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SWOT ANALYSIS ENVIRONMENTAL EDUCATION IN GEORGIA

Tbilisi 2019

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1. General Political and Socio-Economic Climate

General political and socio-economic climate in the target countries for modernization of postgraduate studies in the field of EP on the basis of the Bologna declaration. Please provide also facts & figures, e.g. information on financing of HEIs, trends and Please write ½ page on it and extract threats/opportunities

Over the past decade, Georgia's economy has grown robustly at an average annual rate of 4.5 percent. This was despite numerous shocks, including the global financial crisis of 2007-08, the conflict with the Russian Federation in 2008, and the drop in commodity prices since 2014 that has impacted key trading partners.

Poverty declined from 32.5 percent in 2006 to 16.3 percent in 2017. The poor have benefited considerably from the Government's social policies, as well as from new economic opportunities.

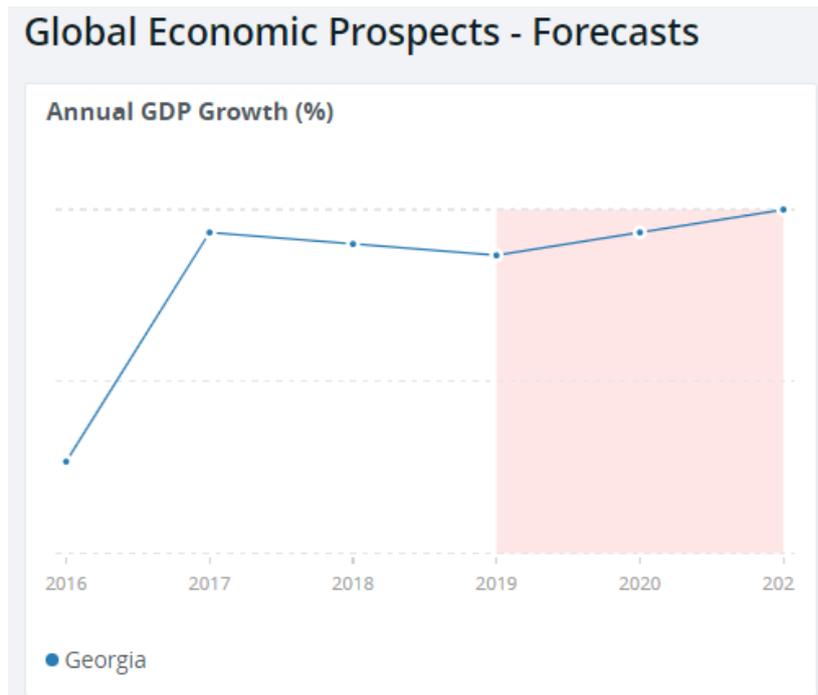
The Deep and Comprehensive Free Trade Area agreement with the European Union and the Free Trade Agreement with China are expected to boost trade integration. Moreover, energy, tourism, and agribusiness can potentially help to integrate the country further into the regional and global economies¹.

Deep reforms in economic management and governance have earned Georgia a reputation of "star reformer." To bolster the private sector, the country has introduced rules and regulations that make it easier to do business, and the country's international ratings on governance and the investment climate have soared. As a country in transition, Georgia is implementing a number of educational reforms, including reforms of the higher education system.

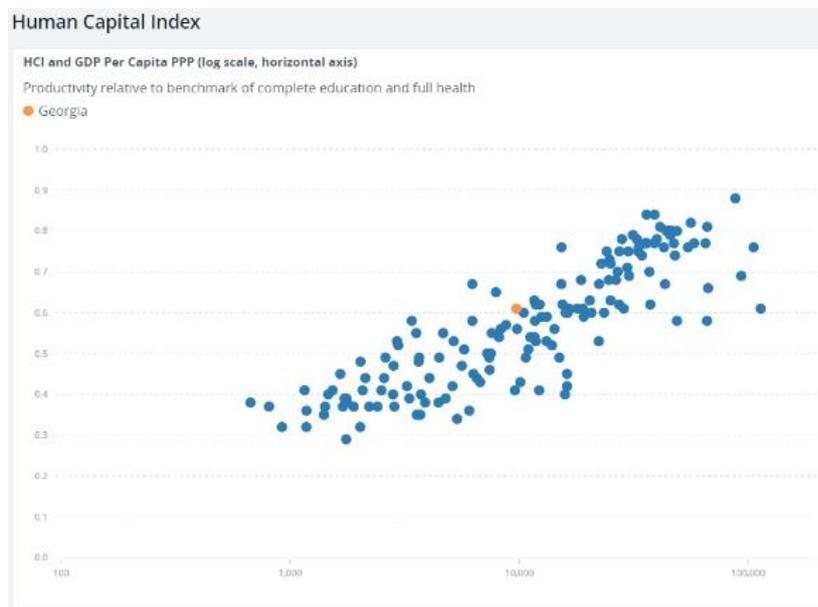
In 2014, the GoG developed and adopted Social-Economic Development Strategy - Georgia 2020, according to which the vision for national development entails three main principles:

- Ensuring fast and efficient economic growth driven by real (production) sector of the economy;
- Implementation of economic policies that facilitate inclusive economic growth through the universal involvement of various segments of the population;
- Rational use of natural resources, ensuring environmental safety and sustainability.

¹<https://www.worldbank.org/en/country/georgia/overview>



Annual GDP dynamics²



Georgia's place in the Human Capital Index data²

²<https://data.worldbank.org/country/georgia>

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Readiness of Government for permanent reforms. • Stable growth of expenses on HEI from state budget. • Gradual growth of employability and demand in qualified workforce. • The Government encourages attracting foreign direct investments oriented towards modern environmentally-friendly and resource-saving technologies which will stipulate the development of a “green” economy. 	<ul style="list-style-type: none"> • Scarcity of funding laboratories and research institutes. • Small motivation and reluctance of students to continue their education on the second and third levels in the field related to science and environment. • Given the attraction of investments, the short-term commercial benefit of business companies often outweigh the environmental protection interests.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Enhancement of international academic cooperation. • Opportunity of involvement in international and national research projects • Comparatively low tuition fees for the students in the natural sciences. • Growth of awareness of ecology related issues among young generation and their active involvement to EP activities. • Obtaining a Master’s degree does not guarantee a significant increase in income, but increases the chance of getting a job by at least 70% when compared to an individual with only a bachelor’s degree. 	<ul style="list-style-type: none"> • Critical reducing, HE programs aimed at training high qualified experts in Applied Ecology. • Disinterest of students to do Master's/PhD in environmental sciences because of low salaries and limited number of working places in the job market.

2. Regulatory Frameworks

Regulatory frameworks (national laws, standards, institutional regulations, etc.) their relation to the Bologna principles. How accreditation of educational programmes is regulated. Please write ½ page on it and extract threats/opportunities

The three-level higher education (HE) system has been adopted in Georgia since 2005. The first level is Bachelor's study and the second level is Master's study. The third and the highest level is Doctoral study. Bachelor, Master and Doctoral programs have already been introduced in all stately recognised higher education institutions (HEIs). Generally, all students below doctoral level are enrolled in a two-level degree system. The exception is some specific disciplines such as medicine for which single-cycle system is introduced with its learning outcomes corresponding to the Master's level.

The study load determined in the curriculum shall be expressed in credit points of European Credit Point Transfer System (ECTS). One credit point corresponds to 25 or 26 hours of work used by a student for studying. The study load of one academic year shall be 60 credit points.

Three types of higher education institutions operate; University - a higher education institution implementing the educational programs of all three levels of higher education and scientific research; Teaching University - a higher education institution implementing Bachelor and/or Master higher education programs. College - a higher education institution, implementing only the first cycle academic higher education programs. HEIs can be publicly or privately founded, but the quality assurance criteria are the same despite the legal status of the institution. Usually, duration of Bachelor's Program is 4 years and counts 240 ECTS; after completion of this program students are awarded the Bachelor's Degree (Diploma). Master's Program lasts mainly for 2 years with 120 ECTS; after completion of the program students are awarded the Master's Degree (Diploma). Students with Bachelor's Degree Diplomas are required to pass Unified Master's Examinations. The Doctoral Program is a third cycle of higher education with a minimum duration of 3 years with 180 ECTS; after completion of this program students are awarded the Academic Doctor's Degree Diplomas. The precondition of entering the third level is the completion of a Master's study level.

Grading: At all three levels an unified grading system is used with a scale 1-100 scores.

Certification: Bachelor's study ends with the taking of a final examination or the defense of a thesis. The precondition for being allowed to take the final examination or to defend a thesis is generally the fact that the student has passed the other subjects of the curriculum. A person who has completed Bachelor's study is issued free of charge the Diploma Supplement by the university upon the request of the person. The issued document certifying education includes the contents of the curriculum and the results of its completion (including form of study, conditions for completing the curriculum, names of subjects and their volumes in credit points, as well as grading systems (grade/assessment)), etc. Generally, Master's study ends with the defense of a thesis. A person who has completed Master's study is issued free of charge a Diploma Supplement in English by the educational institution. The title of the curriculum which the student has completed can also be recorded

on Master's diploma. The issued document certifying education includes the contents of the curriculum and the results of its completion (including form of study, conditions for completing the curriculum, names of subjects and their volumes in credit points).

Admission: Passing the Unified National Exams is a mandatory step to be enrolled to any of authorized HEIs. Only bachelors or persons with degrees equalized with them have a right to study in a Master programs. Unified Master exams are the prerequisites for a Master's degree program. The additional conditions of acceptance are determined by the higher education institution. The State takes a responsibility for students' admission to the first and second levels of higher education through creating of a centralized, objective system and ensuring the principles of equity and meritocracy.

The Quality Assurance System in Georgia consists of internal and external quality assurance (QA) mechanisms. Internal self-evaluation is carried out by educational institutions commensurate with the procedure of evaluation of their own performance and is summarized in an annual self-evaluation report. The self-evaluation report is the basis for external quality assurance. External QA is implemented through authorization and accreditation. Authorization is obligatory for all types of educational institutions in order to carry out educational activities and issue an educational document approved by the State. Program Accreditation is a type of external evaluation mechanism, which determines the compatibility of an educational program with the standards. State funding goes only to accredited programs. Authorization and accreditation have to be renewed every 5 years. The national agency implementing external QA is the Legal Entity of Public Law—National Centre for Educational Quality Enhancement (NCEQE). NCEQE operates under the umbrella of the Ministry of Education, Science, Culture and Sport.

HEIs	Public	Private	Total
University	12	18	30
Teaching University	6	13	19
College	1	4	5
Total	19	35	54

	Bachelor	Medical education	Master	PhD	Total
sum	156493	19777	27891	8482	212643
% of total	73.59%	9.30%	13.12%	3.99%	100%

Georgian HEI Profile. Taken from <http://erasmusplus.org.ge/en/ug-in-georgia>

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • The EU-Georgia Association Agreement is supporting approximation to relevant EU policies and practices, meaning also promoting the modernisation of the education and training systems and the quality in higher education in a manner which is consistent with the EU Modernisation Agenda for Higher Education and the Bologna process (Article 359).³ • All study programs and higher education institutions are reviewed against quality standards in an authorization process authorization. From 2017 onwards, the processes and criteria have become stricter which is envisaged to lead to higher quality of teaching practice and a reduction in the number of weaker study programs. 	<ul style="list-style-type: none"> • In some cases, the content and quality of higher education need to be in better accordance to modern labor market requirements. Business representatives often complain about the relevance and quality of education received by graduates. As a result, unemployment and inactivity has remained relatively high on the Georgian labor market. • The higher education institutions have incentive to maximize the total number of students, and do not closely consider their low average performance in national admission tests because of the current funding system; mostly, students are the only source of revenue for the university. • The existing limited funding of higher education institutions (the funding is slightly tied to research performance) does not encourage institutions to invest in research infrastructure or recruit active researchers and pay for their research time.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Based on the objectives, current higher education policy reforms should be aimed at (i) improving quality, learning outcomes and skills formation for the Georgian labor market; (ii) strengthening the innovative capacity and entrepreneurship in the labor force; and (iii) enhancing tertiary education opportunities for underrepresented students. • The master students who have successfully passed the unified master's exams have a chance to get funding from state budget. For this purpose 2.2 mln 	<ul style="list-style-type: none"> • Legislation does not provide an accountability system (with the exception of annual self-evaluation for authorization and accreditation). Therefore, universities do not feel accountable to the public (university society). In a number of spheres this situation contains risks although it grants universities high levels of autonomy. • Accreditation procedures are quite strict. It may cause delay of launching the new courses.

³[https://eur-lex.europa.eu/legal-content/en/TXT/PDF/?uri=CELEX:22014A0830\(02\)](https://eur-lex.europa.eu/legal-content/en/TXT/PDF/?uri=CELEX:22014A0830(02))

<p>GEL have been allocated in the 2018-2019 academic year. Studying of about 1000 master students are financed.</p>	<ul style="list-style-type: none"> • The staff composition of many universities is not balanced with relatively many older and younger staff and lacking a “middle cadre”. • The state funding does not cover education fees for all postgraduates and this may become a source of demotivation. • Although a student loan system was introduced in Georgia in 2006, due unfavorable repayment conditions (the rate of interest is considered high) the number of students taking out loans may decrease.
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3. Demand for Specialists in Ep with Postgraduate Degrees

If possible – potential employment opportunities, employability statistics in the past, trends in the future, motivation/demotivation factors for the choice of the EP programme. If possible – with references. Please write ½ page on it and extract threats/opportunities.

The main and biggest governmental body responsible for Environment Protection issues is the Ministry of Environment and Natural Resources Protection of Georgia. The Ministry incorporates some legal entities of public law that oversees certain areas of the EP. Specifically, Agency of Protected Areas, National Environmental Agency, National Forestry Agency, Environmental Information and Education Center and Nuclear and Radiation Safety Agency. These agencies are the most important potential public employers for ecologists and EP specialists. The scope of activities of these agencies is preparation and dissemination of warnings and notifications in the event of expected natural disasters and adverse events, as well as in cases of forecasts on extreme environmental pollution for the purpose of ensuring of the state security and safety; planning and implementation of multipurpose, efficient and sustainable forest and other natural resources management; preparation and dissemination of information on the state of environment; development of environmental data bases; Among the tasks of Ministry is to support the raising of environmental education as well.

Apart the public organizations there is a network of NGO-s and business-companies that require qualified expertise in the field of EP. Among them are environmental monitoring production organization, training and research laboratories, as well as in air-conditioning and wastewater treatment plants. It should be noted according to Law of Georgia on Environmental Assesment Code issuing environmental decision based on EIA is a manadatory procedure for a rather wide range of activities.

4. Internal Factors: Existing Baseline

Available EP programmes/courses per partner University, short characteristics, experiences. Extract strengths/weaknesses

There are 27 universities in Georgia providing Master's level studying. Ten of them have a program in EP. Besides the EP Master's Degree programs, environmental disciplines are taught in other Master's Degree curricula at the same universities. There are 27 postgraduate specialties where 131 environmental subjects are taught, among them 21 subjects in ISU.

The National Higher Education Qualifications framework for 2019-2020 academic year master programs includes the following Environmental Protection related nominations⁴: Agroecology, Forest Ecology, Ecological Engineering, Water Engineering, Labor protection and safety Engineering, Emergency Management, Applied Ecology, Conservational Biology, Environmental Protection, Natural Resources, Landscaping.

STRENGTHS	WEAKNESSES
	<ul style="list-style-type: none"> The UG does not offer any Bachelor program in EP therefore there is rather limited number of courses directly dedicated to Ecology and Ecological Engineering.

⁴<https://eqe.ge/res/docs/2014120816152483570.pdf>

5. Availability of Resources

Availability of resources in Universities for the reforms. Human resources (teaching and technical personnel, students per teacher, please provide age/gender/qualification/etc. statistics), material resources (rooms, laboratories, equipment, etc.).

Extract strengths/weaknesses.

University of Georgia

Number of HE Programms	52
Bachelor level	31
Master level	22
PhD level	9

Number of Accredited Programmes	64
Number of Exchange Programmes	38

Number of all students with active status	5550
Bachelor level	4052
Master level	423
PhD level	105
Teacher training (60 ETCS)	0
Number of Foreign (International) Students	1344
Number of Students With Special Educational Needs	3

Total Area, m²	21224
Total Area of classes, m²	13193
Total nonteaching area, m²	8031

Data about employed staff in HEI (Higher educational Institution)	
Number of Employed Staff in HEI(Academic, Scientific, Invited, Administrative, Assistant Staff)	1097
Number of all academic staff	229
- Professor	43
- Associate Professor	148
- Assistant Professor	17
- Assistant	22
Number of researchers	13
- Scientist	13
- Post Doctoral Student	0
Number of all affiliated academic staff	201
- Affiliated Professor	43
- Affiliated Associated Professor	120

- Affiliated Assistant Professor	17
- Affiliated Assistant	21
Number of Foreign Academic/Invited Staff involved in teaching	15
Number of Foreign Academic/Scientific/Invited Staff involved in research	4
Invited Staff Involved in teaching	634
Administrative and assistant staff	276
Ratio of number of Academic and Scientific Staff to total number of Administrative and Assistant Staff	244/276
Ratio of Academic and Scientific Staff to total number of Staff in Institution	243/1097
Ratio of Academic and Scientific Staff to number of Invited Staff	243/634
Ratio of number of Academic, Research, Invited Staff to number of Students	444/6000
Ratio of number of Academic, Scientific, Invited Staff to number of Higher Educational Programmes	444/52
Ratio of number of Administrative Staff to number of Students	634/6000
Ratio of number of Affiliated Academic Staff to total number of Academic and Invited Staff	201/864
Ratio of number of Affiliated Academic Staff to number of students	201/6000
Ratio of number of Supervisors to number of Doctoral Students	195/65
Data of Graduates' employment (during 5 years)	5550
Data of Graduates' employment in relevantfield (during 5 years)	1748

Ilia State University

Number of all students with active status	17521
Bachelor level	14634
Master level	2152
PhD level	156
Teacher training (60 ETCS)	132
Number of Foreign (International) Students	154
Number of Students With Special Educational Needs	6
Number of HE Programms	77
Bachelor level	23
Master level	40
PhD level	12

Number of Accredited Programmes	77
Number of Exchange Programmes with partner Universityes	75

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • There are Environment protection programs on both Bachelor and Master levels in Ilia State University: Following three Master programs will be modernized: • Energy Management and Mineral Resources and Sustainability • Earth Sciences (Geology, Geophysics, Geography and GIS Technologies) • New Materials for Nano Electronics and Nano Engineering 	<ul style="list-style-type: none"> • There is lack of laboratories having Environment Protection related laboratory works. Most courses do not have laboratory works included. There is pure understanding of Physics principles behind advanced sensors and more some sophisticated laboratory equipment frequently used in Environment studies such as: Scanning Electron microscope, Transition Electron Microscope, Mass Spectrometer and spectrometers in general.

6. Sources of expertise.

Potential cooperation partners and opportunities inside the country and internationally. Extract strengths/weaknesses.

- **The National Environmental Agency** is a legal entity of the public law under the Ministry of Environment and Natural Resources Protection of Georgia. The scope of activities of the Agency is preparation and dissemination of warnings and notifications in the event of expected natural disasters and adverse events, as well as in cases of forecasts on extreme environmental pollution for the purpose of ensuring of the state security and safety; preparation and dissemination of information on the state of environment; development of environmental data bases;

- **USAID Georgia**

USAID's programs support environmental education and the sound management and protection of Georgia's natural endowments to ensure the longevity and sustainable use of its forests, lands, and water systems mitigating impact on our global climate. USAID, in partnership with U.S. Forest Service (USFS), provides technical assistance for natural resource management to Georgian government agencies, including the Ministry of Environmental Protection, Forestry Agency, Ministry of Agriculture, and environmental NGOs. USFS technical assistance includes training and advisory services on sustainable forest management with resulting benefits for biodiversity, economic development, governance and Institution Building objectives.

- **Waste Management Technologies in Regions Phase II (WMTR-II) Caucasus Environmental NGO Network (CENN)⁵**

WMTR aims to improve policy development and strategic planning related to waste management at national and local levels in Georgia; enhance the capacity of targeted municipalities to establish and sustainably manage waste facilities and services; and support the development of Georgia's recycling sector. The program develops remediation plans for old and illegal landfills, which will improve the management of thousands of hectares of biologically rich areas. The activity helps reduce environmental pollution, improve sanitation and human health, and increase the quality and quantity of recycled products.

- **National Forestry Agency**

The National Forestry Agency is authorized to manage almost two million hectares of forest in the country. The main objectives of the agency are to look after the forest and carry out reforestation activities, as well as use components of biological diversity on the territory of the Georgian Forest Fund sustainably.

To achieve the above goals the main objectives of the National Forestry Agency are: Sustainable management of the forest fund - the preservation of its useful features to maximize their benefits to society;

Carry out measures for forest maintenance, restoration and forest renewal;

⁵<http://www.cenn.org/>

Plan multipurpose, efficient and sustainable forest management;
 Carrying out forest inventory;
 Control of Forest fund.

- **Agency of Protected Areas.**

The main goal of The Agency of Protected Areas is to preserve natural heritage for future generation by establishing and managing protected areas, conducting scientific research, monitoring of biodiversity and natural resources, promoting eco-educational activities and developing eco-tourism on PAs. In addition, it supports improvement of skills of communities located in support zones of PAs and encourages them to be actively involved in decision-making process on a local level.

- **Environmental Information and Education Center.**

On May 14, 2013 was established Legal Entity of Public Law - Environmental Information and Education Center of the Ministry of Environment Protection and Agriculture of Georgia whose main objectives are:

- ✓ Facilitate environmental and agricultural education and raise public awareness
- ✓ Support public participation in decision-making
- ✓ Ensure access to information
- ✓ Establish unified information technology policy of the Ministry

Activities of the Centre are based on: The principles of the United Nations Economic Commission for Europe (UNECE) Convention on “Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters” (Aarhus Convention) and the visions and directions of UNECE Strategy for Education for Sustainable Development.

The Center promotes sustainable development through education and access to comprehensive information on environmental components.

- **Nuclear and Radiation Safety Agency.** The main functions of the Agency are:

- A) participation in the implementation of state policy in the field of nuclear and radiation safety;
- B) State regulation and control in the field of nuclear and radiation safety;
- C) Authorization of nuclear and radiation activities in accordance with the requirements of Georgian legislation;
- D) Creation and production of a register of departmental and professional radiation doses of radioactive materials, sources of ionizing radiation, radioactive waste, authorization, inspections and radiation incident response;
- E) Control of the functioning of the system of physical safety (security) of radioactive substances and the corresponding nuclear and radiation facilities;
- F) Participation in nuclear readiness and incident preparedness and response measures as provided by the legislation of Georgia;
- G) Organization of a radiation accident investigation according to the radiation accident response plan.