



Georgia's Capacity Needs Self Assessment for Global Environmental Management



**Strategy and Action Plan for Capacity Building in the Areas of Biodiversity
Conservation and Sustainable Use, Climate Change and Combating
Desertification**



September, 2005

This document has been prepared with the participation of the following persons:

- 1. Mamuka Ivaniashvili, lawyer**
- 2. Tengiz Lagidze, economist**
- 3. Nino Chikovani, expert in land degradation issues**
- 4. Mariam Shotadze, expert in land degradation issues**
- 5. Tengiz Urushadze, expert in land degradation issues**
- 6. Valerian Melikidze, expert in sustainable land management issues**
- 7. Marina Shvangiradze, expert in climate change issues**
- 8. Ketu Mateshvili, expert in climate change issues**
- 9. Maka Bitsadze, expert in the issues of conservation and sustainable use of biodiversity**
- 10. Ramaz Gokhelashvili, expert in the issues of conservation and sustainable use of biodiversity**
- 11. Nino Sharashidze, expert in environmental monitoring issues**
- 12. Lia Todua, expert in climate change issues**
- 13. Merab Sharabidze, expert in the issues of conservation and sustainable use of biodiversity**
- 14. Merab Machavariani, expert in the issues of conservation and sustainable use of biodiversity**
- 15. Nino Partskhaladze, expert in root cause and crosscutting analysis**

Project Coordinator: Malkhaz Adeishvili

Assistant Coordinator: Khatuna Gogaladze

Contents

INTRODUCTION	6
PROCESSES AND METHODOLOGY.....	8
PART 1. RESULTS OF THE THEMATIC ASSESSMENT	13
CHAPTER 1. CAPACITY CONSTRAINTS AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS FOR THE IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY...13	
1.1. THE KEY GOALS AND OBLIGATIONS DEFINED BY THE UN CONVENTION ON BIOLOGICAL DIVERSITY	13
1.2. ACHIEVEMENTS BY GEORGIA IN THE FULFILLMENT OF THE GUIDELINES DEFINED BY THE CONVENTION ON BIOLOGICAL DIVERSITY AND THE CARTAGENA PROTOCOL.....	14
1.2. ACHIEVEMENTS BY GEORGIA IN THE FULFILLMENT OF THE GUIDELINES DEFINED BY THE CONVENTION ON BIOLOGICAL DIVERSITY AND THE CARTAGENA PROTOCOL.....	15
1.3 ASSESSMENT OF CAPACITIES IN THE AREA OF CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY AT A SYSTEMIC LEVEL.....	16
1.3.1. Governmental planning in the area of conservation and sustainable use of biodiversity and integration of biodiversity issues in the sectoral development plans.....	16
1.3.1.1. <i>The Biodiversity strategy and action plan of Georgia</i>	16
1.3.1.2. <i>Integration of biodiversity issues into the areas of environmental protection and economic development plans</i>	17
1.3.1.3. <i>Public participation in environmental planning</i>	17
1.3.1.4. <i>Planning at the local governance level</i>	17
1.3.1.5. <i>Land use planning and biodiversity</i>	18
1.3.2. National legislation in the field of biodiversity conservation, the deficiencies in its enforcement and the main reasons for these deficiencies	18
1.3.3. Financial resources	19
1.3.4. Issues related to trade in components of biological diversity	20
1.3.5. Biosafety.....	20
1.3.6. Agrobiodiversity.....	20
1.3.7. Economic instruments in the field of biodiversity conservation and assessment of economic values of biodiversity components.....	21
1.3.8. Information systems and monitoring in the field of biological diversity.....	22
1.4. ASSESSMENT OF CAPACITIES AT AN INSTITUTIONAL LEVEL	23
1.4.1 Functions and capacities of state organizations acting in the field of biodiversity.....	23
1.4.1.1. <i>The Ministry of Environmental Protection and Natural Resources (MEP)</i>	23
1.4.1.2. <i>The Forestry Department</i>	24
1.4.1.3. <i>The Department for Protected Areas</i>	25
1.4.1.4. <i>The Ministry of Agriculture</i>	25
1.4.2. Capacities of academic institutions and their problems	26
1.4.3. Capacities and needs of non-governmental organizations	26
1.2.4. Capacities of local communities.....	27
1.3. CAPACITIES AT THE INDIVIDUAL LEVEL	28
CHAPTER 2. CAPACITY CONSTRAINTS AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS TO IMPLEMENT THE CONVENTION ON CLIMATE CHANGE	29
2.1. THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE AND GEORGIA'S COMMITMENTS TO THE CONVENTION	29
2.2. CAPACITY CONSTRAINTS AT A SYSTEMIC LEVEL	30
2.2.1. Planning in the field of climate change and integration of climate change issues into sectoral development plans and programs	30
2.2.2. Legal and Regulatory Framework	32
2.2.4. Economic incentives in the field of climate change	33
2.2.5 Investment Environment and Financial Markets	33
2.2.6. Financing from State and International Sources	34
2.2.7. Data Collection and Information Resources.....	34
2.2.8. Promoting the Development, Introduction and Use of Environmentally Friendly Technologies	35
2.2.9. Use of the Clean Development Mechanism.....	36

2.3. CAPACITIES AND PROBLEMS AT THE INSTITUTIONAL LEVEL	39
2.3.1. Specific Capacity Constraints in some Governmental Organizations.....	39
2.3.1.1. <i>The Ministry of the Environment Protection and Natural Resources</i>	39
2.3.1.2. <i>Climate Change Unit</i>	39
2.3.1.3. <i>The Department of Hydrometeorology</i>	41
2.3.1.4. <i>The Ministry of Energy</i>	41
2.3.1.5. <i>The Ministry of Economic Development</i>	42
2.3.1.6. <i>Other governmental organizations</i>	42
2.3.2. Scientific organizations.....	43
2.3.3. Non-governmental organizations (NGOs)	43
2.3.4. Private sector	43
2.4. PROBLEMS AND CAPACITIES AT THE INDIVIDUAL LEVEL.....	44
CHAPTER 3. CAPACITY CONSTRAINTS AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS FOR IMPLEMENTING THE UN CONVENTION TO COMBAT DESERTIFICATION.....	45
3.1. THE UN CONVENTION TO COMBAT DESERTIFICATION AND GEORGIA'S COMMITMENTS TO THE CONVENTION....	45
3.2. DESERTIFICATION/LAND DEGRADATION PROBLEMS IN GEORGIA.....	47
3.3. CAPACITY CONSTRAINTS IN THE FIELD OF COMBATING DESERTIFICATION/LAND DEGRADATION AT A SYSTEMIC LEVEL	48
3.3.1. Planning activities for combating desertification/land degradation and integrating them into social-economic development strategies and programs.....	48
3.3.1.1. <i>Planning Activities for Combating Desertification/Land Degradation within the Framework of Environmental Planning.....</i>	48
3.3.1.2. <i>Integration of Issues related to Combating Desertification/Land Degradation into General Social-Economic Development and Sectoral Strategies and Programs</i>	49
3.3.1.3. <i>Planning at the Local Governance Level.....</i>	50
3.3.2. Financial Resources	50
3.3.3. National Legislation in the Field of Land Degradation and the Problems with its Enforcement	51
3.3.4. Economic Instruments Applied in Combating Land Degradation.....	53
3.3.5. Information Systems and Monitoring in the Field of Land Degradation/Desertification	54
3.4. CAPACITY ASSESSMENT AT THE INSTITUTIONAL LEVEL.....	55
3.4.1. Capacities of Governmental Organizations.....	55
3.4.1.1. <i>Mechanisms for Interdepartmental Coordination.....</i>	55
3.4.1.2. <i>Governmental Organizations.....</i>	55
3.4.2. The Academic Sector	56
3.4.3. Non-governmental Sector.....	57
3.4.4. Capacities of Local Communities	58
3.5. CAPACITIES AT THE INDIVIDUAL LEVEL	59
PART 2. ANALYSIS OF COMMON CAPACITY CONSTRAINTS AND CROSS-CUTTING ISSUES	60
CHAPTER 4. ENABLING ENVIRONMENT AND CAPACITY CONSTRAINTS FOR THE IMPLEMENTATION OF THE RIO CONVENTIONS.....	60
4.1. POLITICAL-ECONOMIC FRAMEWORK.....	60
4.2. COORDINATION AND MUTUAL COOPERATION OF GOVERNMENTAL ORGANIZATIONS	61
4.3. STAFF POLICY	61
CHAPTER 5. CROSS-CUTTING ISSUES PERTINENT TO THE IMPLEMENTATION OF THE RIO CONVENTIONS	63
5.1. AWARENESS OF DECISION MAKERS AND GENERAL PUBLIC ON ENVIRONMENTAL ISSUES	63
5.2. STRATEGIC PLANNING CAPACITIES IN THE FIELD OF ENVIRONMENTAL PROTECTION.....	66
5.3. MONITORING AND INFORMATION RESOURCE MANAGEMENT IN THE FIELD OF ENVIRONMENTAL PROTECTION..	68
5.4. USE OF ENVIRONMENTALLY FRIENDLY TECHNOLOGIES	72
5.5. ACADEMIC SECTOR AND SCIENTIFIC RESEARCH IN THE FIELD OF ENVIRONMENTAL PROTECTION.....	74
PART 3. STRATEGY AND ACTION PLAN OF CAPACITY BUILDING FOR THE IMPLEMENTATION OF THE CONVENTIONS ON CLIMATE CHANGE, BIODIVERSITY AND COMBATING DESERTIFICATION.....	77
CHAPTER 6. CAPACITY DEVELOPMENT STRATEGY AND ACTION PLAN FOR IMPLEMENTATION OF THE CONVENTION ON BIODIVERSITY	79

Table 6.1. Strategic directions and actions for capacity building in the area of conservation and sustainable use of biodiversity at systemic level.....	79
Table 6.2. Strategic directions and actions for capacity building in the area of conservation and sustainable use of biodiversity at institutional level.....	82
Table 6.3. Strategic directions and actions for capacity building in the area of conservation and sustainable use of biodiversity at individual level.....	84
CHAPTER 7. CAPACITY DEVELOPMENT STRATEGY AND ACTION PLAN FOR IMPLEMENTATION OF THE CONVENTION ON CLIMATE CHANGE	85
Table 7.1. Strategic directions and actions for capacity building in the area of climate change at systemic level	85
Table 7.2. Strategic directions and actions for capacity building in the area of climate change at institutional level	87
Table 7.3. Strategic directions and actions for capacity building in the area of climate change at individual level	88
CHAPTER 8. CAPACITY DEVELOPMENT STRATEGY AND ACTION PLAN FOR IMPLEMENTATION OF THE CONVENTION TO COMBAT DESERTIFICATION/LAND DEGRADATION.....	89
Table 8.1. Strategic directions and actions for capacity building in the area of combating desertification/land degradation at systemic level	89
Table 8.2. Strategic directions and actions for capacity building in the area of combating desertification/land degradation at institutional level	91
Table 8.3. Strategic directions and actions for capacity building in the area of combating desertification/land degradation at individual level	91
CHAPTER 9. SRATEGY AND CROSS-CUTTING CAPACITY BUILDING MEASURES FOR THE IMPLEMENTATION OF RIO CONVENTIONS	92
Table 9.1. Strategy and cross-cutting capacity building measures for the implementation of Rio Conventions	92
ANNEXES.....	97
ANNEX 1.THE CAPACITY CONSTRAINTS IN THE FIELD OF CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS AND RECOMMENDED MEASURES	98
Table 1. The capacity constraints at institutional level and relevant measures/recommendations	98
Table 2. Capacity constraints at institutional level and relevant measures/recommendations.....	108
Table 3. Capacity constraints at individual level and relevant measures/recommendations.....	119
ANNEX II. RECOMMENDATIONS FOR CAPACITY BUILDING AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS TO AVOID ADVERSE AFFECTS OF CLIMATE CHANGE.....	121
Table 1. The capacity constraints at institutional level and relevant measures/recommendations	121
Table 2. Capacity constraints at institutional and individual levels and relevant measures/recommendations	127
ANNEX III. THE CAPACITY CONSTRAINTS IN THE FIELD OF COMBATING DESERTIFICATION/LAND DEGRADATION AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS AND RECOMMENDED MEASURES	131
Table 1. The capacity constraints at systemic, institutional and individual levels and relevant measures/recommendations.....	131

INTRODUCTION

Currently the world is experiencing unprecedented changes in the global environment. Scientific research has shown that during the past four decades human activity has had a significant and damaging impact on the systems that are vital for human existence, such as the biosphere, the atmosphere and the hydrosphere. This has resulted in an important loss of biodiversity, has caused climate change, has led to the degradation of land and forest resources, and continues to threaten the well being of both present and future generations.

No country, regardless of its wealth and strength, can cope with these issues alone. Solutions can only be reached through the cooperation and joint efforts of all countries around the world by implementing international, regional and local agreements.

The United Nations Conference on Environment and Development, held in Rio de Janeiro (Brazil) on 3-14 June 1992, was an historic event as it laid the foundation for combating global ecological problems and implementing sustainable development. Representatives from 172 countries (108 represented by Heads of States or Governments) and 2 400 representatives of non-governmental organizations adopted a document called “Agenda 21”, which laid out the ecological, economic and social problems existing at the end of the 20th century. Agenda 21 outlined the measures to be implemented by countries around the world in the 21st century in order to overcome these problems. At this meeting countries signed the most significant international agreements in terms of environmental protection: the UN Framework Convention on Climate Change and the Convention on Biological Diversity. The meeting also laid the foundation for the preparation of the UN Convention to Combat Desertification, later adopted in Paris in 1994. These Conventions are often termed the “Rio Conventions”, referring to that historic event, the UN Conference on Environment and Development held in Rio de Janeiro.

Each of these Conventions aims to halt global ecological degradation processes and achieve sustainable development. They define the activities necessary for achieving these goals, and are compulsory for the Parties to the Conventions. The Conventions oblige the signatories to take environmental issues into consideration and integrate them into national social-economic development processes. Countries are called upon to cooperate and support each other in settling the problems, which may be identified at the national, regional or local levels.

Since 1994 Georgia is a Party to the Conventions on Climate Change and on Biological Diversity, and in 1998 the country joined the Convention to Combat Desertification. Hence, Georgia, as a member of the world community, has committed itself to implement these Conventions.

The Global Environment Facility (GEF) is the international funding mechanism for the Conventions on Climate Change, on Biological Diversity and on Combating Desertification. It was set up in 1991 and restructured in 1994. The GEF assists developing countries and countries with economies in transition implement measures to protect the global environment.

By decision of the GEF Council in May 2001, certain countries received financial assistance from the GEF to assess their capacities for protecting the global environment. Georgia launched this assessment programme in 2003 under the guidance of the Ministry of Environmental Protection and Natural Resources and through cooperation with the UN Development Program (UNDP).

To effectively implement these three UN Conventions (Climate Change, Biodiversity and Combating Desertification), the assessment programme aims at evaluating existing financial, technical, institutional and human resources and capacities, to reveal challenges to compliance, and to develop a strategy and action plan for future compliance and for building the necessary capacities.

This strategy and action plan has been prepared within the framework of this project. It describes the challenges for implementing the Rio Conventions, at the systemic, institutional and individual levels. It also offers information about state programs and legislation; it reviews the capacities of state, academic and non-governmental organizations operating in the field of climate change, conservation of biodiversity and combating desertification/land degradation. The document analyses common and crosscutting problems and tasks. It also includes the Georgian government's strategy and specific actions that will help build capacities of the country to implement the Rio Conventions in the next five years, from 2006 to 2010.

PROCESSES AND METHODOLOGY

The term “capacity building” is used in many contexts, often with different meanings. Over the last few years experts have been moving towards a common definition and now agree that “capacity building” can be understood as “the actions needed to enhance the ability of individuals, institutions and systems to make and implement decisions and perform functions in an effective, efficient and sustainable manner” (see Box 1).

In order to assess Georgia’s capacities in terms of implementation of the Rio Conventions and to define effective measures for building these capacities, a study was carried out on the basis of an agreed methodology. In particular, we have used the *Guide for Self-Assessment of Country Capacity Needs for Global Environmental Management*¹ (2001), prepared by the GEF Secretariat, *Country Capacity Development Needs and Priorities, Regional Report for Eastern Europe and Central Asia* (2000)², as well as the UNDP document *Global Environment Facility - National Capacity Self-Assessments: A Resource Kit*³.

The project was implemented in three, logically interrelated stages.

The first stage

At the initial stage, a project implementing unit, a supervisory council and three thematic advisory groups were set up. These included representatives from governmental, academic and non-governmental sectors working in the fields of conservation and sustainable use of biodiversity; climate change; and combating desertification. The advisory groups met regularly at each stage of the project implementation. The members of the groups participated in discussing the reports prepared within the project, making remarks, defining priority problems and their root causes, determining capacity building measures, etc. At the first stage of the project the country’s capacities were assessed according to thematic area. The main goal of this work was to reveal capacity constraints in the country at three levels: systemic, institutional and individual. A “capacity assessment matrix” was used (see Box 2).

In order to answer the questions in the assessment matrix, representatives from various governmental, academic and non-governmental organizations involved in the three themes were interviewed. Documents developed in these fields and related to sustainable development were analyzed. Documents included: Indicative Plan for Social-Economic Development (1998-2003), the First National Communication of Georgia to the UN Framework Convention on Climate Change (1999), the First Environmental Action Program of Georgia (2000), the National Program on Combating Desertification (2002), UNDP Human Development Reports, Country Profile prepared by the Georgian Government for the 2002 Johannesburg Summit on Sustainable Development (2002), Poverty Reduction and Economic Growth Program (2003), National Assessment Report on Sustainable Development (2003), Biodiversity Conservation Strategy and Action Plan (2004), and others.

¹ A Guide For Self-Assessment, of Country Capacity Needs for Global Environmental Management. Prepared by the GEF Secretariat with the assistance of UNITAR in collaboration with UNDP, UNEP, the World Bank, FAO, UNIDO, the Secretariats of CBD, CCD and UNFCCC

² Country Capacity Development Needs and Priorities, Regional Report for Easter Europe and Central Asia. Zuzana Guziova, Jaroslav Marousek, Valery Neronov. Capacity Development Initiative. GEF-UNDP Strategic Partnership. September, 2000.

³ United Nations Development Programme, Global Environment Facility, National Capacity Self-Assessments: A Resource Kit, Updated: October 2004.

Box 1: What is meant by the term “Capacity Building”?*

The term “capacity building” is used in many contexts, often with different meanings. Over the last few years experts from many countries have been moving towards a common definition of the term and now there is general agreement that “capacity building” can be taken as “the actions needed to enhance the ability of individuals, institutions and systems to make and implement decisions and perform functions in an effective, efficient and sustainable manner”.

At the individual level, capacity building refers to the process of changing attitudes and behaviors, most frequently through knowledge transfer and developing skills through training. However it also involves learning by doing, participation, ownership, and processes associated with increasing performance through changes in management, motivation, morale, and levels of accountability and responsibility.

Capacity building at the institutional level focuses on overall organizational performance and functioning capabilities, as well as the ability of an organization to adapt to change. It aims to develop the institution as a total system, including its constituent individuals and groups, as well as its relationship to the outside. In addition to improvements in physical assets, such as infrastructure, institutional capacity building involves clarification of missions, structures, responsibilities, accountabilities and reporting lines, changes in procedures and communications, and changes in the deployment of human resources.

At the systemic level capacity building is concerned with the creation of “enabling environment”, i.e. the overall policy, economic, regulatory and accountability frameworks within which institutions and individuals operate. Relationships and processes between institutions, both formal and informal, as well as their mandates, are important.

Capacity building can be undertaken at local, national, or global levels and amongst any individual or group of stakeholders – individuals, entities or institutions, as well as at an overall systems level.

Interactions between the different levels are also important to overall capacity. Capacity building is relevant in both the short term (for example, the ability to address an immediate problem) and the long term (the ability to create an environment in which particular changes will take place).

Capacity may imply “action”, or “inaction”, depending on the result desired. Capacity building does not always involve the creation of new capacity, but often the redeployment or release of latent capacities.

Box 2. Capacity Assessment Matrix

Capacities at systemic level	Capacities at institutional level	Capacities at individual level
<i>Social-economic and political framework:</i> Is general social-economic and political framework expedient?	<i>Mission/Strategic management:</i> Do the institutions have clear, well-acknowledged missions and powers?	<i>Functions and professional level:</i> Are the functions well defined and are there specialists whose professional skills meet the requirements?
<i>Legislative and normative base:</i> Is relevant legislation available and are laws enforced effectively?	<i>Culture/Structure/Jurisdiction:</i> Are the structures of organizations and their management effective?	<i>Training/Retraining:</i> Do the relevant educational procedures take place?
<i>Accountability of administration:</i> Are the powers of organizations clearly defined and are these organizations accountable to society?	<i>Processes:</i> How effective are processes such as planning, quality management, monitoring and assessment at the organizations?	<i>Professional growth:</i> Does staff have opportunities to increase their professionalism?
<i>Economic framework:</i> Is the market acting effectively?	<i>Human resources:</i> Do human resources meet the existing requirements, how skilled are they and how effective the staff recruitment process is?	<i>Accountability/Ethics:</i> How effectively are duties distributed among staff and what is the degree of their responsibility to meet their commitments?
<i>Resources at systemic level:</i> Are the necessary human, financial and information resources available? (Including central and local governmental bodies, private and public organizations, and non-governmental organizations)	<i>Financial resources:</i> Is the financial resource management process effective, transparent and well managed? Are these resources distributed properly to ensure efficient activities?	<i>Personal/professional contacts:</i> Do employees collaborate closely and exchange professional experience and knowledge? Availability of information: Is the necessary information available?
<i>Processes and relations:</i> Is cooperation and interaction between institutions effective? (central and local governmental bodies, private and public organizations)	<i>Information resources:</i> Is information necessary for further activities available? Is this information disseminated and managed effectively?	<i>Material incentives, material welfare:</i> Are there any measures implemented to stimulate best practices? Efficiency of activities: How effective is the estimation of activities?
	<i>Infrastructure:</i> Is the infrastructure, including premises, offices, transportation mean, and computers, well distributed and used rationally?	<i>Relationship and collective activities:</i> How effective are the relations between staff? Are they organized into functional groups? Is the level of interaction high enough?

The sectoral development concepts and programs prepared by governmental organizations, as well as their plans and provisions were discussed. Studies were carried out in specific directions, including:

- The political-economic framework in Georgia including financial markets;
- Georgia's environmental legislation;
- Economic incentives for environmental protection;
- Monitoring and information systems in the field of environmental protection.

The main goal of interviews and research was to assess how and whether the political-economic framework in Georgia promotes the implementation of the guidelines of the Rio Conventions; how strongly global environmental protection is integrated into the country's social-economic and sectoral development plans; to what extent environmental legislation has been developed; how available financial and information resources are; as well as how successfully institutions and individuals work in the field of global environmental protection and what hampers their activities.

Research outcomes were prepared according to theme:

- Review of the situation in the field of conservation and sustainable use of biodiversity (2003);
- Review of the situation in the field of climate change (2003);
- Review of the situation in the field of combating desertification/land degradation (2003).

These documents and thematic reports were discussed at the meetings of thematic advisory groups and were made available for the public at the project web page www.ncsa.ge.

The November 2003 “Rose Revolution” and further political developments in Georgia have significantly changed institutional arrangements in the field of environmental protection, triggering the necessity for a revision of the thematic reports to take new realities into account. However, changes are still rapidly taking place and some information in this document may not reflect the reality at the time it is published.

The second stage

At the second stage of project implementation, the crosscutting issues and capacity constraints common to the three thematic fields were examined. Using the methodology developed through the participation of thematic advisory groups, specific requirements of the Rio Conventions were assessed, and especially those which required capacity building as a priority measure. Crosscutting capacity constraints were analyzed by experts to see how these hamper the effective implementation of the three Conventions in Georgia. The methods used at the second stage of the project, as well as the results of these studies are reflected in the document “Synthesis Report on Cross-cutting Capacity Constraints, Needs & Priorities for the Implementation of Rio Conventions on Climate Change, Desertification, Biodiversity” (2004), available at the project web page www.ncsa.ge

The third stage

At the third stage of project implementation the priority capacity constraints for each field were outlined, and experts developed recommendations for overcoming the constraints. These recommendations became a basis for the definition of a strategy and action plan for capacity building in Georgia at the systemic, institutional and individual levels to implement the Rio Conventions. The approximate costs⁴ for each action were assessed, and implementing and partner organizations and their terms of reference were defined. A capacity building strategy and action plan has been drawn up for 2006 to 2010. Capacity building recommendations, a strategy and action plan for each Convention and thematic field are described in three separate reports, each discussed at the thematic working meetings of the advisory groups. At the final stage, synthesis of all three documents was carried out, and a final strategy and action plan for all the three Conventions were developed, taking into account the crosscutting capacity constraints.

⁴ According to their approximate expenses, the actions were divided into three groups: low expenses – the cost of which does not exceed USD 50 000, medium expenses – the cost of which ranges within USD 50 000 – 500 000, high expenses – the cost of which exceeds USD 500 000.

Other activities under the project

Research carried out at the first stage of project implementation revealed that the low level of awareness among decision makers and society regarding global ecological problems and international agreements on resolving these problems is a major obstacle to the implementation of the Rio Conventions. Therefore, it was decided to carry out targeted awareness raising measures along with other major activities of the project. In particular, a book entitled “Global Environmental Protection, Problems, International Mechanisms, Organizations” (2005) was prepared and published in the Georgian language.

On June 5, 2005, in connection with the Environmental Protection Day, a newspaper article was published about global ecological issues and the ways of tackling these problems. The project also contributed to organizing an “Earth Festival” in Tbilisi, with the participation of Georgian non-governmental and academic institutions, as well as the representatives from the Ministry of Environment. A competition was held for non-governmental organizations, to fund projects that raise public awareness regarding environmental protection; a short documentary film was made that aimed at raising awareness of the wealth of Georgia’s natural resources and acquaint the population with their country’s environmental problems. Materials prepared within the framework of the project, as well as information on the measures implemented, were regularly published on the web page, making this information publicly available.

PART 1. RESULTS OF THE THEMATIC ASSESSMENT

CHAPTER 1. CAPACITY CONSTRAINTS AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS FOR THE IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY

1.1. THE KEY GOALS AND OBLIGATIONS DEFINED BY THE UN CONVENTION ON BIOLOGICAL DIVERSITY

The Convention on Biological Diversity was submitted to the Parties for signing at the UN Environment and Development Conference in Rio de Janeiro in 1992. It came into force on 29 December 1993 - after being ratified by 30 states. Currently there are 187 Parties to the Convention. Georgia joined the Convention on Biological Diversity in 1994.

The Convention on Biological Diversity is a framework environmental convention, which regards all the components of biodiversity – variety of species, genetic differences within each species and variety of ecosystems. The objectives of the Convention on Biological Diversity are as follows:

- The conservation of biological diversity;
- The sustainable use of its components;
- A fair and equitable sharing of benefits arising from the utilization of genetic resources.

The Convention on Biological Diversity is the first global agreement that regulates the sustainable use of biological resources as well as the conservation of biological diversity (“biodiversity”). Along with its global goals, the Convention on Biological Diversity offers ways to achieve these goals. It also defines the commitments of Parties (see Box 3), and establishes the mechanisms for technical and financial cooperation among the Parties.

Later, on 29 January 2000, many Parties signed the Cartagena Protocol on Biosafety, an annex to the Convention on Biological Diversity, which came into force in 2003. Georgia has not yet signed the Cartagena Protocol although the Government is making plans to join the Protocol in the near future.

The Protocol will ensure an adequate level of protection in the importation, handling and use of genetically modified organisms (GMOs) resulting from modern biotechnology, and that may have adverse effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health. Measures based on risk assessments shall be imposed to the extent necessary to prevent adverse impact from GMOs on the conservation and sustainable use of biological diversity and on human health, within the territory of the Party. The Parties shall establish and maintain appropriate mechanisms, measures and strategies to regulate, manage and control identified risks associated with the use, handling and transboundary movement of genetically modified organisms. The Parties shall also implement necessary legislative, administrative and other framework measures for effective implementation of the Cartagena Protocol.

Box 3. Commitments of the Parties to the Convention on Biological Diversity

To achieve global goals defined by the Convention on Biological Diversity, each Contracting Party shall:

- Develop national strategies, plans or programs for the conservation and sustainable use of biological diversity and integrate them into relevant sectoral or cross-sectoral plans, programs and policies;
- Identify components of biological diversity important for its conservation and sustainable use. These components should be defined and monitored at a level of ecosystems and habitats, species and populations;
- Establish a system of protected areas and promote environmentally sound and sustainable development in areas adjacent to protected areas;
- Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species;
- Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health;
- Prevent the introduction of those alien species which threaten ecosystems, habitats or species;
- Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects;
- Create conditions to facilitate access to genetic resources and provide sharing in a fair and equitable way the benefits arising from the commercial and other utilization of genetic resources;
- Create and enforce national legislation aimed at conserving endangered species and populations;
- Encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention.
- Create conditions for conservation and sustainable use of biological resources;
- Promote educational activities and raising of public awareness regarding the necessity of conservation and sustainable use of biodiversity;
- Facilitate the exchange of information and promote technical and scientific cooperation with other Contracting Parties;
- Submit national reports on implementation of the Convention at a national level.

1.2. ACHIEVEMENTS BY GEORGIA IN THE FULFILLMENT OF THE GUIDELINES DEFINED BY THE CONVENTION ON BIOLOGICAL DIVERSITY AND THE CARTAGENA PROTOCOL

Georgia is one of the richest countries in biodiversity. Its biodiversity is vitally important at national, regional and global levels. According to international assessments, Georgia--as a part of the Caucasus--is recognized as:

- 1) One out of 25 biologically richest and endangered land ecosystems (Conservation International);
- 2) One out of 200 vulnerable ecoregions (WWF);
- 3) One out of 221 endemic bird habitats (Bird Life International);
- 4) One of the World Agrobiodiversity Centers.

During the past decade Georgia's biodiversity has significantly decreased, due to anthropogenic and natural factors such as **loss of habitats, fragmentation and degradation, illegal hunting and fishing, introduction of alien species, unsustainable use of biological resources and climate change.**

Georgia has implemented a number of measures to fulfill the guidelines defined by the Convention on Biological Diversity, in particular:

- A number of national legislative acts have been adopted in the field of conservation and sustainable use of biodiversity since 1996⁵;
- The country acceded important international treaties on biodiversity, such as Convention on Wetlands of International Importance, Especially as Waterfowl Habitat; Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and Convention on the Conservation of Migratory Species of Wild Animals (the Bonn Convention);
- Georgia has conducted biodiversity assessment studies (National Biodiversity Assessment Program, UNEP, 1996);
- A National Strategy and Action Plan for the conservation of Georgia's biological diversity was approved (2005);
- With financial support from the German Government and the Global Environment Facility (GEF), the Protected Areas of the Borjomi-Kharagauli and the Kolkheta National Parks were established; new protected areas are planned for the Javakheti Plateau region in southern Georgia;
- With the support of the Global Environment Facility (GEF), the Project on Development of Protected Areas in Georgia is being implemented. The aim of the project is to elaborate management plans for three protected areas in eastern Georgia (Lagodekhi, Vashlovani and Tusheti), to develop infrastructures necessary for their effective management and to strengthen the State Department for Protected Areas⁶ by improving skills for protected area management;
- With the financial support of the World Bank, the forestry development project is being implemented in Georgia to promote conservation and sustainable use of Georgian forests;
- With the financial support of the Global Environment Facility, Georgia is implementing a project on the conservation and sustainable use of agrobiodiversity;
- Under the guidance of the Ministry of the Environment and Natural Resources and with the financial support of UNEP/GEF, the Project on the Development of a National Biosafety System was implemented, establishing a national legislative framework to regulate and control genetically modified organisms, including their transboundary movement. Elaboration of this framework will expedite the ratification of the Cartagena Protocol on Biosafety.
- In addition to these measures, Georgia will carry out a number of legislative and institutional changes, scientific studies public awareness and investment measures. The implementation of these measures requires a supportive political-economic environment as well as an efficient, mobilization and effective use of human, financial and technical resources.

⁵ Detailed information on legislative acts is given in subchapter 1.3.2

⁶ At the beginning of the project the Department of Protected Areas was an independent state agency, subordinated directly to the President of Georgia. Since 2004 the Department has been under subordination of the Ministry of Environment.

1.3 ASSESSMENT OF CAPACITIES IN THE AREA OF CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY AT A SYSTEMIC LEVEL

1.3.1. Governmental planning in the area of conservation and sustainable use of biodiversity⁷ and integration of biodiversity issues in the sectoral development plans

1.3.1.1. The Biodiversity strategy and action plan of Georgia

To achieve global goals defined by the Convention on Biological Diversity, each Party shall develop national strategies and programs for the conservation and sustainable use of biological diversity and integrate them into relevant sectoral or cross-sectoral plans, programs and policies.

Georgia launched the development of a strategy and action plan on biodiversity conservation in 1996, and yet the Government managed to approve it only in 2005. The document defines the key issues of biodiversity:

- Protected areas;
- Species and habitats;
- Agrobiodiversity;
- Hunting and fishing;
- Monitoring of biodiversity;
- Biosafety;
- Environmental education, public awareness and public participation;
- Economic instruments;
- Legislative and institutional aspects;
- Sustainable forestry.

The Plan defines the strategy for conservation and sustainable use of biodiversity for the next 10 years, as well as particular activities for a five-year term. It is a framework document to be used by the Georgian Government to guarantee the conservation of biodiversity conservation.

The strategy envisages both investment and capacity building measures which should be implemented by Georgia in the conservation and sustainable use of biodiversity. However, the document does not define the responsibilities of particular organizations for implementation of these measures, nor does it analyze whether financial resources necessary for implementation of these measures are available. These two factors reduce the likelihood of its adequate implementation.

The development and ratification of the strategy and action plan was an important step made by the Government towards establishing a systemic approach to planning conservation and sustainable use of biodiversity in Georgia. However, while elaborating the strategy and action plan, it became evident that the country faces challenges in terms of capacities:

- There is a lack of knowledge and experience for strategic planning, including in the field of biodiversity.
- State organizations lack familiarity with approaches and methods used by the leading countries in the field of biodiversity conservation and sustainable use planning, such as identifying factors which threaten biodiversity; assessment and prioritization of danger and reveal root causes of

⁷ The field of biodiversity does not exist as an independent sector; accordingly, the requirements of the Convention should be met through their integration into various sectors such as agriculture, forestry, fishing and hunting, tourism, transport, trade, industry, water management, urban planning, eteach of which is veryimportant in terms of its influence on the conditions of biodiversity.

- danger; definition of effective and cost efficient measures; assessment of necessary resources, including financial and human, for implementation of these measures; and action planning.
- The number of experts able to conduct technical, financial and economic analyses of alternative measures on biodiversity conservation and sustainable use of its components is limited.

1.3.1.2. Integration of biodiversity issues into the areas of environmental protection and economic development plans

The issues of conservation and sustainable use of biodiversity are directly connected with various sectors, such as energy, agriculture, industry, tourism, etc. Accordingly, to ensure the conservation and sustainable use of biodiversity, it is necessary to integrate the Biodiversity Strategy and Action Plan into sectoral and cross-sectoral plans or programs, as defined by the Convention on Biological Diversity. Almost a decade after Georgia carried out a first biodiversity county study and needs assessment, the current capacities of the country to elaborate social-economic and sectoral development strategies and plans are still very weak. At the same time, the integration of conservation and sustainable use of biodiversity into existing sectoral strategies and plans is unsatisfactory. This is due to:

- a) Non-assessment of economic value of biodiversity and economic effect of its use;
- b) Lack of attention to the issues of conservation of biodiversity;
- c) Absence of relevant guidelines and instructions for planning the conservation and sustainable use of biodiversity;
- d) Inadequate participation of governmental, scientific and non-governmental organizations in the planning processes, as well as weak coordination.

1.3.1.3. Public participation in environmental planning

Public participation in the country's development strategies and sectoral development plans has not had a long tradition in Georgia. The first steps in this direction are just being taken. Despite positive changes, public participation and its capacity to contribute and influence the decision-making process are still limited, often influenced by the lack of information or awareness and advocacy skills. The public is not acquainted with procedures of the decision-making process. There is a lack of experience and skills to organize public discussions and involve stakeholders in the decision making process. The mechanisms and traditions needed for the participation of society in the planning of natural resource management is almost totally lacking.

1.3.1.4. Planning at the local governance level

The Georgian legislation entitles the local governance and self-governance bodies to elaborate and implement social-economic development programs. Particular laws in the field of the environment including laws on environmental protection, water and atmospheric air protection, wildlife conservation and use, as well as the forest code, all entitle local governmental bodies to elaborate and implement local action plans for environmental protection, as well as programs and measures for the solution of environmental problems. However, truly systemic planning of social-economic development at the local levels does not take place. Not a single administrative territorial unit (region) or local governmental body has ever elaborated any local environmental action plan (LEAP)⁸. This confirms that opportunities and demand for a systemic approach to the resolution of environmental problems are even weaker at the local level than at the national level.

⁸ One exception is that with the financial support of the U.S. Government (U.S. Environmental Protection Agency), the Kutaisi Environmental Action Plan was developed within the frames of the regional project Local Environmental Action Plans, as a pilot project.

1.3.1.5. Land use planning and biodiversity

Land management issues are closely linked with conservation and sustainable use of biological diversity. During the transition to a market economy, specific changes were made in the legislation on land ownership and management. However biodiversity issues were not integrated into these changes. This now means:

- State policy in the field of biodiversity conservation regarding private agricultural lands is not clearly defined (incentives for farmers, land redemption or other mechanisms);
- Ownership issues and management of agricultural lands is dispersed among various agencies, both at central and local levels. This absence of state policy complicates Georgia's capacity to meet the requirements of the Convention on Biological Diversity.

A key problem is that the current legislative framework does not provide for a strong state institution responsible for state land use planning. One of the major problems of land management is correct distribution of functions among various departments. However, functions often overlap between various institutions and departments, such as the Ministry of the Environmental and Natural Resources, the Forestry Department, the Department for Protected Areas, the Ministry of Infrastructure, the Ministry of Agriculture, the Ministry of Justice, etc.

Due to numerous deficiencies in the current legislation on land use planning and the institutional system, conflicts often arise when making decisions over land use.

1.3.2. National legislation in the field of biodiversity conservation, the deficiencies in its enforcement and the main reasons for these deficiencies

In the past, Central and Eastern European countries often failed to fulfill their environmental obligations, although laws were rather strict. The tendency to develop strict environmental legislation continued, however, even after overthrowing the communist regime. Yet the more ambitious the laws and the stricter the norms established, the less likely they were to be implemented, due to the chaos of transition.⁹ Georgia was no exception in this regard. Environmental legislation adopted after 1990 is quite strict in many aspects, and often unclear, so that planning natural resource management, protection or regulation of its use only promotes corruption and illegal activities. Accordingly, priority should be given to improving legislation in this direction.

There are a number of issues that need legal regulation. The need to update the Red List and the Red Book to reflect a real state of biodiversity in Georgia is one of the most urgent problems. This demands financial resources and comprehensive research. Without the creation of a renewed Red List based on scientific research, it will be impossible to implement effective measures to conserve and protect endangered species. Other issues needing urgent attention include:

1. Availability of genetic resources and equal and fair distribution of the profit gained through their use¹⁰;
2. Preservation and protection of traditional knowledge related to the use of biodiversity;
3. Regulation and control of the introduction of alien species;
4. Biodiversity monitoring

The resolution of the above-mentioned issues is hampered by the following factors:

⁹ Plan of action on environmental protection for Central and Eastern Europe. Approved at the Conference of Environment Ministers, Switzerland, 1993.

¹⁰ Georgia pays little attention to the guidelines of the Convention regarding the availability of genetic resources and fair and equal distribution of the profit gained through their use (especially for commercial purposes).

- Environmental law is not taught or is barely addressed in higher educational institutions. This results in a severe deficit of environmental experts in the country.
- The development of effective laws and by-laws is impossible without the participation of all stakeholders and without some agreement among them. In Georgia, usually one governmental department prepares laws and by-laws, with little participation of other important stakeholders. Public discussions of draft legislation usually do not take place. Non-participation of the stakeholders and weak coordination between governmental organizations often trigger conflicts between legislative acts as well as a duplication of functions;
- The imperfect legislative framework produces problems in the enforcement of current legislation as well. In addition, problems are also caused by the low capacity of governmental organizations and their low level of accountability to society.
- The lack of funding for publishing and disseminating laws means awareness of laws and by-laws remains low both for the population and for local and national public officials.

1.3.3. Financial resources

In spite of a significant increase in the national budget in 2004-2005 (total budgetary revenues in 2004 increased by GEL 862.2. million and amounted to GEL 2158.3 million¹¹, i.e. 22% increase in the GDP), the level of mobilization of revenues in the state budget is still extremely low for environmental issues. The limited financial resources are basically directed to repaying foreign debts, ensuring social welfare of the poorest groups of the population and developing “priority branches” of the economy. State funding for environmental conservation is too insignificant to achieve real change. Other financial concerns include:

- Extrabudgetary ecological funds at either the central or regional level do not exist in Georgia unlike many central and eastern European countries, to provide state funding for environmental projects;
- Scarce state financial resources even hamper effective functioning of the governmental environmental administration. Although salaries of government employees increased 5-8 times during 2005, salaries are not enough to keep skilled staff or attract new employees;
- Ecological projects, including the projects on the conservation and sustainable use of biodiversity, are basically financed from external sources – either through loans from international financial organizations or through grants from donor countries. The share of the Global Environment Facility (GEF) in funding measures on biodiversity conservation in Georgia is extremely high;
- Financial markets are weakly developed in Georgia. The existing short-term oriented investment environment hampers investing capital in the field of environmental protection, including conservation and sustainable use of biodiversity, which brings profit in a longer term. Accordingly, the private sector has no incentives to implement environmental projects;
- The banking sector is not involved in funding the measures on environmental protection and sustainable use of natural resources;
- The capacities of the state, private and non-governmental sectors are all rather weak in terms of identification, preparation and implementation of environmental projects, and in carrying out negotiations with donor countries and financial institutions to attract foreign funding.

¹¹ Approximately USD 1130 million, exchange rate at 1 Lari against 1.91 USD. Source: The Social-Economic Situation in Georgia in 2004, Tbilisi, 2005.

1.3.4. Issues related to trade in components of biological diversity

The importance of regulation of international trade in the components of biological diversity has increased after it became clear that many species of wild flora and fauna, which were the objects of international trade, have arrived at the verge of extinction. It will only be possible to address this threat through joint efforts between Georgia and the international community. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which was created in Washington in 1973, was signed by Georgia in 1996. However, Georgia still faces the following obstacles to meet the requirements of the Convention:

- The real impact of trade in wild flora and fauna and consumption patterns on the biodiversity of Georgia is unstudied. Generally, decision-makers and experts have a superficial knowledge about the links between export-import policies, market structure, consumption patterns and biodiversity. The political will to conduct studies or elaborate specific policies and strategies remains weak.
- Regulations relevant to requirements of the CITES have not been drawn up.

1.3.5. Biosafety

The Cartagena Protocol on Biosafety to the Convention on Biological Diversity was adopted by the Conference of the Parties to the Convention on 29 January 2000. It entered into force in 2003. Georgia has not signed the Cartagena Protocol, however plans to join it in the near future. The Cartagena Protocol seeks to protect biological diversity and human health from the potential risks posed by genetically modified organisms resulting from modern biotechnology. The Cartagena Protocol on Biosafety encourages the Parties to cooperate in the development and/or strengthening of human resources and institutional capacities in biosafety, including biotechnology to the extent that it is required for biosafety, for the purpose of the effective implementation of this Protocol. The Parties shall also promote the raising of public awareness and education, as well as develop public participation in the use, handling and transboundary movement of genetically modified organisms, as well as in decision-making.

In 2002-2004 the UNEP-GEF-supported project “Development of the National Biosafety System in Georgia” was implemented under the guidance of the Ministry of Environmental Protection and Natural Resources. A package of the law on genetically modified organisms and the relevant bylaws, envisaging the use, handling and transboundary movement of living modified organisms, was prepared within the project. The development of a national legislative framework will further accelerate the process of ratification of the Cartagena Protocol on Biosafety. However, in future, it will be necessary to strengthen those institutions that will be responsible for the effective functioning of the biosafety system in Georgia. It is expedient that Georgia participates in the GEF-funded program that envisages capacity building for participation in Biosafety Clearing House Mechanism.

1.3.6. Agrobiodiversity

Georgia is rich in agrobiodiversity. There are unique and endemic species of fruit, grape, cereals (wheat) and domestic animals not found in other countries. According to current data, many unique species of vine, fruit and wheat face extinction, however. Challenges which have been identified and consequently reflected in the strategy and action plan on the conservation of biodiversity, and in particular the conservation of agrobiodiversity, include:

- Lack and unavailability of information on the agrobiodiversity of Georgia, its current state, the related production and traditions;
- Absence of a legislative framework in the field of conservation of agrobiodiversity;
- Uncontrolled import and export of genetically modified organisms;
- Lack of expertise or experience in modern technologies for the *ex situ* and *in situ* conservation of agrobiodiversity;
- Lack of exchange of information and experience both within Georgia and with other countries;
- Lack of programs for agrobiodiversity research and poor technical equipment in the existing scientific-research institutions;
- The risk of complete loss of traditional knowledge and experience in the use of agrobiodiversity and absence of mechanisms to popularize Georgian agrobiodiversity and related production techniques and traditions.
- Absence of economic leverage for conservation and sustainable use of agrobiodiversity in Georgia;
- Ineffective educational programs on agrobiodiversity;

Currently a GEF-funded (USD 962 000) Project on Conservation and Sustainable Use of Agrobiodiversity is being implemented in Georgia. Since 2004 the project has been implemented by the biological farming association Elkana, with the support of the UN Development Program. The project aims at creating pilot projects in order to promote *in situ* and *ex situ* conservation and sustainable use of selected species of agrobiodiversity in the Samtskhe-Javakheti Region, as well as at developing a strategy for introducing the practice of conservation and sustainable use of agrobiodiversity in other regions of Georgia.

1.3.7. Economic instruments in the field of biodiversity conservation and assessment of economic values of biodiversity components

Georgia has imposed taxes on forest timber and non-timber resources, as well as on the removal of wildlife species and fish resources from the environment¹². A system of fines for the illegal use of biological resources, for the violation of exploitation of resources, and concerning the compensation of damage caused to the environment, has been introduced in Georgia through the Code of Administrative Violations of Georgia (Chapter VII). At the same time, it is possible to ask for compensation of damage caused to the environment through the courts. However, the efficiency of these economic instruments in terms of incentives for environmental protection and sustainable use of biodiversity is extremely low, partly due to poorly designed tax legislation and its weak implementation.

State prices for natural resources, and accordingly the taxes for their use are fixed and do not take into account the real demand for resources either within the internal or the external markets.

In many countries user fees have been proven a successful mechanism for generating incomes necessary for biodiversity conservation and protected area management, but entrance fees to protected areas have not been introduced in Georgia.

The assessment of economic value of natural resources and biodiversity is crucial to good decision-making, planning and implementing measures on economic development and conservation. Unfortunately, Georgia has little experience or capacity in these fields. Only a few studies have been

¹² A tax on the use of natural resources in force in 1994-2004, was regulated by the Tax Code. A new tax has been introduced since 2005, which is a direct tax on the use of natural resources.

made in this direction in Soviet times.¹³ One study was carried out within the framework of the WB-financed projects on forest and protected areas development¹⁴.

At the university level, environmental economics studies are practically non-existent and economic experts have no relevant skills to develop effective market economy instruments for environmental protection, or the sustainable use of biodiversity.

1.3.8. Information systems and monitoring in the field of biological diversity

As a Party to the Convention on Biological Diversity, Georgia committed itself to monitor conservation and the sustainable use of biodiversity. Monitoring is important for the assessment of the status and forecast for various species. Monitoring and analysing information are of vital importance for the development of correct policies, strategies and plans for the conservation and sustainable use of biodiversity, as well as for decision-making. Monitoring results help schedule and implement urgent measures for species survival and for the mitigation and avoiding of environmental impact. Reliable information on biodiversity is necessary for the preparation of international inventories and national reports.

Although the current legislation designates particular governmental organizations (the Ministry of Environmental Protection and Natural Resources, units of the Ministry-- Department for Protected Areas and the Forestry Department--as well as the Ministry of Agriculture) to monitor biological diversity, these organizations fail to systematically collect data on biodiversity. The main reasons are:

- Lack of techniques and financial resources necessary for monitoring;
- Non-application of monitoring capacities of scientific institutions;
- Absence of unified methods for conducting biodiversity monitoring that results in discrepancies in statistical data. Information about particular components of biological diversity is not collected by state or scientific and non-governmental organizations regularly or systematically;
- The information collected by scientific and non-governmental organizations within the framework of particular projects are not systematized or used for the creation of a uniform computer database on biological diversity. Consequently, the availability of information about biological diversity for interested institutions and persons is limited.

¹³ For example, the “economic assessment of natural resources of Georgia and efficiency of their use during the forecasting period“, January 14, 1982

¹⁴ „Finalization of the methodology for total economic valuation of Georgia’s forests and the development of a New Forest Resource Pricing Mechanism“. URS Corporation limited. UK, 2002.

1.4. ASSESSMENT OF CAPACITIES AT AN INSTITUTIONAL LEVEL

1.4.1 Functions and capacities of state organizations acting in the field of biodiversity

A number of state organizations are operating in Georgia in the field of biodiversity protection and sustainable use. However, their functions, goals and scopes of work are not clearly defined. Very often functions are duplicated within various agencies. Distribution of functions among the Ministry of the Environment and Natural Resources and its departments - the Department for Protected Areas and the Forestry Department - is worth noting in this regard. Functions often overlap between institutions and departments, such as the Ministry of Environmental Protection and Natural Resources, and the Ministry of Agriculture.

Even though structural changes were made in the public sector of Georgia, for example the State Department for Protected Areas and the State Forestry Department merged with the Ministry of the Environment, much has remained unchanged in their activities. The Ministry needs urgent structural and functional optimization in this direction. At the same time, Georgian legislation does not reflect those institutional changes or the new distribution of roles and functions that took place within 2004-2005 as a result of the abolition or merger of governmental organizations. The situation is ascerbated by numerous leftover bylaws on the distribution of functions, which need to be amended or annulled.

Unclear functions, mixed and poorly defined responsibilities lead to ineffective work by the institutions responsible for the protection of natural resources. There are frequent conflicts between them which end in the non-fulfillment of obligations by these institutions. Poorly defined functions and responsibilities of the institutions and the inappropriate distribution of roles result from the unstable political, administrative and social situation that has existed in Georgia for the past decade.

There are a number of management, staff policy, financial and technical problems characteristic of all state institutions working in the field of conservation and sustainable use of biodiversity (Part 2 gives more detailed analyses of these problems). At the same time, there are particular problems linked to special functions of other state institutions and which significantly hamper meeting the obligations of the Convention. We outline the main organisational issues in the following sections.

1.4.1.1. The Ministry of Environmental Protection and Natural Resources (MEP)

Resources in the MEP are too scarce to get the job done. The number of employees and their qualifications are low. Financial and material resources at the central and regional offices of the Ministry are not sufficient to implement the requirements of the Biodiversity Convention or to carry out responsibilities related to the conservation and sustainable use of biological diversity stipulated by its charter. Although the MEP has recently set up a strong inspectorate to provide for supervising the implementation of the environmental legislation in the country and promoting law enforcement in this field, crippling issues still remain;

- The Ministry's capacity to fulfill necessary coordination activities for implementation of the Convention on Biodiversity and other conventions connected with biodiversity is limited, partly due to the fact that the functions and responsibilities of the Convention focal points are not clearly defined. At the same time, the timetable and commitments of focal points regarding the coordination of the Convention and other activities of the Ministry are not distributed rationally;
- Links, cooperation and accountability between focal points and other departments and scientific institutions are insufficient. It is difficult to obtain information from other departments and scientific organizations;

- Advisory councils and scientific-technical committees have been set up within the framework of several conventions. However, the activities of such committees are ineffective and non-systematic;
- The capacities of the Ministry in terms of participating in the Conference of Parties to the Convention on Biological Diversity and other conventions are weak. The State has no opportunity to fund even focal points' participation in these meetings, to say nothing about financing several other representatives; the competences of the convention focal points, who basically have only an education in biology, are not enough to effectively participate in the Conferences of Parties and the negotiations;
- The Ministry's capacities in terms of biodiversity monitoring and *ex situ* conservation of species are extremely low.

1.4.1.2. The Forestry Department

The State Forestry Department, which merged with the Ministry of Environmental Protection as a result of structural reorganization in 2004, was one of the strongest institutions during the Soviet period. Due to numerous problems the State Forestry Department fails to meet its commitments under market conditions and new social-economic reality in terms of conservation and sustainable use of Georgia's forests.

- The material-technical base of the Department, its administrative and management infrastructure is extremely weak and insufficient to provide effective functioning of the organization. Computer equipment is poor and employees of the regional offices are not familiar with computer technologies. Many offices have no electricity, water or heating systems. They have no paper or office supplies.
- Data on the state of the Forests, their resource value and timber extraction volume is not sufficient or reliable. No database for planning and elaborating national forestry policy exists.
- Forest management plans are outdated. They have not been renewed for the past several years. The Department is not funded to conduct any ecological survey on forest use, which is necessary for issuing environmental permits;
- The capacities of the Forestry Department in terms of modern forestry management which should correspond to Georgian reality and reflect best practices of other countries, are very low;
- The personnel involved in the forest sector are not familiar with modern and effective technologies. Working conditions, in terms of safety and health care, are unsatisfactory.
- Due to low salaries and absence of incentives the forestry administration and the staff responsible for management are not interested in efficient management or protection of forests.
- The forestry education field faces a serious crisis. Educational courses are conducted with outdated programs and text books. New requirements are not taken into account. Due to scarce resources the existing educational institutions fail to respond to change.
- Particular functions of the Department, such as the elaboration of forestry development policy, protection of forests, state regulation of forest resource use (licenses, permits) and monitoring of the state of forests are not clearly delineated, and overlap with functions of the Department for Protected Areas and other units of the Ministry of the Environment Protection and Natural Resources.

It is important to note that a national forestry policy has not been developed in Georgia. The implementation of a project on elaboration of the forestry policy, through the support of the UN Food and Agriculture Organization (FAO), started in 2004 and will last for three years. It gives a unique opportunity for mobilizing human resources from the state, scientific, private and non-governmental sectors and strengthening the capacities of State Forestry Department, the Ministry of the Environment Protection and Natural Resources and other institutions for elaborating and implementing the forestry policy. At the same time, the Forest Development Project funded by the World Bank and the Government of Georgia seeks to strengthen the Department's capacities in

various areas like structural and financial reorganization, forest management improvement and the creation of information systems. It also plans to strengthen forest protection and inspection services, develop nursery gardens and other capacities.

1.4.1.3. The Department for Protected Areas

Like other state institutions, the Department for Protected Areas faces financial, staff and material-technical problems that prevent the organization from meeting its commitments and responsibilities. However, there are a number of specific problems that should be taken into account when planning measures to build institutional capacities.

- The Department is basically composed of botanists, foresters, zoologists and other scientifically skilled employees. Yet the Department lacks experts in environmental policy and management, financial, human and information resource management, as well as foreign language specialists.
- The knowledge and incentives for using non-traditional mechanisms (including internal and external sources) of funding protected areas are limited.
- The Department has limited capacities to elaborate plans for the management of protected areas that consider the best practices of other countries in the Georgian context.
- The Department has no capacities, knowledge and experience to make maps through using geoinformation systems, which is an effective, modern means for planning and managing protected areas.
- There are no continuing education programs for local specialists in the field of protected area management. Periodic short-term courses are held only within the framework of various donor programs.
- A critical issue is the lack of sufficient communications and links with local protected area administrations, which are at the same time overly dependent financially on the central Department.
- Within the past decade the Department for Protected Areas has concentrated on conserving flora and fauna species in protected areas and conducting scientific research. Meanwhile, other activities such as tourism development, educational programs and other promotional capacities like marketing, campaigning for public awareness or developing public relations, have been extremely limited. Also, relations with other ministries and sectors, such as culture, tourism and transport, which are necessary to develop the department's capacities and impact, have been very limited.

Since 2002, with the financial support of the Global Environment Facility and the World Bank, Georgia has been implementing the project on development of protected areas in Georgia. A component of this program envisages institutional development, strengthening the Department for Protected Areas for effective implementation of its duties. Importantly, it foresees the reorganization of the Department, acquisition of modern equipment and technologies, raising qualifications and other inputs.

1.4.1.4. The Ministry of Agriculture

The Ministry of Agriculture plays an important role in the conservation and sustainable use of agrobiodiversity. However, the financial, technical and staff capacities of the Ministry to effectively perform its duties are very limited. Due to the absence of regular monitoring, the Ministry of Agriculture has no data on the current state of agrobiodiversity in the country. Nursery gardens and experimental plots necessary to concentrate species vulnerable to extinction are non-existent.

The functions and responsibilities of the Ministry of Agriculture in the protection of plants against harmful substances, pesticide or chemical application management, supervision and control overlap with the functions of the Ministry of the Environmental Protection and Natural Resources.

1.4.2. Capacities of academic institutions and their problems

There are several academic institutions in Georgia that have been conducting scientific, research and educational activities in the field of biological diversity for several decades. During the past decade state funding, which is of vital importance for these institutions, has been reduced to a minimum. Consequently, the activities of state academic institutions have significantly diminished and their capacities weakened.

With some exceptions, all the academic institutions encounter similar problems, such as:

- Low salaries of scientific workers;
- Loss of skilled staff to the private and non-governmental sectors, or abroad;
- Failure to attract young, highly skilled staff and as a result there is a so-called “ageing process” of the scientific institutions¹⁵;
- Infrastructure is almost non-existent. Employees do not even have access to the Internet, so scientists and students alike fail to learn what is going on in the field today;
- The capacity for undertaking fieldwork and research is minimal. Various research projects are currently funded by international donor organizations, however even this funding is scarce. Consequently, the information about biological diversity is not regularly renewed or coordinated overall.
- As a result of studies undertaken before the 1990s, institutes still have enough information on existing species of flora and fauna in Georgia. However, updated information on the number of populations and conservation status of specific species is rarely available at the institutes. Information on the current state of biodiversity in Georgia is not complete.
- Academic institutions are not informed on modern approaches to *in situ* biodiversity conservation. This is due to the former Soviet approach where special attention was paid to scientific research, but its applicability for the conservation and sustainable management of biodiversity was low.

In spite of these problems, it should be noted that the professional qualifications of the scientists working at the academic institutions and their intellectual capacities are high. Thus, with good management it would be possible to achieve change and significant results in the medium term.

1.4.3. Capacities and needs of non-governmental organizations

As a result of the democratization processes that started in Georgia in the 1980s and 1990s the activities of non-governmental organizations, and especially the environmental organizations, significantly strengthened. Indeed the history of Georgia’s independence has shown it was led by organizations that grew out of the advocacy for environmental issues. The non-governmental sector is developed rapidly in Georgia; their number is gradually increasing and their role is becoming more and more important in the field of environment protection, particularly in biodiversity conservation.

¹⁵ While interviewing the representatives of the scientific institutions have used this term.

Currently several powerful non-governmental organizations are active in Georgia. They promote public awareness on environmental issues and encourage public participation in planning and implementing conservation activities. At the same time, non-governmental organizations implement important projects in the direction of biodiversity research, monitoring, conservation of endangered species, the elaboration of protected areas management plans and the development of legislation. Some of them actively participate in the elaboration of the state strategies and reforms for conservation and the sustainable use of biological diversity.

Most non-governmental organizations operating in Georgia face the following challenges:

- Most non-governmental organizations are funded through grants. Other sources of funding, such as government stipends, membership fees or contributions are minimal or do not exist at all. One-third of the organizations do not have any funding at all.
- Unstable financial security results in the non-stability of the organizations' activities. In Georgia there are only a few non-governmental organizations acting in the field of biodiversity that are comparatively stable, with permanent office, hired staff, long-term programs, etc.
- Most organizations need to revise their management base and to be trained in this regard, to make their activities more effective, more open and transparent.
- Most Georgian non-governmental organizations have no steady membership base and have a small staff;
- The majority of leading non-governmental organizations are concentrated in Tbilisi, while in the regions the non-governmental sector is very weak;
- Cooperation between non-governmental organizations and society is extremely weak;
- Most organizations conduct only educational activities in the field of biodiversity. Only a few organizations implement conservation projects – research and conservation of various species, management of habitats and ecosystems, establishment of the system of protected areas, renewal and management improvement, etc.
- Only a small number of non-governmental organizations participate actively in the process of policy elaboration and decision making;
- Only a few organizations cooperate with international non-governmental and financial organizations. This is basically due to two factors – a lack of foreign language knowledge and a lack of information.
- The procedures of access by non-governmental organizations to state or foreign-funded environmental projects or programs are not transparent;
- Only a few Georgian-based non-governmental organizations are actively cooperating with neighboring countries over transboundary issues.

1.2.4. Capacities of local communities

The importance of participation by local populations and communities for natural resource management and biodiversity conservation has gradually increased throughout the world. The Convention on Biological Diversity demands that countries protect traditional knowledge of local populations and encourages an equitable sharing of benefits arising from the utilization of such knowledge and practices. Unfortunately, in Georgia the capacities and knowledge of local populations and local communities in the field of biodiversity conservation and sustainable use are not properly evaluated or utilized. Local community organizations are rare in Georgia, while in those places where they do exist, the efficiency of their activities and their capacities are limited. In dire economic conditions and with the energy crisis, local populations are involved in illegal hunting, fishing, pasturing and timber processing, thus causing serious damage to biological diversity. Projects funded through international sources envisage the creation of local community organizations, their strengthening and inclusion in the conservation and sustainable use of biodiversity. However, at the state level, a systemic approach to this issue does not exist.

1.3. CAPACITIES AT THE INDIVIDUAL LEVEL

The problems and capacities at systemic and institutional levels are significantly impacted by the capacities at the individual level. The efficiency of systems depends on how much skilled, experienced and motivated staff participates in their creation and functioning. And, vice versa, the efficiency of systems and correct management of institutions condition the attraction of highly skilled and motivated staff, their professional development and correct use of capacities.

The level of education of the Georgian population as a whole is high enough. In 2004, according to the Human Development Report, Georgia's education index was 0.89. According to this parameter Georgia was included in the category of highly educated countries¹⁶. In terms of environmental protection, including the capacities for conservation and the sustainable use of biodiversity, the country's human resources are characterized by the following strengths and weaknesses:

- The country has highly skilled staff in technical and natural sciences – biologists, zoologists, ecologists, engineers, geologists, etc., who have relevant knowledge in the country's biological diversity, as well as the capability to settle separate technical problems;
- Critical is the lack of professionals working in certain areas of the global environment, namely: conservation and natural resource management, environmental economics, environmental policy and law, preparation and economic and financial analysis of environmental projects, institutional analysis;
- Experts have no relevant knowledge and experience to elaborate effective environmental instruments and mechanisms, including economic instruments and financial mechanisms, under market economy conditions. The economic education appropriate for a market economy framework has become available only in the last decade; access to education in environmental economics, management and policy is still very limited in the country; there are difficulties with finding lecturers for academic institutions in this sphere.
- The motivation and skills of specialists for team work are underdeveloped;
- The capacities for raising qualifications are limited at state and academic institutions. There are no organized systems for raising qualification and upgrading. In the field of environmental protection, knowledge is basically acquired with support from international aid; however educational courses organized through this assistance are short-term and less efficient.
- Institutions responsible for overseeing the implementation of the national laws and other environmental policy instruments often do not have skilled or trained personnel to enforce fulfillment of requirements.
- Scientific workers lack information and knowledge about modern methods of biodiversity conservation. This is partially caused by a poor command of foreign languages and the unavailability of foreign literature;
- Individuals working in the non-governmental sector lack training in financial management, organizational development issues, conservation methods and activities;
- The state, scientific-research and non-governmental organizations all lack experts capable of preparing projects in the field of biodiversity and negotiating donor funding. Most local organizations do not have such capacities at all.
- The development of consulting companies in the field of biodiversity is at the initial stage; accordingly the number of skilled consultants is extremely limited.

¹⁶ *Human Development Report, Georgia, 2004. UNDP, New York*

CHAPTER 2. CAPACITY CONSTRAINTS AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS TO IMPLEMENT THE CONVENTION ON CLIMATE CHANGE

2.1. THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE AND GEORGIA'S COMMITMENTS TO THE CONVENTION

In order to avoid global warming and its ecological and economic consequences, many countries signed the UN Framework Convention on Climate Change at the UN Conference on Environment and Development in Rio de Janeiro (Brazil) in 1992. The ultimate objective of this Convention is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous anthropogenic interference with the climate system.

According to the Convention, developing countries and countries such as Georgia with economies in transition are classified as parties not included in Annex I, which means they are not bound to particular quantitative obligations concerning the reduction of greenhouse gas emissions. Georgia ratified the Convention on October 29, 1994 as a party with an economy in transition not included in Annex I. Hence Georgia still has no particular obligations concerning the reduction of greenhouse gas emissions.

Box 4. Georgia's commitments within the framework of the Convention on Climate Change

- To carry out an inventory of greenhouse gases, create and publish databases on emissions;
- To prepare national communications, for which, according to article 12 of the Convention, the country is authorized to receive financial aid from the Global Environment Facility;
- To reveal those systems that are particularly vulnerable to the adverse effects of climate change, and to develop, publish, update and implement the state programs on their adaptation;
- To promote sustainable management of sinks and reservoirs (for example, forests) of greenhouse gases;
- To raise public awareness regarding the climate change processes;
- To promote research and systemic observations, including meteorological, hydro meteorological and climatic ones, and to exchange information;
- To promote the introduction of modern technologies for reducing greenhouse gas emissions;
- To develop, publish, update and implement the state program on mitigation of climate change (through reducing greenhouse gas emissions and increasing absorption from the atmosphere);
- To integrate the climate change issues into the state and sectoral development plans.

2.2. CAPACITY CONSTRAINTS AT A SYSTEMIC LEVEL

2.2.1. Planning in the field of climate change and integration of climate change issues into sectoral development plans and programs

Although meeting the Convention guidelines has not been a priority for Georgia, the previous programs and plans on general social-economic development or the development of specific sectors (energy, transport, agriculture, forestry) still included particular issues of climate change, such as increasing energy efficiency, the use of renewable energy resources, afforestation, etc. However, due to a lack of political will and relevant finance and other resources, real implementation of the climate change commitments has been much slower than scheduled.

The new government, which came to power in 2004, has not yet developed integrated plans for the social-economic development of the country. According to a decree of the Government, a governmental commission for the sustainable development of Georgia was set up in April 2005 which aimed at developing a national strategy for sustainable development. The plan should outline the government's vision about the integration of environmental--including climate change issues--into the social-economic development processes. The process of elaboration of this strategy would become an important test for the Georgian government on the way of establishing a long-term strategy on the country's sustainable development based on principles of co-participation. At this point the process is hampered by the following problems:

- Limited knowledge and experience of effective strategic planning. This complicates the development of economically proven, effective, feasible policies, plans or programs;
- Weak traditions of coordination and cooperation between various institutions, scientific or non-governmental organizations in the planning process;
- Cooperation between government and society in the field of environmental policy development is far from a desirable level. Low public awareness and participation in developing environmental policies. The first steps towards providing public participation in the process of developing the plans and programs have been taken in recent years. The national procedures for public participation in the decision making process in the field of environmental protection are under elaboration (Georgia is a party to the UN Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice on Environmental Matters - Aarhus Convention) and public awareness is gradually increasing.

2.2.1.1. National Program on Climate Change (NPCC)

In order to meet Georgia's commitments to the Convention on Climate Change, and pursuant to a Presidential Decree, the National Program on Climate Change was approved in 1996. A state commission dealing with climate change issues was set up and the National Center for Climate Change established under the Ministry of Environment.

The key goal of the NPCC was to assess the adverse effects of global climate change on Georgia's climate and to forecast the consequences of climate variability. For 1996-2000 the state budget envisaged GEL 600 000 for program implementation, however only GEL 283 000 was actually allocated during this period. Since 2001 funding has been significantly reduced and currently amounts to only approximately GEL 10 000 per year.

Since 1996 around 50 outside experts from the Department of Hydrometeorology, the Institute of Hydrometeorology, the Institute of Geophysics and the Tbilisi State University have participated in the program's implementation. Along with the National Program on Climate Change, the National Center for Climate Change was involved in the implementation of the projects financed from international

sources, including the Global Environment Facility. The results of the research conducted within the framework of the program on climate change and other projects in this sector, implemented with international assistance, were reflected in national bulletins. Several dozen editions of research results were published in Georgian and English. Four monographs related to these issues were also published. However, following the completion of international projects and a significant reduction of funding for the national program since 2000, activities have decreased as well. Unstable funding of the program does not promote the development or mobilization of capacities at institutional and individual levels nor their maintenance in the long term.

The NCCP, in its present form, has mostly a research character and does not aim at establishing state policy on climate change or developing and implementing measures to mitigate adverse effects of climate change or adaptation to them. In the long term, if additional financial resources are obtained, it would be expedient to orient the program towards policy development and implementation. It will be necessary to popularize the outcomes of scientific research conducted under the program and submit them to decision makers and society in an accessible language. This will promote discussions on the climate change problems, the implementation of recommendations and will build awareness of projects developed under the program so they can be integrated into government environmental and social-economic development plans.

2.2.1.2. First National Communication to the UN Framework Convention on Climate Change

In 1997-1999 Georgia prepared the first National Communication for the Conference of the Parties to the Framework Convention on Climate Change within the project “Assistance to Georgia in meeting the commitments to the UN Framework Convention on Climate Change” with the financial and technical support of the Global Environment Facility (GEF) and the UN Development Program (UNDP). The document reflects the outcomes of activities conducted within the project in the following directions:

- National inventory of greenhouse gases;
- Assessment of vulnerability of various ecological and economic systems (such as agriculture, energy sectors) to the adverse effects of climate change on the territory of Georgia;
- Measures and projects on the adaptation of particularly vulnerable systems;
- Measures and project proposals on the reduction of greenhouse gas emissions.

In summer 2004 the preparatory work for the second national communication was conducted with the participation of the stakeholders and through the financial support of the Global Environment Facility (GEF). Implementation of project on the second national communication will start by the end of 2005.

Like the NPCC, the projects and measures proposed in the first national communication on reduction of greenhouse gas emissions and adaptation either failed to be integrated into national programs, or, in case of formal integration, they were not funded from the state budget. In reality, climate change related projects are funded from international sources. Among them we should note the project on the promotion of the use of renewable energy sources for local energy supplies, which was prepared in 1997-2001 with GEF support. Project implementation began in 2004, and envisages the use of geothermal resources for heating and hot water supplies to the Saburtalo district of Tbilisi. The project also envisages the rehabilitation of several hydroelectric power plants in Georgia for local electricity generation. The project costs USD 12.2 million, including USD 4.3 million from a GEF grant. The project is co-financed by the German reconstruction bank, KfW, with USD 4.4 million and by the Tbilisi Municipality and private energy companies of Georgia with USD 3.5 million.

2.2.1.3. National Program on Mitigation of Climate Change

No systematic planning of measures on the mitigation of climate change has ever been carried out at the national level. The first steps in this direction were taken only by preparing the first national communication to the Convention on Climate Change. The major omission of this activity was its failure to forecast greenhouse gas emissions for various sectors of economy and for various periods of time through using computer models. As for the specific project proposals, at a conceptual level they have been prepared for separate resources of renewable energy (geothermal, hydro, solar, wind and biomass energy). Several preparatory stages of these project proposals have been financed by GEF (particularly the PDF A and PDF B preparatory phases). Also several project proposals have been prepared addressing the means to increase energy efficiency for the sectors of industry and municipal thermal supply, as well as for the forestry sector.

2.2.1.4. Assessment of vulnerability of ecosystems to climate change and development of adaptation programs

The vulnerability of various economic sectors and natural ecosystems to climate change was assessed in 1996-1999 within the national program on climate change and the project of the first national communication. Experts from the Agrometeorology Departments of the Institute of Hydrometeorology and the Department of Hydrometeorology, the Ministry of Agriculture and the Agrarian University were involved in the assessment. However, these assessments lacked thoroughness and reliability due to a deficiency in information and staff with relevant knowledge and experience.

The first national report outlined general issues on protection and adaptation of selected vulnerable ecosystems, as well as the capacities of vulnerable economic sectors for adaptation. However, the development of an adaptation program or particular projects was impossible due to a lack of skilled staff. Accordingly, the measures on adaptation to climate change have not been incorporated into the social-economic development strategies nor in plans to develop agricultural, forestry, environmental and other sectors. Public awareness and political demand for elaborating such plans are extremely weak.

2.2.2. Legal and Regulatory Framework

An assessment of the legislative base related to climate change issues has revealed that the Georgian legislation mainly includes laws defining general norms (for example, the laws of Georgia on protection of atmospheric air (1999), on environmental protection (1996), on energy (1994), on motor transport (1995), etc.) and does not focus on addressing particular problems or the implementation of particular tasks and measures.

The development of several laws and bylaws has been envisaged within the regulatory framework, but they have not yet been elaborated. For example, the Law of Georgia on Environmental Protection defines that the state authorities, physical or legal entities within the framework of their authority and those responsible for Georgia's commitments to international agreements should take additional measures to settle regional or global environmental problems within the territory of Georgia (article 50). Article 51 of the same law directly regards the issue of climate protection to prevent global changes, and obligates parties to meet the limits of greenhouse gas emissions and to take measures on their reduction. However, these norms are not envisaged by any bylaws.

The law on the protection of climate against global changes within Georgia's jurisdiction, the adoption of which is envisaged by the Law on Atmospheric Air Protection for meeting the Convention guidelines,

has not been developed. It is still not clear who is responsible for monitoring the observation of norms or what kind of measures will be taken in case of violating emission limits.

Although numerous legal acts and bylaws were adopted and governmental decisions made during the last decade to develop the energy (including the renewable energy) sector, these acts often contradict each other. This reveals the absence of strategic vision or any systematic approach towards development issues. These laws and bylaws generally made one or another governmental organization responsible for using renewable energy and raising energy efficiency. Obviously, such a variety of decisions over identical issues does not promote institutional responsibility at the national level, which is needed to foster the development of renewable energy. The need to elaborate legal acts to regulate this sphere is very acute today.

Another problem is the adjustment and harmonization of Georgian laws on climate change with the European Union's legislation. The European Commission, the EU Parliament and the EU Council have adopted a number of decisions on CO₂ stabilization that demand the monitoring of greenhouse gas emissions, raising energy efficiency, increasing the share of renewable energy on the domestic market and reducing and regulating automobile exhaust gases. Similar laws that focus on particular tasks either do not exist in Georgia, or are not implemented. Although Georgia is not a member of the European Union, the International Agreement on Cooperation and Partnership between the Council of Europe and Georgia, as well as the fact that Georgia is a member of the Council of Europe, oblige the country to bring its national legislation into full compliance with European laws, administrative rules and regulations.

2.2.4. Economic incentives in the field of climate change

From 1993 to 2005 various economic incentives were introduced in Georgia that were directly or indirectly related to the reduction of greenhouse gases – taxes on environmental pollution, including on CO₂ emissions, environmental taxes on fossil fuel consumption, tax privileges on use of renewable energy. However, the efficiency of these incentives in terms of reduction of emissions and effective use of fuel has been extremely low due to the bad design of taxes and weak administering. In 2005 the new Tax Code came into force, which does not, however, envisage any environmental taxes or privileges for the use of renewable energy.

It can be said that presently the government mainly focuses on the growth of tax revenues and strengthening the fiscal discipline in the country. Operational economic incentives in the field of climate change will become possible only in a medium- or long-term perspective. However, it should be noted that the country lacks staff with relevant skills to develop effective environmental taxes or other economic incentives.

2.2.5 Investment Environment and Financial Markets

Georgia suffers from a lack of financial resources in many sectors. Financial institutions, banks and insurance companies have to work under high-risk conditions. Accordingly, the interest rates for loans are extremely high which makes it very difficult to find money for new projects or usual business operations. Georgian commercial banks allot only short-term credits (maximum term of credit is 5 years), the volume of loan is limited (maximum loan volume is USD 1 million), while the annual interest rate of a loan is 15-20% (in accordance with the project particularities and risk). Such tight credit conditions hamper medium- and large-scale investments that could be profitable in the long term.

Environmental projects, including those on climate change – use of renewable energy, raising energy efficiency, protection of forests and afforestation, adaptation measures – need greater capital investments to bring financial profit in a medium or long-term period. Thus, the unavailability of financial resources means the private sector does not invest money in measures against climate change.

2.2.6. Financing from State and International Sources

Despite a significant growth of the state budget within past two years (2004-2005), state financial resources are still extremely scarce and basically allocated to fields such as social welfare, defense, law enforcement, infrastructure development, health care, education, energy, transport and communication.

The financial share of the Global Environment Fund (GEF) in supporting the measures against climate change is very high. GEF assistance to Georgia for enabling activities and preparation of various investment projects within 1996-2005 years exceeded USD 1 million. One of the largest projects on the use of renewable energy, “Promoting the Use of Renewable Energy Sources for Local Energy Supply”, was prepared in 1997-2001 and started implementation in 2004 with the financial support of GEF.

Obviously for the near future international financing will remain the major source of assistance to Georgia in the field of climate change. The country has important capacities to attract foreign investments to this field through using the Clean Development Mechanism. Several countries (Denmark, Germany, Holland) and International Financing Institutions (the World Bank, EBRD) have expressed interest in implementing projects in Georgia using the Clean Development Mechanism. However, in order to use these capacities, Georgia will have to create a relevant infrastructure (institutions and legislation) and human capacities. Chapter 2.3.9. of this document gives detailed information on the Clean Development Mechanism and the measures for its introduction in Georgia.

2.2.7. Data Collection and Information Resources

Availability and reliability of information is one of the key barriers for meeting the guidelines of the UN Framework Convention on Climate Change. This concerns the inventorization of greenhouse gas emissions and absorptions in particular. Most governmental organizations have no computerized databases. The data are non-systematic and hardly available. The fields of forestry and waste management are especially problematic.

The inventory of greenhouse gas emissions was first carried out in Georgia within the framework of the project on the First National Communication to the UN Framework Convention on Climate Change. The inventory included information about greenhouse gas emissions for 1980-1997 and was carried out by the Intergovernmental Panel on Climate Change (IPCC) in accordance with the 1996 guiding document. The inventory was carried out in the energy, agricultural, forestry and waste sectors. Unfortunately, this process was only carried once. Due to financial problems, the country fails to carry out regular inventories. The greenhouse gases inventory is further complicated by the fact that in a number of sectors (for example, forestry, soils) national inventory classifiers do not coincide with the classifiers set by the international climate change program. This significantly decreases the reliability of inventory data.

To better develop the inventory methodology and adjust it to the country’s peculiarities, since 2004 Georgia has been participating in a regional project of the UN Development Program (UNDP) and the Regional Environmental Center for Central and Eastern Europe (REC-CEE) – “Capacity building for

improving the quality of greenhouse gas inventory”. The project aims at improving the quality of greenhouse gas emissions inventories in the CIS states through building capacities for training national teams involved in these activities and for exchanging information. The project also aims at adjusting the IPCC-developed universal emission coefficients to national peculiarities. Georgia has implemented the following measures within the project:

- Available data sources from the implemented and ongoing international and regional projects have been defined;
- A computerized program on calculation of landfill methane emissions has been created;
- The importance of methane emission from the major gas pipeline system has been ascertained taking into account Georgia’s current conditions;
- Methane emissions from Georgia’s major gas pipeline system have been assessed;
- A special manual has been prepared for specialists – “National Procedures for Inventory of Landfill Methane Emissions”;
- A computerized program has been developed to calculate emissions from the transportation sphere;
- The results of the inventory carried out within the first national communication were re-calculated through the software prepared by the intergovernmental group of specialists for climate change.

Georgia still faces the problem of obtaining necessary primary data for carrying out a greenhouse gas inventory. Another problem is that the data obtained at various organizations regarding one and the same issue significantly differ from each other, indicating once again the problems existing in data collection and managing the systems of these organizations.

2.2.8. Promoting the Development, Introduction and Use of Environmentally Friendly Technologies

Promoting the introduction of environmentally friendly technologies is one of the key requirements of the Convention on Climate Change. The inventory of greenhouse gas emissions carried out in 1996-99 years within the framework of the national communication revealed that the energy sector was the key source of greenhouse gas emissions. At the same time, due to the use of low efficiency technologies, the sector had a great potential for reducing emissions. Therefore, in order to promote the introduction of clean technologies, the National Center for Climate Change (presently – the Climate Change Unit of the Ministry of Environmental Protection and Natural Resources) directed its efforts to this sector.

In 1999-2001 with the financial support of GEF, the Center studied the barriers hampering the introduction of energy efficient technologies and the use of renewable energies. It was revealed that in Georgia heat supply from small hydroenergy and geothermal sources are both ecologically acceptable and financially profitable. Particular pilot project proposals were prepared for both sectors. Subsequently, a full-scale project on the “Promotion of the Use of Renewable Energy Resources for Local Energy Supply” was prepared and the this project is financed by GEF, KfW and Georgian private companies. It envisages:

- Creation of a normative base for the use of renewable energy resources in order to create a fair and competitive market environment;
- Establishment of a “revolving” fund for financing projects for the use of renewable energy resources;
- Implementation of pilot projects (rehabilitation of small hydro power plants, use of geothermal waters for hot water supply).

A number of non-governmental organizations (the Center for Energy Efficiency, Bioenergy, the Green Movement, etc.) are also implementing projects on promoting energy efficiency and renewable energy. Their activities are mainly limited to the implementation of small pilot projects.

Besides the energy sector, particular measures were also implemented in the field of industry and agriculture to study the capacities for introducing clean technologies: in 2000-2002 the National Center for Climate Change received additional funding from GEF to undertake an in-depth analysis of some issues studied while preparing the first national communication. In particular, the potential of the industrial and energy sectors in terms of reducing the greenhouse gas emission was thoroughly studied and project proposals were prepared at a conceptual level.

As for the agricultural sector, within the GEF/World Bank project on Agricultural Research Extension and Training (ARET), pilot projects are being implemented on reduction of greenhouse gas emissions through using biogas. Within the framework of the project, biogas equipment has been installed in 80 farms of 5 regions of Georgia. As a whole, about 250 units of biogas demonstration equipment have been installed with the support of various sponsors. However, due to their high price and the low solvency of farmers, consumers have not shown serious interest in it.

Despite the above-mentioned projects, generally speaking there is no permanent mechanism or relevant legislative and investment environment for promoting the introduction of environmentally friendly technologies in Georgia. This is due to several factors:

- Financial resources necessary for introduction of environmentally friendly technologies are less available on the domestic financial market. There are no incentives for promoting such investments in the country;
- There are no economic incentives (taxes, tax privileges) to increase the interest of entrepreneurs/consumers in a wider use of environmentally friendly technologies;
- No organization or agency is working permanently on the transfer of environmentally friendly technologies, the development and regular updating of the database on such technologies or on promoting the dissemination of information among stakeholders¹⁷.

2.2.9. Use of the Clean Development Mechanism

The Kyoto Protocol of the Convention on Climate Change envisages the use of a Clean Development Mechanism (CDM) by means of which developed countries can meet a part of their commitments to reduce greenhouse gas emissions through the introduction of clean technologies in the developing countries.

Georgia meets all the requirements necessary for participating in this mechanism. In particular, 1) Georgia has ratified the Kyoto Protocol; 2) Georgia has expressed its willingness to participate in the Clean Development Mechanism (CDM) several times at the international level; and 3) on January 20, 2005, according to the decree of the Georgian Government, the Ministry of Environment was appointed as the national focal point for the CDM. Currently the Government is working over a draft decree on setting up a National Council for the Clean Development Mechanism, which will define criteria to determine whether the CDM project promotes the sustainable development of the country, how the CDM project corresponds to the national and/or sectoral policy, and to make a decision about granting official consent to implement the CDM.

There are a number of issues that should be addressed in order to introduce the Clean Development Mechanism in Georgia. In particular:

¹⁷ Despite separate attempts of the Climate Change Service, the activities are not systemic.

- There is no legislative base or technical potential for the implementation of the mechanism. Procedures to approve the project and the criteria for project sustainability must be developed at the national level;
- The Ministry of Environment, as national focal point for CDM, has inadequate human resources and it is necessary to train national experts in the key elements of CDM, such as methods for defining basic levels, certification of emission reductions, or organizing a registration system;
- In Georgia and generally in the central and eastern European countries, there are no internationally accredited agencies for the validation, verification and certification of CDM projects. The entire region lacks experts and private firms with relevant skills and qualification;
- Awareness of decision makers and businessmen about the capacities of the Clean Development Mechanism is still low;
- The system for assessing and preparing particular projects is being developed. In order to attract investors, it is essential to group these projects and create a national “project bank”.

The European Union assists Georgia in introducing the Clean Development Mechanism. In particular, since April 2004 Georgia has been implementing a EU-funded project within the TACIS program on the development of the institutional and technical capacities of the country. The Climate Change Unit of the Ministry of Environment is also involved in the project implementation. The project envisages:

- Establishment of clear and distinct procedures for the implementation of the Clean Development Mechanism;
- Revealing prospective sectors/projects in terms of the Clean Development Mechanism and raising awareness of these stakeholders regarding CDM capacities;
- Identification of several particular projects and the preparation of project documents for using the Clean Development Mechanism;
- Preparation of a manual for technical implementation of the Clean Development Mechanism;
- Carrying out a public awareness campaign on climate change and the Kyoto mechanisms.

On November 12, 2004 the Georgian and Danish Governments signed a Memorandum of Understanding envisaging cooperation between the two countries over the Clean Development Mechanism. Several projects have already been identified and currently preparation of relevant project documents is underway. Other organizations have expressed interest in implementing the CDM projects in Georgia. The following projects are under discussion:

1. Reduction of nitrous oxide (N₂O) emission at the JSC “Azot” (chemical factory in the town of Rustavi). The project documents have practically been prepared and will be submitted to the CDM Executive Council in two months. The Ministry of Environment of Denmark is the project partner.
2. Reduction of methane emission at the JSC “Tbilgazi” (Tbilisi gas distributing company). The project documents will be ready in the first quarter of 2006. The project is being implemented with the support of the Danish Ministry of Environment.
3. Rehabilitation of the major gas pipeline system of Georgia. The Project Idea Note (PIN) has already been prepared and submitted to the Ministry. The Millennium Challenge Georgia Fund is the project investor, while the EBRD Carbon Fund is the partner. The project will likely be implemented by the end of 2006.

Negotiations are also under way between the Danish Government and “AES-Mtkvari” over raising the efficiency of the “9th power block” and accordingly, over reducing fuel consumption and emissions. The JSC “Sakcementi” (cement producing factory) has expressed willingness to participate in the CDM, where the EBRD-funded technical assistance measures will be implemented, resulting in reduction of greenhouse gas emissions. Moreover, the perspectives of cooperation with the Georgian oil company “Saknavtobi” are also under discussion.

Within the framework of the Austrian CDM program, the document on supplying the Saburtalo district of Tbilisi with hot water from geothermal reservoirs is being discussed. The interest of international

organizations and developed countries in the CDM projects on reduction of landfill methane emission is great and this issue is also under discussion.

In order to provide full-scale operation of the Clean Development Mechanism in Georgia, it is necessary to set up a unit under the Ministry of Environment to identify potential CDM projects, popularize the capacities of this mechanism in the private sector, assist organizations in preparing project documents and link project authors with foreign partners.

It will also be desirable to assess the potential of Georgia and make information available for developed countries on the transfer of ownership of greenhouse gas emissions, particularly the potential for reducing emissions for various sectors of the economy.

2.3. CAPACITIES AND PROBLEMS AT THE INSTITUTIONAL LEVEL

2.3.1. Specific Capacity Constraints in some Governmental Organizations

2.3.1.1. *The Ministry of the Environment Protection and Natural Resources*

The Ministry of Environment plays a leading role in developing the country's policy in the field of climate change, as well as in the process of meeting the Convention requirements:

- The Ministry is responsible for developing the national program and action plan on climate change and for coordinating its implementation in order to meet the commitments to the Convention on Climate Change¹⁸. The Climate Change Service of the Ministry is responsible for carrying out these activities;
- The Ministry is a national focal point to the Clean Development Mechanism of the Kyoto Protocol;
- One of the Deputy Ministers is national focal point to the Convention on Climate Change; he is responsible for coordinating the political processes related to the Convention inside the country;
- The Ministry includes the Hydrometeorology Department, which is responsible for climate change observations, analysis and forecasting¹⁹;
- The Ministry also includes the Climate Change Unit, one of the functions of which is “state regulation of the activities related to climate change”, participation in the development and implementation of the national policy and strategy (order 69 of the Minister of Environment), informing the governmental bodies and society about current state of climate change, etc²⁰. (see detailed information about the functions of the Climate Change Unit below);
- The Ministry includes the Forestry Department, which is responsible for managing the national forest fund, and hence has a significant role in protecting the forests that are the sinks of the carbon dioxide;
- The Ministry is responsible for the establishment and supervision of the integrated pollution control system²¹ which should regulate greenhouse gas emissions from various activities²².

The Ministry faces the following capacity constraints with regard to the fulfillment of the above-mentioned functions:

- The Georgian forestry policy that would define the national strategy and action plan on protection and enhancing the forests as sinks for the carbon dioxide²³ has not yet been developed;
- No legal framework for an integrated pollution control system has been established which, according to the law on Environment Protection, must regulate greenhouse gas emissions from various activities.

2.3.1.2. *Climate Change Unit*

The Climate Change Unit plays a leading role in the Ministry of Environment concerning climate change issues. However, the status of this structural subdivision, its institutional ownership and functions have changed several times since its establishment. In order to meet the requirements of the Convention on Climate Change according to the presidential decree from 1996, the National Climate

¹⁸ The Law of Georgia on Protection of Atmospheric Air, article 53, paragraph 2

¹⁹ The Law of Georgia on Protection of Atmospheric Air, article 53, paragraph 3

²⁰ Decree 50 of the Georgian Government from 12 June 2004 about ratification of the regulations of the Ministry of Environment, article 9, paragraph 1, subparagraph “r”.

²¹ The Law of Georgia on Environmental Protection, article 13, paragraph 2

²² The Law of Georgia on Environmental Protection, article 51, paragraph 2

²³ Elaboration of the Georgian forestry development policy was launched in 2005 with the financial support of the Food and Agriculture Organization (FAO). It will end in 2006. Simultaneously, the WB-funded forest development project is underway, envisaging restoration of forests and afforestation in selected territories.

Change Research Center was finally created on the basis of a presidential decree in 1999 at the Hydrometeorology Department.

In 2000 the Hydrometeorology Department separated from the Ministry and called the State Hydrometeorology Department. In 2001, according to ministerial order, the Climate Change Center was transformed into an agency affiliated with the Ministry. In 2003, according to order N1 of the Minister of Environment, this National Agency for Climate Change (now the Service) was declared as national focal point for the Clean Development Mechanism (CDM). At the beginning of 2005, this responsibility was assumed by the Ministry of Environment.

According to the 2004 decree by the Ministry, the Agency affiliated with the Ministry as the Climate Change Department. As a result of the amendments made to the decree in 2005, the Department was transformed into the Climate Change Unit, however, the functions of this unit remained unchanged. According to the current decree of the Ministry, approved under order 69 of the Minister of Environment (November 2, 2004), amended in 2005, the Climate Change Unit has the following tasks and functions:

- To assess the vulnerability of certain branches of the economy towards climate change and to determine their capacity to adaptation; to develop particular adaptation projects;
- To develop measures and particular projects on mitigation of climate change and to prepare a national strategy on its basis;
- To prepare national communications from Georgia to the Convention;
- To implement the national program on climate change;
- To prepare proposals on coordinating the activities of governmental, scientific and other organizations for meeting the Convention guidelines;
- To inform decision makers regarding the climate change problems;
- To enforce the Clean Development Mechanism, and particularly to create relevant legislative and institutional frameworks;
- To create information and investment bases to attract and implement CDM projects; to promote the participation of Georgian representatives in international structures and expert councils.

The human resources of the Climate Change Unit are not enough for performing all these functions effectively. The Unit has eight employees, including six specialists and two administrative and technical assistants. The Climate Change Unit has two departments: the National Policy Office and the Office for Sustainable Development of Economy. Due to a lack of human and financial resources, activities are erratic. Its activities depend either on requirements from the Ministry's administration or various stakeholders (both domestic or international) or on international funding for particular projects. The Unit is oriented towards attracting foreign funds and implementing projects. However, due to non-systematic international funding, activities of the Unit are significantly reduced at times. At other times the Unit is implementing several projects simultaneously, so it has insufficient human resources to manage the projects and perform other functions effectively.

The Climate Change Unit is composed of skilled staff, experienced in participating in the international processes related to the Convention on Climate Change and preparing projects in the field of renewable energy, as well as in preparing the national reports. However, the Unit lacks staff skilled in carrying out an inventory of greenhouse gases or elaborating programs on the mitigation of climate change and adaptation. The Unit also lacks economists and lawyers capable of analysing the legal and economic issues of climate change.

2.3.1.3. The Department of Hydrometeorology

The Hydrometeorology Department, a subordinate structural unit of the Ministry of Environment, is responsible for observing, collecting data, analysing and disseminating information on climate change. The Hydrometeorology Department has the oldest observation data. Its multipoint climate observations have a history of over 100 years which, despite Georgia's difficult topography, would enable it to exactly define the current and anticipated climate changes. However, this opportunity has almost disappeared: the hydrometer observation network has been reduced, its technical provision has worsened and measuring tools are not tested any more. All this significantly reduces the reliability of collected information.

As a result of structural reforms implemented in 2004, the Climate Unit was established within the Hydrometeorology Observatory of the Hydrometeorology Department. Its main function is to study the processes of climate change. In particular:

- Actual and predictable trends of climate change;
- Create climatic data archives;
- Introduce and exploit computer systems of climatic data management in order to assess the adverse effects of climate change on human health;
- Monitor the frequency and intensity of extreme hydrometeorological phenomena.

Without the rehabilitation of its equipment and staff training, the Department will find it difficult to participate in research on climate change. At the same time, it should be taken into account that in the short and medium term it will be impossible to rehabilitate the Department's infrastructure and technical equipment. Therefore, the Department's structure and observation network need to be optimized to focus on priority issues.

2.3.1.4. The Ministry of Energy

The energy sector is one of the major emitters of greenhouse gases in the country's economy²⁴. At the same time, this sector has a great potential for reducing greenhouse gas emissions. The energy sector and its sustainable development are considered as a strategic issue in the National Program on Poverty Reduction and Economic Growth.

The Ministry of Energy defines the policy in this sector. Along with other functions, the Ministry is responsible for implementation of the energy saving policy and promotion of measures on using alternative energy sources. Despite several attempts, the Ministry has not yet developed a strategy on promoting energy efficiency and using renewable energy.

The Department of Energy Policy established in the Ministry of Energy, is responsible for developing strategic policy. This Department has only been set up recently and its cooperation with the Ministry of Environment is still weak. Their activities need to be coordinated in order to integrate the climate change issues into the energy development policy.

The program for the promotion of the use of renewable energy resources for local energy supply envisages the development of a strategy on the use of renewable energy with the participation of the Ministries of Environment and Energy. This process will foster the cooperation between the two Ministries regarding the climate change issues.

²⁴ The share of greenhouse gas emissions from the energy sector was 90% in 1990 and 79% in 1996.

2.3.1.5. The Ministry of Economic Development

The Ministry of Economic Development was set up in 2004 as a result of merger of the Ministries of Economy, Industry and Trade, Transport and Communications, and Construction and Urbanization. The main goal of the Ministry is to promote quick and effective development of economy in the country. Among the primary tasks of the Ministry are state property privatization, economic deregulation, liberalization and the development of a free market.

According to the Ministry's regulations, one of the major fields of its activities includes the development of proposals for implementing measures to provide sustainable development. One of the functions of the Department of Economic Policy along with other departments of the Ministry is to participate in the development and implementation of sectoral economic policy and strategy. The Department of Transport of the Ministry is responsible for elaborating national policy in the field of transport, and to coordinate its implementation.

The State Department for Statistics merged with the Ministry of Economic Development on September 10, 2004. This Department is responsible for the collection, handling, maintenance, analysis and dissemination of data on social, economic and ecological issues; the Department is committed to provide the availability and publicity of collected statistical data. Accordingly, the Department's role in establishing a greenhouse gas inventory could be extremely valuable.

Unfortunately, the cooperation between the above-mentioned Departments of the Ministry of Economic Development and relevant services of the Ministry of Environment in meeting the guidelines of the Convention on Climate Change is still weak.

2.3.1.6. Other governmental organizations

Besides these governmental bodies, other public institutions are also indirectly linked with the climate change issues. Among them there are the Ministry of Labor, Health, and Social Affairs; The Ministry of Foreign Affairs; and the Ministry of Finance. Unfortunately the awareness for environmental protection, including climate change issues and the integration of environmental interests into their programs is still low. Mutual cooperation between these organizations, as well as their cooperation with the Ministry of Environment regarding climate change issues, is also weak.

According to the UN Convention on Climate Change, agriculture is considered one of the most vulnerable sectors to the adverse effects of climate change and where adaptation measures need to be taken. At the same time this sector contributes to greenhouse gas emissions. The share of Georgian agriculture in greenhouse gas emissions was 2.5% in 1990, and increased to 6.5% in 1996. The terms of effects of climate change or other global problems on agriculture and food supply is not addressed either.

The climate change problem is not reflected in the policy and programs of the Ministry of Labor, Health and Social Affairs either, as the issue of adverse affects of climate change on human health remains unstudied. In the process of preparing the second National Communication to the Convention on Climate Change (2006-2008), the weaknesses of this sector will be investigated.

The Ministry of Foreign Affairs, the depositor of all international agreements and conventions, participates in the process of monitoring the implementation of these international agreements. It is also entrusted with monitoring membership fees to conventions and international organizations, while the Ministry of Finance is responsible for payment of these fees, including membership to the Convention on Climate Change. However, Georgia has not paid membership fees since 1996, and a significant debt has accrued. This is why Georgian representatives are no longer financed to attend international

conferences held under the aegis of the Convention on Climate Change. Discussions on this issue have recently begun and debts to the Secretariats of the international environmental conventions-- first of all to the Rio Conventions--should gradually be covered. It is vital to design a schedule for debt payments and to include the necessary funding in the Foreign Ministry's budget.

2.3.2. Scientific organizations

Several academic institutions in Georgia have been conducting scientific research and educational activities in the field of climate change and its effects for several decades. Among them are the Institute of Hydrometeorology, the Institute of Geophysics, the Institute of Botany, Tbilisi State University and the Technical University of Georgia. During the past decade government funding, which is of vital importance for these institutions, has been greatly reduced, leading to a significant reduction in activities and capacities in these academic institutions.

The greatest lacunae in academic capacities in this sector are in the fields of vulnerability assessments and the development of adaptation measures. There is also a lack of know-how and experience in this relatively new discipline, an absence of state interest in the issue and little support.

2.3.3. Non-governmental organizations (NGOs)

There are several non-governmental organizations in Georgia whose activities are linked with climate change issues. These organizations aim at raising public awareness, promoting the use of renewable energy and energy efficiency through implementation of small pilot projects, etc. However, non-governmental organization is working on the issue of adaptation to climate change.

The majority of the leading NGOs are concentrated in Tbilisi, while in other regions of the country the non-governmental sector is very weak. Only a few non-governmental organizations participate actively in policy-making and decision-making or cooperate with international non-governmental and financial organizations. This is basically due to their lack of knowledge of foreign languages and of information.

2.3.4. Private sector

One of the most important elements for meeting the convention requirements is the private sector's interest in relevant projects and its initiative to participate in these projects. There are several companies in Georgia that offer technologies and services in the field of renewable energy and energy efficiency; however, the demand for these technologies is still low on the domestic market. These companies usually participate in pilot projects financed from international sources.

The private sector mainly faces the following problems:

- Lack of awareness by businessmen about the profitability of environmentally friendly technologies, as well as about the profits that can be made through their participation in the Clean Development Mechanism;
- There are no economic incentives in the country to encourage the introduction of environmentally safe technologies;
- Financial resources existing in the domestic financial markets are rarely available for new, environmentally friendly technologies.

2.4. PROBLEMS AND CAPACITIES AT THE INDIVIDUAL LEVEL

The country has highly skilled staff in technical and natural sciences – geographers, climatologists, hydrometeorologists, geophysicists, etc. However, there are not enough experts who can develop effective medium- and long-term strategies, policies, programs and plans in the field of environmental protection, including climate change. Critical is the lack of professionals in specific areas at the global level: environmental economics, environmental policy and law, preparation of environmental projects, economic and financial analysis of environmental projects, institutional analysis, etc.

Especially critical is the lack of professionals with skills to define various scenarios of economic development, to forecast greenhouse gas emissions, to develop adaptation measures, to assess the efficiency of policy instruments and the costs and benefits of alternative measures.

Although Georgia has highly skilled staff in the legal and lawmaking fields, it lacks experts in environmental law with the skills to analyze the environmental legislation of other countries and to develop an adequate and effective legislative framework in accordance with Georgia's specific context.

With some exceptions, both governmental and scientific-research and non-governmental organizations lack experts with the skills to prepare projects in the field of climate change and to hold talks with donors for fundraising. Local organizations do not have such capacities at all.

There are only a few consulting firms working on the main issues of climate change. Critical is the lack of independent professional consultants capable of assessing Georgia's vulnerability to climate change and to develop effective adaptation measures.

CHAPTER 3. CAPACITY CONSTRAINTS AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS FOR IMPLEMENTING THE UN CONVENTION TO COMBAT DESERTIFICATION

3.1. THE UN CONVENTION TO COMBAT DESERTIFICATION AND GEORGIA'S COMMITMENTS TO THE CONVENTION

The international community has long recognized that desertification is a major economic, social and environmental problem. In 1977, the United Nations Conference on Desertification (UNCOD) adopted a Plan of Action to Combat Desertification (PACD). Despite these and other efforts, the United Nations Environment Programme (UNEP) concluded that by 1991 land degradation in arid, semi-arid and dry sub-humid areas had intensified. As a result, the question of how to tackle desertification was still a major concern for the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992. The Conference called on the United Nations General Assembly to establish an Intergovernmental Negotiating Committee (INCD) to prepare, by June 1994, a Convention to Combat Desertification, particularly in Africa. In December 1992, the General Assembly agreed and adopted the relevant resolution.

The Convention was adopted in Paris on 17 June 1994, where Georgia also signed the document. In 1999 the Parliament of Georgia ratified the Convention and the country has become the Party to the UN Convention to Combat Desertification. The objectives of this Convention are:

- a) to combat desertification through joint efforts of the Parties to the Convention and
- b) to mitigate the effects of drought in countries experiencing serious drought and/or desertification, through effective action at all levels, supported by international cooperation and partnership arrangements.

The Convention sets particular obligations to the affected country Parties. In particular, affected country Parties undertake to:

- Give due priority to combating desertification and mitigating the effects of drought, and allocate adequate resources in accordance with their circumstances and capabilities;
- Establish strategies and priorities within the framework of sustainable development plans and/or policies to combat desertification and mitigate the effects of drought;
- In order to combat desertification and mitigate adverse affects of drought, develop long-term integrated strategies aimed at increasing soil fertility, conservation and sustainable management of land and water resources;
- Address the underlying causes of desertification and pay special attention to the socio- economic factors contributing to desertification processes;
- Promote awareness and facilitate the participation of local populations, particularly women and youth, with the support of non-governmental organizations, in efforts to combat desertification and mitigate the effects of drought; and
- Provide an enabling environment by strengthening, as appropriate, relevant existing legislation and, where it does not exist, enact new laws and establish long-term policies and action programs.

In pursuing the objective of this Convention, the Parties shall adopt an integrated approach addressing the physical, biological and socio-economic aspects of the processes of desertification and drought. In particular, the Parties shall implement national and regional action programs as the central element of the strategy to combat desertification and mitigate the effects of drought. The national action program shall:

- Specify the respective roles of government, local communities and land users and the resources available and needed;

- Incorporate long-term strategies;
- Give particular attention to the implementation of preventive measures;
- Allow for modifications to be made in response to changing circumstances;
- Enhance national climatological, meteorological and hydrological capabilities and the means to provide for drought early warning;
- Promote policies and strengthen institutional frameworks which develop cooperation and coordination in a spirit of partnership between the donor community, governments at all levels, local populations and community groups, and facilitate access by local populations to appropriate information and technology;
- Provide for effective participation at the local, national and regional levels; and
- Require regular review of, and progress reports on, their implementation.

Moreover, national action programs may include the following measures to prepare for and mitigate the effects of drought:

- Establishment and/or strengthening, as appropriate, of early warning systems and mechanisms for assisting environmentally displaced persons;
- Strengthening of drought preparedness and management, including drought contingency plans;
- Establishment and/or strengthening, as appropriate, of food security systems;
- Development of sustainable irrigation programs for both crops and livestock.

The Parties shall develop operational mechanisms, particularly at the national and field levels, to ensure the fullest possible coordination among developed country Parties, developing country Parties and relevant intergovernmental and non-governmental organizations, in order to avoid duplication, harmonize interventions and approaches, and maximize the impact of assistance.

The Parties shall promote the coordination of national efforts within the Convention to Combat Desertification, as well as coordinate the activities within other international agreements, especially within the UN Conventions on Biological Diversity and Climate Change, and to define an institutional framework in order to avoid duplication.

The Convention also calls on the Parties to intensify cooperation in the scientific-technological field with the purpose of collecting, analyzing and exchanging data, as well as for the introduction of scientific novelties and acquisitions, adaptation and potential use of leading technologies.

And finally, with the purpose of regular monitoring of the Convention guidelines, the Parties shall periodically prepare and submit national reports to the Conference of the Parties.

3.2. DESERTIFICATION/LAND DEGRADATION PROBLEMS IN GEORGIA

Desertification is a serious environmental issue for Georgia, which is an agricultural country with a lack of land resources. However, desertification is an issue only in certain areas of the country. Other forms of land degradation, like deforestation, wind and water erosion, overgrazing, soil exhaustion and contamination, etc., accompanied by socio-economic problems, occur over the entire territory of the country (see Box 5). Therefore, this document considers desertification within the broader context of land degradation and sustainable land management.

Box 5. Problems of desertification/land degradation in Georgia

The regions most sensitive to desertification in Georgia are Shida and Kvemo Kartli, and part of Kakheti (Dedoplistskaro, Signaghi, Sagarejo districts), where unsustainable use of the land resources (improper irrigation and cultivation, deforestation, excessive pasturing) and climate changes (reduction of precipitation levels) result in an intensification of the desertification process. About 3,000 hectares are threatened by desertification, including Shiraki, Eldari, Iori, Taribana, Naomari, Ole, Jeiran-Choli valleys, ridges and plateaus dividing them and most of the southern slope of the Kakheti Range.²⁵ Intensification of desertification can also be observed in Southern Georgia (Akhaltsikhe Depression), where almost full destruction of windbreaks have resulted in extensive wind-caused erosion.

Land degradation is a more intensive process than desertification, and it is a threat for the entire country, including western and mountain regions. According to the most recent data, about 35% of all agricultural lands show signs of degradation and especially soil erosion. While in the 1980's erosion could be observed over 380 thousand hectares, today this process covers over one million ha,²⁶ 380 thousand of which are arable land, 570 thousand are hay- and pasturelands, and 87 thousand are within the Black Sea coastal zone. In arid and semi-arid zones of eastern Georgia, wind erosion can be observed over 105 ha of arable lands in 18 administrative districts.

In addition, high and medium salinity can be observed over 59,220 ha and on 54,340 ha respectively²⁷.

Land degradation in Georgia is a result of climatic-topographical peculiarities, geodynamic activities, uncontrolled forest cutting and destructive agricultural practices (uncontrolled pasturing, intensive farming, ploughing of slopes, open-pit mining, etc.).

²⁵ Environmental Action Plan for Georgia, Ministry of Environment, Tbilisi, 2000.

²⁶ National Program for Soil Protection and Improvement of Fertility in Georgia, Tbilisi, 2002; Caucasus Environmental Outlook, CEO-2002, UNEP/GRID-Tbilisi.

²⁷ The National Program on Combating Desertification, Tbilisi, 2003.

3.3. CAPACITY CONSTRAINTS IN THE FIELD OF COMBATING DESERTIFICATION/LAND DEGRADATION AT A SYSTEMIC LEVEL

3.3.1. Planning activities for combating desertification/land degradation and integrating them into social-economic development strategies and programs

3.3.1.1. Planning Activities for Combating Desertification/Land Degradation within the Framework of Environmental Planning

Planning activities for combating desertification/land degradation in Georgia is part of the comprehensive environmental planning process set out in the Law on the Protection of the Environment (1996). The Law envisages the development of an environmental planning system including long-term strategic planning (sustainable development strategies), five-year planning (national environmental action plan) and drawing up environmental management plans for the specific sites. Environmental action plans shall also be developed at regional, local and sectoral levels.

Georgia still has not elaborated a strategy for sustainable development. In 2000, the *First National Environmental Action Plan (NEAP)* was approved. This is the major document for environmental policy existing in Georgia at this time, and stipulates investment and technical measures necessary for the solution of priority problems for 2000-2004.

The first NEAP considers desertification problems within the view of general land resource management problems. The Program prioritizes problems of soil erosion, salinity, water saturation and agro-chemical pollution of agricultural lands. In order to address these problems, the Program sets out a number of investment and institutional measures. The main responsibilities for their implementation fall to the Ministry of Agriculture and Food and the Ministry of Environment. However, due to lack of finances and other barriers, most of these measures are still unimplemented.

The National Action Plan for Combating Desertification of Georgia (NAPCD) has been developed by the Scientific Research Center for Recovery of Endangered Species (NACRES), with direct coordination by the Ministry of Environment, and was approved in 2003. Within the scope of their respective capabilities, all stakeholders and academic institutions, as well as the representatives of local authorities, participated in the development process.

Relying upon the key strategic principles of the Convention to Combat Desertification, NAPCD identifies the priority regions facing the risk of desertification, defines the main factors resulting in desertification for these areas, and determines short- and medium-term (2003-2007) action plans for combatting it, along with setting out expected outcomes and implementation schedule. Particularly, the Programme proposes scientific-research measures, as well as biodiversity conservation, raising environmental awareness of society, monitoring desertification, agricultural and international cooperation measures.

NAPCD has limited financing. It funds only small-scale pilot projects, limited scientific research, the development of program/plans and measures for carrying out pre-implementation activity. The Program pays less attention to investment and institutional measures (legislative and structural changes), which would be directed towards the reduction or resolution of desertification/land degradation problems. The document includes very little information on state goals, policies and strategies in the field of combating desertification.

Some of the measures related to desertification/land degradation are included into the various environmental documents developed in Georgia. These include the **Biodiversity Strategy and Action Plan** (2005), strategies for adaptation to climate change and climate change action plan developed under the **First National Communication to the United Nations Framework Convention on Climate**

Change (1999), **Management Plan for Conservation of Arid and Semi-Arid Ecosystems of Georgia** (1999), and the **Khrami and Alazani River Basins Integrated Management Plan** (2002). However, due to the lack of political will, finances or other resources, most of the actions are not implemented.

3.3.1.2. Integration of Issues related to Combating Desertification/Land Degradation into General Social-Economic Development and Sectoral Strategies and Programs

Issues of desertification/land degradation are connected with various sectors of economy and public activity such as agriculture, transport infrastructure, forestry, and urban and rural development. Therefore, the issues of combating desertification/land degradation must be considered within development strategies and action plans of these sectors.

In 1998-2003, annual indicative socio-economic development plans were developed in Georgia. Along with other issues, they envisaged the implementation of state-funded programs (Measures for Improvement of Fertility of Brackish and Acidic Soils, Protection of Soils against Erosion, etc.) by the Ministry of Agriculture. However, funding for these programs and—subsequently-- their outcomes were minimal. Furthermore, the geographical area of application of these programs was limited. In 2004-2005, the budget of the Ministry of Agriculture still covered the same programs. The sum allocated for these programs in 2004 amounted to only GEL 150,000. Taking into consideration the fact that total area of degraded lands in Georgia exceeds 1 million hectares, it is evident that the impact of such programs is very low –the funds allocated in 2004 amounted to about GEL 0.8 per hectare.

Generally speaking, the capacities for effective planning and implementation of the measures for combating desertification/land degradation in Georgia are seriously limited, and yet the lack of financial resources is not the major problem. We outline the following issues:

- Lack of experienced personnel familiar with planning and implementing sustainable land management measures under conditions of a market economy; there are no guidelines, manuals or instructions for planning, implementing and monitoring the measures on combating land degradation;
- There are no mechanisms for the economic evaluation of consequences of degradation/desertification or the costs for addressing them;
- The participation of environmental authorities, scientific and non-governmental organizations in sectoral planning process is minimal at best. Communications between these bodies and organizations are poorly arranged and inefficient.

During the Soviet era, control and planning of huge state-owned agricultural lands was easier, but later the state failed to find resources for introducing new monitoring, planning and management mechanisms to fit the radical changes and new types of property. This has resulted in the appearance of countless small, independent farms. Currently, there are no mechanisms to regulate the relationships between the state and small-scale private entrepreneurs in place. It is almost impossible to control their activities, thus many activities result in land degradation/desertification. The Ministry of Agriculture, which has tremendous practical experience in planning and managing measures addressing degradation of agricultural lands, has still failed to develop any new approach to the new economic context. This can be clearly observed by reviewing the latest state-funded programs implemented by the Ministry of Agriculture, all of which are oriented towards technical problem resolution and do not consider institutional issues such as changes in legislation, institutional improvements, innovative approaches, or public awareness.

The situation is more or less similar with regard to the management of non-agricultural lands. The rights and responsibilities are dispersed among a large number of local or central authorities. Due to the absence of state policy, these authorities fail to develop their own strategies to address of land degradation or to implement monitoring and management of the sector falling under their responsibility.

Effective planning and management of land use is also hindered by the fact that there is no strong public institution to take the overall responsibility for these issues. The amendments to the Law on Structure, Authorities and Activities of the Government of Georgia in March 2005 still did not bring any clarity into the matter. The Law failed to effectively define the rights and obligations of the Ministries of Agriculture and of Environmental Protection, while such rights and obligations obviously overlap. This creates further potential for serious intersectoral conflicts. It seems obvious that this situation will further reduce efficiency in planning and managing measures for combating land degradation. The situation is aggravated by the fact that there is also significant overlapping in functions of local and central authorities, as well as in the functions of units of the same authority i.e. structural units of the Ministry of Environment (Land management Unit, Forestry Department, Department for Protected Areas, regional offices of the Ministry).

3.3.1.3. Planning at the Local Governance Level

Georgian legislation grants a wide range of powers to local government and elected councils to develop and implement social-economic programs. Local authorities and administration are empowered to plan and implement local integral or sectoral environmental programs complying with the environmental legislation. These rights are granted by the Laws on Environmental Protection, on Water, on Protection of Atmospheric Air, on Wild Animals and the Forestry Code. In practice, no such planning or implementation is being performed. This is due to the low political demand for process planning and management at these levels. However, very often, the absence of planning activities results from extreme institutional weakness of the local government and self-governance bodies. Their financial, technical and human resources are so miserable that even if activities are planned, the chance for successful implementation is very low. Thus local authorities have little motivation to plan and monitor the measures (especially environmental activities) at local levels.

3.3.2. Financial Resources

Till 2004, the budget of the Ministry of Agriculture envisaged the implementation of soil protection programs, such as the State Program on Protection of Soils from Erosion or the State Program on Improvement of Brackish and Acidic Low Fertility Soils. However, in reality, financing these programs were more difficult than planned initially, and thus their outcomes were minimal. For instance, the total estimated and approved cost of the State Program on the Protection of Soils from Erosion (1999-2005) amounted to GEL 28.481 million²⁸ while in reality the funds allocated for its implementation during 1999-2002, amounted to GEL 359,201, which was 21.4 times less than envisaged.

Although national budgetary revenues have almost doubled within the last two years (2004-2005), the state financial resources are still limited (the budgetary revenues for 2004 amounted to GEL 1,773 million, or USD 928 million²⁹), and are primarily allocated to foreign debt service or to such sectors, as defense, judicial and social security.

Unlike other environmental fields (i.e. biodiversity conservation), external financial assistance in combating desertification/land degradation is negligible. The capacities of state, private or NGO sectors in identifying and developing projects and negotiating with international financial institutions for

²⁸ Source: State Programme of Georgia on Soil Protection and Improvement of Fertility, Ministry of Agriculture and Food of Georgia, Tbilisi, 2002

²⁹ Average rate for 2004 – 1 USD = 1.91 Lari

fundraising are insufficient. GEF, in spite of being the financial mechanism of the Convention to Combat Desertification, has not financed any project in Georgia so far.

The main reason for the financial backlog existing in the sector is the absence of effective, functioning mechanisms for resource mobilization and distribution, management and control. This is mainly caused by the present practises in land property and use. Agricultural lands, to which the vast majority of degraded lands can be attributed, are divided into a huge number of small and the very small plots. Agricultural activities on such plots are not financially sustainable or, in the best case, less profitable. The market financing models approved and recognized at the global level are inapplicable here. It is practically impossible to implement any environmental protection measures in such a small plots with the area of one or just a few hectares. What is more important is that it is very hard to cover any financial investment if a farmer fails to fulfill his obligations. Global experience shows that most effective agricultural financing mechanisms work in cases where the plot is financially viable. In case of failure by the landowner to fulfill his obligations, the plot is transferred to the creditor. As a whole, the application of such a mechanism promotes the consolidation of agricultural lands and the development of relatively effective economies and agricultural production. Taking into account the current political situation in Georgia, it is practically inconceivable to employ these mechanisms. Accordingly, the successful solution of desertification/land degradation problems in the nearest future seems to be very improbable. Furthermore, the property, use and management of publicly owned sites (e.g. pastures, windbreaks, etc.) are still unregulated, which hampers funding for measures to address degradation issues.

3.3.3. National Legislation in the Field of Land Degradation and the Problems with its Enforcement

In Georgia the issues of land resources management and conservation, including protection against desertification/degradation, are regulated by a number of laws. One part of these laws is directly related to land protection issues, while the other regulates the issues of land property and use, which, evidently, are greatly affecting the nature and efficiency of their use.

The first group includes legislative acts like the Law on Soil Protection (1994), Law on Conservation of Soils and Restoration-Improvement of their Fertility (2003), Law on Land Melioration (1997, with amendments in 2000 and 2001), Law on Mineral Resources (1997) and Law on Oil and Gas (1999).³⁰

The following laws can be included in the second group: Law on Ownership of the Agricultural Lands (1996), Law on Registration of Lands (1996), Law on Compensation for Damage and Costs of Reclamation of New Lands Instead of the Agricultural Lands Transferred to Non-Agricultural Activities (1997), Law on Transferring into Private Ownership of Non-Agricultural Lands Being used by Natural Persons and Subjects of Private Law (1998), Law on State Registration Fees for Land Plots and Real Estate Linked with Them (1999), Tax Code (2004).

Existing legislation that regulates land degradation issues is very general. The responsibility for its enforcement falls to too many agencies, and coordination between them is either not regulated, or regulated very inefficiently, with frequent overlapping of functions. This causes conflicts and creates fertile ground for corruption and illegal activity. A legislative framework is not possible as no land code is in place that regulates all land use issues in the country.

³⁰ There are a number of laws that are not directly connected to land protection issues, but significantly influence this sector: Law on Environmental Protection (1996), Law on Environmental Permits (1997), Law on State Environmental Expertise (1997), Law on System of Protected Areas (1996), Law on Plant Protection from Harmful Organisms (1994), Law on Pesticides and Agrochemicals, (1998), Law on Water (1997), Law on Nuclear and Radiation Safety (1998), Law on Fees for Use of Natural Resources (2004), Forest Code (1999).

Adoption of legislative acts is not accompanied or followed by elaboration and adoption of subsequent bylaws and guidelines, or this process is very slow. For example, no normative acts, regulating land cadastre issues, have ever been developed. Law enforcement mechanisms are either insufficient or unrealistic. Often responsibility for law enforcement is delegated to authorities, such as local governments, who are not ready or willing to perform such tasks. The problem is further aggravated by the fact that accountability of state and public authorities is very low.

Generally, the existing legislation has liberalized land use practices, and created potential for the formation of a land market. However, this land market development process is very slow. This is a main obstacle for land consolidation, creating barriers to efficient use of land resources and to addressing land degradation/desertification problems

The process of changing land property types is inconsistent and not yet accomplished. Thus, much valuable agricultural land remains beyond effective control and management, thus contributing to land degradation/desertification. First of all, this refers to overgrazing, which, represents one of the major environmental problems in Georgia and can serve as a good example to illustrate the concept of “the Tragedy of Commons” known in the theory of economics. Also, the non-regulation of ownership issues for former state property sites (irrigation facilities, for instance), can be considered another example of an issue outside of effective control and management.

Sometimes new laws are adopted and old laws, intended to be replaced, are not canceled formally. For example, the Law on Conservation and Restoration-Improvement of Soils was adopted in May, 2003 without any indication of whether the 1994 Law on Protection of Soils was canceled or not, and if not, what its status was.

There is no effective monitoring of law enforcement. This function is not distinguished from land quality monitoring. The development of laws and bylaws is mainly carried out by bodies interested in maximally protecting their own interests, and does not allow the participation of other agencies or society in the lawmaking process. Discussion of draft laws and bylaws is either superficial, or does not take place at all.

The existing laws are rarely publicized. As a result, not only the subjects of the law (private land owners, for example), but also those who are responsible for its enforcement, have little knowledge of the main principles and application procedures of the law.

3.3.4. Economic Instruments Applied in Combating Land Degradation

Countries use different market instruments for the protection of land resources and soils. Most popular among them are subsidies (grants), which are awarded to farmers as a compensation for retaining from land cultivation, constructing windbreaks, taking anti-erosion measures, not using pesticides or introducing other environmentally friendly practices.³¹ In Georgia these subsidies are not paid.

As a whole, issues arising from the use of economic instruments in the field of land degradation can be divided into two subcomponents:

1. In Georgia, there are economic instruments, including fees on the use of natural resources and fines on violation of usage rules, intended for stimulation of protection and sustainable use of natural resources (including land resources), but their effect is minimal. Public institutions, and particularly the structures responsible for law enforcement, are weak; resistance from the persons and organizations falling under these mechanisms is very strong; the traditions of non-obedience are still in place. For instance, the Administrative Code of Georgia envisages penalties for activities like violation of the rules on protection of land resources, removal of fertile layer of the soil, construction of the facilities negatively affecting land quality, damaging hayfields and pastures on lands belonging to the state forestry fund, violation of norms and rules on use of chemical substances in the environment. The penalties vary within a range of GEL 10-2,000. The Law, along with the obligation of payment of the mentioned penalties, also envisages compensation of the damage caused to the environment. However, despite a number of registered violations of land use rights, incomes received from penalties and damage compensations are extremely low. This fact indicates that law enforcement and penalty administration are at a very low level, which means that existing economic instruments are inefficient. The same situation can be observed with the fees for the use of timber resources, which is regulated by the Law on Fees for Use of Natural Resources.³² The impact of this fee is very insignificant, and means that this specific economic instrument is ineffective within the specific socio-economic and institutional context currently existing in the country. For instance, it does not consider the actual timber demand either at the domestic, or at the international market level.

2. In spite of reforms undertaken in the agricultural sector over the last several years, this process is not accomplished yet. By January 2005, only 25% of arable land has been privatized, and 30% of them rented. Most of those privatized and rented form small-scale farms, which, according to the current Tax Code, are not subject to any tax payment. Between 1997-2004, in Georgia, there was a tax on the use of agricultural and non-agricultural lands, which should have been paid by all physical or legal entities owning land plots of any size. However, the effect of this tax, in terms of soil protection and sustainable use, was minimal. According to the new Tax Code adopted in 2004 and in force since 2005, this tax has been abolished. Until January 1, 2007 though the new Code exempts private incomes from taxes on the sale of agricultural production, if such income does not exceed GEL 100,000 per annum. Besides, according to the Code, private persons owning up to 5 ha plot by March 1, 2004, and those whose income does not exceed GEL 40,000 are exempt from property tax. Farmers using tractors or combines for agricultural purposes are also exempt from income tax.

Such a taxation system encourages the preservation of the current, non-effective agricultural structure, which is based on a huge number of small and very small lands; hinders their consolidation and introduction of modern market mechanisms in agriculture; stimulates falsification of reporting; and fosters corruption. This means that the state does not have any effective mechanism to control most agricultural activities in Georgia, except by applying administrative pressure. This can significantly reduce the efficiency of the measures to combat degradation/desertification in uncontrolled areas.

³¹ Economic Instruments for Pollution Control and Natural Resources Management in OECD Countries: A Survey. ENV/GEEI998)35/REV1/Final, OECD, 1999

³² In 1994-2004, there was a tax on the use of natural resources, which was regulated by the Tax Code of Georgia

It can thus be said that currently there are no effective economic instruments for stimulating sustainable land use practices in the country. Another reason for the absence of economic instruments, along with a lack of political will, is the lack of environmental economists capable of developing effective economic instruments.

3.3.5. Information Systems and Monitoring in the Field of Land Degradation/Desertification

Revealing the scope and trends of the desertification/land degradation process, planning measures to address these issues and assess the efficiency of implemented measures all require a broad variety of information/data. This is also essential for national reporting (environmental reports, statistical reports, etc.) Besides internal information requirements, countries have international reporting commitments. In particular the Convention to Combat Desertification requires parties to prepare periodic reports reflecting the status of implementation of the Convention's provisions. These reports should be supported by current information and data.

Generally, Georgia's lack of modern environmental information means data collection and statistical systems are deficient. The control of accuracy and quality of data is non-existent, which seriously undermines the reliability of the information obtained. Decision-making is performed on the basis of insufficient or incorrect information. Monitoring implementation is superficial, or not performed at all. Existing information is obsolete and even the most essential data files have not been updated for 15 years. For instance, the data on land degradation/desertification included in this report dates from the end of the 1990s, and the land inventory formerly carried out every 5 years, was performed for the last time in 1990.

The weaknesses in the environmental monitoring system and lack of information resources are caused by:

- Absence of a clear definition of the roles and responsibilities of relevant state organizations and scientific-research institutions in the field of monitoring, and lack of a clear distribution of functions among them;
- Minimal financing of monitoring equipment and infrastructures;
- Non-systematization of data obtained by scientific-research institutions and NGOs, and no unified database. Often, necessary information is not available for stakeholders or organizations.

Even when good quality modern data (i.e. data on land cadastre) exists, they are not used in development and decision-making processes. Therefore, the data don't influence measures undertaken for improvement of environmental protection, including measures on combating land degradation. Most public officials do not know how to work with systemized information, are not aware of its importance, and do not use it in the decision-making process. A system for preparing analytical or informational materials necessary for decision-making does not exist.

3.4. CAPACITY ASSESSMENT AT THE INSTITUTIONAL LEVEL

3.4.1. Capacities of Governmental Organizations

3.4.1.1. Mechanisms for Interdepartmental Coordination

In 1999, at the initiative of the Ministry of Environment and under the presidential decree, the Permanent State Commission for Implementation of the UN Convention to Combat Desertification (UNCCD) was established. The Minister of Environmental Protection and Natural Resources chaired the Commission. The Commission included representatives from various bodies actively participating in resolution of desertification/land degradation problems (Ministries of Agriculture and Food, Economics, Industry and Trade, Foreign Affairs, Urbanization and Construction, Refugees and Settlement, State Department for Land Management, etc.) and the academic sector. The main function of the Commission was to coordinate and supervise the implementation of the UNCCD in Georgia.

In 2001, the Scientific-Advisory Council to the State Commission of UNCCD was established, which included representatives of research and educational institutions. The main purpose of the Council was to plan and develop programs and consult with the State Commission on activities and approaches.

Despite its various weaknesses, the creation of a permanent interdepartmental state commission and scientific council was a step forward in establishing coordination mechanisms and improving stakeholder participation in the decision-making process. Unfortunately, for the last two years, due to the continual reorganizations of public structures, neither the Commission, nor the Council met. These bodies need to be composed anew, and their goals and objectives, functions, competences and authorities need thorough revision.

3.4.1.2. Governmental Organizations

The main institutional problem in the field of combating desertification/land degradation is that there are several state institutions for this sector without clearly defined functions, goals and objectives. The functions are not clearly defined even among various divisions of the same organizations. Under the current administrative reform, a number of previously independent departments were merged into functional units of various ministries; however, their competencies and relationships with other units are not yet defined.

This primarily relates to the Ministry of Environmental Protection and Natural Resources, which in 2004 incorporated several previously independent state departments, which are linked to desertification/land degradation problems (Departments of Forestry, Protected Areas, Hydrometeorology, Geology and Cartography-Geodesy). However only specific functions of other departments (i.e. Department of Land Management) were transferred to the Ministry, thus structural and functional optimization still remains a problem.

Special attention should be paid to the distribution of functions and resources of the Department for Land Management situated between Ministries of Justice, Environment and Agriculture. According to the Law of Georgia on Structure, Authority and Activities of the Georgian Government³³ (Chapter XII, Transitional and Closing Provisions, Article 35, Paragraph f), the previously independent State Department for Land Management was merged with the Ministry of Justice, though its functions and responsibilities within this Ministry have not been defined. Some of this Department's functions relating to "protection and rational use of the land, measures on combating soil erosion, restoration and

³³ The Law of Georgia on Structure, Authority and Activities of the Georgian Government, 11.02.2004. Chapter XII, Transitional and Closing Provisions, Article 35, Paragraph f

preservation of soil fertility, implementation of the state control in accordance with the requirements of the Law on Purposeful Use and Protection of Lands, creation of unified data bank on status of land resources”, were transferred to the Ministry Environment Protection and Natural Resources. Accordingly, the new Department (“Unit” since 2005) for Land Management was established within the Ministry.

On March 10, 2005, the Law of Georgia on Structure, Authority and Activities of the Georgian Government was amended, as a result of which the functions related to land management were again redistributed: the Ministry of Environment was granted the functions and authorities concerned with the requirements of the Law on Purposeful Use and Protection of Lands, including the development of rules for removal, storage and use of the fertile layer of soil; implementation of state control over development and implementation of the measures for conservation of polluted and deteriorated lands; state control over implementation of measures against soil erosion; decision making on re-categorization of lands; participation in allocating of land plots, identification of their borders and their separation, in accordance with the rules stated by the law.

In addition, the local (district) departments of Land Management Department were abolished as a result of reorganization. Hence, currently, in the regions there are not any units nor even specialists (land surveyors) who can control land use process at the local level. This, of course, significantly reduces the efficiency of the land management unit, since effective control and management from Tbilisi of local, usually small-scale processes are quite difficult.

Under amendments to the law in 2005, part of the land management functions were transferred to the Ministry of Agriculture. Unlike the Ministry of Environmental Protection and Natural Resources, the Ministry of Agriculture has legalized functions under these amendments that have already been carried out by the Ministry of Agriculture, for example, rational land-use, restoration and maintenance of the fertility, implementation of anti-erosion measures, etc. At the same time, some functions that obviously imply control and monitoring of land use that should be undertaken by the Ministry of Environmental Protection (land consolidation, assessment of soil quality and creation of unified data bank of soil conditions, for instance), have been assigned to the Ministry of Agriculture as well.

Thus it can be concluded that amendments made in March, 2005 did not clearly separate roles and functions of the various agencies in combating desertification/land degradation, but rather aggravated the situation. Accordingly, it is necessary to take steps to draw up a legal framework to allow for efficient institutional performance

3.4.2. The Academic Sector

During the Soviet era, a powerful system of scientific-research institutions working in the field of protection and use of soils was established. This system still includes more than 10 scientific-research institutions, a number of departments and laboratories of the Tbilisi State and Agrarian Universities. Among them are:

- Vakhushti Bagrationi Institute of Geography of Academy of Sciences of Georgia;
- Institute of Geophysics;
- Scientific-Research Institute of Environmental Protection;
- Scientific-Research Institute for Agricultural Radiology and Ecology of Academy of Agricultural Sciences of Georgia;
- M. Sabashvili Scientific-Research Institute of Soil Sciences, Agrochemistry and Melioration of the Academy of Agricultural Sciences of Georgia;
- State Research Institute for Land Planning (Sakmitsproekti).

Formerly, these institutions were quite successful in carrying out research on desertification/land degradation issues. Their activities were secured by the uninterrupted financing by the government. At the same time, the less attention was paid to the practical application of the research results. Research priorities were not clearly identified and activities of research institutions did not include (or to a very insignificant extent) issues of strategic planning and policymaking. Subsequently, the collapse of the old financing system caused a severe crisis in the scientific institutions that is not yet resolved.

Practically all research institutions of Georgia are characterized by the following:

- Available governmental financing does not cover their real needs and is symbolic. Adequate financing for specific projects is available only from international donors, and this financing rarely covers the issues of combating desertification/land degradation;
- Salaries are extremely low. This is aggravated by poor working conditions. Infrastructures (premises, laboratory equipment, transport means, etc.) are outmoded and do not function. Modern devices, for example, and even common computers, are rarely available, or provided through international assistance. For the last 15 years no acquisitions for scientific libraries have been made;
- Therefore, the motivation of employees is extremely low. Most of the active specialists who had better capacities for adapting to the new conditions moved from the institutions long ago and are now only formally on the employment lists. Most of the remaining researchers are close to or already retired. No new staff is being hired.
- Accordingly, the performance of these institutions (fieldwork and applied research), is at the lowest level ever. The situation is especially dire for monitoring desertification/land degradation processes and updating databases, which are obsolete and do not reflect the present reality.

The situation is further complicated by the current reform of the educational/scientific sector. Its specific goals, particular measures and implementation schedules are not yet understood by the public. The only thing that is clear for everybody is that the reform implies consolidation and optimization of existing institutions, which will obviously result in dismissal of many current employees. An uncertain future further lowers employee morale and minimizes the efficiency of current activities undertaken in the sector.

At the same time, the research and analytical potential existing in these institutions is still quite high, and it could be successfully used in spheres like monitoring the soil, developing measures for the preservation of land quality and restoration of deteriorated lands. The loss of this potential may create even greater difficulties in the field of sustainable land management in Georgia. Therefore, it is necessary to optimize the existing scientific-research infrastructure to ensure the effective use of expert potential still existing at scientific-research institutions. It is also necessary to restructure the existing scientific-research institutions and create one central research center for land management problems. This center should unite highly skilled staff that still work at different scientific-research institutions, as well as their operational infrastructure and techniques. Such a center could employ about 20-25 persons, who--besides land management issues--would monitor land degradation processes, forecast droughts and extreme situations, develop an early warning system for catastrophes, etc.

3.4.3. Non-governmental Sector

One of the most significant developments in post-Soviet Georgia is the replacement of traditional scientific-research institutions by NGOs that carry out activities mainly through international financing and technical assistance.

The NGO sector employs motivated specialists who are computer-skilled, speak foreign languages and therefore can easily communicate with their foreign partners. However, the professional qualifications of these specialists are lower than that of specialists working in the scientific-research institutions.

Until now, international donors expressed little desire for participating in the solution of desertification and land degradation problems in Georgia. The country has not yet received any financial assistance through financial instruments set out in the Convention to Combat Desertification. Accordingly, NGOs specifically interested in desertification/land degradation problems either do not exist in Georgia, or their capacities are extremely limited. On the other hand, there are a lot of NGOs operating in the fields of biodiversity conservation and environmental education. Because of the close relation of the desertification/land degradation issues to their specialization, they often have to establish links and carry out activities related to these issues.

The lack of NGOs concerned with desertification/land degradation problems significantly limits the possibilities for addressing the problem. This directly affects public awareness and its participation in solving the issues. Accordingly, the limited capacities of the NGO sector are an additional lacuna.

3.4.4. Capacities of Local Communities

The local population and communities should play a decisive role in combating desertification/land degradation. However, the majority of the population is unaware of measures needed for avoiding desertification/land degradation and does not realize the actual dangers concerned with this process. In most cases, local populations start thinking of these problems only when they encounter irrevocable negative processes or catastrophes such as landslides, intensive erosion, etc. The main reasons for this situation are:

- A large number of small-scale independent landowners/users emerged after privatization that resulted in a land resource management crisis;
- Elimination of sustainable land use traditions, which commenced in Soviet times when attention was mainly paid to large collective economies, and personal experience and knowledge of the farmers was neglected. Traditions of positive land-use practices were finally abandoned in the post soviet times, when people were forced to forget about negative impacts of desertification/land degradation in a long-term perspective, in favor of short-term benefits.

This situation is not yet duly assessed or systematically interpreted yet by the Government of Georgia. Accordingly, there are no comprehensive measures for addressing the issues, especially measures to promote community development and public awareness raising.

3.5. CAPACITIES AT THE INDIVIDUAL LEVEL

Although Georgia has had a leading place in the level of general education, the country lacks skilled experts in management of certain economic sectors. The human resources concerned with desertification/land degradation can be described as follows:

- The country has a number of environmental specialists who also are professionals in various aspects of land management. They have technical capabilities and experience for resolution of a wide range of problems. At the same time, most of these specialists are older and find it difficult to adapt to new realities. The shift in generations is very slow, mainly due to poor motivation and the low prestige of the fields of melioration, land use and agronomics. It can be expected that the country will face an acute deficit of specialists in these fields in the nearest future.
- There is a lack of experts specialized in sustainable land management, with an educational background from developed countries or those developing countries where there have been significant achievements in this sector and which apply sustainable land management practices.
- The lack of experts in both state and private sectors who are capable of developing laws and other political instruments (financial and economic incentives) working under market economy conditions is critically lacking. Despite the fact that a number of state or private educational institutions claim that they teach these issues through their courses, the real qualification of the graduates does not correspond to what has been declared.³⁴ The deficit of qualified teachers and lecturers in the respective fields in the country could be considered as the main reason for the above-mentioned. Nor are training systems in place. The curriculum functions mainly within the framework of external assistance, which is short-term and irregular, thus less effective.
- The vast majority of the qualified specialists are residing in the capital, where there are better social-economic and employment opportunities. Outside of Tbilisi, there is an acute deficit of qualified personnel due to insufficient incentives to work in these regions. Therefore, the deficiency of specialists for combating desertification/land degradation is greatest in places where there is the greatest need for them.

³⁴ The only exception is the Master's program of the Department of Economic and Social Geography at Tbilisi State University, where land management is taught based on experience gained during implementation of a KfW project.

PART 2. ANALYSIS OF COMMON CAPACITY CONSTRAINTS AND CROSS-CUTTING ISSUES

CHAPTER 4. ENABLING ENVIRONMENT AND CAPACITY CONSTRAINTS FOR THE IMPLEMENTATION OF THE RIO CONVENTIONS

The research carried out under the self-assessment project showed that there are specific issues that create common environment for all three thematic fields (biodiversity conservation, climate change, desertification/land degradation), as well as for the field of environmental protection as a whole. The solution of these issues goes beyond the environmental field, however they significantly influence the effective activities of institutions and individuals in the field of environmental protection. From this point of view, the following chapters of this document include brief information on the current situation in Georgia and the tendencies in certain areas, such as the political-economic framework, staff management policies and cooperation between governmental organizations.

4.1. POLITICAL-ECONOMIC FRAMEWORK

The November 2003 Rose Revolution launched a new stage in the political-economic life of Georgia. The political force that came to power started to implement new purpose-oriented reforms based on generally recognized ideas of human rights, democratic governance and market economy. It will obviously need several years to gain tangible outcomes of these reforms and currently the general situation is still unstable due to the unsettled political problems in Georgia's breakaway regions of Abkhazia and South Ossetia, the grave social conditions of most of the population (52% of the population lived below the poverty level by 2004) as well as legal, administrative and governance problems.

Currently, the development of key economic sectors such as energy, transport and agriculture, as well as reduction of the poverty level have been identified as the major problems in the medium term. However an unsustainable political and economic framework hampers favorable condition for authorities and the society to pay more attention to the issues of protection of the environment, including conservation and sustainable use of biodiversity, climate change and sustainable land management.

In spite of significant growth achieved within the past two years, mobilization of revenues in the state budget is still extremely low. The limited financial resources are basically directed to repaying foreign debts, ensuring a minimal social safety net for the poorest of the population and developing priority branches of economy. State funding for environmental measures is insignificant in terms of achieving real change.

Financial markets are poorly developed in Georgia. The existing economic context hampers capital investment in the field of environmental protection, including the conservation of the global environment or the sustainable use of natural resources, which would bring profit in the long term. Accordingly, the private sector has no incentives to implement environmental projects.

4.2. COORDINATION AND MUTUAL COOPERATION OF GOVERNMENTAL ORGANIZATIONS

After 2004, the new authorities of Georgia vowed to improve state management, implement structural reforms, compose governmental organizations with skilled staff, and make public officials accountable to society. The first results of these reforms can be observed: corruption has significantly decreased in governmental structures. However, among the key deficiencies of the state management system in Georgia the following are worth noting:

- Lack of cooperation and exchange of information between governmental bodies or coordination of their activities and cooperation in decision-making;
- Weak culture and tradition of political dialogue between different institutions and even inside the same organization;
- Poorly defined and distributed functions and responsibilities of various governmental organizations.

Recently the civil society's activity in political and public processes has significantly increased. Non-governmental organizations working in the fields of human rights, social and environmental protection, have been strengthened. However, the executive authority is not transparent enough. Its cooperation with the civil society is fragmented and non-systematic, depending on the interest or activity of particular persons involved.

First steps are being taken in the administrative management system towards decentralization. New models of the distribution of administrative, financial, property and legal powers between central and local authorities are being elaborated that will significantly change administration for environmental protection and other fields.

4.3. STAFF POLICY

Reform of the state management system and staff renewal has become one of the most active processes in Georgia in recent years. The new governmental authorities aim to compose a state management system with young, highly skilled staff and strengthen their motivation through significant salary raises (salaries of public officials have increased 5-8 times within past two years).

However, reforms are in their initial stages and do not cover all levels of the state management system yet (especially at the local governance level). No common state staff policy exists. Certain staff and management problems are continuing, so effective solutions are a long-term task. The following issues are worth noting:

- Public officials are not familiar with modern management, lacking experience, strategic vision and planning skills;
- Decisions are often made on the basis of personal opinions of this or that official instead of situational analysis or policy analysis;
- Persons are still often appointed to high positions due to their personal connections instead of for their managerial skills, relevant knowledge or experience;
- Many of the senior staff fail to abandon Soviet-style approaches, while a significant part of the younger staff lacks professionalism, experience, discipline and a sense of responsibility.
- Today there are no criteria for terms of reference or job descriptions clearly defining the functions and responsibilities of each employee, thus the procedures for staff discipline or encouragement are non-transparent. A culture of labor rights or managerial responsibility is far from optimal.
- There is no staff rotation;

- Present management systems do not reward individual initiative or achievements on the part of officials, which does not create an environment for the effective use of individual skills.
- Decision-making rights and responsibilities are heavily accumulated among high-ranking officials who rarely delegate these to lower levels. This reduces the motivation of lower level specialists and limits the capacity for their professional growth.

Although salaries of public officials have significantly increased, the working conditions of the vast majority are still far from international standards. Financing is not available for tangible improvements in infrastructure or technical capacity-building within governmental organizations.

CHAPTER 5. CROSS-CUTTING ISSUES PERTINENT TO THE IMPLEMENTATION OF THE RIO CONVENTIONS

The overall objective of the self-assessment project was to reveal crosscutting issues for the implementation of the UN Conventions on Biodiversity Conservation, on Climate Change and on Combating Desertification. These issues are equally important for all three thematic fields, and their resolution will have a positive effect on capacity building in terms of implementation of these Conventions.

In order to define these crosscutting issues, research was carried out in the second half of 2004 by using a special methodology. Advisory groups, consisting of stakeholders from governmental, academic and non-governmental sectors, participated in the prioritization process. The research aimed at defining priority trends in capacity building in Georgia at the current stage of development, in order to implement the Rio Conventions. This methodology helped reveal the main trends in capacities according to separate fields. Consequently, on the basis of expert analysis, crosscutting issues were defined. Addressing these issues will trigger a synergetic movement and will have a positive effect on capacity building for the implementation of all the three Rio Conventions.

The research methodology and its outcomes are reflected in the Synthesis Report on Cross-Cutting Capacity Constraints, Needs & Priorities for the Implementation of Rio Conventions on Climate Change, Desertification, Biodiversity (see project web site www.ncsa.ge). Brief information about the research outcomes is given below.

5.1. AWARENESS OF DECISION MAKERS AND GENERAL PUBLIC ON ENVIRONMENTAL ISSUES

All three Rio conventions have education and public awareness provisions relating to the relevant environmental issues. Although these conventions do not separate awareness-raising of the decision makers as such (with the exception of UNCCD Article 19.1.j), it is implied that local decision makers, especially those at sub-national levels, should be the target of awareness-raising efforts as well.

Box 6. Requirements of Rio conventions in terms of raising public education and awareness

UNFCCC Article 4.1.i. Promote and cooperate in education, training and public awareness related to climate change.

Article 6.1.a. Promote and facilitate ... the development and implementation of educational and public awareness programs on climate change and its effects.

UNCCD Article 19.2. Promote understanding of the causes and effects of desertification and drought.

Article 19.3.g. To that end to train scientific, technical and management personnel.

Article 19.1.j... Training of decision makers, managers, and personnel who are responsible for the collection and analysis of data for the dissemination and use of early warning information on drought conditions.

UNCBD Article 13. Promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity.

against degradation. Although decision-makers were not interrogated separately, we can suppose that results are similar to those of the population at large.

The fact that neither the society nor decision makers consider environmental issues as a priority is caused by several unsolved problems in the country, such as political instability and threats to territorial integrity, poverty and social welfare, lack of law enforcement, etc. It is obvious that if we neglect the environmental issues today, we will have to bear much more expense to eradicate the problems in future.

Diagram 1. Priority areas for state investments (results of interrogation)

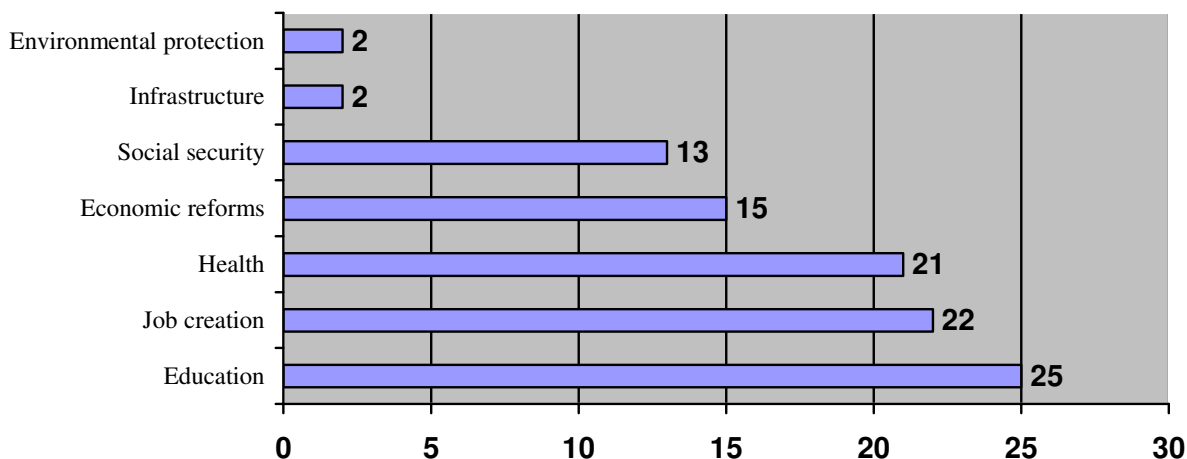
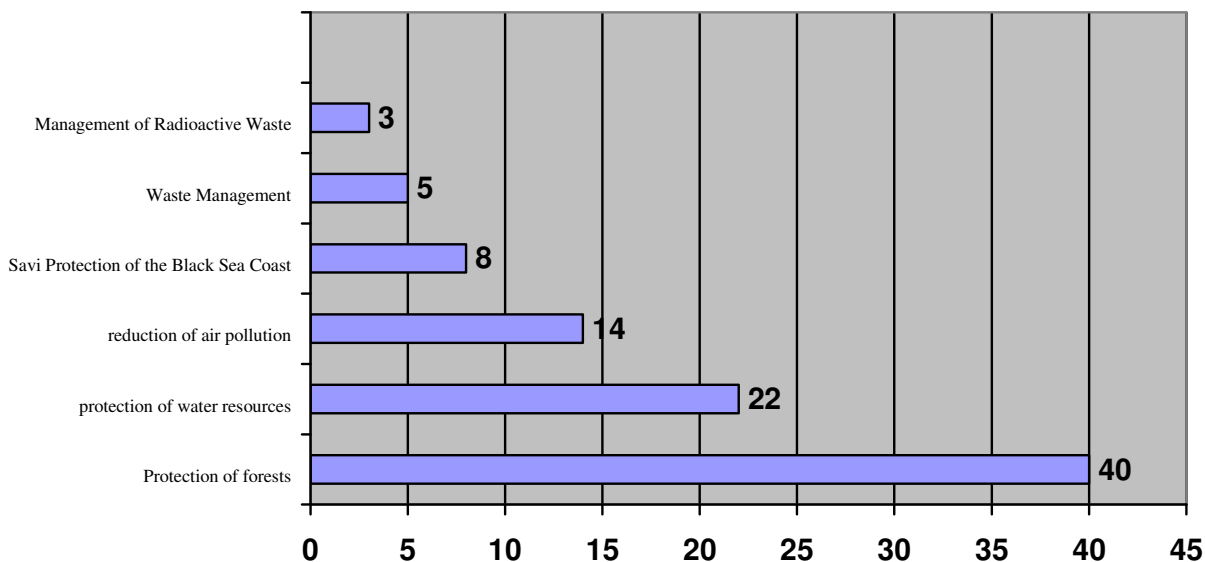


Diagram 2. Priority areas for state investments in the field of environmental protection (results of interrogation)



One of the main reasons for the low level of public awareness in Georgia is the weak integration of environmental protection issues into secondary and higher educational curricula. Only a few higher educational institutions in the country teach environmental management issues but the quality of teaching is very low and does not comply with international standards. This is especially true of such subjects as modern environmental policy, economics, legislation and environmental journalism.

Another cause for the low level of public awareness is related to the underdeveloped system for data collection, analysis and dissemination. This will be discussed later in this report.

A third cause for lack of awareness is the poor presentation of research results due to the poor communication skills of researchers for presenting results in an easily understandable form for decision makers.

State programs and projects on raising awareness in the field of environmental protection are irregular and are mostly implemented within occasional foreign-funded projects.

Making information for various level decision makers about international environmental conventions, including the Rio conventions, as well as about the country's commitments to these conventions has been minimal. Knowledge of current environmental legislation in the country aimed at promoting the implementation of these conventions is also insufficient. Therefore, when making decisions at the governmental level, the requirements of the conventions and the Georgian legislation are not taken into consideration. This triggers conflicts between state environmental organizations, non-governmental organizations and the society at large.

Public officials lack knowledge about the benefits of biodiversity conservation, implementation of preventive measures against land degradation and other practical steps necessary for successful implementation of the conventions.

The impact of NGO-implemented projects on awareness raising is limited and irregular. Mass media usually covers ecological problems, while little attention is paid to the issues of eradicating the root causes of these problems.

We can conclude that it is urgent to create public awareness through information campaigns, printed materials and implementing reforms in the educational system. To achieve this it is necessary to:

- Strengthen capacities of non-governmental organizations to ensure that awareness raising programs cover wider strata of the population;
- Strengthen media capacities to report on environmental issues;
- Increase knowledge and awareness of decision makers about national commitments, and conventions, as well as about legislation currently in force that promotes the implementation of these conventions;
- Incorporate relevant environmental issues into school curricula. This is the requirement of all three conventions and therefore one of the opportunities for synergy is to create a combined multidisciplinary curriculum.

It should be taken into account that the population (especially in rural areas) has acquired knowledge and experience about conservation and the sustainable use of natural resources, and that this knowledge should actively be used in the decision making process. While planning and implementing environmental measures it is necessary to preserve and deepen communications between decision-makers and civil society.

5.2. STRATEGIC PLANNING CAPACITIES IN THE FIELD OF ENVIRONMENTAL PROTECTION

Achievement of the objectives of the Rio conventions requires a favorable policy framework that includes the development of comprehensive long-term strategies, programs and action plans relevant to biodiversity, climate change and land degradation, as well as integration of specific concerns into policies of other sectors that have an effect on natural resources. The conventions encourage countries to cooperate in the development of sub-regional and regional action programmes as well.

Box 7. Requirements of Rio conventions for preparation of strategies, programs and plans in relevant fields

UNFCCC: Article 4.1.b. Formulate, implement, publish and regularly update national and, where appropriate regional programs containing measures to mitigate climate change ... and measures to facilitate adequate adaptation to climate change. Article 3. ...Policies and measures should be integrated with national development programs.

Annex V, Article 3. National action programmes shall be an integral part of the policy framework for sustainable development.

UNCCD: Article 5.e. Provide an enabling environment by ... establishing long-term policies and action programmes. Part III, Section 1 – Entire section deals with the development of action programs for addressing land degradation.

UNCBD: Article 6. Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes; Integrate, as far as possible and as appropriate, the conservation and sustainable use of biodiversity into relevant sectoral or cross-sectoral plans, programmes and policies.

In order to implement the Rio conventions, between 1999 and 2004 Georgia developed the following strategic documents and programs:

- The First National Communication of Georgia on the Implementation of the UN Framework Convention on Climate Change (1999),
- The National Environmental Action Plan of Georgia (NEAP, 2000),
- The National Program on Combating Desertification (2002),
- The Biodiversity Conservation Strategy and Action Plan (2004).

Moreover, the measures connected with conservation and sustainable use of biodiversity, climate change and desertification/land degradation were included in the annual indicative plans on social-economic development of the country (1998-2003), as well as in the Poverty Reduction and Economic Growth Program of Georgia. However, the actual level of implementation of environmental measures envisaged by these programs and plans has been significantly lower than planned due to lack of relevant financial, human and technical resources, as well as political will.

In terms of environmental planning and the integration of environmental issues into social-economic development programs, Georgia faces the following problems:

- State organizations lack knowledge of any approaches and methods, widely used by the leading countries in the field of environmental protection planning, such as: identifying factors which threaten the environment; assessment and prioritization of threats and their root causes; definition and prioritization of effective and cost-efficient measures for the eradication of these causes; assessment of necessary resources, including financial and human, for implementation of these measures; activity and schedule planning.

- Limited number of experts capable of conducting technical, financial or economic analyses of alternative measures for biodiversity conservation and sustainable use, mitigation of climate change and eradication of land degradation;
- Public participation in the country's development strategies and local development programs and plans has been limited to specific issues and localities. Despite positive changes, public participation and its capacity to contribute and influence the decision-making processes are still limited. Public participation in the decision-making process is often influenced by the low level of public awareness regarding specific issues and civil society has not always been solicited for participation in the decision-making processes;
- Systemic planning of social-economic development and environmental protection is lacking. This includes biodiversity conservation, mitigation of climate change and combating land degradation at local levels. Up to the present not a single administrative territorial unit (region) or local governmental body has elaborated the environmental action plan³⁵. It is clear that the opportunities and the demand for a systemic approach to address problems are even weaker at the local level.
- One of the key factors that hamper planning in the field of environmental protection is a lack of reliable information about the existing environmental problems and their scales. Chapter 5.3. describes the root causes of these problems.

In order to improve planning in the environmental field and better integrate environmental issues into social-economic development strategies, it is necessary to strengthen capacities at systemic, institutional and individual levels in the following directions:

- The Georgian government should develop medium- and long-term strategic planning procedures for social-economic development and introduce practices to allow the participation of stakeholders in the planning processes; it is necessary to develop the institutional mechanisms to coordinate planning, to exchange information among the institutions and to develop a "communications culture";
- Taking into account international experience³⁶, the Ministry of Environment should develop methodology and procedures to provide planning, as well as participation of all stakeholders in the decision making process;
- Develop relevant legislation and introduce strategic environmental assessment practices, to assess all economic sector development plans at an early stage in terms of their environmental impact. Aim at maximal inclusion of environmental concerns in these plans³⁷.
- Governmental organizations should strengthen their capacities to effectively set priorities and plan strategically, as well as develop social-economic strategies. For this purpose, strategic planning departments could be created in these organizations.
- Each Ministry should have a structural unit responsible for the development of environmental strategy for all sectors, and for the integration of environmental issues into sectoral development policies and plans.
- Strengthen capacities of the Ministry of Environment; especially of its Department for Sustainable Development to ensure its effective participation in the elaboration of social-economic development plans. The capacities of the Ministry as a coordination body in the preparation of the National Environmental Action Programs should be strengthened as well.
 - Strengthen capacities of structural units of the Ministry of Environment to enable them to set priority goals and develop of policies and programs in relevant fields. This requires the recruitment

³⁵ The Kutaisi Environmental Action Plan, a pilot project with the financial support of the U.S. government (U.S. Environmental Protection Agency) was developed within the framework of the regional project Local Environmental Action Plans.

³⁶ International organizations have prepared a number textbooks about the procedures of public participation in the environmental field, which can be used.

³⁷ Noteworthy is the Ministry of Environment of Georgia's cooperation with the Dutch government to introduce the strategic environmental assessment.

of highly skilled staff with policy development and planning skills. It is also necessary to retrain existing staff in this direction.

- Increase the capacities of local governance bodies to formulate local action plans and gradually improve and expand local programs.

Several of these measures should be implemented as an integral part of the process of development of Georgia's Second National Environmental Program and Sustainable Development Strategy planned for 2005-2010³⁸. The implementation of these measures will secure the quality and efficiency of both the program and the strategy, and vice versa – the process of development of the Sustainable Development Strategy and the Second National Environmental Program will be a good possibility for capacity building in the country in terms of environmental planning and effective integration of environmental issues into the social-economic development plans.

5.3. MONITORING AND INFORMATION RESOURCE MANAGEMENT IN THE FIELD OF ENVIRONMENTAL PROTECTION

All three Rio conventions share a commitment to gather, assess and make information available to diagnose environmental problems and to provide adequate support for planning.

Box 8. Requirements of Rio Conventions to Collect, Assess and Disseminate Information

UNFCCC Article 5. Support and further develop ... data collection and systematic observation, taking into account the need to minimize duplication of effort.

UNCCD Article 16. To integrate and coordinate the collection, analysis and exchange of relevant short term and long term data and information to ensure systematic observation of land degradation in affected areas and to understand better and assess the processes and effects of drought and desertification.

UNCBD Article 7. Monitor, through sampling and other techniques, the components of biological diversity important for its conservation and sustainable use paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use. .. Maintain and organize, by any mechanism data, derived from identification and monitoring activities.

Monitoring and analysing information are vitally important for decision-making as well as for the development of policies, strategies and plans for environmental protection and sustainable use of natural resources. The existence of reliable information on biodiversity, climate change and land degradation is necessary for the international inventory and national reports.

For over a decade Georgia lacked environmental information. This was caused by the reduction of observations on environmental issues on the one hand, and also because of having no functioning system for data collection, handling, interpretation, dissemination and reporting.

³⁸ According to decree 77 of the Government of Georgia, a governmental commission for the sustainable development of Georgia was set up in April 2005, which aims at developing a strategy for sustainable development. According to the Law on Environmental Protection, the government should have developed and adopted the Second National Environmental Program in 2005. However, this has not happened for many reasons.

Within the framework of the self-assessment project research was conducted in order to define the practices of management of data sources and information inside and between specific organizations existing in Georgia. Results showed that the systems of data collection and dissemination are very weak.

No comprehensive monitoring processes could check ongoing and historical data on climate change, biodiversity and desertification. Unfortunately, environmental legislation does not include even a single law or bylaw to define the institutions responsible for environmental monitoring and their mandates. Subjects of observation, environmental indicators, frequency of observations, observation methodology, procedures and methods of data collection, analysis, exchange and dissemination are not defined. Environmental monitoring issues are limited to general provisions and are dispersed among various environmental laws.

Most institutions responsible for environmental monitoring decide independently what kind of monitoring they should conduct within a year. Accordingly, the mandates of institutions in terms of data collection and analysis are not harmonized. Overlapping of functions and duplication of measures often take place. Actually, most institutions collect data on a basis of the Soviet-old inertia.

The analysis showed that in Georgia a great number of governmental and scientific-research institutions are involved in environmental monitoring activities and possess primary, statistical, analytical or research information, some of which meet the requirements of the UN Conventions on Climate Change, Biodiversity and Combating Desertification. However, the above-mentioned data is irregular.

It is noteworthy that almost all institutions conducted more monitoring activities during the Soviet period than at present, and these activities were based on firm, scientifically proven methods and were provided with impressive financial, material-technical and technological support. During the Soviet period many large scientific-research institutions supervised the environmental monitoring activities. Thus environmental monitoring was done frequently.

The centralized systems of financial, material-technical and scientific support of the environmental monitoring system and staff training were completely disrupted after Georgia gained independence. Unfortunately, the process of degradation of the system still continues. The equipment necessary for environmental observations is out of date. The lack of resources prohibits their repair, to say nothing about their renewal. Without funds, it is impossible to conduct activities and this results in a lack of data.

As a result of suspending certain types of environmental observations, relevant statistical calculations were interrupted, making it difficult to define the patterns of environmental change or to develop effective environmental measures.

In terms of long-run monitoring activities, the Hydrometeorology Department has the oldest observation data. Meteorological and hydrological observations have a history of over 150 and 100 years, respectively. In the field of meteorology, this service meets international standards of data collection, analysis, dissemination and database formation. However, due to absence of relevant program software, the same cannot be said about the fields of hydrology and environmental pollution.

The situation is dire in the field of biodiversity monitoring. Expeditions have not been conducted for a decade, hampering data renewal on flora and fauna species. Today there are specific data on the variety of flora and fauna species throughout Georgia, but no data on total number of each species.

The database for wildlife diversity exists only in hard copies (on paper), while data about plants from the Botanical Institute has been prepared in a modern electronic version for data on flora species (4 200) in Georgia.

Data on flora and fauna species in protected areas are collected annually although expeditions are not conducted, making the data on flora and fauna unreliable.

The Gulisashvili Institute of Mountain Forestry stores data about all timber species in Georgia by region; however, the information is not updated and the data are only found in written form.

Land resource monitoring is the most weakly developed field in Georgia. Soil quality observations have not been conducted in the country for past 16 years.

Most environmental data existing in Georgia are kept on paper. It is practically impossible to store these data in electronic format. Hence, the 150-year-old historical data are kept in dusty archives of institutions where even minimum security measures are not implemented. Cooperation between most institutions is very weak, and regular data exchange does not take place. In fact the demand for data is very low both from institutions and from society.

Cooperation between the scientific and governmental sectors is poor. Decision making governmental structures have closer ties with non-governmental organizations than with scientific-research institutions. Only the Hydrometeorology Department updates data on the Internet regularly (daily).

Analysis of the current state of monitoring, data collection, analysis and dissemination in all three thematic areas – biodiversity, climate change and land degradation / desertification revealed several key problems:

- Absence of legal provisions defining the institutions responsible for conducting monitoring in the fields of climate change, biodiversity and desertification, as well as their legal obligations for data collection and maintenance;
- Absence of a common approach to data collection, maintenance and accounting;
- Absence of a uniform environmental monitoring system for organized collection of scarce data in the fields of climate change, biodiversity and desertification;
- The existing monitoring network is inadequate and outdated and fails to meet ISO requirements;
- Due to the scarce funding of institutions, lack of laboratory equipment and communications, as well as chemicals or other substances, the observations network is barely maintained; the number of environmental indicators and frequency of observations has been reduced;
- Poorly functioning system for the provision and control of monitoring quality, especially in the field of certification of measurement devices and metrological provision. Hence, the reliability of observation data is low. Modern technologies to clarify data are not used at all;
- The material-technical base of the institutions is too weak to conduct monitoring activities or data collection, analysis, maintenance and dissemination;
- Most data are not digitalized. Institutions do not use modern methods of geoinformation systems and remote sensing. The methods of environmental modeling are poorly developed.

To overcome the abovementioned problems in Georgia in the fields of climate change, biodiversity and desertification and improve data collection, analysis and dissemination, it is urgent to take the following measures:

- The Ministry of Environmental Protection and Natural Resources should develop a normative act to define clear obligations for the institutions responsible for collecting, analysing, maintaining, accounting, exchanging and disseminating environmental data;
- The Ministry of Environmental Protection and Natural Resources should develop and promote the introduction of indicators developed by the European Environment Agency (EEA) and United Nations Economic Commission for Europe (UNECE) for the countries of East Europe, Caucasus and Central Asia;

- The Ministry of Environment should mobilize financial resources from the state budget and international sources to gradually develop a monitoring system;
- The Ministry of Environment should promote modern electronic information systems, data digitalization, a database, use of geoinformation systems and remote sensing at the institutions responsible for conducting environmental monitoring; create a clearing house mechanism; all of which will make data and information available for stakeholders;
- Train human resources of those institutions responsible for conducting environmental observations, in developing monitoring systems using modern electronic technologies.
- Due to scarce financial resources, Georgia does not have the means to carry out all these recommendations envisaged by the Conventions on Climate Change, Biodiversity Conservation and Desertification/Land Degradation. Hence, in terms of efficiency and synergism, it is better to focus on the selection and systematic observation of those indicators that are common to all three Conventions. Such data are shown in Box 9.

Box 9. Comparison of Data Necessary for Three Rio Conventions				
The key required data	Biological Diversity	Climate Change	Desertification/Land Degradation	
Land use (by types)	X	X	X	
Vegetable layer (by types)	X	X	X	
Forests (by types)	X	X		
Information about forestry and export of timber resources	X	X		
Forest and land property rights	X		X	
Soils (by types)	X	X	X	
Agriculture (by types)	X	X	X	
Use of fertilizers		X		
Cattle	X	X	X	
Wetlands	X	X		
Climate (temperature, precipitation, etc.)	X	X	X	
Topography (downhill, heights)	X		X	
Earth surface hydrology (lakes, rivers, precipitation)	X		X	
Desertification risk quality			X	
Flora and fauna (types of species and density)	X			
Habitats of species vulnerable to extinction	X			
Protected areas (by types and conditions)	X			
Localities	X	X	X	
Territories populated by natives	X		X	
Population (number and density)	X	X	X	
Roads	X	X	X	
Other infrastructure (transmission lines, etc.)	X	X	X	
Industrial activities	X	X		
Power transmission lines	X	X		
Power generation facilities (by types and capacities)	X	X		

Source: *Synergies in National Implementation: The Rio Agreements*. UNDP.

5.4. USE OF ENVIRONMENTALLY FRIENDLY TECHNOLOGIES

All three Rio conventions have requirements to promote technology transfer process and cooperate with other Parties. Furthermore, all three conventions established appropriate bodies for consultation on specific issues concerning the technologies and the transfer process. Thus the Convention to Combat Desertification (UNCCD) has a Subsidiary Body of the Conference of Parties – Committee on Science and Technology. The UN Framework Convention on Climate Change (UNFCCC) operates the subsidiary body for Scientific and Technological Advice. The Convention on Biological Diversity (UNCBD) established a Subsidiary Body on Scientific, Technical and Technological Advice.

The issue of transfer, acquisition and adaptation of environmentally sound, economically viable and socially acceptable technologies is important for at least two reasons:

- First, these technologies tend to be more environmentally sound – producing less harmful substances, and causing less harm to the environment than the technologies and practices currently in place.
- Second, these technologies are economically viable, producing goods and services in a more efficient way. This helps to avoid wasting human and natural resources, in turn reducing production costs in the longer term, after paying the costs of technology acquisition / replacement.

Box 9. Requirements of all three Rio conventions to promote technology transfer process and cooperate with other Parties in this regard.

UNFCCC Article 4.1.c. Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors.

UNCBD Article 16.1. ... Provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity.

UNCCD Article 10.2.e facilitate access by local populations to appropriate information and technology.

Article 12 Affected country Parties, in collaboration with other Parties and the international community, should cooperate ...in the fields of technology transfer as well as scientific research and development.

Article 18.1.a. Fully utilize relevant existing national, subregional, regional and international information systems and clearing-houses for the dissemination of information on available technologies, their sources, their environmental risks and the broad terms under which they may be acquired;

Article 18.1.e. Take appropriate measures to create domestic market conditions and incentives, fiscal or otherwise, conducive to the development, transfer, acquisition and adaptation of suitable technology, knowledge, know-how and practices, including measures to ensure adequate and effective protection of intellectual property rights.

Currently, Georgia does not have the appropriate policy, legislative or institutional framework to facilitate the technology transfer process. Root cause analysis identified several immediate causes for this problem:

- Inadequate political and social demand for technology transfer, which in turn is caused by the low awareness of various stakeholders about innovative technologies and their benefits.
- Lack of incentives and market mechanisms for adopting environmentally sound technologies.
- Underdeveloped institutional framework. Currently there is no institution responsible for making inventories of environmentally sound and innovative technologies and practices, including

traditional technologies, and with the responsibilities for their dissemination and consultation about their application. Information about technologies is not disseminated among relevant stakeholders due to absence of any technology transfer mechanism, i.e. a clearinghouse or other body.

And finally, institutions have limited capacities to select and manage technologies. Two underlying causes for this capacity constraint include poor access to information (limited access to Internet, publications) and limited capacities of individuals to establish partnerships and effectively cooperate with other Convention Parties or with relevant subsidiary bodies.

In order to use environmentally friendly technologies, Georgia should implement the following measures:

- Raise awareness of policy and decision makers, businessmen, local population about the benefits of various technologies and their application. Provide them with knowledge in novel concepts relevant to sustainable development and available technologies.
- Develop incentives and market mechanisms for the transfer of technologies;
- Establish institutional mechanisms, e.g. clearing house, for technology transfer: it is necessary to set up an organization responsible for collecting information on environmentally friendly and innovative technologies and practice, including traditional technologies. Also it should have a particular responsibility for holding consultations over the dissemination and use of these technologies.
- Strengthen capacity of private sector to select and manage technologies; increase the networking and cooperation skills of public employees regarding technology cooperation, connecting them with individuals such as international experts.

Opportunities for synergies

Synergy in the implementation of technology transfer can be achieved by charging one specific agency with the task of coordinating technology transfer process for all three thematic areas. It is necessary to set up an organization or a clearinghouse mechanism that would be in charge of collecting information about environmentally friendly and innovative technologies, as well as carrying out consultations on the dissemination and use of these technologies for strengthening the capacities of the private sector.

5.5. ACADEMIC SECTOR AND SCIENTIFIC RESEARCH IN THE FIELD OF ENVIRONMENTAL PROTECTION

All three conventions require the promotion of technical and scientific cooperation and strengthening research capabilities for undertaking various types of research. They all established special bodies for scientific, technical and technological advice that are required to provide advice on scientific programs and international cooperation in research and development.

Box 10. Requirements of Rio Conventions to promote technical and scientific cooperation and strengthen research capabilities

UNCBD Article 12 – Establish and maintain programs for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components. Promote and encourage research which contributes to the conservation and sustainable use of biological diversity;

Article 18.1. The Contracting Parties shall promote international technical and scientific cooperation ... through the appropriate international and national instruments.

UNCCD Article 12 Affected country Parties, in collaboration with other Parties and the international community, should cooperate ...in the fields of technology transfer as well as scientific research and development.

Article 17.1. Promote technical and scientific cooperation in the fields of combating desertification and mitigating the effects of drought.

UNFCCC Article 4.1.g. Promote and cooperate in scientific, technological, technical, socio-economic & other research.

Article 5.1.a. ... defining, conducting, assessing and financing research, data collection and systematic observation, taking into account the need to minimize duplication of effort.

Article 5.1.b... Strengthen systematic observation and national scientific and technical research capacities & capabilities.

There are several academic institutions in Georgia that have conducted scientific research and educational activities in the field of biological diversity for several decades. During the past decade state funding, which is of vital importance for these institutions, has shrunk to a minimum. Consequently, their activities have significantly dropped and their capacities weakened. Almost all academic institutions have encountered similar problems, such as:

- Low salaries of scientific staff;
- Outflow of skilled staff to the private and non-governmental sectors in Georgia or abroad;
- Attraction of young, highly skilled staff is complicated, thus there is an “ageing process” of scientific institutions³⁹;
- Infrastructures lacking completely, and employees have no access to even the Internet, and thus scientists and students fail to access new information in their fields;
- The capacities of participation in international conferences and seminars are extremely limited. Bad command of foreign languages, unavailability of new books and publications;
- The capacity for undertaking fieldwork and research projects is minimal. Consequently, information about the environmental situation is not regularly renewed. The data existing at the institutions are old and do not reflect current environmental conditions;

³⁹ The representatives of the scientific institutions used this term while interviewing.

- Students and scientists do not have enough capacities to acquire knowledge in new disciplines that are being developed in leading countries. There is a lack of cooperation with foreign scientific institutions in the field of research on environmental issues;
- Academic institutions have little knowledge of modern approaches to biodiversity conservation and the sustainable use of land. This is caused by the fact that during the Soviet period special attention was paid to scientific research with very little applicability;
- Higher educational curricula do not reflect important specialized subjects, such as environmental policy, environmental management, economics, legislation, geoinformation systems and satellite technologies, environmental modeling and other methods of modern research.

Along with inadequate funding, the preservation of inefficient and old management methods also exacerbates these problems in the academic institutions. During the Soviet period the institutions of the Academy of Sciences were funded without taking into account any priorities or the results of research. Although deep political-economic changes have taken place in Georgia, old forms and structures of management have remained in academic institutions. As a result, they became non-competitive and almost disintegrated. They need to be adapted to a market economy where financial resources will define the trends of their activities and generally the directions for their existence.

The links between research institutions and the Ministry of Environment are very weak. Often the Ministry has no information about research carried out in various fields, and this research does not always match the Ministry's interests in terms of using it for state policy and management.

In spite of these problems, it should be noted that the qualification of the scientists working at the academic institutions and their intellectual level is very high. With good management it would be possible to achieve significant success in the medium term.

In order to improve the grave situation at the scientific-research institutions, the Georgian government plans to undertake serious institutional changes, including optimization of infrastructure of the scientific-research institutions, funding of research through tenders and prioritization, increase salaries for scientists, etc. This reform will cover all scientific-research institutions. As for strengthening the scientific research capacities in the environmental field, this will require the following measures:

- The Council of Scientific-Research Advisors should be established under the Ministry of Environment, which will
 - assist the Ministry in the decision making process through delivering scientific information and recommendations;
 - provide exchange of information and links between the Ministry and the academic sector;
- To intensify the participation of the scientific-advisory councils in development of environmental policy and decision-making process. These councils should meet on a regular basis;
- The Ministry should promote the participation of Georgian scientists in the scientific-technical bodies of the Conference of Parties, as well as their cooperation with these bodies;
- The Ministry should carry out negotiations with the higher educational institutions over incorporating into school curricula relevant disciplines, such as environmental management and policy, environmental economics, legislation, geoinformation systems, remote sensing, natural resource management, conservative management, spatial planning, landscape management.
- The Ministry should gradually transfer to a contractual system of cooperation with the scientific institutions, when specific scientific researches are conducted by order of the Ministry, proceeding from its priority requirements.

Opportunities for synergies

The Ministry of Environment should promote strengthening of cooperation and links with international research and financial institutions (through exchange programs, partner programs with foreign institutions, internships abroad, implementation of joint research projects), as well as improvement of material-technical base of the institutions. Specific attention should be paid to strengthening capacities of those institutions that can conduct research, monitor programs and deliver information.

Strengthening research capabilities, scientific cooperation and research related activities was identified as a high priority across all three thematic areas including:

- Sustainable land management;
- Sustainable forest management;
- Integrated management of landscapes and river basins;
- Sustainable energy systems: clean energy, energy saving, alternative energy carriers/transportation/storage;
- Waste management and use;
- Non-chemical methods of combating pests, diseases, weeds.

PART 3. STRATEGY AND ACTION PLAN OF CAPACITY BUILDING FOR THE IMPLEMENTATION OF THE CONVENTIONS ON CLIMATE CHANGE, BIODIVERSITY AND COMBATING DESERTIFICATION

One of the key goals of the self-assessment process was to define a strategy and specific actions with the stakeholders, to address issues of capacity building for the implementation of the Rio conventions. To that end, the self-assessment process was carried out in several, interlinked stages:

1. At the first stage key problems were identified at systemic, institutional and individual levels, which hamper the effective implementation of the Rio conventions in Georgia. The outcomes of studies were reflected in separate documents, then synthesized into three thematic reports according to field: conservation and sustainable use of biodiversity, climate change and combating desertification/land degradation. An overview version is presented in Part I of this document.

2. At the second stage of project implementation crosscutting issues were identified, which are important for the implementation of the Conventions on Climate Change and Combating Desertification. These issues are common for all three thematic fields, and their resolution will have a positive effect on capacity building for the implementation of all three Conventions. These issues and the related capacity constraints are given in Part II of this document.

3. At the third stage of project implementation experts developed recommendations to address those capacity constraints identified in the first and second stages of the project. Consequently these recommendations have become a basis for definition of a strategy and action plan for each thematic field, and reflected in working documents:

a) Situation Analysis in the Field of Conservation and Sustainable Use of Biodiversity and Recommendations, Strategies and Action Plan for Capacity Building at Systemic, Institutional and Individual Levels;

b) Situation Analysis in the Field of Climate Change and Recommendations, Strategy and Action Plan for Capacity Building at Systemic, Institutional and Individual Levels;

c) Situation Analysis in the Field of Desertification/Land Degradation and Recommendations, Strategy and Action Plan for Capacity Building at Systemic, Institutional and Individual Levels. These documents have been discussed at the meetings of stakeholders held in Tbilisi on May 24 and August 9, 2005. They are also available on the project web page www.ncsa.ge, while the tables of recommendations are enclosed (see annexes).

4. At the fourth stage this document was prepared through synthesis of three above-mentioned documents, final strategic trends were defined and a plan of action established for capacity building in three thematic fields – conservation and sustainable use of biodiversity (chapter 6), climate change (chapter 7), combating desertification/land degradation (chapter 8). This part reflects those measures whose implementation is vital for capacity building in relevant spheres. It is worth noting that these measures also include actions already being implemented within the framework of different projects (such as the projects funded by the Global Environment Facility or other donor organizations in the fields of biodiversity and promotion of renewable energy) or which are slated for implementation within the existing plans (for example, the biodiversity strategy and action plan). While reflecting these measures in this document, we aimed at:

a) Drawing attention to the necessity of their implementation;

b) Creating a full picture of those measures which will significantly promote capacity building in Georgia for the implementation of Rio conventions;

c) Avoiding duplication of measures at the next stage.

And finally, through consultations with the stakeholders, we defined a strategy and action plan in a crosscutting direction, i.e. these measures are equally important for all three thematic fields and their solution will have a synergistic effect on capacity building for the implementation all three Rio conventions (chapter 9). The following strategic trends were defined for capacity building in Georgia:

- 1. Improvement of state planning and integration of global environmental issues into sectoral development plans;**
- 2. Financial provision;**
- 3. Improvement of legislation and law enforcement;**
- 4. Raising awareness of decision makers and society in the issues of environmental protection, including biodiversity conservation, climate change and land management;**
- 5. Improvement of information systems and monitoring;**
- 6. Improvement of cooperation and coordination under the Rio conventions;**
- 7. Staff training and upgrading;**
- 8. Strengthening of non-governmental organizations and involvement of local population in the global environmental management issues;**
- 9. Use of environmentally friendly technologies;**
- 10. Scientific researches in the environmental field.**

The following chapters of this document illustrate strategic trends and action plans in tables. Capacity building measures for each field are grouped as relevant strategic trends. At the same time, measures for each field are presented at three levels – systemic, institutional and individual. For each measure, the following are defined:

- Responsible organizations that should initiate an action or be in charge of coordination activities;
- Potential partner organizations which can contribute to the implementation of measures, including financing. Among these organizations there are central and local government bodies, non-governmental organizations and academic institutions, private sector, international financial organizations and donor countries;
- Approximate period of implementation. Initiation and implementation of measures are envisaged for 2006-2010. Some measures may be implemented on a regular basis or continue after 2010;
- Approximate cost of action and potential source for financing.

The action plan consists of 86 activities, some of which could be clustered into single projects. Total cost of all activities is approximately 12.35 mln. USD. Of this, 9.65 mln USD is expected to be financed from international sources, including international financing organizations and donor countries, while 2.70 mln USD will be allocated from the national budget. 23 actions do not require additional funding as they are either being implemented or will be implemented as routine actions of the Ministry of Environment and Natural Resources.

CHAPTER 6. CAPACITY DEVELOPMENT STRATEGY AND ACTION PLAN FOR IMPLEMENTATION OF THE CONVENTION ON BIODIVERSITY

Table 6.1. Strategic directions and actions for capacity building in the area of conservation and sustainable use of biodiversity at systemic level

N	Actions at systemic level	Responsible organization	Partner organization	Term of implementation	Budget (thousand USD)
6.1.1	Improvement of governmental planning in the field of conservation and sustainable use of biodiversity and integration of biodiversity issues in the sectoral development plans				
6.1.1.1	Elaboration of forestry policy ⁴⁰	The Ministry of Environment	Other ministries, scientific and non-governmental organizations, FAO, the World Bank.	2006	Additional financing not required
6.1.1.2	To prepare relevant guidelines and instructions in the field of conservation and sustainable use of biodiversity for various sectors of economy so that to include the biodiversity issues into the planning process.	The Ministry of Environment	Scientific organizations, international organizations, donor countries.	2007	5
6.1.2.	Improvement of financial support				
6.1.2.1	To cooperate with international financial organizations and donor countries to develop and operate innovative financial mechanisms of biodiversity conservation (for example, “debt for environment swap”, target trust funds).	The Ministry of Environment	The Ministry of Finance, international financial organizations and donor countries, including the Government of Germany	2006-2008	Additional financing not required
6.1.3.	Development and enforcement of the current national legislation in the field of biodiversity				
6.1.3.1	To develop bylaws in accordance with the framework laws and to adopt new laws that will fulfill a number of requirements of the Convention on Biological Diversity, such as: - Availability of genetic resources and equal and fair distribution of the profit gained through use of genetic resources; - Preservation and protection of traditional knowledge related to	The Ministry of Environment	The Ministries of Justice and Agriculture, international organizations	2006-2010	

⁴⁰ The project on development of Georgia’s forestry policy was launched in 2004 with the financial support of the UN Food and Agriculture Organization and will end in 2006.

	the use of biodiversity; - Regulation and control of introduction of alien species.				20
6.1.3.2	To mobilize the resources necessary for resumption of Georgia's Red Book, to conduct research activities and to obtain information.	The Ministry of Environment	International financial organizations, Non-governmental organizations and scientific-research institutes	2006-2010	250
6.1.3.3	To prepare amendments to the relevant legislative acts (including to the administrative and criminal codes) in order to improve law enforcement in terms of conservation and sustainable use of biodiversity.	The Ministry of Environment	The Ministry of Justice	2007	Additional financing not required
6.1.4.	To introduce effective economic instruments in order to stimulate conservation and sustainable use of biodiversity.				
6.1.4.1	To improve the system of taxes and dues on the use of biodiversity resources through making amendments to the Law of Georgia on Taxes on the Use of Natural Resources and the Code of Administrative Violations.	The Ministry of Environment	The Ministry of Finances, the Ministry of Economic Development	2007	Additional financing not required
6.1.5.	biousafrTxoebis sitemis ganviTareba Correction				
6.1.5.1	To adopt the Law on Genetically Modified Organisms and the related legal acts, as well as to ratify the Cartagena Protocol by the Parliament of Georgia.	The Parliament of Georgia, the Ministry of Environment	Te Ministry of Health Care, Labor and Social Welfare,	2006-2007	Additional financing not required
6.1.5.2	Capacity Building for Participation in Biosafety Clearing House Mechanism	The Ministry of Environment	Non-governmental organizations and scientific-research institutes; GEF	2006-2008	150
6.1.6.	Conservation and restoration of agrobiodiversity				
	To develop a national program on conservation and restoration of agrobiodiversity ⁴¹	The Ministry of Agriculture	The Ministry of Environment, NGO Elkana, other NGOs, local bodies, scientific institutions, international organizations, GEF, UNDP	2007-2008	50

⁴¹ Currently the GEF-funded (USD 962 000) Project on Conservation and Sustainable Use of Agrobiodiversity is being implemented in Georgia. Since 2004 the project has been implemented by a biological farming association Elkana with the support of the UN Development Program.

6.1.7.	Information systems in the field of biodiversity				
	To collect existing data and develop Biodiversity Clearing House Mechanism.	The Ministry of Environment	Scientific institutions, non-governmental and international organizations.	2006-2008	80
6.1.8.	To raise awareness of the society and decision makers in the field of conservation and sustainable use of biodiversity				
	To raise awareness on the economic and social benefits of conservation of Georgia's biodiversity through mass media, including the role and importance of the local population in management of forests, ecosystems and pastures.	The Ministry of Environment	Public television, non-governmental organizations	2006-2010	25

Table 6.2. Strategic directions and actions for capacity building in the area of conservation and sustainable use of biodiversity at institutional level

N	Actions at institutional level	Responsible organization	Partner organization	Term of implementation	Budget (Thousand USD)
6.2.1	To develop the capacities of the Ministry of Environmental Protection and Natural Resources in the field of conservation and sustainable use of biodiversity				
6.2.1.1	To define and distribute the functions of the Ministry of Environment and its structural units (the Forestry Department, the Department of Protected Areas, etc.) in the field of conservation and sustainable use of biodiversity.	The Ministry of Environment	The Ministry of Justice	2006-2007	Additional financing not required
6.2.1.2	To prepare a plan on the development of protected areas and to develop the capacities of the Department of Protected Areas (including the administrations of separate protected areas) in terms of planning and management.. ⁴²	The Ministry of Environment	GEF, World Bank	2006-2007	Additional financing not required
6.2.1.3	To develop the capacities of the Forestry Department ⁴³ through its structural reorganization and improvement of capacities for sustainable management of forests.	The Ministry of Environment	The Ministry of Finance, the World Bank	2006-2008	Additional financing not required
6.2.1.4	To develop and promote the Black Sea Ecology and Fishery Institute, as the center for conservation of the Black Sea regional biodiversity.	The Ministry of Environment	The Black Sea International Program	2006-2010	100
6.2.2.	To develop the capacities of the Ministry of Agriculture				
6.2.2.1	To establish a group of experts in the Ministry, which will address the following issues of conservation and restoration of agrobiodiversity:: - Development of an agrobiodiversity monitoring system; - Preparation of relevant laws and programs promoting the conservation and restoration of agrobiodiversity;	The Ministry of Environment	The Ministry of Finance, Scientific institutions, the Ministry of Environment, international organizations.	2007-2009	

⁴² Since 2002 with the support of the World Bank, the GEF-funded Project on Development of Protected Areas in Georgia is being implemented, one of the components of which – promotion of institutional development - aims at strengthening the Department for Protected Areas. The project will end in 2007.

⁴³ Since 2003 with the financial support of the World Bank and the Georgian government, the forestry development project is being implemented in Georgia to promote conservation and sustainable use of Georgian forests. The project will end in 2008.

	- Organizing research on agrobiodiversity and implementation of measures on public awareness raising.				40
6.2.2.2	To create nurseries and experimental plots for restoration of unique species of agrobiodiversity.	The Ministry of Agriculture	Scientific organizations, the Ministry of Environment, international financial organizations	2007-2010	450
6.2.3.	To develop the capacities of academic institutions				
6.2.3.1	To strengthen the monitoring and research infrastructure of the scientific institutions working on biodiversity issues; to define priority trends for target research and prepare research programs.	The Ministry of Agriculture	Relevant international programs, the Ministry of Education	2007-2010	400
6.2.4.	To develop the capacities of the non-governmental sector				
6.2.4.1	To promote the development of the non-governmental organizations' network in regions of the country. To arrange training for them in preparation of conservation projects (research and conservation of various species, management of ecosystems and habitats, etc.), as well as in issues of management, including financial management of organizations.		The Ministry of Environment through relevant international programs, non-governmental organizations (WWF Caucasus Office within the GEF-funded CEPF44 program), international organizations.	2006-2010	100
6.2.5.	To develop the capacities of local populations and communities				
6.2.5.1	To study traditional knowledge of the local population in nature conservation and to support using of this knowledge.	The Ministry of Environment	Scientific-Research Institutes, non-governmental and international organizations	2007-2010	15
6.2.5.2	To delegate the levers of natural resource management at a local level, such as: <ul style="list-style-type: none"> • Management of local forests; • To introduce co-management of protected areas, etc. To involve local organizations in international environmental projects.	The Ministry of Environment	Local governmental and self-government bodies, non-governmental organizations.	2007-2010	15

⁴⁴ The partnership fund for protection of vulnerable ecosystems has been established with the financial support of GEF, the program has a global character. The sum allocated for the Caucasus region totals USD 8.5 million. The program is implemented by the Caucasus Office of the World Wildlife Fund (WWF). The project envisages the promotion of the NGO sector's participation in conservation of ecosystems. The project will be implemented within 2004-2008.

Table 6.3. Strategic directions and actions for capacity building in the area of conservation and sustainable use of biodiversity at individual level

N	Actions at individual level	Responsible organization	Partner organization	Term of implementation	Budget (Thousand USD)
6.3.1.1.	Development of effective staff policy, staff training and upgrading				
6.3.1.1	To train experts from the Biodiversity Conservation Service, the Departments of Forestry and Protected Areas of the Ministry of Environment in developing policy and planning in the field of conservation and sustainable use of biodiversity	The Ministry of Environment	International organizations, donor countries	2006 - 2007	40
6.3.1.2	To train in skills lacking in modern management of conservation and use of biodiversity: environmental policy, environmental economy, law and management, integrated management of ecosystems, integrated planning of landscapes, etc.	The Ministry of Environment	International organizations and donor countries, international educational programs, academic institutions.	2006-2010	250
6.3.2.	To develop the capacities of the convention focal points				
6.3.2.1	To develop the capacities of the convention focal points to implement coordination activities necessary for meeting the guidelines of the Convention on Biological Diversity and other related conventions.	The Ministry of Environment	International organizations, non-governmental and academic organizations	2006-2008	12

CHAPTER 7. CAPACITY DEVELOPMENT STRATEGY AND ACTION PLAN FOR IMPLEMENTATION OF THE CONVENTION ON CLIMATE CHANGE

Table 7.1. Strategic directions and actions for capacity building in the area of climate change at systemic level

N	Actions at systemic level	Responsible organization	Partner organization	Time of implementation	Budget (Thousand USD)
7.1.1.	Improvement of state strategic planning in the field of climate change				
7.1.1.1	To prepare a national program on mitigation of climate change in the process of elaboration of the second national communication to the Convention on Climate Change; to assess the vulnerability of selected ecosystems and economic sectors and to develop the program on their adaptation. ⁴⁵	Ministry of Environment	Ministry of Economic Development, Ministry of Agriculture, Ministry of Energy, scientific organizations; GEF/UNDP.	2006-2008	Additional financing not required
7.1.2.	Development of national legislation				
7.1.2.1	To prepare relevant legislative base for the development of renewable energy within the frames of the project on Promoting the Use of Renewable Energy Sources for Local Energy Supply ⁴⁶	Ministry of Environment, Ministry of Energy	Ministry of Justice, KfW, UNDP/GEF.	2007-2008	Additional financing not required
7.1.2.2	To assess Georgian legislation and develop recommendations in the field of climate change to harmonize it with the EU's legislation.	Ministry of Environment	Ministry of Energy, Ministry of Justice	2007-2009	5
7.1.3.	To introduce financial mechanisms and economic incentives				
7.1.3.1	To create a "revolving fund" within the framework of the project on Promoting the Use of Renewable Energy Sources	Ministry of Environment	Ministry of Finance, Ministry of Justice, Ministry of Energy, local	2006-2007	Additional financing not

⁴⁵ With the financial support of the Global Environment Facility (USD 405 000) and the UNDP assistance, the elaboration of the second national communication to the Convention on Climate Change was launched in 2005. The Ministry of Environment is implementing the project. It will end by 2008.

⁴⁶ The project implementation was launched in 2004 through co-financing of the Global Environment Facility (USD 4.3 million) and German Bank for Reconstruction and Development (USD 4.4. million), as well as with the support of UNDP (UNDP/GEF, KfW). The Ministry of Environment and the Ministry of Energy are implementing the project. It will end by 2009.

	for Local Energy Supply (UNDP/GEF, KfW) in order to promote the development of renewable energy ⁴⁷ .		commercial banks, KfW, UNDP/GEF		required
7.1.3.2	To prepare amendments to the Tax Code of Georgia with the purpose of creating economic incentives for the use of energy saving and renewable energy technologies.	Ministry of Environment, Ministry of Finance, Ministry of Energy	The Ministry of Justice, international organizations, (UNDP)	2008-2009	5
7.1.4.	Promotion of Introduction of Clean Development Mechanism				
7.1.4.1	To establish clear and distinct procedures for implementation of the Clean Development Mechanism; to establish national criteria for the project approval; to prepare a manual on implementation of the Clean Development Mechanism within the ongoing TACIS program. ⁴⁸	Ministry of Environment	TACIS	2006	Additional financing not required
7.1.4.2	To raise awareness of decision makers, private sector and non-governmental organizations about the capacities existing within the Clean Development Mechanism.	Ministry of Environment	TACIS, non-governmental organizations	2006-2008	Additional financing not required
7.1.5.	Inventory of greenhouse gases and information systems				
7.1.5.1	To elaborate the methods of collection of statistics and information for carrying out an inventory of greenhouse gas emissions and absorptions, as well as to introduce them in the system of the country's statistical reporting.	Ministry of Environment	Donor countries; the Department for Statistics of the Ministry of Economic Development	2007-2008	10
7.1.5.2	To establish a clearinghouse of clean technologies and capacity building to operationalize these technologies.	Ministry of Environment, Ministry of Economic Development	Ministries of Energy and Agriculture, Technical University, non-governmental organizations, international organizations	2007-2008	150
7.1.6.	Awareness raising of decision makers and society				
7.1.6.1	To carry out information campaigns for decision makers, private and non-governmental organizations regarding the climate change phenomenon and the Convention on Climate Change, including the importance and benefits of the Clean Development Mechanism.	Ministry of Environment	Media, non-governmental organizations, international organizations	2006-2008	15

⁴⁷ The project is under implementation (see previous page).

⁴⁸ Since April 2004 a regional project on strengthening institutional and technical capacities for the use of the Kyoto mechanism is being implemented within the TACIS program through EU funding. Georgia is also participating in the project.

Table 7.2. Strategic directions and actions for capacity building in the area of climate change at institutional level

N	Actions at institutional level	Responsible organization	Partner organization	Time of implementation	Budget (Thousand USD)
7.2.1	Improvement of mutual cooperation and coordination among institutions				
7.2.1.1	To set up an interdepartmental coordinating council for implementation of the Convention on Climate Change with the participation of non-governmental and private sectors.	Ministry of Environment	Ministries of Economic Development, Energy, Agriculture, and Education, scientific and non-governmental organizations, private sector.	2006	Additional financing not required
7.2.2	Capacity building at the Ministry of Environment				
7.2.2.1	To set up a unit under the Ministry of Environment that will work on identification and preparation of particular projects, as well as attracting investors for the use of the Clean Development Mechanism.	Ministry of Environment	World Bank, non-governmental organizations	2006-2007	500
7.2.2.2	To develop the capacities of the Ministry of Environment and its Climate Change Unit for implementation of the Clean Development Mechanism.	Ministry of Environment	TACIS, donor countries	2006 - 2007	Additional financing not required
7.2.2.3	To prepare a medium-term action plan in accordance with the functions of the Climate Change Unit, to develop terms of reference for each position in accordance with this plan and to recruit staff with relevant qualifications.	Ministry of Environment		2006 - 2010	10
7.2.3.	Capacity building at academic institutions				
7.2.3.1	Detailed assessment of capacities at academic institutions, mobilization and strengthening of existing capacities (staff retraining) with the purpose of elaborating the programs on assessment of vulnerability to climate change and adaptation to it.	Ministry of Environment, Academy of Sciences	International organizations and donor countries	2007-2009	50
7.2.4	Capacity building of private and non-governmental sectors				
7.2.4.1	To inform private, academic and non-governmental organizations on the Clean Development Mechanism (CDM), to train them in identification of CDM projects, determine basic and anticipated emissions, prepare project documents.	Ministry of Environment	Relevant international programs	2006-2009	80

Table 7.3. Strategic directions and actions for capacity building in the area of climate change at individual level

N	Actions at individual level	Responsible organization	Partner organization	Time of implementation	Budget (Thousand USD)
7.3.1	Staff training and upgrading				
7.3.1.1	To train staff in the fields of defining scenarios of economic development, forecasting greenhouse gas emissions, developing adaptation measures, assessing the efficiency of policy instruments and the costs and benefits of alternative measures.	Ministry of Environment	International organizations and donor countries	2007-2010	60
7.3.2	Development of capacities of a focal point to the Convention on Climate Change				
7.3.2.1	To develop the capacities of a focal point to the Convention on Climate Change about the Convention, the Kyoto Protocol and the Clean Development Mechanism with the purpose of disseminating information and conducting a political dialogue and coordination activities inside the country.	Ministry of Environment	Secretariat of the Convention on Climate Change, Global Environment Facility	2006-2008	12

CHAPTER 8. CAPACITY DEVELOPMENT STRATEGY AND ACTION PLAN FOR IMPLEMENTATION OF THE CONVENTION TO COMBAT DESERTIFICATION/LAND DEGRADATION

Table 8.1. Strategic directions and actions for capacity building in the area of combating desertification/land degradation at systemic level

N	Actions at systemic level	Responsible organization	Partner organization	Time of implementation	Budget (Thousand USD)
8.1.1.	To improve state planning in the field of combating desertification/land degradation				
8.1.1.1	To prepare and implement the capacity building project to provide sustainable land management	Ministry of Environment	Global Environment Facility, UN Development Programme (UNDP/GEF); Ministry of Agriculture, local government and self-government bodies, Institute of Agriculture, Academy of Agriculture, other scientific institutions	2006-2008	500
8.1.1.2	To prepare a situation analysis in the field of desertification/land degradation and to renew the National Action Plan of Georgia on Combating Desertification.	Ministry of Environment	Ministries of Agriculture and Economic Development, scientific institutions, Global Environment Facility.	2007-2008	30
8.1.2	Development of legislative and normative framework				
8.1.2.1	To assess legislative and normative framework on desertification/land degradation and to develop relevant legislative amendments, including to the laws on structure, authority and activities of the Georgian Government, on conservation and restoration of soils, tax code.	Ministry of Environment, Ministry of Agriculture	Ministry of Justice, international organizations.	2006-2007	5
8.1.2.2	To develop draft land code.	Ministry of Environment	Ministries of Justice and Agriculture; international organizations.	2006-2007	15
8.1.3	To enforce effective economic instruments for sustainable land management				
	To prepare amendments to the Tax Code of Georgia in order to stimulate sustainable land management.	Ministry of Environment	Ministries of Agriculture, Economic Development and	2007-2008	

			Finance; international organizations.		3
8.2.4	Awareness raising of decision makers and society (farmers) concerning land degradation/desertification issues				
8.2.4.1	To prepare and disseminate brochures and other materials for local self-government bodies and landowners/users concerning desertification/land degradation problems and the ways of tackling these problems (including development of recommendations about the sustainable land use practice and technologies).	Ministry of Environment	Local self-government bodies	2006-2007	10
8.2.4.2	To prepare popular TV programs concerning desertification/land degradation problems and ways of combating these problems.	Ministry of Environment	Public television	2006-2007	15
8.2.5.	To carry out research and monitoring of the situation in the field of desertification/land degradation				
8.2.5.1	To set up a research center for land degradation/desertification problems on a basis of the existing scientific institutions that will be in charge of organizing early warning of dangerous geodynamic processes and droughts.	Ministry of Environment	Ministry of Education and Science, Ministry of Agriculture, international scientific organizations	2007-2009	140

Table 8.2. Strategic directions and actions for capacity building in the area of combating desertification/land degradation at institutional level

N	Actions at systemic level	Responsible organization	Partner organization	Time of implementation	Budget (Thousand USD)
8.2.1	Distribution of functions and capacity building of institutions				
8.2.1.1	To study the functions of central and local governmental institutions, including the Ministry of Environment, the Ministry of Justice and the Ministry of Agriculture concerning land management issues; to define these functions clearly and to distribute responsibilities.	Ministry of Environment	International organizations	2006-2007	5
8.2.1.2	To raise the efficiency of the Land Management Service of the Ministry of Environment and the Ministry of Agriculture concerning the sustainable land management.	Ministry of Environment, Ministry of Agriculture	International organizations		50
8.2.3.	Capacity building of local government bodies and populations				
	To prepare and implement a pilot project on sustainable land management in southeastern Georgia.	Ministry of Environment	Ministry of Agriculture, local government bodies, Global Environment Facility, World Bank	2007-2010	2500

Table 8.3. Strategic directions and actions for capacity building in the area of combating desertification/land degradation at individual level

N	Actions at systemic level	Responsible organization	Partner organization	Time of implementation	Budget (Thousand USD)
8.3.1	Training of public officials in sustainable land management methods				
8.3.1.1	To train the employees of the Ministry of Environment, Ministry of Agriculture and local government bodies in methods of sustainable land management.	G	International organizations, foreign educational institutions	2006-2010	Medium

CHAPTER 9. STRATEGY AND CROSS-CUTTING CAPACITY BUILDING MEASURES FOR THE IMPLEMENTATION OF RIO CONVENTIONS

Table 9.1. Strategy and cross-cutting capacity building measures for the implementation of Rio Conventions

N	Actions at systemic, institutional and individual levels	Responsible organization	Partner organization	Time of implementation	Budget (Thousand USD)
9.1	Improvement of state planning and integration of global environmental issues into the sectoral development plans				
9.1.1	To develop a national strategy for sustainable development that will reflect the Georgian government's vision regarding the integration of the environmental issues, including the issues of conservation and sustainable use of biodiversity, climate change and combating desertification/land degradation, into the social-economic development process.	State Commission for Sustainable Development	Ministry of Environment, Ministry of Economic Development, Ministry of Energy, Ministry of Agriculture, Ministry of Education, Ministry of Finance, non-governmental and scientific organizations, UNDP	2006-2007	100
9.1.2	To enlarge the structure of the state commission for sustainable development and to involve non-governmental and private sectors with the purpose of top-level discussion of environmental, including biodiversity, climate change and desertification/land degradation issues and making of coordinated decisions.	Prime Minister	Ministries of Economic Development, Energy, Agriculture, Environment and Education; business associations, scientific and non-governmental organizations.	2006	Additional financing not required
9.1.3	To define the functions of the Ministry of Environment, as of the Secretariat of the Commission for Sustainable Development, and to develop their capacities in terms of preparation of the strategic issues and decisions.	Ministry of Environment	Ministries of Economic Development, Energy, Agriculture and Finance; scientific and non-governmental organizations.	2006	Additional financing not required
9.1.4	To develop the Second National Environmental Action Plan, which will define the priorities of Georgia's environmental policy for 2006-2010, including the fields of biodiversity conservation, climate change and combating desertification/land degradation.	Ministry of Environment	Relevant ministries, scientific and NGOs; UN Development Programme, World Bank	2006-2007	120

9.1.5	To prepare relevant legislative principles in order to enforce the system of strategic environmental assessment; to train the staff in this direction.	Ministry of Environment	Ministry of Justice, international organizations (UNDP) and donor countries (Dutch government)	2006-2008	150
9.1.6	To approve relevant legislative principles concerning the system of strategic environmental assessment; to enforce this system.	The Parliament of Georgia		2009-2010	100
9.1.7	To develop relevant procedures and guidelines for the involvement of the stakeholders and the society in the environmental planning process.	Ministry of Environment		2006-2007	3
9.2.	Financial support				
9.2.1	To introduce medium-term planning of the Ministry's budget, taking into account the strategic priorities and necessary financial resources.	Ministry of Environment	Ministry of Finance	2006	Additional financing not required
9.2.2	To cooperate with international financial organizations and donor countries with the purpose to develop and operate innovative financial mechanisms of biodiversity conservation (for example, "debt for environment swap")	Ministry of Environment, Ministry of Finance	International financial organizations and donor countries	2006-2010	Additional financing not required
9.2.3	To prepare a plan on payment of the debt to Rio conventions for 2006-2010 and to start debt payment.	Ministry of Environment, Ministry of Foreign Affairs	Ministry of Finance	2006-2010	250
9.3.	Improvement of law enforcement				
9.3.1	To compose the environmental inspectorates with relevant staff, equipment and training.	Ministry of Environment	European Bank for Reconstruction and Development (EBRD), Organization for Economic Cooperation and Development (OECD)	2006-2008	350
9.4.	Awareness raising of society and decision makers over biodiversity conservation, climate change and land management issues				
9.4.1	To strengthen the capacities of the Ministry's Public Relations Service to implement awareness raising measures for society and decision makers concerning biodiversity, climate change and desertification/land degradation issues.	Ministry of Environment	Non-governmental organizations, international organizations	2006-2007	25

9.4.2	To raise awareness on the economic and social benefits of conservation of Georgia's biodiversity and sustainable land management through mass media, including the role and importance of the local population in management of forests, ecosystems and pastures.	Ministry of Environment	Public television, non-governmental organizations.	2006-2010	30
9.4.3	To develop a program of integration of environmental issues in the courses of primary, secondary and higher educational systems.	Ministry of Environment	Ministry of Education and Science, non-governmental organizations.	2007	5
9.4.4	To introduce applied ecology courses in VIII-IX classes of secondary schools, to develop special programs, to prepare and print textbooks and manuals for teachers.	Ministry of Education and Science	Ministry of Environment	2007-2008	25
9.5.	Improvement of information systems and monitoring				
9.5.1	To elaborate a program on development of the monitoring and information exchange system, which will clearly define the functions and responsibilities of separate institutions in terms of collection, analysis, maintenance and dissemination of environmental data.	Ministry of Environment	International financial organizations (including UNDP/GEF) and donor countries	2006-2008	500
9.5.2	To strengthen the capacities of the Ministry of Environment in terms of monitoring indicators, monitoring system design and information management.	Ministry of Environment	Scientific-research institutions, international financial organizations (including UNDP/GEF) and donor countries.	2006-2008	50
9.5.3	To optimize the infrastructure of the Hydrometeorology Department and to strengthen technical capacities.	Ministry of Environment	Ministry of Finance, international organizations and donor countries.	2006-2010	2500
9.6.	Improvement of cooperation and coordination under Rio conventions				
9.6.1	To set up a uniform coordinating body for the global environmental conventions with the participation of relevant ministries, non-governmental, academic and private sectors.	Ministry of Environment	Business associations, scientific and non-governmental organizations.	2006	Additional financing not required
9.6.2	To develop a project on rendering assistance to the convention focal points to help them disseminate information about	Ministry of Environment	Global Environment Facility, UNDP, Secretariats to Rio	2006-2007	

	commitments to the conventions, meet with stakeholders; hold coordination meetings and implement awareness raising measures.		conventions.		5
9.6.3	To introduce a system of annual reporting and hearing of focal points.	Ministry of Environment, focal points to Rio conventions	Convention coordinating body	2006-2010	Additional financing not required
9.7.	Staff training and upgrading				
9.7.1	To incorporate into school curricula relevant disciplines, such as environmental management and policy, environmental economics, legislation, sustainable development principles, and, on special demand, to teach public officials in the magistracy of higher educational institutions.	Ministry of Environment, Ministry of Education and Science	Tbilisi State University, other higher educational institutions.	2007-2008	40
9.7.2	To raise qualification of public officials, especially managers working in the environmental field, in politics and management.	Ministry of Environment	Georgian Institute of Public Affairs (GIPA)	2006-2010	40
9.8.	Strengthening non-governmental organizations and involvement of local population in the global environment management issues				
9.8.1	To prepare a small grants program ⁴⁹ for non-governmental organizations and local communities and to submit it to the Global Environment Facility (GEF)	Ministry of Environment	UN Development Programme (UNDP), Global Environment Facility (GEF).	2006-2007	6
9.8.2	To create a UNDP/GEF small grants program for the non-governmental organizations and local communities.	UNDP/GEF	Non-governmental organizations, local population	2007-2010	500
9.9.	Use of environmentally friendly technologies				
9.9. 1	To establish an institutional mechanism of technology transfer on a base of the environmental institutions, which will be responsible for collection of information concerning environmentally friendly and innovative technologies and practice, including traditional technologies, and capable of carrying out consultations on the use and dissemination of these technologies.	Ministry of Environment	International financial organizations	2008-02010	500

⁴⁹ The UNDP/GEF small grants program has been running since 1992 through UNDP. Within the framework of this program non-governmental organizations and local communities receive grants worth USD 50 000 to implement projects on global environmental protection. To date up to 80 countries are participating in the UNDP/GEF small grants program, yet. Georgia does not participate in it yet

9.9. 2	To develop market mechanisms for stimulation of technology transfer and to create favorable legislative framework.	Ministry of Environment	Ministry of Finance, Ministry of Economic Development	2008-2009	10
9.10.	Scientific research in the field of environmental protection				
9.10.1	To set up a council of scientific-technical advisers under the Ministry of Environment, to assist the Ministry in the decision making process through delivering scientific information and recommendations, as well as to provide an exchange of information between the Ministry and the academic sector.	Ministry of Environment	Academy of Sciences, scientific-research institutions	2006	Additional financing not required
9.10.2	To develop and implement a program on reform and development of academic institutions	Ministry of Education and Science		2006-2007	10
9.10.3	To transfer to a contractual system of cooperation with scientific institutions that will encourage scientific research on demand of the Ministry according to the latter's priorities.	Ministry of Environment	Ministry of Education and Science, Academy of Sciences, scientific-research institutions	2008-2010	600

ANNEXES

ANNEX 1.THE CAPACITY CONSTRAINTS IN THE FIELD OF CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS AND RECOMMENDED MEASURES

Table 1. The capacity constraints at institutional level and relevant measures/recommendations

Problem/issue	Measures at systemic level	Measures at institutional level	Measures at individual level
1.1 Governmental planning in the field of biodiversity⁵⁰ and integration of biodiversity conservation issues in the sectoral development plans			
1.1.1. Political will in the issues of conservation and sustainable use of biodiversity is low. The government adopted the strategy and action plan on biodiversity conservation only ten years after acceding to the Convention. No strategy for sustainable development has been developed so far.	According to decree 77 of the Georgian government adopted on 22 April 2005, the governmental commission for sustainable development of Georgia has been set up to develop a strategy for sustainable development of Georgia, discuss environmental issues and coordinate the activities of various agencies. However, the commission's structure should be enlarged by including the representatives from academic, non-governmental and local governance bodies. The regulations of the commission's activities need to be improved as well.	The Ministry of Environmental Protection and Natural Resources should provide for the establishment of a permanent secretariat of the governmental commission for sustainable development, which will prepare the plans for the commission's activities, the issues to be discussed and relevant materials.	The Ministry of Environmental Protection and Natural Resources should provide for the composition of a permanent secretariat of the governmental commission for sustainable development with highly skilled staff.

1.1.2. Integration of the issues of conservation and sustainable use of biodiversity in the socio-economic development plans and programs is unsatisfactory.	To introduce strategic environmental assessment and planning practice.	To ensure the involvement of the Ministry of Environmental Protection and Natural Resources in the process of development and discussion of sectoral plans.	<ul style="list-style-type: none"> • Training of experts from the Ministries of Economy, Finance, Agriculture and Environmental Protection in strategic planning; • Capacity building for conducting strategic environmental assessment.
1.1.3. Lack of knowledge in those approaches and methods for effective planning of conservation and sustainable use of biodiversity.			Raising personnel qualifications in the relevant governmental organizations, especially at the Ministry of Environmental Protection and Natural Resources, with the purpose of planning conservation and sustainable use of biodiversity in various directions, such as the identification of risk factors, prioritization of those factors and identification of root causes of threats; identification of effective actions to eradicate these causes and their prioritization; Assessment of necessary resources, including financial and human, for action planning and implementation.
1.1.4. Insufficient participation of civil society, non-governmental sector and scientists in the processes of planning the conservation and sustainable use of biodiversity.	Public awareness raising regarding the values of Georgia's biodiversity and the necessity and benefit of its conservation and sustainable use.	The Ministry of Environmental Protection and Natural Resources should establish an effective and transparent public relations mechanism and introduce practices to guarantee the participation of the society, non-governmental sector and scientists in decision making and planning processes, as well as the public discussion of these plans before approval.	To conduct trainings at non-governmental, academic and educational institutions about modern approaches of conservation and sustainable use of biodiversity.

1.1.5. Planning conservation and sustainable use of biodiversity at local (regional) level does not take place.	Development of medium-term local action plans on environmental protection, 2008-2010.	Strengthening of local governmental bodies in terms of planning and implementing environmental measures.	Raising qualifications of the employees of local governmental bodies for planning environmental protection
1.2. Land Use Planning			
1.2.2. State planning for long-term use of land does not take place. As a result, conflicts often arise over the use of land for various purposes (for conservative, agricultural or industrial purposes) .	Current legislation on land use needs to be revised in order to define and define the functions and responsibilities of state and local governmental bodies. Special attention should be paid to the functions of the Ministries of Environment and Agriculture in the field of land use.	<ul style="list-style-type: none"> • The functions and capacities of the Ministry of Environment should be strengthened in terms of planning and sustainable management of land use. • A special planning service should be established. 	Raising skills of experts from the Land Management Department of the Ministry of Environment in planning and sustainable management of land use.
1.3. Financial support			
1.3.1. The projects on conservation and sustainable use of biodiversity are basically financed from external sources – through the loans of international financial organizations and the grants of donor countries. The share of the state budget in funding biodiversity projects is extremely low.	The Ministry of Environment, along with the Ministry of Finances, should hold talks with creditor countries and international financial organizations over introducing innovative financial mechanisms (i.e. foreign debt swapping in exchange of environmental protection, purpose-oriented trust funds).	The Ministry of Environment should develop state target projects on conservation of biodiversity and mobilize funds from the state budget for implementation of these projects in accordance with the strategy and action plan on conservation of biodiversity.	Training experts from the Ministries of Environment, Finances and Economy, as well as the non-governmental and private sectors in the issues of funding environmental, including conservation measures.
1.3.2. The capacities of the county in the state, private and non-governmental sectors are weak in terms of identification, preparation and implementation of environmental projects, as well as attraction of foreign funding.			The Ministry of Environment should seek foreign assistance to ensure that the representatives of state, private and non-governmental sectors undergo training in the field of identification, elaboration and management of projects on conservation and sustainable use of biodiversity.
1.4. National legislation in the field of biodiversity conservation, deficiencies in its enforcement			

<p>1.4.1. Georgian legislation does not regulate a number of requirements of the Convention on Biodiversity, such as:</p> <ul style="list-style-type: none"> - Availability of genetic resources and equal and fair distribution of the profit gained through use of genetic resources⁵¹ - Preservation and protection of traditional knowledge related to the use of biodiversity; - Regulation and control of introduction of alien species. 	<p>It is necessary to develop legislative acts to regulate issues such as:</p> <ul style="list-style-type: none"> - Availability of genetic resources and equal and fair distribution of the profit gained through use of genetic resources; - Preservation and protection of traditional knowledge related to the use of biodiversity; - Regulation and control of introduction of alien species. 	<p>Creation of a uniform information bank for genetic resources. The Ministry of Environment, through the support of international organizations, should hold meetings for governmental, non-governmental, scientific and private sectors for raising their awareness about the necessity of the availability of genetic resources and fair and equal distribution of the profit gained through their use (especially for commercial purposes).</p>	<p>To share relevant experience and train experts.</p>
<p>1.4.2. The adopted laws are not effectively enforced, since there are no bylaws.</p> <p>There are numerous conflicts between existing laws, and duplication of functions or unclear functions of the state agencies responsible for their enforcement.</p>	<p>Development of bylaws and regulations envisaged by the laws existing in the field of conservation and sustainable use of biodiversity;</p> <p>The Ministry of Environment should guarantee the involvement of stakeholders, including other ministries, non-governmental organizations, scientific sector and highly skilled lawyers in the elaboration of new laws and bylaws, and the mobilization of relevant financial resources.</p>	<p>To establish an environmental inspection service with the purpose of law enforcement based on international experience.</p>	<p>To teach environmental law at the law faculties.</p>
<p>1.4.3. The Red List and the Red Book, which would reflect a real state of biodiversity in Georgia, has not been renewed since the 80's. Without</p>		<p>The Ministry of Environment, together with non-governmental organizations and scientific-research institutions, should ensure mobilization of resources</p>	

⁵¹ The country does not pay due attention to the guidelines of the Convention regarding the availability of genetic resources and fair and equal distribution of the profit gained through their use (especially for commercial purposes).

creation of the renewed Red List based on scientific research it will be impossible to implement effective measures for conservation and preservation of endangered species.		for renewal of the Red List and the Red Book, as well as conduct research activities and obtaining information.	
1.4.4. The procedures of granting environmental licenses are imperfect and complicated.	To improve existing laws on licensing the use of biodiversity resources (timber and non-timber resources, wild fauna components) to simplify and eradicate corruption and other illegal actions.	To create a transparent and decentralized decision-making system in the field of licensing biodiversity resources. To launch a “one-stop” licensing system under the Ministry.	
1.4.5. The environmental laws are often violated and these violations are ignored in most cases.	To strengthen the environmental law enforcement system.	With the purpose of law enforcement the Ministry of Environment should establish an inspection service.	To teach and train the employees of the inspection service in environmental law, the rules and regulations of their enforcement.
1.5. The issues related to trade in the components of biological diversity			
The real impact of trade in wild flora and fauna and consumption patterns on the biodiversity of Georgia is unstudied.		The Ministry of Environment should request the international financial and non-governmental organizations to assist in studying real impact of trade in wild flora and fauna and consumption patterns on the biodiversity of Georgia.	
1.6 Economic instruments in the field of biodiversity conservation and assessment of economic values of biodiversity components			
1.6.1. The efficiency of economic instruments in the field of conservation and sustainable use of biodiversity is	<ul style="list-style-type: none"> To revise the current system of pricing on natural resources and to make amendments to the Law of 	<ul style="list-style-type: none"> The Ministry of Environment, together with the Ministry of Economic Development, should 	

too low.	<p>Georgia relating to the taxes on the use of natural resources.</p> <ul style="list-style-type: none"> • To revise the amount and rules of payment of fines on illegal use of natural resources in the Code of Administrative Violations. • To introduce visitors' fees for further use of incomes for the development of protected areas. 	<p>prepare proposals for making amendments to the Law of Georgia relating to the taxes on the use of natural resources and to the Code of Administrative Violations.</p> <ul style="list-style-type: none"> • To grant more financial independence to the administrations of protected areas to generate income. 	
1.6.2. Modern theories of environmental economy are not taught or are weakly taught at higher educational institutions. This leads to a lack of environmental experts in the country able to develop effective market economy instruments for protection of the environment, including conservation and sustainable use of biodiversity, or to use modern methods of defining economic values of natural resources and biodiversity.	To introduce the practice of economic assessment of biodiversity to promote decisions about the planning and implementation of economic development and conservation measures.	<ul style="list-style-type: none"> • To introduce/strengthen environmental economy courses at the higher educational institutions, based on the theories developed in the countries with market economy. • To translate the textbooks in environmental economy into Georgian for relevant educational institutions. 	<ul style="list-style-type: none"> • Provide training for experts from the Ministry of Economic Development, as well as the Biodiversity and Economic Departments of the Ministry of Environment in the development and use of economic instruments. • To provide experts with relevant periodicals and official bulletins.
1.7. Biosafety			
Georgia has not acceded to the Cartagena Protocol on Biosafety. The country has prepared a draft law on genetically modified organisms and relevant normative acts. However, these documents are under discussion but have not been approved by the Parliament of Georgia yet.	<ul style="list-style-type: none"> • The Parliament of Georgia should approve the law on genetically modified organisms with relevant normative acts and ratify the Cartagena Protocol on Biosafety. • The Ministry of Environment through the cooperation with the non-governmental organizations and academic institutions should implement measures on raising public awareness over genetically modified organisms. 	To develop the capacities of those institutions, which will legally be responsible for assessment and management of risks related to genetically modified organisms.	<ul style="list-style-type: none"> • To raise qualifications for assessment and management of risks related to genetically modified organisms. • To train customs officers in the field of identification of genetically modified organisms.
1.8. Conservation and restoration of agrobiodiversity			
1.8.1. Measures on restoration and	• To conduct research about	The Ministries of Environment and	• To train staff and create relevant

conservation of agrobiodiversity on agricultural lands are not implemented; unique species of vine, fruit and wheat face extinction.	<p>traditional knowledge and experience in conservation of agrobiodiversity;</p> <ul style="list-style-type: none"> • To prepare and disseminate scientific and popular publications; to create TV and radio programs, to publish newspaper articles; • To prepare an inventory of Georgia's agrobiodiversity and make a Red List; to develop particular programs on the restoration of species facing extinction; • To stimulate conservation of agrobiodiversity in farmlands. • To prepare legislative base for conservation and sustainable use of Georgia's agrobiodiversity for further eradication of problems. 	<p>Agriculture should:</p> <ul style="list-style-type: none"> • prepare project proposals and attract relevant financial resources to study the current state of agrobiodiversity. • rehabilitate, restore and develop the existing collections, selection stations and seed farms; • promote the establishment of seed farms and the turnover of seed materials among the farmers; • create and conserve mini-reserves in order to protect medicinal plants 	<p>infrastructure for conservation and sustainable use of agrobiodiversity in Georgia.</p> <ul style="list-style-type: none"> • To educate farmers in agrobiodiversity issues.
1.9. Information systems and monitoring in the field of biological diversity			
1.9.1. Although the existing laws oblige particular governmental organizations to monitor various components of biodiversity, no reliable data are collected regularly. The capacities of scientific institutions in terms of monitoring are not used effectively.	<ul style="list-style-type: none"> • The Ministry of Environment should develop a law on environmental monitoring the (including biodiversity), that will define the role of the in the monitoring system, the procedures of data collection and analysis, dissemination of information, and will regulate the issues of funding and distribution of functions and responsibilities among the various institutions. • The Ministry of Environment (the Biodiversity Department, the Monitoring Department, the Institute for Environmental Protection) through cooperation with scientific-research institutions should develop and approve 	<ul style="list-style-type: none"> • Due to lack of financial, human and technical resources, the Ministry of Environmental Protection and Natural Resources should focus on priority components of biodiversity, develop and approve relevant indicators and methods of monitoring; • The Ministry of Environmental Protection and Natural Resources should strengthen structural units (for example, the Institute for Environmental Protection, the Department of Environmental Monitoring), which will be responsible for creation of monitoring systems, including the development of legislative principles, selection of indicators and observation methods; 	To train staff able to create monitoring systems, including the development of legislative principles, selection of indicators and observation methods.

	methods of monitoring the components of biodiversity.	<ul style="list-style-type: none"> • The Ministry of Environmental Protection and Natural Resources should provide mobilization of financial resources for establishing and operating the biodiversity monitoring system. • The Ministry of Environmental Protection and Natural Resources should promote the creation of the Clearing House Mechanism, where detailed information over biodiversity in Georgia that has been collected by scientific and non-governmental organizations within the frames of various projects will be gathered and available for general public. • It is necessary to guarantee effective use of monitoring capacities existing at the scientific-research institutions (the Institute of Zoology, the Institute of Botany, the Biology Department of the Tbilisi State University, etc.). 	
1.10. Coordination in the field of conservation and sustainable use of biodiversity and relations between the institutions			
Coordination of activities between the executive bodies and the relevant scientific and educational institutions is too weak.		To exchange information about action plans of the executive bodies and relevant scientific institutions, to agree on priorities and cooperate in their implementation.	To hold joint workshops for the employees of the executive bodies and the relevant scientific institutions.
1.11.Awareness of society and decision-makers in the field of conservation and sustainable use of biological diversity			
1.11.1 Due to lack of knowledge about the problems of biodiversity, its	<ul style="list-style-type: none"> • To develop environmental journalism, to prepare and issue 	<ul style="list-style-type: none"> • The Ministry of Environmental Protection and Natural Resources 	To train highly skilled journalists in the field of environmental protection.

<p>conservation and sustainable use, society and decision-makers are not interested in biodiversity issues. Very often society, political circles and decision-making institutions express support to those particular development projects, which bring economic profit in a short-term period. Hence, the long-term impact of these projects on biological diversity is not discussed in due course.</p>	<p>publications, to broadcast TV advertising films.</p> <ul style="list-style-type: none"> • To arrange round tables over the issues of conservation and sustainable use of biodiversity with the participation of the politicians, decision makers, the representatives of non-governmental, scientific and private sectors. 	<p>should strengthen the Departments for Public Relations and Biodiversity to implement effective information projects on the value of Georgia's biodiversity, the advantage of its conservation and sustainable use;</p> <ul style="list-style-type: none"> • The Ministry of Environmental Protection and Natural Resources should regularly prepare and publish the reports on biodiversity of Georgia, including the implemented measures and actions on its conservation: for example, the first report on implementation of the strategy and action plan of biodiversity should be prepared by 2008. • The Ministry of Environment should boost cooperation with the non-governmental sector in order to conduct joint campaigns on raising awareness over the importance of biodiversity. Set up a Center for Conservation of Nature, which will become the venue of meetings, seminars, conferences, trainings for the environmental organizations, as well as a place for promoting the ecological education of youth. 	
<p>1.11.2. Environmental protection is weakly integrated into secondary schools and higher educational institutions.</p>	<p>The Ministry of Environmental Protection and Natural Resources, together with the Ministry of Education, should elaborate the environmental education program, that will guarantee teaching of the environmental issues at the secondary schools and higher educational institutions. Special emphasis should be</p>	<p>The Ministry of Environment should cooperate with the non-governmental sector in establishing the center for teaching the conservation and sustainable use of biodiversity.</p>	<p>To send experts to western higher educational institutions to get acquainted with the environmental management courses and adapt them to the higher educational institutions of Georgia.</p>

	put on the establishment of environmental management courses at higher educational institutions, taking into account the experience of foreign countries.		
--	---	--	--

Table 2. Capacity constraints at institutional level and relevant measures/recommendations

Problem/issue	Measures at systemic level	Measures at institutional level	Measures at individual level
2.1. Capacities of governmental organizations working in the field of biodiversity			
2.1.1. Functions, responsibilities and mutual cooperation of governmental organizations			
A number of governmental organizations are operating in Georgia to meet the guidelines of the Convention on Biological Diversity, its conservation and sustainable use. However, their functions, goals and scopes are not clearly defined and functions are duplicated. The state policy does not clearly define the role and capacities of the non-governmental, academic and local organizations. Cooperation and coordination of activities among the governmental organizations with the non-governmental, academic and local organizations is non-systemic.		<p>To define and distribute the functions between the Ministry of Agriculture, the Ministry of Environment and its structural units - the Department for Protected Areas, the Forestry Department, etc. in the field of conservation and sustainable use of biodiversity.</p> <p>The Ministry of Environment should analyze the resources and capacities existing at the non-governmental, academic and local institutions, in terms of conservation and sustainable use of biodiversity, as well as establish an effective and transparent mechanism of mutual cooperation and coordination of activities, especially while defining Georgia's official position regarding the issues to be discussed at the Conference of Parties to the Convention on Biological Diversity.</p>	<p>To prepare job descriptions relevant to functions and scopes of each position in the structural units working on biodiversity issues in the system of the Ministry of Environment. Recruitment of new staff and retraining of old staff in accordance with modern requirements.</p>
2.1.2 Problems of management of governmental organizations			
The employees of government bodies,			To raise managerial knowledge and

<p>of various levels lack strategic vision, managerial, and planning skills.</p> <p>A working day, week or month of each subdivision and official is not planned at all or is planned ineffectively. Practice of periodic reporting, their analyzing and assessing has not been introduced. Regular assessment of management system efficiency at public institutions through conducting independent audit does not take place.</p>			<p>practice, strategic planning skills of state officials.</p>
2.1.3. Staff policy			
<p>The employees of governmental organizations lack relevant skills. The so-called terms of reference are not elaborated and approved in most public institutions to clearly define the functions and obligations of each employee.</p>	<p>The Georgian government should provide the development of staff policy and legislation necessary for effective state management; it should improve the recruitment conditions and provide the transition to a contractual system, as well as the establishment of the relevant system for assessment of the activities of employees.</p>	<p>To prepare job descriptions relevant to the functions and scopes of each position of the structural units working over the biodiversity issues in the system of the Ministry of Environment and the Ministry of Agriculture. Recruitment of new staff and retraining of old staff in accordance with modern requirements.</p>	
2.1.4. Financial resources			
<p>Financial capacities of governmental organizations are scarce and insufficient to provide effective fulfillment of the guidelines defined by the Convention on Biological Diversity. The existing financial resources are used ineffectively and capacities for preparation of project proposals by the governmental organizations and attraction of necessary funds from alternative sources are very weak.</p>		<p>The Ministries of Environment and Agriculture should prioritize their programs and measures, as well as distribute their financial resources among the measures on conservation and sustainable use of biodiversity (including agrobiodiversity).</p>	<p>To train the employees of the Ministries of Environment and Agriculture in preparation of project proposals in the field of conservation and sustainable use of biodiversity and attraction of necessary funds from alternative sources.</p>

2.1.5. Infrastructure and technical resources			
The infrastructure and technical capacities of governmental organizations are poor. The existing infrastructure (premises, buildings, laboratories, installations, transportation, etc.), created during the Soviet period has been devastated due to lack of funds necessary for their maintenance.		To unite the infrastructure of separate, related subdivisions; to allocate budgetary funds for maintenance of priority infrastructure.	
2.1.6. Information resources			
Most state organizations do not possess computerized databases (standardized system of modern information technologies). The data, which exist in separate departments, are non-systemic and hardly available for other departments. In a number of cases the departments have no data necessary for creation of the database. Very often state organizations have no funds to purchase magazines, books and other necessary editions. Internet services are not accessible for the employees, as a result of which the latter have no chance to get new information in their field.		The Ministry of Environmental Protection and Natural Resources should concentrate the existing information related to conservation and sustainable use of biodiversity and create a clearing house mechanism, which will be available for the governmental and non-governmental organizations, scientific-research institutions and the society. The Ministry of Environment should provide each structural unit working over the issues of conservation and sustainable use of biodiversity with computers, a communication network, Internet and relevant literature.	The Ministry of Environmental Protection and Natural Resources should provide training of experts in creating, using and updating the uniform database.
2.1.7. Specific capacity constrains in state organizations:			
The Ministry of Environmental Protection and Natural Resources			
2.1.7.1. As a result of institutional changes in 2004-2005, several state institutions in the field of	To reflect the institutional changes conducted in 2004-2005 as a result of which several state institutions were	To define and distribute the functions of the Ministry of Environment and its structural units (the Forestry	To prepare detailed job descriptions for each position in the Ministry's structural units, working

environmental protection were abolished, while others merged with the Ministry of Environment. However, the legislation of Georgia has not reflected these changes, or the new distribution of roles and functions.	abolished and others merged with the Ministry, as well as the and new distribution of the functions in the legislation of Georgia.	Department, the Department for Protected Areas, etc.) in the field of conservation and sustainable use of biodiversity.	onbiodiversity issues.
2.1.7.2. The Ministry's capacity to fulfill necessary coordination activities for implementation of the Convention on Biodiversity and other conventions connected with biodiversity is rather limited. The functions and responsibilities of the convention focal points are not clearly defined. The timetable and commitments of focal points regarding the coordination of the convention and other activities of the Ministry are not distributed rationally.	To define the functions of the Ministry, as of the Secretariat of the Commission for Sustainable Development, regarding the preparation and implementation of strategic issues over conservation and sustainable use of biodiversity.	The Biodiversity Department of the Ministry of Environment should establish the coordinating mechanism for the implementation of the Convention on Biodiversity and other conventions connected with biodiversity with the participation of the executive bodies, NGO sector, scientific-research and educational institutions and the private sector.	To define the functions and responsibilities of the convention focal points; to distribute rationally the timetable and commitments of focal points regarding the coordination of the convention and other activities of the Ministry.
2.1.7.3. Advisory councils and scientific-technical committees have been set up within the framework of several conventions. However, the activities of such committees are ineffective and non-systemic.		To operate advisory councils and scientific-technical committees, which have been set up within the framework of several conventions.	
2.1.7.3. The capacities of the Ministry in terms of participating in the Conference of Parties to the Convention on Biological Diversity and other conventions are weak. The State has no opportunity to fund focal points' participation in these meetings, or other representatives; the competencies of the convention focal points, who have only an education in biology, are not enough to effectively		The Ministries of Environment and Foreign Affairs should mobilize funds for the participation of the Georgian delegation in the Conference of Parties to the Convention on Biological Diversity, as well as prepare a coordinated position for the meetings.	

participate in the Conferences of Parties and negotiations.			
2.1.7.4. The Ministry has not set up a strong inspectorate to provide supervise the implementation of environmental legislation in the country and promoting law enforcement in this field.	The Government of Georgia should improve the current legislation in the field of supervision and control of the implementation of the environmental legislation.	The Ministry of Environment should promote the establishment of a strong inspectorate to provide superviseimplementation of environmental legislation and promote law enforcement.	The Ministry of Environment should provide training for the inspectors in environmental legislation and ways of their enforcement.
2.1.7.5. The Ministry's capacities in terms of biodiversity monitoring and <i>ex-situ</i> conservation of species are extremely low. The Ministry's capacities in terms of assessment of negative impact on biodiversity in various projects are low as well.		To develop and promote the Black Sea Ecology and Fishery Institute, as the center for conservation of the Black Sea regional biodiversity; to create the centers for <i>ex-situ</i> conservation of flora and fauna species; to prepare special training programs; to build up capacities for assessment of negative impact on biodiversity.	To train staff in the issues of <i>ex-situ</i> conservation, as well as in discussing and examining the projects on assessment of negative impact on biodiversity.
The Forestry Department			
2.1.7.6. A national forestry policy does not exist in Georgia. The Forestry Department of the Ministry of Environment fail to meet their commitments under market conditions and new social-economic reality in terms of conservation and sustainable use of Georgia's forests.	To develop forestry policy and strategy; to introduce the principles of sustainable forestry.	To integrate biodiversity issues adopted by the Conference of Parties to the Convention on Biodiversity into the forestry practice.	
2.1.7.7. The material-technical base of the Department, its administrative and management infrastructure is extremely weak and insufficient to provide effective activities of the organization.		To supply the Forestry Department with computers and modern apparatus, to improve its infrastructure.	To train the staff in modern computer technologies.
2.1.7.8. The capacities of the Department in development of modern	To declare forest registering as priority activities in Georgia.	To conduct forest management through multi-purpose planning methods and	To train the staff working in the forestry sector in using modern technologies.

methods and plans of forest management, which correspond Georgian realities and reflect the best practices of other countries, are limited; the data on the state of the Forest Fund, resource value and timber extraction volume are not enough and reliable. Asatisfactory information base for planning and elaborating national forestry policy does not exist.		improved inventory. To develop a forest management information system, as a key component of the standardized database on biodiversity.	To provide working conditions, including safety and health care.
2.1.7.9. Due to low salaries and absence of incentives the forestry administrations and the staff responsible for forest management are not interested in efficient management and protection of forests.		The Ministry of Environment should conduct reorganization of the Forestry Department and its subordinate bodies. It needs: - To create the capacities for attracting additional financial resources; to define clearly defined state functions (development of policy and legislation, state control and supervision) from the functions of physical management of forests; • To establish a simple, transparent system for forest resource use; to change a fixed system of price formation on forest resources, etc.	
The Department for Protected Areas			
2.1.7.10. Like other state institutions, the Department for Protected Areas faces financial, staff and material-technical problems that prevent it from meeting commitments. The functions and role of protected areas are not defined and developed in accordance with modern requirements.	To elaborate a long-term plan for development of protected areas.	To put the working program on the issues of protected areas, adopted by the Conference of Parties to the Convention on Biodiversity, into practice.	To retrain the employees of the central and subsidiary bodies of the Department.

2.1.7.11. The Department is mainly composed of botanists, foresters, zoologists and other relevant specialists but lacks experts in environmental policy and management, financial, human and information resource management, as well as foreign language specialists.			To attract experts with new skills (management of financial, human and information resources, tourism and ecotourism, marketing, etc.) and to create the capacities for retraining the old staff.
2.1.7.12. The knowledge and incentives for using non-traditional mechanisms (including internal and external sources) of funding the protected areas are limited. The Department has limited capacities to elaborate the methods and plans on management of protected areas taking into account the realities of Georgia, as well as the best practices of other countries. The state control over the protected areas is weak.	To prepare legislative base for introducing non-traditional mechanisms of financing the protected areas.	<p>To develop and implement the instruments of income generation for protected areas (such as visitors' fees).</p> <p>To develop relevant human, financial and technical resources necessary for effective control of the protected territories.</p>	
2.1.7.13. The Department has no capacities, knowledge and experience to make maps using geoinformation systems, for planning and managing the protected areas. The country does not conduct biodiversity monitoring either. There are not constant programs aiming at training of experts in the field of protected areas management. Periodic short-term courses are only held within the framework of various donor programs.		<ul style="list-style-type: none"> • To develop new methods of management of the protected areas with the help of GIS. • To conduct monitoring of biodiversity on the protected areas and to create database. 	
2.1.7.14. Within past years the Department for Protected Areas was basically oriented to conserving flora		<ul style="list-style-type: none"> • To elaborate new scientific research on protected areas, which will be oriented to the priorities of the strategy 	To attract experts with new skills, such as management of financial, human and information resources, tourism and

and fauna species on the protected areas and conducting scientific research. Meanwhile, the attraction of tourists, educational activities, and accordingly, capacities in terms of marketing, and public relations are extremely scarce. The relations with other sectors, such as culture, tourism and transport, the cooperation with which is necessary to achieve success, are limited.		and action plan on biodiversity conservation. • To develop the Department's capacities to attract tourists, conduct educational activities, marketing, public information and public relations.	ecotourism, marketing, etc. to the system of protected areas and create the capacities for retraining the old staff.
The Ministry of Agriculture			
2.1.7.15. Due to absence of regular monitoring, the Ministry of Agriculture has no data over the current state of agrobiodiversity in the country. Nursery gardens and experimental plots necessary to concentrate species vulnerable to extinction are not developed. The functions and responsibilities of the Ministry of Agriculture in the field of protection of plants against harmful substances, pesticide and chemical application management, supervision and control are not clearly defined from the functions of the Ministry of the Environment Protection and Natural Resources.	To develop a program on conservation of agrobiodiversity; to prepare legislative amendments on marginalizing the functions and responsibilities of the Ministry of Agriculture in the field of protection of plants against harmful substances, pesticide and chemical application management, supervision and control.	To develop the Ministry's capacities for conservation and restoration of agrobiodiversity; • To conduct agrobiodiversity monitoring; • To create nursery gardens and experimental plots to restore unique species of agrobiodiversity; • To set up a group of agrobiodiversity experts within the Ministry; • To render technical and financial support to the programs on conservation of agrobiodiversity.	To train the Ministry's target group in the agrobiodiversity issues.
2.2. Capacities of academic institutions and their problems			
2.2.1. Salaries of scientific workers are extremely low; outflow of skilled staff	To develop the program on reformation and development of	To merge related scientific institutions or to unite their infrastructure.	

to the private and non-governmental sectors, or abroad is too frequent; attraction of young, highly skilled staff is complicated, as a result of which the so-called “ageing process” of the scientific institutions continues. Along with inadequate funding, the preservation of inefficient and old management methods. During the Soviet period the institutions of the Academy of Sciences were basically funded without taking into account the results of research and without any priorities. Old forms and structures of management continue in academic institutions.. They need to be adapted to market economy, where financial resources define the trends of their activities and generally the issues of their existence.	academic institutions. To adapt the activities of academic institutions to market economy conditions; to increase material incentives for scientific workers.	To provide availability of modern scientific information and communications. To renew scientific research through defining the priority fundamental and applied trends; to participate in international research. To restore and renew the technical and information infrastructure.	
2.2.1. The academic institutions have little knowledge of modern approaches to biodiversity conservation. This is caused by the fact that during the Soviet period special attention was paid to the scientific research, applicability of which for the conservation management is too low.		To prepare a program on modern approaches and methods of biodiversity conservation.	To train in modern approaches of biodiversity conservation and monitoring.
2.3. Capacities and needs of non-governmental sector			
2.3.1. Most non-governmental organizations are funded through the grants. Other sources of funding, such as membership fees or contributions are minimal. One third of the organizations do not have any funding.		To improve management forms of non-governmental organizations.	To organize joint workshops and trainings for the representatives of the non-governmental organizations in the issues of management, including financial management.

Most; Most organizations need to revise the forms of management and structure, also to undergo trainings to make their activities more effective.			
2.3.2. Majority of leading non-governmental organizations are concentrated in Tbilisi, while in the regions the non-governmental sector is too weak.		To strengthen the network of non-governmental organizations in the regions.	
2.3.3. Most organizations conduct only educational works in the field of biodiversity. Only a few organizations implement conservation projects – research and conservation of various species, management of habitats and ecosystems, establishment of the system of protected areas, renewal and management improvement, etc.		To develop the capacities of non-governmental organizations in preparation of conservation projects (for research and conservation of various species, management of ecosystems and habitats, etc.).	
2.3.4. Only a small part of non-governmental organizations participates actively in the process of policy elaboration and decision making.		To involve the non-governmental sector in the work of the governmental commission for sustainable development.	
2.3.5. Only a few organizations cooperate with international non-governmental and financial organizations; this is basically caused by two reasons – bad command of foreign language and lack of information. The involvement of non-governmental organizations in the state or foreign-funded environmental projects or programs is not transparent;	To develop transparent procedures of involvement of non-governmental organizations in the governmental or internationally funded environmental projects or programs.	To foster the participation of non-governmental organizations in important international meetings.	To promote the participation of the representatives of non-governmental organizations in special educational programs abroad.
2.3.6. Only a few non-governmental organizations in Georgia are actively cooperating with neighbor countries	To promote regional environmental projects in the Caucasus.	To develop the capacities of non-governmental organizations in transboundary cooperation.	

over transboundary issues.			
2.4. Capacities at the level of local communities			
2.4.1. In Georgia the capacities and knowledge of local local communities in the field of biodiversity conservation are not properly evaluated and used. Local community organizations almost do not exist in Georgia, while in those places we they do exist, the efficiency of their activities and their capacities are extremely limited. Separate projects funded through international sources envisage creation of local community organizations, their strengthening and inclusion in the conservation and sustainable use of biodiversity. However, a state-level systemic approach towards this issue does not exist so far.	To develop environmental plans at local levels and to involve local communities in the process of planning and conservation and sustainable use of natural resources, including biodiversity.	To study and support the traditional knowledge of local communities in conservation of nature. To raise awareness of local self-governmental bodies and to involve them in the management of protected areas. To introduceco-management in the field of conservation of natural resources and biodiversity. To delegate the levers of natural resource management at a local level, such as: Management of local forests; Management of protected areas, etc. To involve local organizations in international environmental projects.	To strengthen human, financial and technical capacities of local community organizations in terms of management of natural resources, including biodiversity.

Table 3. Capacity constraints at individual level and relevant measures/recommendations

Problem/issue	Measures at systemic level	Measures at institutional level	Measures at individual level
1. Critical is the lack of professionals working in both state and private sectors in certain areas, namely: conservation and natural resource management, environmental economics, environmental policy and law, preparation and economic and financial analysis of environmental projects, institutional analysis.	To establish the system for stimulation and upgrading the employees of the environmental bodies and relevant scientific institutions. To improve the recruitment procedures and to establish the performance rating system.	To elaborate and implement the plan on optimization of staff policy of the Ministry of Environment.	To raise qualification of employees in accordance with modern requirements.
2. Experts have no relevant knowledge and experience to elaborate effective environmental instruments and mechanisms, including economic instruments and financial mechanisms, under market economy conditions. Economic education appropriate for a market economy framework has only been available in the last decade; access to education in environmental economics, management and policy is still very limited; there are difficulties with finding lecturers in academic institutions in this sphere.		To develop a strategy on development of human resources in the field of environmental protection, including biodiversity. To define necessary skills in priority trends at governmental, academic and educational institutions.	To retrain the employees of governmental, academic and educational institutions in accordance with necessary skills in priority trends.
3. Motivation and skills of experts in terms of team work are underdeveloped.		To prepare special joint training programs for state institutions in order to promote the development of team work skills.	To train staff under the developed program.
4.. There are no organized systems for raising qualification and upgrading. In the field of environmental protection knowledge is basically acquired through international assistance,	To develop the strategy for development of human resources in the field of environmental protection, including biodiversity.	To develop a short-term and long-term upgrading and retraining system at the state and academic institutions.	To launch operation of a short-term and long-term upgrading and retraining system at the state and academic institutions.

however the educational courses organized through this assistance are short-term and less efficient.			
5. Local and regional governmental organizations responsible for overseeing the implementation of the national laws and other environmental policy instruments often do not have skilled and trained personnel to enforce fulfillment of the requirements.		To prepare staff upgrading and retraining programs at the regional and local governmental organizations.	To launch the implementation of staff upgrading and retraining programs at the regional and local governmental organizations.
6. Individuals working in the non-governmental sector lack training in financial management, organizational development issues, conservation methods and activities.			To organize training for non-governmental organizations in the issues of preparation of conservation projects (research and conservation of various species, management of habitats and ecosystems, etc.), including financial management.

ANNEX II. RECOMMENDATIONS FOR CAPACITY BUILDING AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS TO AVOID ADVERSE AFFECTS OF CLIMATE CHANGE

Table 1. The capacity constraints at institutional level and relevant measures/recommendations

Problem/issue	Measures at systemic level	Measures at institutional level	Measures at individual level
1.1. Meeting international commitments			
1.1.1. There is no effective mechanism to control implementation of requirements of international environmental agreements by the government or the society.	To determine clear responsibilities for implementation of the international environmental agreements (including the Convention on Climate Change).	To include the reporting of relevant structures about the implementation of international environmental agreements, including the Convention on Climate Change, into the government's working plans.	To raise awareness of public officials about the requirements of international environmental agreements, including the Convention on Climate Change.
1.1.2. The stakeholders do not properly participate in the reporting to the Convention on Climate Change.	To set up a national intersectoral coordinating council for implementation of the Convention on Climate Change, with the participation of the society.	To appoint focal points at relevant departments, who will cooperate with the intersectoral council.	To raise awareness of the society and the stakeholders (governmental organizations, scientific organizations, non-governmental and private sectors) about the requirements of the Convention on Climate Change.
1.2. National planning and integration of climate change issues			
1.2.1. Political interest is low concerning climate change issues. Georgia has not developed a sustainable development strategy integrating the climate change issues.	<p>The Georgian government should develop a national strategy for sustainable development, to provide the government's vision in the process of social-economic development on integrating environmental issues, including climate change issues.</p> <p>According to decree 77 of the Government of Georgia, a</p>	The Ministry of Environment should provide the establishment of a permanent secretariat of the governmental commission for sustainable development within its structure that will prepare the plan for the commission's activities, the issues to be discussed and relevant materials.	<p>The Ministry of Environment should create a permanent secretariat for sustainable development with highly skilled staff.</p> <p>To train the employees of various governmental organizations in the main principles of sustainable development strategy and in the approaches of its elaboration.</p>

	<p>governmental commission for sustainable development of Georgia was set up in April 2005, which aims at developing a strategy for sustainable development, discussing the environmental issues and coordinating activities among various agencies at a top level. However, the commission should be expanded through involving representatives from academic and non-governmental organizations, as well as from the local government bodies. The regulations of the commission's activities also need to be improved.</p>		
<p>1.2.2. The issues related to climate change are not properly integrated into the social-economic development plans and programs.</p>	<ul style="list-style-type: none"> • Introduction of strategic environmental assessment and planning practice through preparing relevant legislative framework • To provide the procedures for the involvement of the Ministry of Environment in the processes of preparation and discussion of sectoral plans. 		<ul style="list-style-type: none"> • To train experts from the Ministries of Economy, Finance, Energy, Agriculture and Environment in the methods of strategic planning; • Capacity building in terms of carrying out the strategic environmental assessment.
<p>1.2.3 Lack of knowledge in those approaches and methods, that should be used for elaboration of mitigation and adaptation measures to climate change, and for effective planning of sustainable development.</p>			<p>To raise qualification of relevant state employees of planning the mitigation measures for climate change and sustainable development in the following directions:</p> <ol style="list-style-type: none"> 1. To reveal especially vulnerable ecosystems and to develop adaptation measures; 2. To prepare and implement the measures of reduction and absorption of emissions; 3. To develop and use clean technologies.

1.2.4. The society, non-governmental and academic sectors do not sufficiently participate in the process of environmental planning, including the planning of climate change issues.	The Ministry of Environment should develop and the government should ratify the detailed procedure of environmental planning, which will provide for wide and effective participation of the society in the planning process.	To develop the capacities of the Ministry of Environment for involvement of the society in the environmental planning process. To develop the society's capacities for effective participation in the environmental planning process.	To train experts from the Ministry of Environment regarding the privileges of involvement of the society in the planning and monitoring process.
1.3. Financial support			
1.3.1. The capacities of the county in the state, private and non-governmental sectors are rather weak in terms of identification, preparation and implementation of environmental projects in the field of climate change, especially with respect to adaptation measures, as well as leveraging foreign financing.		The Ministry of Environment, along with the Ministry of Finances, should hold talks with creditor countries and international financing institutions over introducing innovative financial mechanisms (i.e. foreign debt swapping in exchange of environmental protection, reduction of greenhouse gas emissions).	The Ministry of Environment should provide mobilization of foreign assistance to ensure that the representatives of state, private and non-governmental sectors undergo training in the field of identification, elaboration and management of projects on greenhouse gas emissions and adaptation of vulnerable systems.
1.4. Economic incentives			
1.4.1. There are no economic incentives to encourage the reduction of greenhouse gas emissions and the use of energy saving and renewable energy technologies.	The Ministries of Environment, Economy and Finance should develop economic incentives (taxes, tax privileges) to reduce greenhouse gas emissions and promote the introduction of ecologically clean technologies.	To set up groups at the Ministries of Environment, Economy and Finances, which will jointly develop the economic incentives for introduction of clean technologies.	To train experts from the Ministries of Environment, Economy and Finance in the development of economic incentives.
1.5. Use of Clean Development Mechanism			
1.5.1. There is no effective legislative and institutional framework in Georgia to promote the introduction of the Clean Development Mechanism.	To prepare relevant legislative base for the establishment of clear and apprehensible procedures for the implementation of the Clean Development Mechanism; to create national systems on monitoring the projects on reduction of greenhouse gas emissions, certification and registration of reduced emissions.	<ul style="list-style-type: none"> • To strengthen the potential of the Ministry of Environment and its Climate Change Unit, as the national focal point for the Clean Development Mechanism. • The Ministry of Environment should provide the preparation of a manual on the technical implementation of the Clean Development Mechanism. 	To train national experts in the key elements of the Clean Development Mechanism, such as assessment of project sustainability, calculation of basic level and reduced emissions, certification and registration of emissions.

1.5.2. The government has not assessed sufficiently the potential of greenhouse gas reduction in Georgian various sectors of economy, as well the amount of greenhouses gases, necessary for making a decision over transfer of ownership on reduced emissions.	Arrangement of the national system of greenhouse gas inventory and continuity.	The Ministry of Environment, the Hydrometeorology Department and the State Department for Statistics (the Ministry of Economic Development) should develop instructions in order to collect relevant statistical data for carrying out inventory of greenhouse gas emissions and improving statistical accounting.	To train staff in relevant skills
1.5.2. Decision makers, private and non-governmental sectors have no relevant information about the capacities of the use and the benefit of the Clean Development Mechanism.	The Ministry of Environment should raise of awareness of the society, decision-making structures, private sector and non-governmental organizations about existing capacities within the frames of the Clean Development Mechanism.		
1.5.3. There are no information sources for businessmen on available clean technologies.		The Ministry of Environment, in the cooperation with the Ministry of Economic Development, should promote the creation of the information database (Clearing House) on clean technologies and the dissemination of this information.	
1.5.4. There is no institution working regularly on preparing projects for Clean Development Mechanism.		The Ministry of Environment should promote a structure, probably inside the Ministry, for the identification and preparation of projects and attraction of investors for the use of the Clean Development Mechanism.	To train staff in identification and preparation of particular projects and attraction of investors for the use of the Clean Development Mechanism.
1.6. Preparation of programs and projects on adaptation to climate change			
1.6.1. The country lacks relevant knowledge and experience in developing the programs on adaptation to climate change, as well as the staff	To instruct the Ministries of Economic Development and Agriculture to elaborate programs on adaptation of economy to climate change.	To strengthen the capacities of advisory companies and governmental organizations to develop programs on adapting various sectors of economy to	To train public officials from the Ministries of Economic Development and Agriculture, the scientific sector and independent consultants in

with relevant skills.		climate change.	developing adaptation programs and projects.
1.6.2. The country has no system of forecasting and defending against adverse affects of climate change (i.e. disasters, droughts).		To set up the Service for Forecasting the Adverse Affects of Climate Change and Early Warning at the Hydrometeorology Department.	Staff upgrading
1..7. National legislation in the field of climate change			
1.7.1. Climate change related legal acts mostly include general norms and are not directed towards solution of particular tasks. The existing laws often contradict each other, especially in the field of renewable energy. The law on the protection of the climate against global changes within Georgia's jurisdiction, the adoption of which is envisaged by the Law on Atmospheric Air Protection for meeting the Convention guidelines, has not been developed yet.	The Ministry of Environment, along with the Ministry of Energy should develop the laws, bylaws and norms, that will promote energy saving, the use of effective technologies and renewable energy. The Ministry of Environment should develop and the Parliament should ratify the law on "Protection from the Climate Changes within Georgia's Jurisdiction", the adoption of which is envisaged by the Law on Atmospheric Air Protection .	The Ministry of Environment should provide the involvement of various stakeholders (other ministries, non-governmental and scientific sectors, professional lawyers) in developing new laws and bylaws, as well as the mobilization of relevant financial resources.	To share relevant experience and to train experts.
1..8. Awareness of society and decision makers			
1.8.1. Awareness of decision makers and society about the reasons causing climate change, its outcomes, the ways of mitigation of climate change and adaptation to it, is low.	To implement the national program on the population's ecological education	To put the implementation of the state program on ecological education in the charters and working plans of the Ministries of Education and Environment as one of their functions. Capacity building at the Ministry of Environment for carrying out public awareness raising campaigns on environmental issues.	To train staff in the issues of educating the society and public officials about the ecological issues. To train staff in planning and carrying out campaigns to raise public awareness.
1.8.2. Business people are not aware of		The Ministry of Environment should	To train the employees of the Ministry

new opportunities from the enforcement of the Kyoto Protocol.		develop and carry out an awareness raising campaign for business people on new opportunities created by the Kyoto Protocol.	of Environment in preparing and carrying out the information campaigns oriented to business sector.
1.8.3. The environmental issues are weakly integrated into the curricula of secondary schools and higher educational institutions.		The Ministry of Environment, and the Ministry of Education, should develop the environmental education program to teach environmental issues at secondary schools and higher educational institutions.	To dispatch experts to western countries in order to get acquainted with the environmental management curricula at the higher educational institutions for their further adaptation in Georgia.
1.9. Information systems and monitoring in the field of climate change			
1.9.1. Availability and reliability of information are key barriers for meeting the requirements of the UN Framework Convention on Climate Change, particularly for carrying out an inventory of greenhouse gas emissions and absorptions. Regular collection of the reliable data is practically impossible.	The Ministry of Environment should develop the law on environmental monitoring, which will define the state role in the monitoring system, the procedures of data collection, analysis and dissemination of information, as well as regulate the issues of financing and distribution of functions among various institutions.	The Ministry of Environment and the State Department for Statistics (the Ministry of Economic Development) should develop instructions in order to improve statistical accounting for carrying out inventory of greenhouse gas emissions and absorptions. The system of carrying out regular inventory of greenhouse gas emissions and absorptions should be developed.	To train staff capable to create monitoring systems, including development of legislative principles, selection of indicators and observation methods.
1.9.2. There are no information sources to provide businessmen with regular information about available clean technologies.		The Ministry of Environment should provide the creation of the clean technologies electronic database - Clearing House Mechanism, which will be available for the society and the private sector.	

Table 2. Capacity constraints at institutional and individual levels and relevant measures/recommendations

Problem/issue	Measures at systemic level	Measures at institutional level	Measures at individual level
2.1. Functions, responsibilities, coordination and mutual cooperation of governmental organizations in the field of climate change			
2.1.1. The functions and responsibilities related to the Convention on Climate Change are not clearly and rationally distributed among the governmental organizations. Coordination and cooperation between organizations is weak.	<p>To analyze the responsibilities of governmental organizations, especially the role and responsibilities of the Ministries of Environment, Economic Development, Energy, Agriculture, Finance and Foreign Affairs for meeting the guidelines of the Convention on Climate Change.</p> <p>To create an effective mechanism for coordinating the governmental structures to meet the convention requirements. This function may be performed by the commission for sustainable development, or an extraordinary interdepartmental council may be set up.</p>	The issue of responsibility for meeting the Convention guidelines should be settled at the Ministry of Environment (to improve coordination between the focal point and the Climate Change Unit).	To prepare job descriptions on the functions and goals related to organizing and implementing the convention requirements for each position at the Ministry of Environment or other governmental organizations. Recruitment of new staff and retraining of old staff in accordance with new requirements.
2.2. Specific institutional capacity constraints regarding climate change			
The Ministry of Environmental Protection and Natural Resources			
2.2.1. The Ministry's capacities in terms of carrying out necessary coordination activities for meeting the convention requirements are limited. The function			To clearly define the functions and responsibilities of a focal point; to apportion his time and duties regarding the coordination of the Convention and

and responsibility of the Convention focal point is not clearly defined. The time and duties of a focal point regarding the coordination of the Convention and other activities of the Ministry are not apportioned rationally.			other activities of the Ministry rationally.
<p>2.2.2. Human, financial and technical resources of the Climate Change Unit are not enough for performing its functions effectively.</p> <p>The capacities of the Unit in terms of holding a political dialogue inside the country, preparing information campaigns, climate change mitigation strategy and programs on adaptation to climate change are extremely weak.</p> <p>The capacities of the Unit, as of the national focal point for the Clean Development Mechanism, are not developed properly.</p>		<ul style="list-style-type: none"> • To strengthen the capacities of the Climate Change Unit in terms of preparing information campaigns on climate change, climate change mitigation strategy and programs on adaptation to climate change. • To strengthen the capacities of the Climate Change Service as of the national focal point for the Clean Development Mechanism. 	To determine the staff requirements of the Unit, to define technical tasks and hire relevant personnel.
2.2.3. Infrastructure and technical equipment of the Hydrometeorology Department and the Hydrometeorology Institute are not enough for climate change observations, collection of reliable data, research and forecasting.		To improve the infrastructure and technical equipment of the Hydrometeorology Department and the Hydrometeorology Institute.	
Ministry of Energy			
2.2.4. Top officials of the Ministry of Energy are not sufficiently informed about the Convention on Climate Change and Georgia's commitments to it, as well as about the Kyoto Protocol and the mechanisms of its implementation,	The Ministry of Energy, together with the Ministry of Environment should develop the policy on raising energy efficiency and promoting the use of renewable energy, prepare the relevant legislative framework and	<ul style="list-style-type: none"> • To develop the Ministry's capacities in terms of developing the policy on energy efficiency and use of renewable energy, as well as preparing relevant programs and measures. • To improve the cooperation and 	<ul style="list-style-type: none"> • To inform top officials of the Ministry of Energy about the Convention on Climate Change, the Kyoto Protocol and the mechanisms of its implementation, including the emissions trading and clean

<p>including the emissions trading and clean development mechanisms.</p> <ul style="list-style-type: none"> • The cooperation of the Ministry of Energy with the Ministry of Environment over the climate change issues is weak; • The Ministry's capacities in terms of developing the policy on energy efficiency and use of renewable energy, as well as preparing relevant programs and measures are insufficient. 	<p>programs.</p>	<p>coordination between the Ministries of Energy and Environment for better integration of the climate change issues into the energy development strategy.</p>	<p>development mechanisms.</p>
2.3. General problems of management of governmental institutions			
<p>The employees of governmental bodies, at various levels, lack professional (managerial) competence, strategic vision, tasks and planning skills.</p> <p>Working days, week or month of each subdivision and official are planned ineffectively or not at all. Periodic reporting has not been introduced. Regular assessment of management system efficiency at public institutions through conducting independent audit does not take place.</p>	<p>To analyze the requirements of staff with various qualifications at public institutions.</p>	<p>To introduce new methods of planning/inspecting the work of the Ministry (including its subdivisions and employees).</p>	<p>To increase professional (managerial) competence of the govt employees</p>
2.4. Capacity constraints at individual level			
2.4.1. Human resources management policy			
<p>Staff qualifications often do not correspond to their functions. Terms of reference, clearly defining the functions and responsibilities for each employee, are not elaborated and approved in most</p>	<p>The Government of Georgia should provide the development of relevant Human resources policy and legislation in order to ensure effective state management. It</p>	<p>To elaborate terms of reference defining the functions and responsibilities for each employee in public institutions.</p>	<p>To recruit new staff and retrain old one in accordance with the requirements.</p>

public institutions.	should also provide the improvement of the staff recruitment policy, the transition to a contractual system and the establishment of staff assessment system.		
2.5..2. Specific problems related to human resources			
<ul style="list-style-type: none"> • Georgia has highly skilled staff in technical and natural sciences. However, there are not enough experts, who can develop effective medium and long-term strategies, policy, programs and plans in the field of environmental protection, including climate change. • Especially critical is the lack of professionals with skills to define various scenarios of economic development, to forecast greenhouse gas emissions, to develop adaptation measures, to assess the efficiency of policy instruments and the costs and benefits of alternative measures. 			Staff training and upgrading in the field of forecasting greenhouse gas emissions, assessing vulnerability, developing adaptation measures, assessing the efficiency of policy instruments and analyzing the costs and benefits of alternative measures.

ANNEX III. THE CAPACITY CONSTRAINTS IN THE FIELD OF COMBATING DESERTIFICATION/LAND DEGRADATION AT SYSTEMIC, INSTITUTIONAL AND INDIVIDUAL LEVELS AND RECOMMENDED MEASURES

Table 1. The capacity constraints at systemic, institutional and individual levels and relevant measures/recommendations

Problem/Issue	Measures at Systemic Level	Measures at Institutional Level	Measures at Individual Level
The National Programme of Combatting Desertification approved in 2003, does not envisage institutional or legislative changes that would ensure improvements in land management. At present, there is no other national strategy or action plan for addressing land management problems including problems of desertification/land degradation.	It is necessary to update the national policy on combating desertification/land degradation and develop respective comprehensive national action plan.	Ministries of Environment, Agriculture and Economic Development, with the participation of academic institutions shall ensure development of action plan.	Specialists capable of organizing and supervising the action plan development activities should be identified and trained within the mentioned institutions
Desertification/land degradation problems are not integrated into sectoral and other development plans	Planning practices and methodologies existing in the country shall be revised and new approaches, envisaging more effective mechanisms for intersectoral cooperation, based on strategic assessment and planning, should be developed.	Ministry of Environment shall develop particular proposals for improvement of planning practices	The state authorities shall invite analyses and planning experts, and ensure their respective training/retraining
Legislative framework on desertification/land degradation does not ensure: <ul style="list-style-type: none"> • Effective distribution of functions of institutions involved in the problem solution; • Establishment of effective mechanisms for land use/management; • Establishment of economic instruments for combating desertification/land degradation. 	The legislative framework shall be assessed by the experts, who will provide their advices for its harmonization and integration, and development of respective amendments (Law on Structure, Authorities and Activities of Government of Georgia, Law on Conservation and Restoration-Improvement of Soils, package of laws on land property).	Ministries of Justice, Environment, Agriculture and Economic Development, with the participation of academic institutions, shall ensure implementation of the mentioned measures. Special attention should be paid to proper distribution of respective functions between the Ministries of Agriculture and Environment.	
Functions and responsibilities of the Land Management Unit (MoE) are not clearly defined that results in its		Ministry of Environment shall develop respective bylaws and internal regulations, which will ensure	Staff of the Land Management Unit should be upgraded through

ineffective performance.		optimization of performance of the Land Management Unit	trainings focusing on new objectives set by the department.
The database used for assessment of desertification/land degradation processes and respective decision-making is insufficient, obsolete and not reliable.	The following activities shall be performed: a) identification of information needs, general indicators and supervision methodologies; b) identification of the bodies responsible for monitoring and collection/processing/storage of information; c) creation of legal framework ensuring the development of modern integrated information base for strategic planning and decision making processes	Ministries of Environment and Agriculture should develop the respective legal proposals, ensure collection and consolidation of information concerning desertification/land degradation and creation of special (compatible with GIS) information center.	Staff responsible for collection and processing of information should undergo relevant training/retraining
The performance of public officials is not well organized; they have inadequate motivation, no proper incentives and identified responsibilities, especially in the field of public relations. In addition, they have poor knowledge of desertification/land degradation issues and lack of managerial and planning skills.		Ministry of Environment shall develop respective departmental norms, improve material conditions of its staff, and put forward the issues of training environmental managers, lawyers and other specialists in higher educational institutions	The continuing retraining of the staff shall begin. Special attention shall be paid to planning, management, document development and public relations issues Prospective young specialists should be sent to higher institutions for receiving respective additional qualifications
Public awareness on desertification/land degradation issues is very low and effective land use traditions are practically lost.	To create the legislative framework ensuring integration of specific ecological problems into secondary school curricula; to develop permanent training/retraining system (either formal or informal) for land owners/users/local authorities.	Ministries of Environment, Agriculture, Science and Education and Justice shall ensure development of respective legislative amendments, educational programs, guidelines and information materials (including video materials).	The respective personnel shall be trained and/or retrained
Existing academic institutions are incapable of implementing their functions.	To create political and legal prerequisites for the involvement of the Ministry of Environment in academic sector reforms.	Ministry of Environment and Ministry of Science and Culture should jointly implement the relevant reform of academic institutions, with maximal consideration of desertification/land degradation problems, and on a basis of	Personnel should be trained in accordance with the requirements of modern research methodologies.

		retaining and integrating the existing potential (primarily the personnel potential).	
--	--	---	--