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Biodiversity Finance Policy and Institutional Review

The Biodiversity Finance Initiative (BIOFIN) – Georgia

November, 2016



საქართველოს გარემოს
და ბუნების დაცვის
დასახვის სამინისტრო



Abbreviations and Acronyms

- APA** - The Agency of Protected Areas of Georgia
- APMA** - The Agricultural Projects Management Agency
- BAU** - Business as Usual
- BDD** - Basic Data and Directions
- BER** - Biodiversity Expenditure Review
- BFP** - Biodiversity Finance Plan
- BIOFIN** – Biodiversity Finance Initiative
- CBD** - Convention on Biological Diversity
- CITES** - Convention on International Trade in Endangered Species of Wild Fauna and Flora
- CMS** - Convention on Migratory Species
- COP** – Conference of the Parties
- DCFTA** - Deep and Comprehensive Free Trade Area (free trade areas established between the European Union and Georgia)
- DES** - Department of Environmental Supervision
- EEC** - Energy Efficiency Centre
- EIA** – Environmental Impact Assessment
- EPR** – Environmental Performance Review
- ESCO** - The Electricity System Commercial Operator
- FNA** - Financial Needs Assessment
- GEDF** - The Georgian Energy Development Fund
- GEF** – Global Environment Facility
- GEL** – Georgian Lari (National Currency)
- GEOSTAT** - The National Statistics Office of Georgia
- GIZ** - Deutsche Gesellschaft für Internationale Zusammenarbeit/ The German Federal Enterprise for International Cooperation
- GNERC** - The Georgian National Energy and Water Supply Regulatory Commission
- GNTA** - The Georgian National Tourism Administration
- GSE** - The Georgian State Electro System
- GTA** - Georgian Tourism Association
- ICT** – Information and Communication Technologies
- IMF** – International Monetary Fund
- IUCN** - The International Union for Conservation of Nature and Natural Resources
- MoA** – Ministry of Agriculture of Georgia
- MoE** - Ministry of Energy of Georgia
- MoENRP** – Ministry of Environment and Natural Resources Protection of Georgia
- MoF** – Ministry of Finance of Georgia
- NBSAP** - National Biodiversity Strategy and Action Plan

NEA - National Environmental Agency
NEAP - National Environmental Action Plan
NFA - National Forestry Agency
ODA - Official Development Assistance
OECD – Organization for Economic Cooperation and Development
PIR - The Biodiversity Finance Policy and Institutional Review
PPP – Purchasing Power Parity
RoR – Run of River
SEA – Strategic Environmental Assessment
SEM - Sustainable Ecosystem Management
TEEB - The Economics of Ecosystems and Biodiversity
UNDP – United Nations Development Programme
UNEP - United Nations Environment Programme
UN-REDD - The United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation
WAVES - Wealth Accounting and the Valuation of Ecosystem Services
WWF - World Wildlife Fund

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Executive Summary

The Policy and Institutional Review forms a reference point for the whole BIOFIN process. The document establishes a baseline of the national policy and institutional context in which the BIOFIN project is expected to expand biodiversity finance in Georgia.

With regard to biodiversity framework, all the principal development strategies, national laws, and other national policy documents have been considered.

The need for changes in the policy and regulatory framework dealing with the environment and biodiversity protection is clearly outlined in the principal national strategies. “The environmental legal framework will be revised and upgraded in such areas as: waste management, water resource management, atmospheric air protection, forest management, reduction of natural and anthropogenic hazards, nuclear and radiation safety, protection of biodiversity, sustainable management of natural resources, issuance of permits and licenses, environmental impact assessment and strategic environmental assessment” is outlined in the **2015 state program “For Strong, Democratic, United Georgia”**.

The National Biodiversity Strategy and Action Plan (2014–2020) (adopted in May 2014), a document mandated by the CBD, formulates a wide-ranging policy and outlines the respective national priorities to transform Georgia into the country, where by the year 2030 “it will be a country with population living in harmony with nature, biodiversity will be commonly valued, biological resources - conserved and wisely used. This will provide natural continuity of ecosystem processes, healthy environment and benefits essential for all people “.

In order to identify the entry-points for future interventions under BIOFIN process, it is important to have a clear understanding regarding the linkages between priorities identified by National Biodiversity Strategy and Action Plan (NBSAP) and other policy documents in environment sector as well as other economic sectors, having different levels of impact and/or dependency on biodiversity.

NBSAP highlights importance of mainstreaming of biodiversity issues into the different sectors. Moreover, the number of NBSAP actions should be implemented in cooperation with different sectoral ministries and other governmental bodies. Although majority of this actions are not reflected in relevant sectoral strategies.

In 2012, a second **National Environmental Action Programme (NEAP-2)** for the period 2012–2016 was adopted. Timeframes for achieving a large range of specific measures are identified as well as the broad cost categories (low, medium and high), potential financing sources (central and local self-government budgets, IFIs, foreign donors) and achievement indicators.

Basic Dimensions and Directions (BDD) document is the key document outlining the financing perspectives. The **2014–2017 BDD** sets protection of the environment and rational use of natural resources among established priorities and commits to serve the goal of gradually attaining environmental standards adhered to in the EU space or established by international treaties.

The document containing Basic Dimensions and Directions of the country’s development is the master plan of the country’s development, which includes the information on medium-term macroeconomic and

fiscal forecast, as well as information on main issue-areas of the development of the central, autonomous and local self-government authorities of Georgia.

The **Ministry of Environment and Natural Resources Protection of Georgia (MENRP)** is the principal body of the executive authority in the biodiversity protection sphere. Different entities of public law (LEPLs) and sub-units under the MENRP play vital roles in the context of biodiversity management. The **Agency of Protected Areas (APA)** is responsible for establishment/management of PAs nationwide, monitoring and scientific research, processing, storing and distributing data about protected areas. The forest protection function is fulfilled by the **National Forestry Agency (NFA)**. The **National Environmental Agency (NEA)** issues licenses for mineral resources use and carries out environmental monitoring of air, surface water and soil pollution in major industrial regions. The **Department of Environmental Supervision (DES)** is responsible for carrying out environmental inspections. The **Department of Biodiversity and Forest Policy under the MENRP** is responsible for defining the strategies and elaboration of biodiversity and forestry related policy documents.

The **Ministry of Finance of Georgia** is the key player, responsible for coordinating the state budgeting process, forming budgets of the ministries, overseeing the process of budget funded state programs etc.

The **Ministry of Economy and Sustainable Development of Georgia** is in charge of developing and implementing the country's economic policy. It is also responsible for technical regulations and standards, foreign trade, foreign investments, promotion of the private business sector and privatization of state property.

Consideration of the national economic context is crucial for achieving the BIOFIN objectives. Five economic sectors (Hydro energy, Agriculture, Forestry, Tourism, Mining) have been prioritized based on their dependency, impacts, risks and opportunities with biodiversity and different ecosystem services. Impact-Dependency matrixes have been formed for most significant ecosystem services for each priority sector.

Although, TPP, Wind and Solar electricity generation are also being developed, **Hydro energy** is envisaged as the most important factor in electricity generation growth in Georgia. The development of the sector should be understood from the perspective of ecosystem services, on which the sector depends and which are impacted by it. According to Ministry of Energy and Natural Resources of Georgia, about 100 new HPP's are either under construction or going through feasibility study by different investors and respective Memorandums of Understanding have been signed. The total installed capacity of the new HPP projects is about 3.8 thousand MW. Although no active public debates take place on how Georgia's energy sector should develop further, the government of Georgia aims to position the country as a future regional renewable energy hub. According to the number of the reports, the process has number of deficiencies. "The planned projects do not comply with the principles of sustainable development, and they may have serious negative impacts for the environment, drastically change the social and demographic situation in Georgia's mountainous regions and also lead to the destruction of cultural heritage." Off balance - The Georgian energy sector and the contradictions in EU policy and practice, CEE Bankwatch Network, 2013

Agriculture remains an important sector in Georgia, providing employment of over 50 percent of the population and contributing to about 25 percent of exports. Nearly 47 percent of the Georgian population lives in rural areas (National Statistics Office of Georgia 2012). Agricultural land, including arable land,

perennial crops, hay fields and pastures, occupies approximately 3 million hectares or about 43.5 percent of the country's territory (National Statistics Office of Georgia 2012). According to the CBD Fifth Report of Georgia, "In order to reduce the direct pressures on biodiversity and promote sustainable use of biological resources the package of actions involves development of the legislative and institutional framework for mitigation of environmental pollution from agricultural activities and implementation of pilot projects for restoration of especially degraded/polluted grasslands, assessment of the status of agrarian ecosystems and pastures, implementation of pilot projects for sustainable management of grasslands and bio farm development."

The **mining** industry in Georgia has a long history. The country has more than 300 explored mineral deposits— copper, iron ore, barite, lead, zinc, arsenic, clay, sand, gravel, and a range of secondary metals, including gold and silver—only about half of which have been brought into production. Georgia has been a major producer of high-grade manganese (Mn) for about a century. It has one of the world's richest Mn deposits and largest Mn mining areas in the foothills of the Caucasus Mountains near the city of Chiatura. Sector operations oftentimes have a very significant impact on the environment due to unsustainable practices of waste treatment, causing the pollution of water and the complete destruction of local habitat – especially due to open pit operations. Although the Chiatura Manganese Mine and the Zestafoni plant are important for the county's trade balance, it is observed that they have significant environmental impacts, including acid mine drainage in some areas and contamination of groundwater, surface water, and soils.

Georgia is a country endowed with **forests** that are fully owned by the state. There are no private forests in Georgia - only long-term licenses are issued for timber production and for hunting ranches. According to the Georgia-Country Environmental Analysis, Institutional, Economic, and Poverty Aspects of Georgia's Road to Environmental Sustainability by World Bank, over the past 12 years, it is estimated that forest cover in Georgia has been reduced by 7,800 ha and has gained 4,900 ha of a different quality. It is assumed that lost tree cover is associated with 80 percent forest ecosystem value loss, and gained hectares are associated with 50 percent forest value gain. The actual usage of forestry wood material provided by statistics office somewhat corresponds to an estimate made by CENN (2,426,138 m³). A report by USAID estimates an even higher annual usage of 4,614,851 m³.

Development of the **tourism sector** is considered a principal prerequisite of economic success by the government of Georgia. While there are quick revenues to be generated from the tourism sector, various adverse impacts of tourism on ecosystems have been observed. Some of these include habitat loss due to land encroachment, waste generation and water quality impacts. Georgia's tourism's potential could be affected by the quality of the environment and severely restricted by poor air and water quality and collapsing coastal ecosystems because of pollution. The trend of significant increase in tourism as well as eco-tourism, suggests that certain ecosystem services will come under pressure as a result of the growth. One of the principle ways that biodiversity is protected in Georgia is through existing and proposed Protected Areas.

Introduction

The Biodiversity Finance Initiative (BIOFIN) is a global partnership addressing the biodiversity finance challenge in a comprehensive manner. The Initiative provides an innovative methodology enabling countries to measure their current biodiversity expenditures, assess their financial needs in the medium term and identify the most suitable finance solutions to bridge their national biodiversity finance gaps. The BIOFIN methodology includes the following main steps:

- **The Biodiversity Finance Policy and Institutional Review (PIR):** Analysis of the policy and institutional architecture for biodiversity finance and existing finance solutions.
- **Biodiversity Expenditure Review (BER):** Analysis of public and private expenditures targeting biodiversity.
- **Financial Needs Assessment (FNA):** Estimates the investment required to implement national biodiversity plans and achieve national biodiversity targets and results.
- **Biodiversity Finance Plan (BFP):** Analysis of options to optimize current and expand future investments (public, private, national, international, traditional and innovative) in biodiversity management.
- **Implementing Finance Solutions:** Support the implementation of policy recommendations and finance plans emerging from BIOFIN, such as the improvement or creation of finance mechanisms and the integration of finance solutions into national planning cycles.

The goal of the **Biodiversity Finance Policy and Institutional Review (PIR)** is to analyze a country's fiscal, economic, legal, policy, and institutional framework to initiate, improve, and scale effective biodiversity finance solutions. The PIR should establish a baseline context and orientation for the entire BIOFIN process.

A policy and institutional review is a widely used approach to assess the strengths and weaknesses of policies and institutions within a given sector. These reviews focus on topics related to the adequacy of existing policies, the existence of policy gaps, the translation of policies into practice, the role of the broader policy environment in influencing existing policies, and the adequacy of existing institutions and institutional frameworks.

Policy and institutional reviews are effectively system analyses and have been applied across many different sectors. They are required within the BIOFIN process due to the complexity of the current direct and indirect drivers of biodiversity loss. BIOFIN must address the whole set of drivers because it aims to adjust the current trajectory of development to improve its outcomes for biodiversity and for human and planetary wellbeing.

Specific objectives of the PIR include:

- a) Establish and expand a common understanding of how sustainable management of biodiversity and ecosystem services (including the National Biodiversity Strategy and Action Plan) supports national sustainable development goals and visions;
- b) Assess economic and financial drivers of biodiversity change;
- c) Catalogue existing biodiversity finance mechanisms, incentives, subsidies and other instruments;

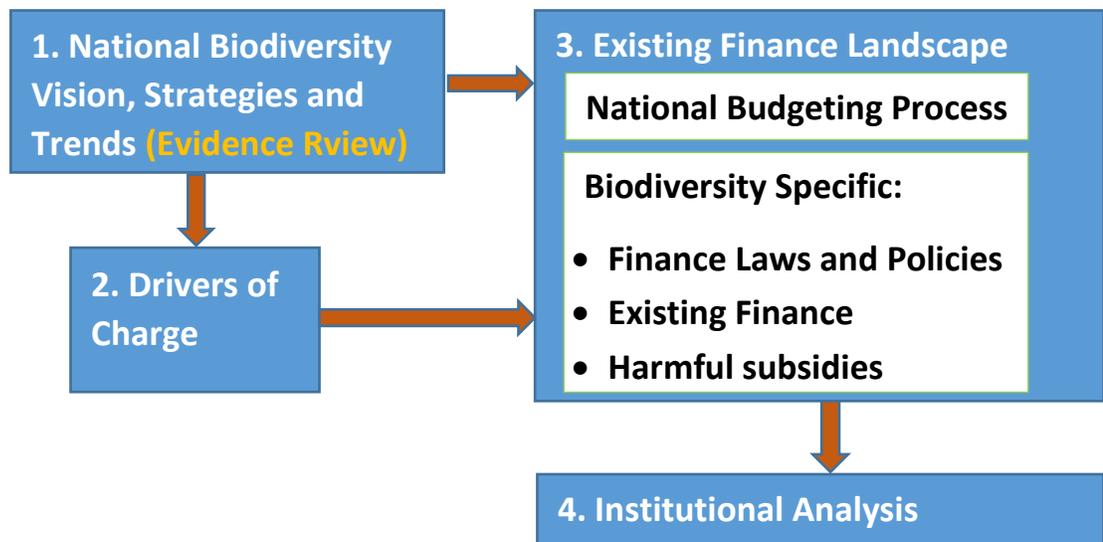
- d) Identify barriers to improved or expanded biodiversity finance solutions including legal, policy, institutional, and operational aspects;
- e) Identify biodiversity finance capacity development needs and opportunities; and
- f) Develop specific policy recommendations to initiate, improve, and scale effective biodiversity finance solutions.

The BIOFIN PIR therefore aims at identifying opportunities for improving biodiversity finance, including ways to reduce the loss of biodiversity by addressing drivers at their root cause, and to reduce costs, inefficiencies and barriers related to biodiversity and finance policies and institutions.

PIR Implementation Steps

The policy and institutional review identifies the national biodiversity vision, strategies and trends which establish what will be analyzed within the National BIOFIN study (e.g. which biodiversity targets) and the context for the intended change in financing. As below Figure 1 shows, from this first step the sectors driving biodiversity loss are identified. The existing finance landscape is then examined in more detail, including the national budgeting process, and the biodiversity finance laws and policies, existing biodiversity finance measures and biodiversity-harmful subsidies. Finally, an institutional analysis identifies biodiversity finance actors are identified.

Figure 1. PIR Implementation Steps



Policy and Legal Framework

The importance of changes in the policy and regulatory framework is outlined in the **2015 state program “For Strong, Democratic, United Georgia”**, “The environmental legal framework will be revised and upgraded in such areas as: waste management, water resource management, atmospheric air protection, **forest management, reduction of natural and anthropogenic hazards**, nuclear and radiation safety, **protection of biodiversity, sustainable management of natural resources**, issuance of permits and licenses, environmental impact assessment and strategic environmental assessment.” According to the document, with regards to biodiversity, “Measures necessary for the protection of biodiversity will be taken in accordance with the National Biodiversity Strategy and Action Plan for 2014-2020. National Biosafety Framework will be developed in the country.”

National Biodiversity Strategy and Action Plan of Georgia 2014-2020 (NBSAP 2)

In early 1994, with the ratification of the United Nations Convention on Biological Diversity (CBD), Georgia demonstrated its commitment to:

- Conserving biodiversity;
- Ensuring sustainable use of biodiversity and natural resources;
- Enabling access to biodiversity with fair and equitable sharing of its benefits.

Each CBD member country is required to develop a National Biodiversity Strategy and Action Plan (NBSAP) and to ensure that the strategy is reflected into the policies and activities of all those sectors whose activities have or can have an impact on biodiversity and ecosystem services.

Georgia adopted its first NBSAP in 2005. The document covered a 10-year strategy of biodiversity conservation, while the action plan was elaborated for a 5-year period, keeping in mind that in 5 years the document would be subjected to revision to reflect recent achievements and altered circumstances.

At the 10th meeting of the Conference of Parties (COP 10) of the CBD, Georgia committed itself to revising its NBSAP according to the Global Strategic Plan for Biodiversity 2011-2020 and respective “Aichi Biodiversity Targets”, and adopting it as a policy instrument by 2015. The process of elaboration of the document was initiated by the Ministry of Environment and Natural Resources Protection of Georgia in early 2011 and was financially and technically supported by the GIZ program ‘Sustainable Management of Biodiversity, South Caucasus’.

The National Biodiversity Strategy and Action Plan (2014–2020) was adopted by the Decree of the Government of Georgia No. 343 in May 2014.

The document formulates a comprehensive policy and defines national priorities in order to transform Georgia into the country, where by the year 2030 “it will be a country with population living in harmony with nature, biodiversity will be commonly valued, biological resources - conserved and wisely used. This will provide natural continuity of ecosystem processes, healthy environment and benefits essential for all people”.

The targets outlined in the NBSAP 2 are in line with Aichi Targets and are grouped under 5 main strategic goals:

- Underlying causes of biodiversity loss;

- Direct Pressures on Biodiversity;
- Status of Biodiversity Components;
- Benefits from Biodiversity;
- Measures to enhance implementation of the strategy.

Under the NBSAP 2 for Georgia, 21 national goals are set for protection of biodiversity, which are targeted at preservation of the values of biodiversity, raising public awareness regarding significance of biodiversity and benefits derived therein, integration of biodiversity aspects, enhancement of the biodiversity status and mitigation of threats to biodiversity (see Annex 1).

As opposed to the NBSAP-1, the updated National Biodiversity Strategy and Action Plan includes a situational analysis, strategic approaches and actions in the following new areas: Black Sea, Inland water ecosystems, Forest ecosystems, Natural grasslands, Cross-cutting issues and governance.

One of the main goals of the NBSAP 2 is creation of background for fulfillment of obligations undertaken under the EU Association Agreement and facilitation of harmonization with European environmental policy and strategies. The Georgia - European Union Association Agreement includes principal commitments for conservation of species and habitats and sustainable use of biological resources. Georgia has already made first steps to this effect: with technical assistance of the GIZ, elaboration of the Draft Law of Georgia “on Biological Diversity” is ongoing for the purpose of harmonizing the national legislation with EU Council Environmental Directives. At the present time, Georgia is part of the joint program on „Establishment of the Conserved Area Emerald Network in South Caucasus and Central and East Europe.” Under the program, 21 hot-spots in terms of biodiversity conservation are already revealed and associated scientific data and maps are prepared. As a result of project implementation, in 2018 Georgia is expected to include its first areas in the “Emerald Network”.

NBSAP 2 considers economic valuation of biodiversity and ecosystem services as a principal issue for integration of biodiversity aspects into the decision-making at the national level, “In most countries, including Georgia, goods and services provided by ecosystems have not been economically valued. A country could cut its forests and deplete its fish stocks, and this would show only as a gain in GDP without accounting for the corresponding decline in the nation’s natural capital.” (NBSAP 2, 2014)

The strategy confirms that “assessment of the role of ecosystems in the country’s economy at the national level is a new trend that can gradually attract decision-makers’ attention.” The scoping study of **The Economics of Ecosystems and Biodiversity (TEEB)** can be considered as the first step towards the above mentioned direction.

Box 1. The Economics of Ecosystems and Biodiversity (TEEB) Scoping Study - Georgia

In 2012 Georgia became one of the pilot countries for TEEB Scoping Study. Under the scoping study, **which** was conducted with participation of the MoENRP, UNEP, WWF-Caucasus Program Office, five core sectors of Georgian economy were identified, which are applicable for a more detailed TEEB study, these are energy, tourism, agriculture, mining, and forestry. The study highlights the substantial dependence of these driving forces of Georgian economy on natural capital and the services it provides. Under the scoping study, a guide was elaborated for comprehensive study of ecosystems and economy of biodiversity, which should serve as demonstration of tight links existing between economic development and biodiversity and integration of the values of natural capital into economic policy.

The strategy formulates the plans regarding economic valuation, “under the NBSAP it is planned to determine economic values of biodiversity and ecosystems at the national level and to integrate its outputs in national accounting and statistical systems, as well as in development, agricultural, poverty alleviation, and such other strategies.”

The strategy outlines the need for continuation of economic valuation in all the priority economic sections quite straightforwardly, “the process of economic valuation of biodiversity and ecosystems should continue in all preliminarily selected fields—forestry, energy, agriculture, tourism and mining and obtained results should be fully incorporated into national policies, accounts and statistics.”

There are separate activities outlined under the Objective A3-o2 to ‘evaluate economic values of biodiversity and ecosystems and integrate them into national accounting, agricultural and poverty reduction strategies and planning processes.’ (Table 1) According to the document, financial and technical support from the donor organizations is needed to conduct the economic valuation and elaborate/implement a communication strategy for the principal stakeholders, while the integration of the results into the respective state programs has to be supported from the state budget of the country.

Table 1. Objective A3-o2

Objective A3-o2. Evaluate economic values of biodiversity and ecosystems and integrate them into national accounting, agricultural and poverty reduction strategies and planning processes			
A.3-o2.1. Conduct an economic valuation of the country’s biodiversity and ecosystems using TEEB (The Economics of Ecosystems and Biodiversity), including agroecosystems (agricultural soils, natural grasslands and priority landraces)	2015	MoENRP; APA; NGOs; research institutes	Donors
A.3-o2.2. Elaborate and implement a communication strategy for decision makers, local communities and women’s groups on the economic values of biodiversity and ecosystems	2016	MoENRP; NGOs	Donors
A.3-o2.3. Integrate the results of TEEB study into development, agriculture, poverty eradication and other relevant programmes as well as into the national statistics	2018	MoENRP; other relevant agencies	State budget

From the institutional point of view, how the NBSAP is treated by the government and the private sector can be a major indicator of how the BIOFIN will be implemented. Unfortunately, the NBSAP 2 is not a legal budgeted document in Georgia, which means that the concepts should be integrated into national development plans, directly into budgets, and significant advocacy and awareness raising will be required. The document can be considered as a comprehensive strategy for addressing the key biodiversity management challenges existing in Georgia.

National Environmental Action Programme 2 (2012-2016)

Implementation of the first programme (**NEAP-1**), adopted for the period 2000–2004, was not effective as it was not properly linked to the budget processes to ensure availability of sufficient financial resources.

In January 2012, the Government of Georgia, based on the **Government Decree No. 127 (2012)**, adopted a second **National Environmental Action Programme (NEAP-2)** for the period 2012–2016. Timeframes for achieving a large range of specific measures are identified as well as the broad cost categories (low, medium and high), potential financing sources (central and local self-government budgets, IFIs, foreign donors) and achievement indicators. “To date, there has been no formal assessment of the progress made with implementation of NEAP-2. There is neither a specific cost estimate for the various individual measures envisaged nor an estimate of the overall financial resources that would be required to implement all these measures. There is also no costing of the various measures implemented so far within the framework of NEAP-2” *Environmental Performance Review of Georgia, UNECE, 2016*. Recently, special group of experts has started working on the elaboration of **NEAP 3**.

The single positive signal since 2010 is the **2013 National Forest Concept for Georgia**, the main goal of which is to establish a system of sustainable forest management that will ensure improvement of the quantitative and qualitative characteristics of Georgian forests, protection of biological diversity, effective use of the economic potential of forests taking into account their ecological value, public participation in forest management-related issues and fair distribution of derived benefits.

The Second National Action Programme to Combat Desertification, which was approved by the Resolution #742 of the Government of Georgia of December 29, 2014 is particularly focused on consistent fulfillment at the national level of commitments undertaken under the Convention to Combat Desertification, The Convention on Biological Diversity and The Framework Convention on Climate Change and to this effect envisages drawing up a joint national action plan by 2017 in order to implement all of the three conventions, as well as taking actions for informing public and decision makers of interaction existing between desertification/land degradation, biodiversity conservation and climate change.

The **2014 Waste Management Code** provides for legal conditions aiming at prevention of waste generation and increasing re-use, and introduces requirements for industrial waste permitting and reporting, but it is not applied to mining wastes.

The **2014–2017 BDD** sets protection of the environment and rational use of natural resources among established priorities and commits to serve the goal of gradually attaining environmental standards adhered to in the EU space or established by international treaties.

In 2010, the Government of Georgia, based on the Government Decree No. 172 (2010), adopted the **State Strategy of Regional Development of Georgia 2010–2017**. The document was developed with the purpose to create relevant conditions for regional economic development and the improvement of living standards countrywide. The Strategy defines medium-term priorities and objectives, as well as the means for achieving them. The key objectives are to improve municipal and regional infrastructure services (water supply, water drainage, waste management, roads, etc.) and institutional capacity at the regional and local levels. Environmental protection is, in general, integrated into these regional strategies. Until 2014, the Government had developed regional development strategies for the period up to 2017 or 2021 for all nine regions (i.e. administrative-territorial units) of Georgia.

Socio-Economic Development Strategy of Georgia (Georgia 2020)

In June 2014, the **Socio-Economic Development Strategy of Georgia (“Georgia 2020”)** has been adopted by the Government of Georgia. The key objective of the national strategy is to promote economic growth with the aim to raise employment and the overall living standards of the population. A principal target is to raise GDP per capita more than twofold in 2020 compared with 2013. The Strategy contains a range of measures to stimulate competitiveness in major economic sectors, notably in agriculture, designed to promote the growth of exports. The challenge will be to ensure the effective consideration and integration of environmental protection into this growth strategy.

National Security Concept of Georgia considers energy security as one of the principal national interests of the state.

In 2015 the parliament of Georgia adopted the new policy document, the **Main Directions of the State Policy in Energy Sector of Georgia**, which outlines main directions of state policy in energy sector, including: optimal utilization of local energy resources, approximation of Georgia’s legislative and regulatory framework with the EU’s Energy Acquis and effective implementation of EU energy market principles.

Ten Year Network Development Plan 2015-2025 by the JSC Georgian State Electro system (GSE) is an important technical document, outlining the perspectives of the electric power sector in Georgia.

Green economy initiatives

To date, Georgia does not have any official strategy for “greening” economic growth. Opportunities for fostering green growth exist in a large number of areas, such as energy efficiency, material use efficiency, organic agriculture, mining, sustainable forest management and wood processing, transportation, tourism etc. “Among the main challenges are the mainstreaming of sustainable consumption and production (SCP) into national legislation and development plans, and the promotion of SEA and EIA as planning instruments. Government budgets alone cannot mobilize the resources required for financing the necessary “green investments” *Environmental Performance Review of Georgia, UNECE, 2016*. Private sector has to play a key role. It is therefore important that there are effective incentives for promoting private sector investments. Also, the role of commercial banks in providing loans for green business investments has to be strengthened. So far, commercial banks have mainly offered specific environmental credit lines when supported by IFIs and donors. There are currently two government-owned funds in Georgia that aim to leverage private investment. The **Georgian Energy Development Fund (GEDF)** was established in 2010 and operates under the supervision of the Ministry of Energy. Its main assignment is to promote the development of the renewable energy investment projects (mainly hydropower) and attract potential investors.

The state-owned **Georgian Green Energy Development Company**, established in 2011 under the supervision of the Georgian Oil and Gas Corporation (GOGC), was merged with the GEDF in 2012. There is a **Renewable Energy Fund** set up by KfW, which leverages investments in renewable energy infrastructure, notably hydropower, by enabling Georgian commercial banks to lend corresponding funds to domestic companies. Since 2013, Georgia has been a member of the **Eastern Europe Energy Efficiency and Environment Partnership**, which is a multi-donor fund that aims at promoting energy efficiency and environmental investment at local self-government level in EU Eastern Partnership countries. These funds are then used to leverage national funds and loans from IFIs. Georgia is currently

included in a multi-country EU programme, **Greening Economies in the Eastern Neighborhood (EaP GREEN)**.

The **2006 Law on State Support to Investments** does not apply to environmental impact permits. The main goal of the preliminary license is to reduce administration procedures, however, long-term benefits, such as nature conservation and environmental protection, are not ensured.

The Strategic **“10-Point Plan” of the Government for Modernization and Employment 2011–2015** envisages the transfer of land into agricultural activities, which is important in respect of agricultural biodiversity; however, the Plan does not indicate measures to be taken to attain this target.

The **Strategy for Agricultural Development in Georgia (2015-2020)** underlines that conservation and sustainable use of agricultural biodiversity have a special role in the development of agriculture. It also recognizes the role of local farmers and breeders in the conservation and improvement of genetic resources, though it does not specify the State’s obligations in respect of the conservation of agricultural biodiversity.

Georgia Tourism Strategy 2015-2025 is a 10-year vision and strategic plan for increasing the value and importance of tourism for the benefit of the country’s economy and ultimately its citizens.

The 2014 state program **“Produce in Georgia”** aims at supporting and developing the manufacturing industry through the financing of new manufacturing, technological updating of existing production and support of micro start-ups.

The **2005 Law on Licenses and Permits** altered the licensing and permitting system, abolishing numerous licenses and permits, including in the water use sector.

Rules for issuance of an environmental impact permit are further defined by the **2007 Law on Environmental Impact Permit**.

Legal and regulatory instruments that apply to industry are also set up in the **2007 Law on State Ecological Expertise**.

The **2014 Law on Genetically Modified Organisms** forbids the import and the use of GMOs in Georgia.

The **1997 Water Law** is the framework law regulating water resources, which defines the main issues related to protection and use of water. It defines the main principles of water policy (protection and rational use, supply of drinking water as a first priority, sustainability and prevention of harmful impacts), and guarantees the security of state interests in water protection. However, it does not fully cover all aspects of water management, including management of groundwater, which is regulated by the **1996 Law on Mineral Resources**. “The Water Law suffers from an unworkable character because of the nominal and questionable legal validity of most of its provisions. It mainly provides for protection and use of surface inland waters and practically leaves out the legal regulation of groundwater and coastal waters” *Environmental Performance Review of Georgia, UNECE, 2016*.

The **1997 Law on Electricity and Natural Gas** stipulates the establishment and functioning of the energy regulator, the Georgian National Energy and Water Supply Regulatory Commission (GNERC).

The **2014 Minister of Energy Order No. 40** sets out the terms and conditions of the proposals about construction, ownership and operation of those HPPs that are not included in the List of Potential Power Plants in Georgia.

The **1994 Law on Soil Protection** (amended in 1997 and in 2002) aims to ensure the integrity of the soil surface, conservation and increased soil fertility. The Law excludes the use of fertile land for any other than agricultural purposes.

2007 Law on Recognition of Ownership Rights on Land Plots being under the Usage of Natural Persons and Legal Persons of Private Law regulates the legalization of ownership rights on land plots which are being used by natural and legal persons in an unlawful way;

2003 Law on Conservation of Soils and Reclamation and Improvement of Soil Fertility.

1994 Law on the Protection of Plants from Harmful Organisms provides that only plant protection means which are tested for their impact on the environment can be registered and imported.

2006 Law on Self-governance provides for creation of certain rights of local authorities with regard to natural resources.

In conjunction with the provisions of the EU-Georgia Association Agreement, Georgia has started to harmonize the legal basis concerning environmental management and, most important, to integrate environmental concerns into other policy areas. The introduction of impact assessment and environmental classification of activities based on their scope and risk levels, along with a ruling in the strategic environmental assessment of regional and sectoral development programs, is imperative to set the stage for assessment of project impacts across all sectors.

Global, regional and bilateral agreements

Georgia is a party to all of the major legally binding agreements relevant to biodiversity conservation and climate change and their related protocols, with the exception of the Nagoya Protocol on Access and Benefit Sharing to the Convention on Biological Diversity, International Treaty on Plant Genetic Resources for Food and Agriculture, Georgia is also a signatory to a number of relevant non-legally binding multilateral agreements. In October 2015, The Parliament of Georgia ratified the GMO Amendment to the Aarhus Convention.

- **Convention on Biological Diversity (CBD) – 1994**
- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) – 1996**
- **Convention on Wetlands of International Importance (The Ramsar Convention) – 1997**
- **Convention on Migratory Species (CMS) – 2001**
- **UNESCO World Heritage Convention- 1992**
- **Bern Convention on the Conservation of European Wildlife and Natural Habitats – 2009**
- **Georgia EU Association Agreement – 2014**
- **Association Agreement of trade-related Deep and Comprehensive Free Trade Area (DCFTA) – 2014**

Institutional Framework

The **Ministry of Environment and Natural Resources Protection of Georgia (MENRP)** is the principal body of the executive authority in the biodiversity protection sphere. Its objectives and terms of reference directly or indirectly relating to biodiversity issues are:

- Biodiversity protection, restoration and monitoring;
- Regulation of biodiversity components (i.e. issuing permits for export, import, re-export and introduction of species, included in the annexes to the Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES], their parts and derivatives);
- General environmental issues;
- Environmental policy;
- Control, monitoring, environmental education and awareness.

The functions of the **Agency of Protected Areas (APA)** include organizing monitoring and scientific research, and processing, storing and distributing data about protected areas.

The forest protection function is fulfilled by the **National Forestry Agency (NFA)** the Ministry of Environment and Natural Resources Protection.

The **National Environmental Agency (NEA)** issues licenses for mineral resources use and carries out environmental monitoring of air, surface water and soil pollution in major industrial regions.

The **Department of Environmental Supervision (DES)** is responsible for carrying out environmental inspections.

The **Land Resources Protection and Mineral Resources Service under the MENRP** is charged with implementation of the Law on Soil Protection.

The **Department of Biodiversity and Forest Policy under the MENRP** is responsible for defining the strategies and elaboration of biodiversity and forestry related policy documents.

The **Ministry of Finance of Georgia** is the key state body responsible for coordinating the state budgeting process, forming budgets of the ministries, overseeing the process of budget funded state programs etc.

The **Ministry of Economy and Sustainable Development of Georgia** is in charge of developing and implementing the country's economic policy. It is also responsible for technical regulations and standards, foreign trade, foreign investments, promotion of the private business sector and privatization of state property.

The **Division for Energy Efficiency and Alternative Sources** was established in the Ministry in 2013. Its main responsibilities include promotion of the programs and projects supporting the development of energy efficiency and use of renewable energy resources, and CDM projects.

The **National Agency for State Property Management** is responsible for the management of state owned lands.

The **Georgian National Tourism Administration (GNTA)** is to ensure sustainable tourism development through positioning Georgia as a unique travel destination, improve visitor experiences and maximize visitor expenditures to contribute to the national economy.

The **Georgian National Investment Agency** under the direct supervision of the Prime Minister of Georgia is the only official state agency responsible for promoting and facilitating foreign direct investments in Georgia.

The **Ministry of Energy of Georgia** sets out policies and is responsible for facilitating investment projects. The Ministry has a duty to provide the policy framework and legal means for the institutional development of the energy sector of Georgia.

The **Georgian National Energy and Water Supply Regulatory Commission (GNERC)**, the independent regulator, establishes tariffs, licensing rules and standards, and resolves relations between customers and companies.

The **Electricity System Commercial Operator (ESCO)** is responsible for balancing the market and ensuring grid stability, conducting export/import operations to meet systemic needs and for emergency purposes, and creating and managing a unified database on the wholesale purchase and sale of energy.

The **Georgian State Electrosystem (GSE)**, the transmission system owner and operator, is the only dispatch licensee in the country. Its main function is technical control and supervision over the entire power system to ensure an uninterrupted and reliable power supply.

The **National Statistics Office (Geostat)** provides all the sector-specific data used for end-use sector energy analysis.

The **Georgian Energy Development Fund (GEDF)** is established in 2010 by the Government in order to facilitate investment in and development of the country's renewable energy sector. GEDF aims at development of renewable energy projects in Georgia and works mainly on development of hydro, wind and solar energy projects.

The **Department of Sustainable Development (DSD)** deals with sustainable development issues. The **Technical and Constructions Supervision Agency** is responsible for issuing construction permits for industry; supervision (technical inspections), including of high-risk industrial facilities (metallurgy, mining, chemical) and compliance with the implementation of industry's emergency response plans;

The **Georgia's Innovation and Technology Agency (GITA)** is responsible for promoting the introduction of modern and cleaner technologies in industry.

The **Ministry of Agriculture of Georgia** carries the overall state responsibility for agricultural production, soil fertility, plant protection, livestock breeding and agricultural engineering, and is responsible for carrying out state control over irrigation systems etc.

The **Agriculture Cooperative Development Agency (ACDA)** was established in 2013 to ensure granting, termination and monitoring of status of agricultural cooperatives, as well as implementation of state programs.

The **Scientific-Research Centre of Agriculture (SRCA)** was established in 2014 to endorse the bio-agro (organic) production, promote the ecologically safe food and harmonize it with international standards, advance technologies of the agricultural food processing and post-harvest management, study the land pool and restore the soil fertility of Georgia etc.

The **Agricultural Projects Management Agency (APMA)** was established in 2012 to promote and stimulate development of production-oriented industries in the regions of Georgia.

“**Georgian Amelioration**” LTD is the 100% state owned company is responsible for the management of the state owned irrigation systems.

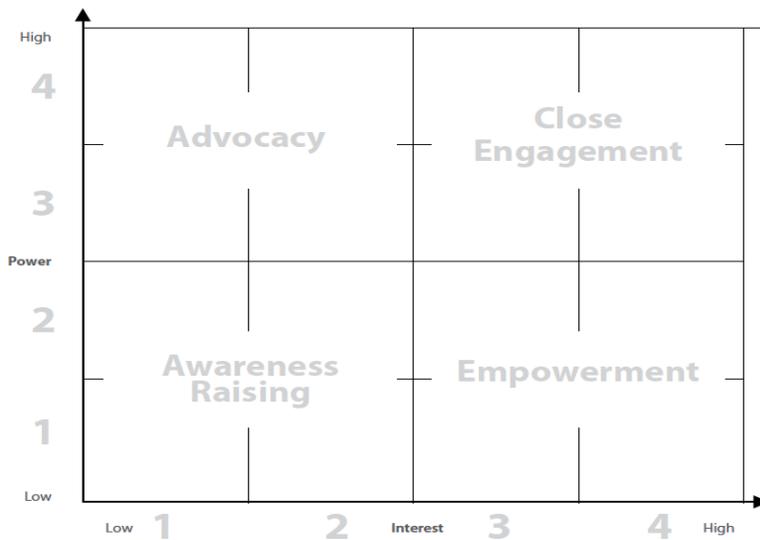
The **Rural and Agricultural Development Fund** was established in 2013 to promote agricultural cooperatives, development of infrastructure, increase in food production, to reduce rural poverty and strengthen small farmers’ organizations.

The **Ministry of Internal Affairs of Georgia** and the **Emergency Management Agency** are responsible for coordinating emergency situations in the event of an industrial accident.

The **National Agency of Public Registry** is responsible for registering the land plots and of all operations related to real estate.

All the stakeholders have been prioritized according to the two main criteria: Interest in the sector and power (Figure 2). Stakeholders including ministries, agencies, NGOs, private sector associations, donors and other finance sources, key economic actors, etc. were given scores taking into account two main criteria: power and interest.

Figure 2. Prioritization criterias of stakeholders



The results were summarized in the detailed sectoral tables identifying the principal stakeholders

(see Annex 2). The stakeholders which were given 5 or more score were considered as relevant for inclusion in the Biodiversity Expenditure Review (BER) and for engagement in the Financial Needs Assessment (FNA).

Energy

Utilization of the hydropower potential in Georgia dates back to the late 19th century. “Since the nineteenth century hydropower in Georgia became one of the driving forces in electricity production. The first hydropower plant (HPP), with a capacity of 103kw, was built in the village of Borjomula in 1898.” Off balance - The Georgian energy sector and the contradictions in EU policy and practice, CEE Bankwatch Network, 2013

Georgia’s rich hydro power potential is outlined in the respective reports, studies and policy documents. “Georgia holds significant hydroelectric power potential, and if fully utilized this can allow the country to export significant quantities of clean electricity to neighboring countries and potentially to the European Union.” Energy Union Strategy and EaP countries, World Experience for Georgia, 2015

Hydropower dominates Georgia’s electricity generation sector, while the national economy depends on imports for the bulk of its primary energy requirements due to the low level of domestic oil and gas resources and there being only a few coal deposits in the country. Generation of hydroelectric power changes the river environment. The current Georgian legislation does not define the methodology for calculating the environmental flow. In practice, two methodologies coexist: for the oldest dams, the Soviet standards are applied, and for the most recent ones, a more simplified methodology is adopted. In addition, dams have cumulative impacts on water quality, natural flooding and species composition especially where a number of dams are sited on the same river. **While being a renewable resource, hydropower both depends on and impacts upon ecosystem services.** It depends on a regular supply of water; both quality and quantity of freshwater is critical for the functioning of this sector. Some of the impacts of the hydropower sector include habitat loss, displacement of local communities and greenhouse gas emissions. These impacts, however, are not always appropriately addressed in the current EIAs of HPPs.

According to the **Country Partnership Strategy for Georgia 2014-2017** by the World Bank, “Over the last decade, the Government has transformed the energy sector, ensuring fast growth with improved efficiency. The government is pursuing two strategic objectives: to ensure continued reliable domestic energy supply for firms and homes; and to facilitate and bolster electricity production from hydropower plants (HPPs) to expand regional electricity trade. Important institutional and regulatory reforms have been initiated to support private investment in energy.”

Box 2. The Priorities in Energy Sector

Adopting market rules to facilitate trade through compliance with the EU Energy regulations applicable to Georgia under the Association Agreement and the Community Treaty;
Implementing international standards for environmental and social impact assessments and mitigation;
Strengthening the transmission network capacity to improve reliability and support electricity trade;
Creating the conditions for efficient private investment in hydro power and other renewables.

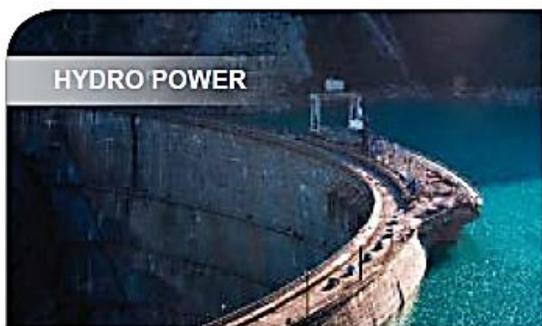
According to the 2015 state program **“For Strong, Democratic, United Georgia”**, “availability of energy resources is a necessary prerequisite for improving living conditions amid the growing and competitive economy. To attain this goal, the Government will continue to engage in such priority areas as the rational use of local energy resources that, in the medium- and long-term future, will substitute energy imports and will increase export potential, ensuring, at the same time, the readiness of the energy sector in case of development of energy-intensive sectors of economy”. Regarding the vision of the development of energy sector in the country, certain contradictions can be observed in the document. The Government plans to simplify the procedures to attract additional private investments in energy sector “the Government will provide a favorable environment for attracting private investments to the energy sector. The Government will make more effective the measures contributing to investments, as well as the introduction of simplified and transparent procedures”, states the document. At the same time it declares, that “the optimum use of renewable energy sources will remain one of the Government’s priorities, with due regard for technical, economic, environmental and social requirements and based on the international best practices.” To maintain the balance between sustainable use of the resources and the simplified procedures can be seen as a key challenge and for the current and future governments of Georgia. Moreover, simplification of the procedures in energy sector will contradict Georgia’s aspiration to accomplish the objectives envisaged by the AA with EU. Respectively, it can serve as the additional barrier on the way of “Bringing the domestic legislation into line with the EU energy laws”.

National Security Concept of Georgia considers energy security as one of the principal national interests of the state. “In order to ensure the country’s energy security, the further diversification of energy sources and transportation routes is a priority for Georgia. It is equally important to support the development and modernization of the country’s energy systems, as well as their integration into regional energy infrastructure. The further strengthening of Georgia’s energy capacity will positively affect state security, economic development, and the welfare of citizens.” (National Security Concept of Georgia, 2011) It is expected that the further strengthening of energy capacity of the country will have positive consequences for the national security, as well as for the economic development and the socio-economic conditions of the citizens of Georgia. According to the document, the energy independence is very critical for Georgia and its strengthening is in connection with the national security of Georgia. It is declared in the document that “the further development of clean energy sources and the creation of required infrastructure is also important to the energy security of Georgia”.

Along with the security issues, with regards to the energy, the document is mainly focused of the economic aspects. “In order to ensure sustainable energy security for Georgia, it is important to create a favorable investment environment, to strengthen international cooperation, and to further develop the existing energy infrastructure.” (National Security Concept of Georgia, 2011)

Figure 3. Excerpt from the brochure for attracting investments in hydropower sector of Georgia

INVESTMENT OPPORTUNITIES



- Georgia is one of the top countries in terms of water resources per capita
- Today 78% of total electricity is generated from Hydro Power Plants
- Georgia could produce additional 25 TWh annually with hydro resources alone
- There are over 60 potential HPP projects on the Pre-feasibility Study Level with Financial and Technical projection ready for investors

GENERATION AND EXPORT ACTIVITIES ARE EXEMPTED FROM VAT

NEW HPPS HAVE PRIORITY ACCESS TO TRANSMISSION LINE TO TURKEY

HPPS SMALLER THAN 13 MW DON'T NEED GENERATION LICENSE

HPPS SMALLER THAN 2 MW DON'T NEED ENVIRONMENTAL IMPACT PERMIT

Based on the experience, Georgia is a proponent of new initiatives regarding the energy projects. “Georgia welcomes the implementation of new projects in the framework of the South Energy Corridor, including those projects that will supply oil and natural gas from the Caspian and Central Asian regions through Georgia to Europe.” (National Security Concept of Georgia, 2011)

“Since 2008, the Government of Georgia is promoting investment to support the State Program “Renewable Energy 2008”. For example, there are 60 ongoing investment projects on different stages of development, with an approximate total investment of USD 2,937,774.382.” Assessment of Fresh Water Ecosystem Services in the Hydropower Sector in Georgia, 2015, Irakli Matcharashvili and Marlon Flores

As a crucial energy corridor, Georgia fully realizes its role in supplying the West with energy resources from the Caspian and Central Asian regions via alternative routes. Georgia’s Black Sea ports, the Baku-Supsa and Baku-Tbilisi-Ceyhan oil pipelines, and the Baku-Tbilisi-Erzurum gas pipeline are already active and strategically important projects.

Among the main priorities of Georgia's energy policy are the development of energy infrastructure, the more efficient use of hydropower, and research into other clean-energy resources. Georgia actively cooperates with foreign investors on developing renewable energy resources.

The document recognizes the importance of sustainable usage of the natural resources and environmental protection and outlines the role of environmental security in the process of massive projects. "Environmental protection and the rational use of natural resources is closely related to public health and safety. Ensuring environmental security is especially important while implementing large-scale domestic and international projects." (National Security Concept of Georgia, 2011)

Additionally, there is a separate section dedicated to the environmental security in the document, "The environmental security policy of Georgia protects people and the environment by reducing the use of natural resources and the prevention of environmental damage caused by natural and manmade crises."

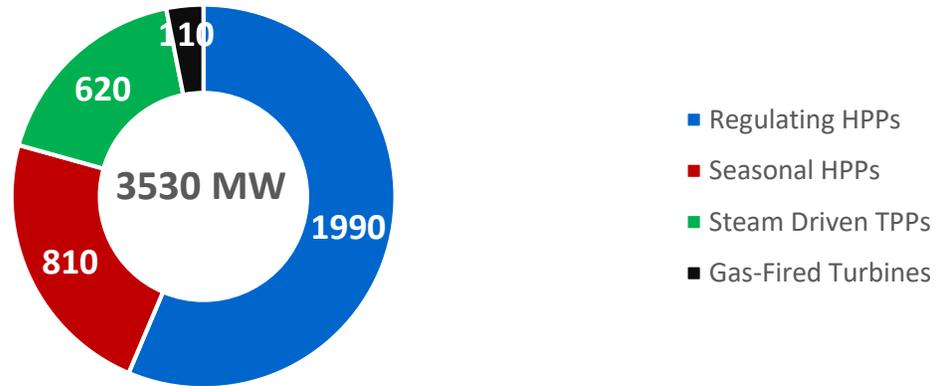
In 2015 the parliament of Georgia adopted the new policy document, the **Main Directions of the State Policy in Energy Sector of Georgia**. The document outlines main directions of state policy in energy sector, including: optimal utilization of local energy resources, approximation of Georgia's legislative and regulatory framework with the EU's Energy Acquis and effective implementation of EU energy market principles. The importance of taking into consideration environmental components in the implementation of the energy projects is recognized in the document. "While implementing energy projects including implementation of large HPP projects, that might have an environmental and social impact, it's vital to take into consideration best international practices, which include environmental and social impact assessment, consultations with local population, information publicity and availability." (Main Directions of the State Policy in Energy Sector of Georgia, 2015)

Utilization of the different energy resources in Georgia is justified with climate change factor, "Utilization of Georgia's renewable energy resources Development of renewable resources is a key to tackling climate change and deploying cleaner sources of energy. Georgia is remarkably rich in hydro-power resources, also having potential of wind, solar, biomass and geothermal resources, which can be used for creation of additional capacity by means of domestic and foreign investments." (Main Directions of the State Policy in Energy Sector of Georgia, 2015)

To realize the policy priorities Ministry of Energy of Georgia has developed the draft version for the **Energy Strategy of Georgia 2016-2025**, which is in full compliance with the national priorities in the sector outlined in the above mentioned documents.

Ten Year Network Development Plan 2015-2025 by the JSC Georgian State Electro system (GSE) is an important technical document. According to the document, at present, total installed capacity of electric power plants operated in Georgia amounts to 3530 MW. From this, 1990 MW is generated by the so called "regulated" HPPs (with water storage), 810 MW by "seasonal" (run-of-river) HPPs, 110 MW by Gas Turbines and 620 MW by thermal power plants (Figure 4.). Roughly 80% of the total in-country installed capacity is provided by HPPs, including 56% generated by regulated hydro power plants.

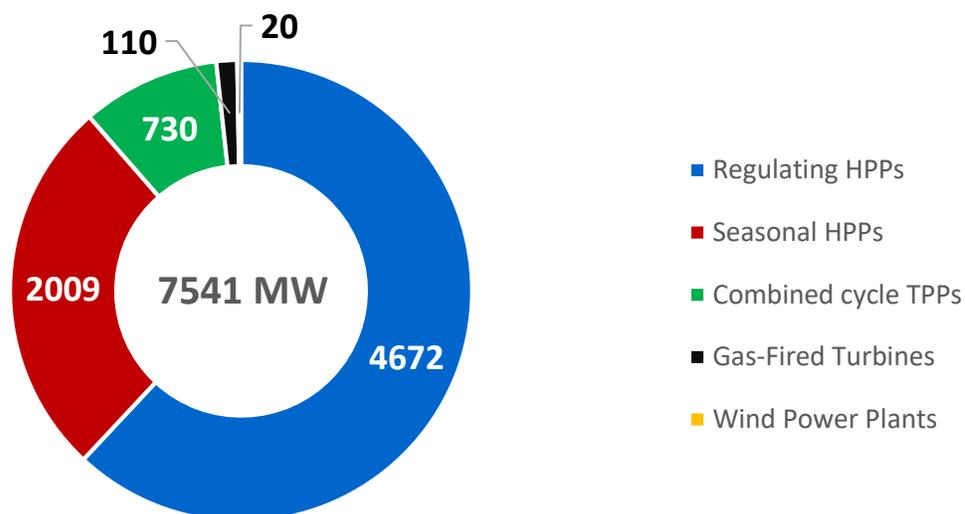
Figure 4. Installed capacity of electric power plants operated in Georgia



Source: Ten Year Network Development Plan 2015-2025, JSC Georgian State Electro system (GSE)

For 2025, the total installed capacity available in Georgian power system will grow to 7541 MW (Figure 5.) From this, 4672 MW will be attributed to regulated HPPs, 2009 MW to seasonal HPPs, 110 MW to gas-fired turbines, 20 MW to Wind Power Plants and 730 MW to high efficiency combined cycle thermal power plants, which will replace the older Gardabani TPP's Units Nos. 3, 4 and 9. For 2025, percentage share of hydropower in total national installed capacity will grow to 89%, including 62% regulated hydro power plants. This will ensure use of the water stored during flood season for low flow periods, thus reducing dependence on import of electricity and fossil fuels necessary for operation of thermal power plants. The annual electric energy balances have been developed based on forecasted growth of generation and demand.

Figure 5. Installed capacity available in Georgian power system



Source: Ten Year Network Development Plan 2015-2025, JSC Georgian State Electro system (GSE)

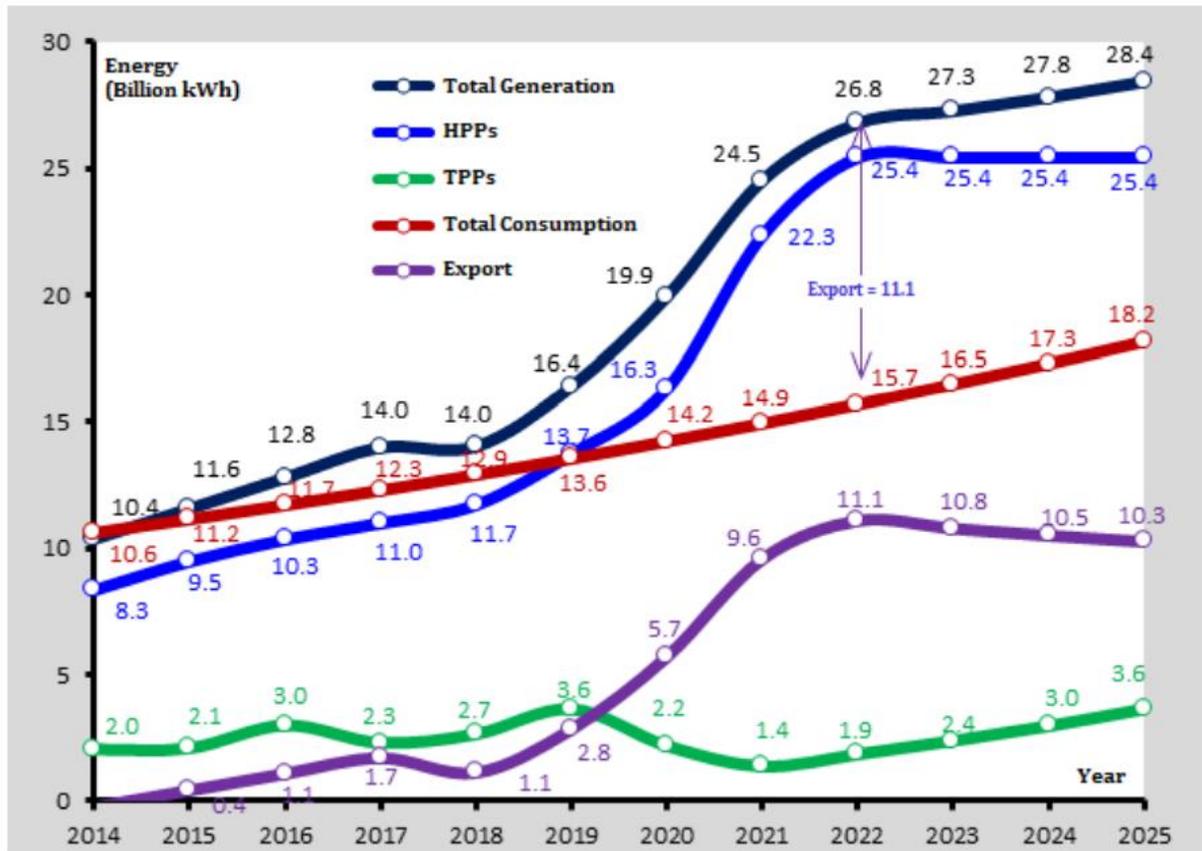
The annual electric energy balances have been developed based on forecasted growth of generation and demand (Table 2, Figure 6).

Table 2. Forecasted Annual Energy Balances of Georgian Electric Power System (bln kWh)

Year	Generation	HPPs	TPPs	Consumption	Export
2014	10.37	8.34	2.04	10.62	-0.25
2015	11.57	9.48	2.09	11.15	0.42
2016	12.79	10.34	3	11.71	1.08
2017	13.99	10.99	2.3	12.29	1.70
2018	14.03	11.72	2.65	12.91	1.12
2019	16.39	13.73	3.64	13.55	2.84
2020	19.94	16.3	2.18	14.23	5.71
2021	24.52	22.34	1.37	14.94	9.58
2022	26.78	25.42	1.85	15.69	11.09
2023	27.26	25.42	2.38	16.48	10.78
2024	27.8	25.42	2.97	17.30	10.50
2025	27.42	25.42	3.64	18.16	10.26

Source: Ten Year Network Development Plan 2015-2025, JSC Georgian State Electro system (GSE)

Figure 6. Georgian Generation, Consumption and Export



Source: Ten Year Network Development Plan 2015-2025, JSC Georgian State Electro system (GSE)

Table 3. Basic Economic Indicators

Electricity production	2011	2012	2013	2014	2015
Industry Production Value (GEL million)	439	535	568	640	791
Industry Expenses (GEL million)	202	347	303	364	481
GDP - Value Added (GEL million)	237	188	266	277	311
GDP share (%)	1.0%	0.7%	1.0%	0.9%	1.0%
Salary Expenses (GEL million)	71	83	83	92	100
Profit before taxes (GEL million)	166	105	183	185	211
FDI (USD million)	204	179	245	190	124
Net Export (USD million)	8	-14	-16	-22	-18
Export (USD million)	33	19	14	29	26
Import (USD million)	24	33	30	51	44
Number of hired employees	7128	7677	7802	7932	8056
Number of self-employed	0	0	0	0	0

Share in total working places	0.31%	0.32%	0.33%	0.33%	0.33%
Average Monthly Salary	835	903	886	966	1037

Energy production sector accounts for about 1% of Georgia’s GDP. Despite this fact, energy production is one of the most developing sectors in Georgian economy. There is a high interest from both domestic and foreign investors. Foreign direct investment in this sector accounted for about 15% of total FDI in 2011-2015. The number of employees in the sector is steadily increasing, indicating the stable development of the sector.

Current energy production in Georgia mainly derives from Hydro Power Plants (HPP) and Thermal Power Plants (TPP). The breakdown of the production by HPP and TPP is provided in the table 4 below:

Table 4. Energy production in Georgia by HPP and TPP

Electricity production (GW/h)	2011	2012	2013	2014	2015
From HPPs	8,158	7,561	9,097	8,303	8,809
From TPPs	2,588	2,577	1,788	2,036	2,378
Total	10,746	10,138	10,885	10,339	11,187

Although currently the value of imported energy is higher than the value of export, the fact that Georgia began exporting electricity is an important development.

Georgian government envisages energy sector as one of the strategic directions of Georgia in the near future. It has been estimated that Georgia has a sizeable hydropower capacity with about 300 rivers capable of producing electricity. Current installed capacity of existing HPP’s is about 2.8 thousand megawatts. It is notable that almost half of this capacity derives from Enguri HPP with 1.3 thousand megawatts of installed capacity.

The breakdown of existing HPP’s by their relative size is provided in the table 5 below:

Table 5. Breakdown of existing HPPs

Existing capacity	Number of HPP's	Total Installed Capacity (MW)
<10 MW	42	119
10<, <100 MW	15	503
>100 MW	7	2,169
Total	64	2,791

According to Ministry of Energy and Natural Resources of Georgia, about 100 new HPP’s are either under construction or going through feasibility study by different investors and respective Memorandums of Understanding have been signed. The total installed capacity of the new HPP projects is about 3.8 thousand MW.

The breakdown of the potential capacity by the size of HPP’s is provided in the table 6 below:

Table 6. Breakdown of the potential capacity by the size of HPPs

Installed Capacity	Number of HPP's	Total Installed Capacity (MW)
<10 MW	53	248
10<, <100 MW	40	1,107
>100 MW	9	2,433
Total	102	3,788

Given Georgia’s energy needs, it can be estimated that this capacity will be sufficient to enable Georgia to export significant amount of Energy to its neighbors. Georgia is already exporting some of its spare capacity abroad. In 2011-2015, about 1% of country’s total exports derived from electricity. However, given the number of prospective projects, it can be estimated that by 2020 this share could grow more than tenfold to about 10% of country’s total exports.

This would be in line with Government’s plan for Georgia’s energy security, as no more imports would be required from neighboring countries.

Given the projected growth in number of HPP’s, it is certain that Georgia’s ecosystems will be subject to significant pressure form the developing sector. The main regions under significant stress are

- Samegrelo - Zemo Svaneti,
- Racha-Lechkhumi - Kvemo Svaneti,
- and Adjara

There are also ongoing investments and feasibility studies of new Thermal Power Plants, as well as completely new sources of energy such as Wind and Solar. Four new TPP’s are under feasibility study with a total installed capacity of about 1,000 MW, while two new coal TTP’s are under construction in Tkibuli, with an installed capacity of 163 MW.

In 2016, first wind electricity production has been launched in Georgia. Total installed capacity of the completed project amounted to 20 MW, however 5 new sites for wind precaution are currently being studied. Two sites in Georgia are studied in terms of potential generation of solar energy.

Figure 7. Hydropower Energy Sector

Hydropower Energy Sector	Raw Materials	Sector Operations	Major Clients
Ecosystem services	Dependence Impact	Dependence Impact	Dependence Impact

Provisioning					
Aquaculture		● -		● -	
Timber and other wood fibers				● -	
Freshwater	●	● +/-	●	● +/-	
Genetic resources		● -		● -	
Regulating					
Regional/local climate regulation	●		●	● +/-	● +/-
Regulation of water timing and flows	●	● +/-	●	● +/-	
Maintenance of soil quality		● -		● -	
Supporting					
Habitat		● -		● -	

Although, TPP, Wind and Solar electricity generation are also being developed, Hydro energy is envisaged as the most important factor in electricity generation growth in Georgia. The development of the sector should be understood from the perspective of ecosystem services, on which the sector depends and which are impacted by it.

The following table presents Impact-Dependency matrix for most significant ecosystem services for Hydropower Energy sector:

Given the outlined trend of HPP generation growth in the country, we can envision following Risks and Opportunities as derived from the mentioned ecosystem services and from the point of view of energy producer:

Figure 8. Outlined trend of HPP generation growth in the country

Trends	Impact on Ecosystem Service	Business risk
Increased deforestation	Increased deforestation upstream could lead to increased erosion.	Erosion might create sedimentation of water, which might cause deterioration of turbines and create unforeseen costs.
Increased number of HPP's	Degraded water quality makes water unsafe for drinking - reduced oxygenation and dilution of pollutants by stagnant reservoirs	Possible drinking water health problems to local communities, causing fines, environmental regulations.
Increased number of HPP's	Fresh water is not available for downstream users	Regulating changes due to local communities dissatisfaction, increased compliance costs.
Increased number of HPP's	Sudden flooding, when water is released from dams	Damage to agriculture causing fines, change in regulation.
Global warming	Decline of the glaciers, decrease in fresh water run	Decrease in electricity generation capacity of the river, lost revenue

The energy intensity of the Georgian economy is high. The amount of energy needed to produce goods and services in Georgia is 2-2.5 times higher than in Western countries. Georgia has one of the most energy-intensive economies when compared with similar countries in the region. It is estimated that Energy efficiency measures can provide up to 20% of energy saving in the country in short term perspective and with minor expenses. This would allow Georgia to cut down its peak demand for electricity and gas, resulting strengthening its energy supply security.” Energy Union Strategy and EaP countries, World Experience for Georgia, 2015

Until recently, the focus of official energy policies has been on building as many HPPs and other infrastructure as possible and addressing short term immediate problems with less regard to economic realities and EU association interests. Within the existing legal framework plagued by grey areas and allowing individual dealings, this process has resulted in excessive state obligations, unwarranted concessions to potential developers and non-competitive agreements now comprising a body of barriers to reform. This practice is both unsustainable and does not conform with the country’s long-term strategic interests or EU association goals. It is necessary to urgently mobilize all stakeholders interested in energy reform and to reverse this trend.

Box 3. Khudoni HPP Project

Khudoni Hydro Power Plant is a projected power plant on Enguri River, in Samegrelo-Zemo Svaneti, Georgia, having 3 turbines with a nominal capacity of 233.3 MW each having a total capacity of 700 MW. The power plant is associated with a planned 200.5-metre tall concrete double-arch-gravity dam. The most immediate impact of Khudoni dam is the flooding of several settlements and the inevitable resettlement of more than 2000 native Svans from the area (one seventh of the population of Upper Svaneti), who have resisted the project for 30 years already.

In the case of Khudoni HPP project, the Netherlands Commission for Environmental Assessment has concluded that essential information is lacking in the environmental and social impact assessment (ESIA): social issues related to compensation, resettlement and cultural heritage; sediment load of the river and geo-hazards in relation to useful reservoir life; seismic risk; and broader costs and benefits for Georgia. The Commission also concluded that, if the above issues were addressed and were necessarily mitigated in an appropriate manner, the ratio between environmental and social impacts on the one hand, and generated power on the other, was relatively favorable for Khudoni HPP, which could act as a driver of regional conservation and development if compensation measures for loss of biodiversity and cultural heritage were implemented according to international best practice.



The quality of Georgian energy legislation has been criticised on many occasions and still remains a major problem. One time ad hoc changes resulting from short-term specific needs have become a rule. 16 amendments were introduced in the last three years to the Electricity and Natural Gas Law alone, not to mention the numerous changes to electricity market rules. More often than not, these amendments are superficial quick fixes to concrete problems or needs, not harmonized with the whole logic of energy sector needs.

Government resolution 214 of 2013 defines the procedures for construction of new power plants. It has replaced the previous resolution, but still allows subjective interpretation and an uneven treatment for different developers. More than 100 memoranda have been signed by the Ministry of Energy of Georgia for the construction of more than 120 hydropower plants based on these procedures. The conditions of these agreements vary widely, providing: the sales tariffs between 4.3 and 10.5 USC per kWh, the periods of guaranteed purchase by ESCO from 3 to 12 months, and different conditions for access. Georgia's Energy Sector, Murman Margvelashvili, 2016

Although no active public debates take place on how Georgia's energy sector should develop further, the government of Georgia aims to position the country as a future regional renewable energy hub.

According to the number of the reports, the process has number of deficiencies. "The planned projects do not comply with the principles of sustainable development, and they may have serious negative impacts for the environment, drastically change the social and demographic situation in Georgia's mountainous regions and also lead to the destruction of cultural heritage. In addition, other than the social and environmental problems related to large dams elsewhere, it has emerged that the Build, Own, Operate (BOO) model promoted by the Georgian government for the construction of the HPPs will not benefit the country's budget in any way sufficient to justify the total change of landscape and the devastation of the environment, to say nothing about the thousands of people that will be forced to resettle." Off balance - The Georgian energy sector and the contradictions in EU policy and practice, CEE Bankwatch Network, 2013

The effectiveness of the Environmental Impact Assessment (EIA) system with regard to the energy sector is an issue of the intensive discussion.

"The Environmental Impact Assessment (EIA) system is ineffective in Georgia, both in terms of providing the public with information and opportunities for public participation, as well as in terms of helping decision-makers to take informed decisions on activities that might have a significant impact on the environment and human health. Public (state-owned) projects remain exempt from EIA procedures, the same as with mining and forest use projects (mining and forest use licenses are auctioned off without any prior environmental and social assessments). The public remains uninformed about the applications for receiving environmental consents for development projects, and the same applies for final decisions taken by the competent authority, the Ministry of Environment. The Georgian EIA system is neither in compliance with the requirements of the Aarhus Convention nor with relevant EU directives." Off balance - The Georgian energy sector and the contradictions in EU policy and practice, CEE Bankwatch Network, 2013

Box 4. Specific recommendations to address the Georgian energy sector situation In order to ensure that the mistakes involved in the energy sector planning are taken into account, and that the process of Georgia’s power sector development is sustainable

1. Enforce a moratorium on the funding of any large dam construction in Georgia until the strategic development plans of Georgia’s power sector are developed in a participatory manner.
2. Support the development of a coherent resettlement and environmental policy that would comply with international legislation.
3. Support the Government of Georgia to carry out a genuine Strategic Environmental Impact Assessment that would: address ways to satisfy existing electricity demand in Georgia with existing potentials and alternatives; address as well as develop the most sustainable solutions for development within the sector, and; present a cost-benefit analysis of these alternatives, along with a cumulative impact assessment of the planned projects on local populations and Georgian society as a whole. The SEA should present the best scenarios not only for the development of new generation capacities or the rehabilitation of infrastructure, but include also the development of new renewable technologies, as well as energy efficiency.
4. Ensure wide and fair public participation for the revision of the SEA findings and the follow up decision-making process.

Source: Off balance - The Georgian energy sector and the contradictions in EU policy and practice, CEE Bankwatch Network, 2013

Box 5. Business-as-usual scenario

The business-as-usual scenario implies developing 1,872 MW extra capacity through new small, medium and large-scale HPPs. Development is carried out on a case-by-case basis without any strategic planning for what seems to be a rather large number of HPPs, taking into consideration the fact that currently installed HPPs work at only 60 per cent of their capacity. The current large-scale and export-oriented energy model can be vulnerable to unfavorable changes in the political and economic environments of all potential trade partners: it can be affected by a decrease in electricity demand in Turkey as a result of a slowdown in economic growth, or a decrease in electricity prices in Turkey. The energy scenario is often not appropriate and effective in meeting basic needs in rural areas. This energy model gives rise to overreliance on one energy source for power generation, such as hydropower (where prolonged drought means empty reservoirs that dramatically reduce generating capacity), where large hydropower projects, the negative social and environmental impacts of which, are often not properly assessed prior to their construction. The absence of a national and/or strategic site allocation energy strategy, complemented by integrated water resources (or river basin) management plans for rivers and supported by the SEA process, makes it impossible to verify why projects are needed from a national energy demand and supply point of view, why hydropower is selected as the source of energy and where the hydropower dams should be located. Planned hydropower development has yet to be optimized to increase overall economic benefits and minimize adverse environmental and social impacts. Georgia has been developing hydropower sites on a case-by-case basis, focusing on the benefits and costs of each site, rather than an optimal development framework. At the same time, there has been a clear tendency to move Georgia’s economy towards heavy dependence on the large-scale exploitation of natural

resources (forestry, agricultural land) without assessing the economic, environmental and social consequences of such an approach. Impacts on poor communities that rely heavily on natural resources for subsistence and income have been neglected.

Alternative scenario

An alternative scenario may support alternative, small-scale decentralized energy projects which take account of the needs of local communities and the economic realities specific to Georgia. It might specifically address how access to energy can help lift people out of poverty, while facilitating the shift to an environmentally sustainable energy development path. It might aim to diversify the energy portfolio, to scale up investments in renewable energies and energy efficiency, and to refrain from investing in large hydroelectric projects, underlying that small hydropower dams are more sustainable and economically viable than large hydropower facilities. Alternative scenarios might ensure the sustainability of energy sector development if hydropower capacity growth is carried out through medium and small-scale HPP installations complemented by alternative renewable energy resources for electricity generation and energy efficiency measures. Careful planning is required, based on robust statistical data outlining future demand and supply projections for the energy sector, where calculations for projected energy efficiency measures and potential energy conservation savings are factored into energy policy planning. Whereas increased power generation affects the environment, energy efficiency/savings measures support energy consumption without an environmental impact. It is suggested that an SEA process be carried out in parallel with any strategic energy development plan document. To facilitate sustainable development at the project level, application of the principles of the Hydropower Sustainability Assessment Protocol, developed under the auspices of the International Hydropower Association (IHA), will ensure that the need for any HPP development, and the political, technical, social, financial and environmental risks associated with it, are integrated into the decision-making process at the early stages of the development.

Source: *Environmental Performance Review of Georgia, UNECE, 2016.*

Agriculture

Agriculture remains an important sector in Georgia, providing employment of over 50 percent of the population and contributing to about 25 percent of exports. The share of agriculture in GDP has significantly declined (from 25 percent in 1999 to about 8 percent in 2012) (World Bank 2014). According to the agricultural census in 2005, most of the agricultural holdings in Georgia were family farms, dominated by small private farms (93 percent with less than 2 hectares of land). About 82 percent of agricultural farms are subsistence and 18 percent are semi-subsistence (EU Partnership Program 2012).

Nearly 47 percent of the Georgian population lives in rural areas (National Statistics Office of Georgia 2012). Agricultural land, including arable land, perennial crops, hay fields and pastures, occupies approximately 3 million hectares or about 43.5 percent of the country's territory (National Statistics Office of Georgia 2012). Approximately 30 percent of the cultivated land is sown for perennial crops such as fruits (grapes, apples, pears, cherries, peaches/apricots, berries, and citrus fruit), nuts (walnuts and hazelnuts), tea, and vegetables. The other 70 percent is covered by annual crops such as grains (wheat, maize, barley, and sunflower), grapes, legumes, potatoes, sugar beet, and tobacco (Ahouissoussi et al. 2012).

Table 7. Basic Economic Indicators

Agriculture Sector	2011	2012	2013	2014	2015
Industry Production Value (GEL million)	2,575	2,697	3,071	3,227	3,474
Industry Expenses (GEL million)	878	933	1,052	1,094	1,181
GDP - Value Added (GEL million)	1,697	1,765	2,019	2,133	2,293
GDP share (%)	7.0%	6.7%	7.5%	7.3%	7.2%
Gross Mixed Income*	1,697	1,765	2,019	2,133	2,293
FDI (USD million)	15	16	12	12	15
Net Export (USD million)	48	2	233	197	221
<i>Export (USD million)</i>	<i>371</i>	<i>401</i>	<i>568</i>	<i>553</i>	<i>507</i>
<i>Import (USD million)</i>	<i>323</i>	<i>399</i>	<i>336</i>	<i>356</i>	<i>286</i>
Number of hired employees	40,149	44,258	51,915	45,369	48,672
Number of self-employed	1,211,563	1,230,779	1,195,732	1,226,154	1,217,123
Share in total working places	54%	54%	53%	53%	51%
Average Monthly Salary (GEL)	113	115	135	140	151

* Gross mixed income is used as the share of self-employment is very high, therefore Profit can count as remuneration.

Government of Georgia believes that agriculture is one of the strategically important sectors for Georgia, as more than half of country's population indicates to be employed in this sector. The majority of the employment is in fact self-employment (about 96%) and the productivity of the sector is one of the least among other sectors in the economy, with only about GEL 150 as a monthly income of those engaged in its operations and only a 7.2% share in country's GDP.

As the government targets to improve the livelihoods of the financially insecure part of the population, public financial resources directed to agriculture sector significantly increased, as indicated by the total budget of the Ministry of Agriculture in the table 8 below:

Table 8. Total budget of the Ministry of Agriculture

State budget financing	2011	2012	2013	2014	2015	2016
Ministry of Agriculture (GEL million)	86	242	242	272	287	321
Ministry of Agriculture (USD million)	52	146	139	146	120	138
% of budget	1.1%	3.0%	2.8%	3.0%	3.0%	3.2%

State funds, directed towards various programs in agriculture have tripled compared to the level of financing in 2011, as the proportion of ministry's budget in total budget spending increased from 1.1% in 2011 to 3.2% in 2016. Average income of those employed in the sector also increased, however by a significantly smaller fraction.

Table 9 below presents the production value in thousand tons for most significant agricultural products of Georgian Agriculture Sector:

Table 9. Production value for most significant agricultural products of Georgian Agriculture Sector

Agricultural production	Thousand Tons					Cumulated Average Growth Rate
	2011	2012	2013	2014	2015	
Milk	582	590	605	656	677	4%
Other vegetables	21	18	24	21	19	-2%
Grapes	160	144	223	225	268	14%
Walnuts, Hazelnuts	37	30	51	43	42	4%
Meat	21	16	20	20	21	0%
Straw	398	370	504	481	465	4%
Eggs, Mil. Units	483	474	495	549	601	6%
Pork	12	12	15	16	17	10%
Potatoes	274	252	297	216	206	-7%
Poultry meat	12	12	10	15	19	12%
Maize	270	267	364	347	231	-4%
Honey	3	4	4	4	4	11%
Tomatoes	62	64	75	65	63	1%
Wheat	97	81	81	50	133	8%
Annual grass	243	246	251	259	235	-1%
Citruses	55	77	110	76	86	12%
Sheep and Goat meet	4	3	3	4	5	5%
Peaches, Plums, Cherries, Apricots	40	24	39	44	23	-13%
Subtropical fruit	25	26	28	24	25	0%
Cucumbers	26	39	32	31	27	1%
Apple	64	45	69	87	26	-20%

As a result of governmental programs combined with natural economic growth in the sector, several types of agricultural produce increased. Most significant increase was in the production of grapes, which had a cumulative average growth rate of 14% over the five-year period 2011-2015, coupled with the increase in prices.

Although, the increase rate in the production of different agricultural products is not very significant, the importance of the sector to the economy, as well as governments priority towards financing agriculture can put a significant stress on ecosystem services on which the sector is dependent, as well as those impacted by it.

The following table presents Impact-Dependency matrix for most significant ecosystem services for Agriculture sector:

Table 10. Agriculture Sector

Agriculture Sector	Raw Materials	Sector Operations	Major Clients
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Ecosystem services	Dependence	Impact	Dependence	Impact	Dependence	Impact
Provisioning						
Crops	●	●+	●	●+	●	
Livestock	●	●+	●	●+	●	
Capture fisheries	●	●-	●	●-	●	
Aquaculture	●	●+	●	●+	●	
Genetic resources	●	●+/-		●+/-		
Regulating						
Maintenance of air quality	●		●	●+/-	●	
Maintenance of soil quality	●	●-	●	●-		
Pollination	●	●+	●	●+/-		

Given the trends observed in the sector, as well as other relying sectors, we can envision following Risks and Opportunities as derived from the mentioned ecosystem services and from the point of view of Agriculture sector player:

Table 11. Risks and opportunities of agriculture sector

Trends	Impact on Ecosystem Service	Business risk	Opportunity
Growth of agriculture due to increased governmental focus	Degrading of soil due to erosion, unsustainable grazing	Decrease in agricultural land, decrease in output, decrease in wild products, lost revenues.	
Increased use of chemical fertilizers due to increased emphasis on agriculture	Increase in acidity of soil, with potassium and nitrates	Decrease in agricultural land, decrease in output	Use of organic fertilizers, better prices for organic produce.
Increased number of HPP's	Losing fertile soil, which could be used for agriculture, due to HPP construction.	Decrease in potential agriculture output.	

Use of forestry exceeding replenishment level	Less freshwater for irrigation and crops	Loss of output, decrease in revenue	
Use of forestry exceeding replenishment level	Landslides and other extreme events due to deforestation	Pressure from local communities, change in regulation, license suspension, lost revenue, fines for imposed damage, lawsuits	
Use of forestry exceeding replenishment level	Habitat of bees and other pollination insects destroyed	Decrease in output of local agricultural communities, galantus, livestock farmers, change in regulation, lost revenues	

According to the National Statistics Office, the territory of Georgia can be divided into three parts according to utilization types:

1. Agricultural land – 15.8%;
2. Natural farming area (forest, shrubbery, hay pastures) – 70.6%;
3. Land not used in agriculture – 13.6%.

Agricultural lands are subject to permanent changes in structure and quality, determined by cultivating new areas, intensive melioration activities, and others. Moreover, erosion processes, land salinity or bogging or flooding and other unfavorable conditions cause decreasing the size of agricultural land and worsening its quality. Thus, land resources are under permanent quantitative and qualitative changes. Natural Resources of Georgia and Environmental Protection, Statistical Publication, National Statistics Office of Georgia, 2013

Georgia’s agriculture is mainly of a subsistence nature: more than 90 percent of the agricultural production is concentrated within highly fragmented small-scale family holdings. On average, the size of a family holding is 1.22 ha, fragmented into two or three land parcels of 0.45 ha on average. About 82 percent of family holdings produce mainly for self-consumption, whereas the remaining 18 percent produce cash crops (Kvaratskhelia and Shavgulidze 2011). Additionally, livestock is an important subsector of the agriculture. Cattle, sheep, pigs, and goats are the major livestock. Even though the cash income of the households engaged in agriculture is low, the sector provides an important safety net for most of the rural population, and its performance is crucial to poverty reduction (Kvaratskhelia and Shavgulidze 2011).

According to the CBD Fifth Report of Georgia, “In order to reduce the direct pressures on biodiversity and promote sustainable use of biological resources the package of actions involves development of the legislative and institutional framework for mitigation of environmental pollution from agricultural activities and implementation of pilot projects for restoration of especially degraded/polluted grasslands, assessment of the status of agrarian ecosystems and pastures, implementation of pilot projects for sustainable management of grasslands and bio farm development.”

The separate section is devoted to the development of agriculture in **the 2015 state program “For Strong, Democratic, United Georgia”**. The section is basically focused on the economic aspects in agriculture. “The strategic vision of the development of Georgian agriculture stipulates that it is necessary to create

an environment based on the principles of sustainable development, which would increase competitiveness in agriculture, contribute to stable growth in the production of quality goods, ensure food safety and security, and eliminate poverty in rural areas. Within the framework of the Association Agreement, comprehensive reforms will be carried out in all relevant directions, in the area of food safety, in particular. Georgian entrepreneurs will be able to phase in international and European standards, which will increase the production and supply of quality products and subsequently, will improve their competitiveness in the European market.”

According to the **Strategy for Agricultural Development in Georgia (2015-2020)**, “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.”

“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.” *Strategy for Agricultural Development in Georgia (2015-2020)*

Table 12. Sown Area, Livestock, and Share of Agriculture in GDP

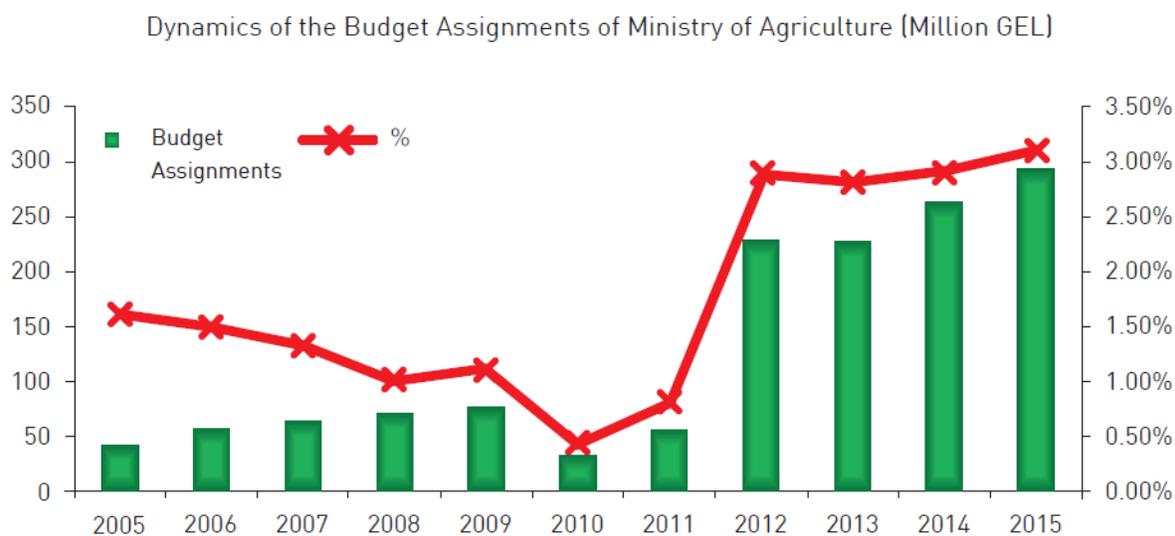
Year	Sown Area (Ha)	Cattle	Pig	Sheep and Goat	Share of Agriculture in GDP
1990	701,900	1,298,300	880,200	1,618,100	31.6%
1995	453,100	944,100	352,600	724,800	44.4%
2000	610,800	1,177,400	443,400	627,600	21.9%
2005	539,600	1,190,600	455,300	815,300	16.7%
2006	330,200	1,080,300	343,500	789,200	12.8%
2007	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: National Statistics Office of Georgia

Agriculture still accounts for about 52% of the country’s labor force while 98% of farmworkers are considered self-employed. Therefore, the key objective for the upcoming years is economic diversification by means of creating off-farm jobs, promoting family farming as well as agro tourism (*National Statistics Office of Georgia*).

Figure 9. Dynamics of the Budget Assignments of Ministry of Agriculture (Mln GEL)



Source: The ministry of Finance of Georgia

The issue of developing specific tools to strengthen the agricultural credit and leasing system is in the list of strategic priorities in the Strategy for Agricultural Development in Georgia (2015-2020). “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.”

Nowadays there is an increase in the use of fertilizers, “with 35,300 tons applied in 2013 – mainly nitrogen in the form of urea. According to the sample survey of agricultural holdings, the figure for mineral fertilizers used by agricultural holdings in 2013 (71,000 tons) is almost double the amount registered by the Ministry of Agriculture (42,248 tons), and the surface fertilized with nitrogenous fertilizers is 197,400 ha. Chlorine organic and mercury pesticides are reported to be no longer in use and the use of phosphorus organic insecticides to have decreased. Half of the used pesticides are copper-bearing fungicides.” Environmental Performance Review of Georgia, UNECE, 2016.

Georgia is one of the gene centers for important crops: wheat (12 species and 30 subspecies are present in Transcaucasia, of which two, Makha and Zanduri, are found only in Georgia), barley, oats, rye, peas, chickpeas and lentils, and fruit species (plum, cherry, quince and grape). About 100 plant families and 350 local species have been registered. There are more than 100 species of stone and seed fruit trees, nuts and berries. There are 500 known local varieties of grapes, although only 300 are present in the life

collections of research institutes and peasant farms. In addition, there exist numerous species of local flora that are applied in traditional medicine. This diversity is being continuously lost, with modern agriculture prioritizing production with introduced varieties producing acceptable yields. Local varieties were kept in ex-situ collections and extension centers, which could not continue their work because of the lack of technical and financial means after the country's independence. Environmental Performance Review of Georgia, UNECE, 2016.

Forestry

Georgia is a country endowed with forests that are fully owned by the state. There are no private forests in Georgia - only long-term licenses are issued for timber production and for hunting ranches.

“The quality of forestland governance is an important determinant of the number and scale of environmental problems. Ecosystem services, such as fuel wood and timber supply, non-timber products and drinking water supply, as well as prevention of erosion, floods and landslides are of high importance for a significant portion of the population. Good environmental governance is key for the protection and sustainable use of natural resources for poverty alleviation, suspension of environmental degradation, and ensuring social and economic development.”

“Overexploitation of timber resources, uncontrolled pasturing and development of infrastructure projects in vital ecosystems, including protected areas, are among the results of bad governance.”

Table 13. Forest Area of Georgia

	Forest area (Thousand hectare)
Forest area, total	3,046.6
Of which:	
Under the National Forestry Agency	2,003.4
Under the Adjara Forestry Agency	153.4
Under the Agency of Protected Areas	520.7
Abkhazia A/R	369.1

Source: Ministry of Environment and Natural Resources Protection of Georgia; National Forestry Agency; Adjarian Forestry Agency; Agency of Protected Area.

Table 14. Forest Cover under the National Forestry Agency

	Thousand hectare	
Territory	Forest area	Of which covered by forest
Forest cover, total	2,003.4	1,876.3
Samegrelo-Zemo Svaneti	272.8	256.4
Guria	86.1	82.7
Imereti	310.5	301.2
Racha-Lechkhumi and Kvemo Svaneti	282.1	268.0

Shida Kartli	237.3	213.6
Mtsketa-Mtianeti	250.6	238.0
Kakheti	289.8	268.2
Kvemo Kartli	144.0	131.0
Semtske-Javakheti	132.2	117.2

Source: Ministry of Environment and Natural Resources Protection of Georgia; National Forestry Agency

Table 15. Forest Restoration

Thousand hectare

Year	Forest restoration, total	Of which:	
		Forest seeding and planting	Facilitating natural recovery of forest
1995	13,912	1,002	12,910
2000	1,158	258	900
2005	74	10	64
2010	165	111	54
2011	-	-	-
2012	4	4	-
2013	49	15	34

Source: Ministry of Environment and Natural Resources Protection of Georgia; National Forestry Agency; Adjarian Forestry Agency.

According to the Georgia-Country Environmental Analysis, Institutional, Economic, and Poverty Aspects of Georgia's Road to Environmental Sustainability by World Bank, over the past 12 years, it is estimated that forest cover in Georgia has been reduced by 7,800 ha and has gained 4,900 ha of a different quality. It is assumed that lost tree cover is associated with 80 percent forest ecosystem value loss, and gained hectares are associated with 50 percent forest value gain.

Table 16. Volume of Timber Harvested in Forests by Regions

Cubic meter

	1995	2000	2005	2010	2011	2012	2013
Georgia, total	289,712	442,140	810,615	876,749	681,669	518,792	702,137
Tbilisi	19,192	4,741	6,278	-	-	-	-
Abkhazia A/R
Adjara A/R	24,464	44,648	73,007	77,868	86,236	71,313	75,894
Samegrelo-Zemo Svaneti	22,175	55,923	110,376	91,524	42,671	44,229	57,709
Guria	4,952	24,463	56,384	16,193	10,546	26,836	10,150
Imereti	19,098	45,270	103,718	97,440	43,643	34,580	90,449
Racha-Lechkhumi and Kvemo Svaneti	16,509	52,706	52,713	37,148	42,992	51,067	54,165
Shida Kartli	13,623	23,227	52,369	103,848	70,730	43,911	85,883
Mtsketa-Mtianeti	20,341	36,029	68,938	86,944	61,884	45,517	52,772

Kakheti	44,890	61,893	119,479	181,706	150,756	91,025	136,938
Kvemo Kartli	32,552	20,757	44,100	89,704	75,668	46,622	46,980
Smtskhe-Javakheti	71,916	72,483	123,253	94,374	96,543	63,692	91,197

Source: Ministry of Environment and Natural Resources Protection of Georgia; National Forestry Agency; Adjarian Forestry Agency.

According to the CBD Fifth National Report of Georgia the main threats to the forest ecosystems in Georgia include:

- Unsustainable utilization of forest resources, which is mainly caused by lack of access to alternative energy sources;
- Overgrazing by the livestock, which results in degradation of the forests' natural regeneration capability;
- Forest pests and diseases;
- Alien invasive species;
- Frequent forest fires and legislative gaps and shortcomings in management.

Unsustainable utilization of forest resources has inflicted damage on beech forests in mountainous regions of Georgia and chestnut forests in Colchis foothills, oak forests are only preserved in distant canyons and relatively meagre soils.

Timber resources are mostly harvested for non-commercial purposes, for provision of fuelwood and timber material to the population, public organizations and legal entities of public law. "Social logging is characterized by a growth trend and constitutes 80,7% of the total logging registered in Georgia (625,980 m³). To all appearance, utilization of timber for fuelwood will for a long time remain as a main type of forest use in Georgia, which due to its volumes and coverage has significant impact on forest resources." *CBD Fifth National Report of Georgia*

Table 17. Forestry Sector: Basic Economic Indicators

Forestry Sector	2011	2012	2013	2014	2015
Industry Production Value (GEL million)	187	194	164	176	196
Industry Expenses (GEL million)	104	109	92	98	110
GDP - Value Added (GEL million)	83	86	72	78	87
GDP share (%)	0.34%	0.33%	0.27%	0.27%	0.27%
Salary Expenses (GEL million)	18	21	19	23	19
Profit before taxes (GEL million)	64	65	53	54	67
Net Export (USD million)	0	-6	5	0	1
<i>Export (USD million)</i>	<i>10</i>	<i>10</i>	<i>12</i>	<i>13</i>	<i>12</i>
<i>Import (USD million)</i>	<i>10</i>	<i>16</i>	<i>7</i>	<i>13</i>	<i>11</i>
Number of hired employees	3,291	3,142	3,637	3,244	3,093
Number of self-employed	3,461	5,733	4,224	3,105	2,516
Share in total working places	0.29%	0.37%	0.34%	0.26%	0.23%
Average Monthly Salary	466	544	443	601	518

The forestry sector constitutes to only about 0.3% of Georgia’s GDP, however its contribution to the well-being of local, as well as general population is significantly higher. Forest covers more than 40% of country’s area and provides vital ecosystem services, which are not adequately reflected in current GDP, mainly due to the fact that the services are “free of charge”.

The most tangible and economically quantifiable ecosystem service, provided by the forest is wood and timber. Wood and timber are used by two types of market players:

- Agents who have a license for cutting down trees for commercial use in a given area;
- Local communities and LEPLs, who are engaged in social use of forestry.

Official quantity of resource used by these agents is significantly smaller than actual usage of forestry, as a very significant part of operations, conducted by the agents is illegal.

According to the state audit, social usage of wood and timber were allowed on the following quantities of resource:

Table 18. Social usage of wood and timber

Officially permitted	2013	2014	2015
For fuel (m3)	501,871	506,670	534,179
For material (m3)	16,658	13,462	19,342
Total	518,529	520,132	553,521

Actual usage, however, estimated by the national statistics office of Georgia, are much higher:

Table 19. Actual usage for fuel

Actual usage – for fuel	2013	2014	2015
Social usage of forestry (m3)	2,543,000	2,474,800	2,482,719

The actual usage of forestry wood material provided by statistics office somewhat corresponds to an estimate made by CENN (2,426,138 m3). A report by USAID estimates an even higher annual usage of 4,614,851 m3. State audit also noted that the respective agency, responsible for issuing forestry permits and determining the optimal volume of wood designated for social use, uses methodology according to which each family in wood-dependent community requires 6-7 m3 of wood each year. In total, issued forestry tickets amount to about 700,000 m3 annually, the amount which is enough for about 100,000 families. The actual number of registered families is however significantly higher and amounts to more than 700 thousand families. Thus, even according to the methodology used by the responsible agency, the volume officially designated and licensed for social use, is not sufficient. Practically, getting forestry permits is subject to significant competition and inevitably triggers illegal forestry usage by social sector.

As to the commercial usage - based on data from license holders on the commercial use of forest, we can approximate the following usage of forest materials for commercial purposes through the years:

Table 20. Usage of forest materials for commercial purposes

	2011	2012	2013	2014	2015
Commercial use (m3)	275,650	309,136	309,136	407,770	407,770

This somewhat corresponds to the declared exports of wood materials in m3:

Table 21. Declared exports of wood materials

	2013	2014	2015
Export of wood materials (m3)	457,073	441,064	411,536
Import of wood materials (m3)	1,794,345	2,215,000	2,119,522

It is notable that, although exported material is significantly lower compared to imported goods in m3, however, the value of export in USD terms is at least as high as the value of import and even exceeds it in some of the years. This is due to the fact that export comprises of mostly highly valuable goods, while import is mostly low-cost sawdust and other leftover materials.

Additionally, there is a possibility that some of the wood material produced in Georgia by commercial users, is used for local production of furniture and construction materials, rather than only exports. Furthermore, as the procedures for export are significantly eased due to the fact that there is no export tax, officially declared exported quantity is not adequately accounted. We can expect that actual export figures are even higher. This indicates to illegal logging in commercial use of forest.

It is very hard to estimate a quantity of wood cutting, which would be in line with the long-term sustainability of the sector, as the actual stock of Georgia’s forest resources has not been estimated for more than 20 years. Estimates made by MENR, National Forest Agency and CENN, show a sustainable level of 200,000 m3, based on data of the most recent inventory levels of the forests in Georgia. This level is significantly lower than estimated usage of wood through social and commercial use. Social use can be seen as the more significant factor and the main driving force of forest degradation in Georgia.

The main reason behind the government’s tolerance for the illegal usage of wood is the economic situation in rural regions of Georgia, where population often lacks necessary means to switch from the usage of timber as the main source of heat energy to other materials such as electricity, gas or other.

Given the outlined trend of unsustainable usage of forest resource, we can expect that ecosystem services derived from forest will come under significant stress in the future.

The following table presents Impact-Dependency matrix for most significant ecosystem services for Forestry sector:

Table 22. Forestry Sector

Forestry Sector	Raw Materials		Sector Operations		Major Clients	
	Dependence	Impact	Dependence	Impact	Dependence	Impact
Ecosystem services						
<i>Provisioning</i>						
Timber and other wood fibers	●	● -		● -	●	● -
<i>Regulating</i>						

Regional/local climate regulation		● -			
Erosion control		● -	●		
Pollination		● -			
Cultural					
Recreation and ecotourism		● -			
Supporting					
Habitat		● -		● -	

Based on the available data of forestry use by local communities, there are certain inefficiencies which can be exploited in order to decrease the stress on the forestry sector. The most significant inefficiency is the insufficient time interval between the cutting of the wood and its actual usage. Studies indicate that for the wood to be most effective in producing heat energy, it has to be dried for at least 12 months, while Georgian communities are observed to use the resource in about 2-3 months since its cutting, therefore losing about 30-40% of potential heat energy.

It is also notable that the usage of wood for the production of heat, is oftentimes the least economically viable way of using the resource, as the value of wood as a production material is significantly higher. At the same time, the potential alternatives to wood fuel such as bio-mass fuel or gas do not cost significantly more than wood fuel. Therefore, by using wood in its least productive way, the country is losing significant potential for the economic output.

Given the trends observed in the sector, as well as other relying sectors, we can envision following Risks and Opportunities as derived from the mentioned ecosystem services and from the point of view of Forestry sector player:

Table 23. Risks and opportunities of forestry sector

Trends	Impact on Ecosystem Service	Business risk	Opportunity
Use of forestry exceeding replenishment level	Decrease in available wood and timber resource for commercial forestry industry	Commercial users - Decrease in output, lost revenues, fines for illegal logging, suspension of license	
Use of forestry exceeding replenishment level	Decrease in available wood and timber resource for commercial forestry industry	Social users - Loss of traditional heat energy source	Opportunity to switch to biomass palletes, coal, gas
Use of forestry exceeding replenishment level	Decrease in available wood and timber resource for local communities	Social users - Loss of traditional heat energy source	Change in timing of the wood-cutting; allowing wood to dry for 12 months, generating 30-40% more energy

Use of forestry exceeding replenishment level	Decrease in mineral water quantity	Pressure from mineral water producing companies, change in regulation, license suspension, lost revenue	
Use of forestry exceeding replenishment level	Less freshwater for irrigation and crops	Pressure from local agricultural communities, change in regulation, license suspension, lost revenue	
Increased number of HPP's	Increased deforestation due to construction and dam creation	Decrease in available forest resource to local communities, as an energy source	

Based on the results of the study “Assessment of Firewood Consumption and Firewood Production Potential in Georgia” conducted by CENN, annual firewood consumption is currently twelve times more than the optimum annual available amount under continuous consumption principles. “According to forest inventory materials and taxation indicators of state-owned forests, the optimum annual available firewood resources is less than 200,000 m³, while the actual annual rate of firewood exploitation exceeds 2,400,000 m³.” Assessment of Firewood Consumption and Firewood Production Potential in Georgia, CENN, 2016

To satisfy the demand on heating sources, the National Forest Agency allocates 600,000 m³ of firewood annually. Despite this amounting three times more than the optimum annual available amount in case of sustainable forest use, this volume of firewood still only satisfies 25% of the overall demand. The remaining 300,000 households must resort to illegally obtaining the extra 1,800,000 m³ of the firewood for their existence. This is demonstrated in the results of the recently conducted forest inventory in Borjomi Bakuriani and Kharagauli forests, which shows a drastic results of forest decline, a rapid decrease in wood supplies and highlights the extreme difficulty in marking final areas of forests. This brings into question the possibility of sustainable provision of firewood covering even 25% of existing demand.

Certain calculations regarding the valuation of the forestry ecosystem services have been done by the World Bank study, “Based on unit monetary values of ecosystem services, we applied conservative median values from the study for two different categories of ecosystems: tropical forests estimated at about US\$2,100/ha/year and temperate forests at US\$1,100/ha/year, climate service excluded. The annual forest value in Georgia is thus estimated in a range from US\$2,100 to US\$1,100/ha/ year without climate service.” Georgia-Country Environmental Analysis, Institutional, Economic, and Poverty Aspects of Georgia’s Road to Environmental Sustainability, World Bank, 2015

Tourism

Development of the tourism sector is considered a principal prerequisite of economic success by the government of Georgia, “The Government of Georgia will contribute to the development of tourism – one of the main preconditions for boosting the economy, as well as for increasing income and employment opportunities.” state program “For Strong, Democratic, United Georgia”, 2015

While there are quick revenues to be generated from the tourism sector, various adverse impacts of tourism on ecosystems have been observed. Some of these include habitat loss due to land encroachment, waste generation and water quality impacts. Moreover, some of these adverse effects from uncontrolled expansion in tourism may negatively impinge upon the tourist experience (e.g. untreated sewage affecting bathing water quality; soil erosion from off-road vehicles making pathways and roads impassable; the draining of coastal wetlands, which can increase the prevalence and intensity of storm events; unregulated waste disposal implying plastic litter in otherwise pristine nature spots). Environmental Performance Review of Georgia, UNECE, 2016.

Georgia's tourism's potential could be affected by the quality of the environment and severely restricted by poor air and water quality and collapsing coastal ecosystems because of pollution. Conversely, the tourism industry, if not properly planned and managed, may exert extra pressures on ecosystems. This could be a result of construction in sensitive ecosystems, lack of treatment infrastructure, and pollution from emissions from tourism-related transportation contributing to deteriorating air quality and so on. To address these potential risks, the government needs to put in place environmental policies and legislative provisions to meet the national economic development goals. Tourism as an economic driver for Georgia has great growth potential. Georgia-Country Environmental Analysis, Institutional, Economic, and Poverty Aspects of Georgia's Road to Environmental Sustainability, World Bank, 2015

The challenges that the country must address in creating world-class tourism offer and stimulating international demand include:

- Increasing convenient and affordable airlift from major outbound markets;
- Developing uniformly high quality visitor services throughout the country, particularly in rural areas, where some of the greatest tourism development potential lies;
- Improving road access and infrastructure in some of the country's most spectacular natural areas;
- Enhancing accesses, services, preservation and interpretation of cultural heritage sites and other forms of cultural expression;
- Expanding educational opportunities for Georgians to acquire the skills required for serving international and domestic markets with high quality standards;
- Improving and modernizing tourism-related superstructure (hotels, restaurants, museums, etc.), particularly in coastal and rural areas;
- Expanding data collection and analysis, market research, and marketing efforts;
- Building stronger public/private partnerships for tourism product development and marketing.

Table 24. Basic Economic Parameters of Tourism sector

Tourism sector	2011	2012	2013	2014	2015
Industry Production Value (GEL million)	993	1123	1239	1407	1676
Industry Expenses (GEL million)	500	580	666	761	917
GDP - Value Added (GEL million)	492	543	573	646	759
GDP share (%)	2.0%	2.1%	2.1%	2.2%	2.4%
Salary Expenses (GEL million)	106	140	172	194	245
Profit before taxes (GEL million)	386	402	401	452	514
FDI (USD million)	38	29	-23	233	332
Number of hired employees	26280	29670	32698	34084	37076
Number of self-employed	4778	4581	3873	2340	1828

Share in total working places	1.34%	1.45%	1.56%	1.51%	1.58%
Average Monthly Salary	337	394	439	475	550
Number of foreign tourists (million)	2.8	4.4	5.4	5.5	5.9

Apart from the growth of international arrivals, there is a significant growth in the number of hotels, available rooms and beds. According to Georgian National Tourism administration, there are currently about 1,700 hotels around Georgia, with about 24,000 rooms available. Out of this, 1,472 rooms were opened only in 2016, constituting 6% of the total.

By 2019, number of rooms should further increase by additional 9,060 rooms. These are the projects which are already underway with most of them completing in 2017-2018.

Table below summarizes the number of rooms projected through the years:

Table 25. Number of rooms projected through the years

	2015	2016	2017	2018	2019
Number of Available Rooms	22,449	25,100	29,507	32,167	32,977
Increase in rooms	N/A	2,651	4407	2660	810
YoY % change	N/A	12%	18%	9%	3%

It might be expected that the number of new hotels planned for opening in 2018, 2019 will increase as the time goes by and new investors are introduced.

The increase in the number of rooms should contribute not only to the growth in international arrivals, but internal tourism as well. As the tourism sector develops, eco-tourism is also increasing.

The table below summarizes the number of visitors by different Protected Areas in Georgia:

Table 26. Number of visitors by different Protected Areas in Georgia

Protected Area	2011	2012	2013	2014	2015
Algeti National Park	4,828	4,343	5,322	8,828	8,030
Borjom-Kharagauli National Park	16,213	28,191	42,675	49,549	51,573
Vashlovani Protected Areas	3,161	6,968	7,334	8,711	10,976
Tbilisi National Park	12,805	15,410	19,145	20,960	15,220
Tusheti Protected Areas	9,294	6,853	7,663	9,786	9,676
Kintrishi Protected Areas	3,212	4,843	3,364	3,696	3,758
Kolkheti National Park	16,760	22,924	17,552	17,699	13,747
Lagodekhi Protected Areas	18,615	26,351	32,318	39,417	44,065
Mtirala National Park	19,400	21,939	16,358	22,968	21,981
Sataplia	75,231	59,015	72,421	67,287	73,601
Prometheus Cave	80,687	45,305	72,954	91,711	106,959
Okatse canyon				3,165	44,527
Martvili canyon*					
Kobuleti Protected Areas	10,294	10,412	7,553	8,426	8,737

Kazbegi National Park	32,796	45,960	50,366	64,622	98,788
Chachuna Agkvetili	390	396	656	1,036	2,390
Javakheti Protected Areas				2,305	4,190
Total	303,686	298,910	355,681	420,166	518,218
YoY % growth	N/A	-2%	19%	18%	23%
Georgian	255,477	230,955	254,603	272,502	336,889
Foreign	48,209	67,955	101,078	147,664	181,329
Share of Georgians	84%	77%	72%	65%	65%
Share of Foreigners	16%	23%	28%	35%	35%

* Martvili canyon was officially opened in 2016, therefore there were no visitors in previous years.

The growth in visitor numbers corresponds to the opening of new PA's as well as general increase in the number of tourists and the addition of new services.

International visitors are a significant contributor to the increase in PA visitors. The table below shows the split of visitors by Native/Foreign visitors of the PA's through the years.

Table 27. Split of visitors by Native/Foreign visitors of the PA's through the years

	2011	2012	2013	2014	2015
Georgian	255,477	230,955	254,603	272,502	336,889
Foreign	48,209	67,955	101,078	147,664	181,329
Share of Georgians	84%	77%	72%	65%	65%
Share of Foreigners	16%	23%	28%	35%	35%

We can see that the number of foreign visitors dramatically increases, while the increase in Georgian visitors is also significant, however it is still relatively smaller.

The trend of significant increase in tourism as well as eco-tourism, suggests that certain ecosystem services will come under pressure as a result of the growth.

The following table presents Impact-Dependency matrix for most significant ecosystem services for Tourism sector:

Table 28. Tourism Sector

Tourism Sector	Raw Materials		Sector Operations		Major Clients	
	Dependence	Impact	Dependence	Impact	Dependence	Impact
Ecosystem services						
Provisioning						
Timber and other wood fibers				● -		
Freshwater	○		○		○	● -
Cultural						
Recreation and ecotourism	○	● +/-	○	● +/-	○	● +/-

Ethical and spiritual values	•	• +/-	•	• +/-	•	• +/-
Educational and inspirational values	•	• +/-	•	• +/-	•	• +/-

Given the outlined trend of tourism growth in the country, we can envision following Risks and Opportunities as derived from the mentioned ecosystem services and from the point of view of tourism sector player:

Table 29. Risks and opportunities of tourism sector

Trends	Impact on Ecosystem Service	Business risk	Opportunity
Increased number of HPP's	Habitat and migratory routes of game species lost	Eco-tourism sector losing attractiveness and revenue.	
Increased number of tourists	Increased pollution and waste in tourist destinations.	Less attractive tourist destination, lost revenue.	
Increased number of tourists, hotels	Runoff from new hotels and motels contribute to water pollution	Health problems to local communities and visitors due to ground water pollution, fines, new regulations, lost revenues.	
Increased number of tourists, hotels	Loss of biological diversity due to construction of new infrastructure (hotels, access roads etc.)	Decrease of attractiveness of the site due to negative impact on local biodiversity and ecosystem (deforestation, habitat loss) - lost revenue.	
Increased transportation due to increase in tourists	Increased transportation can negatively impact local biodiversity.	Decrease of attractiveness of the site, lost revenue.	
Development of hotels in naturally attractive areas	Development of the land can negatively impact spiritual and cultural value of the nature.	Decrease of attractiveness of the site, lost revenue.	
New PA's	Preservation of ecosystems		Increase in number of tourists, additional revenue for local communities through service.
Overcrowding of tourist areas, due to increased	Negative impact on spiritual and cultural value of the location	Decrease in attractiveness of the location, negative	Developing new PA's to mitigate increased

number of tourists		change in customer preferences, lost revenue.	number of tourists, generate revenue.
Increased number of tourists	Unauthorized paths and shortcuts, causing erosion of the trails surface.	Decrease of attractiveness of the site, lost revenue.	
Increased number of tourists	Increased biodiversity due to agro-tourism, creation of diversified local farms.		Additional revenue due to diversified domesticated animals, plant and insect cultures.
Increased number of tourists	Improved biodiversity		Tourists can observe malpractices and notice mistakes, causing the improvement in management, avoiding costs.
Increased number of tourists	Improved biodiversity		Tourists can inform about vandalism and poaching, avoiding costs.
Increased number of tourists	Positive economic impact on local communities livelihood		Favorable government regulation.

According to the state program **“For Strong, Democratic, United Georgia”** 2015, “the network of protected areas will be expanded and their management will be improved. Measures aimed at promoting conservation activities in the protected areas, as well as at encouraging ecotourism will be intensified.”

Ecotourism is becoming an increasing pastime in Georgia, bringing with it the economic benefits. Bird watchers from around the world visit Georgia to see the endemic species of birds, and to watch the stunning migrations of waterfowl and raptors along the flyways in the spring and fall. Hikers, mountain climbers, and river rafters also are coming to Georgia in increasing numbers to partake of the scenery. The ecotourism programs have been initiated by the government of Georgia. The respective funds are being allocated in the state budget since 2013, and have resulted in both economic and conservation success

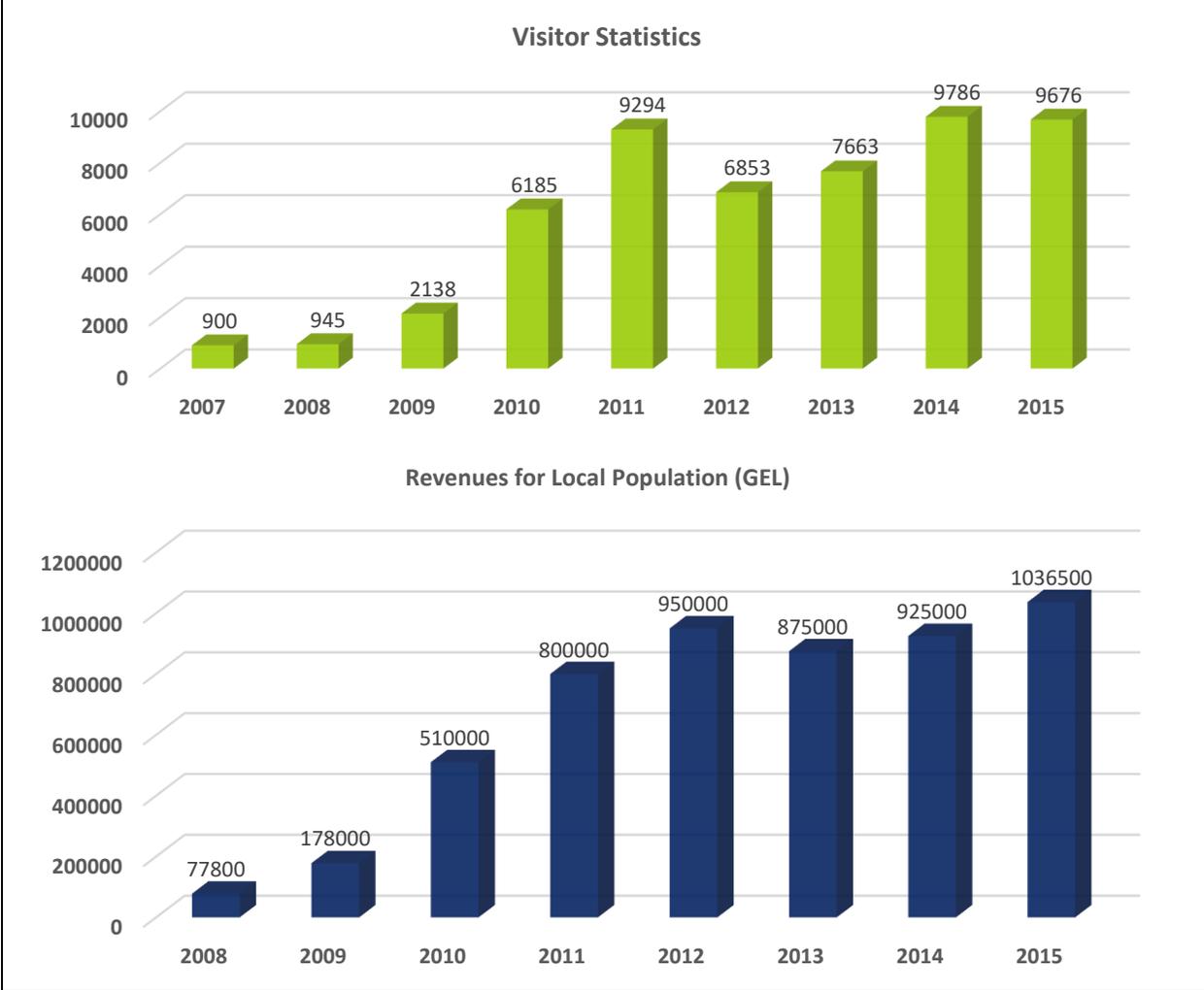
One of the principle ways that biodiversity is protected in Georgia is through existing and proposed Protected Areas. The Agency of Protected Areas (APA) of Ministry of Environment Protection and Natural Resources (MoE) is one of the strongest divisions of the MoE largely due to its visibility in the tourism sector, considered an economic driver in the country.

Under the **“Protected Areas 2012 – Ecoregion of Caucasus”** project, the WWF-Caucasus Program Office conducted two pilot assessments for revealing the input of Borjom-Kharagauli and Mtirala National Parks in economic development. Under the UNDP/GEF **“Catalyzing Financial Sustainability of Georgia’s**

Protected Areas System” project, an additional study was conducted to assess the significance of Tusheti protected areas. The above-mentioned studies have revealed significance of these protected areas for tourism and other economic sectors (hydro energetics, mineral water production and agricultural development). Establishment of national parks has considerably contributed to attraction of investments in the service area and triggered their social-economic development (see Box 6. Tusheti Case in Tourism section).

Box 6. Case of Tusheti Pas

Tusheti is located in the Northeast part of Georgia. PAs established in early 2003. 3 IUCN categories are presented: National Park, Strict Nature Reserve and Protected Landscape.
Total area: 113 660 ha
National Park - 69 515 ha
Strict Nature Reserve - 12 627 ha
Protected Landscape - 31 518 ha
Management Authorities:
Agency of Protected Areas responsible for National park and Strict Nature Reserve
Akhmeta Municipality responsible for Protected Landscape



After establishment of the protected areas, number of visitations to the high mountain region of Georgia – Tusheti, has dramatically increased. In 2006, prior to launching operation of the protected area, there were only 7 guesthouses in Tusheti and 12 persons were employed in touristic business. Currently, number of guesthouses in Tusheti has increased up to 40. The local population is actively engaged in tourism-related services (including tour guiding, renting horses, and selling traditional handicrafts, trips to the protected areas and within the boundaries of protected areas). The locals are developing a guesthouse network, with expectation of the gradual growth of the number of visitors in future. Gross annual income of local people from Nature based Tourism related activities in Tusheti is estimated at one mln USD .



There have been improvements in the management of protected areas since 2010. New protected areas have been established: Machakehla National Park (July 2012), Javakheti Protected Areas (in 2011, including Javakheti National Park and five managed reserves) and Pshav-khevsureti Protected Areas (in 2014 Pshav-khevsureti National Park, Asa Managed Reserve and Roshka Natural Monument), as well as 21 natural monuments. As a result, the area of protected areas increased from 494,050 ha (7.09 per cent of Georgia’s territory) to 600,668 ha (8.62 per cent of Georgia’s territory).

Mining

The mining industry in Georgia has a long history, but it has not been developing at the same rate as other industries. Georgia’s output of ferrous and nonferrous metals, ferroalloys, industrial minerals, and fuels is second only to agriculture in terms of GNP (The Mineral Industries of the Commonwealth of Independent States, Levine RM, Wallace GJ, 2004). The country has more than 300 explored mineral deposits— copper, iron ore, barite, lead, zinc, arsenic, clay, sand, gravel, and a range of secondary metals, including gold and silver—only about half of which have been brought into production. Georgia has been a major producer of high-grade manganese (Mn) for about a century. It has one of the world’s richest Mn deposits and largest Mn mining areas in the foothills of the Caucasus Mountains near the city of Chiatura, in the Imereti region of Western Georgia. The U.S. Geological Survey indicates (2012) that although the growth rate of the real value of manufacturing in Georgia was 16.4 percent, it was only 2 percent for mining.

Table 30. Mining: Basic Economic Indicators

Mining	2011	2012	2013	2014	2015
Industry Production Value (GEL million)	353	390	355	345	572
Industry Expenses (GEL million)	144	159	145	141	203
GDP - Value Added (GEL million)	209	231	210	204	369
GDP share (%)	0.9%	0.9%	0.8%	0.7%	1.2%
Salary Expenses (GEL million)	58	73	67	75	101
Gross Mixed Income*	151	158	143	129	268
FDI (USD million)	40	5	44	43	88
Net Export (USD million)	-132	-199	-213	-251	-227
<i>Export (USD million)</i>	<i>173</i>	<i>140</i>	<i>277</i>	<i>269</i>	<i>250</i>
<i>Import (USD million)</i>	<i>304</i>	<i>339</i>	<i>490</i>	<i>520</i>	<i>476</i>
Number of hired employees	5884	7157	6353	7006	8131
Number of self-employed	329	249	360	456	0
Share in total working places	0.27%	0.31%	0.29%	0.31%	0.33%
Average Monthly Salary (GEL)	814	845	884	892	1033

The mining sector contributed to about 1.2% of GDP and displayed a significant rise in 2015, mainly due to newly started production of gold ore. Sector operations have been expanding as more people are shown to be employed throughout the years: the average growth rate of employment for 2011-2015 amounted to about 7%.

Another evidence of the expansion of operations is the licenses acquired by individuals and private companies for the commencement of mining operations. The table below presents the amounts paid for mining licenses through the years:

Table 31. Amounts paid for mining licenses through the years

Year	Amount paid for mining licenses (GEL)
2002	10,900
2003	10,350
2004	13,800
2005	51,850
2006	3,539,560
2007	15,073,460
2008	4,414,176
2009	4,359,342
2010	5,276,400
2011	9,655,540
2012	20,027,299

2013	31,150,826
2014	117,600,341
2015	103,888,917
2016	9,924,652

Increase in 2014 and 2015 is caused by a payment for gold ore mining license in Bolnisi (GEL 110.5 million and GEL 93.5 million respectively).

Table below presents license payments by most significant ores through the years:

Table 32. License payments by most significant ores through the years

GEL thousands	2011	2012	2013	2014	2015
Total license payments	9,655	20,027	31,151	117,600	103,889
Gold	-	9,500	987	111,490	93,500
Limestone	2,938	5,695	20,549	148	267
Gravel	1,614	2,890	2,488	4,037	6,416
Mineral waters	3,058	-	2,836	155	186
Manganese ore	-	-	1,798	-	-
All Other	2,045	1,943	2,493	1,770	3,519

Another factor indicating the increasing trend of mining operations is the number of issued licenses. The table below summarizes total number of issued licenses through the years as well as number of issued licenses by several most frequently issued types of materials:

Table 33. Total number of issued licenses through the years

Number of licenses in a year	2011	2012	2013	2014	2015
Grand Total	281	408	331	661	874
Fresh-water	70	165	68	360	443
Gravel	133	158	164	207	285
Limestone	15	26	16	13	18
Basalt	16	11	11	11	17
Sand	5	1	6	9	9
Shingle	6	3	5	4	8
Quartz sand	4	4	4	3	7
Teschenit	3	3	7	8	2

Sector operations oftentimes have a very significant impact on the environment due to unsustainable practices of waste treatment, causing the pollution of water and the complete destruction of local habitat – especially due to open pit operations.

Also, transportation with open top vehicles causes the pollution of air and significant health threats to local communities.

The following table presents Impact-Dependency matrix for most significant ecosystem services for Mining sector:

Table 34. Mining Sector

Mining Sector	Raw Materials		Sector Operations		Major Clients	
	Dependence	Impact	Dependence	Impact	Dependence	Impact
Ecosystem services						
Provisioning						
Aquaculture				● -		
Timber and other wood fibers				● -		
Freshwater		● -	○	● -		
Regulating						
Maintenance of air quality		● -		● -		
Cultural						
Ethical and spiritual values				● -		
Supporting						
Habitat				● -		

Given the trends observed in the sector, as well as other relying sectors, we can envision following Risks and Opportunities as derived from the mentioned ecosystem services and from the point of view of Mining sector player:

Table 35. Risks and opportunities of mining sector

Trends	Impact on Ecosystem Service	Business risk	Opportunity
Ongoing operations and expansion	Air pollution	Health problems to local communities and subsequent lawsuits	Improvement of operation environmental safety standards
Ongoing operations and expansion	Water pollution	Health problems to local communities and subsequent lawsuits	Improvement of operation environmental safety standards
Ongoing operations and expansion	Aquaculture pollution	Health problems to local communities and subsequent lawsuits	Improvement of operation environmental safety standards
Ongoing operations and expansion	Habitat destruction	Regulation and fines	Improvement of operation environmental safety standards
Ongoing operations and expansion	Negative impact on ethical and spiritual values	Pressure from community countrywide, changes in regulations, lawsuits, fines from government	Improvement of operation environmental safety standards
Ongoing operations and expansion	Increase in deforestation	Lawsuits and fines from government	Improvement of operation environmental safety standards

Ongoing operations and expansion	Disruption in agriculture sector operations	Pressure from local agricultural communities, change in regulation, license suspension, lost revenue	Improvement of operation environmental safety standards
Switch to open pit operations	Increased pressure on ecosystem services	Regulation and fines	Transition to underground operations

Although the Chiatura Manganese Mine and the Zestafoni plant are important for the county's trade balance, it is observed that they have significant environmental impacts, including acid mine drainage in some areas and contamination of groundwater, surface water, and soils. Tables 36 and 37 provide data on the annual average concentrations of heavy metals in water and manganese and of dust in ambient air in the area of the Zestafoni mine. Manganese can be toxic to humans through exposure routes that include ingestion, dermal exposure, and inhalation of particulate forms in air. Manganese compounds are well-known neurotoxic substances.

Table 36. Annual Average Concentration of Heavy Metals in the Water for 2012 (mg/L)

	Fe	Zn	Cu	Mn
River Kvirila-Zestafoni upstream	0.4246	0.0760	0.3330	0.4230
River Kvirila-Zestafoni downstream	0.2784	0.0511	0.0103	0.2283

Source: National Environmental Agency 2013.

Table 37. Annual Average Concentration of Total Suspended Particles and Manganese in Air for 2012 (µg/m³)

	TSP	MnO ₂
Zestafoni area	458	6.8

Source: National Environmental Agency 2013.

Georgia's largest industries include mining and processing of metals and coal, ferrous and nonferrous metallurgy, and chemical industries. RMG Copper and RMG Gold mine polymetallic ores in the Bolnisi region, southern Georgia. Copper is open-pit mined and gold is extracted using the heap leaching technology. Georgian Manganese Holding is the owner of the Chiatura manganese mine and the Zestafoni ferroalloys plant. Coal mining is mainly concentrated in the Tkibuli-Shaori basin.

Table 38. Number of active industrial enterprises by size and branch

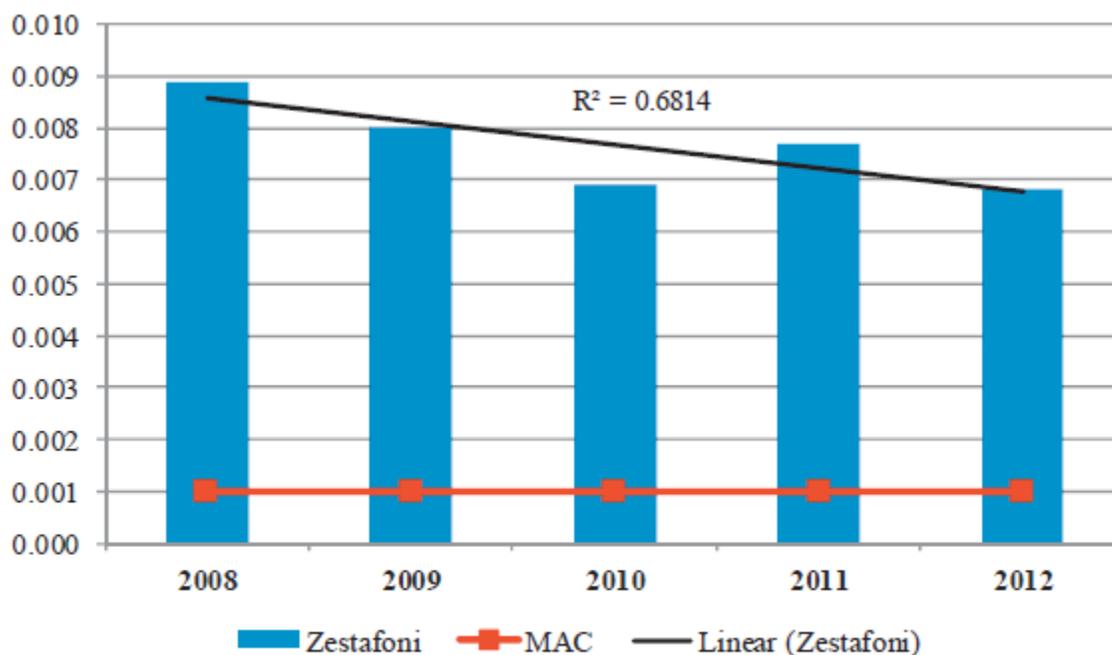
	Total	Large	Medium	Small
Total	6,740	467	521	5,752
Mining and quarrying	403	20	47	336

Source: National Statistics Office, 2015

The regions that rank as the most polluted due to air emissions from industry are Imereti, with its manganese and coal mining, metallurgical and ferroalloys industries followed by Kvemo Kartli, with its copper/gold mining, metallurgical, chemical and cement production industries.

The highest exceedance of manganese oxides was detected in Zestafoni (figure 10). The levels of manganese oxides concentration, due to the local metallurgical plant, were more than five times higher than the maximum allowed concentrations (MACs). It is not clear whether actions have been undertaken to reduce the emissions of the industrial installations.

Figure 10. Concentration of manganese oxides in Zestafoni, 2008-2012, mg/m³



Source: Ministry of Environment and Natural Resources Protection, 2014.

Major water pollution issues are:

- Chiatura manganese mines (one large and several small ones) do not have any treatment plant, and have very high concentrations of manganese and TSSs;
- Copper (JSC RMG Copper) and gold mines. Acidic water from the copper mine (at Bolnisi) is the main source of pollution. A gold mine runs on a closed cycle, so in theory no discharges of contaminated water should occur;

Coal mines at Tkibuli;

Box 7. Environmental issues in Zestafoni and Chiatura

The Zestafoni ferroalloys plant and Chiatura manganese mines were privatized in 2006. An agreement to comply with the environmental legislation in place was signed by the new owner and the Government. According to this agreement, the enterprise has a deadline of 2018 to comply with environmental requirements. However, the environmental requirements included in the agreement, such as mitigation, monitoring and rehabilitation plans, were not disclosed to the public. At present, no improvements have been made, as the EIA required by the legislation was not carried out and, consequently, the environmental impact permit was not issued. After an inspection carried out by the Ministry of Environment and Natural Resources Protection, the enterprise was fined 18 million lari. NGOs have asked for an environmental audit in Chiatura, without success. The main environmental issue concerning the Zestafoni ferroalloys plant involves the lack of modern and efficient filters to reduce and control air emissions, in particular manganese dioxide emissions. In the Chiatura mines, a major environmental issue relates to the lack of treatment plants for mine wastewater containing suspended solids and heavy metals (mainly manganese).

Source: Green Alternative, 2014.

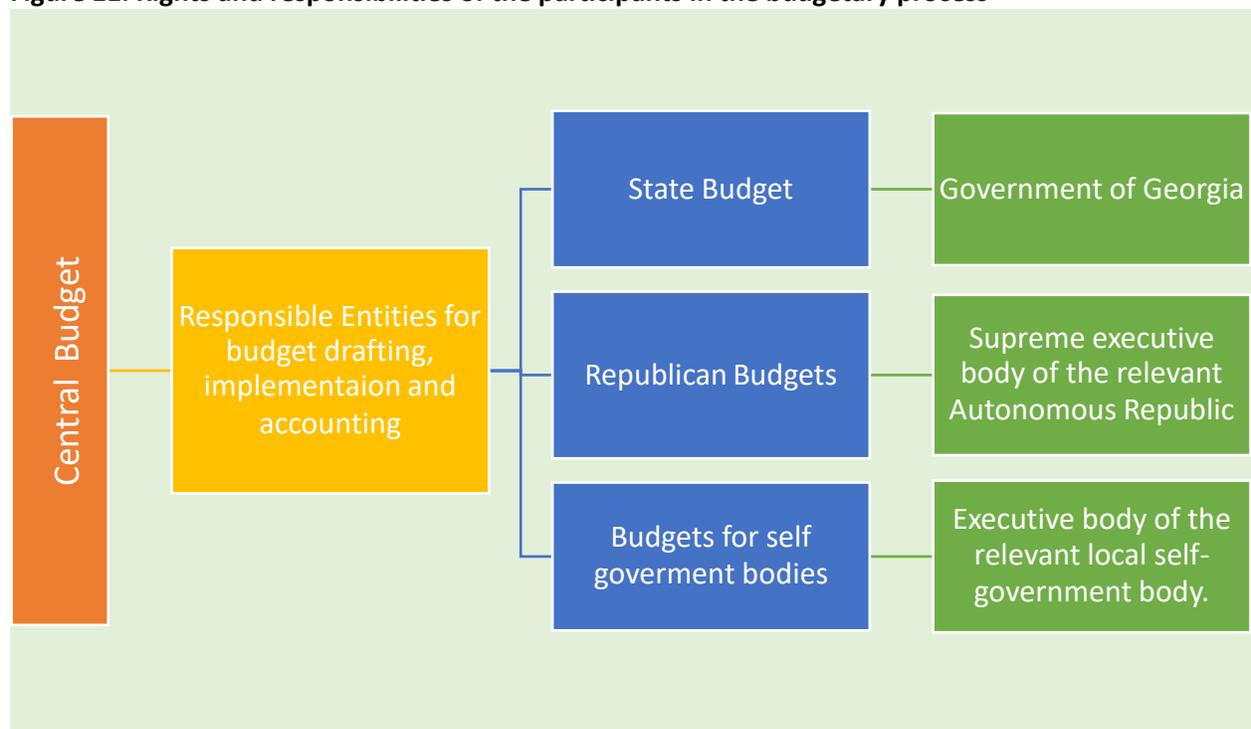
RESOURCES AVAILABLE AND BUDGET CAPACITY

According to the Article 5 of the Budgetary Code of Georgia “the budgetary process is an integral part of the budgetary system of Georgia. The budgetary process is the activity of the participants of the budgetary system of Georgia, which includes preparation of the draft budget, its submission, consideration, approval, amendment, fulfilment, accounting and control.”

The government of Georgia is responsible for drafting, implementation and accounting of the state budget. While the supreme executive bodies of the relevant Autonomous Republics in Georgia are responsible for the republican budgets of their own. For the budgets of local self-government units the executive bodies of the respective local self-government units are in charge.

The relevant budgets are reviewed, adopted and controlled by the Parliament of Georgia, supreme representative body of Autonomous Republic, representative body of the local self-government unit. The process of preparation and submission of the draft state budget is coordinated by the Ministry of Finance of Georgia, which is responsible for the whole process (see Annex 3).

Figure 11. Rights and responsibilities of the participants in the budgetary process



Source: Ministry of Finance of Georgia, 2016

The document containing Basic Dimensions and Directions of the country’s development is the master plan of the country’s development, which includes the information on medium-term macroeconomic and fiscal forecast, as well as information on main issue-areas of the development of the central, autonomous and local self-government authorities of Georgia.

The Ministry of Finance of Georgia is responsible for preparation of Basic Dimensions and Directions in coordination with the offices of payment designated by the National Bank of Georgia, State Representatives in the administrative-territorial units – Governors, the authorities of the Autonomous Republics, the authorities of local self-government bodies and the Government of Georgia, for which the mentioned above bodies shall present to the Ministry of Finance of Georgia the requested information.

The review of public environmental expenditure aims to present the current status of Georgia’s public resource allocation and spending patterns related to the funds allocated to environmental protection in the public budget system. It examines the extent to which the present budget system meets strategic objectives based on the data available. Public environmental expenditures are analyzed by spending agency (MENRP, Ministry of Energy, other institutions), by type of expenditure (current, capital), and by environment domain (air, water, waste, and so on). Public funds for the environment in Georgia come from the central government, municipalities, donors and publicly owned enterprises (waste and water management companies), and the Agency for Nature Protection. The MENRP is the main institution financed through the state budget. The Ministry of Energy, the Ministry of Regional Development and Infrastructure (mainly through the United Water Supply Company LEPL, and Solid Waste Management Company LEPL), the Ministry of Agriculture, and the Ministry of Labor, Health, and Social Affairs (through the National Center for Disease Control and Public Health LEPL) are also among the

recipients of public funds for environmental protection. The municipalities receiving the direct transfers from state budget are responsible for the municipal waste management at regional level. Tracking down expenditures outside the core agencies of the Ministry of Environment and Ministry of Energy is a major problem. Thus, in most cases expenditures by core environmental agencies just noted serve as a proxy for public environmental expenditures. Since 2012 the government Program has defined environmental protection as one of its priorities, and despite the MTEF BDD also declaring environmental protection as one of the priorities, the budget/expenditure for 2011–13 decreased compared with 2009–10. The Georgian Environmental Protection Law is the main legislation governing environmental issues. It does not define “environmental expenditure” as such, but the Georgian State Budget System considers a separate account (Code 705) for “environmental protection” within the classification of the expenditure by the functions of government (based on the Government Finance Statistics Manual 2001—Classification of Outlays by Functions of Government), and the environmental protection expenditures are divided into six broad groups that correspond to the Classification of Functions of Government (a Eurostat functional classification): waste management, wastewater management, pollution abatement, protection of biodiversity and landscape, R&D environmental protection, environmental protection not elsewhere classified (n.e.c.). This classification makes it possible to compare Georgia to other countries, particularly those in Europe. Compared with most of the countries in Europe, Georgia spends considerably less on the environment as a percentage of GDP (0.08 percent in 2012). (See table 39) It should be noted, though, that the difference would be smaller if spending of all budget users were included and if forestry were included in the “environmental protection” category in 2008–12.

When compared with immediate neighbors, Georgia’s environmental expenditures are somewhat comparable to those in Armenia but substantially lower than in Azerbaijan (as percentage of GDP but also in absolute terms). (See table 39)

Table 39. Environmental Expenditure (% of GDP)

	2011	2012	2013
Armenia	0.23	0.14	0.10
Azerbaijan	0.61	0.78	0.69
Georgia	0.10	0.08	0.09

Source: www.mof.gov.ge; www.armstat.am; www.stat.gov.az.

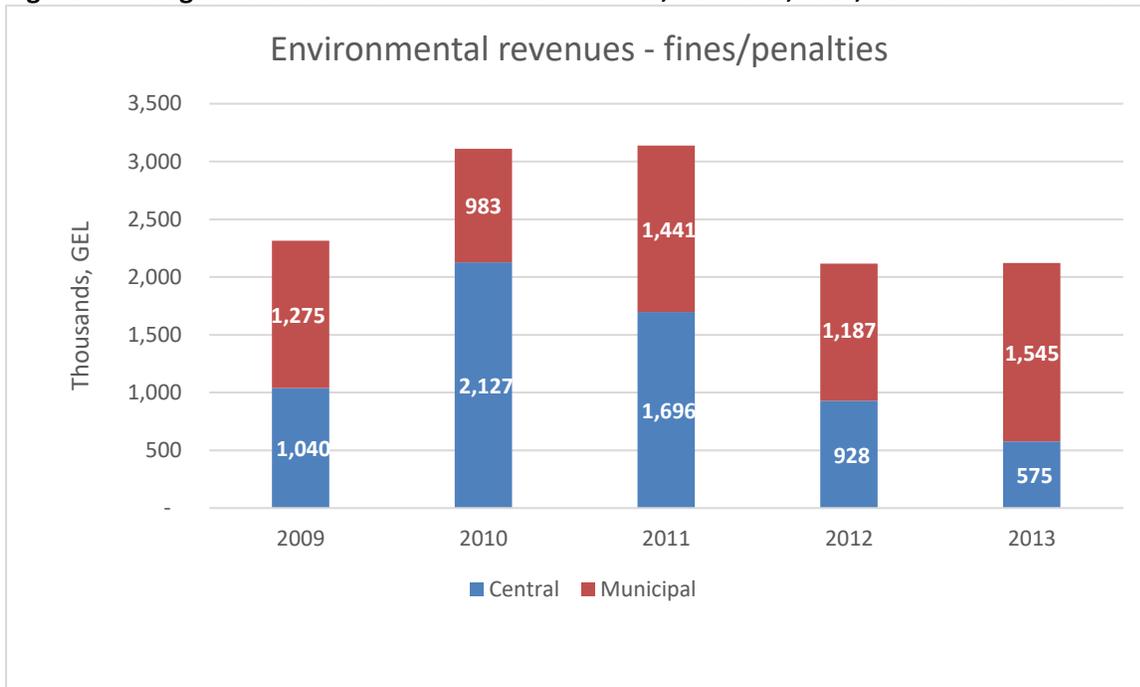
Georgia collects environment related revenues for administrative violations in the field of environmental protection and natural resources and as compensation for the environmental damage state compensation for damages. (See figure 12)

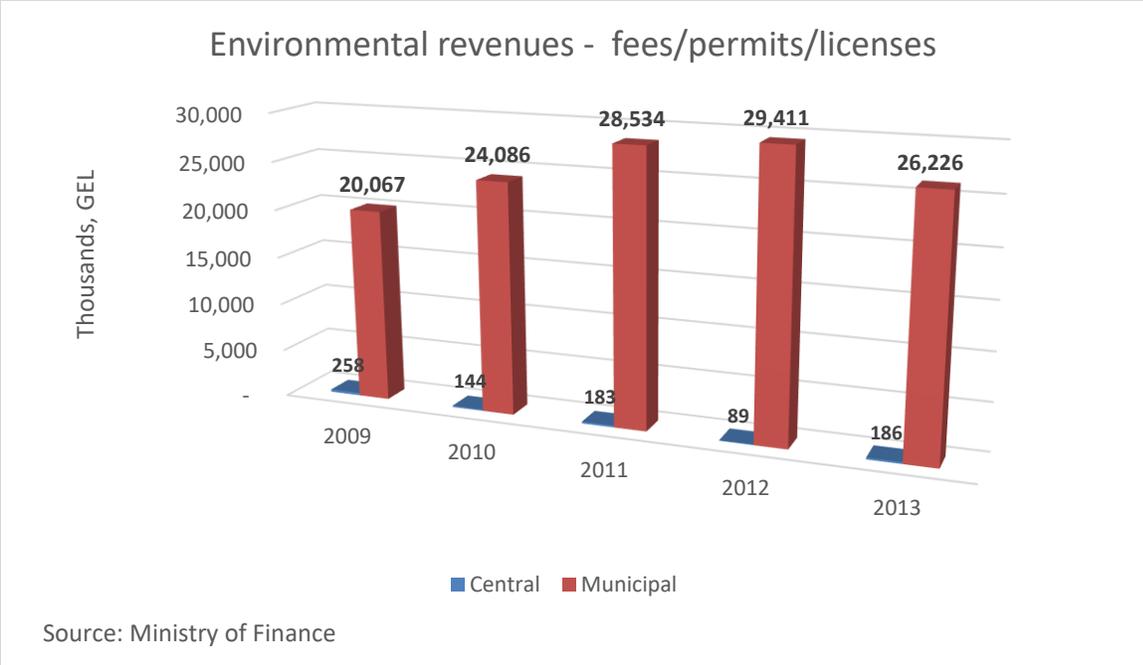
The natural resources fees are collected in the general state budget from the central and municipal levels. The fees are divided into the following groups:

- **Natural resources user fees**—for the use of soil; for the use of state forest timber resources; for non-timber forest resources extracted from the environment and the use of wood products; for the use of water resources; for hunting; for extraction of migratory birds; for use of other nonclassified natural resources.

- **Licensing fees**—for fishing and hunting permits; for environmental impact; for State Ecological Expertise of MENRP; for forestry or timber harvesting and hunting Economy/licenses for mineral exploration and use of underground resources; for the use of wild fauna and flora; for restoration of green plantation; for endangered flora and fauna species; and for export, import, re export, and extraction from the sea.

Figure 12. Budget Revenues from Environmental Fines, Penalties, Fees, Permits and Licenses.





Given the amount of environmental problems in Georgia, budget resources fall short of what is needed to combat environmental degradation. Spending by the main ministries responsible for environmental protection during 2009–13 amounted to an average of just 0.37 percent of total government expenditures, despite the fact that since 2012 the government has defined environmental protection as one of its priorities. The Medium-Term Expenditure Framework (MTEF)/Basic Data Directions (BDD) also declares environmental protection a priority. Yet the budget/expenditure for 2011–13 was lower than it was for 2009–10. During the same period, public environmental expenditures as a percentage of GDP decreased from 0.2 percent to 0.09 percent. Compared with other countries, particularly those in Europe, Georgia spends considerably less on environment as a percentage of GDP.

Georgia needs to expand further the policy debate on environmental factors in sustainable development in order to deliver on the priority actions outlined in the government’s Basic Data and Directions for Development and to meet the environmental sustainability goals in MDG No. 7. Having embraced the paradigm of unified economic, environmental, and social development, Georgian policy makers need to act to minimize environmental degradation and human health risks. The next step would be to track progress on national strategic goals by benchmarking them to internationally accepted indicators of sustainable development and to assess national policy in a complex manner, considering fundamental economic welfare and intergenerational aspects.

[List of Existing Studies](#)

The TEEB Scoping Study for Georgia, 2013

- Environmental Performance Review of Georgia, UNECE, 2016
- Georgia-Country Environmental Analysis, Institutional, Economic, and Poverty Aspects of Georgia’s Road to Environmental Sustainability, World Bank, 2015

Biodiversity Analysis Update for Georgia – Final Report, ECODIT/USAID, Pat Foster-Turley and Ramaz Gokhelasvili, 2009

Off balance - The Georgian energy sector and the contradictions in EU policy and practice, CEE Bankwatch Network, 2013

Georgia's Fifth National Report to the Convention on Biological Diversity, 2015

Energy Union Strategy and EaP countries, World Experience for Georgia, 2015

Georgian Tourism in Figures, 2015

Ecoregion Conservation Plan for Caucasus, WWF, 2012

Cost-Benefit Analysis Model Development, Enguri Watershed HPP Development, USAID, 2014

Assessment of Fresh Water Ecosystem Services in the Hydropower Sector in Georgia, Irakli

Matcharashvili I., Flores M., 2015,

Current Status of Forest Management and its Impact on the Population, CENN, 2014

Assessment of Firewood Consumption and Firewood Production Potential in Georgia, CENN, 2016

Forestland Governance in Georgia, Assessment of legislation and practice, Green Alternative, 2016

Natural Resources of Georgia and Environmental Protection, National Statistics Office of Georgia, 2013

WTTC Travel & Tourism Economic Impact Georgia, 2015

Effects of Manganese Mining on Water Quality in the Caucasus Mountains, Caruso S., Mirtskhulava M.,

Wireman M., Schroeder W., Kornilovich B., Griffin S., 2012

The Mineral Industries of the Commonwealth of Independent States, Levine RM, Wallace GJ, 2004

Country Partnership Strategy for Georgia 2014-2017, the World Bank, 2014

List of Contributors:

References:

Annex: 1

Global Strategic Goals	National Goals of Georgia	Respective Aichi Targets
Global Strategic Goal A: Address the underlying causes of biodiversity loss through integration of biodiversity issues into governmental activities and public life	National Goal A1. By 2020, at least 50% of the population of Georgia is informed about biodiversity, knows about the ways it is threatened, and is acquainted with the steps necessary to mitigate those threats, and is aware of the economic value and benefits biodiversity provides to society.	1
	National Goal A2. By 2020, significantly greater number of people, and especially of local population, is interested and effectively taking part in decision making processes that contribute both to conservation and sustainable use of biodiversity and to biosafety.	
	National Goal A3. By 2020, sustainable use and the economic values of biodiversity and ecosystems are integrated into regional development, agricultural, poverty alleviation and other relevant strategies and national accounting and statistical systems; positive economic mechanisms of encouragement have been put in place and incentives posing threat to biodiversity have been eliminated or reformed.	2, 3
	National Goal A4. By 2020, an effective and fully functional national biosafety system has been put in place ensuring adequate protection of the national biodiversity against any potential negative impact of genetically modified organisms.	1, 7
Global Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use of biological resources	National Goal B.1. By 2020, negative factors directly affecting threatened natural habitats have been significantly reduced through the sustainable management of at least 60% of these habitats, including at least 60% of forests, 80% of wetlands and 70% of grasslands.	5
	National Goal B.2. By 2020, alien invasive species have been assessed with regard to their status and their relative hazards; their pathways have been evaluated and identified, and measures are in place to prevent their introduction and establishment through management of these pathways; no new alien species have been recorded.	9
	National Goal B.3. By 2020, pollution of natural environment, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem functioning and biodiversity.	8
	National Goal B.4. By 2020, management of agricultural ecosystems and natural grasslands is improved	7
	National Goal B.5. By 2020, the impact of fisheries and aquaculture on fish stock, species and ecosystems does not exceed	6
	ecological safety limits	
National Goal B.6. By 2020, a national system of sustainable hunting is in place which ensures viability of game species	7	
Global Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	National Goal C.1. By 2020, status of biodiversity has been assessed (state of species and habitats) through improvement of scientific and baseline knowledge and establishment of an effective monitoring system	12
	National Goal C.2. By 2020, status of species - including 75% of "Red List" species - has been considerably improved through effective conservation measures and sustainable utilization	
	National Goal C.3. By 2020, forest biodiversity is safeguarded through introduction of the best forestry practices	11
	National Goal C.4. By 2020, at least 12% of the country's terrestrial and inland water areas and 2.5 % of marine areas are covered by protected areas; areas of particular importance for ecosystem services are effectively and equitably managed via an ecologically representative system and other effective conservation measures; development of the protected area network and its integration into the wider landscape and seascapes is ongoing	11, 5, 14, 15, 18
	National Goal C.5. By 2020, genetic diversity of indigenous species of plants and animals and endemic cultivated plants is maintained; strategies have been developed and are being introduced for safeguarding their genetic diversity	13
	National Goal C.6. By 2020, anthropogenic pressure on the Black Sea and inland waters is minimized; integrity and functioning of aquatic ecosystems are preserved	11
Global Strategic GoalD: Enhance the benefits to all from biodiversity and ecosystem services	National Goal D.1. By 2015, the Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (the Nagoya Protocol) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) have been ratified and their implementation is initiated	16
	National Goal D.2. By 2020, potential impact of climate change on biodiversity is assessed; resilience of ecosystems has been enhanced through relevant environmental policies and activities	15
Global Strategic GoalE: Enhance implementation of biodiversity strategy through participatory planning, knowledge management and capacity-	National Goal E.1. By 2020, knowledge has been enhanced on the values, functioning, status and trends of biodiversity and the consequences of its loss and the corresponding scientific basis has been improved	19
	National Goal E.2. By 2020, teaching of biodiversity aspects is improved at every stage of formal and informal educational systems, a continuous teaching system is introduced and equipped with appropriate educational resources	
building	National Goal E.3. By2020, traditional knowledge and needs relating to conservation and sustainable utilization of biodiversity are incorporated and reflected in legislation and strategies.	18

Annex: 2

Institutional Framework for Energy Sector:		Evaluation of Stakeholders		
Institution	Description	Score based on power (max score 4)	Score based on interest (max score 4)	Total Score (max score 8)
The Ministry of Energy of Georgia	<ul style="list-style-type: none"> - Developing and implementing energy policy, including electric power sector/hydropower; - Facilitating investment projects; - On behalf of Georgian Government signing of memorandums/agreements with investors on Building, Operating and Owning (BOO) of HPPs. 	4	2	6
The Division for Energy Efficiency and Alternative Sources under the Ministry of Energy of Georgia	<ul style="list-style-type: none"> - Promote the programs and projects supporting the development of energy efficiency and use of renewable energy resources, and CDM projects; - Coordinate the Covenant of Mayors and the EC-LEDS. 	3	3	6
The Ministry of Economy and Sustainable Development of Georgia	<ul style="list-style-type: none"> - Preparing sustainable development strategy; - Issuance of construction permits (state ecological expertise is provided as an input to the construction permit); - Reviewing project-related technical documentation; - Exercise of state surveillance over construction activities and their compliance with the standards and 	3	2	5

	requirements of the project EIA.			
The Ministry of Environment and Natural Resources Protection of Georgia	<ul style="list-style-type: none"> - Overall governance and policy-making regarding environmental issues including water resources and biodiversity conservation; - Carrying out state ecological assessments and issuance of Environmental Impact Assessment (EIA) permits; 	2	4	6
Ministry of Finance of Georgia	<ul style="list-style-type: none"> - Forming budgets of the ministries - Overseeing the process of budget funded state programs 	4	1	5
The Georgian National Energy and Water Supply Regulatory Commission (GNERC)	<ul style="list-style-type: none"> - Establish tariffs, licensing rules and standards; - Resolve relations between customers and companies. - Grant licenses; - Regulate the activities of licensees, importers, exporters, and commercial system operators and suppliers within the electricity and natural gas sectors. 	3	1	4
The Electricity System Commercial Operator (ESCO)	<ul style="list-style-type: none"> - Balance the market and ensure grid stability; - Conduct export/import operations to meet systemic needs and for emergency purposes; - Create and manage a unified database on the wholesale purchase and sale of energy. 	2	1	3
The Georgian State	<ul style="list-style-type: none"> - Provide technical control and supervision over the 	2	1	3

Electrosystem (GSE)	<p>entire power system to ensure an uninterrupted and reliable power supply.</p> <ul style="list-style-type: none"> - It only has the right to purchase electricity to cover transmission losses. - Operate part of the high-voltage transmission grid and interconnection lines with neighboring countries. 			
The National Statistics Office (Geostat)	<ul style="list-style-type: none"> - Provide all the sector-specific data used for end-use sector energy analysis. 	1	1	2
The Georgian Energy Development Fund (GEDF)	<ul style="list-style-type: none"> - Facilitate investment in and development of the country's renewable energy sector; - Develop renewable energy projects in Georgia and work on development of hydro, wind and solar energy projects. 	3	2	5
The non-governmental Energy Efficiency Centre (EEC)	<ul style="list-style-type: none"> - Popularize energy efficiency principles and raise the issue of energy efficiency in different sectors of the national economy. 	1	3	4

Institutional Framework for Tourism Sector:		Evaluation of Stakeholders		
		Score based on power (max score 4)	Score based on interest (max score 4)	Total Score (max score 8)
The Georgian National Tourism Administration (GNTA) under the Ministry of Economy and Sustainable Development of Georgia	<ul style="list-style-type: none"> - Ensure sustainable tourism development through positioning Georgia as a unique travel destination; - Improve visitor experience and maximize visitor 	3	3	6

	expenditures to contribute to the national economy.			
The Agency of Protected Areas of Georgia (APA) under the Ministry of Environment and Natural Resources Protection	<ul style="list-style-type: none"> - Establish, administer and manage the protected areas of Georgia; - Supervise the administrations of existing protected areas and allocate the budget. 	2	4	6
Ministry of Finance of Georgia	<ul style="list-style-type: none"> - Forming budgets of the ministries - Overseeing the process of budget funded state programs 	4	1	5
Georgian Tourism Association (GTA)	<ul style="list-style-type: none"> - Promote the cooperation between the tourism companies in Georgia; - Support cooperation between private and public sector; - Support capacity building and quality management for tourism services, accessibility of tourism information and country marketing, and sustainable tourism development in Georgia. 	1	3	4

Donors & IFIs	<ul style="list-style-type: none"> - Promotion sector development; - Providing capacity building of the national stakeholders; - Financing new initiatives; - Supporting state priorities in the sector. 	3	3	6
Travel companies	<ul style="list-style-type: none"> - Operating private segment tourism of tourism sector. 	1	3	4

Institutional Framework for Agriculture:		Evaluation of Stakeholders		
		Score based on power (max score 4)	Score based on interest (max score 4)	Total Score (max score 8)
The Ministry of Agriculture of Georgia	<ul style="list-style-type: none"> - Overall state responsibilities for agricultural production, soil fertility, plant protection, livestock breeding and agricultural engineering, and is responsible for carrying out state control over irrigation systems. 	4	3	7
“Georgian Amelioration” LTD	<ul style="list-style-type: none"> - 100% state owned company is responsible for the management of the state owned irrigation systems. 	2	2	4
Land Resources Protection and Mineral Resources Service under the Ministry of	<ul style="list-style-type: none"> - Established in 2013, the service is charged with implementation of the Law on Soil Protection. Its main 	2	3	5

Environment and Natural Resources Protection of Georgia	responsibilities include participation in the process of developing and implementation governmental policy of sustainable management and targeted using of land resources and mineral resources; Coordination planning and implementation measurements for land degradation and desertification prevention.			
The Ministry of Economy and Sustainable Development of Georgia	- The Ministry is responsible for land privatization issues to identify the plots that do not belong to the forest fund, the fund of protected areas or the fund of mineral resources.	3	2	5
The National Agency for State Property Management of the Ministry of Economy and Sustainable Development	- The agency is responsible for the management of state land.	3	1	4
Ministry of Finance of Georgia	- Forming budgets of the ministries - Overseeing the process of budget funded state programs	4	1	5
The National Agency of Public Registry of the Ministry of Justice	- The agency is in charge of registering the land plots and of	3	1	4

	all operations related to real estate.			
The Rural and Agricultural Development Fund	- Objectives are the promotion of agricultural cooperatives, development of infrastructure, increase in food production, to reduce rural poverty and to strengthen small farmers organizations.	2	3	5
The Agricultural Projects Management Agency (APMA)	- Supports development of the agricultural sector in Georgia by implementing modern technologies in the country.	2	3	5

Institutional Framework		Evaluation of Stakeholders		
		Score based on power (max score 4)	Score based on interest (max score 4)	Total Score (max score 8)
Ministry of Environment and Natural Resources Protection of Georgia	- Develop, implement and enforce policies and strategies related to environmental protection and sustainable use of natural resources.	2	4	6
Department of Environmental Supervision (DES) under the Ministry of Environment and Natural	- Carry out environmental inspections.	2	4	6

Resources Protection of Georgia				
National Environmental Agency (NEA) under the Ministry of Environment and Natural Resources Protection of Georgia	<ul style="list-style-type: none"> - Issue licenses for mineral resources use; - Carry out environmental monitoring of air, surface water and soil pollution in major industrial regions. 	2	4	6
Ministry of Economy and Sustainable Development of Georgia	<ul style="list-style-type: none"> - Develop and implement the country's economic policy. - Responsible for technical regulations and standards, foreign trade, foreign investments, promotion of the private business sector and privatization of state property. 	3	2	5
Ministry of Finance of Georgia	<ul style="list-style-type: none"> - Forming budgets of the ministries - Overseeing the process of budget funded state programs 	4	1	5
Georgia's Innovation and Technology Agency	<ul style="list-style-type: none"> - Promote the introduction of modern and cleaner technologies in industry. 	2	3	5
Ministry of Internal Affairs of Georgia	<ul style="list-style-type: none"> - Coordinate emergency 	2	2	4

Emergency Management Agency under the Ministry of Internal Affairs of Georgia	situations in case of an industrial accident.			
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Institutional Framework for Forestry Sector:		Evaluation of Stakeholders		
		Score based on power (max score 4)	Score based on interest (max score 4)	Total Score (max score 8)
National Forestry Agency (NFA) under the Ministry of Environment and Natural Resources Protection of Georgia	- LEPL, responsible for the management of state-owned forests;	3	4	7
Department of Environmental Supervision (DES) under the Ministry of Environment and Natural Resources Protection of Georgia	- Unit responsible for inspection;	2	4	6
Forest Policy Service under the Ministry of Environment and Natural Resources Protection of Georgia	- Unit responsible for defining the strategy and elaboration of forestry related policy documents.	2	4	6
Ministry of Agriculture of Georgia	- Coordination of issues related to land use	2	2	4
Ministry of Economy and Sustainable	- Coordination of issues regarding energy policies.	3	2	5

Development of Georgia				
Ministry of Finance of Georgia	<ul style="list-style-type: none"> - Forming budgets of the ministries - Overseeing the process of budget funded state programs 	4	1	5
Ministry of Internal Affairs of Georgia	<ul style="list-style-type: none"> - Coordination of crime issues related to the forest management services. 	3	1	4

Annex: 3

Budget Preparation Timetable

Prior to March 1 - The Government of Georgia defines in its decree the list of information to be presented by offices of payment, the State Representatives in the administrative-territorial units, the authorities of the Autonomous Republics and the authorities of local self-government bodies (except for the local self-government entities within the Autonomous Republics) and the terms for presentation of this information.

Prior to June 1 - With the purpose of agreeing Basic Dimensions and Directions with the Georgian Parliamentary Committees, the Government of Georgia submits to the Parliament of Georgia the information about the main macroeconomic forecasts and the basic dimensions and directions of Georgian Ministries.

Prior to June 20 - The resolutions of the Georgian Parliamentary Committees on the information about the main macroeconomic forecasts and the basic dimensions and directions are sent to the Government of Georgia.

Prior to June 30 - Georgian Ministries approve their medium-term action plans which include the priorities, as well as the programs and measures required in order to achieve the priorities.

Prior to July 10 - The Government of Georgia prepares the first draft of the Basic Dimensions and Directions.

Prior to September 1 - Offices of payment submit their budgetary requests to the Ministry of Finance.

Prior to September 15 - Ministry of Finance reviews budgetary requests and submits the main parameters of the draft budget for consideration to the Government of Georgia.

Prior to September 25 - Ministry of Finance submits the draft state budget and the revised Basic Dimensions and Directions to the Government of Georgia.

Prior to October 1 - The Government of Georgia submits the draft state budget, along with enclosed materials, to the Parliament of Georgia.

Prior to October 22 - The remarks made during the Committee hearings, as well as the conclusions of the Chamber of Control of Georgia and the National Bank of Georgia, are transferred by the Parliament of Georgia to the Government of Georgia.

Prior to November 5 - The Government of Georgia re-submits the revised draft state budget and the Basic Dimensions and Directions, including the information on the remarks and nature of suggestions, to the Parliament of Georgia, and the draft state budget is discussed at the plenary sessions.

Prior to November 15 - The remarks made during the plenary session are passed to the Government of Georgia.

Prior to November 30 – The Government of Georgia submits the final versions of the draft state budget and the document containing Basic Dimensions and Directions, along with information on the remarks and nature of suggestions made during the plenary session, to the Parliament of Georgia.

No later than the third Friday of December - The Parliament of Georgia votes the draft state budget of Georgia.

Annex 4

Forest biome

Forests are found throughout the country, with the exception of the Javakheti plateau. Khevi and mountainous Tusheti are relatively poor in forests. Oriental beech (*Fagus orientalis*) tends to be the dominant species, although there are many other tree species* present in the forests. Notable forest types include:

1. Georgian oak forest (*Quercus iberica*): Occurs at 600-700 m.a.s.l. in eastern Georgia.
2. Xerophilic oak forests
3. Beech forests (*Fagus orientalis*): Found in middle and upper zones of the forest belt, these are highly productive ecosystems.
4. Pine forests: These often develop on the edges of mountain steppes or steppe-meadows (in southern Georgia), between 1,700-2,400 meters a.s.l. and are remarkably species rich.
5. Pine and oak woodland: This forest type is particularly noteworthy. It can be found in eastern Georgia at 800-1,100 m.a.s.l., but in Achara (western Georgia) from 300-1,200 m.a.s.l.
6. Yew (*Taxus baccata*) forests: Found in the east of Georgia, these are relic forests, a fragment of which is preserved in the Batsara Reserve.
7. Zelcova forest: These forests are found in east Georgia. The forest in Babaneuri is noteworthy due to

its relict nature and distribution.

8. Maple (*Acer velutinum*) forests: These forests are found only in Alazani Valley. This species does not occur above 1,000 m. In east Georgia *Acer laetun* is usually found in mixed forests.

9. Colchic forests: These are forest in the Kolkheti (Colcheti) Lowlands (West Georgia), rich in creepers.

10. Endemic pine (*Pinus pitiunta*): These forests are found on the Abkhazian coastline.

11. Chestnut forests: These are found both in east and west Georgia. In west Georgia they occur at 100-1,000 m. In east Georgia are found as high as 1,400-1,450 meters but typically occur from 400-500 meters up to 1,300 - 1,350 meters a.s.l.

Annex 5

Areas Designated to the Patriarchy of Georgia, with the territory exceeding 20 Hectares

Region	Forest district	Forestry	Area (HA)	Order N	Management Agency
Kakheti	Telavi	Telavi	194,4	N668, 03.12.2007	NFA
Kakheti	Akhmeta	Zemo Khodasheni	259	N748, 23.10.2009	NFA
Kakheti	Kvareli	Akhalsopeli	92,5	N242, 10.05.2008	NFA
Kakheti	Dedoplistskaro-Signagi	Gediki and Dedoplistskaro	279,5	N177, 27.05.2008	NFA
Kakheti	Dedoplistskaro-Signagi	Dedoplistskaro	68,6	N22, 18.01.2008	NFA
Kakheti	Kvareli	Shilda	23	N237, 10.05.2008	NFA
Kakheti	Kvareli	Shilda	31,3	N246, 10.05.2008	NFA
Kakheti	Kvareli	Akhalsopeli	40,7	N243, 10.05.2008	NFA
Kakheti	Kvareli	Akhalsopeli	35	N248, 10.05.2008	NFA
Kakheti	Kvareli	Akhalsopeli	21,6	N233, 10.05.2008	NFA
Kakheti	Kvareli	Duruji	20,8	N232, 10.05.2008	NFA
Kakheti	Kvareli	Kvareli	26	N245, 10.05.2008	NFA
Kakheti	Kvareli	Kvareli	25	N236, 10.05.2008	NFA
Kakheti	Kvareli	Gremi	39	N 239, 10.05.2008	NFA
Kakheti	Kvareli	Kvareli	30	N 247, 10.05.2008	NFA
Kakheti	Kvareli	Mtisdziri	21,4	N 240, 10.05.2008	NFA
Samegrelo-Upper Svaneti	Kolkheti	Eki	33,6	N 749, 30.12.2007	NFA
Samegrelo-Upper Svaneti	Former Abasha forest nursery	Siriachkoni	21	N336, 27.06.2008	NFA
Samtske-Javakheti	Akhalsikhe	Akhalsikhe	50	N455, 19.09.2008	NFA
Samtske-Javakheti	Borjom-Bakuriani	Tsagveri	28	N733, 30.12.2007	NFA
Samtske-Javakheti	Borjom-Bakuriani	Borjomi	33	N273, 2.05.2008	NFA
Kakheti	Vashlovani Protected Area		180	N747, 30.12.2007	APA

Source: *FORESTLAND GOVERNANCE IN GEORGIA, ASSESSMENT OF LEGISLATION AND PRACTICE, GREEN ALTERNATIVE, 2016*

Annex: 6

Country rankings: Real growth, 2015

Travel & Tourism's Direct Contribution to GDP	2015 % growth
19 Iran	6.6
66 Georgia	4.2
World	3.7
120 Turkey	2.8
Europe	2.7
127 Azerbaijan	2.6
128 Romania	2.6
139 Bulgaria	2.0
160 Belarus	1.1
173 Ukraine	-1.0
181 Russian Federation	-5.2
184 Armenia	-9.4

Travel & Tourism's Total Contribution to GDP	2015 % growth
21 Iran	6.1
61 Romania	4.5
64 Georgia	4.2
World	3.7
103 Turkey	3.0
110 Azerbaijan	2.8
Europe	2.4
153 Bulgaria	1.5
160 Belarus	1.1
178 Ukraine	-2.2
183 Russian Federation	-6.3
184 Armenia	-7.9

Travel & Tourism's Direct Contribution to Employment	2015 % growth
13 Turkey	5.9
36 Iran	4.4
71 Ukraine	2.8
Europe	2.1
World	2.0
132 Bulgaria	0.9
135 Azerbaijan	0.8
138 Romania	0.6
156 Belarus	-0.3
157 Georgia	-0.4
165 Russian Federation	-0.8
184 Armenia	-10.8

Travel & Tourism's Total Contribution to Employment	2015 % growth
15 Iran	5.1
40 Turkey	3.7
63 Romania	2.7
World	2.6
Europe	1.5
116 Ukraine	1.3
131 Azerbaijan	0.9
150 Bulgaria	0.0
155 Georgia	-0.4
156 Belarus	-0.5
170 Russian Federation	-2.0
184 Armenia	-9.5

Travel & Tourism Investment	2015 % growth
14 Azerbaijan	10.4
16 Bulgaria	9.6
17 Romania	9.5
29 Georgia	7.9
43 Armenia	7.0
World	4.8
88 Turkey	4.8
103 Iran	4.3
Europe	2.4
154 Belarus	1.5
183 Ukraine	-9.0
184 Russian Federation	-17.4

Visitor Exports	2015 % growth
24 Romania	7.2
67 Bulgaria	4.8
87 Georgia	3.6
Europe	3.4
94 Turkey	3.2
95 Iran	3.2
World	2.8
158 Azerbaijan	-1.1
160 Ukraine	-1.7
166 Russian Federation	-2.7
180 Belarus	-7.2
183 Armenia	-11.3

Source: WTTC Travel & Tourism Economic Impact Georgia, 2015

Annex: 7

The economic contribution of Travel & Tourism: Growth

Georgia								
Growth¹ (%)	2009	2010	2011	2012	2013	2014	2015E	2025F ²
1. Visitor exports	22.1	35.0	25.4	41.7	24.2	2.1	3.6	7.2
2. Domestic expenditure (includes government individual spending)	1.5	-1.5	6.6	-0.4	3.3	5.0	6.1	4.5
3. Internal tourism consumption (= 1 + 2)	10.8	16.8	17.4	25.7	17.9	2.9	4.2	6.5
4. Purchases by tourism providers, including imported goods (supply chain)	10.1	17.2	16.6	25.4	18.1	2.9	4.3	6.5
5. Direct contribution of Travel & Tourism to GDP (= 3 + 4)	12.5	16.4	19.2	26.5	17.7	2.7	4.2	6.6
Other final impacts (indirect & induced)	12.5	16.4	19.2	26.5	17.7	2.7	4.2	6.6
6. Domestic supply chain								
7. Capital investment	-30.0	35.4	29.2	18.4	6.9	1.3	7.9	6.2
8. Government collective spending	-8.8	-8.2	-7.2	3.6	11.6	2.5	2.2	3.5
9. Imported goods from indirect spending	8.9	13.9	17.2	24.2	17.4	2.8	4.1	6.4
10. Induced	15.3	12.7	18.4	23.6	6.6	1.2	3.7	6.8
11. Total contribution of Travel & Tourism to GDP (= 5 + 6 + 7 + 8 + 9 + 10)	9.4	15.1	18.3	25.0	15.0	2.4	4.2	6.5
Employment impacts ('000)								
12. Direct contribution of Travel & Tourism to employment	20.7	8.0	14.1	23.7	5.4	2.1	-0.4	1.6
13. Total contribution of Travel & Tourism to employment	17.7	6.6	13.1	22.2	5.1	1.7	-0.4	1.5
Other indicators								
14. Expenditure on outbound travel	8.8	6.6	-0.3	18.1	17.3	6.6	-0.4	4.5

Source: WTTC Travel & Tourism Economic Impact Georgia, 2015