

**Ministry of Environment Protection and Natural
Resources of Georgia**

Third National Report of Georgia

**On The Implementation of the UN Convention to
Combat Desertification**

**Tbilisi, Georgia
May 2006**

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II. Brief Overview

In 1994 Georgia signed the UN Convention to Combat Desertification. In 1999 the Parliament of Georgia ratified the Convention and on 21 October 1999 Georgia became the Party to the UN Convention to Combat Desertification.

Georgia is a country with insufficient land resources. Its territory, including the areas of territorial waters (835, 1 thousand hectares), amounts to 7628, 0 thousand hectares. According to the data of 2005 the area of agricultural lands comprises 3026, 3 thousand hectares (39, 7% of the whole territory), out of which 802, 1 thousand hectares is plough-land and 1796, 9 thousand hectares is grazing land.

Since November 2003 positive trends of socio-economic development have become noticeable in Georgia. A course of the reforms was announced for the country development. The activities of the state administrative bodies have become better organized, transparent and well-considered (carefully thought out). Executive and financial discipline became stronger; the state administrative system personnel have been changed partly grew younger. The environment for the activities in the country in general has become much more attractive as compared with the previous years.

At the same time, the problem of the territorial integrity of the country has not been solved yet; investment environment should further improved, unemployment rate has increased as a big amount of state functionaries have been dismissed from their jobs. The reforms of the legal and administrative systems are still going on.

Development priorities which have been identified by the country authorities for short- and medium-term outlook, mainly relate to the sectors such as self-defense, education, energy, transport, poverty reduction. Environmental problems are less represented in these top priorities of the development. Even in the cases when the development of this or that sector of economics is acknowledged as the most important task of the state policy (for example agriculture) environmental aspects are still not paid enough attention. In the field of environmental protection the state course within the short and medium-term period is mainly directed at the optimization of the existing system of management, improvement of the state control (supervision) over the use of natural resources and destruction of the possibilities for corruption.

Desertification is a significant ecological problem for Georgia, which is an agrarian country with insufficient agricultural lands. However, in the conditions of Georgia desertification is limited to geographical area. The forms of land degradation such as deforestation, wind and water erosion, landslides, overgrazing, soil exhaustion, soil contamination and others is spread all over the country and is accompanied by socio-economic results. Because of that desertification is considered within a broader context of land degradation and problem of sustainable land management.

In Georgia most sensitive areas to desertification are the regions of Shida and Kvemo Kartli, parts of Kakheti (Dedoplistskaro, Signagi and Sagarejo regions) where desertification processes are activated because of unsustainable use of land resources (improper irrigation and cultivation,

overgrazing, deforestation) and climatic factors. Desertification processes are intensified over almost 3000km² of area including Shiraki, Eldari, Iveri, Taribana, Naomari, Ole, Jeiran-Choli valleys, mountain ranges and plateaus dividing them and the most part of Kakheti range hill-side. Desertification zone in Georgia is starting at 300-400 meters above the sea level and is closely bordering with “North savannas”. Desertification process is very intensively presented on the area of 119 041,5 hectares of land in Dedoplistskaro region, 46700,0 hectares of area in Signagi region, 47000, 0 hectares of area in Sagarejo region, 32000,0 hectares of area in Gardabani region and 30561,0 hectares of area in Marneuli region. Active desertification is also noticed in the southern part of Georgia (Akhaltzikhe depression) and Shida Kartli (Kaspi region), where during the last decade the erosion process caused by the wind became stronger due to the destruction of windbreaks, increased frequency of droughts, deficit of precipitation and increased temperature.

The scale of land degradation is much bigger as compared to desertification and it is rather significant problem for almost all Georgia including the Western Georgia and high mountain regions. According to the latest data, about 35% of agricultural lands are degraded. Land erosion, which has significantly activated during the last years is most representative out of the problems related to land degradation. More than 1 million hectares of land is erosion stricken. Out of it plough-lands constitute 380 thousand hectares, pasture lands and hayfields constitute 570 thousand and Black Sea coastal line – 87 thousand hectares. In arid and semi-arid zones of Eastern Georgia about 105 thousand hectares of plough-lands in 18 administrative regions undergo erosion caused by winds. 59 220 hectares of soil is seriously saline, in average -54 340 hectares. Overall area of humus-sulphate soils requiring melioration (land-reclamation) constitutes 15 thousand hectares.

Land degradation in Georgia is mainly conditioned by climatic and topographical peculiarities, activity of geo-dynamic processes, uncontrolled forest cutting and improper agricultural practices (over-pasturing, intensive cultivation, plough of slopes, extraction of minerals through open pit mining).

According to the recent data of the Ministry of Agriculture of Georgia the low-yield agricultural lands occupy rather big areas:

- Saline and brackish soils – 205, 0 thousand hectares (6, 7% of the whole arable lands);
- Acidic - 300, 0 thousand hectares (11%)
- Marshy soils – 210, 0 thousand hectares (7, 3%)
- Eroded soils - 1 mil hectares (33%).

This is aggravated by the impoverishment of the soil from the nutrition substances necessary for vegetation and the trend of the reduction of humus - the main indicator of fertility - in almost all types of soil.

1. Focal point institution:

| | |
|---------------------------------------|--|
| Name of focal point | Ministry of environmental protection and natural resources |
| Address including e-mail address | 6 Gulua str. 0114 +99532 275723 |
| Country-specific websites relating to | 1. www.moe.gov.ge |

| | |
|-----------------|----------------|
| desertification | 2. www.ncsa.ge |
|-----------------|----------------|

2. Status of NAP:

| | |
|--|---|
| Date of validation | April 2, 2003 |
| Body/institution/Government level which validated the NAP | Decree of the Prezident |
| NAP review(s) | No |
| NAP has been integrated into the poverty reduction strategy (PRSP) | No PRSP was adopted before the NAP |
| NAP has been integrated into the national development strategy | No However, considered during the preparation of certain strategies, plans: Biodiversity Strategy and Action Plan; First National Communication to the United Nations Framework Convention on Climate Change |
| NAP implementation has started with or without the conclusions of partnership agreements | No |

3. Cooperation within SRAP/RAP frames on issues of desertification hasn't been launched yet.

4. In 2001 the **National Coordinating Body** on UNCCD- Permanent State Commission -was established by the Decree of the President of Georgia N 282 (15.07.2001) "On the Establishment of the Permanent State Commission on the Implementation of the United Nations Convention to Combat Desertification". The Commission was consist of representatives of relevant governmental agencies and academic institutions. PSC doesn't include non-governmental representatives due to some limitations imposed by legislative provisions for such a commissions.

However, currently the Commission is not functioning.

5. Total number of NGOs accredited to the process: _____2_____

| | |
|---|----|
| Has an NGO National Coordinating Committee on desertification been established; if yes, how many NGOs or civil society organizations participate in it? | No |
|---|----|

6. Total number of acts and laws passed relating to the UNCCD: 21
Name up to five most relevant acts and laws and/or regulations.

| Title of the law | Date of adoption |
|--|--|
| 1. Law on Soil Protection | 1994 |
| 2. Law on Conservation of Soils and Restoration-Improvement of their Fertility | 2003 |
| 3. Law on Land Conservation and reclamation | 1997, with amendments in 2000 and 2001 |
| 4. Law on Mineral Resources | 1997 |
| 5. Law on Oil and Gas | 1999 |

7. The consultative process within the framework of the UNCCD hasn't not been carried out as well as partnership agreements were not initiated.

List of consultative meetings on UNCCD implementation (please provide information where appropriate):

| Name of consultative meeting | Date/year | Donor countries involved | International organizations or agencies of the UN system involved |
|---|-----------|--------------------------|---|
| 1.REC Caucasus Conference "Draught and Desertification" | 2002 | Germany, USA | WHO, WFP |

8. The projects currently under implementation which are directly or indirectly related to the UNCCD.

| Name of project | Project implemented within the framework of the NAP/SRAP/ | Project implemented within the framework of | Timeframe | Partners involved | Overall budget |
|-----------------|---|---|-----------|-------------------|----------------|
| | | | | | |

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| | RAP? (Yes/No) | | | | |
|--|------------------|---------------------------------------|--|-------------------------|---|
| 1.National Capacity Needs Self-Assessment for Global Environmental Management | No | UNDP/GEF | 2002 December- 2006 | | 198 000USD |
| 2.Enabling Activities for the Preparation of Georgia's Second National Communication | No | UNDP/GEF | 01.01 2006- 01.01.2009 | | 15 000US\$ |
| 3.Forest Development Project | No | International Development Association | 2002 3 December- 2008 31 December | | Credit - 12.60ml.SDR(15.67ml.USD) Georgian Ministry of Finance(such as credit agreement signing authoritative body); -5.67ml.USD credit |
| 4.Georgia's Protected Areas Development Project | No | World Bank, USAID | July 2002- to December 31 2006 | | 141300USD |
| 5.Reducing Trans-boundary Degradation of the Kura-Aras River Basin | No | UNDP/GEF/ SIDA | 2003-2006 | | 649 629 US\$ |
| 6. South Caucasus Water Programme | No | USAID | 2005-2008 | | 1 500 000 US\$ |
| 7.Costal Zone Integrated Management Project | No | GEF | 1999-2006 | Government of Nederland | 2 600 000 US\$ |

III Strategies and priorities developed in the framework of sustainable development plans and policy

III.1 Desertification/land degradation in the frame of environmental planning

A new stage of political and economic development of Georgia started in November 2003. The new political force that came into power started far going reforms relying on globally recognized ideas of the people's rights, democratic administration and market economy. In case of success the results of these reforms will need several years to become tangible. However, at present the general state is still not stable the cause of which is unsettled political problems in Abkhazia and Southern Osetia (Shida Kartli), hard social state of the population (as of 2004 52% of the population was beyond the poverty line), legal, administrative and management problems still present in the country.

At this stage the priority problem of the country in medium-term perspective is to ensure the fast economic growth, development of economic sectors such as energy, transport, agriculture and tourism and reduction of poverty. Unstable political and economic environment does not create favorable conditions for the state and society to pay more attention and allocate more resources for global environmental protection, namely biodiversity protection and its sustainable use, climate change and sustainable land management issues.

Despite the significant achievements in the growth of the budget for the last two years, the level of income into the state budget is still low. Limited state financial resources are mainly used to cover the foreign debts, as well as the expenses needed for defense, remedial actions, social security of the population and the development of priority fields of economy. Environmental financing is far less as compared to the funds which are actually necessary for the achievement of real changes and results in this sphere.

Financial markets in the country are still very poorly developed. The existing investment environment do not facilitate to the environmental protection, namely to carry out such investments in the field of global environmental protection and sustainable use of natural resources which would bring benefits in long-term perspective. Respectively, the private sector does not have enough incentives for the implementation of environmental protection projects.

In Georgia the planning for combating desertification/land degradation is the constituent part of the country planning for environmental protection, the frame of which is created by the Law on Environmental Protection of 1996. The Law envisages the development of an environmental planning system which should include long-term strategic planning (sustainable development strategies), five-year planning (national environmental action plan) and drawing up environmental management plans for the units of activities. Environmental action plans shall also be developed at regional, local and departmental levels.

Georgia still has not elaborated a strategy for sustainable development.

On April 22, 2005 under Resolution N77 the Georgian Government established Governmental Commission on the Sustainable Development of Georgia. The Commission was assigned to elaborate the strategy for the sustainable development of the country.

The Ministry of Environment Protection and Natural Resources of Georgia was assigned the function of the Commission Secretariat.

III.2 First National Environmental Action Plan (NEAP) of Georgia.

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 the desertification problems within the view of general land resource management problems. The Program prioritizes the 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 on the Ministry of Agriculture and Food and the Ministry of Environment. However, due to the lack of finances and other barriers, most of these measures have not yet been implemented.

The above-mentioned Plan is outdated needing renewal. It is planned to elaborate Environmental Protection National Action Plan for Georgia for 2006-2010.

III.3 National Action Plan of Georgia for Combating Desertification (NAPCD).

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. All stakeholders and academic institutions, as well as the representatives of local authorities participated in the development process within the scope of their capabilities.

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 measures for combating it, along with setting out expected outcomes and implementation schedule. Specifically, the Program proposes scientific-research measures, as well as biodiversity conservation, raising environmental awareness of society, monitoring desertification, agricultural and international cooperation measures.

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

Besides, the Plan does not envisage the carrying out measures which are connected with the conservation of water resources. This makes the document one-sided. Particular weakness of the Plan is that the problem identification and planning of the measures to address the problems (due to limited finances and time) was not carried out on the basis of detailed study and mainly the opinions of experts were used. The given document is more like a concept than a specific plan.

The measures presented there are very general and are presented only on conceptual level. The Plan does not offer specific project-proposals including demonstrating ones. In addition, the Plan does not offer the criteria and methodology for the evaluation of given measures.

The plan does not identify possible sources of financing and does not offer the institutional mechanisms for the Plan implementation. The criteria for the Plan implementation monitoring and evaluation are not identified.

Taking into account all above said, the Plan requires renewal. The National Action Plan for Combating Desertification is rather costly. It is necessary that the funds for its implementation are mobilized and allocated both from the state budget and donor organizations with international assistance.

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).

In the frame of the First National Communication to the United Nations Framework Convention on Climate Change (1995) desertification issues were reviewed in general, however in the Climate Change Action Plan specific measures were not planned.

Management Plan for Conservation of Arid and Semi-Arid Ecosystems of Georgia (1999), and the Khrami and Alazani River Basins Integrated Management Plans (2002) also contain some measures against land degradation; however, due to the lack of political will, finances or other resources, most of the actions are not implemented.

At present the work for the preparation of the Second National Communication to the United Nations Framework Convention on Climate Change is underway. This document too will include the measures that should be taken against land degradation/desertification.

III.4 National Focal Point for UNCCD

The first NFP for UNCCD was designated in Georgia in 1997, well before to the ratification of UNCCD by Georgian Parliament (23.06.1999) and played a key role in accession process.

In 1997, with the support of UNCCD Secretariat, the Focal Point organized the seminar on Public Awareness on CCD and its Implementation in Georgia (Telavi 21-24 April, 1997) that became first major event in Georgia related to the desertification problem.

In 2000, the program “Institutional Capacity Building of NFP” was launched through the assistance of UNCCD Secretariat.

Since the January 2006 the obligations of the NFP for UNCCD are assumed by the Head of the Division of International Relations of the Department of International Relations and Conventions of the Ministry until the official appointment of new NFP.

III.5 Integration of issues related to Combating Desertification/Land Degradation into Socio-economic Development and Sectoral Strategies and Programs

Issues of desertification/land degradation are connected with the 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, these plans envisaged the implementation of state-funded programs “Measures for Improvement of Fertility of Brackish and Acidic Soils”, “Protection of Soils against Erosion” by the Ministry of Agriculture. However, funding for these programs and – respectively - 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 envisaged these same programs.

For the purpose of soil protection and improvement of the soil fertility the following measures were taken by the specialized service of the Ministry of Agriculture:

1. Agro-chemical study and qualitative evaluation were carried out on the agricultural areas of 3262 hectares in 19 regions of the country. According to this study and taking into account the amount of phosphorus and potassium necessary for plants the investigated areas were put into the category of “very poor”.
2. In 2004, by the state earmarked program 80, 0 thousand GEL was envisaged for the measures against erosion. For the purpose of soil protection against erosion trees were planted on the area of 24 hectares in Ajara Autonomous Republic.
3. “Recommendations against Erosion” were elaborated and published.

Generally, in parallel to the limited capacities for effective planning and implementation of the measures for combating desertification/land degradation in Georgia there exist some major problems:

- Lack of experienced personnel that are familiar with planning and implementing sustainable land management measures under the conditions of a market economy; in addition, 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. Communications between these bodies and organizations are inefficient.

During the Soviet era, control and planning of huge state-owned agricultural lands was easier, but later the state was not able to find mechanisms for introducing relevant monitoring, planning and management to meet the radical changes and new types of property which resulted in the appearance of countless small, independent farms. Currently, there are no such market mechanisms which would regulate the relationships between the state and small-scale private farms. It is almost impossible to control their activities, including the activities that 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 not been able until now to develop any new approach by taking into consideration the new reality. 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 the solution of land degradation problems 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 state institution responsible for all these fields. 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 amendments failed to draw effective boundaries between the rights and obligations of the Ministries of Agriculture and of Environmental Protection. Their rights and obligations obviously overlap and create further possibilities for serious intersectoral conflicts and are easily imaginable. This situation, respectively, will further reduce efficiency in planning and managing measures for combating land degradation, inefficient use of existing limited financial and material resources. The situation is aggravated by the fact that there is also significant overlapping and boundaries are not fixed clearly in functions of local and central authorities, as well as in the functions of separate units of the same authority regarding the land management issues.

Georgian legislation grants a wide range of powers to local government and self-governance bodies to develop and implement social-economic programs. They are also empowered to plan and implement local integral or sectoral environmental programs in conformity 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 is preconditioned by the 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 in the field of environmental protection) at local levels.

IV. Economic instruments Applied in Combating Land Degradation.

Developed countries use different market instruments for the protection of land resources and soils. Most widespread 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.¹ In Georgia these types of subsidies practically are not used.

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

1. In the country, there are economic instruments, including fees on the use of natural resources and fines on violation of usage rules, the intention of which is the stimulation of protection and sustainable use of natural resources (including land resources). The Administrative Code of Georgia envisages fines for the 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,

¹ Economic Instruments for Pollution Control and Natural Resources Management in OECD Countries: A Survey. ENV/GEEI998)35/REV1/Final, OECD, 1999

violation of norms and rules on use of chemical substances in the environment. The fines are within a range of GEL 10-2,000. The Code, along with the obligation of payment of the mentioned fines, also envisages compensation for the damage caused to the environment. However, despite a lot of registered violations of land use rights, incomes received from fines 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 not efficient. Situation is the same with the fees for the use of timber resources, which is regulated by the Law on Fees for Use of Natural Resources.² The impact of this fee on the illegal timber production in the country is very insignificant, which means that this specific economic instrument is ineffective within the present socio-economic and institutional context of the country. For instance, it does not envisage the actual timber demand either at the domestic, or at the international market.

2. In spite of the structural reforms that have been underway 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 about 30% of it has been rented. Most of those privatized and rented land plots form small-scale farms, which, according to the current Tax Code, are not subject to the economic instrument for the stimulation of sustainable use. From 1997 to 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, from the viewpoint 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. At the same time, until January 1, 2007 according to the new Tax Code private incomes are exempt 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 per annum 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. This means that the state does not have any effective instrument (mechanism) to influence the rural population and respectively the most land plots in their property, except for administrative pressure. This approach can significantly reduce the efficiency of the measures to combat degradation/desertification in these areas.

Thus, it can be said that currently the state does not have effective economic instruments for stimulating sustainable land use in the country.

Another reason for the absence of economic instruments, along with the lack of political will, is the lack of environmental economists who would be able to develop effective economic instruments.

V. National Legislation in the Field of Land Degradation

In Georgia the issues of land resources management and conservation, including protection against desertification/degradation, are regulated by a number of laws. Some of these laws are

² In 1994-2004, there was a tax on the use of natural resources, which was regulated by the Tax Code of Georgia

directly related to land protection issues, while others regulate the issues of land ownership and use, which 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 Conservation and reclamation (1997, with amendments in 2000 and 2001), Law on Mineral Resources (1997) and Law on Oil and Gas (1999).³

The other laws are: Law on the Agricultural Land Ownership (1996), Law on Registration of Lands (1996), Law on Compensation for Damage and Costs of Reclamation of New Lands Imposed through Transfer of the Agricultural Lands to Non-Agricultural Activities (1997), Law on Transfer of Non-Agricultural Lands Being in Disposal of Natural Persons and Subjects of Private Law into Private Ownership (1998), Law on State Registration Fees for Land Plots and Real Estate Situated there (1999), Tax Code (2004).

Existing legislation that regulates land degradation issues is very generic. Too many agencies are responsible for its enforcement and their activities are regulated very inefficiently, with frequent overlapping of functions. Moreover, legislation is not complete because Land Code, a comprehensive law regulating land use, is not developed and adopted. Old Land Code was adopted in 1971. Many provisions of this law, regardless of their relevance, are not taken into account in new legislation. Therefore, the land management specialists often are forced to go back to old Land Code.

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.

Existing legislation has liberalized land use and management, and created potential for the formation of a land market. However, its implementation is not very efficient as development of land market is very slow. This is a main obstacle for land consolidation, combating land degradation/desertification and non-rational utilization of land resources.

The process of transferring from one form land ownership into other is not yet finalized. 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.

Sometimes new laws are adopted without formally abolishing old laws. For example, the Law on Land Conservation and Reclamation was adopted in May, 2003 without any indication of whether the 1994 Law on Protection of Soils was abolished or not, and if not, what its status was.

An effective control and monitoring of law enforcement is not carried out. There is no clear distinction between this function and monitoring of land state. Public discussion of draft laws and bylaws is either superficial, or does not take place at all.

³ There are a number of laws that are not directly related to land protection issues, but have an influence on this sector. These are: Law on Environmental Protection (1996), Law on Environmental Permits (1997), Law on State Environmental Expertise (1997), Law on 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).

VI. The Monitoring and Evaluation mechanisms

Unfortunately there is no law or sub law on environmental monitoring in legislation that would clearly define the role and responsibilities of agencies carrying out environmental monitoring. Clearly defined procedure and methods of observation, its frequency, data collection, processing, exchange, reporting and dissemination of information is absent. Issues of environmental monitoring are very generic and spread in different environmental laws.

Situation in monitoring of land resources is also rather grave. It must be outlined that land monitoring is least developed filed in Georgia. The observations of the soil quality have not been carried out since 16 years. It is important to point out that with financial assistance of The Credit Bank of Reconstruction of Germany (KFW) has been carried out project on Land Cadastre that envisaged development of GIS maps. The project has been completed and its beneficiaries are Ministry of Justice and Ministry of Agriculture.

The major part of the environmental data in Georgia is available only on hard copies. Digitalizing of data is rarely performed. 150 years old historical data are stored in archives of different agencies where the minimum safety requirements are not met. The cooperation among different agencies is weak. The role and responsibilities in data exchange among agencies is not defined. In fact, there is a little interest of agencies and society in these data.

Update of data on regular (daily) basis in internet is performed only by center of monitoring and forecast.

VII. Public participation in the process of planning of environmental protection actions

In Georgia public discussions on the draft environmental laws and regulative acts is widely spread practice. Georgian legislation guarantees the right of the public to have an access to any kind of information existing in the governmental agencies (unless this information is of State or commercial importance). Georgia has ratified convention of UN European Economic Commission on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters.

Periodically the Ministry of Environmental Protection and Natural Resources holds meetings with Non Governmental Organizations to discuss the environmental problems, development of policy in the field of environmental protection. NGOs are involved in development of various documents on the environmental protection. However, there are some difficulties with regard of public participation. Local Non-Governmental Organizations often have no sufficient funds available for assisting public participation process. It must be pointed out that from numerous registered Environmental NGOs only few are working on the land degradation/desertification issues.

The measures taken for raising awareness and education of the population and governmental agencies is only limited to short term and specific campaigns that are mainly organized by Non-Governmental Organizations. The role of the local media in this regard is restricted. Target measures are directed to the specific audience. Academia was always informed on the process of development of national action plan. Media and individual journalists have played a major role in information campaigns. Gender issues are not a problem. On the leading positions in the state and research institutions are represented males and females and both sexes are actively involved in decision making process.

VIII. Financial Resources

Although state budgetary revenues have almost doubled within the last two years (2004-2005), the state financial resources are still limited (the budgetary revenues for 2004 reached to 1 773 mil. GEL, or 928 mil USD⁴), and are primarily allocated for foreign debt service, defence, judicial system and social security.

Till 2004, the budget of the Ministry of Agriculture envisaged the implementation of the soil protection programs, such as the State Program on Protection of Soils from Erosion or the State Program on Improvement of Acid, Low Fertility Soils. However, in reality, funds allocated for these programs were less 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 million⁵ while in reality only GEL 359 201 were allocated for its implementation in 1999-2002, which was 21.4 times less than envisaged.

Unlike other environmental fields (i.e. biodiversity conservation), external financial assistance in combating desertification/land degradation is inadequate. In Georgia, Global Environmental Facility, as a financial mechanism of Convention on Combating Desertification has only funded one project: Capacity Needs Assessment for Global Environmental Protection, which only assesses existing state of art. Here must be pointed out a project funded by German Bank of Reconstruction and Credit (KfW) on Land Cadastre, which envisaged development of GIS maps for Soil types.

Important financial sources for funding environmental protection activities are: United Nations Development Program (UNDP), World Bank (WB), USAID, TACIS, SIDA, KfW, as well as bilateral donors (France, German, Netherlands, Norway, Great Britain, Denmark, etc)

The Secretariat of UN convention on Combating Desertification provided financial assistance for development of the National Action Plan for Combating Desertification in Georgia. The contribution of the Ministry was restricted to provision of necessary equipment, working place, etc, as budgetary funds for that time were very limited.

⁴ Average rate for 2004 – 1 USD = 1.91 Lari

⁵ Source: State Programme of Georgia on Soil Protection and Improvement of Fertility, Ministry of Agriculture and Food of Georgia, Tbilisi, 2002

IX. Scientific-Technical Measures in Combating Desertification

In Georgia different scientific institutions are working on issues of land degradation/desertification:

Institute of Hydrometeorology of the Academy of Science of Georgia.

All departments of the Institute of Hydrometeorology directly or indirectly are involved in research of the land degradation and desertification issues. Here are carried out studies on hydro-agro-meteorological trends, short, middle and long term forecasting, soil contamination and modelling.

Vakhushti Bagrationi Institute of Geography of Academy of Sciences of Georgia is carrying out research in Geography: investigation of physical, economic and social geography of the mountain regions, rational use of natural resources, sustainable economic and social development. In institute in particular is performed: investigation of natural hazardous events (landslides, mudflows, erosion, floods, etc), mapping, forecasting and development of mitigation measures against them.

Desertification is the main subject of research. In studies is applied integrated approach and are examined natural factors and particular aspects (hydrology, climatology, and geomorphology, social and economic environment) of desertification.

In the laboratory of mathematical modelling is carried out investigation of impact of global warming on the desertification process in mountain regions. The objective of the study is development of methodology allowing for quantitative evaluation of expected land desertification.

In 2001 in institute was established scientific-consultative council, that was engaged in work of the permanent state commission implementing UN convention on Desertification. In institute is established laboratory for studying desertification.

Department of Soil Science of the University of Agricultural Sciences of Georgia. The main activity of the department is research of the land degradation and desertification problems. The information and data in University is stored in laboratory and is presented in scientific reports, articles and monographies.

There are departments of hydrology, soil science, meteorology and climatology, oceanology, geomorphology, landscape, etc on faculty of Geography of the Tbilisi State University. Till 90-es in these departments research, field works stationary observations were carried out on systematic bases. At present, due to lack of financial resources, researches are carried out only episodically and only within the some projects/programs. All stationary and fieldworks are practically ceased.

Scientific-Research Institute of Soil Sciences, Agrochemistry and Melioration of the Academy of Agricultural Sciences of Georgia is working on issues of soil erosion forecasting, soil protection against erosion and increasing fertility of salivated soil, development of

agromelioration measures. Special attention is paid to examination of the biological activity of soil and its physical and chemical characteristics. The institute has carried out following activities: developed maps for soil types with scale 1: 200 000. In 19 administrative regions of the Eastern Georgia was carried out studies and developed maps for soil types with scale 1: 50 000. Besides, were developed measures against soil salinization and erosion, rational utilization of fertilizers and proper distribution of agricultural crops. There was carried out agroecological division of soil cover into districts in Kartli and Kakheti and eastern part of the Greater Caucasus. The composition, characteristics and regime indicators are examined and limiting factors of fertility revealed. For 42 administrative regions of Georgia was made division of soil cover into districts taking into consideration character of erosion. It gives information on extent of erosions processes and its intensity. Number of management, agro- and hydrotechnical measures for protection against land erosion was developed. Potential land erosion threats are identified.

L. Kanchaveli Scientific-Research Institute of Plant Protection of the Academy of Agricultural Sciences of Georgia. The main objective of institute is study of the bio-ecological characteristic of agricultural crop parasites, monitoring of phito-sanitary state, short and long term forecasting, development of bio rational (integrated) methods against harmful organisms, for increasing the quantity and quality of harvest.

It must be pointed out that at present in institute only few researchers and scientists are engaged in national or international projects. Institute of Plant Protection is not engaged in activities carried out within the convention on combating land desertification and degradation. They are not informed about activities performed by the scientific-consulataive council.

Scientific-Research Institute for Agricultural Radiology and Ecology of Academy of Agricultural Sciences of Georgia since 1979 is working on issues of soil contamination with radionuclide and heavy metals and since 1991 on agroecological issues. It studies impact of agricultural activities on environment and soil fertility and quality. It works on issues of environmental impact on soil and growth and harvest of agricultural crops.

From the activities carried out by the **Institute of Water Economy and Eco-engineering (Saqtskaeclogia)** must be pointed out following: identification of the soil resistance against runoff, modelling river bed sediment movement, elaboration of normative for identifying the acceptable speed margins for water flow that does not wash out soils, development of a theoretical bases for forecasting of soil and wind erosion and measures against erosion. Different erosion preventive constructions were designed. Mudflow development mechanisms and dynamics were studied, mudflow preventive constructions were designed. Theory of reliability of hydromeliorative installations were developed, new methodology for melioration of heavy soils of Eastern Georgia were elaborated.

Department of food production and botany of Zoo veterinary University of Georgia. The main objectives of department are improvement of the winter pastures presented in semi desert and dry zones, development of measures against wind erosion.

Scientific Research institute of Agriculture of the Academy of Agricultural Sciences of Georgia is working on breeding new agricultural crops, including new drought and salt resistant perennial and annual plants. They are used as a main component for prevention of land degradation/desertification. In institute and in its observation stations are taught rotation of crops on arable lands of dry zones.

Institute of Botany of the Academy of Sciences of Georgia. The field of research of the Institute is: plant biodiversity, problems of ecology of high mountain plants, development of scientific basis for rational utilization and protection of vegetation, conservation of endangered species of flora of Caucasus/Georgia; Bioremediation of soils contaminated with oil and oil products.

At present in Institute of Botany international grants are mobilised to carry out research in vulnerability due to global climate change, establishment of the long term biodiversity monitoring system for high mountain regions, conservation of endangered species. Institute of Botany is on a state budget. Owing to institute's high technical potential and good management, during last 5 years from international organizations were raised funds for 15 conservation projects and research, that have been carried out successfully.

Only from 5 year USA grant, institute annually receives USD 60 000. Department involved in projects and programmes are well equipped with computers and have access to telecommunication. Institute has its own program provision. It has data on vegetation cover obtained during many years of observation and research. In 1937 in Shiraki valley (karistskali) was established station for research of vegetation cover in arid and semi-arid lands, their seasonal development rhythms, structure of phytocenosis, individual species, and root systems. The main objective of this study was optimal utilization of available pasture lands. From the beginning of 90-es due to financial crises, systematic works on station were ceased. At present researches there are carried out only within the separate projects and programs.

Institute of Zoology of the Academy Science of Georgia is engaged in research of wild fauna, its biodiversity, animal ecology, ethnology, zoogeographical studies. From 40-es till early 90-es, in institute of Zoology were carried out systematization of mammals of Caucasus, studies on fauna, morphology, ecology, zoogeography, embryology, behaviour and parasites. From 90-es works have been dramatically decreased due to lack of funds, however from time to time works on the mammal behaviour and cariology were carried out. Serious research of ichthyology, herpetology and ornithology is not carried out. Material technical base is poor. Computers and telecommunication means are not available.

The biggest problem is funding. Taking into consideration existing economic situation in country, funds allocated from the state budget for research is not adequate. Existing information is outdated. It is necessary to upgrade data and create modern data bases.

Representatives of the academy sector are engaged in work of scientific-consulting council for combating desertification. Council has actively participated in implementation of the National Action Plan for Combating Desertification.

References:

- Ministry of Environment Protection and Natural Resources of Georgia
- UNDP/GEF project “Georgia’s Capacity Needs Self Assessment for Global Environmental Management”
- Department of Statistics, Ministry of Economic Development
- Ministry of Education and Science
- Ministry of Culture and Sport
- Institute of Hydrometeorology

Annex N1

Country Profile, Georgia

Ministry of Environmental Protection and Natural Resources

2006 May 30

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Biophysical indicators of Drought and Desertification

1. Climate

- 1.1. Index of aridity – 1,37
- 1.2. Precipitation, in conformity with norm – N/A
- 1.3. Average square deviation of precipitation

| Sub national territories | mm |
|--------------------------|------|
| 1. Abkhazia | 1530 |
| 2. Adjara | 2718 |
| 3. Raja-Lechxumi | 1075 |
| 4. Imereti | 1526 |
| 5. Guria | 1980 |
| 6. Shida Kartli | 585 |
| 7. Qvemo Kartli | 572 |
| 8. Mtcxeta-Mtianeti | 999 |
| 9. Kakheti | 860 |
| 10. Samtckhe-Djavakheti | 554 |
| 11. Samegrelo | 1831 |

2. Vegetation and landuse

- 2.1. Fixed vegetation index – N/A
- 2.2. Area of vegetation cover (% of total land area) – N/A
- 2.3. Land use area (% of total land area) – N/A

Arable and pasture lands and forests

| Year | Arable land | Pasture | Forest |
|------|-------------|---------|--------|
| 1990 | 790,4 | 1686,3 | 2843,3 |
| 1991 | 796,2 | 1686,3 | 2843,3 |
| 1992 | 806,2 | 1700,9 | 2842,7 |

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| | | | |
|------|-------|--------|--------|
| 1993 | 799,5 | 1727,4 | 2842,7 |
| 1994 | 797,1 | 1730,4 | 2842,7 |
| 1995 | 759,3 | 1762,2 | 2837,9 |
| 1996 | 781,1 | 1774,9 | 2837,9 |
| 1997 | 785,0 | 1788,0 | 2838,3 |
| 1998 | 791,9 | 1794,4 | 2838,3 |
| 1999 | 790,4 | 1796,1 | 2838,3 |
| 2000 | 792,9 | 1795,8 | 2838,3 |
| 2001 | 795,3 | 1797,2 | 2838,3 |
| 2002 | 798,7 | 1796,9 | 2838,3 |
| 2003 | 801,8 | 1796,9 | 2838,3 |

Balance was not calculated since 2003.

2.4. Albedo surface

3. Water Resources

- 3.1. Fresh water resources (mln m3) - 104820
- 3.2. Fresh water resources per person (m3) - 0,02
- 3.3. Water used in agriculture (mln m3) - 163.1
- 3.4. Water used in Industry (mln m3) - 129.7

4. Energy

Demand

- 4.1. Energy consumption per person (kg Oil equivalent) – N/A
- 4.2. Energy consumed in agriculture on one hectare (mln BTE) – N/A

Projection of Electricity Demand and Required Supply in 2001 - 2020

| Year | Demand, GWh | Supply, GWh | Year | Demand, GWh | Required Supply, GWh |
|------|-------------|-------------|------|-------------|----------------------|
| 2001 | 6 430 | 7 940 | 2011 | 10 070 | 11 190 |
| 2002 | 6 240 | 7 610 | 2012 | 10 570 | 11 740 |
| 2003 | 5 970 | 7 190 | 2013 | 11 100 | 12 330 |
| 2004 | 6 230 | 7 420 | 2014 | 11 660 | 12 960 |
| 2005 | 6 710 | 7 800 | 2015 | 12 240 | 13 600 |
| 2006 | 7 120 | 8 090 | 2016 | 12 850 | 14 280 |
| 2007 | 7 890 | 8 770 | 2017 | 13 500 | 15 000 |
| 2008 | 8 700 | 9 670 | 2018 | 14 170 | 14 740 |
| 2009 | 9 140 | 10 160 | 2019 | 14 880 | 16 530 |
| 2010 | 9 590 | 10 660 | 2020 | 15 620 | 17 360 |

Projected Electricity Demand (in GWh) up to 2020 (Fast Recovery and Fast GDP Growth)

| Electricity Consumption Levels | YEARS | | | | | | |
|--|--------|-------|-------|--------|--------|--------|--------|
| | 1990 | 1998 | 1999 | 2005 | 2010 | 2015 | 2020 |
| Stipulated by economic development factors | 17 444 | 7 962 | 8 147 | 10 706 | 13 826 | 18 255 | 24 542 |
| Considering price variation impact | 17 444 | 7 962 | 8 147 | 9 924 | 12 442 | 16 310 | 21 795 |
| As a consequence of the implementation of energy efficiency measures | 17 444 | 7 962 | 8 147 | 9 405 | 11 636 | 15 141 | 20 156 |

Industry

4.3. Renewable resources, except fuel from renewable resources and waste (% from supply)

Renewable sources – demand by sectors

4.4. Industry (demand on renewable energy - % from all renewable sources)

4.5. Domestic sector (demand on renewable energy - % from all renewable sources)

4.6. Agriculture (demand on renewable energy - % from all renewable sources)

5. Types of land degradation

| Degradation type | 1990-1999 | | 2000-2005 | |
|------------------|-----------|-----------------|-----------|-----------------|
| | Mln ha | % of total area | Mln ha | % of total area |
| NN/A | | | | |

6. Reclamation

| Reclaimed lands | 1990-1999 | 2000-2005 |
|--|-----------|-----------------------|
| Reclaimed lands with crops (km ²) | N/A | 33 000 m ² |
| Reclaimed degraded pastures (km ²) | N/A | N/A |
| Reclaimed degraded forests | N/A | N/A |

Socio-economic indicators related to drought and desertification

7. Population and Economy

7.1. Population (total population) - 4289, 1 thousand

Urban Population (% of total population) - 52.3

Rural Population (% of total pupation) - 47.7

7.2. Population growth (annual growth) - 0.6

7.3. Life expectancy - 71.4 years

7.4. Mortality rate (per 1000) - 23.8

- 7.5. GDP (in USD according to exchange rate) - 6400.5 mil
- 7.6. GNI per capita (in USD according to exchange rate)-N/A
- 7.7. Poverty rate (% of total population) – N/A
- 7.8. Plant production (ton)-N/A
- 7.9. Meat production (ton) – N/A

8. Human development

- 8.1. School enrolment ration (% from total youth) - 97.8
- 8.2. Women, engaged in agriculture – N/a
- 8.3. Unemployment rate (% of total) - 13.8
- 8.4. Unemployment among young population (from 15 to 24) - 28.3
- 8.5. Illiterate population (over 15) - 0.35
- 8.6. Total illiterate male population (over 15) - 0.23
- 8.7. Total illiterate women population (over 15) - 0.45

9. Science and Technology

Total number of institutions working on desertification problems: 9

10. The data sources used:

Department of Statistics, Ministry of Economic Development
Ministry of Education and Science
Ministry of Culture and Sport
Ministry of Energy
Ministry of Agriculture