



# *ELENA –Experiential Learning and Education for Nature Awareness*

539561-LLP-1-2013-1-DE-COMENIUS-CMP PROJECT

## **ELENA Project**

### **Baseline Study on Biodiversity Education using Living Animals in Schools in Georgia**



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## Foreword

This baseline study has elaborated in frame of the project **ELENA - Experiential Learning and Education for Nature Awareness**, supported by the **Comenius** (a European Commission Funded Education) **Programme**.

Mentioned project aims accomplishment to the conservation education and contribution to the establishment of innovative methods for biodiversity education.

Baseline study aims to discover opportunities for the project inculcation, legislative regulations and general educational systems framework to establish its practices and implement extracurricular activities based on project concept frame.

Concept of biodiversity education implicates not only theoretical based, but methodology of direct observation of live animals. This type of method stimulates interest and positive emotions among pupils, as well as develops feeling of care and kindles the love of nature that in the future becomes to a skill and usual behavior in daily life.

This baseline study has been elaborated in a period of 4 month by the [National Center for Teacher Professional Development](#) and [SABUKO - Society for Nature Conservation](#).

During elaboration of this document it has been provided following activities:

- ✓ Detailed research of methodology in the schools of Tbilisi and Ajara Regions;
- ✓ Personal meetings and interviews with relevant specialists, school teachers and representatives of Ministry of Education and Science of Georgia.

These have been giving useful information concerning expected barriers, as well as suggestions and recommendations for its further successful implementation:

## Executive Summary

This baseline study is elaborated in frame of the **ELENA** - Experiental Learning and Education for Nature Awareness project N.: 539561-LLP-1-2013-1-DE-COMENIUS-CMP., supported by the **Comenius** (a European Commission Funded Education) **Programme**.

[National Center of Teacher Professional Development](#) and [SAKUKO - Society for Nature Conservation](#), in cooperation with its stakeholders [GIZ Deutsche Gesellschaft fur Internationale Zusammenarbeit \(GIZ\) GmbH](#) and [Ministry of Education and Science of Georgia](#) have provided coordination of national baseline study development due to a research of existing methods on nature education concept in secondary schools in Tbilisi and Ajara region.

Mentioned research also aimed to discover further opportunities, as well as possible interest to establish flexible methods of nature education based on [Tiere Live](#).

Results highlighted through the research mentions high level of interest and motivation to establish alternative methods for biodiversity education based on interactive and practical way provided by the [Tiere Life](#) modules.

# Introduction

## Map of Georgia



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**Area:** 69,700 sq km (26,911 sq miles)

**Population:** 4.3 million (Population Census, 2002)

**Capital:** Tbilisi

**Language:** Georgian

**Life expectancy:** 74 years - 71 years (men), 77 years (women) (UN)

Georgia has an area of 69, 7 km<sup>2</sup>. It is situated in the Caucasus region at the juncture of Eastern Europe and Western Asia. The country is bounded to the west by the Black Sea coast (shoreline 315 km), to the north by Russian Federation (border length 815 km), to the south-east by Azerbaijan (460 km), to the south by Armenia (197 km) and to the south-west by Turkey (248 km).

The Greater Caucasus Mountain Range forms the northern border of the country while the Lesser Caucasus Mountains occupy the country's southern part. The Likhi Range connects these two mountain systems and divides the country from the northeast to the southwest. To the west of this divider is the Kolkheti Lowland area, which extends to the coast of the Black Sea. To the east of the Likhi range is the Kartalinia Plain, a high plateau along the Kura River up to the border with Azerbaijan.

The Caucasus Mountains cover some 85 per cent of the country's total land area. Georgia's highest peak, Mount Shkhara (5,068 m), is situated in the Greater Caucasus range.

The coastal area has a humid subtropical Mediterranean climate all year round. The Greater Caucasus Mountain Range forms a barrier against the cold air from the north, while warm, moist air from the Black Sea can move easily into the coastal lowlands from the west. The plains of eastern Georgia have a more continental climate than the west, with colder winters, hotter summers and lower humidity, while the Alpine and highland regions and the semi-arid region of the Iori Plateau to the south-east have distinct microclimates. Alpine climates begin at about 2,100 m, and above 3,600 m mountains are covered by snow and ice all year round.

Georgia is rich with water resources. There are 26060 rivers and their total length is about 59 thousand kilometres. 99% makes the small rivers (length - less than 25 km). There are a lot of thermal and mineral water springs in the country. There are many natural and artificial water reservoirs. Important supplies of ground water are in limestone horizons on the territory of Caucasus.

Water resources are distributed unequally and they are mainly in the west part of the country. Black Sea basin accounts 70% of total rivers. Other 30% belongs to the Caspian Sea basin. There are about 860 lakes in Georgia. Most of them are very small so their water surface area is about 170 km<sup>2</sup>. (It consists of 0.24% of territory if the country). Most of them are fresh waters.

In Georgia wetlands cover 225 thousand ha on Kolkheti Lowlands. Georgian forests are occupying the territory of 3005.3 thousand which is 40% of the country's territory hectares. Agriculture has considerably transformed the land at lower altitudes, and little of the country's native wildlife remains. Dense forests and woodlands cover 40 per cent of the country, but forests are mostly concentrated in the western and mountainous regions, while in the sparsely wooded eastern uplands, underbrush and grasses predominate.

#### Environmental context

Georgia has a host of environmental problems, the most important of which relate to air and water quality, waste management, land use, coastal and marine pollution, chemical pollution and nature conservation.

Air pollution is fast becoming a major environmental concern. At the moment, the annual national emissions inventory of air pollutants covers only the energy, industry and transport sectors. The impact of the transport sector, especially increasing road transport, is a cause for concern. The effect of the some 3,000 stationary sources on air pollution is mitigated by the fact that not all are working at full capacity.

Georgia has considerable water resources, but water distribution is uneven due to the varying geographic conditions. A bigger problem, however, is maintaining water quality given the inadequate and outdated infrastructure. Defective water distribution infrastructure and contamination from wastewater are causing drinking water quality concerns.

Land degradation and desertification are worsening. In general, nature conservation may encounter increased problems due to the State's weakening environmental control.

Georgia is one of the richest spots in biodiversity in Europe. Georgia as a part of Caucasian eco-region is recognized by WWF as one of 200 biodiversity hot-spots. The main biomes are: grove forests, half deserts, steppes, arid sparse forests, wide deciduous biomes, coniferous mixed forests, sub-Alps, Alps, subnival and nival biomes. Georgia has 600 species endemic to the region.

Diversity of fauna: more than 80 species of fishes in fresh water, 5 species of sturgeon is spread in the Black Sea basin, 12 species of amphibians, 50 species of reptiles and more than 300 species of birds. Kolkheti lowlands and Javakheti uplands are significant places for migratory birds. There are accounted more than 100 species of mammals.

Detailed information about endangered species list in Georgia is given on the link according to IUCN criteria: [http://moe.gov.ge/index.php?sec\\_id=47&lang\\_id=ENG](http://moe.gov.ge/index.php?sec_id=47&lang_id=ENG)

#### Socio-Economic content

**The low salary system of the teacher profession makes it a poor career choice in Georgia.** Despite the gradual increase of teacher salaries in the last decade<sup>1</sup>, they remain below the average national salaries. According to figures of the National Statistics Office of Georgia the average

monthly salary for 2013 (fourth quarter) is of 875 GEL, while the average monthly salary in education is 475 GEL<sup>ii</sup>.

**Teacher salaries in Georgia are among the lowest compared to other countries that participated in PISA 2009.** Analysing 2009 teacher salaries relative to GDP per capita, teachers with minimum training and 10 years of experience in Georgia are paid less than half of teachers with similar formal qualifications are paid in Finland or Bulgaria

Demographics and education are influenced by political, socio-economic factors. This attests to the fact that since its independence in April 1991 Georgia has experienced unprecedented social and economic challenges, which impact on education and employability of school leavers. Education is a key contributor to the socio-economic development. Georgia's primary education Net Enrolment Ratio is steady and was 98% in 2012; in comparison the GER in 2012 was 106%. This indicates a high level of progression potential from primary to secondary education (Source: The World Bank, <http://data.worldbank.org/country/georgia> ). As far as progression is concerned, 98% of female students progressed from primary to secondary education in 2011. This is slightly down from 2009 with figures being 100%. The same applies to the responding total progression rate (Source: The World Bank, <http://data.worldbank.org/indicator/SE.ENR.SECO.FM.ZS/countries>).

For the general education there is a cross curricula competence eco-literacy that should be developed through the subjects taught. ELENA project has high value as it improves teachers competences and help students with gaining specific skills, it enhanced environmental attitudes towards „Tiere live” modules. Adaption of the modules is an important step for future learning of biodiversity conservation.

<sup>1</sup> In order to make the profession more attractive, the government introduced changes in the teacher compensation scheme in January 2013. The base salary of teachers rose from 245 GEL, set in 2009, to 305 GEL. As a result, this change has raised teachers' wages in a range of 26 to 60 percent amounting to about 60-205 GEL.

<sup>2</sup> The agency gives overall salaries in education, which also include non-teaching staff, therefore this information could be little inaccurate but it does not change much in comparative terms.



## Legislative Frame

The importance of environmental education is unquestionable. Ecological education emerged in the XIX century, on the basis of the natural sciences. Afterwards, it was replaced with the environmental education in the education system. In the 60-ies of the XX century significant changes started to take place- the countries established the Earth Day (April 22), and the 1972 UN Stockholm Conference on the "human environment" has declared the need for environmental education.

In general, there is a long tradition of teaching these topics in Georgia. In 1977, aimed to protect the environment, the world's first intergovernmental conference on "Environmental Education" accepted "the Tbilisi Declaration". It emphasized the need for environmental education in both formal and non-formal education and raised the issue of compulsory environmental education. The conference was a prerequisite for environmental protection and sustainable development education. A declaration was adopted and is still important in terms of awareness, knowledge, method of approach, skills and inclusion, and the main goal - human behavior, conduct, practices, and social conditions in compliance with the for sustainable future - still has to be achieved.

Later environmental education issues were described in the state program,<sup>1</sup> it was determined that the Environmental Education "Environmental education is a multidisciplinary training which forms the perception, values and skills for the people and the whole community to be involved in environmental preservation and improvement; It is the most important social strategy with the ultimate aim to form a human, who has the appropriate knowledge of his living environment, has the ability of judgment, knowledge of environmental relations skills, and has a core (including environmental) attitudes. " Its receivers are the teachers, trainers, all children, pupils or students in the educational institutions, and its strategic direction is their awareness, communication, training, and capacity building.

This document was not only focused on environmental education, as the issues were much more wide and systemic. Its aim is to promote the ideas of sustainable development and the principles of sustainable management of natural resources, and its impact is on both the formal and non-formal education.

In response to modern challenges, the strategy and action plan was developed in 2012, which is a continuation of "public environmental education program".

"Environmental Education for Sustainable Development: 2012-2014. National Strategy and Action Plan",<sup>2</sup> was prepared by the Ministry of Environmental Protection, in collaboration with the Ministry of Education and Science. It was approved by the Government on 24 May 2012 №980 decree. The document was developed on the basis of the public discussions, special workshops held by international donor organizations and by consultations of parties interested/ stakeholders with environmental education.

The aim of the document is to organize environmental education in the manner that all citizens are environmentally responsible, every action should be based on necessary knowledge, skills, values and attitudes for introducing the changes in the society, to develop a systematic approach for the implementation, to co-ordinate efforts of interested parties/ stakeholders in order to improve communication, to strengthen their capacity for the sustainable development, to have education and environmental objectives in line with international standards;

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<sup>3</sup> Presidential Decree No.: 538 of the State Programme on Environmental Education, Tbilisi, 2002.

<sup>2</sup> Environmental Education for Sustainable Development: National Strategy and Action Plan 2012-2014, Tbilisi, 2012

35 years later, on September 6-7, 2012, the Government of Georgia organized intergovernmental Conference, "Tbilisi+35: Environmental Education for Sustainable Development", which was held in partnership with The United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Environment Programme (UNEP). Participants included ministers of relevant sectors from various countries, international organizations, experts and other stakeholders. It stressed the importance of the environmental education in achieving sustainable development.

## **Georgia and the Convention on Biological Diversity**

Georgia joined "biological diversity" convention in 1994, acknowledging 3 main objectives of this Convention: biodiversity conservation, sustainable use of biological resources and the fair and equitable sharing of benefits derived from genetic resources.

In addition, Georgia is connected to/involved in the convention on "Trade in Endangered Species of Wild Fauna and Flora" (CITES), so-called "Ramsar Convention", "The Convention on Migratory Species" (CMS) and the "UNESCO Convention on the protection of natural and cultural heritage."

The embodiment of International Strategy for 2011-2020 at the national level is "National Biodiversity Strategy and Action Plan 2014-2020", which was developed with active participation of local and international experts. The objectives of this document are five goals of global level, in line with the national goals. 5th goal, "biodiversity strategy for the implementation of participatory planning, knowledge management and capacity building", includes the following goals: increased biodiversity, its values, functioning, status and trends for 2020, as well as biodiversity losses caused by the implications of the knowledge and enhanced scientific basis; For 2020, the study of biodiversity is enhanced at all levels of formal and informal education and there is lifelong learning system and educational resources of biodiversity; By 2020, biodiversity conservation and traditional knowledge and needs for sustainable usage are integrated into legislation and strategies.<sup>3</sup>

### ***1.1 Policy commitment***

#### ***General Education Frameworks***

The basis of Educational normative documents is the Governmental Decree No.84 of October 18, 2004 on Approving **National Goals** of General Education.<sup>4</sup> It describes the objectives, for the graduates of educational institutions, and what conditions are necessary for them to become a free individual with the national and universal values.

The "National Goals of General Education" describes what a student should be able to comprehend on the basis of the school education. The second aim from the main nine-point aims is the "conserve and protect the natural environment: young people need to be aware of the natural environment they live in, what harm can come from any of their actions, and how to preserve and protect the natural environment."

Based on the "National Goals of General Education", National Curriculum (NC) was adopted, changing the main paradigm of education and offering learner and the results centered approach. It allows the student to become an active observer instead of a passive recipient of the knowledge; the teaching focuses on attitudes, research skills, utilization of knowledge, decision-making and developing responsibility. The goal becomes not the amount of knowledge, but its quality.

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<sup>3</sup> National Biodiversity Strategy and Action Plan 2014-2020, Tbilisi 2014

<sup>4</sup> Government Decree No. 84 of 2004 on the approval of the National Education Goals

Thus, the state has recognized the place and the role of education in shaping environmental awareness.

Cross curriculum competences are given in the introduction of NC. It identifies nine areas of competence.<sup>5</sup>

Ecological Literacy, with the learning to learn, literacy, media literacy, digital literacy, Numeracy, multilingual, semiotic, social and civil competences are called cross curriculum competences.

In NC ecological literacy is described as: "ecological literacy implies formation of healthy attitudes towards the environment, which means that the student must realize the individual responsibility towards the environment, and must be able to participate in its protection and restoration."

The development of competences is not a responsibility of one specific subject or group of them, it is necessary that each subject takes care of adopting them with the appropriate mechanisms and approaches. This requires interdisciplinary ties in the learning process, which is important for transferring knowledge acquired in one subject to other contexts. All of the above will help young people to adapt the competencies to real life.

The goal of the teaching of the natural science disciplines is to share the basics of natural science to the pupils and to develop research skills that will allow them to explore and understand the world, to engage in social activities in various fields, and to have a sense of responsibility for themselves, society and the environment.

### ***Primary level***

On the primary level, I-VI classes are taught the subject of "Natural History" continuously, which combines geography, astronomy, biology, physics, chemistry and civic issues. Attention is paid to the attitudes and skills development, research and the knowledge and its use. The primary level pupils are beginning to orientate in the environment independently and have a desire to explore it. At this stage of learning, there should be the basis for a student to establish their perceptions of environment from passive to active, creative thinking and environmentally correct approach - Biodiversity, material, understanding of the physical forces and energy. The student should be able to use the gained knowledge and experience in everyday life.

At the end of VIII class the pupil should be able to characterize the diversity of the living world, using the principle of classification and discuss similarities and differences between different groups; also he should be able to discuss the importance of positive and negative microorganisms for the people. He should have information on some species included in the Red List of endangered species in Georgia.

### ***Elective subject block***

In this level the students are able to choose elective courses from a variety of disciplines, which enables them to learn in depth according to their interest. The main objective of the elective classes is to expand the students' horizons and to enrich their experience. They should be helpful in identifying their own inclinations.

According to NC, in X-XII classes students should learn two hour elective courses during 5 semesters, and only in the 12th grade in the second semester, it is no longer required.

From the elective courses, the following have the clear focus on environment: "Environment and Sustainable Development", "Fundamentals of Conservation Biology", "ecology and environmental management".<sup>6</sup>

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<sup>5</sup> The National Curriculum, 2011-2016, Tbilisi

For our study especially interesting is "Fundamentals of conservation biology." The rapid growth of human population and their needs contributes to the ecological crisis. Conservation Biology is an interdisciplinary field of science, which is expressed in the connection between the social sciences and humanities, as well as ethical issues. Here, emphasis was given to the biodiversity of advanced training, in particular to biogeographic zonation schemes, earth ecosystems, their spread patterns and changes over time, factors that influence reduction (climate change, habitat destruction, habitat fragmentation and landscape change; surplus extraction, the introduced and invasive species; intensive agriculture farm, Eutrophication, etc.); Studied as well as biodiversity hot spots, agricultural biodiversity, ecosystem services, conservation approaches, the international legal framework and the situation in Georgia, the relevant international conventions, international organizations, employment areas of professional conservation biologists.

### ***1.2 Regulatory framework***

The lack of standards hinders teachers' qualifications, as well as the fact that there are not enough supporting materials available in Georgian language. It would have supported the teachers in teaching standard results and indicators.

Moreover, there is not a special training module, which would enable teachers to develop professionally, and to get some knowledge in the area.

It should be noted that there is Handbook for the elective subjects, which casts doubt on its teaching. Lack of resources, access to internet, material and technical base together with the lack of qualified teachers casts doubt on conducting the new, modern approach in biodiversity studies.

It should be noted that ELENA project and the material created, was widely used in Bavaria, Germany and was successfully implemented in many schools. Therefore, it can be successfully used in Georgia as well. In addition to the manual, which includes the separate sections for each animal, the local context is very important to make the correct selection. For example, wolf and dog, silk worm, butterflies, birds. The translated and adapted material is relevant to the local context. Moreover, the training of teachers will enhance their competencies.

It should also be noted that at the legislative level, there is no prohibition or restriction of any kind, which could prevent contact with live animals. In addition, teachers and school principals recall the times when there was the practice "live corners", where they had plants and animals. Schools were developing in children the care for living world. However, their goals were more limited and were not aimed at the development of cognitive skills, but in terms of ELENA, we can talk about development of competencies within a much broader range.

Schools emphasize that abolition of the "live corners" coincided with the energy crisis and economic problems, which is why schools found it difficult to maintain the temperature at the same level all the time, the nutrition and care became difficult, as well as additional argument that doctors suggested that the animals can cause allergies. After that, the practice was abolished in most schools. However, the teachers clearly remember the positive influence of the practice on students. In conclusion, it should be noted that the introduction of Helena project responds to legislative regulations and enables it to be introduced at the different levels of education, mostly at the primary

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<sup>6</sup> The full list of elective subjects can be found in the following link  
<http://www.mes.gov.ge/content.php?id=3923&lang=geo>

and secondary levels. Moreover, there is already a positive experience with the animals and “live corners”.

### ***Educational Cooperation***

According to expert estimates there is low public awareness in the case of biodiversity. There is a low interest in the protection and preservation in all levels (media, decision-makers, local governments, communities, youth and children).

In addition to formal education, there are initiatives that are carried out by non-governmental organizations. However, their sustainability is questionable, because as soon as their funding is terminated, they will stop functioning. Thus, without the support of the government the number of successful practices in non-formal education is often doomed.

Eco-clubs are actively forming within the schools; their size has increased, especially after the adoption of the strategy in 2012-2014, which supported the idea of informal education, and in particular, in the eco-club direction.

We should be aware of work in this direction of the Ministry of Environment and Natural Resources, Agency of Protected Areas, USAID, UNDP, CENN, CARE, Caucasian Scouts and other organizations. The main part of the work of eco-clubs is environmental awareness. There are many important projects carried out in terms of biodiversity. Especially popular are days marked on "green calendar" with different events, clean-up campaigns, conferences, tree planting and more.

The number of students involved in eco-clubs clubs and green clubs continues to grow (10% of the total number of pupils). They have exciting activities carried out, at the same time, their popularity continues to grow. It should be noted that the scope of their activities often extended beyond the school and requires community involvement as well. In addition, students are improving their knowledge with fun and exciting activities, developing the necessary skills and become positively inclined to the environment.

### ***1.3 Networking opportunities***

The two main institutions, that are collaborating to introduce environmental education, are the Ministry of Education and Science and the Ministry of Environment and Natural Resources. They make joint programs, projects, competitions, participate in commissions. However, the most important result of cooperation is “Environmental Education for Sustainable Development: 2012-2014. National Strategy and Action Plan ". Both offices are involved in its introduction.

Environmental Information and Education Centre was established in 2013, it can lead to eradication of deficiencies. The center is actively involved in all levels of education in order to make this direction a priority.

The educational function of the Protected Areas Agency is also important, as it has great opportunities to plan educational activities and to promote a better understanding of the teachings of biodiversity.

The zoo has an interesting educational offers for schools, when children can study behavior through observation. It has a great approval in children of different ages.

In addition to the organizations and institutions mentioned above, the role of the Ministry of Sports and Youth is immense as well. Currently, its involvement is minimal, but in the future they should

be able to play a part in environmental and biodiversity studies. In addition to their projects, they have summer schools, which can be very fruitful. But currently, there is no established mechanism for their involvement.

Non-governmental organizations are actively involved, as well as the international organizations, already mentioned in the previous section regarding eco-clubs.

We should also acknowledge the role of schools. They develop the school curriculum based on the national curriculum. Where in addition to the mandatory framework, they have a certain freedom for the development of their own curriculum, in what the schools are having significant independence.

From the start of the new school year, the Teacher Professional Development Scheme will begin to work, which means evaluation of the teachers according to their qualification and activities. Thus, teachers will be able to accumulate credits and advance their careers. Hence, teachers will be interested in carrying out different projects, which will allow the school to improve their students' achievements, promoting reaching the outcomes of NC.

Schools have a high degree of freedom, although it should be noted that the NC loads the timetable with the mandatory courses, so that the schools do not have the opportunity to spread their creative work.

#### ***1.4 Conclusions***

It should be noted that the legal framework is well-balanced and it reflects environmental trends. There are clear priority areas, including eco-literacy, but it is not spread enough in all levels of courses.

In terms of biodiversity, some results and indicators allow the introduction of ELENA; however, NC needs to be more extended. Also NC implementation mechanisms are not enough, as there is a lack of resources, which can be a good basis for the ELENA project.

It turned out that the eco-clubs have the opportunity, as well as the interest to implement the material of the project, which is consistent with their objectives, and the schools have enough freedom to encourage teachers to introduce the materials from the ELENA project.

The schools already have similar experiences, positively evaluated by teachers; they would gladly restore "live corners" in schools.

## Education Frame

### *2.1 Education and teaching*

Environmental education (and, in particular, biodiversity education), as can be expected, is not identified as a separate subject/blocks of subject in the **National Curriculum** (current National Curriculum 2011-2016 was adopted last year). The content and appropriate learning outcomes related to environmental/biodiversity education is addressed in transparent priority competencies of the National Curriculum as well as is integrated in an inter-disciplinary manner and are embedded in specific subjects of the curriculum at all three: primary, basic and general education levels. Teaching the science subjects is considered on all levels of studying: Primary level (1-6 grades), Basic level (7-9 grades), and secondary level (10-12 grades).

Within the primary grades the science is not divided into several subjects, e.g. biology, physics, chemistry; it consists of integrated course with the elements of above mentioned subjects plus geography and civics.

The specific skills that are priority of the natural science and are developed through learning on primary level are:

- Observation of nature (as through sense organs and using simple tools)
- Identification of natural phenomena and description of the processes
- Collecting data, observation, providing simple experiments, using various sources of information
- asking a questions about the issues
- classifying objects according to their characteristics
- recording quantitative data, organizing them and presenting them in variety of ways ;
- Protection of environment, following safety rules.

There are 2328 schools among them 243 are private schools. From the legal point of view National Curriculum is the minimum requirement for the schools, private schools have more flexibility and more resources for modifying existing programs and implementing extracurricular activities.

There are some public and private schools that are having more emphases on environmental education. We have schools that are having eco-clubs; those schools are celebrating all the “green” days on calendar, having projects, conducting fields as their activities. These clubs are supervised by different NGOs and also by the Ministry of Environment and Natural Resources within the actions defined by strategy and AP on environment protection and sustainable development.

There are some private schools that are trying to foster environmental education as they are having better infrastructure and more freedom in achieving results that are described by National Curriculum.

Also they are having more advanced human resources with better competences and better salaries. The entire above mentioned are affecting the learning process.

According to the findings of research<sup>7</sup> on environmental education students of private schools are showing better results in knowing and understanding concepts, having better attitudes

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<sup>7</sup> Assessment of Youth Environmental Awareness in Georgia, Tbilisi, 2013

towards environment and having more developed skills. Some differences were identified between the level of environmental awareness of private and public school students. Students from private schools demonstrate better academic knowledge of environmental issues; they display more critical reasoning or systemic thinking skills. This is the result of wider range of environmental topics that they are undertaking, also they are more involved in extracurricular activities, and more projects are taking place on the ground.

If we will focus on biodiversity, research found that most of students are having general perceptions about the value of biodiversity and the basic preservation and conservation concepts; however none of them demonstrated the awareness over the importance of Georgia's biodiversity in a global context.

National curriculum is a compulsory for primary and basic levels, while in secondary level there are compulsory and optional courses available. E.g. there are Environment and Sustainable Development and Bio-conservation courses for 11<sup>th</sup> and 12<sup>th</sup> grades

We think that according to the specific standard results and indicators the most appropriate are 5-6 and 8-9 grades (primary and basic levels) to introduce "Tiere Live";

Also the modules will be a valuable resource for eco-clubs

Teachers that are teaching Natural Science on primary level and also Biology on Basic and Secondary levels are having competences to provide learning according to the modules of "Tiere live".

We put the question in the network of Teachers of Georgia about the experience of bringing different insects and animals to the classroom, what type of activities are they providing, how they are incorporating it in curriculum:

We found out that schools practiced previously having "The live corner". It was abolished as it was costly; also there were some cases of because of lack of care they were dying or some health problems were widely discussed. Also in previous years there were shortages with electricity and heating of schools and it was difficult to preserve those "live corners" at school. We have to add that the aim of the "live corners" was limited. They were developing caring skills. The animals were not used as a resource for teaching and learning. Also there were some discussions after which this kind of practice was abandoned.

Teachers are willing to promote love and awareness of biodiversity in children that will help shape children's values, perspectives, and understanding of the environment and help them develop into responsible adults. They believe that children need to learn from a very early age that the environment has an impact on their lifestyle and quality of life and vice versa for sustainable future.

Mostly there were positive responses to the question and several teachers were identified that are motivated to implement "**Tiere live**". Teachers are from both public and private schools.



## 2.2 Extracurricular partners

[GIZ Deutsche Gesellschaft für Internationale Zusammenarbeit \(GIZ\) GmbH](#)  
[Ministry of Education and Science of Georgia](#)

Apart from formal settings environmental awareness and knowledge is created through non-formal educational opportunities. There are no regulations who could be a partner for the schools for extracurricular activities. Mostly these opportunities are offered by educational institutions, NGOs, International organizations working in Georgia and different governmental structures. local governments and mayor's offices, also they visit different sites, like museums, protected areas, and zoo. These partnerships are having a very positive influence on school culture. These partnerships are targeted by different environmental capacity or awareness building instruments include students of 7-12 grades.

There are a significant number of extracurricular projects for children initiated by different institutions, educational and environmental, aimed at increasing awareness of the children on importance and conservation of biodiversity, but still their influence scale is little.

According to another research<sup>8</sup> of educational system there were interviewed 28 NGOs that work on environmental issues. Mostly their area is awareness raising, management of natural resources and sustainable development, biodiversity, green belts and forests, waste managements, energy-efficiency, climate change and other campaigns in a format of training, informational meetings, projects.

The most recognizable institutions that were listed by the respondents were Green movement, CENN, Eco-vision, Green Alternative, ELKANA, Green fist.

Since 2007 on the initiative from the Ministry of Education and Georgia and in partnership with universities a series of public lectures on a number of popular scientific topics, among them biology and geography, is being delivered at general schools all around Georgia. The project is aimed at updating the knowledge of natural sciences as well as making them more attractive and appealing to students. Thousands of pupils have attended these lectures during the five year period.

Another initiative by the Ministry of Education and Sciences of Georgia is a national awards initiative for school students called "Olympiads". The Olympiads cover a number of subject groups and is a country wide initiative allowing all basic and secondary school students to participate in it. Under the topic *education for sustainable development* the following areas were included: Conservation of the Black Sea coastal zone (Sarphi- Batumi or Supsa-Natanebi); Conservation and rational use of forests; Inclusion of local natural and historic relics into tourism development; Quality of environment and health, etc.

National parks, one of the major functions of which is education, can have a strong say in environmental education and awareness rising. Different awareness raising campaigns, public lectures, eco-tours, eco camps and so on, are carried out by the Agency of Protected Areas network.

An educational center for children "Metazoa" is established by Tbilisi Zoo. It aims environmental awareness raising and ecological education of children (age groups 5-16). Biodiversity conservation and supporting harmonious coexistence of humans and living nature is the main area of the "Metazoa".

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<sup>8</sup> Assessment of Environmental Education in Georgia, Tbilisi, 2014

Garden Birds Hour Campaign, organized by the Ministry of Environment and Natural Resources Protection (MoENRP) and the financial support of GIZ, is held in Georgia since 2009. Campaign aims at raising environmental education and responsibility in young generations. This will support protection and conservation of an environment.

Garden Birds Hour is held every May 22 and aims at promotion of an International Day for Biodiversity. An interest towards a campaign is high. During past 5 years 7 000 students of 700 schools have participated in the campaign.

Garden Birds Hour has been held for 6 years. It encourages young people to be closer to nature and raises public awareness on biodiversity issues.

Since 2005 Department for Educational Programmes is working under National Museum of Georgia as well. The department develops educational programmes based on the museum collections and targeting school children. Chitaia Ethnographic Museum initiated Interactive Dialogues on environmental topics for students (10-15 years old).

Junior University and within the Tbilisi State University among other areas aims to popularize natural sciences by holding public lectures and practical experiments with the participation of teachers and students. It improves knowledge and develops skills and lay foundations for research. Different activities are held among others as student competitions and conferences, as well as open seminars in different regions of Georgia. Also they arrange summer schools for senior secondary school students. This program provides students with a unique opportunity to obtain extra-curricular information about new scientific and technological advancements, participate in real time experiments and projects. Among the covered topics was Promotion of Biodiversity through Restoration of Quarries.

Apart from the Ministry of Education and Science of Georgia (with its agencies) probably second most important actors in teacher awareness rising with regards to biodiversity conservation and protected areas of Georgia is the Ministry of Environment Protection of Georgia (and its agencies/departments – Agency of Protected Areas of Georgia and Biodiversity Service). Primary targets within their campaigns were biology and geography teachers. So far the coverage is not very comprehensive (approx. 120 and 500 teachers respectively) but the Ministry plans to work in this regard in the coming years. The aim of the projects is to raise the awareness of school teachers and pupils on Georgia's Protected Areas, Georgia's biodiversity and the species that are on the verge of extinction.

Besides the fact that some organizations are participating in school life, teachers do believe that it's not enough for environmental education; it's mainly unsystematic and not sustainable and is quitted after the project ends. Mainly teachers complain that there is a low interest from different institutions to participate into school life.

### ***2.3 Adapting and developing the handbook „Tiere live“***

Living organisms are part of the National Curriculum, earlier it was discussed on a concept level:

**“A student is able to describe the diversity of the live world, to use classification principle and discuss the similarities and differences among various groups**

The result is obvious, if a student:

- Presents several ways of grouping of one and the same set of organisms according to the criteria selected by him/her. Explains the reason for the separation of certain groups, makes presentations;
- obtains information about a certain variation of organ in the individuals of one and the same species (e.g. a plant leaf length or width, weight of foetus), compares them with each other and discusses diversity of variations;
- names the main criteria for dividing organisms into groups (fungi, algae, mosses, ferns, flower plants);
- obtains the material about local environment plant and animal diversity and distributes them in relevant taxonomic units according to their features (e.g., fir-tree, pine-tree, lime-tree - the plant kingdom, gymnosperms or angiosperms accordingly);
- when being in the wild identifies the organisms with the help of guidebooks/references;
- obtains information and describes the live world kingdoms, makes a simple genealogical tree, and presents it by a variety of visual means (e.g., scheme, figure);
- discusses the positive and negative impact of microorganisms on the people (e.g., production of food stuff and spoiling/rotting of them, water pollution and purification, compost production, provoking disease);

*Content relevant to the outcome and indicators: Animals (coelenterates, worms, molluscs, arthropods, fishes, amphibians, reptiles, birds, mammals). Some species put in the on the Red List and Red Book of Georgia”.*

**A student is able to discuss the historical development of the live world, to associate the diversity of organisms with the process of evolution.**

The result is obvious, if a student:

- obtains information about the establishment of evolutionary views; distinguishes the Lamarckian and Darwinian ideas about the driving forces of the evolution;
- discusses the main evolutionary factor (natural selection) revealed by Darwin and Wallace and proves its validity with appropriate examples;
- compares with each other the natural and artificial selection appropriate and proves own opinion based on the relevant examples;
- characterizes the forms of struggle for survival;
- Conducts experiments or observes the course of struggle for survival at the example of plant growth (e.g., plants sawn alone and closely in two pots, various elderly woody differently developed in the forest). Presents the data by a variety of visual means (e.g., tables, diagrams, photo);
- Based on the obtained information discusses the final outcome of the evolution (adaptability, emergence of new species), and presents by a variety of visual means (e.g., tables, diagrams, video materials).

*Content relevant to the outcome and indicators: Peculiarities of a living system. Basic criteria of a living system are: feeding, irritability, division, motion, growth, reproduction, chemicals and energy metabolism (respiration, photosynthesis).*

*Levels of organization of living systems: molecular, cellular, tissue, organism, species, ecosystem, biosphere.”*

So there is a wide range of possibilities to support achieving of the curriculum outcomes.

Based on teachers responses and expert opinions it was decided to translate several chapters from handbook:

Wolf and dog;

Birds;

Butterflies;

There are no specific regulations that are restricting presence of the animals at school environment, in case of classroom, it's better to have an agreement from parents, to avoid some further problems.

At the organizational level within the ELENA project we will invite qualified human resources from specific fields – live animal experts.

## **2.4 Conclusions**

This survey analysis revealed that schools are open for collaboration. There are many organizations that participate into school life, but it's not so wide in scale and thus is not enough. There is much higher demand on such collaboration. Teachers need support from the governmental and school administrations level to acknowledge the meaning of extracurricular activities and help them and promote active and motivated teachers.

There is an expertise in many NGOs and other institutions of having environmental educational projects. It is important to involve them in adapting and implementing of chosen handbook chapters. It will increase achieved results.

## Training needs analysis for teacher trainings

*Please consider that this is the part for analysing the organisations and teachers for the scope of the project*

### 3.1 Organisation

Key role in the adequate knowledge transfer and skills development lies within teachers who can create suitable teaching and learning environment in the classroom and be mediators in transfer of knowledge, adoption of relevant skills, values and attitudes. That's why proper professional development of teachers is of high importance.

In line with the educational reforms taking place in Georgia since 2003, teacher professional development was high on the agenda. In 2011 teachers standards were developed, based on them in service trainings become systematic. Provision of trainings are mostly centralized and are offered free of charge to all acting teachers. Some of the trainings that are accredited could be offered as well to teachers.

There is an important institutional achievement in teacher professional development in recent years; But still problems exists in the system as there are 75% of uncertified teachers. Low salary perspectives is not attracting professionals from outside, also there is a low motivation to enter the profession for new university graduates.

The inadequacies with teaching and especially teaching of natural sciences can be also related to the existence of modern teaching aids and equipment in the school classrooms. To cope with the problem the Ministry of Education and Science launched improvement of the infrastructure computer labs, smart boards, Project Einstein – to equip schools with science labs and etc.

Main actor in teachers in service training is Teacher Professional Development Center. The center updated professional standards, also detailed guidelines were prepared. Trainings, both subject specific and teaching methodology related, have been offered to teachers. There are 143 training modules available to them. Teachers could apply for them on-line<sup>9</sup> and participate in trainings in a regional centre close to their place of residence. On-line registration system for teachers is designed in a way that there is given a list of training modules categorized by subjects; there is a short description of the module, contact hours, place where they want to attend training. After the group is completed (20 for Tbilisi, 10 for other regions), trainer is sent to the location. For the public school teachers the training is for free, while private school teachers are paying for attendance.

Mainly there is a practice to conduct 4hours trainings per day, after classes, or 5-6 hours on weekends. The length could be from 2 day trainings up to 6 days trainings.

There are “Teacher Houses” in Tbilisi, Batumi, and Kutaisi that are providing infrastructure for trainings. In other cases schools are hosting the trainings.

There are limited opportunities in environmental education, One module is provided in Sustainable development (10 contact hours), geography of global problems (20 contact hours), other trainings cover the topic only partially. There is no separate module on biodiversity.

There are professional trainers available who are hired by the TPDC and they have high expertise in subject area and also developed trainers skills, they are having permanent ToTs for continues professional development.

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<sup>9</sup> <http://tpdc.ge/>

Also there is a practise of inviting speakers for seminars and master classes. We could invite speakers for the upcoming events, based on their expertise.

The length of training depends on the topic. Tiere Live handbook consists of specific knowledge, also for teachers specific skills should be developed, as an arrangement part, how to organize school environment to bring different live organisms into the class; what are the safety requirements, how to conduct different activities, how to support learning process and how students have to obtain all the competences the program aims to develop. For training module 1 training day before launching one within the process for consultation might be enough.

### ***3.2 Networking between organizations***

#### *Providers of teacher trainings*

Teacher's trainings are provided by several organizations. Free of charge are trainings by TPDC (it was discussed above), also within the projects that are financed by different donors and funds trainings are taking place. Also there is an active participation of MOE and its departments and centers, they could conduct trainings for different target groups. Some Universities provide trainings for science teachers (IliaUni, SALIS trainings), and there are NGOs that are conducting trainings on environmental education.

Also in 205 public schools we are piloting project "school based professional development", where 1 motivated teacher from each subject group are participants of the group that is trained to change the culture of the school and make it more collaborative.

In Georgia all the key persons that are active in environmental education are having a good coordination.

NGOs are providing trainings mainly within the concrete projects on awareness rising. Tbilisi Zoo is having a special department which is focused on different age groups of students.

Also Hour of Garden Birds is organized by MoENRP, that support awareness raising in biodiversity.

All the institutions are willing to participate, especially those NGOs that are providing environmental activities.

### ***3.3 Financing***

"Tiere live" implementation is planned to finance from the Budget of the program, also some additional funds will be used from the budget of the Georgian partner organizations. E.g. TPDC is will support trainings.

It is not yet clear the source of financing trainings and further implementation of the modules. It depends on circumstances. If the funds will be raised it will be easier to make the project larger in scale. The scale will be smaller if the extra funding will not be available.

### ***3.4 Target group of the training***

#### *Type of schools:*

Teachers will be from the public schools; also some private schools that are motivated to participate in the project will be invited. According to the project Georgia has to train 5 teachers.

Within the project teachers of natural science on primary level and biology teachers will be targeted.

Teachers volunteered to participate in the project, it is the best way them to be motivated. We will include the teachers that are having a good experience of teaching environmental education.

For the selected teachers to attend trainings will be obligatory, it is important to understand the scope of the handbook correctly and to use the right methodology for reaching the goals, for developing competences.

### ***3.5 Teachers trained as multipliers***

We will choose teachers that are experienced in environmental education, also that have a good portfolio and conducting projects, that are active and recognized professionals among teachers, so they will distribute their knowledge.

There will be an on-line group for them to discuss some topics and problems. This will help to find the persons that are innovative, creative and successful within the project. After, they will be able to continue on involving colleagues from their schools. Final meeting/ seminar/ conference will be a good room for attracting other teachers.

Tbilisi and Ajara region will be among participants; also regional representation will be taken into account, in total 5 schools. All the teachers involved in the training will have extra meetings for sharing problems raised and also for sharing good practises.

### ***3.6 Conclusions***

The current system allows selecting teachers and conducting trainings for them. Regional representation of the teachers is important for wider distribution of the ideas of biodiversity.

## Good Practices

### General data of the case:

**Title of the project/programme:** Nature clubs for nature and biodiversity education

The idea of this programme has established in 2008 by the [Batumi Raptor Count](#) - International project under SABUKO (Society for Nature Conservation) for monitoring of migratory raptors in Batumi Bottleneck.

It aims at raising environmental awareness and developing responsible attitude towards the surrounding nature among the secondary school pupils, so that they become nature friends. In the long term this will contribute to conservation and wise use of Georgia's biodiversity and sustainable development.

**Coordinators:** Mr. Wouter Vansteelant PhD and Ms. Siranush Tumanyan

**Project:** Nature clubs for nature and biodiversity education

**Organization:** SABUKO - Society for Nature Conservation

**Partners:** The Walt Disney conservation fund, EOCA - European Outdoor Conservation Association, Osprey Packs, Youth in Action programme by the European Commission and Ministry of Education and Science of the A.R. of Ajara.

**Age of the students engaged, targeted:** from 7 to 13

**Location:** Batumi, Ajara region, Georgia

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[www.birdlife.ge](http://www.birdlife.ge) / [www.batumiraptorcount.org](http://www.batumiraptorcount.org)

The pre-research activity before the project elaboration highlighted followings:

- ✓ Based on Georgian national education system there are a few relevant lessons adopted so far connected to the topic of nature, however there is only one type of lesson “the science of nature” adopted for the exact target group of the project that is (from 7 to 13);
- ✓ The lesson “science of nature” is provided permanently 2/3 times a week and it includes different topics as well, such as: physics, chemist, geography, etc. that makes only 35/45% of concentration on topic of nature and biodiversity education;
- ✓ These lessons usually provided based on theoretical (in-door) methods and includes low percentage of practical and entertaining methodology that is highly important to stimulate interest and motivation in topic of this target group.

Nature clubs for nature and biodiversity education project provides non-formal education methods based activities (30% of in-door and 70% of out-door).

Nature club gives an opportunity to meet with wild nature face to face and stimulates development of skills and behaviour of loving nature among young generation by direct observation of live birds, animals, mammals, reptiles, insects, amphibians and plants.

The nature club aims to increase the environmental awareness of school children and to strengthen their understanding of the close linkage between the quality of nature and the well-being of people.



In cooperation with secondary schools management, at the beginning level project has established 5 nature clubs in 5 secondary schools with composition of 10/15 pupils in each.

Together with local school teachers, project also invites foreigner teachers from abroad to exchange knowledge and experience, as well as to provide activities together. Before the start of activity, mixed group of teachers provide detailed planning of curriculum for theoretical and practical activities that needs to be implemented.

- During the nature club event teachers turn in to facilitators and using interactive method of leading the process of in-door activity by using methods of brain-storming, work in a small groups, as well as group presentations, etc.
- Each nature club event followed by trip to the national park or protected area where pupils have chance to entertain and observe local biodiversity in its place of origin.
- After each out-door activity teachers facilitate exchange process and open discussion of results of the day work.

*During each activity children get useful educational hand-outs and reading materials.*

**Nature club provides general biodiversity education, however huge accent is made on topic of birds and its diversity of species due to a following unfortunate fact:** *The foothills of the Lesser Caucasus along the Black Sea Coast in Georgia forms one of the world's biggest bottlenecks for migrating raptors. More than one million birds of prey pass through this region, during migration seasons in spring and autumn, the flight is very diverse, and at least 35 different species of raptors have been observed migrating through the region.*

*Unfortunately this migration process is impacted by illegal and indiscriminate hunting, a deeply rooted tradition in the rural communities. Estimates indicate that every autumn between 7000-9000 raptors get shot.*

*Historical tradition of Falconry and Hunting sports is deeply rooted and widely spread throughout whole Caucasus region. Statistically there is minimum one hunter and falconer in each second family in each local village, even school kids (between age of 13-17) are active followers of this tradition, motivated by fact that traditionally hunters have always been respected by local communities;*

The main target of this project is to raise awareness and to enthuse children about nature and birds in particular. Therefore the results of the bird observation are presented to the young participants of the secondary schools. Having feedback in the form of published results keeps pupils motivated for further participation in the nature club activities. Moreover, the publication can encourage other schools and make them willing to participate in the project.

Pupils are also handed practical advices and recommendations about making the surrounding environment favourable to birds.

*Each summer SABUKO provides at least one summer camp for nature club participants (with combination of annual gifts, such as binoculars, t-shirts, caps, reading materials and certificates) and in this way stimulates more and more children and their parents to join the nature club and follow its green lifestyle.*



## Interviews

### 2 Interviews:

Major Questions:

1. How important is to provide lessons on live nature and biodiversity in the schools at the beginning classes?
2. How often pupils get lessons per week on live nature and biodiversity and what are the aims of these lessons?
3. What are the main methods of these lessons and is it effective in terms of reaching pointed goals?
4. How often pupils have direct observation of live animals and how often they have an opportunity to go for an excursion in nature reserves, national parks and other destinations to observe wild nature?
5. Did you ever ask pupils what are the main interest of them concerning wild nature and what would be more exiting interesting for them to see?
6. Do you like this hand book **Tiere Live**? Do you think its concept would help pupils to highlight more interest to the biodiversity lessons?
7. What would be your suggestions/recommendation concerning improvement of biodiversity education in the schools?

Respondent 1:

1. A child is born with a connection to the Environment, but he/she has no knowledge of the nature and its diversity and vitality of the peculiarities of the structure of organisms, and so on. It is important for kids at the primary level to realize that the environment is diverse, consisting of living and non-living components are inextricably linked, and this diversity has an important role for each of us.
2. Primary School provides science lessons 2-3 times a week. This lesson is designed to develop specific skills for students in the primary level, which is a priority:
  - Environmental monitoring (as its own sense organs, and simple tools);
  - Description of natural phenomena detection and simple processes;
  - Collection of data, observations, a simple experiment and information sources;
  - Questions about the issue;
  - Classification of objects according to their characteristics;
  - Quantitative data recording, organization and presentation of their performance in a variety of methods;
  - Caring for the environment, safety rules. (Excerpt from esg)
3. At the core of the teaching methods are used: observation; Description; Classification; The estimates of the registration; Simple experiments. (Teaching methods selected by the community and, esg's outcome).
4. Unfortunately, the students have not been given the opportunities to observe the students' learning process in living organisms or their frequent excursions / or live observation of nature;
5. I think that teachers often do not ask questions in class because they are mostly only use manual focus;
6. It seems to me quite interesting, as it is easier and clearer for each living organism. I think in that way teachers will help students better understand the importance of biodiversity to promote;

7. I wish schools to be made more emphasis on natural science course of study at the University of Biodiversity and its preservation is also very important that schools have adequate financial and technical resources.

Respondent 2:

1. In my opinion it is too important to deliver an idea of nature love and respect to the kids from the beginning stages to develop his/her further right direction of the world outlines;
2. Usually pupils get about 3/4 lessons on nature, but these lessons are more theoretical than practical that becomes quite boring for most of them and finally they lose interest to the subject;
3. If we speak about reaching goals, then we should try to analyse what are the goals that we would like to reach by this type of lessons. Do we aim to deliver knowledge or knowledge and idea of nature love at the same time...? If we speak about second, that I would say that existing method is not adapted to this idea and it needs to be considered and re-elaborated.
4. Usually secondary schools organize different trips and excursions, but mostly to visit historical and cultural areas. Only a few times I heard that pupils were taken to the zoo or even to some national reserve to see some live animals. Most of the school pupils never had an opportunity to see a live wolf, fox, bear or some other popular animals from famous cartoons nor books.
5. Usually I ask this question and response is quite promising, but unfortunately questions always stay as a question, because we never had chance for action, because this type of trips needs to be financially supported, but school budget doesn't consider these excursions. Another reason is that we are not so flexible based on established teaching regulation by the ministry of education and we are quite framed in terms of teaching methods and have less opportunity for practical activities such as observation of live animals;
6. This book looks quite interesting to me and I think it would motivate kids a lot to develop interest in this subject. I would be happy to have one copy for myself;
7. I would love to have flexibility to provide more practical lessons oriented on biodiversity education. I also very much liked the idea of bringing some small animals to the classroom but they are difficult to find. It would be wonderful to have one separated nature room where we could have live animals for the nature science lessons.

## References

1. Government Decree No. 84 of 2004 concerning the approval of the general National Education objectives;
2. National Educational Curricula , 2011-2016, Tbilisi
3. National Biodiversity Strategy and Action Plan 2014-2020, Tbilisi 2014
4. Presidential Decree No. 538 of the State Programme on Environmental Education, Tbilisi, 2002.
5. Assessment of Environmental Education in Georgia, Tbilisi, 2014
6. Assessment of Youth Environmental Awareness in Georgia, Tbilisi, 2013
7. <http://www.mes.gov.ge/content.php?id=3923&lang=geo>
8. <http://tpdc.ge/>

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<sup>i</sup> In order to make the profession more attractive, the government introduced changes in the teacher compensation scheme in January 2013<sup>1</sup>. The base salary of teachers rose from 245 GEL, set in 2009, to 305 GEL. As a result, this change has raised teachers' wages in a range of 26 to 60 percent amounting to about 60-205 GEL.

<sup>ii</sup> The agency gives overall salaries in education, which also include non-teaching staff, therefore this information could be little inaccurate but it does not change much in comparative terms