Fourth National Report to the United Nations Convention on Biological Diversity: Georgia

Table of Contents

Executive Summary

Georgia, as part of the Caucasus eco-region, represents one of 34 biodiversity “hotspots” identified by Conservation International as areas distinguished for having high levels of endemism whilst also being seriously threatened by habitat loss. The Caucasus eco-region is also identified as having global significance by WWF due also to high levels of diversity and endemism but also because of specific evolutional processes and unique historical floral and faunal development.

As well as its distinct biological components Georgia is also distinguished by a complex landscape, variations in climate and diverse ecosystems. The main biomes to be found in Georgia are: forests, fresh water systems and wetlands, marine and coastal habitats, high mountains, semi-deserts and steppes. Kolkheti refugium, limestone of the Western Caucasus and high mountainous vegetation complexes, are especially notable for their diverse assemblages of species and high levels of endemism.

Mountains occupy a significant portion of the country: 54% of the country is located at altitudes higher than 1000 m.a.s.l. Agricultural land covers 43.5% of the state area of which 35% is arable land and perennial crops and 65% is hay meadows and pastures (according to 2004 data). However, in recent years the area of arable land and perennial crops (utilized by agricultural households) has decreased.

Forests cover about 40% of the territory of Georgia. Broadleaf and coniferous forests, rich with endemic and rare species, are the true treasure of the state with 97% of Georgian forest being natural. The vast majority (98 %) of forested land is represented by mountainous forests providing such ecosystem services as water regulation, soil protection and climate stabilization whilst also being important habitat for many relict, endemic and endangered species of plants and animals. Almost intact forest stands, which have the greatest conservation value, have been preserved in Georgia.

Georgian flora is one of the richest among \countries with moderate climates with 4,130 vascular plant species, including around 900 species (approximately 21%) that are either Caucasian or Georgian endemics. In addition, 17 endemic genera are present in the flora of Georgia and Caucasus. About 2,000 species of Georgian flora have direct economic value; utilized as timber, firewood, food (fruit, hazel nut), forage and animal food or used in medicine, painting and volatile oil extraction. Many local variations of domestic crops as well as their wild relatives (especially wheats and legumes) are distributed in Georgia.

In terms of the countries faunal components, 16,054 species have been described, 758 of which are chordates. Amongst the Caucasian endemics there are 19 mammals, three birds, 15 reptiles and three amphibians whilst the Georgian endemics are represented by only one species; the Adjarian lizard (*Darevskia mixta*).

Due to habitat destruction and extensive, unregulated exploitation many plant and animal species have become endangered with 29 mammal, 35 bird, 11 reptile, two amphibian, 14 fish and 56 woody plant species currently included on the national Red List. In addition 44 vertebrates found in Georgia are globally endangered and included on the IUCN Red List as vulnerable (VU) or higher. In the past century the goitered gazelle and the southern population (Trialeti ridge) of wild goat became extinct in Georgia. The leopard and striped hyena have are still present but most likely exist as isolated individuals, whilst red deer numbers have drastically decreased (only three small populations have been preserved) in Georgia.

Due to a lack of modern and effective tools for data collection, storage and analysis the identification of actual changes in species and habitat conditions has become quite difficult; this, in its turn, has made the assessment of the current state and trends of biodiversity significantly more complicated. Consequently, there is currently no distinct reasoning for decision making in biodiversity conservation.

However, a national system for biodiversity monitoring (www.biomonitoring.moe.gov.ge) is currently being developed in Georgia with the selection of national indicators recently accomplished. The methods of data collection and analysis, according to individual indicators, are now being developed. The information given within this report, detailing the health, status and trends in species and habitats is, then, based upon surveys, undertaken under a variety of different projects carried out in Georgia in recent years.

The main threats for biodiversity in Georgia are destruction/degradation of habitats and the extensive extraction of biological resources. The principal causes for habitat destruction are timber logging, degradation of water ecosystems and intensive grazing. Despite the fact that more recent trends indicate a decrease in illicit extraction of forest resources, wood and fire wood processing remains one of the threats to biodiversity. The problem of intensive grazing is mainly problematic for the sub-alpine, alpine ecosystems of the high mountains as well as the semi-arid zones found in the south-eastern parts of Georgia where, in both cases, large numbers of grazing livestock (especially sheep) result in soil erosion.

Over-extraction of biological resources is principally caused by illegal activities such as poaching (including fishing), illicit logging as well as illegal trade associated with all these. For example, poaching is the main reason for decreases in the populations of deer, tur, chamois, wild oat bear and several species of fish. In addition, construction of dams along the migration routes of anadromous species (i.e. sturgeon) have formed impassable barrier for individuals moving to spawning areas. At present, for example the extraction of non-timber forest products (food, medicinal purposes and decorative plants) is not legally regulated. In addition, the status assessment for herbaceous species has not yet been completed and so rare, endemic and endangered species of non-woody plants remain unprotected by legislation.

The National Biodiversity Strategy and Action Plan, Georgia (NBSAP) was approved by statute #27 of the government of Georgia on 19th February, 2005. NBSAP determines the biodiversity protection and wise-use strategy for a ten year period and specific activities for a five year period. The following ten issues are distinguished in NBSAP with due regard to the state of

biodiversity in the country, problems and influencing threats: protected areas; species and habitats; agro-biodiversity; hunting and fishing; biodiversity monitoring; bio-safety; environmental education, public awareness and involvement; financial-economic program; sustainable forestry; legislation. NBSAP identifies 140 activities to achieve the identified goals. In addition to governmental bodies, non-governmental organizations and scientific-research institutions also participate in the implementation of NBSAP. The Ministry of Environment Protection and Natural Resources (MoE) coordinates the execution of the measures as defined by the plan. NBSAP mainly focuses on *in-situ* conservation, identifies activities to facilitate the sustainable use of biological resources and pays less attention to the third principal goal of the convention; the availability of genetic resources and fair distribution of the benefit received from their utilization.

The principal priorities for the protection and sustainable use of the biodiversity have recently been the establishment of protected areas and reforms of the forestry at the national level.

The main achievements in the implementation of NBSAP are:

- further development of the protected territories;
- creation of the Red List of Georgia using IUCN criteria and categories;
- preparation of conservation management plans and their implementation for some endangered species and species groups;
- development of the national monitoring system of biodiversity;
- *ex-situ* and *on-farm* conservation of the endemic, endangered species and crops of Georgian flora;
- improvement of the legal and institutional environment for the sustainable management of biological resources;
- creation of biodiversity resource-centre of Georgia (www.chm.moe.gov.ge).

Funding for the development of the protected areas system, biodiversity protection, the administration of biological resource–use and scientific research are included in the state budget of Georgia. Activities planned in NBSAP, however, are mainly funded by external sources – international financial institutes and donor countries. The share of Global Environmental Facilities (GEF), Germany, Norway, USA, the EU and the Critical Ecosystem Partnership Fund (CEPF) should be especially noted.

The MoE is responsible for the implementation of the biodiversity convention at national level in Georgia and the participation of other ministries is insignificant. Biodiversity protection issues are partially reflected in the agriculture, forestry and fishing sectors as well as the strategy of climate change. There is also a functioning system of environmental impact permits which aims to reduce the impact of development projects on biodiversity. The integral part of the system is

the environmental impact assessment, although these tools need further elaboration and improvement.

At present the second national program of the actions for the protection of the environment of Georgia (NEAP) is being prepared. NEAP will determine long-term goals (until 2030) for the protection of the environment, results to be achieved by 2015 and measures to be undertaken in the nearest five years. One of the sectors of NEAP will be biodiversity and fishing. Drafts of the development strategy (for the following 10 years) and the action plan (for the following five years) of the protected areas of Georgia have already been prepared. The renewal of NBSAP is planned for 2010. The above documents shall identify national priorities in the field of biodiversity protection and sustainable use.

1 Overview of Biodiversity Status, Trends and Threats

1.1 General Information on Georgia

Georgia, as part of the Caucasus eco-region, represents one of 34 biodiversity "hotspots" identified by Conservation International as areas distinguished for having high levels of endemism whilst also being seriously threatened by habitat loss. The Caucasus eco-region is also identified as having global significance by WWF due also to high levels of diversity and endemism but also because of specific evolutional processes and unique historical floral and faunal development.

Georgia is 69,494 km^2 with territorial waters covering an additional 7,628.4 ha). To the north the country is bordered by the Greater Caucasus Mountains and to the south by the Lesser Caucasus. Between these mountain ranges lay the inter-montane plains of Central Georgia. The Likhi ridge divides the country, from north to south, into western and eastern Georgia. The country is characterized by distinguishable vertical zoning with altitudes of up to 5,069 m.a.s.l. (the Shkhara peak). Mountains occupy the major part of the country with 54% of the territory located at altitudes higher than 1000 m.a.s.l.

Likhi ridge determines the climate contrasts between various parts of Georgia. The climate of Western Georgia is fairly diverse ranging from humid sub-tropical to permanent ice. The average annual temperature is 14-15ºC, while annual average precipitation varies between 1,500 and 2,500 mm (although mount Mtirala, in the Adjara autonomous republic, records a maximal annual precipitation of up to 4,000 mm). Average annual temperatures fluctuate between 6-10ºC and 2-4ºC in the mountainous and high mountainous zones of Western Georgia. The prevalent climate in Eastern Georgia is drier ranging from arid sub-tropical in the lowlands to alpine in the mountainous regions. Annual average temperature is 11-13ºC in the lowlands and 2-7ºC in the mountains whilst total annual precipitations range from 400-600 mm in the lowlands and 800-1,200 mm in mountains.

Soils differ markedly between the west, east and south of the country with lowland wetland podsols, mountain-forest and mountain-meadow soil zones prominent in the west; chestnut and black soils in the steppes and brown soils (in the Eldari semi-desert and various areas of the southern parts of Iori upland) are typical for the eastern province.

Up to 40% of Georgia is covered by forests and another 40% by agricultural land. Among these 15% is covered with intensively used (arable land and perennial crops) agricultural fields and 28% with hay meadows and pastures.

1.2 Species Diversity

Within Georgian flora 4,130 species of vascular plant are registered, including 79 ferns, 17 gymnosperms, 4,034 angiosperms). The rich nature of Georgian flora is prominent from its high level of endemism with around 21% of Georgian flora (up to 900 species) being endemic. Among these, around 600 (14% of all species) are Caucasus endemics and 300 (9% of all species) are endemic to Georgia. Endemic genera are also significant, with 16 recorded in

Georgian and Caucasian flora: *Alboviodoxa, Woronowia, Chymsydia*, *Trigonocaryum, Symphyoloma, Pseudobetckea, Charesia, Mandenovai, Sredinskaya*, *Grossheimia, Cladocheta, Pseudovesicaria, Gadellia, Agasyllis, Paederotella,* and *Kemulariella*.

In terms of diversity, the following 10 families are prominent for species diversity in Georgian flora: *Compositae* (538 species), *Gramineae* (332 species), *Leguminosae* (317 species), *Rosacea* (238), *Cruciferae* (183), *Scrophulariacea* (179), *Umbeliferae* (177), *Labiatae* (149), *Caryophyllacea* (135) and *Liliacea* (129). More than 800 moss species and about 7,000 species of fungus are recorded for Georgia whilst the inland waters of Georgia are home to at least 2,605 taxa of algae. It is, however, worth noting that these numbers do not necessarily represent the full gamete of these taxa in Georgia which is rich with economically valuable plants. Around 2,000 species have direct economic value, and are used for a wide variety of purposes ranging from timber and fire-wood, to food (fruit, hazel nut) and forage as well as those used in medicine, for dyeing fabrics and for the extraction of volatile oils. Many local variations of domestic crops as well as their wild relatives (especially wheat and legumes) are found in Georgia. Georgia is part of the Western Asian centre of origin of cultivated plants, considered to be the source barley, wheat, legumes, vines and many species of fruit. As such, Georgia has a rich and ancient history of cultivating a wide variety of all of these types of food and crop species.

In terms of the countries faunal components, 16,054 species have been described, 758 of which are chordates. Amongst the Caucasian endemics there are 19 mammals, three birds, 15 reptiles and three amphibians. The Georgian endemics are represented by only one species; the Adjarian lizard (*Darevskia mixta*).

Amongst the Georgian vertebrates 44 species are endangered at global scale included on the IUCN Red List as vulnerable (VU) or higher. Of the Georgian mammals 19 are Caucasus endemics. Among these the Western Caucasian and Eastern Caucasian turs (*Capra caucasica and C. cylindricornis*), Caucasian birch mouse (*Sicista caucasica*), Kluchor's birch mouse (*S. kluchorica*), Kazbeg birch mouse (*S. kazbegica*) are also included on both the Georgian and IUCN Red Lists. Of the birds, three are Caucasian endemics; Caucasian grouse (*Tetrao mlokosiewiczi*), Caucasian snowcock (*Tetraogallus caucasicus*) and Caucasian chiffchaff (*Phylloscopus lorenzii*). Among these, the Caucasian grouse and Caucasian snowcock are included on the national Red List.

Important research on some of the countries predatory birds has been undertaken recently and there have been many studies focusing on Chiroptera (bats) and invertebrates (aphids, dragon-flies, semi-coleoptera, coleoptera, and hymenoptera as well as various groups of worms, spiders and crustacea) in recent years. As elsewhere, the insects dominate the invertebrates with 11,471 species currently recognised and all of the main insect orders have been studied in more or less detail.

Data on the biodiversity of species of Georgia are published on the web-page initiated by the faculty of natural sciences of Ilia Chavchavadze University (www.biodiversity-georgia.net).

The Commission of Endangered Species at the Academy of Sciences of Georgia completed the evaluation of species' status, based upon IUCN criteria, in 2006 and this provided the basis for the new Red List of Georgia. In terms of flora, the commission assessed only arborescent plant status. The status of the herbaceous species is being evaluated now whilst the status of mushrooms, algae, lichens and mosses have not yet been assessed.

The numbers of the species distributed in Georgia, including endemic and endangered species, by taxonomic groups are represented in table 1.

Table 1: Numbers of Plant and Animal Species and Endangered Species by Taxonomic Groups

Taxonomic group	**Number of Species**	**Number of species included in IUCN Red List as VU or higher category**	**Number of species included in the Red List of Georgia (According to IUCN categories)**			
			RE	**CR**	**EN**	**VU**
Plants						
Algae	2,605					
Mushrooms	7,000					
Lichens	800					
Mosses	812					
Vascular Plants	4,130		-	2	18	36
Animals						
Invertebrates	15,761	6		2	8	32
Fishes	188	10	-	1	6	7
Amphibians	13	1	-	-	1	1
Reptiles	54	11	-	1	2	8
Birds	390	14		2	9	24
Mammals	111	8	4	5	6	18

The research on the status of individual species in Georgia began in the 1930's but generally this lacked any kind of standardization, both in terms of data collection and analysis, and was relatively unsystematic and lacked coordination. The soviet Red Book of Georgia (1982) listed species into one of only three categories: almost extinct or preserved in inaccessible areas,

threatened species and rare species; in this way, it included on 65 animal species and 161 plants.

A collection of data taken from a variety national biodiversity studies (GEF/UNEP, NACRES) was published in 1996 and this represented the countries first attempt at collating and assessing these assessments of the status of on various components of the national biodiversity.

Provisions for the National Red List and Red Book were adopted into Georgian law in 2003 and it was stipulated that status assessments should be carried out using IUCN criteria. Prior to such standardized assessments an interim Red List was approved by the order of the minister for the protection of the environment and natural resources. The interim Red List included species listed in 1982 Red Book as well as species strictly protected by the Bonn convention and its regional treaties (AEWA, ACCOBAMS).

The numbers of threatened species within the various taxonomic groups of vertebrates and based upon the above mentioned publications are given in the table below according to year.

Taxon/year	**1982**	**1996**	**2003**	**2006**
Fishes	1	7	1	11
Amphibians	4	2	4	2
Reptiles	6	28	6	11
Birds	33	34	55	35
Mammals	21	34	26	33
Total	**65**	**105**	**92**	**92**
Share of threatened and extinct species	**8,6 %**	**13,8 %**	**12,2%**	**12,2%**

Information source: Levan Butkhuzi, Draft Final Report on Preparation of Final List of Environmental Sustainability Indicators for Georgia (Complementary to MDG7 Target 9 Global Framework Indicators), Biodiversity and Forestry. The data, in its turn, is based upon the Red List of Georgia (1982-1990), Data of the Study of the Biodiversity of Georgia (1996), Red List of Georgia (2003), Red List of Georgia (2006).

The information represented in the table is mainly based upon expert opinions, as no national assessments or censuses has been conducted since 1990 whilst the quality of records made before then is also seriously questioned. Although the total number of threatened species decreased between 1996 and 2006 this should be attributed to increased knowledge and information rather than real improvement of the situation.

However, due to a lack of modern and effective tools for data collection, storage and analysis identification of actual changes in the status of species and habitats is difficult.

1.3 Ecosystems and Habitats

A complex landscape and variations in climatic conditions between the various provinces in Georgia contribute to the overall diversity of the country. The main biomes are: forests, fresh-water and wetlands, marine and coastal, high-mountain, semi-desert and steppes. Forests cover about 39.9% of the territory of Georgia. Leaved and coniferous forests rich with endemic and rare species are the true treasure of the state. The Kolkheti refugium, limestone areas of the Western Caucasus and high mountainous vegetation complexes are especially notable for their species diversity and high levels of endemism.

Unfortunately, habitat classifications used in Georgia do not coincide with those applied in Europe and are not standardised even at the national level and this represents a serious impediment to obtaining reliable information on habitat status as well as the facilitation of effective conservation and management. The MoE, in cooperation with GTZ, is now developing a national habitat classification system based on the Natura 2000 Interpretation Manual for the EU.

Forest Ecosystems

Forest ecosystems are outstandingly significant for the conservation of biodiversity in Georgia as these cover about 40% of the land. Furthermore, 97% of this is natural, as opposed to plantation, and is represented primarily by mountainous forests important for the provision of ecosystem services including water regulation, soil protection and climate stabilization. They are also important habitats for many relict populations and endemic and endangered plants and animals. Almost intact forest stands, with high conservation value, have been preserved in Georgia and forest ecosystems are found in almost all regions of the country, with the exception of the Javakheti plateau, and in the Khevi and Tusheti regions forests occupy only very small areas.

In Western Georgia forests are present all the way down to sea level while in Eastern Georgia the forest belt starts at 600-700 m.a.s.l. About 400 arborescent species grow in the forests of Georgia and 26% (104 species) of the dendro-flora here are either Georgian or Caucasian endemics. Due mainly to the prevalent soil and climatic conditions the main forest types in Georgia are: broadleaf, coniferous, sub-alpine thin and crook stem, arid thin and floodplain forests. **Broadleaf forests** occupy 81% of forest cover while **coniferous forests** cover around 19%. By species forest composition is represented as: beech, *Fagus orientalis*, (46.6%), oak *Quercus spp*.(10.6%), hornbeam, *Carpinus caucasica*, (8.8%), Caucasian fir, *Abies nordmaniana*, (7%), alder *Alnus barbata* (5.5%), spruce, *Picea orientalis* (4.5%), pine, *Pinus spp*. (4%) and chestnut, *Castanea sativa* (3.2%).

An understory of evergreen broadleaf arborescent species is typical for the forests of the Western Georgia and is formed with relict genera such as Rhododendron, Epigaea, Ruscus, Ilex, Daphne, Hedera, and Laurocerasus. More specifically: rhododendron (*Rhododendron*

ponticum), Ungern's rhododendron (*R. ungernii*), Smirnov's rhododendron (*R. smizhowii*), cherry laurel (*Laurocerasus officinalis*), holly (*Ilex colchica*), Colchic holly (*Ruscus calchicus*), ground laurel (*Epigaea gaultheroides*), Colchic ivy (*Hedera colchica*), *Daphne alboviana, D. pontica*. These species, then, form the understory of forests in the bio-geographical province of Kolkheti both individually and in a variety of combinations, thus granting the forests unique status and high conservation value. Colchic understory is especially well developed in the South-Western Kolkheti until 2,300-2,400 m.a.s.l. The yew (*Taxus baccata*) and Zelkova (*Zelkova carpinifolia*) relict forests found in the East Georgia reserves of Batsara and Babaneura are also worthy of mention.

Sub-alpine thin or "park" forests start from 1,800-1,900 m.a.s.l. and are mainly formed by red bud maple (*Acer trautvetteri*) and Caucasian oak (*Quercus macranthera*).

Sub-alpine crook stem forests are, in the Caucasus, formed by beech (*Fagis orientalis*), birch (*Betula litwinowii*) and Imeretian buckthorn (*Rhamnus imeretina*). These forests are rich in endemic and relict species such as Megrelian birch (*B. megrelica*), Medvedev's birch (*B. medwedewii*) and Pontic oak (*Q. pontica*).

Floodplain forests are developed in East Georgia, on the lowlands and foothill rivers of Kura, Iori, Alazani and the lower reaches of Ktsia. Oak (*Q. pedunculiflora*) and aspen (*Populus canescens* and *P. hybrida*) are dominant in these forests, which are rich with lianas. Alders (*Alnus spp.*) are dominant in the floodplain forests of the Western Georgia.

During the last years of the Soviet Union cheap wood was imported from Russia to Georgia, resulting in very little pressure on Georgian forests for extraction and allowing forest management to focus on recreational purposes. Currently, around 10% of forests are within protected areas and special protection is afforded to floodplain forests and sub-alpine forests outside of protected areas.

The majority of the fauna species of Georgia are associated with the forest ecosystems and among these brown bear (*Ursus arctos*), wild goat (*Capra aegagrus*), chamois (*Rupicapra rupicapra*), red deer (*Cervus elaphus*) and the endemic Caucasian salamander (*Martensiella caucasica*) are all included on the Red List of Georgia. The avifauna of Georgian forests is also very rich, although endemic and globally vulnerable species are relatively small in number.

After acquiring independence in the 1990s the transition to a market economy, along with a significant reduction in the gross domestic product, increasing poverty and energetic deficits inflicted serious damage to the country's forest ecosystems. The end of wood imports and a rise in cheap exports, as well as the domestic extraction of fuel-wood and the ineffective control of all these activities resulted in an unsystematic timber industry and significant degradation in the composition and quality of the forests in Georgia.

The pressure on beech forests was especially severe because of the high demand for this species and the proximity of beech forests to roads and villages, facilitating access for

extraction. The structure of such forests is now heavily degraded and human-induced succession is evident.

As in many European countries economic activities caused especially severe damage to floodplain forests. In Georgia this is particularly evident as these forests represent a significant component of landscape diversity acting as important corridors and refuges for many animal species. Today only fragments of the original floodplain forests have been preserved where the expansion of arable land and the hydrological changes caused by several artificial structures along the river have resulted in serious disruption of this ecosystem.

The main threat for most of Georgia's forest ecosystems is unsustainable timber logging. Unfortunately, reliable information on logging and remaining forest cover is not available as forest inventories simply have not been conducted and there is no monitoring system in place. Accurate research (i.e. using satellite imagery and GIS-based analysis) has not yet been carried out and so a real picture of the current national forested cover or changes and trends in the general health of forests is not available. According to data gathered in 2009, 26,760.5 ha of forest need active management and restoration as result of thinning, mudslides and other causes.

Another threat to Georgia's forests is damage inflicted by forest parasites. It should be noted that studies of pathologies of the forests have not been conducted in the recent years but, according to 2004 data, 192,900 ha of forest suffers from various diseases. Beech withering, caused by various diseases, in Imereti and Adjara is especially noteworthy.

Forest fires represent another threat and in recent history, the largest forest fire was connected with the armed conflict with Russia in 2008, when 951 ha of unique forest massifs were eliminated near Borjomi-Kharagauli National Park.

Inland Waters

With a total of 26,060 rivers Georgia has a large river network, though the majority of these are less than 25 km long. The longest is the river Kura which starts in Turkey and crosses Eastern Georgia before flowing into the Mingechauri reservoir in Azerbaijan. Two more large rivers, the Alazani and the Iori, also flow into this reservoir but they begin their journey in the mountains of the Great Caucasus, passing through Kakheti region. Other rivers in the east of the country are the Liakhvi, Khrami and Aragvi. Western Georgia holds the majority of the country's rivers, the majority of which begin in the mountains of the Great Caucasus and flow into the Black Sea. The main rivers here are the Rioni, Enguri, Tchorokhi, Kodori, Bzifi and the Tskhenistskhali.

More than 850 lakes are located in Georgia but the majority are very small and the total area of lakes does not exceed 170 km^2 (0.24% of total area). The largest lake in Georgia, the Faravani (37.5 km^2), is situated on the Javakheti upland (2,100 m.a.s.l.) in the south of the country. Other large lakes are the Paliastomi (18 sq^2), Ritsa (1.49 km^2), Tabatskhuri (14 km^2) and Bazaleti (1 km^2).

There are also 43 artificial reservoirs in Georgia (35 in the east and eight in the west) including Jvari (13.5 km^2), Shaori (13 km^2), Sioni (14.4 km^2), Jandari (12.5 km^2), Jinvali (11.5 km^2) and Tbilisi reservoir (12 km^2).

Marshes are a typical component of the Georgian landscape with sphagnum bogs distributed up to the sub-alpine belt in western Georgia and to 2,000 m.a.s.l. in the eastern region, where they are affected by the drier climate. Marshes are distributed in both the lowlands and sub-alpine and alpine belts.

The following fresh water ecosystems are considered as national priorities for conservation: the lakes of the Javakheti plateau, the Rioni estuary, the Kolkheti marshes and the trans-boundary areas of the rivers Iori and Alazani.

The wetland alder forests and unique peat bogs (located in the coastal Kolkheti lowlands) as well as Paliastomi Lake are designated as RAMSAR sites. These areas are also covered by Kolkheti national park and Kobuleti nature reserve and managed reserve that includes coastal peat bogs that are especially important for their unique floristic composition, abundance of endemic and relict species.

The lakes situated on Javakheti plateau (Khanchali, Madatafa and Bughdasheni) in Southern Georgia will also be presented for consideration as RAMSAR sites as planning for the establishment of the Javakheti uplands as protected areas is currently underway.

Wetland ecosystems of both the Kolkheti lowlands and the Javakheti plateau are also important habitats for migratory birds with up to 300 species of birds have been registered in the Kolkheti protected territories and adjacent areas. The territory is a significant habitat for endangered species included in the Red List of Georgia(*Pelecanus onocrotalus, Pelecanus crispus, Ciconia ciconia, Coconia nigra, Anser erythropus, tadorna ferriginea, Marmaronetta angustirostris, Oxyura leucocephala* (IUCN), *Haliaeetus albicilla, Buteo rufinus rufinus, Aquila heliaca* (IUCN), *Aquila clanga, Falco ch*errug (IUCN), *Falco vespertinus, Falco naumanni* (IUCN), *Aegolius funereus, Tyto alba, Grus grus.*). A further 91 species have been registered at Javakheti lakes, many of them included on both the Georgian and IUCN Red Lists.

Tabatskhuri alpine lake and the neighbouring high mountainous wetlands are included in Ktsia-Tabatskhuri managed reserve; established in 2007.

More than 80 species of freshwater fish are present in Georgia. River/lake trout (*Salmo fario)*, included in the Red List of Georgia, is an important species of mountain rivers. Anadromous fish species, mainly sturgeons and salmon, enter the rivers of Western Georgia form the Black Sea to spawn. The above mentioned species are included in the Red List of Georgia. The main threats to these species are illegal fishing, water pollution and the construction of dams. Unfortunately, there have been no surveys to assess the health of the country's ichthyofauna, which includes some endemics, since 1991 with the exception of the sturgeon and the Black Sea salmon. The conservation status of the majority of species is, then, unknown. Equally, specific information on the numbers of endemic species as well as general population

structures, distributions and threats, are scarce and specific conservation needs remain unidentified.

Ultimately, there have been no inventorying or ecological assessments of the country's freshwater systems or wetlands. Many freshwater and wetland ecosystems remain completely unprotected and are prone to anthropogenic modification through a variety of unregulated economic activities that adversely affect water levels. As a result, their structure is disrupted and their ecological value diminished.

Water pollution, illegal fishing, damming and alien invasive species represent the main threats for freshwater ichthyofauna. Poaching and the artificial modification of freshwater and wetland ecosystems also represent significant impacts on migratory birds.

Marine and Coastal areas

Western Georgia is bordered by the Black Sea and has a coastline of 330 km. Of the 184 species living within the Black sea, 110 are present within Georgian waters. There are also three dolphin species resident in the Black Sea (Common dolphin -*Delphinus delphis,* bottlenose dolphin - *Tursiops truncatus,* harbour porpoise - *Phocoena phocoena*) two of which (the harbour porpoise and the bottlenose dolphin) are included in the Red List of Georgia and of which, the harbour porpoise is IUCN listed as globally vulnerable. All three of them are protected under the Bonn Convention on Migratory Species (CMS). The coastal waters of the Black Sea and its associated river estuaries, especially the Rioni estuary, are significant habitats for sturgeon. Six species of sturgeon are observed in the area (*Acipense sturio, A. stellatus, A. gueldenstaedti, A. nudiventris, A. persicus, Huso huso*) and all of them are included in the Red List of Georgia whilst *A. sturio* is listed by the IUCN as globally endangered.

The Black Sea coast is also an important habitat for migratory birds with up to 200 species using this area including many that over-winter here: great crested grebe (*Podiceps cristatus*), little grebe (*Tachybaptus ruficollis*), cormorant (*Phalacrocorax carbo*), mute swan (*Cygnus olor*), Dalmatian pelican (*Pelecanus crispus*), graylag goose (*Anser anser*), greater white-fronted goose (*A. albifrons*), mallard (*Anas platyrhynchos*) and gadwall (*A. strepera*). In addition, hundreds of individuals of predatory bird, representing 27 species, pass through a migratory bottleneck over the Georgian coast, near the resort town of Batumi, during the spring and autumn migrations.

The most valuable natural habitats of the Black Sea and Georgian coastline are included in Kolkheti National Park (IUCN category II) and Kobuleti Reserve and Managed Reserve (IUCN categories I and IV respectively) and are under special protection regimes. Kolkheti National Park comprises 15,742 ha of seascape (strict and managed protection zones) and is a significant habitat for dolphins and sturgeons.

The main reasons for the loss pelagic and coastal biodiversity are; drainage, solid and liquid waste pollution, expansion of settlements and inadequately planned development.

Although the composition of sturgeon species in the coastal areas of the Black Sea and its' adjoining rivers has been preserved (*Acipenser sturio, A. stellatus, A. nudiventris, A. persicus colchicus, A. güldenstädti tanaica* and *Huso huso*), in 2007 an assessment of the total number of sturgeon in Georgian waters revealed historically low numbers: less than 10,000 individuals, a decrease by a factor of 37 since 1907. Accordingly, all sturgeon species distributed in the area are included in the Red List of Georgia. The most important reason for such a dramatic decrease is the destruction of habitats mainly caused by the construction of hydro-electric power station, the pollution of rivers and coastal zones, the extraction of sand-gravel at spawning rivers.

High Mountain Ecosystems

High mountains are traditionally defined as areas higher than 1,800 m.a.s.l. and include sub-alpine, sub-nival and nival ecosystems. The main habitats of the high mountains are shrub, sub-alpine tall grass meadows, alpine meadows, alpine moles and a variety of rock and scree habitats. Due in part to the location of the Caucasus, at the borderline of Europe and Asia, but also to contrasts in climate, severe relief and other factors, high mountain vegetation is fairly diverse in this region. Sub-alpine shrubbery is mainly composed of relict Colchic mesophilous elements: *Rhododendron ponticum, R. ungernii, R. smirnowii, R. luteum, R. caucasicum, Accinium arctostaphylos, Ilex colchica, Ruscus colchicus, Laurocerasus officinalis, Rhamnus imeretina, Corylus colchica, Sorbus subfusca, Dapne alboviana* and *Epigaea gaulterioides* most of which are Caucasus endemics. In particular, the tall grass sub-alpine flora is remarkably diverse and rich in Caucasian endemics including species from the genera: *Gadellia*, *Grosshemia, Dolychorrisa*. The flora of alpine meadows mainly consists of one or two of the following dominant species: *Nardus glabriculmis, Carex tristis, Festucetum variae, Caricetum tristis, Kobresia capilliformis*.

Alpine moles are developed on so called "circuses", depressed areas in which snow cover persists for longer periods. Despite the fact that the productivity of such areas is low, they are intensively used for grazing by, primarily, sheep. The Caucasian endemic, *Rhododendron caucasicum*, covers the northern and north-western slopes of the alpine belt mountains. Two juniper species reach the alpine belt of the Caucasus (*Juniperus hemisphaeica, J. sabina*) and rhododendron and juniper formations play a significant role in the control of erosion. About 250 plant species are distributed in the sub-nival belt of Caucasus and, again, there is a high representation of endemic species (approximately 60-70%). Endemic genera are especially important: *Pseudovesicaria, Gymphyloma, Pseudobetckea, Coluteocarpus, Didimophysa*, *Eunomia, Vavilovia*.

High mountain ecosystems contain important habitats for such key species as; the west and east Caucasian turs, the Caucasian black grouse and the Caucasian snowcock, all of which are endemic to the Caucasus, as well as the bearded vulture (*Gypaetus barbatus*), cinereous vulture (*Aegypius monachus*) and the griffon vulture (*Gyps fulvus*). Some of the animal species which live in the upper forest belt, such as the wild goat, chamois, brown bear and red deer, are also associated with the sub-alpine zone.

High mountain meadows form refuges for small, endemic mammals such as Prometheomys Satunin (*Prometheomys schaposchnikovi*), Caucasian snow vole (*Chionomys gud*), Robert's snow vole (*C. roberti*), Kluchor birch mouse, Kazbeg birch mouse and Caucasian birch mouse. According to 1997 estimates, there are around 12,000 east Caucasian tur () present along the Caucasus ridge, while there is no reliable information on the numbers of its' western counterpart (*C. caucasica*); west Caucasian tur population in Georgia may be around 1,000 individuals. Both species are included in IUCN Red List. Since the 1990's *Capra cylindricornis* and *C. caucasica* numbers are believed to have dropped by 20% and 50% respectively primarily due to hunting.

Alpine meadows are mainly used as pastures and, as a result, the vegetation conditions have deteriorated somewhat with an alteration in species composition and a reduction in overall productivity. The upper soil layer is also damaged by erosive processes such as landslides and avalanches.

The key high mountain ecosystems in Georgia can be found in the protected areas of Tusheti, Lagodekhi, Kazbegi and Borjomi-Kharagauli.

Arid and Semi-Arid Ecosystems

Arid and semi-arid ecosystems are mainly found in the south-eastern part of Georgia. These ecosystems are characterised by desert and semi-desert vegetation, steppes, arid light woodlands, Shibliak, phryganoid vegetation, rock xerophytes, halophyte communities. The semi-arid zone also has Tugai forests along the Iori. Up to 500 species of higher plants are distributed in arid and semi-arid ecosystems. There are also 66 mammal species (including 17 featured on the Red List of Georgia) and up to 250 bird species.

High conservation value species are distributed throughout the forests here and include pistachio (*Pistacia mutica*), several species of juniper (*Juniperus foetidissima, J. polycarpos, J. oxycedrus*), salvia (*Salvia garedji*), Eichlerian tulip (*Tulipa eichleri*), two orchids (*Orchis punctulata* and *O. picta*) and the Georgian iris (*Iris iberica*). High conservation species found in the Tugay forests include the oak (*Quercus pedunculiflora*) while the salt tree (*Halimodendron halodendron*) and the bongardia (*Bongardia chrysogonum*), both included in the Red List of Georgia, are present in the semi-deserts.

The arid and semi-arid ecosystems of Georgia are especially rich in reptiles, predatory and scavenging birds and mammalian predator communities, though the zone is very poor in wild ungulates. The following fauna species, included in the Red List of Georgia, are found in the arid and semi-arid zones: leopard (*Panthera pardus*), striped hyena (*Hyaena hyaena*), lynx (*Lynx lynx*), jungle cat (*Felis chaus*), bear, cinereous vulture, griffon vulture and Greek tortoise (*Testudo graeca*).

The primary anthropogenic use of these areas is as winter grazing. At present, due to uncontrolled pasture loads and grazing terms, the phytocenoses structure of steppes is fairly damaged and, in some areas, has led to a reduction in species diversity amongst the herbs as

well as the loss of many annual plants and ephemeras. The degradation of the steppe biome causes an increase in the area covered with weed species such as wormwoods (*Artemisia lerchiana* and *A. fragrans*) and tumble weeds (*Salsola dendroides, S. ericoides, S. Nodulosa* and *Suaeda microphylla*) and a reduction in the area and quality of pastures.

Arid light woodlands, which used to be widely spread in the past, have been preserved intact only in Vashlovani nature reserve. Due to water level regulation and logging, the area covered by the unique Tugai forests of the Iori floodplain has also been significantly reduced.

The inevitable result of such habitat degradation, coupled with the vagaries of unregulated hunting, is a loss of diversity amongst the fauna species. This is particularly evident in the case of the once abundant goitered gazelle (*Gazella subgutturosa*) which was eliminated in the 1930's through a combination of intensive sheep grazing and hunting.

In the last decade, five-toed jerboa (*Allactaga elater*) and Indian porcupine (*Hystrix indica*) have been noted apparently expending their ranges from Azerbaijan into Georgia. This may indicate shifts in the ecosystem in turn possibly associated with desertification.

The main threats for the Georgian arid and semi-arid ecosystems are intensive and unsystematic grazing (causing soil erosion and the expansion of invasive species), inappropriate irrigation and poaching.

Vashlovani National Park (24,610 ha) was established to protect and conserve the arid and semi-arid ecosystems that are otherwise rare in Georgia and so, the original Vashlovani Reserve (10,143 ha) was extended in 2003. Plans are also underway to establish protected landscapes on the Iori uplands (IUCN category V, area 173,000 ha), although this has not yet been realised.

1.4 Main Threats to Biodiversity

The main active threats for the biodiversity of Georgia are; the degradation and loss of habitats and unsustainable use of biological resources.

The principal causes of **habitat loss and degradation** would be timber logging, water pollution and intensive grazing. Despite the fact that recent trends suggest a decrease in illicit extraction of forest resources, logging and fire-wood collection remains as one of the threats to biodiversity. The water ecosystems in Georgia have been intensively modified over the years as bogs have been drained and water levels in many lakes have been artificially regulated. The water quality of many rivers and reservoirs became critically low during the Soviet period. After the collapse of the Soviet Union the dramatic decrease in industrial production resulted in a similar decrease in the levels of waste being discharged into the rivers. At present the main sources of water pollution are the utilities sector (67%), thermal power engineering (31%) and industry (2%). Additional sources of water pollution are agricultural run-off and domestic waste dumps on river banks. Since 1995 pollution from non-industrial sources due to abandonment of water treatment facilities has increased and, at present, none of these facilities are functioning. Monitoring of water quality has been conducted only for 22 of the country's rivers and one lake,

the Paliastomi. It is generally recognised that water pollution now threatens many of the species associated with Georgia's wetlands.

The issue of intensive grazing is mainly associated with the sub-alpine and alpine pastures as well as the arid ecosystems of the south-east, where livestock (especially sheep) are seasonally abundant and grazing is effectively uncontrolled. The pastures are not adequately managed (no rotation schemes are effectively practiced) that affects the vegetation composition as well as the overall productivity of the pastures. Livestock is often grazed in forest ecosystems which negatively impacts natural restoration cycles within forest stands.

Intensive grazing in the alpine zones of the Eastern Caucasus has resulted in a decrease in the feeding base and habitat quality of the wild ungulates (although hunting seems to be much more limiting factor for these species), particularly for the chamois, east Caucasian tur and red deer. The subsequent decrease in the wild ungulate numbers is probably one of the main causes of current conflicts between large carnivore species, such as the wolf, and local communities.

In the semi-arid ecosystems, used as winter pastures for sheep, overgrazing is especially intensive causing severe erosion. The problem is now critical and without urgent restoration activities may soon become irreversible. This particular form of habitat degradation, started in the Soviet period, has resulted in a dramatic reduction in the availability of natural graze and, in conjunction with hunting, has already led to the local extinction of the red deer and goitered gazelle.

The **unsustainable use of biological resources** is mainly associated with illegal activities such as poaching (including unlicensed fishing), illicit timber logging and subsequent trade of biological resources. Poaching is especially intensive in mountainous regions, where species such as tur, chamois and brown bear are targeted.

Illegal and unsustainable hunting is the main cause of current decreases in populations of red deer, tur, chamois, wild goat, wild pig (*Sus scrofa*) and bear. Today, only three small populations of red deer remain and these are all in existing protected areas. The numbers of tur, chamois, wild goat and brown bear populations have all decreased whilst the goitered gazelle has become entirely extinct in the country (see above). Poaching also poses a threat to the country's populations of water birds, many of which are popular targets for hunters.

Illegal fishing involving overfishing, fishing protected species as well as fishing with illegal methods, is a major cause of decreases in fish numbers, particularly when the migratory routes of anadromous species (such as the sturgeon), already impacted by the construction of dams, are used.

The current system for monitoring the health of hunted species needs major improvement if any kind of sustainable hunting is to be realised. For example, hunting limits on migratory birds are not currently based on any kind of population monitoring and the majority of hunting farms (game reserves) do not have suitable facilities for effective game species registration. A

combination of the clustered distribution of hunting farms and the fact that only in five out of 18 are actually functioning encourages the spread of illegal hunting.

At present the extraction of non-timber resources, for food, medicinal or decorative purposes, is not legally regulated. In addition, the status assessment of such plants has not been completed and so, rare non-timber, endemics and endangered species are not legally protected.

Due to the fact that biodiversity monitoring systems have not yet been established, there is no information available on the intensity at which these threats impact the country's natural resources and this impedes the making of timely and effective decisions in the biodiversity protection field.

2 Current Status of National Biodiversity Strategies and Action Plans

2.1 Brief Description of the National Biodiversity Strategy and Action Plan

Georgia's National Biodiversity Strategy and Action Plan (NBSAP) was approved by statute #27 of the Georgian government on 19th February, 2005. The development of the document was conducted by the Ministry of Environment Protection and Natural Resources (MoE) in close collaboration with the national NGO, Centre for Biodiversity Conservation and Research (NACRES) and the support of selection of experts from various scientific, governmental and non-governmental organizations, including WWF Caucasus, Biological Farming Association ELKANA (Elkana), the Botanical Institute and the State Museum of Georgia. The first version was prepared with the financial support of the Global Environmental Facility (GEF) and the World Bank, while the final version was developed and issued within the GEF/UNDP project, the Conservation of Arid and Semi-Arid Ecosystems in the Southern Caucasus, with the help of Fauna and Flora International (FFI).

NBSAP details a ten year strategy for biodiversity protection and sustainable resource use as well as specific activities for the first five year period. The following ten issues are distinguished within NBSAP with due regard to the state of the country's biodiversity and the issues and problems that threaten it: protected areas; species and habitats; agro-biodiversity; hunting and fishing; biodiversity monitoring; bio-safety; environmental education, public awareness and involvement; financial-economic program; sustainable forestry and national legislation. The plan analyses the impact of these issues and sets out: a general goal and future vision; strategic operational principles; specific goals and objectives; precise actions and activities and estimates and terms for their implementation.

The following strategic goals have been identified by NBSAP:

- To develop a protected areas system to ensure conservation and sustainable use of biological resources.
- To maintain and restore Georgia's habitats, species and genetic diversity through *in-situ, ex-situ* and *inter-situ* conservation measures, and through sustainable use of biological resources.
- To conserve Georgian agrobiodiversity through ensuring its sustainable use and by promoting of *ex-situ* and *in-situ* conservation measures.
- To promote sustainable hunting and fishing through adequate planning, restoration and protection of key biological resources
- To develop a biodiversity monitoring system and an active and integrated biodiversity database to ensure sustainable use and conservation of biological resources.
- To protect both the human population and biodiversity from potential threats from genetically modified organisms (biotechnology), through the strengthening the law and through increasing public involvement in decision making.
- To raise public awareness of biodiversity issues and to encourage public participation in the decision making process.
- To ensure appropriate financial and economic programmes are in place in order to support effective conservation of biodiversity, and to ensure the delivery of the BSAP.
- To further improve national legislation (and associated institutions) relating to

biodiversity conservation, through the creation of new, and elaboration of existing laws and regulations, and through ensuring harmonisation to international legal responsibilities

- To conserve forest biodiversity through sustainable forest management

NBSAP determines 140 actions to achieve the above goals and identifies indicators and expected outputs for the accomplishment of each, some of which are quantitatively measurable.

As with its development, the implementation of NBSAP is carried out by government agencies, NGOs and scientific-research institutes under the coordination of the MoE.

2.2 Reflection of the Objectives and Indicators Determined by CBD in NBSAP

The goals and objectives identified by NBSAP have been set with due regard to the specific conditions, needs and circumstances relevant to Georgia at the time it was developed. However, the preparation and adoption process of the document was so lengthy (from 1998 to 2005) that some elements of the document needed review and renewal shortly after its official approval. The identification of indicators is complete and the process of establishing a national biodiversity monitoring system is currently underway as approved by MoE in May, 2009. At present methodologies for data collection and analysis for each of the indicators are being developed and so are not reflected in NBSAP itself.

The goals, objectives and indicators of NBSAP largely coincide with the objectives and indicators defined in the Convention on Biological Diversity (CBD).

NBSAP focuses on *in-situ* conservation and identifies activities to facilitate the sustainable use of biological resources. As such, it pays less attention to the third principal goal of the CBD; the availability of genetic resources and fair distribution of the benefit received from their utilization.

2.3 The Role of the Actions Determined by NBSAP in the Implementation of Convention Articles, Thematic Programs and Inter-Related Issues

NBSAP mainly reflects the commitments set out in all articles of the CBD. The majority of NBSAP actions are focused on *in-situ* conservation (article 8; 67th action), improvement of public education and awareness (article 13), identification and monitoring (article 7), *ex-situ* conservation (article 9) and research and training (article 12). However, some issues highlighted by the CBD, such as international cooperation (article 5), encouraging measures (article 11), technical and scientific cooperation (article 17) and availability of genetic resources (article 15), are not fully addressed in the document. In addition, NBSAP does not, of course, make reference to any of the thematic programmes that are not directly relevant to Georgia; these include coral reefs and island biodiversity.

NBSAP outlines the following actions as recommended by thematic programs and inter-related issues: protected areas, agro-biodiversity, in-land water ecosystems, dry and sub-humid territories. NBSAP does not encompass issues pertaining to marine biodiversity and sets only

strategic goals and objectives for sustainable forestry as this has been addressed in other documents.

The table below provides information on the implementation status of the commitments set out by the convention articles, thematic programs and inter-related issues (non-government sector also actively participated in the activities and measures within NBSAP components and the majority of the actions were conducted with the partial or full financial support of various donors and financial institutes).

NBSAP Strategic Goal	Compliance with Convention Articles, Thematic Programs and Inter-Related Issues	Implementation State
A. The development of the protected areas system with the aim to protect biodiversity, restore and wisely use natural resources	Articles 8 (a-e), 5 & 12 Thematic working programs on mountain, inland water, forest biodiversity Working program on the protected territories	By the end of 2009 there are 14 state reserves, 8 national parks, 14 natural monuments, 12 managed reserves and 2 protected landscapes in Georgia. Their total area is 495,954.01 ha (among these, sea waters occupy 15,743 ha), or around 7.14 % of the entire territory of the country. After 2005 the following new protected areas have been established in Georgia: - Mtirala National Park – 15,806 ha; - Tbilisi National Park – 22,425 ha, including Saguramo National Reserve (5,359 ha); - Protected Areas of Imereti Caves, which include 11 natural monuments, 9 of which are karst caves (area has not been measures yet) The following protected areas were extended: - Babaneuri Reserve – extended by 92.1 ha; - Ilto Reserve - by 1,698 ha; - Kolkheti National Park – by 1,034.4 ha. By adoption of the law of Georgia on Protected Areas System the categories of some of the existing protected areas were changed, the areas of Ktsia-Tabatskhuri, Nedzvi and Tetrobi Managed Reserves determined and the Ajamatei Reserve established at the base of Ajameti Reserve (the area of the latter was

		increased by 269 ha). Important results achieved in terms of the development of the protected areas are the following: • the area of the protected areas (IUCN categories I-V) has increased by 64,889.01 ha as a result of the establishment of new protected territories and the extending of existing ones between 2005-2009; the trend for increasing existing protected areas is prominent; • due to current institutional reforms the management of the protected areas has improved and been optimized at the systemic level; • State financing of protected areas has significantly increased. Activities to facilitate financial sustainability of the protected areas are also being undertaken. New financial resources have been attracted for the further development of the protected areas; • the management of the existing national parks have been improved through the provision of appropriate equipment and the development of tourism and administrative infrastructure and the training of administrative staff; • public relations and educational activities have been improved. Detailed information pertaining to the development of the protected areas of Georgia is given in Annex III. B.
B. Conservation and restoration of habitats, species and their genetic diversity using *in-situ, ex-*	Articles 7 (a), sub-articles (a), 8 (e, h, i & k), 9 & 10 Global strategy of plant	The Commission of the Endangered Species, at the Academy of Sciences of Georgia, has been established. It developed the new Red List of Georgia. The status of species has been evaluated according to IUCN criteria and categories. The Red List was approved by Presidential Decree (#303, 02.05.06) and now

situ and *inter-situ* conservation activities and sustainable use of biological resources	conservation Working programs on the diversity of inland water, mountain, forest and arid and sub-humid territories Working program on the protected territories	provides the legislative base for the protection of the endangered species in Georgia. Management plans have been, or are being, prepared for the following species and species groups: tur (*Capra caucasica, C. cylindricornis*), leopard (*Panthera pardus*), bats (Chiroptera spp.), brown bear (*Ursus arctos*), Caucasian grouse (*Tetrao mlokosiewiczi*), dalmatian pelican (*Pelecanus crispus*), white fronted goose (*Anser erythropus*), red breasted goose (*Branta ruficollis*), white headed duck (*Oxyura leucocephala*), imperial eagle (*Aquila heliaca*), lesser kestrel (*Falco naumanni*), Greek tortoise (*Testudo graeca*), Caucasian salamander (*Mertensiella caucasica*), sturgeon (Acipenseridae spp.). However, due to a lack of financial resources only few measures determined by management plans are currently being implemented. Measures are being taken to restore populations of the goitered gazelle (*Gazella subgutturosa*). This species has been absent from Georgia since the first half of the 20th century. The restoration of the gazelle is planned first for Vashlovani National Park, located in the animals' historical range. At this stage a captive population, using 10 individuals from Turkey, is being established and the importation of additional individuals is planned for the near future (the potential sources of individuals, in addition to Turkey population, are Uzbekistan and Azerbaijan populations). Reintroduction of wild goat (*Capra aegagrus*) is being undertaken in Borjomi-Kharagauli National Park. The species is included in the Red List of Georgia as critically endangered taxon (CR). As a result of improvements in protection regimes as well as direct conservation activities, the red deer (*Cervus elaphus*) population has increased in Borjomi-Kharagauli National Park (from 39 individuals in 1999 to 228 individuals in 2009).

		The species is included in the Red List of Georgia as a critically endangered taxon (CR). Only three small populations have been preserved in Lagodekhi, Borjomi-Kharagauli and Gardabani protected areas within Georgia. The national bat species list has been added with new entries, heir conservation status has been evaluated according to IUCN criteria and key habitats have been identified and are now being included in protected territories. The monitoring of the Black Sea mammals (*Tursiops truncatus, Phocoena phocoena, Delphinus delphis*) has started. A bird-ringing centre for migratory birds is being developed in Kolkheti National Park. Surveys of non-local and invasive flora have been undertaken. Biological and ecological specifics of exotic plants, including those that are potentially invasive, registered in Georgia have been listed. Significant habitats and ecological corridors have been identified. 31 habitats of global significance for birds (IBAs) and 17 areas especially interesting for biodiversity conservation are included in the Emerald Network of Europe. Areas significant for plants (IPAs) are also being identified. Measures to protect and preserve the Iori river and Alazani floodplain forests have been undertaken. Floodplain forests are considered as one of Georgia's significant habitats for biodiversity conservation. Activities towards the restoration of the Chiauri forest (150 ha of riparian forest on the Alazani river), such as the support of natural regeneration and planting, are being conducted. Appropriate measures have been identified and are being implemented to support the restoration of the natural hydrological regime of Iori river; essential for the

		preservation of the associated floodplain. Plant conservation is an important part of biodiversity protection in Georgia and seeds from 600 endangered and endemic species (17% of the country's flora species) are already stored at the Millennium Seed Bank at Kew Gardens. Two species *Galanthus woronowii* and *Cyclamen coum,* included in the appendices of the Convention on the International Trade in Endangered Species of Flora and Fauna (CITES) have been studied due to their importance in commercial trade. To facilitate sustainable use of these plants existing resources have been evaluated, tools for control and monitoring are being developed and measures to support their artificial cultivation are being planned.
C. Conservation of the agro-biodiversity of Georgia through the establishment of a framework of conditions for the sustainable use and support of *ex-situ* and *in-situ* actions	Articles 7 (a), 9, 11, 12 & 15 Working program on agro-biodiversity	A gene bank was established at the institute of farming. The bank is equipped with modern equipment and computer facilities and a working database. 3,057 samples of field and vegetable crops are currently being stored in the bank. 1,519 samples of fruit and vine varieties are available at the institute of horticulture, viticulture and wine making. With the support and participation of international organizations, expeditions are being arranged to various regions of Georgia to collect new material for the gene bank. The collections are being documented and the database created. Many workshops and learning courses were arranged, to teach Georgian scientists how to store and renew genetic resources, prepare documentation and work with databases. The national system for management and use of plant genetic resources has been evaluated and political recommendations on the preparation of a management strategy of genetic resources developed. A national report on the state of genetic resources for food and agriculture has

		been prepared. Local medicinal plant resources have been studied and assessed in Samtskhe-Javakheti, as well as conditions of the wild relatives of crops. *On farm* conservation of endangered traditional crops is being conducted. The traditional cultivation of 5 wheat varieties (Tsiteli Doli, Dika, barley, rye, millet), 5 local legumes (cicer, bean, lentil, cowpea, chick pea) and 1 technical (flax) variety have already been restored in local farms. 22 local apple species have been collected and saplings cultivated. The saplings have been distributed amongst farms in the Samtskhe-Javakheti region. The restoration of endangered wheat and legume varieties is also being conducted in farms of Guria, Kvemo Kartli and Kakheti. To support organic and traditional farming, the law on organic agro-industry has been adopted. At present, traditional agriculture is being practised by about 1,000 farmers, although their share in the agricultural sector is not significant. To support agro-biodiversity conservation and the development of organic agriculture, trainings and workshops are regularly arranged and awareness raising activities for different target groups are carried out. Encouraging measures for traditional and organic agriculture and agro-biodiversity conservation are not in place.
D. Planning of fishing and hunting towards the protection, restoration and sustainable use of animal	Articles 8 (i), 9, 10, 11, 12 & 13	Certain amendments to legislative acts regulating hunting and fishing have been adopted to improve the regulation of these activities. Some actions have been undertaken to improve the knowledge and awareness of hunters. Basic research of the hunting sector has been arranged. A program of improvement in the

resources		management of hunting is being planned. The establishment of private hunting reserves has started in 2000. Georgia has a very limited experience of effective management of hunting reserves. The level of public awareness of hunting issues is low.
E. Establishment of biodiversity monitoring system, development of dynamic database for the conservation and sustainable use of biodiversity	Articles 7 (b) & 17	The establishment of a national system of biodiversity monitoring begun in 2008. The biodiversity monitoring concept has been prepared. 25 indicators for biodiversity monitoring have been selected in close cooperation with stakeholders and approved by MoE. Among these are 11 pressure indicators, 5 status and 9 response indicators . The detailed information on the indicators is published on the biodiversity monitoring web-site: www.biomonitoring.moe.gov.ge. The coordination counsel for the establishment of the biodiversity monitoring system has been created. The methods of data collection and analysis for individual indicators and assessment of the data availability for selected indicators are being developed. After the completion of the methodological part, data collection, analysis, publishing of information on the web-site and regular updates are planned for individual indicators. Arrangement of field studies, training of specialists and those involved in monitoring, preparation of training modules, publishing of guide-books and collections of works are planned.
F. Protection of the population and biodiversity from the possible threat from genetically modified organisms (bio-safety) through establishment of the appropriate legal framework and	Article 8 (g)	The Carthage protocol on bio-safety was ratified by Georgia in September, 2008 and it entered into force in February, 2009. For the fulfilment of the commitments, as stipulated by the protocol, at national level and facilitation of a legal base draft law on gene-modified organisms has been prepared.

involvement of the public in the decision making process		
G. Delivery of information to the Georgian society regarding biodiversity to improve environmental awareness and subsequent increase of active involvement of the public in the decision making process	Article 13	The activities to raise public awareness and distribute information have become more intense recently. Various publications (brochures, leaflets, posters, calendars, field guides, tourist guides & field guides), television programs and photo exhibitions on the protected areas system of Georgia and various protected areas have been prepared. Media tours are regularly arranged to protected areas. Advertisement videos are broadcast through popular television channels. The implementation of a variety of campaigns, for various target groups, has been started (i.e. “the hour of yard birds” has been held with the participation of up to 3,000 pupils from 181 schools). The main goal of the campaign is to raise youth awareness in biodiversity value. The campaign is planned to be repeated in the following years. The non-governmental sector plays a significant role in the improvement of public awareness. An environmental communication campaign has been accomplished; Conservation for Sustainable Development in Caucasus Eco-Region. The campaign focused on raising public awareness in decision makers, private sectors and local populations in terms of biodiversity and especially prioritized species conservation. Measures to support capacity building in local journalists have been implemented and a network of eco-journalists established. 11 training sessions, dedicated to biodiversity issues, have been arranged within the project at an eco-region level. Journalists, representatives of local authorities and non-governmental organizations have participated in the trainings. The eco-journalist network has been established in two more regions of Georgia, trainings for journalists and representatives of local authorities arranged. Within the ongoing reform of basic and secondary education attention is paid to

		environmental issues, including biodiversity conservation, which are being integrated into the national curriculum and text books (biology, geography).
H. Introduction of appropriate financial and economic programs to support effective conservation of biodiversity	Articles 6 & 20	NBSAP comprises the development of economic assessments of biodiversity and an economic plan of biodiversity conservation as well as the preparation of several legislative acts which would form the legal base for biodiversity conservation integration in various sectors. These activities have not yet been implemented.
I. Elaboration of legislation connected with biodiversity conservation (among these regulative norms of institutional arrangement) through the development of new normative acts, improvement of the existing legislation and facilitation of compliance with international commitments of Georgia		Amendments to the current legislation have been drafted. These aim to improve the conservation and protection of species that included in Red List of Georgia as well as regulate the extraction and trade of species listed by CITES. Draft laws on gene-modified organisms have also been prepared. Normative acts to support sustainable use of biological resources (hunting, fishing, some non-arborescent resources) have been adopted in order to improve the efficacy of hunting farms.

2.4 National and International Resources to Implement NBSAP

The national budget of Georgia includes funds for the development of the protected areas system, the administration of biodiversity protection and biological resource use and the scientific research of biodiversity. In contrast with many central and eastern European countries, purpose-specific environmental funds not financed from the state budget do not function in Georgia. Purpose-specific programs aimed to implement NBSAP have not been financed from the budget and financial tools which could improve revenue for the use of biodiversity components or indemnify inflicted damage through reinvestment in biodiversity conservation, are not in place. The only example of such mechanisms in Georgia is the Fund for the Development of Kolkheti Protected Areas, established due to mitigate the impacts on wetland habitats from the construction of an oil terminal.

Biodiversity protection and sustainable use initiatives, then, are financed mainly from external sources such as those provided by international financial institutions. The greatest share of external financing of biodiversity projects carried out in Georgia comes from GEF. The role of GEF in the development and capacity building of Georgia's protected areas system is especially notable as it has provided funding for; the development of NBSAP, an assessment of national capacities to fulfil the requirements of the CBD (including the preparation of the national report), the development of the protected areas system and the conservation and restoration of agro-biodiversity. Since 1996 Georgia has received nearly 13 million USD from GEF.

At a regional scale, the Trust Fund of Protected Areas for Armenia, Azerbaijan and Georgia was established with the initiative of BMZ/KfW, CI and WWF in March, 2006. The Trust Fund started functioning by the end of 2009 and will cover about 50% of the expenses of the protected areas in these three countries.

Both Germany's Federal Ministry for Economic Cooperation and Development (BMZ) and its development bank, KfW, support the development of the protected areas in Georgia (supporting the management of Borjomi-Kharagauli National Park and the establishment of protected territories on the Javakheti upland) and trans-boundary cooperation.

In addition, the German Technical Cooperation (GTZ) has been active in the region, looking at the Sustainable Management of Natural Resources in South Caucasus, since 2008. The main goal of this project is to integrate the economically effective and sustainable use of natural resources in both state and private sectors. An investment of 6.5 million Euros is planned for the first stage of implementation.

Norway's government supports Mtirala National Park and Chachuna and Iori Managed Reserves as well as builds systemic capacity for the protected areas system as a whole and the development of NBSAP.

The USA's Department of the Interior also aids the development of protected areas in Georgia through capacity building and supported the development of Tbilisi National Park.

The European Commission and European Counsel support the discovery of important sites for biodiversity conservation for inclusion in the Emerald Network. They also finance other initiatives,

including a relatively large-scale project focusing on human-wildlife conflict in south-eastern Georgia.

Aid from the Japan Social Development Fund (JSDF) focused on villages adjacent to Kolkheti National Park and supported the development of infrastructure projects, discovery of alternative income sources and the raising of public awareness to reduce pressure on the resources of the national park.

The MAVA Foundation's current project, Protected Territories in Caucasus Eco-Region 2012, supports the introduction of the CBD working program on protected areas in Caucasus Eco-Region.

The Critical Ecosystem Partnership Fund (CEPF) spearheads significant investments (up to 8.5 million USD) for the conservation of biodiversity in the Caucasus eco-region. The Fund is the joint initiative of Conservation International, the Global Environmental Facility, the Japanese government, the MacArthur Foundation and the World Bank.

A significant role in the implementation of NBSAP activities is played by a wide variety of international and national NGOs including: WWF Caucasus; the IUCN Programme Office for the Southern Caucasus; the Regional Environmental Centre of the Caucasus (REC Caucasus); the Centre for Species Conservation (NACRES); the Centre for Nature Conservation of Georgia (GCCW); the Field Researchers Union (CAMPESTER); Elkana and the Caucasus Environmental NGO Network (CENN).

It should be noted that BP and its partner companies (BTC Co and SCP) initiated an Environmental Investment Program (EIP) which has supported the development of Ktsia-Tabatskhuri Managed Reserve and the preparation of conservation management plans for endangered species (the brown bear and Caucasian grouse). BP and its partner companies also run an annual grant-giving program for the support of biodiversity conservation.

2.5 Major Achievements and Impediments in NBSAP Implementation

2.5.1 Major Achievements

The main achievements in the implementation of NBSAP are the following:

- further development of the protected territories;
- creation of the Red List of Georgia using IUCN criteria and categories;
- preparation and implementation of species management plans;
- implementation of the national biodiversity monitoring system;
- *Ex-situ* and *on-farm* conservation of endemic and/or endangered species and crops of Georgian flora;
- improvement in the legal and institutional environment for the sustainable management of biological resources;

- creation of the Biodiversity Clearinghouse Mechanism of Georgia (www.chm.moe.gov.ge).

The following information details some of the significant NBSAP activities that have been implemented between 2005 and 2009. Data specific to projects that supported the development of Georgia's protected areas is given in Annex 3.

CEPF Investment in the Protection of the Biodiversity of Georgia

The CEPF regional program in the Caucasus was started in 2004 and the coordination and management of the fund here is conducted in cooperation with the WWF Caucasus programme. During this first five years of CEPF involvement, 19 small and eight large projects have been implemented by national NGOs and organizations and three are run by international organizations. These projects focus on the conservation of priority species, the development of the protected areas system, the involvement of local communities in biodiversity conservation and the establishment of a favourable environment for biodiversity conservation and public awareness.

The following activities have been conducted in Georgia with the support of CEPF:

- IUCN evaluated the global conservation status of all mammals and reptiles distributed in the Caucasus eco-region, the results (database, status assessments and maps of species distributions: http://www.iucnredlist.org/mammals and http://www.iucnredlist.org);
- creation of the Red List of Georgia web-site: www.red-list.ge;
- assessments of the status of several priority species leading to the development of specific conservation plans;
- the reintroduction of wild goats to Borjomi-Kharagauli National Park;
- In close cooperation with Bird Life International five Important Bird Areas (IBA) were identified and a network of IBA protectors was established to facilitate protection and monitoring activities for endangered bird species;
- training for local communities, volunteers (mainly students) and employees of state control bodies in the control of the illegal extraction of sturgeon;
- As a result of cooperation between IUCN, Missouri Botanical Garden and Tbilisi Botanical Garden and Institute of Botany the new list of endemic plants of the Caucasus eco-region was developed. It includes a total of 2,800 taxa; 1,100 were evaluated using IUCN criteria and status of 600 taxons were classified as threatened. The identification of Important plant areas (IPA) is underway, working draft of the regional strategy of plant protection was developed;
- the endemic flora of Adjara-Shavsheti has been studied, the conservation status of 48 endemic species identified and recommendations for their *in-situ* conservation developed and a seed bank for *ex-situ* conservation of endemic species created;

- analysis of the socio-economic, demographic and geo-ecological specifics of the ecological corridor of the Western Lesser Caucasus has been undertaken (forming the basis for the landscape planning and the establishment of protected areas as ecological corridors), GIS database was created and precise recommendations for the development of the protected areas developed;
- guidelines for the establishment of Khevsureti Protected Area (60,000 ha) has been created and preparation works conducted;
- Natural-Landscape Territory of Mtirala-Matchakhela (22,941 ha) has been created which should lead to the establishment of multiple use area in Mtirala National Park and Matchakhela Protected Landscape;
- with the aim of raising the effectiveness of multi-party biodiversity protection agreements, workshops were arranged for local authorities, regional divisions of MoE and local NGOs to develop local level recommendations for facilitating commitments;
- the existing legal base was analyzed in for their relevance to commitments to RAMSAR and CITES and recommendations made for amendments as well as the preparation of a CITES implementation textbook and training for customs officials;
- a program of micro-grants was implemented to facilitate the participation of local communities in NBSAP execution and to create local groups of biodiversity protection support (including the preparation of local Biodiversity Action Plans prepared by Community Based Organisations (CBOs) in Racha, Svaneti and the Adjara autonomous republic and documents on the establishment of new protected areas in Khevsureti);
- a journal “Beautiful Georgia” and a book “Caucasus; Treasury of Nature” were published;
- a documentary, “Return of the Wild Goat”, was produced;
- articles were published and radio programs and social advertisements prepared;
- photo exhibitions were arranged and various advertising materials (calendars, t-shirts, posters) were prepared and distributed;
- a network of eco-journalists was created in two regions of Georgia and cooperation with local authorities implemented;
- awareness raising measures were conducted for journalists, state officials and non-governmental organizations and the South Caucasian network of eco-journalists established, training and trans-boundary media-tours arranged, stories on biodiversity protection developed, journalistic research undertaken, articles and radio programs prepared;
- training for local journalists as well as annual competitions with winning stories published on CI’s “Biodiversity Awards Website”: http://www.biodiversityreporting.org.

CEPF partners in these activities were WWF Caucasus, the South Caucasus Program of IUCN, REC Caucasus, CENN, NACRES, the Black Sea Eco-Academy, GCCW, CAMPESTER, the Association of Protection and Sustainable Development of the Environment "Mta-Bari", International Association of Ecology and Tourism, Association of Ecologists – the Eco-House of Caucasus, Union "Ecopulsi", Union of Sustainable Development EcoVision, Association of Nature Lovers "Tskhratskharo", Caucasus Centre of Research, Association "Journalists and Society", Centre of Wild Plant Certification of Caucasus, the Goethe Institute of Tbilisi, Union "Ano da Vano", Research Centre of Caucasus Endemics, Union "Durujis Madli", Fund "Aquamedia", Association of Wild Plant Conservation, and Pilgrim Studio.

Assessment of Capacity Building Needs for Biodiversity Conservation and Sustainable Use, Participation in Clearing House Mechanism and Preparation of a Second and Third National Reports to CBD

Within this project, GEF and UNDP supported the establishment of a favourable environment for the fulfilment of commitments undertaken under the CBD. The project was accomplished in close cooperation with MoE and NACRES. Within the project the capacities of Georgia were evaluated in terms of: *in-situ* and *ex-situ* conservation of flora and fauna; biodiversity monitoring; active threats for biodiversity and their elimination and the analysis of legislation associated with these issues. The project allowed for the preparation of appropriate legislative amendments and appropriate regulative acts. The clearing house mechanism (CHM) (www.chm.moe.gov.ge) and the second and third national reports to CBD were also created within this project. In addition, a national conference on biodiversity was arranged which attended by relevant ministries, universities and research institutes, as well as representatives from NGOs and donor organizations.

Improving implementation of CITES for Galanthus woronowii and Cyclamen coum from Georgia

Georgia has been party to CITES since 1997 although Georgia has only one CITES listed species (Appendix I) that is currently subject to commercial trade; the snowdrop (*Galanthus woronowii*). Fifteen million bulbs of snowdrop are exported annually to Turkey and the Netherlands. To improve the implementation of CITES regulations for this species MoE, with support of the Dutch government and the CITES secretariat, implemented a project. Within this project experts from the Tbilisi Botanical Garden and Institute and Kew Botanical Gardens (Great Britain): evaluated wild and farmed populations; developed extraction quotas and schemes for population monitoring; put in place controls for extraction and made recommendations for the artificial cultivation. The project has already demonstrated positive impacts and could become the basis for further cooperation between conservation and the sustainable use of bulb plants.

Recovery, Conservation, and Sustainable Use of Georgia's Agrobiodiversity

This project was implemented in 2005 with the financial support of GEF and UNDP and by Elkana. Within the project, *on-farm* conservation of selected target crops is being undertaken in Samtskhe-Javakheti region, where 189 farmers are involved in cultivating 28 local landraces for domestic use and seven for commercial purposes. The practices of seed turnover and seed production have been introduced and a nursery for local fruit varieties has been established. Consultations and

trainings are regularly arranged for farmers and a collection of target landraces is stored in the national seed bank from which the exchange of data is facilitated. The sale of products made from traditional crops has also begun within the local market. Furthermore, within the project the status of the wild relatives of crops and medicinal plants found in Samtskhe-Javakheti has been evaluated. Specifically, to facilitate the cultivation of medicinal plants, 27 target species were selected (based on IUCN guidelines), local communities interviewed about the traditional use of the medicinal plants and cultivation and propagation methods for each target species identified.

The project helps to popularize products made from traditional crops by organising working meetings for degustation and workshops that focus on the availability of genetic resources and their fair distribution. Materials connected with these issues were also translated into Georgian and published.

Collection of Seeds of Georgian Flora for Ex-Situ Conservation

This is an ongoing project, originally implemented in 2006 by the Tbilisi Botanical Garden and Institute with the support of Kew Botanical Gardens. At present collections and seed banks have been created and more than 600 endangered and endemic species stored; this represents 17% of Georgian flora species. The project greatly favoured capacity building of the Tbilisi Botanical Garden and Institute, particularly in *ex-situ* plant conservation, through the training of specialists and the provision of appropriate equipment.

2.5.2 Impeding Factors

Despite the fact that NBSAP was approved by the Georgian government, no state funds are provided for its implementation. The implementation of NBSAP almost entirely depends on external aid.

A lack of environmental awareness amongst the general public is also an impeding factor for effective implementation of NBSAP.

The establishment of a national system of biodiversity monitoring has recently occurred and this should facilitate the formalised monitoring of natural dynamics and allow for timely and informed decisions, towards the protection of natural resources, to be made.

As yet, no actions to develop and implement financial-economic programs for supporting biodiversity conservation have been taken.

The effective implementation of NBSAP requires active cooperation with the agricultural, education and economic development sectors and these, currently, remain weak.

The lack of staff in each sector is still an acute problem in as much as it is connected with biodiversity protection and management of biological resources.

2.6 Analysis of the effectiveness of NBSAP

It should be first mentioned that the preparation and adoption of NBSAP has occurred over a very long period (begun in 1997 and finalized and approved in 2005) and so, some components needed further updating and review quite soon after its adoption. Since 2005 both the political and socio-

economic situation has greatly changed, which of course has had certain effects on the relevance and effectiveness of the NBSAP. New challenges and totally new opportunities have been created and this should be fully considered during the creation of any new document. Despite the fact that NBSAP was approved by the statute of the government of Georgia, it is not mandatory and its implementation greatly depends on external resources. Consequently, only those activities that are financed within international, regional or bilateral collaborations have been implemented or are being undertaken, and the funds used have been sourced either by MoE or by NGOs and research institutes.

The general conservation status of various components of Georgian biodiversity is greatly determined by the country's baseline conditions (such as large areas of forests and relatively low levels of development in various sectors of the economy) rather than actual conservation efforts. However, the contribution and impact of the NBSAP activities have been extremely important in the development of the protected areas system, conservation planning, sustainable use of biodiversity, and *ex-situ* conservation of agro-biodiversity as well as in the improvement of the legal framework and state control and protection.

NBSAP identified the major issues faced by biodiversity in the country and categorised these into ten themes upon which to base the development of actions: protected areas; species and habitats; agro-biodiversity; hunting and fishing; biodiversity monitoring, bio-safety, environmental education; public awareness and involvement of society; financial-economical program; sustainable forestry and legislative aspects. In this way, NBSAP comprises measures to mitigate existing threats, such as habitat destruction (due to ecosystem modification and intensive grazing), over-extraction of biological resources and poaching, low levels of public awareness. NBSAP does not set out actions to reduce pollution of the environment or to mitigate negative impacts on biodiversity through development projects. NBSAP also omits measures for the development of sustainable forestry and the protection of the Black Sea ecosystem as these issues should have been reflected in other national documents. During the development of NBSAP over the coming years great attention needs to be paid to opportunities of implementation with regard to financial, human, political or social restrictions. Priorities and urgent measures should be identified.

2.7 Special Information by the Decision of the 8th Conference of the Convention Parties

VIII/5 (Article 8 (g)) Participation of the Local and Indigenous Population

As has already been mentioned, one of the root causes of biodiversity degradation in Georgia is the absence of public involvement in its protection or management. The solution to this should be found in a systemic approach, requiring the establishment of appropriate national policies as well as legislative and institutional changes. However, it should be noted that attempts have already been attempted at a local level; i.e. NACRES, with the support of CEPF, implemented a program of micro-grants for NGOs and CBOs working in Racha, Svaneti and the Adjara autonomous republic. The project encouraged the involvement of the local population in planning conservation actions for species and habitats as well as monitoring the development of projects and reducing their environmental impact. Local support groups have been created and the capacities of selected NGOs strengthened. Within the project the association of local organizations of Adjara – Flora and Fauna developed a local Biodiversity Action Plan (BAP) for Adjara. NGOs Zekari (Racha) and

Synapse (Svaneti) jointly developed local BAPs that included provisions for the development of eco-tourism. Centre for natural and cultural heritage of Khevsureti “Sane” prepared the documents necessary for establishing a protected area.

With the financial support of BP and its partners (BTC/SCP), NACRES and Save the Children implemented another micro-grant program that covered seven districts of Georgia and aimed at building the capacities of local communities in biodiversity protection.

Detailed information on the participation of the local population in the planning and management of the protected areas is represented in Annex 3.

VIII/22 Sea and Coast Biodiversity – Integrated Management of the Sea and Coast

Integrated coastal zone management initiatives in Georgia started in 1993 within the Black Sea Environmental Program (BSEP). The Black Sea Strategic Action Plan (BS-SAP, 1996) determines the commitments of various countries for the development of the initiative through the preparation of national strategies and action plans. Between 1995 and 2005 the Integrated Coastal Management Project was implemented with the financial support of GEF and the World Bank. The concept of integrated coastal zone management and a draft laws for the integrated management of the Georgian coast were developed within the project. By President’s decree, a consultation commission for integrated coastal management, with the goal of aiding the integrated management processes in Georgia, was established. However, this commission ceased functioning in 2006. The working group of integrated management revoked activities in 2007 with the support of the project On Environmental Collaboration for the Black Sea financed by the EU. The working group developed an integrated management strategy project, which is now being discussed by the appropriate ministries. The group also fulfilled a pilot project of integrated management in the village of Tskhaltsminda.

VIII/24 Protected Areas

Information on the financial aid received for the implementation of the CBD Programme of Work on Protected Areas (PoWPA) at a national level is given in Annex 3.

Progress in the implementation of PoWPA was evaluated within the WWF Caucasus project, Protected Areas for a Living Planet, with funding from the MAVA Foundation. The main goal of the project was to aid the countries within the Caucasus eco-region (Armenia, Azerbaijan, Georgia, Russia and Turkey) to achieve the goals of the working program (PoWPA) 2010/2012.

VIII/28 Impact Assessment

Environmental Impact Assessments (EIAs) and the issuance of permits are regulated by national Laws on environmental permits and state ecological expertise. The law on environmental permits determines the full list of 21 activities which need to undergo EIAs in Georgia and defines the need for public participation in the environmental permit issue process.

According to the law, the EIA process should, in addition to identifying potential impacts, incorporate the identification of mitigation and compensation measures. The legislation on EIAs

needs review if it is to truly reflect the full gamete of recommendations approved by CBD decision VIII/28.

More details on the EIA process are presented in Chapter 3.

3 Sectoral and cross-sectoral integration or mainstreaming of biodiversity considerations

Against a background of political and socio-economic unrest much of the country's focus is, understandably, often on overcoming the various issues that resulted whilst the protection of the environment remains very limited in the development plans of the country. The main directions of the **Medium-Term Strategy of the Government of Georgia,** for 2007-2010, were; the restoration of territorial integrity through a step-by-step peaceful policy, overcoming poverty and associated social problems, energy safety and infrastructure development. However, the following priorities for environmental protection and the management of natural resources have been identified over the past four years:

I. elaboration of the resource-use system;

II. elaboration of environmental protection systems;

III. elaboration of the system for monitoring and forecast.

The second point, elaborating the environmental protection system, comprises the establishment of a protected areas system as well as its continued development. In this field attention is paid to the development of eco-tourism in protected areas, reduction of forest fires and the conservation of biodiversity.

Elaboration of resource-use systems focuses on the facilitation of forest protection as well as the sustainable use of forest resources. The major direction of the recent measures implemented and planned in this area are: the reform of forestry; the elimination of legal and regulative gaps in forest resource-use; the issue of long-term licenses for forest resource use through auction and the protection of forests from parasitic-borne disease, fires and negative anthropogenic impacts. In order to facilitate the sustainable use of water resources and to improve water quality, the medium-term plan sets transition to a reservoir based management system.

According to the Georgian constitution, international agreements and Georgian legislation, the **Second National Environmental Activity Program (NEAP)** of Georgia is now being developed. The first was approved in 2000 and its validity term was 2000-2004. The adoption of the first program became the base for the qualitatively new phase of cooperation between Georgia and various international financial organizations and developed countries. The development of the second NEAP started in 2006 and was coordinated by MoE and funded by UNDP. Within the process major environmental problems were revealed, prioritized issues identified and measures to overcome these problems developed. In 2008 MoE, with the support of the Ministry of Construction, Spatial Planning and Environment of Netherlands, renewed the development of the action plan for the protection of the environment. NEAP determines long-term goals for the protection of the environment (until 2030) as well as a set of results to be achieved by 2015 and activities to be completed in the nearest five years. One of the NEAP sectors will be biodiversity and fishing.

3.1 Forestry

The NBSAP describes problems in forestry and identifies strategic goals. The strategy and action plan for sustainable forestry should be developed as a separate document, although at present only

a working version of the forestry policy exists and this not yet been approved. Measures in the forestry sector are mainly determined by the medium-term strategy of the government of Georgia and other policy documents.

Approximately 2.8 million ha, or 40% of the country's territories, are covered by forest and about 97% of these are of natural origin. The majority of Georgia's biodiversity is directly or indirectly connected with forest ecosystems. After 1990 the forests of Georgia became intensively exploited for economic purposes whilst, for the part of rural communities firewood has remained one of the sources of energy. Significant demand exists on timber. It is clear, then, that the introduction of sustainable forestry principles is of key significance to the conservation of the country's biodiversity.

At present Georgian forests are entirely State owned, managed by MoE with forest-use licenses issued by the Ministry of Economic Development, via auction. According to 2005 data, 109,337 ha of mountain forests belong to resort forests, 270,340 ha are green zone forests and the remaining 2,076,555 ha have soil protection and water regulative functions. Protected areas have been established on about 10% of state forests.

At present, 37 long-term licenses for wood production have been issued on 156,000 ha. The special decree of the Georgian government sets out forest-use conditions, which partially encompass biodiversity protection commitments. For example, a timber production licensee is obliged to:

- facilitate the protection of high conservation value forests by preserving and improving their main characteristics and should document how that protection is facilitated;
- not allow the deterioration of wildlife habitats, breeding areas, migration and water access routes and drinking areas;
- not cause ecosystem fragmentation, changes of the natural structure and composition of the forest or impoverish species diversity;
- facilitate the protection of rare, endangered, endemic and relict species, and their habitats, within the license area;
- not allow the spread of alien (invasive) species and gene-modified organisms and/or use any of these during the activation on the licensed area;
- conduct measures of forest maintenance, protection from parasite-borne disease and fires and restoration;
- prove, in advance, the necessity for using plant protection facilities and agree with MoE on the proposed activity plan;
- use ecologically acceptable devices, tools and technologies during work in the forest.

The licensee is obliged to act within the forest-use plan, as agreed upon with MoE, in a way that reflects specific actions to fulfil these commitments.

For the development of sustainable forestry, significant problems remain: legal and institutional gaps; insufficient financial resources; undistributed functions between the central and local authorities; absence of forest inventory and monitoring systems; lack of knowledge and experience in sustainable forest management and insufficient information on the state of forest resources. Towards sustainable forestry, the inventory of the economic forest fund is planned within a special state program. As a result, the real volume of wood resources will be identified and an appropriate information base established. The forestry department, in cooperation with the GTZ project looking at the sustainable management of biological resources in the southern Caucasus, activities are being undertaken to develop forest management standards in compliance with the state strategy of the forestry development and best international practice.

Due to ease of access, forests located near villages are especially prone to damage. During the Soviet period these forests were under the ownership of collective farmer households but are now state owned. Certain rights, although yet indistinctly determined, still belong to the local authorities.

The Kharagauli Temi Forest Project serves to introduce innovative forest management tools and methods and strengthen the role of local authorities. The project is funded by the Development Agency of France. The project aims to establish and coordinate sustainable forest management systems at local levels (Temi) in Kharagauli district. The goal of the project is to establish local forestry in Kharagauli, which will greatly contribute to the restoration of the degraded forests and protection of Borjomi-Kharagauli National Park, as the target forests are located near the national park. The inventory of Kharagauli forests, preparation of management plans for those areas to be passed to the municipality and the implementation of a model sustainable management model are planned within the project scope.

The Support of the Development of the Management Policy and Practice of Temi Forests in Mountainous Regions of Caucasus is a project supported by the Regional Ecological Centre of the Caucasus and European Commission and also aims to strengthen the position of village (Temi) organizations in the management of mountain forests. The rationale behind this is that, in addition to economic value, forests located near residential areas, especially in the highlands, also have cultural significance. The project encourages the development of legal, institutional and technical tools for Temi forest management as well as the protection of the villager's rights in forest-use. The project focuses on the improvement of awareness in Temi and local authorities and supports urgent measures for the restoration of forest ecosystems, necessary in protecting villages from natural disasters (such as landslides and avalanches).

3.2 Agriculture

Traditionally, agriculture has played an important role in the country's economy due, in part to fertile soils and a temperate climate that form very favourable conditions for farming and livestock breeding. Traditional agricultural crops are grapes, wheat, maize, various fruits, citruses and tea. Traditional livestock breeding focuses on sheep and cattle although bee-keeping is also developed.

Agricultural land occupies 3,025,800 ha, or 43.5% of the total area of the country. Of this, arable land and perennial crops cover 1,056,600 ha (15.2% of the country) whilst hay meadows and pastures make up 1,940,400 ha (27.9%).

During the transition period (after the disintegration of the Soviet Union) many problems occurred in the agricultural sector, which were primarily connected with rapid increases in prices of agricultural production tools and a decrease in the production cost. The latter was caused by the collapse of the central supply system and a change to a free market system. Due to a loss of traditional markets fruit, grape, citrus and tea production have drastically decreased in comparison with the 1980s. By comparing the 2004 agricultural census data with that taken in 1988, the decreasing trend becomes prominent: the area of perennial crops has decreased by 245,400 ha whilst that turned over to arable land has decreased by 364,000 ha. By 2008 data, 329,000 ha of arable land (only 41% of the total area of arable land) were being used. A significant portion of the abandoned agricultural land has now become wild and some of the territories have even developed into semi-natural habitats.

During the past 20 years, agricultural practices have also undergone significant change and the use of fertilizers and pesticides has dramatically decreased. This, in turn, has resulted in significant reductions in the impact of agriculture on the environment. In the 1980's, up to 600,000 tons of mineral fertilizers were used whilst only a decade later, this had fallen to only 12,000 tons. At present the trend in fertilizer use is increasing (52,700 tons in 2008), although utilization levels remain insignificant in comparison with pre-transition figures.

Similarly, the use of pesticides has greatly decreased from 2008 figures, when the total area of annual and perennial crops processed with pesticides was 142,400 ha (or 13.4% of arable land and perennial crops). In spite of the diminishing use of chemical inputs, the local impact on the environment and biodiversity at specific areas may have increased. In many farms the rules of fertilizer and pesticide use are now almost ignored, resulting in the pollution of the environment with harmful substances.

It is worth noting that, according to legislation, only registered means of plant protection can be used and, in Georgia, only those means that have received positive feedback during the process of state examination in terms of toxicology, hygiene and ecology are registered. Furthermore, within the scope of both nationally and internationally funded projects, activities to render harmless and safely dispose of agro-chemicals that have passed their expiry date are regularly conducted. The law on pesticides and agro-chemicals (2005) exerts control over the use of pesticide and agro-chemicals. The order of the Minister of Agriculture on the approval of the rule of import, storage, realization and wise use of agro-chemicals was also adopted in 2005. This order outlines all of the necessary rules and norms that need to be followed while suing fertilizers and pesticides.

Since its independence, Georgia has been steadily developing the practice of organic farming and there is a distinct trend for an increase in the number of biological farms. This is supported by certain legislative and regulative acts adopted in recent years that include a law on biological agro-production adopted in 2006 which legally regulates issues of organic farming in Georgia. The law is based upon an international standard (principles of Codex Alimentarius GL 32) and appropriate regulations set-out by the EC (EEC #2092/91). Georgian standards on biological agro-production, that identify substances that can be used in biological agricultural production, have been developed and the preparation of rules for bio-production certification is being planned.

Significant changes have also occurred in livestock breeding. Since the 1990s, the total number of livestock has drastically decreased; more specifically, the numbers of sheep and goat have almost halved while the proportion of cattle has increased. Despite this, conditions in the country's pastures have not improved due, in part, to the exclusion of Georgian pastoralists from traditional pastures in the northern Caucasus, such as those in Dagestan, and the subsequent concentration of sheep on Georgian winter pastures.

The joint initiative of MoE and the Ministry of Agriculture on the preparation of the model codex of agricultural practice should be noted. The codex represents the unity of commitments, recommendations and practical advice, as stipulated by Georgian legislation, both for small peasant households and farms and large agro-production units. The goal of the codex is to encourage the decrease of the negative impact of agriculture on the environment and degradation of the major natural resources through the introduction of less harmful farming rules.

3.3 Fishery

Fishing (extraction of fish from the Black Sea and inland reservoirs) is managed by MoE in Georgia. The ministry also evaluates the existing resources, sets extraction limits, fishing rules and enforces fishing license rules. The main legal documents regulating fishing are: the Law of Georgia on Wild Fauna, Law on State Licenses and Permits; Regulations "The procedures for issuing and conditions of fishing license (#138, 11.08.2005), "List of fauna species permitted for use and rules for their taking, terms and permitted methods (#512, 07.12.2005).

After 1991, difficulties in Georgian economics and the loss of markets, as well as dramatic decreases in fish stocks in the Black Sea, have had a negative impact on the fishing sector. The volume of fishing in the Black Sea has significantly decreased from 1988.

Eight fish species are commonly extracted from the Black Sea for commercial purposes at present (anchovy, whiting, spurdog, mullet, golden mullet, flat head mullet, jack mackerel, Caspian shad). The most important is the Black Sea anchovy. The extraction of other fish species is much more limited.

According to legislation, fishing farther than 300 m from the Black Sea coast needs a license. The state purpose-specific program for the sustainable use of fish resources was implemented in 2005 when fish supplies were studied in the Black Sea, within Georgian waters. Based upon the study, long-term (10 year) fishing licenses were issued in 2006. Licensees are obliged to evaluate the fish resource supplies annually and present the results of the survey to MoE. According to the ministries recommendation, the Ministry of Economic Development approves species specific annual extraction quotas.

In addition, the order of MoE sets certain restrictions and prohibitions designed to protect fish resources and support their restoration. The order covers the following aspects:

- fishing terms (commercial fishing in the Black Sea is entirely banned from 1st May till 1st June and for inland reservoirs is determined individually);

- areas where fishing is banned (i.e. fishing is entirely banned in rivers used by migrating sturgeons and salmon and within 500 m around their estuaries as well within five miles from the coastal Foti to Ochamchire);
- species fishing of which is banned;
- fishing tools and their technical characteristics;
- banned extraction methods;
- minimum size of fish permitted for extraction.

Many rivers, lakes and artificial reservoirs are located in Georgia and fishing occurs in the majority of them. At present the long-term licensing of fishing for several lakes and reservoirs is being conducted. For licensing purposes, ichthyofauna conditions have been assessed in the reservoirs and specific rules for fishing and restoration of fish populations have been developed to facilitate the sustainable use of fish resources as well as the restoration of threatened and endemic species.

In spite of measures to encourage sustainable fishing, the problems of illegal fishing as well as the spread of non-local/invasive species and the absence of monitoring system have remained.

3.4 Climate Change

Georgia became party to the United Nations Framework Convention on Climate Change (UNFCCC) in 1994 and in 2006-2009 Georgia prepared its second national notification to the convention. During this process a national inventory of green-house gasses was conducted, scenarios of expected climate change processed and vulnerability of various ecosystems and branches of economics to current and expected changes was assessed. Along with plans for reducing green-house gas emissions, adaptation projects were also developed and activities aimed at improving public awareness arranged.

With due regard to the second national notification and the results of other completed or active projects, the short and long-term strategy for climate change was prepared. It does not yet cover the entire country but focuses on priority regions selected according to the results of the initial study. Based upon the expected scenario of climate change, three regions (the Black Sea coast, Dedoplistskaro district and Kvemo Svaneti) were evaluated using identified vulnerability and adaptation measures.

The following information details the impact of climate change on these ecosystems and the expected threats and adaptation measures which are directly connected with biodiversity issues.

Black Sea Coast: against the background of global warming four main threats have become distinct for the Black Sea ecosystems:

I. an increase in the speed of eustatic variations (the global rise of the sea level towards land);

II. an increase in the intensity and frequency of storms and a change in seasonality;

III. the activation of sedimentation in deltas of rivers feeding on glaciers (this threatens only the Rioni delta and middle reaches);

IV. changes in the thermal characteristics of the sea.

Evaluations revealed that the most vulnerable sectors within the coastline are the Rioni and Chorokhi river deltas and the lower reaches of the Rioni River. Kolkheti National Park is directly adjacent to the Black Sea and comprises coastal waters, coastal peat bogs, Paliastomi Lake and wetland Colchic forests. As the evaluation showed, the rise in sea water levels has significant negative impact on the protected areas, particularly Lake Paliastomi. Between 1927 and 2006 the temperature had risen by 0.7º C which, along with other factors, resulted in serious changes of the lake's ecosystem. Climate change adaptation measures are planned for the lake within the strategy plan and include: a detailed study of the impact of climate change, the preparation of adaptation measures and the sourcing of investments to implement.

Dedoplistskaro District: this is one of the priority regions selected during the preparation of the second national notification as a territory under the threat of desertification and where effective adaptation measures should be introduced. Dedoplistskaro is rich with fertile soils and vast pastures, but poor in water resources, with low annual precipitation rates. Represented here are unique semi-arid ecosystems, untypical for the country and rich with flora and fauna. In order to protect these ecosystems, protected areas have been established over various periods: Vashlovani Protected Areas (comprises a national park (25,114 ha) and a Reserve (10,142 ha) as well as Natural Monuments (the Alazani floodplain and the Artsivi gorge) and Chachuna State Reserve (5,200 ha). The total area of the protected areas is 30,552 ha, or 12% of the district. Agriculture plays a leading role in the economy of the region but is serious impeded by a lack of water (irrigation systems are in a state of total disrepair), frequent droughts and strong winds (windbreaks have been entirely eliminated during the last 20 years). Soil degradation in Dedoplistskaro district represents one of the most acute problems; with pasture management almost absent, erosive processes are accelerated, impoverishing the vegetation and intensifying the desertification processes.

The following adaptation measures are determined for Dedoplistskaro district:

- the establishment of a permanent monitoring system, within the protected areas, to evaluate land degradation and the impact of climate change on endemic species of flora and fauna (in conditions free from anthropogenic pressure);
- the planting of plantation stands on abandoned and eroded land (a project is proposed for the planting of a 40 ha bio-energetic forest);
- the rehabilitation of windbreaks.

In 2008 the project on the Climate Tolerant Rehabilitation of Degraded Landscapes, Georgia, was implemented by MoE, in cooperation with the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and GTZ. The goal of the project is to restore degraded landscape and provide aid to the government of Georgia in implementing measures against land degradation and desertification. The project mainly focuses on Dedoplistskaro district, where the restoration of windbreaks has begun on a 30 ha plot, and actively involves the local community.

Kvemo Svaneti: this mountainous region was selected as an ecosystem whose vulnerability to natural disasters is intensified by the threat of global warming. The increase in frequency and intensity of such disasters (flash floods, landslides and mudflows) severely damages agriculture, forests, roads and other infrastructure.

Due to landslides and flash floods the population of Lentekhi district has fallen by 40% since 1986. Forests covering more than 60% of the region area represent one of the major natural treasures of Kvemo Svaneti but, during the past 15 to 20 years parasite-borne diseases have widely spread in the forests. It is thought that this may, in part, be driven by climate change.

An evaluation of glaciers in the Central Caucasus region (of which Kvemo Svaneti is a part) revealed that their total area has decreased by about 25% whilst total volume has fallen from 1.2 km^3 to 0.8 km^3 since the 1950s. The expected increase in temperature by 2050 could result in the vanishing of the glaciers of Kvemo Svaneti.

The following adaptation measures have been identified for Kvemo Svaneti:

- rehabilitation and adequate management of severely damaged forests;
- restoration of forests, for protection against landslides, in appropriate areas;
- development of economic packages for the protection of local forests from harmful insects.

3.5 Environmental Impact Assessment

General requirements connected with the EIA system are determined in the law of Georgia on Environmental Protection (1996). The law sets out environmental requirements for development activities during decision making and implementation. According to this law an Environmental Impact Permits (EIPs) is required for the implementation of certain activities. In order for such a permit to be issued, an EIA must first be conducted by the developer.

At present, the EIA system is regulated by 2007 Law on Environmental Impact Assessment and Sate Ecological Expertise. According to the law environmental permits are necessary for activities characterized by excessive threat to human life or health. According to the provisions of the law, the purpose of the EIA is to ensure that any planned activity includes measure for the protection of individual components of the environment including landscapes, cultural heritage and human populations. In this way, EIAs should identify any direct or indirect impacts on human health and safety, wildlife, soil, air, water, climate, landscape, ecosystems and historical monuments, or the products of any of these factors such as cultural values and socio-economic conditions.

The law gives a full list of activities that require an EIP within Georgia:

a) extraction of minerals (ecological expertise is not needed for construction material extraction, except for as stipulated by paragraph g);

b) any industrial technology using asbestos;

c) cement, asphalt, lime, gypsum marl, gypsum and brick production;

d) glass and glass product manufacturing;

e) processing of solid domestic waste (among these, arrangement of waste burning factories) and/or arrangement of dumps;

f) allocation of toxic or other hazardous waste, their entombment and/or processing, neutralization of such waste;

g) production of any volume related to coal gasification, liquidation, briquetting and coking;

h) construction of major oil and gas pipeline;

i) allocation of storage, terminals for oil and oil products as well as liquid and natural gases, if the volume of reservoirs located within such territory exceeds 1000 m^3 or their total volume exceeds 1000 m^3;

j) construction of international and national automobile roads, railroads and their bridges, road tunnels as well as engineering protective buildings of automobile roads, railroads and their territories;

k) construction of high voltage (exceeding 35 kwt) air or cable electricity lines and allocation of stations (exceeding 100 kwt);

l) Allocation of hydro power stations (exceeding 2 mwt) and thermal power station (exceeding 10 mwt);

m) construction of metro;

n) arranging of reservoir (exceeding 10,000 m^3);

o) allocation of water treatment centers (exceeding 1,000 m^3 per day) as well as major sewage collector;

p) arrangement of aerodrome, airport, railway stations and marine ports;

q) allocation of dam, port, pier, dock and berth;

r) chemical industry, namely: chemical processing of semi-manufactured (half-finished material) and chemical substance manufacturing; production and processing of pesticides, mineral fertilizers, chemical paints, lacquer, peroxides and elastic substances (rubber or plastic substances); production of gunpowder and explosives; manufacturing of graphite electrodes;

s) oil and gas processing units (exceeding 500 t per day);

t) any metallurgical production (with volume more than 1 ton per hour), except for cold processing of metal and jewellery production;

u) arrangement of storage of toxic and other hazardous material.

The regulations on environmental impact assessment (approved by order #18, 09.03.2009 of MoE) EIA outlines the stages of the EIA process and mandatory issues to be reviewed by a EIA report.

The executor of the activity is responsible for the organization and completion of an EIA and also bears all the necessary expenses connected with EIA procedure. Upon completion the EIA report is presented to MoE for its consideration and award of an EIP where appropriate. The permit issue procedure, then, consists of the following components:

- Environmental Impact Assessment;
- ecological expertise;
- public participation in the decision making process.

In order to receive an EIP the legislation requires that the EIA is carried out by a qualified professional and in an impartial and rigorous manner. EIP is then issued through the state ecological expertise procedure. This involves the following, the expert commission appointed by MoE reviews the project documentation and EIA report and prepares its' conclusions. Furthermore, any permit will include a set of conditions by which the activity must be carried out. Such conditions can include requirements for implementing mitigation measures for any identified impacts on biodiversity.

Currently, there are no legislative requirements for strategic environmental assessments in Georgia. Capacity building in this field is necessary as the inclusion of EIA issues in corresponding educational programs and the preparation of guidelines on such issues, connected with biodiversity, to be covered by the EIA system.

4 Conclusions: Progress towards the 2010 Target and Implementation of the Strategic Plan

4.1 Progress Towards the 2010 Target

FOCAL AREA: PROTECT THE COMPONENTS OF BIODIVERSITY		
Goals and Targets	**Corresponding Indicator of CBD**	**Progress Evaluation**
Goal 1. Promote the conservation of the biological diversity of ecosystems, habitats and biomes		
Target 1.1: At least 10% of each of the world's ecological regions effectively conserved.	- Change of the area of the protected territories; - Trend of change in the area of the selected biomes, ecosystems and habitats; - Trends of number and distribution of the selected species	- 7.14% of Georgian territory represented in protected areas; - Since 2005 the area of the protected territories (IUCN categories I-V) has increased by 64,889.01 ha
Target 1.2: Areas of particular importance to biodiversity proatected	- Change of the area of the protected territories. - Trend of change in the area of selected biomes, ecosystems and habitats; - Trends of number and distribution of the selected species;	The Assessment of the Effectiveness of Protected Area Management (IUCN, WWF, 2009) revealed that the role of the existing protected territories in biodiversity conservation is high, namely: - The full range of ecosystem biodiversity is adequately represented in the protected areas system. The necessity for the establishment of new protected areas and the extension of existing ones (Algeti and Kazbegi National Parks) has become prominent in facilitating effective conservation of ecosystems, habitats and populations; - Areas of high value are protected along with territories prominent for high levels of biodiversity and endemism; - The location and configuration of the protected areas system favors biodiversity conservation The following has been identified in Georgia;

		- 31 globally important areas for birds (Birdlife International, GCCW, 2001); - 17 areas especially interesting in terms of biodiversity conservation with the aim to include them in the Emerald Network (EC, NACRES, 2002); - 17 priority areas for conservation and 60 ecological corridors (ECP, WWF, 2006); - 49 priority areas for conservation (CEPF, 2003); - Forests of high conservation value (WWF, 2006); - The identification of important areas for plants (IPAs) is in process (CEPF, IUCN) There is need of compilation of all existing information and the resultsb of gap analysis conducted so far. The next stage should be to prioritize areas, identified through the above measures, for their inclusion in the protected areas system, drawing of precise maps and reserving of spots based upon the decision of the government and/or parliament of Georgia. This, in turn, will enable the Georgian government to identify relevant objectives as well as realistic timelines for their execution and indicators of achievement for the development of the protected areas system as a whole
Goal 2. Promote the conservation of species diversity		
Target 2.1: Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups	- Trends of number and distribution of the selected species; - Changes in statuses of threatened species	Due to the absence of a monitoring system the assessment of trends in numbers of species and species groups is impossible, although information does exist on the current status of some species: - An increasing trend in the numbers of deer has been observed in Borjomi-Kharagauli National Park (from 39 individuals in 1999 to 228 individuals in 2009); - A program for the reintroduction of the goitered gazelle in Georgia has started with 10 individuals now housed within a

		purpose-built enclosure in Vashlovani National Park – the progeny of this captive population will be used for future re-introductions into the park itself; the program for the rehabilitation of wild goat populations is also being conducted in Borjomi-Kharagauli National Park with a captive population of nine individuals already in place
Target 2.2: Status of threatened species improved.	- Changes in the status of the threatened species; - Trends of number and distribution of the selected species; - Change in the area of protected territories	Due to an absence of up-to-date and effective tools for data collection, storage and analysis, the effective identification of population trends is difficult: this, in turn, significantly complicates the assessment of the actual status of and trends in biodiversity. However, the evaluation of the status of fauna and woody-plant species, according to IUCN criteria and categories, has finished; - nine vertebrate species and two woody-plant species are critically endangered (CR); 24 vertebrate and 18 woody-plant species are endangered (EN) and 54 vertebrate and 36 plant species are vulnerable (VU) in; - An assessment of herbaceous species is currently being carried out according to IUCN criteria
Goal 3. Promote the conservation of genetic diversity		
Target 3.1: Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained.	- Trends in the genetic diversity of domestic animals, crops and socio-economically valuable fish; - Biodiversity of edible and medicinal resources (indicator is being developed); - Trends in number and distribution of selected	- *On-farm* conservation of local landraces of crops is being conducted in farms; at present 35 local landraces are being cultivated; the distribution of 22 rare, local varieties of apple has expanded; - Inventory and assessment of medicinal plants and crops has been undertaken in one of the regions of Georgia (Samtskhe-Javakheti), the status of 27 medicinal plants has been identified as threatened; - Inventory and assessment of crops and the updating of *ex-situ* collections (up to 6,000 samples are stored within the

	species	collections) have been completed; - Gene banks, meeting recent standards, have been created at the Institute of Farming and the Tbilisi Botanical Garden and Botanic Institute; - National reports on the state of the genetic resources of food and agricultural plants have been prepared; - Recommendations on the development of the unified national strategy of the management and use of plant genetic resources have been prepared and the components of the strategy defined
FOCAL AREA: PROMOTE SUSTAINABLE USE		
Goal 4. Promote sustainable use and consumption		
Target 4.1: Biodiversity-based products derived from sources that are sustainably managed, and Production areas managed consistent with the conservation of biodiversity.	- Areas of sustainably managed forest, arable land and aqua-culture farms; - The share of products, which have been extracted from sustainable resources (indicator is being developed); - Trends in numbers and distribution of selected species; - Trophic sea index; - Nitrogen composition; - Water quality in water ecosystems	- An increasing trend in biological farming can be observed, although the actual area of land under such farming is unknown; - The legislative amendment adopted in 1996 aimed to support the sustainable use of game species by only allowing hunting in areas, known as hunting farms, specifically established for this purpose. The creation of hunting farms started in 2000 and currently there are 18 covering around 111,661 ha. In addition to providing game for hunters, these farms also have to actively manage their stocks as the legislation requires that numbers of animals reach certain levels before hunting can commence (currently only five meet these standards). - 10% of the forests of Georgia are included in the protected area system. Long-term forest use licenses have been issued on 156,000 ha. These forests are managed through MoE approved management plans that cover specific actions to facilitate sustainable forest use

Target 4.2: Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced.	Ecological impact and connected concepts	- A legislative base for the sustainable use of fish and game species as well as non-arborescent forest resources (fir cones, snowdrop and cyclamen bulbs) has been created. Use licenses and permits are issued in accordance with the legislation; - Use is allowed only based upon the quotas and limits determined by the resource assessment; - Specific rules for the use of different resources have been determined; - State control of illegal and extensive grazing is being conducted; - A decreasing trend in illicit timber logging and illegal fishing is prominent due to the strengthening of the state control system for the use of natural resources and improvements in law enforcement
Target 4.3: No species of wild flora or fauna endangered by international trade.	Changes in status of threatened species	- The status of wild snowdrop and cyclamen populations has been assessed. These species are included in CITES Annexes and are subject to commercial trade; their resources have been evaluated, extraction quotas determined, control and monitoring schemes developed and recommendations for their artificial cultivation prepared; - Legal acts regulating the issuance of permits for trade in species included in CITES Annexes have been adopted; - Special Legal acts regulating snowdrop and cyclamen extraction have been adopted; - Draft law on the Use of Trade in Endangered Flora and Fauna Species has been prepared; - Legislative changes to improve effectiveness in controls on trade of CITES species have been adopted; - Training modules for customs officers on the control of trade in

		CITES species have been developed; - Training for customs officers is undertaken annually.
FOCAL AREA: ADDRESS THREATS TO BIODIVERSITY		
Goal 5. Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced.		
Target 5.1: Rate of loss and degradation of natural habitats decreased.	- Trends in area of selected biomes, ecosystems and habitats; - Trends in numbers and distribution of selected species; - Trophic sea index	- The main tool for the protection and conservation of specific habitats is for their inclusion in the protected area system. Between 2005-2009 the area of protected territories increased by 64,889 ha; - The classification of habitats in Georgia is being conducted according to Natura 2000 Guidelines and it is anticipated that this will lead to the discovery and monitoring of threatened habitats; - Due to the absence of a monitoring system, the review of trends in the health of separate habitats is impossible, although as a result of improvements in the control on wood extraction (above) it could be said that the threat of decreasing forest area has been almost eliminated. In spite of this, the threat of composition and structural changes in forest habitat still remains. The current rehabilitation of the Alazani River and Iori floodplain forests should also be noted – as these support natural forest regeneration and help identify restoration activities for the Iori River. Consequently, the natural restoration of Chiauri floodplain forests (Alazani River) has already begun on 150 ha. These measures are implemented by WWF Caucasus
Goal 6. Control threats from invasive alien species.		
Target 6.1: Pathways for	Trends in numbers of invasive	- According to legislation, any cargo which could become the

major potential alien invasive species controlled.	species	carrier of an object of quarantine (i.e. carrier of plant parasites and weeds) is subject to phyto-sanitary and zoo-veterinary control. Legislative changes for raising effectiveness in controls have been adopted and training for customs divisions completed; - The legislation bans the introduction of alien animal species into the environment; - Local flora of Georgia has been studied and a list of invasive species compiled; models describing the spread of three invasive species (*Amrosia artemisiifolia, Phytolacca americana* and *Roninia psedoacacia*) have also been developed
Target 6.2: Management plans in place for major alien species that threaten ecosystems, habitats or species.		- Invasive species management plans have not yet been developed; - Management plans and recommendations for controlling agricultural pest species (e.g. grasshopper, American white butterfly) have been prepared
Goal 7. Address challenges to biodiversity from climate change, and pollution.		
Target 7.1: Maintain and enhance resilience of the components of biodiversity to adapt to climate change	- Ecosystem integrity/fragmentation	- The ecosystems most vulnerable to climate changes have been identified as the Black Sea coast, the arid and semi-arid ecosystems in Dedoplistskaro district and the mountain forests of Kvemo Svaneti); - Adaptation measures have been identified and project proposals are being developed; - Current levels of landscape and ecosystem fragmentation have not yet been assessed, although it has been chosen as one of the indicators for biodiversity monitoring
Target 7.2: Reduce pollution and its impacts on	- Nitrogen composition;	- Water pollution monitoring is being implemented only at 43

biodiversity	- Water quality in water ecosystems	points along 22 rivers and in 4 lakes; - In the 1980s the main source of pollution was industry and pollution levels were fairly high. At present the main source of pollution is untreated municipal waters. Between 1995-2005 all water treatment facilities stopped and, consequently, the level of pollution in water ecosystems has increased in comparison with those recorded in 1995
Focal Area: Maintain Goods And Services From Biodiversity To Support Human Well-Being		
Goal 8. Maintain capacity of ecosystems to deliver goods and services and support livelihoods		
Target 8.1: Capacity of ecosystems to deliver goods and services maintained.	- Biodiversity used for food and medicinal purposes (indicator is being developed); - Water quality in water ecosystems	- Assessments of the potential for preserving the ability of ecosystems to deliver products and services have not yet been conducted, although it could be generally said that food and medicinal plant resources have been preserved - Despite the absence of precise data, it is known that fish resources have greatly decreased in the inland reservoirs of Georgia due to water pollution and illegal fishing - The following tools for preserving biological resources and facilitating sustainable use are applicable in Georgia: licensing of natural resource use; restrictions on volumes of natural resource use within the limits of maximum extractable amounts (quota); rules of natural resource use; responsibility and remuneration for illegal or extensive use as well as violation of use rules.
Target 8.2: biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained.	- The health and welfare of villages (Temebi), which are directly dependent on ecosystem products and services;	- Forests are especially important for rural populations as they provide resources for fire and construction as well as food and medicine and so have, on the whole, been well preserved. Local communities have the right to gather non-timber forest products for personal use without any permit.

	- Biodiversity used for food and medicinal purposes (indicator is being developed).	- Despite the absence of precise data, it is clear that fish resources in inland reservoirs have been severely depleted due to water pollution and illegal fishing. Considering the local socio-economic situation fishing along the coastline (300 m from the shore) and on Paliastomi lake are not currently subject to licensing laws
FOCAL AREA: PROTECT TRADITIONAL KNOWLEDGE, INNOVATIONS AND PRACTICES		
Goal 9 Maintain socio-cultural diversity of indigenous and local communities		
Target 9.1 Protect traditional knowledge, innovations and practices	- Status and trends of linguistic diversity and numbers of the local language speakers; - Additional indicators should be developed.	- Under a GEF/World Bank project (2002-2008) a small grant program focusing on traditional activities in the protected territories of the eastern Caucasus, was implemented and many villages adjacent to Tusheti National Park and Tusheti Protected Landscape were supported in restoring ritual traditions. Networks of family hotels were created, folk crafts and traditional food production restored, eco-tourism developed and the restoration of historical-cultural monuments and the rehabilitation of traditional crops facilitated.
Target 9.2: Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing	Indicator is being developed	
FOCAL AREA: ENSURE THE FAIR AND EQUITABLE SHARING OF BENEFITS ARISING OUT OF THE USE OF GENETIC RESOURCES		
Goal 10. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources		
Target 10.1: All transfers of genetic resources are in line with the Convention on	Indicator is being developed	- Legislation regulating the availability and distribution of genetic resources does not currently exist in Georgia.

Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements.		- There are no restrictions on the utilization of genetic resources within collections. - The owners of collections participate in the international cooperation related to genetic resources and deliver material to their partners free of charge and without restrictions. - The applicable legislation does not require registration of imported or exported genetic resources. As a rule, collection owners send and register genetic resources according to local and foreign requests.
Target 10.2: Benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources.	Indicator is being developed	- Georgian legislation does not regulate fair distribution of benefits received from the use of genetic resources.
FOCAL AREA: ENSURE PROVISION OF ADEQUATE RESOURCES		
Goal 11: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention		
Target 11.1: New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20.	Indicator is being developed	- The state budget contains expenses for the management and, in part, development of protected areas, the protection of biodiversity and administration of its' sustainable use as well as the scientific research of biodiversity - The measures for the protection and sustainable use of biodiversity, in Georgia, are mainly financed from external sources such as grants from international financial institutes and governments of donor countries. The main donors are GEF, CEPF, the MAVA Foundation and the governments of Germany, USA, Norway and the Netherlands
Target 11.2: Technology is	Indicator is being developed	- Projects within the scope of international and bilateral

transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4.		cooperation greatly facilitate the transfer of new technologies and their use in the protection and sustainable use of biodiversity. This is true for various items of laboratory equipment as well as computer software and the general implementation of new technologies through training in appropriate skills and the provision of shared knowledge and experience.

4.2 Progress towards the Goals and Objectives of the Strategic Plan of the Convention

Goal 1: The Convention is fulfilling its leadership role in international biodiversity issues	
1.1 The Convention is setting the global biodiversity agenda	The Convention on Biodiversity plays a leading role in the development of policies, strategy and legislation related to the protection and sustainable use of biodiversity at a national level. The main provisions of the convention are reflected in the national legislation of Georgia and the biodiversity protection strategy The commitments stipulated by the convention are included in bilateral agreements with other countries in the environment protection field At the global level, the convention is the main tool for the identification of directions taken for biodiversity protection and sustainable use. Its requirements are reflected in all other international and regional agreements regarding environment protection, including: Convention on Climate Change, Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer and the Convention to Combat Desertification
1.2 The Convention is promoting cooperation between all relevant international instruments and processes to enhance policy coherence	
1.3 Other international processes are actively supporting implementation of the Convention, in a manner consistent with their respective frameworks	
1.4 The Cartagena Protocol on Biosafety is widely implemented	Georgia joined the Carthage protocol on bio-safety in September, 2008. The legal documents for the facilitation of the implementation of the provisions of the protocol have not yet been developed
1.5 Biodiversity concerns are being integrated into relevant sectoral or cross-sectoral plans, programmes and policies at the regional and global levels	The issues of the protection and sustainable use of biodiversity are covered under the regional Convention on the Protection of the Black Sea Against Pollution of which, Georgia joined the protocol for the Protection of Biodiversity and Landscapes of the Black Sea in 2009 In April, 2009 the Strategic Action Plan for the Rehabilitation and Protection of the Black Sea was adopted by the various relevant ministers of the Black Sea countries. Biodiversity protection

	is a significant part of these documents
1.6 Parties are collaborating at the regional and subregional levels to implement the Convention	Georgia actively collaborates with the countries of the Caucasus eco-region (Turkey, Armenia and Azerbaijan) in terms of biodiversity protection issues: - Bilateral agreements are signed and several initiatives for establishing trans-boundary protected areas are being developed - The Eco-regional biodiversity conservation plan has been prepared and approved by all countries of the eco-region - The Eco-regional Council for Biodiversity Conservation and Sustainable Resource Use in the Caucasus has been set-up and supports the coordination of actions at an eco-regional level
Goal 2: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention	
2.1 All Parties have adequate capacity for implementation of priority actions in national biodiversity strategies and action plans	Georgia generally has appropriate institutional and human resources to implement NBSAP, while financial resources are not adequate. Despite the fact that NBSAP was approved by the government of Georgia, funds for its implementation are not adequately covered by the state budget. The actions determined by the document are mainly implemented with the support of international financial aid
2.2 Developing country Parties, in particular the least developed and the small island developing States amongst them, and other Parties with economies in transition, have sufficient resources available to implement the three objectives of the Convention	Georgia, as a country with a transitional economy, receives significant financial aid from GEF and donor countries, within international and bilateral cooperation agreements, to achieve the goals of the convention
2.3 Developing country Parties, in particular the least developed and the small island developing States amongst them, and other	Draft laws on genetically modified organisms (GMOs) have been developed with the support of GEF/UNEP in 2005. The document needs

Parties with economies in transition, have increased resources and technology transfer available to implement the Cartagena Protocol on Biosafety	significant review to reflect the decisions within the protocol and facilitate compliance with the applicable legal environment of Georgia Scientific potential has increased with qualified scientists, with experience in GMO detection methods, working in bio-technology institutes. The practice of teaching GMO analysis to MSc students in Ilia Chavchavadze University exists and the establishment of the educational laboratory of modern bio-technologies is planned
2.4 All Parties have adequate capacity to implement the Cartagena Protocol on Biosafety	Georgia does not currently have sufficient capacity to facilitate the implementation of the Carthage protocol in terms of risk assessment, administration, control and participation in the information system of bio-safety (BCH)
2.5 Technical and scientific cooperation is making a significant contribution to building capacity	Scientific-technical cooperation in bio-safety is limited to courses at the institute of bio-technologies in various bodies
Goal 3: National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the objectives of the Convention	
3.1 Every Party has effective national strategies, plans and programmes in place to provide a national framework for implementing the three objectives of the Convention and to set clear national priorities	Georgian NBSAP was approved in 2005. The document determines the national biodiversity protection strategy until 2015 with an action plan until 2010. The preparation of the new action plan is due for the following five year term in 2010
3.2 Every Party to the Cartagena Protocol on Biosafety has a regulatory framework in place and functioning to implement the Protocol	Georgia does not currently regulate bio-safety issues at a national level
3.3 Biodiversity concerns are being integrated into relevant national sectoral and cross-sectoral plans, programmes and policies	Against the background of recent and current political and socio-economic instability and considering the priorities identified by the government to overcome this, biodiversity issues are poorly reflected in the countries development and sector development plans. The main relevant priorities in recent years have

	been the development of protected areas and the reform of forestry
3.4 The priorities in national biodiversity strategies and action plans are being actively implemented, as a means to achieve national implementation of the Convention, and as a significant contribution towards the global biodiversity agenda	The following measures and actions have been implemented towards the ten priorities defined by NBSAP: development of the protected areas system; protection of agro-biodiversity; regulation of hunting and fishing; raising of public awareness; species and habitat protection; biodiversity monitoring and the improvement of legislation Activities to establish national bio-safety system and implement financial-economical programs have not yet been implemented Detailed information on this issue is presented in Chapter Two
Goal 4: There is a better understanding of the importance of biodiversity and of the Convention, and this has led to broader engagement across society in implementation	
4.1 All Parties are implementing a communication, education, and public awareness strategy and promoting public participation in support of the Convention	The NBSAP outlines the countries strategic action plan for improving public education and involvement. Recent actions in this field have become more intensive. Campaigns for various target groups are being implemented with the involvement of the mass media Detailed information on the above issue is presented in Chapter Two
4.2 Every Party to the Cartagena Protocol on Biosafety is promoting and facilitating public awareness, education and participation in support of the Protocol	Georgin Green Movement and the Friendds of the Earth conducted a campaign on bio-safety issues to increase public awareness in Georgia. For capacity building amongst NGOs, special educational material has been prepared for school pupils and eco-workshops conducted in various districts of Georgia
4.3 Indigenous and local communities are effectively involved in implementation and in the processes of the Convention, at national, regional and international levels	The rights of local populations in biodiversity conservation and management are defined by law. Several projects for strengthening the involvement of local populations in biological resource management have been implemented by NGOs (detailed information is presented in

	Chapter Two). The participation of the local population in the management of protected areas is described in Annex 3B
4.4 Key actors and stakeholders, including the private sector, are engaged in partnership to implement the Convention and are integrating biodiversity concerns into their relevant sectoral and cross-sectoral plans, programmes and policies	An example of private sector participation in the protection of the biodiversity is a memorandum signed recently between the Agency for Protected Areas (APA), the Caucasus Nature Fund nd the Bank of Georgia which stipulates that the Bank of Georgia will provide $75,000 to support Borjomi-Kharagauli National Park. It should be noted that BP and its partner organizations (BTC Co. and SCP Co.) finance the environmental investment and small grant program for the conservation of the biodiversity

4.3 Conclusions

The 2010 goals and objectives of the convention are partially integrated in the NBSAP of Georgia, though national indicators of their fulfilment have not yet been determined. Consequently, it is difficult to assess the extent to which the convention's objectives have been achieved at a national level. However, significant progress has been made in the following directions: the development of the protected areas system; assessments of the status of certain species and the identification of appropriate conservation measures; the implementation of restoration programmes for locally extinct species; *ex-situ* conservation of endemic and threatened plant species; the improvement of the legal base for regulating hunting and fishing; the regulation of international trade in endangered species and improvements in its control; the elaboration of controls on the illegal extraction of biological resources.

With due regard to the health of biodiversity, the mitigation of active threats and their control of their causes, as well as progress already achieved towards biodiversity protection and sustainable use, the priority directions for the future can be defined as follows:

- further development of the protected areas system, including the establishment of new protected areas, the extension of existing ones, the establishment of an integrated protected areas network, the improvement of management effectiveness for specific protected territories and the facilitation of financial sustainability;
- implementation of conservation and rehabilitation measures for priority threatened and endemic species;
- establishment of a national biodiversity monitoring system;
- facilitation of the sustainable use of biological resources;

- establishment of a national bio-safety system;
- improvement in law enforcement including the strengthening of controls on illegal resources use;
- increasing the role of local administrations and communities in biodiversity conservation and management of biological resource use;
- public education and the improvement of awareness.

Appendix I. Information concerning reporting Party and preparation of national report

A. Reporting Party

Contracting Party	GEORGIA
NATIONAL FOCAL POINT	
Full name of the institution	*Ministry of Environment Protection and Natural Resources of Georgia*
Name and title of contact officer	*Ioseb Kartsivadze,* *Head of Biodiversity Protection Service*
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CONTACT OFFICER FOR NATIONAL REPORT (IF DIFFERENT FROM ABOVE)	
Full name of the institution	*Ministry of Environment Protection and Natural Resources of Georgia*
Name and title of contact officer	*Anna Rukhadze,* *Main Specialist of Biodiversity Protection Service*
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SUBMISSION	
Signature of officer responsible for submitting national report	*Ioseb Kartsivadze,* *Head of Biodiversity Protection Service,* *CBD National Focal Point*
Date of submission	*30.03. 2010*

B. Information on the preparation of the report

This report was elaborated with support from the Global Environmental Facility (GEF) and United Nations Environment Programme (UNEP), within the framework of the project "**Small-Scale Funding Agreement (SSFA) for the project, "Support to GEF Eligible CBD Parties for Carrying out 2010 Biodiversity Targets National Assessments- Phase III".** The project was implemented by NACRES – Centre for Biodiversity Conservation and Research in close cooperation with the Ministry of Environmental Protection and Natural Resources of Georgia.

The draft of the Forth National report was prepared by Ms. Ana Rukhadze, Chief Specialist of the Biodiversity Protection Service of The Ministry of Environmental Protection and Natural Resources of Georgia on the basis of the data obtained from consultations and interviews with various relevant national agencies, nongovernmental and research institutions as well as on the basis of existing reports and published information. The first draft of the document was elaborated in Georgian, which was submitted for discussion to the Ministry of Environmental Protection and Natural Resources. The final version of the document reflects their comments and recommendations.

The quality of the National Report was evaluated by a special group formed at the Centre for the Conservation of Species (NACRES). The final version incorporated their comments too.

For creating this document, interviews and consultations were held at the following departments, scientific research institutes and NGOs:

State Agencies:

- The Ministry of Environmental Protection and Natural Resources:
    - The Department of Integrated Management of the Environment;
    - Environmental Protection Inspection;
    - Department of Protected Areas;
    - Forest Department;
    - The Department of International Relations and Policy;
- The Ministry of Agriculture;

Research Institutes and Educational Institutions:

- Tbilisi Botanical Garden and the Institute of Botany, Tbilisi;
- Batumi Botanical Gardens, Batumi;
- The Institute of Zoology, Tbilisi;
- Kanchaveli Institute of Plant Protection, Tbilisi;
- Gulisashvili Forest Institute, Tbilisi;
- The Institute of Agriculture, Tbilisi;
- Javakhishvili Tbilisi State University;

- Chavchavadze State University, Tbilisi;
- Georgian Academy of Agricultural Sciences, Tbilisi.

Non-Governmental Organizations:

- WWF Caucasus Programme Office;
- IUCN South Caucasian Office;
- Georgian Centre for the Conservation of Wildlife (GCCW);
- The Association of Field Researchers CAMPESTER;
- Association of Organic Farmers Elkana;
- Centre for Sustainable Tourism;
- CGIAR Program for Central Asia and the Caucasus;

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Appendix III - Progress towards Targets of the Global Strategy for Plant Conservation and the Programme of Work on Protected Areas

A. Progress towards Targets of the Global Strategy for Plant Conservation (GSPC)

Specific goals and objectives for the global strategy of plant conservation are not identified in Georgia, although the majority of GSPC objectives are reflected in NBSAP and appropriate measures determined.

Within an IUCN project, supported by CEPF, a working version of the regional strategy of plant protection for the Caucasus eco-region has been prepared and discussed at stakeholders' working meetings. The work on the preparation of the final version of the document is in progress.

OBJECTIVE 1: Understanding and Documenting Plant Diversity:

TARGET 1: A widely accessible working list of known plant species as a step towards a complete world flora.

Taxonomic research has a long history in Georgia and, as a result, the composition of Georgian flora is well known and is documented in *Gagnidze, R. 2005. Vascular plants of Georgia: A nomenclatural checklist. Tbilisi, "Universale" Chikovani, N., Svanidze, T. 2004. Checklist of bryophyte species of Georgia)* and in *The sixteen volumes of Georgian Flora* (although the existing checklists of flora need updating according to recent taxonomic definitions).

The taxonomic centres of Georgia are the Tbilisi Botanical Garden and Botanical Institute and the National Museum of Georgia.

Existing taxonomic data is partially available through internet (www.biodiversity-gerogia.net).

TARGET 2: A preliminary assessment of the conservation status of all known plant species at national, regional and international levels.

The commission on endangered species at the Academy of Sciences of Georgia completed the status assessment of woody-plant species, according to IUCN criteria and categories, in 2006. All plants identified as VU were included in the Red List of Georgia giving a total of 56 species; 52 of these are angiosperms and four gymnosperms.

The updated information on Georgian and Caucasian endemic flora is much favoured by a CEPF project, implemented by IUCN in close cooperation with the Missouri Botanical Gardens (USA). The full list of endemic species and sub-species of Caucasus flora has been completed, with 1,100

plants assessed according to IUCN criteria and 600 species (mainly with limited distribution) considered as endangered. The results of the work are due to be published in 2010.

CEPF also supported more focused research in the western part of Lesser Caucasus, studying the endemic plants of the trans-boundary district of Adjara-Shavsheti. As a result of this research, 48 species of endemic plants were evaluated according to IUCN criteria and recommendations for their *in-situ* conservation prepared. Seed banks of endemic plants, for the beginning of their *ex situ* conservation, have been created at the Batumi Botanical Gardens.

TARGET 3: Providing methods for plant conservation based on best practice.

- According to the Forest Code of Georgia, regulative acts and rules of wood processing have been developed.
- Limits, places and rules of fir cone collection are defined.
- Limits and conditions for the extraction of snowdrop (*Galanthus woronowii*) and cyclamen (*Cyclamen coum*) have been identified.
- Rules for the protection of wild population, sustainable use, monitoring and artificial cultivation in peasant farming plots have been prepared with the support of CITES secretariat and in close cooperation with Kew Botanical Gardens.
- With the help of the GTZ project "Sustainable Management of Natural Resources in Southern Caucasus", the development of rules for the extraction of medicinal, food and other economically valuable plants is in progress and aims to facilitate the sustainable use of these plants.

OBJECTIVE 2: Conserving Plant Diversity:

TARGET 4: At least ten per cent of the world's ecological regions effectively conserved.

At present 495,954 ha (7.1% of the country – compared to 6.2% in 2005) of land is included in protected areas of various types (reserves, national parks, natural monuments, managed reserves, protected landscapes). It should be noted that the majority of the reserves of Georgia were originally established for the conservation flora species.

TARGET 5: Protection of 50 per cent of the most important areas for plant diversity assured.

Important Plant Areas (IPAs) in the Caucasus are being identified, under Objective 2, with an important role being played by the IUCN project. Analysis of which IPAs should be included in protected areas has not yet been undertaken.

TARGET 6: At least 30 percent of production lands managed consistent with the conservation of plant biodiversity

At present there is not data on the area of biological farms, although a trend in an increase of such territories is prominent.

The existing practice of hay meadows and pastures does not facilitate the protection of plant communities and species or the protection against degradation.

On 10% of forested land, protected territories of various categories are established. Extraction of fire-wood is allowed in traditional use zones of national parks, managed reserves and protected landscapes. On 156,000 ha of forest (5.57% of total forest), long term licenses for forest use have been issued, covering the extraction of wood for commercial purposes. The territories are managed according to forest management plans agreed with MoE.

TARGET 7: 60 per cent of the world's threatened species conserved *in-situ.*

There are 56 plant species included on the Red List of Georgia and, according to associated legislation, their extraction for economic purposes is banned. However, removal of separate individuals, or their parts, from the wild is allowed for scientific purposes, for breeding or for the implementation of strategic projects.

The majority of threatened and endemic plants are represented within the protected areas system, particularly, as previously mentioned, the original function of those protected areas was to protect flora species and rare plant communities.

TARGET 8: 60 per cent of threatened plant species in accessible *ex-situ* collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes.

More than 600 species of Caucasus and Georgian endemics, threatened species and high conservation value species are protected in Tbilisi Botanical Gardens and its branches in Kutaisi and Bakuriani. Nineteen species included on the Red List of Georgia are protected within Batumi Botanical Gardens.

Tbilisi Botanical Gardens has been participating in the Millennium Seed Bank Project of Kew Gardens, in England, since 2005. Through the project, Georgia now has a duplicated collection of 600 threatened and endemic species (plant seeds and herbariums in Kew Botanical Garden and Tbilisi Botanical Institute) which covers 17 % of Georgian flora.

With the support of CEPF, a seed bank of endemic plants (48 species) of Adjara-Shavsheti has been established towards the implementation of their *ex-situ* conservation plans.

TARGET 9: 70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated local and indigenous knowledge maintained.

With the support of the GEF/UNDP project Rehabilitation, Conservation and Sustainable Use of Georgian Agro-Biodiversity, significant measures for *on-farm* conservation of local crop landraces have been undertaken. Within the project, 28 local landraces are cultivated for internal use and seven for commercial purposes. The project also encouraged the spread of 22 local apple varieties amongst farming households.

The *ex-situ* efforts in the conservation of plant genetic resources are especially important with existing national collections have been rehabilitated and updated with the support of various international organizations in recent years.

The table below shows data on plant collections currently preserved within various Georgina institutes:

Institution	**Location**	**No. of samples in collection**	**No. of samples in live collection**	**No. of samples *in vitro* collection**	**Main plant groups**
Institute of Farming	Mtskheta	3,057	-	-	Meadow crops and vegetables
Institute of Viticulture, Horticulture and Wine Making	Tbilisi	1,519	650	-	Vines, fruits, nuts & berries
Forestry Institute	Tbilisi	99	-	-	Trees
Research Institute of Plant Immunology	Kobuleti	343	6	-	-
Institute of Tea, Sub-Tropical Cultures and Tea Growing	Ozurgeti	-	155	-	Citruses and other friuts, tea,
Center of Bio-Technologies	Tbilisi	-	-	75	Potato
Batumi Botanical Garden	Batumi	-	2,037	-	Various
Tbilisi Botanical Garden and Botanical Institute	Tbilisi	800	2,300 (approximate)	-	Various
Agrarian University of Georgia	Tbilisi	748	10	-	Vines & legumes
Agro Cartu	Tbilisi		475		Vines

***Source**: National Report on the State of Plant Genetic Resources for Food and Agriculture in Georgia, FAO, Tbilisi Botanical Garden and Institute of Botany, ICARDA, 2008.*

Gene banks, compliant with modern standards, were created at the Institute of Farming and at Tbilisi Botanical Gardens and Botanical Institute.

Research to determine effective methods for the management of plant genetic resources has been carried out with the support of FAO, EC, ICARDA. As a result of national workshops conducted as part of that research, project recommendations for plant genetic resources management as well as a unified strategy for their utilization, have been prepared.

The national report on plant genetic resources was prepared within the project of the National Sharing Mechanism for Plant Genetic Resources, Global Action Plan for the Effective Conservation and Utilization of Plant Genetic Resources.

TARGET 10: Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems.

Up to 450 non-native plant species are found in Georgia 80 of which are crops that are not, or are insignificantly, represented in the wild, 368 species are naturalized or invasive and they form 8.6% of Georgian flora. There are 16 invasive species recorded in Georgia (5.5% of non-local flora). Naturalized mountain plants have not been recorded.

Semi-natural areas, under severe anthropogenic pressure, and wetlands are particularly vulnerable to plant invasions, while natural forests and herbaceous communities are fairly resistant to the expansion of non-local plants.

In 2008-2009, Tbilisi Botanical Gardens and Botanical Institute and Batumi Botanical Gardens, along with the Freiburg University of Switzerland, cooperated in the implementation of research into non-local flora in Georgia. This resulted in a comprehensive list of non-local species, including potentially invasive species, detailing the biological and ecological features of each. Models of existing and potential distributions for several of these species (*Ambrosia artemisiifolia, Phytolacca americana and Roninia psedoacacia*) were also prepared with the aim to assess the potential success of habitat occupation in primary and secondary habitats. The survey showed that a significant area of land in Georgia is seriously threatened by the invasion of *A. Artemisiifolia* whilst *P. americana and R. psedoacacia* have narrower zones of influence. In addition, *P. Americana* seems to be restricted to western Georgia, particularly along the coast, while *R. psedoacacia* prefers conditions typical of the central part of the country as well as the foothills of the Great and Lesser Caucasus.

Non-native flora of Georgia has not, yet, been sufficiently studied. However, it does seem clear from the data we do have, that invasive species have the potential to transform some of the country's unique ecosystems and pose a serious threat to autochthonic plant diversity, domestic crops and, ultimately, human health. Intensive surveys should be undertaken to fully understand the role of non-native species and to develop both legislative (policy and trade and customs controls) and physical (mechanical, chemical and biological) control measures to limit thier further dispersal and thus minimize the damage inflicted by such species.

OBJECTIVE 3: Using Plant Diversity Sustainably:
TARGET 11: No species of wild flora endangered by international trade.

At present only one CITES listed species, the snowdrop (*G. woronowii*), is subject to commercial export from Georgia. The conditions of both wild and cultivated populations have been assessed and quotas for their extraction set.

Extraction and export of other non-woody species are not regulated by Georgian legislation. Consequently, there is no information of the resources exported from Georgia by individual species.

TARGET 12: 30 per cent of plant-based products derived from sources that are sustainably managed.

Three model projects focusing on the sustainable use of plant resources have been supported by CEPF in the buffer zone of Mtirala National Park. These comprised the creation of plant nurseries for economically valuable species as well as the establishment of various eco-tourism activities and a local business centre. Local communities were involved in the development of these models and they continue to receive a direct benefit from them.

TARGET 13: The decline of plant resources, and associated indigenous and local knowledge innovations and practices that support sustainable livelihoods, local food security and health care, halted.

Measures to achieve this objective have been undertaken within the Restoration, Conservation and Sustainable Use of the Agro-biodiversity of Georgia project detailed in Chapter Two.

OBJECTIVE 4: Promoting Education and Awareness about Plant Diversity:
TARGET 14: The importance of plant diversity and the need for its conservation incorporated into communication, educational and public awareness programmes

Current activities to inform and raise the awareness of the general public largely focus on issues pertaining to the protection of forest ecosystems. MoE, in cooperation with GTZ, are planning an educational campaign on economically valuable and threatened wild plants.

OBJECTIVE 5: Building Capacity for the Conservation of Plant Diversity:
TARGET 15: The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this strategy.

The millennium seed bank project of Kew gardens has greatly supported the building of capacity within the Tbilisi Botanical Institute, particularly through training in plant *ex-situ* conservation. The training of specialists on plant diversity assessment methods, according to IUCN criteria, was also included in the CEPF/IUCN project on Plant Conservation in the Protected Areas of Caucasus which set out to determine important areas for plants in Georgia.

Target 16: Networks for plant conservation activities established or strengthened at international, regional and national levels.

A network of botanists has been established with the support of CEPF in the Caucasus eco-region. The network functions as the main group developing a Caucasus Red List at the IUCN commission of species conservation.

B. Progress towards Targets of the Programme of Work on Protected Areas

By 2009 the protected areas system of Georgia included the following protected areas:

National Category	Corresponding IUCN Category	Number	Area (ha)	% of national territory
State Reserve	I	14	141,534.11	2
National Park	II	8	258,437.1	3.7
Natural Monument	III	14	314.8	
Managed Reserve	IV	12	61,158	0.88
Protected Landscape	V	2	34,510	0.5
Total			**495,954.01 ha**	**7.11**

Table below shows the progress of the achievement of each goal and objective of the PoWPA

Goal 1.1. To establish and strengthen national and regional systems of protected areas integrated into a global network as a contribution to globally agreed goals.
Target: *By 2010, terrestrially [1]/ and 2012 in the marine area, a global network of comprehensive, representative and effectively managed national and regional protected area system is established as a contribution to (i) the goal of the Strategic Plan of the Convention and the World Summit on Sustainable Development of achieving a significant reduction in the rate of biodiversity loss by 2010; (ii) the Millennium Development Goals – particularly goal 7 on ensuring environmental sustainability; and (iii) the Global Strategy for Plant Conservation*
The following new protected territories have been established in Georgia since 2004: o Mtirala National Park – 15,806 ha; o Tbilisi National Park – 22,425 ha, (including the existing Saguramo State Reserve (5,359 ha)); o Protected Areas of Imereti Caves – comprises 11 natural monuments, among these nine karst caves (area unknown). The following protected areas were extended: Babaneuli Reserve (by 92.1 ha), Ilto Managed Reserve (by 1,698 ha) & Kolkheti National Park (by 1,034.4 ha). The categories of some existing protected areas were changed in 2007 by the adoption of the law of Georgia on protected areas status; the area of Ktsia-Tabatskhuri, Nedzvi and Tetrobi Managed Reserves was determined and the Ajameti Managed Reserve created at the base of Ajameti Reserve, increased its area by 269 ha. To date, the total area of protected territories (IUCN categories I-V) has increased by 64,889.01 ha as a result of the establishment of new protected areas and the extension of existing ones.

[1]/ Terrestrial includes inland water ecosystems.

In addition, new protected territories are now being planned in parts of the Javakehti upland and the Pshav-Khevsureti and Matchakhela gorges.

Further extensions are also planned in Kazbegi and Algeti National Parks, Mariamjvari Reserve and Ktsia-Tabatskhuri Managed Reserve.

A project to support the conservation of natural monuments is now in progress and involves the assessment of about 40 sites, the creation of a database, the identification of criteria for site selection and the improvement of the legal base for the effective management of natural monuments.

Goal 1.2. To integrate protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function.

***Target**: By 2015, all protected areas and protected area systems are integrated into the wider land- and seascape, and relevant sectors, by applying the ecosystem approach and taking into account ecological connectivity [5]/ and the concept, where appropriate, of ecological networks.*

Ecological corridors have not yet been established, though, during various processes, priority ecological corridors have been revealed in Georgia and planning documents for two of them (the Alazani Floodplain Multiple Use Area and the David-Gareji Protected Landscape) have been developed.

Mtirala-Matchakhela Natural-Landscape Area has been established. A Multiple Use Area for Mtirala National Park and Matchakhela Protected Landscape will be created on the bases of the above area.

The establishment of protected landscapes, multiple use territories and ecological corridors and general introduction of landscape planning principles in Georgia are subject to certain difficulties, mainly caused by absence of a spatial planning system and full land cadastre data resulting in an inability to achieve consensus on the development perspectives of the same territorial unit at central and local levels as well as between sectors.

Within the program of the protection of South Caucasus nature (BMZ/KfW) the introduction of the system of landscape planning has been initiated in countries of the Southern Caucasus. Landscape planning is considered as a potential mechanism for spatial planning, which comprises such tools as regional plans, municipal plans and environmental assessment of projects; all of these should integrate nature conservation issues in spatial planning. The Secretariat, in cooperation with Berlin Technical University and Iv. Javakhisvhili Tbilisi State University, has prepared guidelines of landscape planning. The same project supported the development of landscape planning in the Adjara autonomous republic as one of the pilot activities to introduce landscape planning in Georgia.

Goal 1.3. To establish and strengthen regional networks, transboundary protected areas

[5]/ The concept of connectivity may not be applicable to all Parties.

(TBPAs) and collaboration between neighbouring protected areas across national boundaries.
***Target**: Establish and strengthen by 2010/2012 [6]/ transboundary protected areas, other forms of collaboration between neighbouring protected areas across national boundaries and regional networks, to enhance the conservation and sustainable use of biological diversity, implementing the ecosystem approach, and improving international cooperation*
At present, trans-boundary protected areas of Georgia and neighbouring countries have not been established. However, certain cooperative initiatives involving the Caucasus eco-region countries are being developed including; the establishment of trans-boundary protected areas with Armenia (Javakheti and Arpi lakes), Azerbaijan (Belakani-Lagodekhi) and Turkey (Southern Kolkheti). Within the Caucasus initiative of the German government and the support of BMZ/KfW the program of the South Caucasus Nature Protection started in 2005. It aims to strengthen collaboration between Georgia, Armenia and Azerbaijan for the conservation of the regions biodiversity. The project supports the establishment of trans-boundary protected areas in Georgia and Armenia (Javakheti upland and Shiraki). The establishment of a Trans-boundary Coordination Council is also planned within the project to will facilitate the coordinated management of these trans-boundary protected territories. A joint trans-boundary secretariat has already been created to serve the establishment of new protected areas in all three of the countries. The secretariat is also active in facilitating the sharing of experiences and knowledge between the countries, the implementation of regional approaches to conservation and the development of regional and national policies and programs that comply with the eco-region conservation plan. With the support of the Georgian component of the United States of America Internal Departments' International Technical Aid Program (USAID-ITAP), a training tour to America has been arranged for high-level decision makers to share trans-boundary protected area management practices.
Goal 1.4. To substantially improve site-based protected area planning and management.
***Target:** All protected areas to have effective management in existence by 2012, using participatory and science-based site planning processes that incorporate clear biodiversity objectives, targets, management strategies and monitoring programmes, drawing upon existing methodologies and a long-term management plan with active stakeholder involvement*
At present, management plans exist only for three of the 14 reserves (Batsara and Babaneuri & Kobuleti), one out of the eight national parks (Kolkheti) and only one of 12 managed reserves (Kobuleti). Other protected areas are managed according to temporary regulatiionss (approved by MoE in 2008) and annual management plans. Those plans that do exist have been developed with due regard to existing international practice as they are primarily based on IUCN guidelines. Incorporated into these management plans are also the results of socio-economic analysis carried out within the protected areas and their adjacent territories as well as investigations of the types and levels of resources used by local communities. These studies also contributed to subsequent

[6]/ References to marine protected area networks to be consistent with the target in the WSSD plan of implementation.

zoning and programs within the protected areas. In spite of certain existing experiences, the facilitation of public participation within the protected area planning process needs further development and elaboration: an assessment of management effectiveness revealed that current levels of community involvement, even in issues directly connected with their interests, is currently low.

The number of administrative staff in the majority of the protected areas is insufficient. Administrations of the protected areas do not have the appropriate tools to collect, collate and analyze information and transport infrastructure, field and maintenance equipment or provision for their storage do not fully comply with the needs of the protected areas.

Goal 1.5. To prevent and mitigate the negative impacts of key threats to protected areas.

By 2008, effective mechanisms for identifying and preventing, and/or mitigating the negative impacts of key threats to protected areas are in place.

The assessment of protected area management effectiveness reveals the following major threats: timber logging, fires, water infrastructure, impact from adjacent areas and invasive species.

It should be noted that illegal timber logging and poaching within the protected areas have significantly decreased in the last five years due to the implementation of law enforcement measures and an increase in penalties, as well as improvements in staff responsibilities and wages and the raising of awareness amongst local communities.

The impact on the environment from adjacent areas is also noteworthy as the current system of Environmental Impact Assessments needs to be developed in this direction.

Measures to protect against fires and invasive species are being regularly implemented within the protected areas.

Goal 2.1. To promote equity and benefit-sharing

***Target**: Establish by 2008 mechanisms for the equitable sharing of both costs and benefits arising from the establishment and management of protected areas*

An assessment of socio-cultural-economic costs resulting from the establishment and management of the protected areas of Georgia has not been undertaken. The mechanism connected with the expenses of nature protection and distribution of benefits does not exist.

However, it is anticipated that the dependency of local villages on resources found within protected areas is not high whilst the potential for benefits to local communities are most likely to be found within the tourism industry.

In all national parks of Georgia traditional use zones are distinguished for economic activities connected with traditional use of natural resources. The collection of non-woody plant species and fish and the use of pastures for grazing by livestock are all allowed in traditional use zones. Protected areas also provide adjacent villages with fire wood.

It is also noteworthy that protected areas collaborate with the Georgian Orthodox Church: in 2008 the management of areas adjacent to, and access roads into, protected areas was passed to the monasteries and churches located in protected areas for their use in specific activities.

With the support of various projects, programs have been implemented in villages adjacent to protected areas aiming at the indemnification of restrictions caused by the establishment of the protected territories (for example, a small grants program, implemented by the World Bank protected areas development project, supported the development of traditional and "green" activities, such guesthouses, restoration of agro-biodiversity, sustainable management of pastures and traditional arts and crafts, in villages adjacent to Tusheti, Lagodekhi and Vashlovani protected areas. Grants were issued to local NGOs, businessmen, family groups and community groups with a total of 61 projects financed to a total value of 780,000 USD.

A project funded by the Social Development Fund of Japan, the Improvement of Social Safety in the Kolkheti lowlands, supported the development of rural infrastructure and the discovery of alternative income sources for the villages adjacent to the Kolkheti protected areas. The program was fully oriented by the priority needs of the villages, such as the rehabilitation of secondary schools and kindergartens and their capacity building, restoration of water supplies and energy systems and the maintenance of roads and bridges. Micro-projects have been completed in 30 target villages to a total value of 973,125 USD.

Three model projects focusing on the sustainable use of biological resources have been implemented in areas adjacent to Mtirala National Park with the support of CEPF. These include the creation of a plant nursery for species with economic value and a local business centre. The local population participated in the project and received direct benefit.

With the support of EC, NACRES and Fauna & Flora International have implemented a capacity building project focusing on Vashlovani and Tusheti protected areas. The project actively involves local communities by seeking to improve their economic status in ways that also facilitate the conservation of these two distinct ecosystems and the unique species assemblages that they support. To this end, a small grants program and pilot eco-tourism program is planned.

Georgian legislation does not acknowledge various models of protected area management such as private or village protected areas. According to the law of Georgia on the protected areas system, reserves, national parks, natural monuments and managed reserves (compliant with IUCN I-IV categories) can only be owned by the state. In addition, the distribution of the natural resources of such territories is banned, except for the traditional use zones of national parks, as detailed above, and in some areas of managed reserves in exceptional cases.

Goal 2.2. To enhance and secure involvement of indigenous and local communities and relevant stakeholders.

***Target**: Full and effective participation by 2008, of indigenous and local communities, in full respect of their rights and recognition of their responsibilities, consistent with national law and applicable international obligations, and the participation of relevant stakeholders, in the management of existing, and the establishment and management of new, protected areas*

One tool used in Georgia for facilitating the participation of local communities in protected area management is the scientific-consultation council with representatives from local authorities, NGOs

and scientific groups.

Local communities have, in one way or another, been involved in the planning of the protected areas network since 1996; the borders of new protected territories and associated traditional use zones have been identified through consultations with local populations. The participation of local communities has increased in the planning of Javakheti protected areas. At present four working groups, consisting of the representatives of the local population, exist and they are directly involved in the planning process for protected areas as detailed above.

However, as already mentioned, the participation of local communities in the making of decisions directly connected with their interests, has in general remained low. With the support of the BP eco-grant program and the Eurasia Cooperation Fund, the South Caucasus office of the IUCN implements a project of stakeholder support involving local communities in the management of several protected areas in Georgia. Through this project, Friends' associations have been created for Tusheti, Vashlovani and Lagodekhi protected territories. It also facilitates capacity building of scientific-consultation councils.

According to Georgian legislation the expropriation of property, including land, cannot be conducted for the purpose of establishing protected areas. However, there are several farms which, from the point of view of protected area management, should be relocated out of the now established protected territories of Tusheti, Vashlovani and Lagodekhi. These households hold as leases for their property and use the land within the protected areas for pastures. With the aid of the GEF/WB project focusing on the development of the protected areas system, a special survey was carried out, which helped to select alternative land plots for farmers and identify indemnification measures. The relocation of these farms has not yet been arranged.

3.1. To provide an enabling policy, institutional and socio-economic environment for protected areas.

***Target**: By 2008 review and revise policies as appropriate, including use of social and economic valuation and incentives, to provide a supportive enabling environment for more effective establishment and management of protected areas and protected areas systems.*

The development of a legal base for the establishment of protected areas in Georgia began in 1996 through adoption of the Law on Protected Areas which now determines not only the formation of new protected areas but also the cancellation or change in category of existing ones. As such, all protected areas created since 1996 have their areas, categories and specific management issues determined by this law. However, the status of protected territories established before 1991 was not fully or clearly identified by legislation and therefore needed clarification. Thus, a new law was adopted in 2007 (Law of Georgia on the Status of Protected Areas) to determine the status, area, borders and legal issues connected with management and functioning of protected areas established before 1996, primarily during the Soviet regime.

Significant institutional changes within organizations associated with the protected area system have been implemented since 2004. Currently, all protected areas are managed by the Agency of Protected Areas (APA), a public legal entity that exists within MoE but which has complete autonomy, as shown by its ability to generate its own funds and to develop business relations. The

patronage of the agency is strong within the sector; a significant contrast to the prior entity charged with PA management. The agency independently functions under state control and conducts maintenance, monitoring, restoration and protection of the protected areas.

A legal and institutional gap analysis of the national protected area system was prepared and the potential for institutional development assessed within WWFs Protected Areas for a Living Planet Caucasus Eco-region Project, with financial support of the MAVA Foundation (2009) and in close cooperation with the U.S. Department of the Interiors' International Technical Assistance Program (USDOI-ITAP).

The socio-economic role of protected areas in Georgia has not yet been evaluated. Mechanisms for establishing a self-sustaining system of revenue generation for protected areas have not yet been identified.

Goal 3.2. To build capacity for the planning, establishment and management of protected areas.

***Target**: By 2010, comprehensive capacity building programmes and initiatives are implemented to develop knowledge and skills at individual, community and institutional levels, and raise professional standards*

By the end of 2008 the assessment of protected areas capacity needs were completed within WWFs Protected Areas for a Living Planet Caucasus Eco-region Project. The management effectiveness of protected areas was assessed in close cooperation with the IUCN Programme Office for the Southern Caucasus. The capacity building needs were evaluated in close collaboration with the Georgian component of USDOI-ITAP. After identification and prioritization of key difficulties and threats, 10 strategic directions for management improvement and capacity building were determined and an action plan for capacity development prepared. The action plan comprises the following strategic directions:

- sustainable financing;
- human resource development;
- improvement of management planning and management of protected areas;
- infrastructure development;
- elaboration of legislation;
- surveys, inventory and data management;
- development of the protected areas system;
- improvement of public awareness and education;
- development of intra-sector cooperation and intra-organization improvement.

It should be noted that important measures for capacity building within the protected area system have already been completed or are in progress within various projects such as the GEF/World Bank Protected Areas Development project (1999-2008) which significantly helped APA in strengthening the administration of specific protected areas (Tusheti, Lagodekhi, Batsara-Babaneuri, Vashlovani) as well as improving the capacity of staff both in terms of skills and resources. Germany's Federal Ministry for Economic Cooperation and Development (BMZ) and Reconstruction Credit Institute (KfW) also support capacity building within the Borjomi-Kharagauli

National Park administration. Activities to improve the base of Kolkheti National Park and Kobuleti Protected Territories were implemented within the Georgia Integrated Coastal Management Project (GEF/World Bank, 1998-2006). The government of Norway and WWF Caucasus have helped Chachuna and Iori Managed Reserves and Mtirala National Park with infrastructure, training and equipment whilst BP and IUCN Programme Office for the Southern Caucasus support the tourist and administrative infrastructure development of Ktsia-Tabatskhuri Managed Reserve.

USDOI-ITAP, with the support of GTZ, is currently implementing a programme of training for APA staff, protected area administration and other governmental bodies covering such topics as: development of natural fire management plans (including measures against natural fires and rehabilitation of ecosystems after fires); application of Geographic Information Systems; effective leadership; visitor management and law enforcement. Additional training is planned on the following topics: effective administration, developing partnerships and the design of sustainable infrastructure.

Within the BP (and its partner, BTC Co and SCP Co) Environmental Investment Program (EIP), with support from the IUCN Programme Office for the Southern Caucasus, training in the development of management plans were arranged for APA and protected areas managers.

With the support of USDOI-ITAP and Trans-boundary Joint Secretariat (TJS) study tours to European and American protected areas were arranged for APA staff and protected area mangers.

With the support from the EU, NACRES and Fauna & Flora International have implemented a project focusing on capacity building of two of Georgia's protected areas, Tusheti and Vashlovani, which includes components for the participation of local communities. Within the project the training and resource needs of the two areas are being assessed and identified training and resources provided as well as strategies for law enforcement and community engagement elaborated.

3.3. To develop, apply and transfer appropriate technologies for protected areas.

***Target**: By 2010 the development, validation, and transfer of appropriate technologies and innovative approaches for the effective management of protected areas is substantially improved, taking into account decisions of the Conference of the Parties on technology transfer and cooperation.*

The transfer and use of technologies in the planning and management of protected areas in Georgia is greatly supported by international and bilateral cooperation projects. In this way, so called "hard" (e.g. field equipment) and "soft" technologies (such as the implementation of GIS and the sharing of skills, knowledge and experience) are being facilitated.

It is worth noting that TJS has prepared guidelines for national park management planning with the aim supporting the establishment of new national parks in the South Caucasus region: Georgia, Armenia and Azerbaijan. The testing and adaptation of these guidelines will be undertaken during the establishment process of the national parks. Within the EIP, financed by BP and its partners (BTC Co and SCP Co), supported by the IUCN Programme Office for the Southern Caucasus, IUCN/WCPA guideline principles for protected area management planning were translated into Georgian and published.

However, the need for further improvements in the availability of knowledge and best practices, related to the management and planning of protected areas, still exists. This need may be filled

through further study tours, employee internships, training programmes, preparation of adapted translations of the existing guidelines and other publications and foreign language studies for park employees.

Goal 3.4. To ensure financial sustainability of protected areas and national and regional systems of protected areas.

By 2008, sufficient financial, technical and other resources to meet the costs to effectively implement and manage national and regional systems of protected areas are secured, including both from national and international sources, particularly to support the needs of developing countries and countries with economies in transition and small island developing States.

Insufficient financing and economic instability are two significant barriers for effective management and conservation in Georgia's protected areas. Despite the fact that the state funding of protected areas has significantly increased recently (3,762,000 GEL in 2008 compared to 429,100 GEL in 2004), current financing is still significantly less than is actually required for the effective management of the existing protected areas, Add to this the need to expand the existing protected areas system and we can see that current funding falls far short of reality. The establishment and development of protected areas is mainly conducted with the financial support of donors with periodic expenses are covered by state: additional sources of financing are, then, poorly represented

However, financing from external sources for protected area development is fairly comprehensive with the main donors being GEF, BMZ and KfW, the Norwegian government, the United States Department of the Interior, the European Union and the MAVA Foundation.

Long term sustainable funding is vitally important for the preservation of progress already made, in recent years, through the projects implemented by these donor organizations.

In 2006, a BMZ/KfW, Conservation International and WWF initiative resulted in the financing of a trust fund for the protected areas for Armenia, Georgia and Azerbaijan; the Caucasus Protected Areas Fund (CPAF). The fund covers up to 50% of expenses incurred in priority protected areas from the three countries on the fulfilment of the following conditions: (1) the relevant state finances the remaining 50% of management costs; (2) management and business plans for each protected area have been completed or are being developed; (3) the government provides the fund with grant agreement. The trust fund is an important tool for the long-term financing of periodical expenses of Georgia's protected areas, even if other sources of income are identified and a system and institutional basis favouring financial sustainability is in place. At present the fund has attracted 8,000,000 EURO.

The incentive for the participation of the private sector in the financing of protected areas is also noteworthy: APA, CPAF and the Bank of Georgia have just signed a Memorandum of Understanding whereby the Bank of Georgia agrees to distribute 75,000 USD to the management of Borjomi-Kharagauli National Park.

As state financing is not enough, the government of Georgia requested GEF funding to address

additional expenses associated with achieving financial sustainability and thus creating the potential for further strengthening the system.

In 2009 a project for realising financial sustainability within the protected area system was implemented by GEF/UNDP. The goal of this project is to strengthen financial sustainability and the legal base of the protected areas system, involving the development of a sustainable financing plan for the protected areas network, the activation of relevant policy and legislation, capacity building of management mechanisms and the testing of revenue generating tools in the Tusheti protected areas.

Goal 3.5. To strengthen communication, education and public awareness.

***Target**:* By 2008 public awareness, understanding and appreciation of the importance and benefits of protected areas is significantly increased

One of the impeding factors for the normal functioning of Georgia's protected areas is low environmental awareness of and insufficient information to the local population on the purpose and benefits of protected areas.

An important component, then, of all completed and ongoing projects connected with the development of protected areas is environmental education and awareness raising. APA is especially active in this field with various publications having been prepared (brochures, leaflets, posters, calendars, field guides, tourist guides, field collections) and TV programs and photo exhibitions focusing on the system of the protected areas arranged. Administration of the protected areas develops cooperation with local NGOs and schools in terms of improvement of education and public awareness. Projects favouring the popularization of national parks and the distribution of information on their natural and cultural values to local NGOs and village organizations have been supported. Video clips have been prepared, trainings arranged for teachers and pupils, children's drawing competitions held and eco-libraries established at schools. Training, conducted for secondary school biology and geography teachers, by APA, USDOI-ITAP, Centre of National Curriculum and Examination (Ministry of Education and Science) and project of OSCE mission – AARHUS centre, are especially noteworthy.

APA annually prepares plan for the improvement of information distribution and public awareness. Periodical monitoring and evaluation of public perceptions of the social impact of specific protected areas, is carried out using questionnaires prepared in cooperation with a national sociological research centre, Gorbi (in 2008, this covered local communities from 19 protected territories).

However, the monitoring of trends in the actions and attitudes of local communities towards protected areas is a complex lengthy process and, primarily, requires capacity building of administration staff for effective planning and implementation.

Goal 4.1. To develop and adopt minimum standards and best practices for national and regional protected area systems.

***Target**:* By 2008, standards, criteria, and best practices for planning, selecting, establishing, managing and governance of national and regional systems of protected areas are developed and

adopted.

Standards and criteria for the planning, selection, establishment, management and supervision of the protected areas of Georgia have not been prepared. The law on the protected areas system determines only general criteria for the establishment of the protected territories of various categories.

Three of the indicators selected within the scope of the establishment of a national system for biodiversity monitoring are connected with the results achieved in the protected areas system; namely:

- total area of the protected territories (change of area of the protected territories established by law);
- change in the number of protected areas administered through management plans by qualified staff;
- change in area of places determined mainly for biodiversity conservation within the protected areas system.

One indicator is linked with the existing threat of the protected areas, namely:

- the number of protected areas under the impact of infrastructure development is assessed.

At present, methodology is being developed for the implementation of these indicators.

Goal 4.2. To evaluate and improve the effectiveness of protected areas management.

***Target**:* By 2010**,** frameworks for monitoring, evaluating and reporting protected areas management effectiveness at sites, national and regional systems, and transboundary protected area levels adopted and implemented by Parties

The assessment of the effectiveness of the management of Georgia's protected areas was undertaken within WWFs Protected Areas for a Living Planet Caucasus Eco-region Project and financed by the MAVA Foundation. The evaluation of management effectiveness and the identification of priorities was undertaken using WWFs RA-PAM methodology. Management effectiveness was assessed in 35 protected territories and present major impacts and threats determined.

Assessments revealed the main components which have influence on management effectiveness: management planning, HR development and training, data collection and processing, infrastructure development, inventory, wildlife management, research and financing.

Assessments also revealed strong and weak spots within the protected areas system. At the systemic level, strengths include: full diversity of ecosystems with places of high conservation value (however, the need for the establishment of new protected areas was identified) within protected territories; clear vision, goals and objectives for the development of the protected territories in national policy; effective enforcement of legislation connected with protected areas (although significant improvement is needed) and dialogue and cooperation with society is encouraged by the national policy.

Among the weaknesses are: inadequate protection of species; low level of representation of typical and intact ecosystems within the protected areas; low quality of inventorying; low level of

restoration activities for rare and/or significantly degraded ecosystems; ineffectiveness of capacity building in existing programs of training for protected areas employees; insufficient will and financing for the effective management of the protected areas.

Goal 4.3. To assess and monitor protected area status and trends.

***Target**:* By 2010, national and regional systems are established to enable effective monitoring of protected-area coverage, status and trends at national, regional and global scales, and to assist in evaluating progress in meeting global biodiversity targets

Standards of monitoring in the protected areas are medium though monitoring and documentation of legal and illegal resource use within the protected areas are regularly conducted.

Protected areas administration provides APA and the Statistics Department with annual records for major bird and mammal species as well as plants and animals included in the Red List of Georgia. Registration data is gathered in the APA database which has functioned since 2007. However, due to an absence of tools for monitoring (in terms of both human and financial resources as well as basic equipment) the quality of the data is low. Capacity building for administration staff, the introduction of modern research methods and the development of a monitoring program for separate protected areas are all necessary. Within the development of protected areas project (GEF / World Bank), NACRES has prepared and published guidelines for biodiversity monitoring and has organized training for the employees of both APA and the administrations of the protected areas of the Eastern Georgia (Lagodekhi Reserve and Managed Reserve, Vashlovani Reserve and National Park, Tusheti Reserve and National Park, Batsara-Babaneuri Reserve and Ilto Reserve). However, the introduction of permanent tools for HR capacity building is required for the effective implementation of the monitoring programs.

Goal 4.4 To ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected area systems.

***Target**: Scientific knowledge relevant to protected areas is further developed as a contribution to their establishment, effectiveness, and management*

The standards of research in the protected areas are medium. Biodiversity research is partially arranged in many protected areas with surveys related to social issues regularly conducted in all protected areas (see 3.5). The indicator for periodical acquaintance of protected area administrative personnel with scientific research is not high. Research priorities are set for the majority of protected areas but there is no funding for implementation.

Research within Georgia's protected areas is mainly arranged by external research institutes and NGOs (national and international) as well as within individual projects.

Research is mainly focused on vertebrate fauna with the aim to study predators, ungulates, bats and avifauna. Botanical and entomological studies are also arranged whilst fungi are less studied. Scientific research is mainly conducted in Borjomi-Kharagauli and Vashlovani National Parks.

No inventories of natural and cultural resources are in place for the majority of the protected areas and forest inventory data is only available from the 1980-90s. It should be noted that detailed studies of biodiversity in the protected areas of the Eastern Caucasus (Lagodekhi Reserve and

Managed Reserve, Vashlovani Reserve and National Park, Tusheti Reserve and National Park, Batsara-Babaneuri Reserve and Ilto Reserve), as well as planned protected areas of Central Caucasus, have been arranged with the support of the GEF/World Bank protected areas development project.

At present, APA is preparing a database of scientific research undertaken within the protected territories.