Ministry of Agriculture.

Strategic Direction 3.7: Climate Change, Environment and Biodiversity

Measure 3.7.1- Maintaining good agricultural practices, biodiversity and environmental sustainability programs

An important MoA priority will be the protection and enhancement of the environment and biodiversity in-situ and ex-situ. Productive but sustainable farming methods will be encouraged by ensuring best agricultural practices, crop rotation for soil structure and quality improvement and promoting low level or appropriate chemical applications. A State program for developing bioorganic production will be adopted and with associated measures for certification at both primary and processing levels. A gene bank will be developed and efficiently managed for the conservation of agro-diversity and endemic species. The Ministry of Agriculture will coordinate with the Ministry of Environment on design and implementation of preventive and adaptive measures to address potentially harmful impact caused by global climate change.

Good agricultural practice, which aims at providing secure and safe agricultural production, will ensure efficient and sustainable agricultural production, maintain and improve soil quality and reduce degradation. For this purpose an awareness and training program of best agricultural practices (crop rotation, efficient use of pesticides and fertilizers, use of organics, water use etc.) for farmers, advisers and policy makers,

as well as introduce and enforce mechanisms for adherence to best agricultural practices. The potential for organic production will be considered and including the possibility for an accreditation system in line with international standards.

The Caucasus is an eco-region of global importance, characterized by a high variety of species and biodiversity. The Ministry of Agriculture will ensure coordination of activities with the Ministry of Environment and Protection and relevant structures of neighbor countries on biodiversity and environmental sustainable issues, including adaptation with environment and developing measures against soil degradation (desertification, salination, turning of soils into salt marches, and erosion).

For the purpose of maintenance and improvement of the bio agro-diversity, the measures for increase of efficiency of management of agri-ecosystems and natural pastures and meadows will be conducted. The certification systems will be introduced for creation, encouragement, and sustainable management of organic farming.

Based on ecosystem approach the measures for support of development of aquaculture will be implemented in internal water reservoirs of Georgia.

Measure 3.7.2- Gene bank development/management for conservation of agro-diversity and endemic species

The region of Caucasus is noted for its variety of agricultural breeds. Retention of the existing agro and biodiversity is of key importance both from the standpoints of maintaining the agricultural sustainability. This became even more important given global climate change, since it might result in reduction of agro and biodiversity. This mostly pertains to arid and semi-arid eco-systems.

A plant and livestock conservation strategy will be developed and implemented which will include a detailed inventory and identification of native species and breeds and the development of an efficient in situ and ex situ gene bank. A farmer and other stakeholder awareness program will be implemented on agro-diversity and endemic species. The measures for maintenance of local and endemic plant and animal breeds and species as well as their wild relatives, and genetic purity of other socially or culturally important species will be implemented.

Measure 3.7.3- Promoting climate smart agriculture (CSA) practice

Agricultural production is tied to climate change, which increases risks and negatively affects economic and social welfare of farmers and other types of vulnerable groups. Therefore, it is important to promote Climate Smart Agriculture (CSA) approach that simultaneously addresses three intertwined challenges: ensuring food security through increased productivity and income, adapting to climate change and contributing to mitigation of climate change.

Introduction of climate-smart practices is an important component of the Strategy and Action Plan. In close collaboration with Government institutions, local authorities, NGOs and private sector representatives the MoA will participate in developing relevant national and municipal programs.

Capacity of the Ministry staff and municipal information-consultation centers will be strengthened through training program on climate-smart agriculture approach and technologies.

Based on the research the impact of climate change on agriculture will be assessed. The information database will be created to collect data on negative effects of climatic change and natural disasters.

A system for agro climatic monitoring, analysis, results communication and other data dissemination will be put in practice.

In coordination with the Ministry of Environment and Natural Resources a policy document for prevention and management of fires occurring in nature will be elaborated with the clear delineation of competencies and designation of entities related to management of this issue.

4. Financing

Financing sources of agriculture will be the State budget, international and donor organizations as well as national and international investments. In the beginning, a stronger emphasis will be placed on government and donor financing, whereas afterwards, when the relevant enabling environment is firmly established, private sector representatives and foreign investors will play more important role in financing of the strategy implementation.

5. Conclusion

The implementation of the Strategy of Agriculture Development in Georgia 2015-2020 will ensure growth and commercialization of agricultural production through sustainable development. After the approval of the Strategy and Action Plan and sectorial programs will be developed and presented including timeframes and sources of funding.

During the Strategy implementation process special consideration will be given to the economic development measures of regions and municipalities, improvement of institutional arrangements, efficient functioning of information-consultation centers, farmer training in accordance with market requirements, integrated development of agricultural cooperatives, rehabilitation of agricultural infrastructure, improvement of statistical reporting, development of market database, improvement of food security analysis and monitoring, development and implementation of relevant flexible legislation.

Institutional development support will be a significant priority during the first few years of strategy implementation. Support to production improvement of production practices will mainly be targeted on small-scale farmers to increase yields and productivity through improved access to supplies and markets. Support to environmental programs will be considered throughout program implementation but its extent will increase in proportion of total support in longer run.

During the Strategy implementation process, the gender-disaggregated information will be collected for the purpose of its substantive analysis and subsequent inclusion in the policy measures targeted at promotion of female participation in agriculture and agribusiness. Particular issues will be addressed in relation to gender, minority, elderly, rural youth, remote regions and disadvantaged groups in program development and service delivery.

The Strategy is aligned with the requirements of Deep and Comprehensive Free Trade Agreement (in accordance with set up timeframes of approximation) that stipulates for approximation to international standards and norms and improvement of quality of production.

Modern approaches, innovations and technologies lead to optimization of production and successful development of economic activities. The involvement and efficient functioning of institutions within the Ministry (such as: LEPL Scientific-Research Center, LEPL National Food Agency, LEPL National Wine Agency, LEPL Agricultural Development Cooperative Agency, NNLE Projects' Management Agency, LTD Georgian United Systems of Melioration Company, LEPL Laboratory of the Ministry of Agriculture, NNLE Rural and Agricultural Development Fund) will be important in the abovementioned process. An Action Plan will be prepared in collaboration with various Georgian governmental agencies, scientific-research centers and educational

institutions, Georgian National and Agricultural Academies' of Sciences, international and donor organizations, private sector, NGOs and all relevant stakeholders. A consultative body –council of experts will be created within the MoA, which will be actively engaged in the process of developing the Action Plan

A monitoring and evaluation system will be developed within the implementation process of the Strategy. It will be based on each measure and program of evaluation indicators, for example: meet the demand of domestic market and export, increase the number of people employed in agri-business, reduce the tendency of downward trend in agricultural sector, increase the level of value added in agriculture, increase the volume of agri business production, increase the productivity of primary production, increase the number of sown/planted areas, increase the number of irrigated and drained areas, reduce rural poverty, increase the agriculture credit portfolio, increase the number of insured beneficiaries in agriculture etc. Periodic monitoring and evaluation will identify the benefits gained and whether the results are in compliance with objectives. Based on result-oriented assessment and monitoring recommendations, if necessary, relevant adjustments will be made and implemented in the Action Plan.