

MEDIUM-SIZED PROJECT BRIEF

PROJECT SUMMARY

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| 1. <u>Project Name</u> : Arid and Semi-Arid Eco-system Conservation in the Caucasus | 2. <u>GEF Implementing Agency</u> : UNDP |
| 3. <u>Country or countries in which the project is being implemented</u> : Georgia | 4. <u>Country eligibility</u> : Georgia ratified the CBD in 1994 |
| 5. GEF focal areas(s): Biodiversity Land degradation | 6. <u>Operational program/short-term measure</u> : Operational Programme Number 1 |
| 7. <u>Project linkage to national priorities, action plans, and programs</u> : The present project is based on the national priorities as indicated in the Biodiversity Strategy and Action Plan of Georgia, which identifies the arid and semi-arid zone as a priority area for conservation. The coordination of protection activities with Armenia and Azerbaijan in the target zone is based on governmental environmental protection agreements signed between Georgia-Armenia and Georgia-Azerbaijan. These are the "Agreement on Environmental Protection Between Georgia and Republic of Azerbaijan", signed in 1998, and the "Agreement on Environmental Protection Between Georgia and Republic of Armenia", also signed in 1998. The articles 6,7, and 8, of these agreements state an urgent need for the protection of transboundary ecosystems and migratory species. | |
| 8. <u>GEF national operational focal point and date of country endorsement</u> : Mr. Temur Basilia, Assistant to the President of Georgia on Economic Reform Issues. | |
| <p>9. <u>Project rationale and objectives</u>:</p> <p><u>Project Goal</u>: Conserve highly threatened Arid and Semi-arid ecosystems in the Caucasus through the participatory planning and sustainable management of natural resources.</p> <p><u>Immediate Objectives</u>:</p> <ul style="list-style-type: none"> • To develop agreed alternative land use strategies aimed at recovering and protecting the ecosystem and key species • To increase coordination among countries concerned in participatory planning and sustainable management of transboundary natural resources. • To increase awareness and develop management techniques for the sustainable use of biological resources among land users and other stakeholders | <p><u>Indicators</u>:</p> <ul style="list-style-type: none"> • Density of animals grazing, hunting pressure, and species recovery techniques within the specifications set by the agreed management criteria. • Grazing rotation schedules within the specifications set by the agreed management criteria; • Quarterly meetings (at least 10 by the end of the project) and monthly consultations among representatives of governments, public organizations, and local users. • An official agreement by stakeholders on proposed alternative land uses by the 13th month of the project • Statistically significant difference (between baseline situation and end of project) in awareness and management skills of land users and local communities. |
| <p>10. <u>Project outcomes</u>:</p> <ul style="list-style-type: none"> • An arid and semi-arid zone coordination unit established for formulation, information management, communication of protection activities; • Developed and agreed principles, guidelines and actions for the conservation of the ecosystem; • The establishment of replicable pilot demonstration projects based on the management principles and guidelines for arid and semi-arid zone conservation. These projects include more effective utilization and restoration of available pastures, and the generation | <p><u>Indicators</u>:</p> <ul style="list-style-type: none"> • By the third month of the project, Government agencies and NGOs recognize the unit as the coordinating body for development of a management criteria; • Delivery of document at the 14th month of the project with a description of critical habitats, species protection needs, grazing rotation scheme, allowed levels of hunting activities, enforcement and monitoring needs, feasible sources of funding, and execution arrangements; • Between the 13 and 29 months selected |

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| <p>of income from hunting by establishing appropriate facilities,</p> <ul style="list-style-type: none"> • A biodiversity monitoring system for the arid and semi-arid zone. • Replicable capacity and public awareness strengthening programs, with particular attention put on shepherds and hunters groups. | <p>stakeholders will be involved in 5 alternative land use patterns and species recovery activities proposed by the project;</p> <ul style="list-style-type: none"> • An agreed yearly calendar of sampling, agreed indicators, and thresholds completed within the first eight months of the project; • At the end of the first year, a database containing at least 75% of known species in the arid zone, together with their status, current threats, and proposed management is accessible through the WWW; • Monthly execution of seminars and/or community workshops, and publication of material. |
| <p>10. <u>Project activities to achieve outcomes</u> (including cost in US\$ or local currency of each activity):</p> <ul style="list-style-type: none"> • To establish communication exchange between public organizations and institutions. (\$43,800) • To build institutional and technical capacities in Government units and NGOs'. (\$83,100) • To carry out environmental awareness program for hunters and shepherds. (\$65,920) • To standardize the inventory methodologies and a greater capacity to analyze collected data from the different sectors of the ecosystem. (\$7,000) • Detailed analysis of baseline situation with which to measure/assess changes in the ecosystem health (\$131,810) • To establish and implement a Monitoring System (\$35,520) • To make data accessible to public organizations and individuals (\$20,000) • To produce alternative land use strategies agreed among communities and other relevant stakeholders ensuring the protection of the ecosystem (\$93,000) • To produce and promote the adoption of Policy recommendations land use rights promoting transboundary biodiversity conservation (\$28,300) • To implement Pilot projects (\$152,970) • Effective management of a transboundary ecosystem with extensive participation of local land users. (\$216,780) | |
| <p>11. <u>Information on project proposer</u>: Noah's Ark Center for the Recovery of Endangered Species (NACRES). See Annex 1.</p> | |
| <p>12. <u>Information on proposed executing agency</u> : Same as (12)</p> | |
| <p>13. <u>Date of initial submission of project concept</u>: No project concept was submitted.</p> | |
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| <p>14. <u>Project Identification number</u>:</p> | |
| <p>15. <u>Implementing Agency contact person</u>: Ms. Tehmina Akhtar, GEF Regional Coordinator in-charge, RBEC/UNDP; Ms. Marion Michaud, Programme Officer, UNDP local office in Georgia.</p> | |
| <p>16. <u>Project linkage to Implementing Agency Program(s)</u>: This project follows UNDP' s sustainable human development (SHD) mandate. This has been clearly reflected in the Country Cooperation Framework (CCF) prepared jointly by UNDP and the Government for the period 1997-2001. The CCF sets the outlines for the UNDP programme in Georgia and advocates the use of UNDP resources in the areas of poverty, environmental regeneration, job creation and gender equity.</p> | |

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1. CONTEXT

1.1. Project links to GEF Operational Programmes and National Strategies

The project activities aimed at ensuring the conservation of the arid and semi-arid zone respond to the national priorities as indicated in the Biodiversity Strategy and Action Plan of Georgia. The coordination of these efforts with Armenia and Azerbaijan respond to governmental agreements on environmental protection signed between Georgia-Armenia and Georgia-Azerbaijan. The latter are the "Agreement on Environmental Protection Between Georgia and Republic of Azerbaijan", signed in 1998, and the "Agreement on Environmental Protection Between Georgia and Republic of Armenia", also signed in 1998. The articles 6,7, and 8, of these agreements state an urgent need for the protection of transboundary ecosystems and migratory species.

This project is in accordance with the Operational Programme Number 1 for Arid and Semi Arid Zone Ecosystems. It falls within the priorities identified in the set of guidelines produced by the Conference of Parties (COP) in its first meeting. In particular, points a and b of the guidelines give priority to:

- (a) Projects that promote the conservation and sustainable use of biological diversity and vulnerable areas such as arid and semi-arid.
- (b) Projects that promote the conservation and/or sustainable use of endemic species.

In its third meeting, the COP requested the GEF to support capacity building for local communities embodying traditional lifestyles as well as incorporating target research and promoting awareness activities when relevant to project objectives and consistent with national priorities. The project also falls within objective (a) of the Operational Programme Number 1 which stresses the conservation and protection of ecosystems threatened by increased pressure from intensified use, drought, and desertification all of which lead to land degradation.

In addition, joining *The Living Planet Campaign of the World Wide Fund for Nature* in 1997 the President of Georgia declared the country's intention to designate 20% of Georgia's territory as protected areas (Environment and Development, 1998). With these actions the Government of Georgia hopes to promote the rehabilitation of the ecosystems and increase environmental awareness in the local populations.

The main objective of the project is the protection of biodiversity in the arid and semi-arid ecosystem of Eastern Georgia. The project's target area has been described as one of the most endangered in Georgia in particular and in the Caucasus² in general (Biodiversity Country Study, 1996). The arid and semi-arid zone falls under the heavy influence of human disturbance, in particular overgrazing and hunting.

² The Caucasus is in itself a distinctive small region characterized by high differentiation of geographical zones from humid subtropics to arid and semi-deserts. Vertically, it comprises all zones including the nival and has served as a link between Europe and Asia as well as Palearctic and Middle East. This high differentiation makes the Caucasus a significant reservoir of diversity of animal and plant species, and habitats

The project proposes innovative approaches to biodiversity conservation in Georgia. It is designed to ensure local land users participation in the design of new land use patterns and their integration in its implementation. The project includes strong capacity building components for managers and local communities and takes fully into account local lifestyles and traditional land use schemes.

The arid and semi-arid ecosystem extends beyond the borders of Georgia to include sections of Armenia and Azerbaijan³. Many species of the arid and semi-arid zone migrate over the administrative borders. Some sections of the ecosystem subsidize others by maintaining population numbers, or function as biological corridors or reservoirs. For instance, the Armenian section, although quite small, seems to act as a significant reservoir for selected species. The effective preservation of the arid and semi-arid ecosystem in Georgia requires negotiation and coordination of local protection activities with neighboring countries. Georgia is in a unique position to take the lead in coordinating transboundary conservation activities, a role ratified by Armenia and Azerbaijan representatives in the workshops and discussions that led to the preparation of this document.

1.2. Past and On-going Assistance

In 1990, the government of Georgia, with support from the WWF-International, began a major reorganization of the Protected Areas System. Old Soviet "Zapovedniks" (natural reserves) were no longer considered valid and the implementation of new alternatives became a pressing need. Twenty nature reserves are currently being transformed into nine protected areas. This redistribution is considered to offer a better option for long-term conservation of critical habitats and species. The process initiated by the Georgian Government and WWF found much needed support from other international organizations (e.g. the World Bank, UNDP, FFI, and others) which helped to produce management plans for the majority of the nine areas. In particular, the World Bank/GEF initiative aimed at protecting the conservation of forest ecosystems in Georgia⁴ is of special importance. One of the main components of the project is to assist the Government in implementing some of the previously mentioned protected area management plans.

In the last eight years, the Parliament of Georgia developed and approved legislation concerning environmental and biodiversity protection. The process is still underway and refinements to the existing regulations are being discussed.

The project objectives, outputs, and activities have been designed taking also into account a number of regional initiatives aimed at harmonizing environmental protection activities in the Caucasus and strengthening governments and NGOs capacities. These initiatives are:

³ Appendix 2 presents country profiles.

⁴ Project name: Georgia Conservation of Forest Ecosystems.

- a) New Regional Environmental Center for the Caucasus (European Union project); component for the strengthening of cooperation among the countries of the Caucasus through capacity building activities and coordination: *(total cost of the project for two years \$610,000)*
- b) Communication Exchange Program in the Caucasus (project of the Sacred Earth Network-USA): \$ 20,000 *(project intends to improve communication exchange among environmental NGOs in the Caucasus)*
- c) Horizonti Foundation regional programs for the Caucasus in environmental protection and capacity building \$ 70,000
- d) ISAR' grassroots cooperation program in the Caucasus: \$ 60,000
- e) Tacis Environmental Awareness Program for the Caucasus \$ 1,053,000
- f) NACRES project Regional Wildlife Study in the Caucasus \$62,873

Synergy between World Bank/GEF and UNDP/GEF projects in Georgia

In August 1998, the World Bank submitted a Project Concept Document to the GEF concerning the conservation of forest ecosystems in Georgia. One of the main components of the project is to assist the Government in implementing several protected area management plans, mainly in the high mountains of the Georgian Caucasus. One of these areas, the Vashlovani reserve, which contains a unique sparse riparian forest, is located within the Georgian arid and semi-arid zone. The World Bank/GEF project objective is to strengthen the Vashlovani reserve.

The objective of the UNDP/GEF project is to protect the biodiversity of the *arid and semi-arid ecosystem*. The majority of the Georgian arid and semi-arid zone lies beyond the limits of the Vashlovani reserve and its buffer zone. In addition, the ecosystem extends across the Georgian border. The UNDP/GEF project will develop management criteria to protect arid and semi-arid fauna and flora and will incorporate transboundary issues into the design of new land use patterns and protection measures.

By reordering human activities beyond the Vashlovani buffer zone and by coordinating these efforts with the two neighboring countries, the UNDP/GEF project will relieve pressure from the Vashlovani reserve. The two projects are complementary and employ different strategies, a finding ratified by preliminary consultations held by NACRES, UNDP and World Bank representatives in Tbilisi (1997, 1998), and further validated by the Government of Georgia.

The effective coordination between the two initiatives is ensured by a system in which the NGO implementing the UNDP/GEF project participates in the implementation of the World Bank/GEF initiative while, at the same time, a representative of the World Bank/GEF project unit is present at the UNDP/GEF Project Steering Committee. In addition, the UNDP/GEF Project Implementing Unit will have as a formal (required) task the provision of its meeting minutes and quarterly plans and reports to the project implementation unit of the WB/GEF, in addition to the copies sent to the UNDP programme officer. Finally, there will be at least one joint supervision mission a year for both projects. These mechanisms should ensure that information flows between the initiatives.

2. PROJECT JUSTIFICATION

2.1. General Overview of the Activities Undertaken within the PDF-A

A working group consisted by a *Managing Unit* and *Group of Experts* undertook the activities proposed in the PDF-A. The Managing Unit included representatives of the implementing organization and well as colleagues from Armenian and Azeri governmental and non-governmental agencies. The Group of Experts included consultants working in socio-economic and ecological issues.

The PDF-A activities financed a series of preliminary ecological and socio-economic field studies, and several meetings with a wide range of stakeholders including: local farmers, local hunters and hunting unions, local NGOs, ecological tourism centers, local authorities, experts from academic institutions, ministries of environment and their local offices, agencies responsible for the protected areas and their local offices;

In addition, the PDF-A supported missions to Armenia and Azerbaijan, and a Logical Framework Workshop.

Armenia:

Several meetings were organized at the Ministry of the Environment. The officials met included Deputy Ministers and Heads of Protected Areas and Biodiversity Departments. In addition, in an effort to ensure wide participation, meetings were also held with local NGO community, international environmental organizations operating in that country, UNDP office, Embassy of Georgia in Armenia, and mass media.

Azerbaijan

The mission met with the Heads of Azerbaijan State Committee on Ecology and Natural Resources Management and Nature Reserve, Hunting Lands and Fauna Protection Department, also with NGOs and UNDP local office.

Logical Framework Workshop

By the end of the project a finalizing workshop was held to define project objectives, outputs and activities. The workshop worked out the strategy of the present project document. Representatives of all both the government and NGO sectors from Azerbaijan, Armenia and Georgia attended the workshop, which was facilitated by representatives of Fauna and Flora International UK as their in-kind contribution to the project.

2.2. Background Information and Current Situation

Basic Geographic Indicators of the Arid and Semi-Arid Zone

- Location of the Arid and semi arid ecosystem: Central-northern part of the Transcaucasus (Lat: 41⁰20'N; Lon: 45⁰43'E)
- Height: 100-600 m. above sea level
- Climate: arid and semi-arid
- Average annual temperature: (+) 16-22 C^o
- Average annual precipitation: 300-400 mm

The following points show the boundaries of the project activity area:

- Extreme dot in the western part of the area: Latitude 41⁰13'N
Longitude 44⁰45'E
- Extreme dot in the northern part of the area: Latitude 41⁰33'N
Longitude 45⁰28'E
- Extreme dot in the eastern part of the area: Latitude 41⁰4'N
Longitude 47⁰5'E
- Extreme dot in the southern part of the area: Latitude 41⁰0'N
Longitude 45⁰49'E

Characteristics of the region and biodiversity status:

Specific natural conditions determine the existence of the original flora and fauna in the Arid and Semi-Arid Zone. The ecological fieldwork and relevant literature survey carried out during PDF-A showed that the diversity of natural complexes has led to the development of five main floristic types: desert type, semi-desert, arid sparse forests, steppe, and elements of deciduous forests. In addition, there are three intrazonal types: rocky xerophits, flood plain (riparian) forest lines along the rivers, and foothill bushes. Such rapid changes of floristic types within so small an area are unique for all the Caucasus.

Dry climate, long hot summers, and mild short winters characterize the arid and semi-arid ecosystem of the Caucasus. The short spring is the most humid season. The ecosystem presents two main rivers: the Alazani, which can be considered a northern border of the zone and the Iori river that crosses it in the southern part. A dry steppe climate follows along the Iori river while moderate humid climate characterizes the areas along the right banks of the Alazani river. The

ecosystem contains one of the highest populations of endemic and endangered species in the Caucasus. (Biodiversity Country Study (Georgia) 1996)

The diversity of fauna is remarkable. There are about 52 mammal, over 90 bird, approximately 30 reptile, 18 fish, and 6 amphibian species in the area. Significant numbers of invertebrates are also typical for the zone. The region offers species typical to arid ecosystems such as striped hyena (*Hyaena hyaena*), Caucasian hamster (*Mesocricetus brandti*), Mediterranean tortoise (*Testudo graeca*), lebetine viper (*Vipera lebetina*), western boa (*Eryx jaculus*), and also atypical species for these ecosystems such as lynx (*Felis (lynx) lynx*), white-tailed eagle (*Haliaeetus albicilla*), and black stork (*Cikonia nigra*). The region is particularly rich in reptiles and, at present, poor in ungulates. The zone serves as winter shelter for certain bird and mammal species.

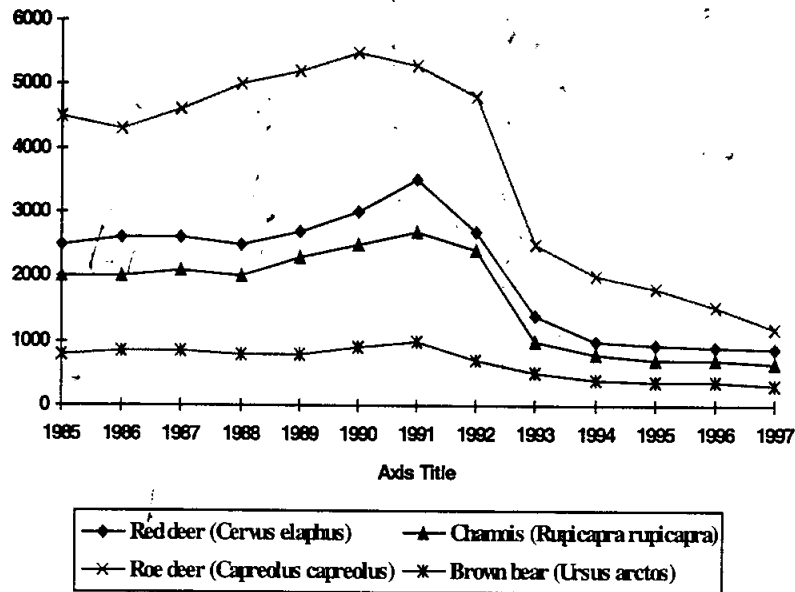
The arid and semi-arid zone suffers great disturbance from human influence since the area, along with adjacent low mountain ranges and gorges, is extensively used as a winter grazing ground for livestock. The land use pattern seems to be incompatible with long-term conservation, and a large part of the area suffers serious erosion.

Intensive hunting has also significantly affected biodiversity in the region and numerous species have seen their numbers severely reduced. Others have simply become extinct. Indeed, the vast majority of plant and animal populations found in the area fall under different endangered status of IUCN Red List Categories⁵.

There is a lack of quantitative data showing the trends in populations numbers for the arid and semi-arid zone. However, the magnitude of the problem could be inferred from a study carried out by NACRES in Eastern Georgia, a region that includes the project target area. Since 1985, NACRES has been collecting data on selected populations. In Figure 1, the curves indicating population numbers show a plateau before slight increases, but this, in turn, is followed by declines. The falls in population numbers are significant and occur after the disintegration of the former Soviet Union, a process characterized by a collapse in inter-regional trade and a fall into poverty for a significant portion of the population. The rate of decline (the velocity of the extinction process) slows down in 1993-1994 but continues to this day.

⁵ Appendix 3: List of Some Threatened Species of the Arid Zone

Figure 1: Some mammal species population dynamics in eastern Georgia



At the beginning of the 20th century the arid and semi-arid zone was home to significant numbers of Persian gazelle (*Gazella subgutturossa*) and red deer (*Cervus elaphus*). A few cases of gazelle sightings have been recorded recently. However, the NACRES study could not record the existence of deer in the project target area. Even though there are still limited reservoirs of deer in Eastern Georgia, the population is extinct in the arid and semi-arid zone. Similar cases include the extinction of the striped hyena in Armenia and the leopard in Georgia⁶.

Socio-Economic Factors affecting biodiversity conservation:

Even though a significant part of the target area is practically uninhabited by humans, the region is still under heavy disturbance from human activities. In winter, the Georgian section of the target area receives steady seasonal flows of livestock from the south central and northwest mountains of the country. In addition, it also hosts animals from bordering areas of Azerbaijan. In those places, the lack of pastures during the cold winter is responsible for the sheep migration to the relatively mild arid and semi-arid zone weather. Preliminary socio-economic surveys carried out within the framework of PDF-A showed that the cycle starts in the middle of September and the livestock remain in the area until early April when it is routed back to their original places.

It is difficult to estimate with precision the number of animals and shepherds involved in these seasonal migrations. There are strong incentives for shepherds (mainly taxation from

⁶ The situation reflects a trend observed in all of the Caucasus, where once abundant species such as the pasang (*Capra aegagrus*), otter (*Lutra lutra*), or the white-tailed eagle (*Haliaeetus albicilla*) are on the verge of disappearing, or have already gone extinct (tiger in Azerbaijan).

government authorities) to under-report the number of animals involved in the migration cycle. However, the use of an ecologically sensitive site model and sampling along the borders of the Vashlovani reserve (Georgia) revealed the existence of 72 shepherd encampments, each of them with an average of 2000 sheep. The average density was estimated to be 12 animals/ha, or 3 times greater than allowed by existing regulations. It shows the lack of capacity by local authorities to enforce existing land use regulations. Similar findings in other areas seem to confirm these results. The outcome is an alarming level of erosion and degradation in the entire area, primarily in Georgia and Azerbaijan, seemingly less serious in Armenia.

Overgrazing and the subsequent erosion is a blow to stakeholders' economy because grazing areas diminish every year. Yet, the local communities show a relatively low level of awareness about erosion problems and the extinction of over-hunted species. It is partly due to knowledge barriers to alternative land use schemes, and partly because environmental education did not rank high among Soviet's priorities. Even shepherds show a relatively low capacity in recognizing the magnitude of the erosion caused by overgrazing.

However, the excessive number of animals is not solely responsible for land degradation. The abandonment of traditional land use methods is also responsible for the erosion levels present in the area. Historical records show that before the Soviet revolution, communities had applied a sustainable and ingenious system of rotation. It had been in place for centuries, thus passing the test of time. Shepherds had a strategy of seasonal and "year to year" pasture utilization. Before the Soviet revolution, all shepherds involved in the animal migration cycle used to associate in some sort of cooperative sub-groups. Each sub-group would receive two plots of the arid land for 10-15 years to utilize as pastures. At the same time, special attention was paid to the types of land plots. All pastures consisted of two different zones: hills and plains. At the beginning of the Fall season, each sub-group would first occupy the hilly areas of one of their two land plots. In winter they would bring their herds down to the plain areas. This could be called Seasonal Utilization. The "year to year" utilization scheme resulted in leaving one plot of their pasture untouched throughout the whole year. In the following year, the same Seasonal Utilization method would be repeated in the area that was intact the year before. In addition, there would be a full rotation of plots among shepherds after 10-15 years (S. Makalatia, 1934). Mutual enforcement was possible due to the size of the groups, social links among their members, and the dimension of the plots.

The implementation of the Soviet economic system was responsible for the abandonment of traditional and sustainable pasture management techniques, once widely used in the Caucasus. The new regime abolished the private sector, created collective farms (so called Kolkhozes and Sovkhozes), and promoted overall and intensive utilization of winter pastures in the ecosystem. This eliminated the foundations of a traditional system whose main principle was not one of maximization at all. The abolishment of the concept of private and communal use of land eroded the mechanisms that had successfully internalized the costs of erosion into the shepherds' calculations. Despite the fact that the Soviet regime could not increase sheep numbers significantly, the ecosystem still suffered severe damage.

The adoption of a market economy and the subsequent recognition of private and communal property rights have not resulted in the adoption by the population of the old rotation system. This is hardly surprising. There are knowledge barriers and significant transaction costs for any shepherd or community willing to take the lead and put the old system back in place again. Still today, the majority of the Georgian part of the arid and semi-arid zone still is State property with unclear land use rights. To compound this problem, the collapse of the Soviet regime in Georgia left the government presence in the area severely reduced.

Shepherd migrations into the target area have occurred for centuries. For these communities, the concept of political frontiers has not been an impediment to the establishment of traditional rotation systems, nor to migrations across what sometimes they consider imaginary lines on a map. Thus, in addition to its own migration movements, Georgia still receives flows of shepherds from neighboring Azerbaijan. Overgrazing is a serious problem there and some shepherds move their herds into Georgian territory. There is no migration from Georgia into Azerbaijan, or from Armenia into Georgia. A preliminary assessment showed that Azerbaijan shepherds are eager to prevent any intrusion into their already overgrazed area. On the other hand, Armenians do not need to move their small herds into Georgian territory.

As previously mentioned, the second reason for the decrease in wildlife populations is the present hunting pressure, a factor behind the extinction of certain species (red deer, Persian gazelle), and the reason for significant decreases in others. Public perception still divides wildlife into "useful" and "non useful" categories. The first includes all species that can directly benefit humans such as ungulates or species with expensive fur. The second category includes all predators; their elimination was encouraged through a bonus system that was abolished in 1993.

However, there are still significant amounts of weapons available and this facilitates intense poaching (Biodiversity Country Study, 1996). Compounding this problem, the increased premium paid in foreign markets for some species and their derivatives keeps the incentives for poaching quite alive. Unfortunately, there are no statistics showing the extent of this trade. Certain populations, such as the Persian gazelle, have been eliminated from the arid and semi-arid ecosystem in Georgia. Others species have taken such a heavy blow that even reduced hunting and habitat destruction are enough to keep them within the IUCN's Red List of Threatened Species. The striped hyena is a good example. The decline in the hyena population began in the beginning of the 1960s. At present, its numbers have been reduced by 80%. The animal is today one of the least hunted. Yet, its population shows no sign of recovery. Simply reduced sport hunting and habitat destruction keep the hyena on the verge of extinction.

The assessment of the baseline situation, which included meetings with hunters and local environmental groups provided information about potential ways to tackle the problem of illegal hunting.

At present, the Georgian Law on Wild Fauna Protection defines the terms of hunting which, except for migratory birds, is only allowed in the so-called hunting or game farms. However, since there are no hunting farms established in Georgia yet, all hunting in the country is automatically qualified as poaching. Therefore, shooting of any animals, except migratory

birds, both in and outside of protected areas is a criminal offence and the poacher has to pay a penalty defined by the current legislation. The penalty varies for every game species. For example, shooting a brown bear, one of the most popular game species in Georgia, will cost a poacher the equivalent of 3000 US\$ as penalty. This amount is many times more than the average Georgian salary and also much more than what is required for breeding these animals in captivity.

In the current socio-economical situation, most poachers refuse to pay the penalty and justify this on grounds of insolvency. However, sport hunting is also increasingly popular among those who *can* afford set prices or penalties. Both rangers (in protected areas) and eco-police (outside the protected areas) with low salaries are easy targets for bribes. Corruption of this kind has become common since the Government is unable to increase the salaries of rangers and eco-police so as to make them less vulnerable to bribes. This example clearly demonstrates that even stricter legislative measures alone will not solve the problem unless new alternate strategies are introduced. In this regard, the establishment of hunting farms looks like an attractive option (see section 2.6. "Project Strategy and Implementation Arrangements").

Political factors and transboundary cooperation

The recurrent economic crisis and the past conflict between Armenia and Azerbaijan have not helped the coordination of transboundary activities in the zone. However, difficulties in improving coordination among the three countries are not insurmountable. An extensive round of consultations carried out by NACRES prior to the development of the PDF-A, had already shown that the Governments of the countries concerned, as well as NGOs and the general public, are ready and willing to cooperate in environmental management of the transboundary zone. The finding was ratified by Azerbaijan and Armenian representatives during the workshop that led to the preparation of this document. These same stakeholders agreed that Georgian counterparts are best placed to take a lead and initiate this program. There was a general agreement that Georgia is the only politically neutral country in the affected region and that it has the most experience in the development of management plans for protected areas.

2.3. Root Cause Analysis and Project Activities

| Problem | Root Cause | Activity | Output |
|---|--|---|---|
| <ul style="list-style-type: none"> No coordination in management of a transboundary ecosystem | <ul style="list-style-type: none"> No experience in transboundary ecosystem management within the Ministries of Environment. Lack of a formal coordination structure among the countries involved. | <ul style="list-style-type: none"> To form an Coordination unit for transboundary ecosystem management; To set up a steering committee with representatives from the Ministries of Environment and NGOs (during project time frame) to overseeing the Coordination unit,; To execute regular coordination meetings | <ul style="list-style-type: none"> Relevant government units gain experience in, and mutual trust for, transboundary management. A fully operational formal transboundary coordination structure. |
| <ul style="list-style-type: none"> Insufficient participation of local resource users in the land management decision making process | <ul style="list-style-type: none"> No tradition of participatory planning and management. Lack of formal channels for stakeholders involvement. | <ul style="list-style-type: none"> To establish mechanisms within the Coordination unit to ensure effective information exchange, and stakeholders involvement in planning and management of sustainable resources. | <ul style="list-style-type: none"> Local stakeholders' views are inputs in the decision making process at the Coordination unit. |

Root Cause Analysis and Project Activities (cont.)

| Problem | Root Cause | Activity | Output |
|---|--|--|---|
| <ul style="list-style-type: none"> • Overgrazing and illegal Hunting <p><i>(It continues in next page)</i></p> | <ul style="list-style-type: none"> • Lack of knowledge in arid zone management in government departments, and lack of awareness among resource users • No well-defined land access rights. • Traditional grazing schemes abandoned and a current absence of land use policy <p><i>(It continues in next page)</i></p> | <ul style="list-style-type: none"> • To conduct series of workshops and training programs for stakeholders involved in the project using national and international expertise; • To execute seminars to increase technical capacity in both non-governmental and governmental agencies that are involved in the project management; • To carry out environmental awareness activities among the local communities and other target groups. • To analyze land ownership issues, including land use dynamics in the face of the transformation that have taken place since the collapse of the Soviet regime; • To complete an inventory of the status of biodiversity resources and other baseline data; <p><i>(It continues in next page)</i></p> | <ul style="list-style-type: none"> • Increased technical capacity on management of the arid and semi-arid zone • Increased awareness on the significance of protecting the arid and semi-arid zone by communities • Issues of property rights and access to land are clarified and recommendations are proposed. • Transboundary arid zone management plan. <p><i>(It continues in next page)</i></p> |

Root Cause Analysis and Project Activities (cont.)

| Problem | Root Cause | Activity | Output |
|--|---|--|--|
| <p>(cont.)</p> <ul style="list-style-type: none"> • Overgrazing and illegal Hunting | <p>(cont.)</p> <ul style="list-style-type: none"> • Abandoned traditional grazing schemes, and current absence of land use policy <p>(It continues in next page)</p> | <p>(cont.)</p> <ul style="list-style-type: none"> • To study the relevant environmental legislation in the countries concerned • To collect information on current and projected numbers of animals grazing and hunted in the area; • To identify numbers of sheep involved in national and transboundary migration flows; • To reassess habitat carrying capacity in the light of current erosion level and hunting pressure; • To design grazing rotation scheme; • To identify needed changes in sheep grazing patterns • To identification of the network of transboundary protected areas • Data analysis and formulation of management plan <p>(It continues in next page)</p> | <p>(cont.)</p> <ul style="list-style-type: none"> • Transboundary arid zone management plan. <p>(It continues in next page)</p> |

Root Cause Analysis and Project Activities (cont.)

| Problem | Root Cause | Activity | Output |
|--|--|--|--|
| <p>(cont.)</p> <ul style="list-style-type: none"> • Overgrazing and illegal Hunting | <p>(cont.)</p> <ul style="list-style-type: none"> • No sufficient resources available to enable the Governments to enforce management plans in the area. • Market and knowledge barriers to alternative land use strategies. | <p>(cont.)</p> <ul style="list-style-type: none"> • To identify both financial and human resources needed for the monitoring and enforcement of the transboundary management plan • To design of long-term financial mechanism and to secure funds for it. • To estimate the potential impact on stakeholders arising from changes in sheep grazing and hunting patterns and devise alternative strategies. • To develop pilot demonstration projects for selected current land users to show the viability of alternative land use strategies | <p>(cont.)</p> <ul style="list-style-type: none"> • A demonstrated and locally feasible funding mechanism for the management plan. • Viability and replicability of alternative land uses are demonstrated |

Root Cause Analysis and Project Activities (cont.)

| Problem | Root Cause | Activity | Output |
|---|--|--|--|
| <ul style="list-style-type: none"> • 4) Absence of information on impact of different land use practices on biodiversity | <ul style="list-style-type: none"> • Lack of systematic data gathering activities. • Lack of a monitoring system to track down changes in wildlife status. | <ul style="list-style-type: none"> • Creation of a Transcaucasus database of habitats and species status for the collection, analysis, and dissemination of information; • Design of long-term data updating mechanisms • To make database accessible through the World Wide Web. | <ul style="list-style-type: none"> • A biodiversity monitoring system for the arid zone |

2.4. Expected end-of-project Situation

The project is expected to remove the identified barriers threatening species habitats and to ensure the sustainable use of natural resources in the ecosystem. The fauna and flora of the zone are expected to receive increased protection and certain species (such as striped hyena or Persian gazelle), which had been brought to the edge of extinction or exterminated, could be recovered at a low cost. At the same time transboundary management issues will be comprehensively addressed.

The project will deliver a biodiversity management plan with specific coordinated actions for the three countries involved. The plan will include feasible sources of local and external funding for long-term full implementation. The project will also implement selected parts of the management plan as part of replicable pilot demonstration projects (see section 2.6. for a description of pilot projects). There will be a transition period between the 14th and 29th months in which the responsibilities for the continuation of the management plan and the replicable pilot projects will be gradually transferred to Governments, NGOs, and the local stakeholders

The establishment of a coordinating unit for transboundary management is an important project outcome. It is expected that the experience and mutual trust gained as a result of implementing the project activities will ensure the continuation of the coordinating unit tasks beyond the project's life.

The project will produce an extensive environmental awareness program that is designed to mobilize communities to take part in the formulation and implementation of the management plan. The formulation process of the management plan and the implementation of pilot projects will be based on broad participation from local communities. The project approach greatly emphasizes the importance of ownership by local stakeholders, and assumes that this maximizes the plan's chances of success.

Therefore the following outcomes are expected at the end of the project:

- An arid zone coordination unit established for facilitation of project coordination, information management, communication, and implementation;
- A transboundary arid zone management plan (with clear and feasible funding sources) developed with broad participation from stakeholders.
- Replicable pilot projects implemented and targeted at rehabilitation of habitats and key species based on the principles of the management plan (see section 2.6. for a description of pilot projects).
- A Biodiversity monitoring system for the arid zone
- Replicable capacity strengthening programs

2.5. Target Beneficiaries, Stakeholders Involvement, and Social Assessment

The main beneficiaries from this project are (a) the local land users whose livelihoods are being threatened by the diminished productivity of their grazing lands, and (b) the national and international communities that will benefit from the preservation of a unique ecosystem.

The project is supported by representatives of the following communities and agencies of Georgia and the neighboring countries concerned: farmers, local hunters and hunting unions, local NGOs, ecological tourism centers, local authorities, experts from academic institutions, ministries of environment and their local offices, and agencies responsible for the protected areas and their local offices.

The socio-economic impact of the project in local communities will be assessed on the basis of information and data gathered in the first 16 months of the project.

2.6. Project Strategy, Execution, and Implementation Arrangements

Project Strategy

The project strategy is twofold. First, the project will strengthen the conservation of the Georgian arid and semi-arid zone by incorporating transboundary management aspects into current and proposed protection efforts. In this regard, the project rests on Georgia's reputation in the Caucasus as the country with most experience in environmental and biodiversity protection activities. The coordinating role of Georgia for transboundary activities with Armenia and Azerbaijan has been agreed by representatives of these countries during several rounds of consultations and meetings, and further ratified in the final workshop that resulted in the development of this project document. Armenia and Azerbaijan will have their respective representatives at the project coordination unit. *The role of Georgia as a country leading the coordination of transboundary activities is a remarkable project strategy that has allowed the rapid initiation of protection activities among the three countries.*

Second, the project will propose alternative sustainable land use schemes for the Georgian arid and semi-arid zone. These alternative land use strategies will have incorporated in their design the agreed principles and guidelines for transboundary preservation, and will take the form of replicable pilot projects. Armenian and Azeri counterparts will not only be invited to observe the implementation of these activities, but also, if feasible, to execute (in collaboration with Georgian stakeholders) selected parts of them. The project expects that these experiences will be replicated beyond the Georgian border since local factors threatening biodiversity are similar among the three countries. The successful reordering of human activities in the Georgian arid and semi-arid zone will relieve pressure from the Vashlovani reserve, thus complementing protection activities to be carried out by the World Bank/GEF initiative.

Project Implementation and execution arrangements

The project will be executed and implemented by NACRES, a Georgian NGO, following standard UNDP procedures for NGO executed projects. The local UNDP office in Georgia will provide the required project support. The project has a Project Implementation Unit and a Steering Committee.

The Project Implementation Unit, which will be based in Tbilisi, will manage the project and have a director, an assistant, a translator, and an accountant. A national co-ordinator will be appointed in Azerbaijan and Armenia. It will periodically undertake consultation and meetings with local stakeholders and will have in-built mechanisms ensuring that the feedback received is incorporated in its work. Such mechanisms will need to be approved in the first meeting of the Steering Committee, which will be carried out two months after project starting date.

For project activities in Armenia, the Armenian Department of protected Areas of the Ministry of Environment will take the leading role ensuring that activities are carried out as specified in the project document and in accordance to changes that could be specified in Steering Committee meetings. The implementation of activities in Armenia will be carried out by the local NGO "Environmental Survival Union", which will also serve as a day-to-day link with the Project Implementation Unit in Tbilisi.

In Azerbaijan, the Department of Natural Reserves, Hunting Lands and Fauna Protection of the Azerbaijan State Committee on Ecology and Control of Natural Resources Utilization will take the leading role ensuring that activities are carried out as specified in the project document and in accordance to changes specified in Steering Committee meetings. The implementation of activities in Azerbaijan will be carried out by the local NGO, Biodiversity Conservation Section of Azerbaijan Greens, which will also serve as a day to day link with the Project Implementation Unit in Tbilisi.

The Project Implementation Unit will report to a Steering Committee formed by Government representatives, NGOs, UNDP, academia, and a representative of the WB/GEF project. The government representatives and the UNDP representative will have voting powers. The Steering Committee will ensure that the project advances in conformity with the mandate given by these stakeholders in the process that led to the preparation of this document. The Steering Committee will meet at least twice a year.

The project's duration is 29 months. In the first year, the project will establish a broad coordination mechanism based on intense participation by local stakeholders. In the first 7 months the project will also collect biodiversity and socio-economic data for the entire arid and semi-arid zone. The project will count with the support of NACRES and Fauna and Flora International (UK) to carry out data gathering activities in Armenia and Azerbaijan. This information will be shared with the management unit of the Vashlovani reserve. In turn, the main aspects of the reserve management plan will be incorporated in the coordination of activities with Armenian and Azeries counterparts. The goal is to optimize efforts in the preservation of the

ecosystem. The project will develop in the remaining part of the year a set of agreed principles and actions for transboundary management, including feasible sources of funding.

In the remaining 17 months, the project will devote its efforts to the implementation of the agreed actions in selected areas of the Georgian arid and semi-arid ecosystem. The implementation will take the form of replicable demonstration projects. Simultaneously, there will be a gradual transferring of responsibilities to corresponding government units, public organizations, and local communities. The project's approach in all of its activities will fully take into account local communities' inputs, respect local customs and traditions, and create a strong sense of ownership. Systematic capacity building and public awareness activities will be carried out throughout the project duration.

Establishment of the Coordination Unit

The establishment of a unit entrusted with coordinating transboundary activities, and its continuation beyond project termination date, is an important project objective. The project implementation unit, together with its Armenian and Azerbaijan representatives, will act as the Coordination Unit during the time frame of the project. This coordinating role will be ratified by representatives of the three countries at the first Steering Committee meeting.

As mentioned above, the last 17 months of the project will see a gradual transferring of responsibilities for achieving long-term project objectives to government units and/or NGOs. During this time, the specific form that the coordination unit will take after project termination date will be discussed with the three countries and ratified in Steering Committee meetings. It is expected that the work carried out in the first year of the project will provide a body of experience with which to fine tune the specific characteristics that the coordination body will have once the project is completed.

A description of the Pilot Projects:

The re-introduction of traditional land use strategies in selected areas and the establishment of "hunting farms" will be carried out in the form of selected pilot projects. These will start implementation after the 17th month, once the necessary biological and socio-economic data have been obtained, analyzed, and best implementation alternatives have been selected. This body of data is therefore a crucial input into the design of the pilot projects.

The concept of hunting farm is an innovative idea contained in the Georgian Law on Wild Fauna Protection, which provides a legal basis for the protection of wild animal species throughout the country. The concept is still at an early development stage and it refers to sectors in which controlled hunting would be allowed and a fee charged. Even though the law was adopted three years ago it has not yet been adequately enforced, nor have hunting farms been established so far.

The existence of the already approved law on wild Fauna Protection gives the project a solid entry point to establishing hunting farms as part of pilot initiatives. The initiative is also strongly supported by the government, particularly by the Ministry of Environment of Georgia.

Consultations with local stakeholders showed the interest of local communities in setting up an alternative income generating strategy based on sport hunting. The project intends to support these local initiatives and establish hunting farms in two preliminary sites selected during PDF-A. One of these two sites is located near the Armenian border. The other site is by the Azeri border and along the river Alazani.

The hunting farms will have 4 different zones with specific purpose, such as: hunting zone, protected zone to preserve important natural sites, natural breeding grounds set aside to allow natural increase of animal populations and breeding zone for breeding certain game species. The price differential between current penalties for illegal hunting will allow the selling of hunting licenses at competitive prices.

The project will provide necessary assistance in a wide range of aspects connected with both the initial establishment and further functioning of the farm in order to ensure its sustainability in a long term. These aspects are as follows:

1. Management Plan: the Ministry of Environment as part of its in-kind contribution to the project, will assist in developing management plans for hunting farm;
2. Training in relevant fields for specific employees, such as:
 - (a) service (for farm staff);
 - (b) animal census, monitoring and animal care (for: rangers, animal wardens);
 - (c) financial and administrative management (for managers);
 - (d) public relations/marketing (all staff).
3. Other components of capacity building such as:
 - (a) preparation of field guides;
 - (b) use of potential alternative sources of income (birdwatching, photo hunting, etc);
4. Organizing study tours and site visits for stakeholders from Azerbaijan and Armenia to ensure publicity, information exchange, and replicability in these neighboring countries.
5. Establish close contacts with hunting unions and local hunters as one of the main stakeholders of the project.

The project is aware of the challenges involved in making these farms sustainable in the long-run. On one hand, the level of hunting enforcement in other sectors of the arid zone is an important factor. Otherwise, hunters will just move their activities to unregulated areas of the ecosystem. But on the other hand, the possibility of generating income from these hunting farms places an incentive for local management authorities to enforcing existing fauna regulations. In this respect, hunting restrictions would not impair subsistence activities by local populations. As it was mentioned before, the significant decrease in animal populations was not due to subsistence hunting, an activity that had been taking place before the collapse of the Soviet

Union, but due to the establishment of illegal rings that commercialize trophies in and outside Georgia.

The second set of pilot projects will attempt to establish traditional patterns of land use in the arid and semi-arid zone. The specific location of the replicable demonstration projects will have to be decided in close collaboration with the management unit of the World Bank/GEF project working at Vashlovani reserve.

For each site, the number of sheep that can be sustained following a year-to-year seasonal utilization scheme will be estimated. The selection of communities participating in the pilot projects will take into account the following factors:

- a) vicinity to the pasturing area;
- b) social links among members in order to promote community enforcement of traditional pasturing methods;
- c) communities that are already experiencing noticeable impact from overgrazing; and
- d) communities that show a minimum required level of awareness about the land degradation problem.

The project will attempt to re-establish the strategy of seasonal and "year to year" pasture utilization. As it was previously mentioned, before the Soviet revolution, all shepherds involved in the animal migration cycle used to associate in some sort of cooperative sub-groups. Each sub-group used to receive two plots of the arid land for 10-15 years to utilize as pastures. At the same time, special attention was paid to the types of land plots. All pastures consisted of two different zones: hills and plains. At the beginning of the Fall season, each sub-group would first occupy the hilly areas of one of their two land plots. In winter they would bring their herds down to the plain areas. This could be called Seasonal Utilization. The "year to year" utilization scheme resulted in leaving one plot of their pasture untouched throughout the whole year. In the following year, the same Seasonal Utilization method would be repeated in the area that was intact the year before. Plots would rotate among groups after 15 years.

The successful re-establishment of traditional pasturing patterns is dependent on ensuring land use rights for the communities involved. The communities selected are expected to have provisional rights to use the project sites according to the land use pattern designed for them. Once the success of the pilot projects is confirmed, the project, in close partnership with local and state authorities, is expected to design and establish a more permanent system of land use rights.

Project Activities and Problems of Cattle Migration from Neighboring Countries

The seasonal migration of shepherds and sheep from neighboring countries has become a problematic issue due to the de-facto open access regime in Georgian territory, lack of enforcement capacities of the Georgian government, and problem of overgrazing in Azerbaijan.

The project has chosen to focus its efforts on (a) reversing the open access regime in Georgian territory, (b) showing the feasibility of alternative land use patterns, and (c) increasing collaboration between the three countries involved. Migration should be expected to continue at least in the medium term. However, its contribution to the degradation of the Georgian sector of the arid and semi-arid zone should not be overemphasized.

An alternative grazing scheme with secure land rights in Georgia will by itself contribute significantly to diminish incentives for transboundary migrations, mainly because of a diminished open access area. We remember that the more established land rights in Azerbaijan, and not the country's capacity to patrol its own frontiers, is the factor impeding migration from Georgia into Azerbaijan.

If the pilot projects are successful, as they are expected to be, the incentives for their replication in neighboring countries will exist. The Project Implementation Unit is the vehicle through which these experiences are expected to be replicated and capacity be created.

Resolving the issue of sheep migration will thus take time and exceed the time frame of this present project. That is why this GEF initiative pays so much attention to issues of establishing within the project time frame the structures, and associated incentives, for long-term biodiversity conservation. One of the them is the Coordination Unit, a crucial element for long-term collaboration among countries, which is expected to remain as a permanent coordinating structure and not be just an interim implementation unit to be dismissed at the end of the project life. The other one is the success of traditional land use patterns, which rest primarily on community participation and own enforcement of pasturing limits. By ensuring the successful implementation of these medium-term efforts, Georgia will be best positioned to address the (long-run) sheep migration problem.

2.7. Special Considerations

In addition to establish a sense of ownership by local land users for proposed alternative land use alternative schemes, the dissemination of information produced by the project will also receive particular attention. The use of local expertise, when available, in the project activities will also receive special consideration.

2.8. Reasons for Assistance from UNDP

This project follows UNDP's sustainable human development (SHD) mandate. This has been clearly reflected in the Country Cooperation Framework (CCF) prepared jointly by UNDP and the Government for the period 1997-2001. The CCF sets the outlines for the UNDP programme in Georgia and advocates the use of UNDP resources in the areas of poverty, environmental regeneration, job creation and gender equity.

3. PROJECT GOAL, IMMEDIATE OBJECTIVES, OUTPUTS, AND ACTIVITIES

3.1. Logical Framework Matrix

The Project Goal, Immediate Objectives, Outputs, and Activities are described following the Logical Framework Matrix. This includes objectively verifiable indicators, their means of verification, and assumptions.

The Logical Framework Matrix has been the result of a workshop that counted with participants from the three countries involved in the project, national and international NGOs, local stakeholders, and UNDP.

Logical Framework Matrix

| Intervention Strategy Project Goal | Objectively Verifiable Indicators (Measures of Objective Achievement) | Means of Verification | Assumptions (Concerning Long-Term Value of Project) |
|--|---|---|---|
| <ul style="list-style-type: none"> Conserve a highly threatened Arid and Semi-arid ecosystem through the participatory planning and sustainable use of natural resources. | <ul style="list-style-type: none"> Density of animals grazing, hunting pressure, and species recovery techniques within the specifications set by the project Implementation unit. Grazing rotation schedules within the specifications set by the project Implementation unit. | <ul style="list-style-type: none"> Reports on habitat restoration. Surveys on density of animal grazing, rotation patterns, and hunting activities. | <p>(Concerning Long-Term Value of Project)</p> <ul style="list-style-type: none"> Grazing and hunting activities that respect the ecosystem estimated carrying capacity complemented with restoration activities will result in conservation of currently threatened biodiversity. |
| <p>Immediate Objectives:</p> <ul style="list-style-type: none"> To increase coordination among countries concerned in participatory planning and sustainable management of natural resources. To develop agreed alternative land use strategies aimed at recovering and protecting the ecosystem and key species To increase awareness and develop management techniques for the sustainable use of biological resources among land users and other stakeholders | <p>(Conditions that will indicate immediate objectives have been achieved)</p> <ul style="list-style-type: none"> Quarterly meetings (at least 10 by the end of the project) and monthly consultations among representatives of governments, public organizations, and local users. An official agreement by stakeholders on proposed alternative land uses by the 13th month of the project Statistically significant difference (between baseline situation and end of project) in awareness and management skills of land users and local communities. | <p>(Affecting Immediate to Project Goal Link)</p> <ul style="list-style-type: none"> The governments are committed to carry out agreed measures for biodiversity protection. Local stakeholders inputs are genuinely taken into account in the development of the management plan A critical number of land users and other stakeholders agree that medium-term benefits from preserving the arid and semi-arid area outweigh short-term gains from unsustainable use. | |

(cont.)

| Intervention Strategy | Objectively Verifiable Indicators (Magnitude of Outputs sufficient to achieve immediate objectives) | Means of Verification | Assumptions (Affecting Output to Immediate Objectives Link) |
|--|--|---|---|
| <p>Outputs:</p> <ol style="list-style-type: none"> An arid and semi-arid zone Coordination unit established for formulation, information management, communication, and implementation of protection activities; Developed agreed principles, guidelines and actions for conservation of the arid and semi-arid zone conservation. The establishment of replicable pilot demonstration projects based on the principles of the agreed management criteria. A biodiversity monitoring system for the arid and semi-arid zone. Replicable capacity and public awareness strengthening programs | <ul style="list-style-type: none"> By the third month of the project, Governments and NGOs recognize the unit as the coordinating body for development of transboundary management criteria. Delivery of document at the 13th month of the project with a description of critical habitats, species protection needs, grazing rotation scheme, allowed levels of hunting activities, enforcement and monitoring needs, feasible sources of funding, and execution arrangements. Between the 13 and 29 months selected stakeholders will be involved in 5 alternative land use and species recovery activities proposed by the project An agreed yearly calendar of sampling, agreed indicators, and thresholds completed within the first eight months of the project. At the end of the first year, a database containing at least 75% of known species in the arid zone, together with their status, current threats, and proposed management is accessible through the WWW. Monthly execution of seminars and/or community workshops, and publication of material. | <ul style="list-style-type: none"> Formal (written) appointments from respective government units and NGOs representatives to the implementation unit.. Formal (written) agreement with the document from government units. Field surveys and interviews with local communities Minutes from the coordination meetings approving the establishment of the monitoring system. Access to the WWW Reports of seminars and workshops. | <ul style="list-style-type: none"> Government units are committed to follow the management criteria agreed by the implementation unit. The management criteria addresses conservation targets and its implementation proves feasible. Pilot projects are successful in demonstrating the viability of alternative land use strategies and recovery of species. Information reaches the public and it is used as input in the arid and semi-arid zone's decision making process. Unmet demand for training programs. The public awareness programs are successful in demonstrating the benefits from conservation of the arid and semi-arid zone |

(cont.)

| Intervention Strategy | Inputs | Preconditions |
|---|--|---------------|
| <p>Activities (for output #1)</p> <ul style="list-style-type: none"> To set up the steering committee which includes government units, and NGOs; To establish a project implementation unit for the formulation and implementation of protection activities; To establish built-in mechanisms within the coordinating unit to ensure stakeholders involvement in planning and management of resources; To design information dissemination mechanisms. <p>(for output #2)</p> <ul style="list-style-type: none"> To complete of an inventory and status of biodiversity resources, and other baseline data; To collect information on current and projected numbers of animals grazing in the area; To identify numbers of animals involved in national and transboundary migration flows; To reassess habitat carrying capacity analysis in the light of current erosion levels; To analyze land ownership issues, including land use dynamics in the face of the rapid transformation that have taken place since the collapse of the Soviet regime; To design grazing rotation scheme; Identify needed changes in sheep grazing patterns; | <ul style="list-style-type: none"> 6 month-work for the establishment of the coordination structure and financial resources for 5 meetings of the Steering Committee. Financial resources for 29-month operation of the coordinating unit, and transferring of management activities to government agencies and public organizations. Financial resources for 13-month work of national and international expertise on baseline activities of land use plans, initial surveying, and social, and legal assessment in the target area. 13-month work of national and international expertise in the preparation of the management criteria. | <p>None</p> |

(cont.)

| Intervention Strategy | Inputs | Preconditions |
|---|--|---------------|
| <ul style="list-style-type: none"> • To estimate the potential economic impact on stakeholders arising from changes in sheep grazing and hunting patterns; • To assess the relevant environmental legislation; • To assess the feasibility of a network of transboundary protected areas; • To identify both financial and human resources needed for the monitoring and enforcement of the agreed management criteria; • To explore potential long-term financial mechanisms; • To ratify the agreed management criteria with relevant governments units. <p>(for output #3)</p> <ul style="list-style-type: none"> • To select areas and target groups involved; • To identify necessary changes in grazing and hunting patterns; • To implement desired changes in selected portions of the ecosystem; • To analyze response from targeted groups to incentives and other mechanisms implemented to restore protected habitats; • To design information dissemination strategy on lessons learnt in pilot projects | <ul style="list-style-type: none"> • Financial resources for 21 month-work of national and international experts in the design and implementation of replicable demonstration projects. | <p>None</p> |

(cont.)

| Intervention Strategy | Inputs | Preconditions |
|---|--|---------------|
| <p>(for output #4)</p> <ul style="list-style-type: none"> • To create of a Transcaucasus database of habitats and species for the collection, collation, and dissemination of information; • To design of long-term information updating mechanisms • To make database accessible through the World Wide Web. <p>(for output #5)</p> <ul style="list-style-type: none"> • To conduct series of training for stakeholders involved in the project management; • To execute seminars to increase technical capacity in both non-governmental and governmental agencies that are involved in the project management; • To carry out environmental awareness workshops among shepherds, hunters, and other target groups. | <ul style="list-style-type: none"> • Financial resources for 6-month work for national and international expertise • Financial resources to cover 33 month-work of national and international consultants in capacity building programs. | <p>None</p> |

4. INPUTS

The following section described the financial inputs required for each set of activities.

- Established communication exchange between public organizations and institutions. (\$43,800)
- Building of institutional and technical capacities in Government units and NGOs'. (\$83,100)
- Environmental Awareness program for hunters and shepherds. (\$65,920)
- Standardization of inventory methodologies and a greater capacity to analyze collected data from the different sectors of the ecosystem. (\$7,000)
- Analysis of the baseline situation with which to measure/assess changes in the ecosystem health (\$131,810)
- Establishment and implementation of the Monitoring System (\$35,520)
- Data accessible to public organizations and individuals (\$20,000)
- Alternative land use strategies agreed among communities and other relevant stakeholders ensuring the protection of the ecosystem (\$93,000)
- Policy recommendations for development and enforcement of land use rights promoting transboundary biodiversity conservation (\$28,300)
- Implementation of Pilot projects (\$152,970)
- Effective management of a transboundary ecosystem with extensive participation of local land users. (\$216,780)

4.1. Government inputs

The Government of Georgia is undergoing a severe budgetary crisis. The impact of the Asian meltdown and the collapse of the Russian economy (Russia is one of Georgia's main trading partners) will result in further than expected budgetary cuts in the order of 10% of public spending. This situation has posed very strict limits to monetary contributions from Government agencies. Therefore, government's inputs to the project will be in-kind contributions which in total amounts to \$ 12,000.

5.1. Risk Assessment

Project risks and avoidance measures are as follows:

| RISK | AVOIDANCE MEASURE | RISK APPRAISAL |
|---|--|----------------|
| <p><u>Political conflict between Armenia and Azerbaijan delays the work of the coordinating unit</u></p> <p>The origin of the conflict between these two countries is a dispute over the Nagorno-Karabakh area, which is not part of the arid and semi-arid region covered by this project. The dispute is still unresolved although the possibility of a renewed conflict is very low.</p> | <p>The project is oriented to Georgia-Azery and Georgia-Armenia cooperation. The leading role of Georgia and the fact that this GEF initiative is a Georgian project has greatly facilitated the rapid initiation of coordinated transboundary activities. Azeris and Armenians have agreed that Georgian counterparts are best placed to take a lead and initiate this program since Georgia is perceived as a politically neutral country in the conflict, and has the most experience in the development of management plans for protected areas. For different reasons, both countries have an interest in finding a peaceful solution to the dispute. In addition, a study carried out by NACRES has shown that the two Governments as well as NGOs, and the general public are ready and willing to cooperate on environmental management in the transboundary zone. This finding was ratified by Armenian and Azeri representatives during the workshop that lead to the preparation of this project document</p> | <p>MEDIUM</p> |

Risk Assessment and Sustainability Analysis (cont.)

| RISK | AVOIDANCE MEASURE | RISK APPRAISAL |
|--|---|-----------------|
| <p><u>Potential overlapping and duplication of activities with upcoming National Forest Biodiversity Project initiated by the World Bank/GEF</u></p> <p>The World Bank submitted to the GEF a project for biodiversity conservation in the Georgian Caucasus. The project includes activities in an established reserve, which includes a unique sparse riparian forest, lies within the boundaries of the arid and semi-arid zone in Georgia. It is not envisioned to cover the transboundary aspects of biodiversity conservation in the arid and semi-arid zones of the Caucasus. However, poor coordination between the two projects could result in waste of resources.</p> | <p>In order to avoid overlapping, and the subsequent waste of resources, NACRES, UNDP and World Bank representatives held a series of meetings in Tbilisi (1997) and there was a common understanding that the two projects are complementary to each other.</p> <p>The effective coordination between the two initiatives is ensured by a system in which the NGO implementing the UNDP/GEF project participates in the implementation of the World Bank/GEF initiative while, at the same time, a representative of the World Bank/GEF project unit is part of the UNDP/GEF Project Steering Committee. In addition, the UNDP/GEF Project Implementing Unit will have as a formal requirement the provision of its meeting minutes and quarterly plans and reports to the project implementation unit of the WB/GEF, in addition to the copies sent to the UNDP programme officer. Finally, there will be at least a joint supervision mission a year for both projects. These mechanisms should ensure that information flows between the initiatives.</p> | <p>VERY LOW</p> |
| <p><u>Counterpart government and other contributions to support the continuation of the coordinating activities and implementation of the management criteria do not fully materialize at the end of the project.</u></p> <p>This is a common risk to all biodiversity protection projects involving the long-term implementation of activities. In the particular case of the arid and semi-arid area, this could result in insufficient implementation of the management criteria after project termination date.</p> | <p>The project includes strong components aimed at designing financial mechanisms and attracting external funds. Foreign private sector and other potential contributors will be targeted.</p> <p>In addition, the project places great emphasis on (a) public awareness about economic losses arising from a decreased carrying capacity, (b) the creation of incentives mechanisms, (c) the clarification of property land issues, and (d) on showing the viability of alternative land use strategies to local communities. It is expected that success in these components will greatly reduce the amount of resources necessary to enforce protection activities.</p> | <p>MEDIUM</p> |

5.2. Sustainability Analysis:

The following activities are designed to best ensure the long-term sustainability of arid and semi-arid ecosystem management:

- (a) Establishment of project executing arrangements that are community based and conform to existing governance structures. In particular, it will be very important the coordination with local authorities, and the respect for traditional institutions and customs.
- (b) Linking project initiatives with national government programs to ensure consistency as well as continuity of operations beyond the project's life. In particular it is expected that successful linkages will maximize the possibility of materializing counterpart government contributions in support of community activities and the management plan.
- (c) The design of local resource mobilization strategies, including collection of receipts from livelihood initiatives, and generating funds from other funding agencies and private donors; and,
- (d) Systematic programs in (a) environmental awareness and (b) training in leadership and management skills.

5.3. Conclusions on overall risk and sustainability analysis:

The project's overall risk is considered to be medium. In addition, the different risk factors are considered to be independent of each other. For each of these, the project counts with feasible avoidance measures, which under normal assumptions (absence of a major political or economic crisis) should minimize impact on project objectives.

In the other hand, the long-term sustainability of the project objectives is in direct relation to the sense of ownership that the project could generate among local resource users. Sole reliance on exclusion measures will likely fail to enforce biodiversity protection activities, in particular, the reduction of grazing pressure and hunting levels. The project is considered to be best prepared to (a) generate this sense of ownership, and (b) increase awareness among local resource users on the importance of the conservation of the arid and semi-arid zone for their own benefit. All things considered, the sustainability prospects of the project are considered to be very good.

6. PRIOR OBLIGATIONS AND PREREQUISITES

None

7. PROJECT REVIEW, REPORTING, AND EVALUATION

The project will extend for 29 months and will include three Tripartite Reviews. These are scheduled to occur on the 12th, 24th, and 29th month. These will evaluate the overall performance of the project in accordance to the set of indicators provided in the Logical Framework Matrix and the timetable of activities. In addition, and following standard UNDP procedures, an internationally recognized auditing firm will audit the project expenditures. This is expected to take place during the 24th month of the project. The final evaluation of the project performance will be carried out during the last Tripartite Review with additional inputs from an independent panel of experts.

In addition, the National Project Director (NPD), on behalf of the executing agency, will report on progress made in the implementation of the Project to the UNDP Country Office in Georgia. The project director will submit written reports, according to standard UNDP format, at least on a quarterly basis. The last report of the year will serve as the *Annual Project Report* according to format in the UNDP handbook series "Results Oriented Monitoring and Evaluation" chapter 21. The preparation of the annual project report must begin in October and the final report must be submitted to the UNDP country office no later than November 30.

Upon completion of the project, the NPD must prepare a *Terminal Report* that focuses on the relevance and performance of the project, the likelihood of its success and the initial lessons learned in terms of best and worst practices. The report should also contain recommendations for follow up actions by appropriate institutions where necessary. The terminal report should be prepared for the final tripartite review (see PPM section 30605).

Field Visits

In addition to the above, the project manager at UNDP will make field visits at regular intervals, as often as necessary but not less than once every six months. In addition to inspecting the sites, physical outputs and services of the project, the visit must focus on interaction with target groups to obtain their views on how the project is affecting them and their proposed solutions to perceived problems. The person undertaking the field visits must prepare related reports, focusing on the relevance and performance of the project, including early signs of potential problems or success areas.

8. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Georgia and the United Nations Development Programme, signed by the parties on 1 July 1994.

The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP Resident Representative only, provided he/she is assured that the other signatories of the project document have no objections to the proposed changes:

- Revisions in, or addition of, any of the annexes of the Project Document,
- Revisions which do not involve significant changes in the immediate objectives, outputs of activities of the project, but are caused by the rearrangement of inputs already agreed to or by cost increases due to inflation,
- Mandatory annual revisions which rephrase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

9. TECHNICAL REVIEW

Not required.

10. BUDGET

Budget matrix (in US\$)

| Components | GEF | FFI ⁷ | WWF | Total |
|--------------------|--------|------------------|-------|--------|
| Preparation: PDF-A | 25,000 | 7,050 (in kind) | 2,000 | 34,050 |

| Component | GEF | NACRES | Gov. of Georgia | FFI | Subtotal |
|---|----------------|------------------|------------------|---------------|----------------|
| International Experts & Consultants | 41,700 | - | | - | 41,700 |
| Personnel | 68,400 | - | | - | 68,400 |
| Duty Travel | 8,700 | - | | - | 8,700 |
| Mission Costs | 20,000 | - | | - | 20,000 |
| National Professionals | 115,920 | - | | - | 115,920 |
| Subcontracts | 79,000 | 21,000 | | - | 100,000 |
| Pilot Projects | 147,160 | | 12,000 (in kind) | | 159,160 |
| Training/Workshops/Fieldwork | 86,440 | 20,000 | | 30,000 | 136,440 |
| Expandable Equipment | 21,700 | 4,200 | | - | 25,900 |
| Non-Expendable Equipment | 57,700 | 25,000 (in kind) | | - | 82,700 |
| Operation and maintenance | 13,280 | 16,000 (in kind) | | - | 29,280 |
| Sundries (Bank and audit services) | 67,500 | - | | - | 67,500 |
| Project Support | 22,500 | - | | - | 22,500 |
| BUDGET TOTAL (Excluding PDF A) | 750,000 | 86,200 | 12,000 | 30,000 | 878,200 |

11. INCREMENTAL COST ASSESSMENT

The PDF-A that led to the preparation of this project document revealed the existence of important baseline activities that have enabled this GEF initiative to significantly concentrate its resources on transboundary issues.

Georgia will soon be receiving an important assistance in strengthening the capacity of its Ministry of Environment, a project financed by UNDP. In addition, the Georgian Ministry of Environment is already receiving a significant assistance from a World Bank/GEF project aimed at conserving forest ecosystems. As previously mentioned, a reserve targeted by this project falls within the arid and semi-arid zone. The World Bank/GEF full size project has an estimated budget of 8.7 million US\$. Based on consultations with the WB Task Manager, it is estimated that 75% of this amount will be used in implementation of management plans in the three

⁷ Fauna and Flora International contributed to the preparation stage after the submission of the PDF-A to GEF.

reserves proposed by the project. Approximately, 1/3 of this amount will be directed to the Vashlovani Reserve. Therefore, relevant baseline activities from the WB/GEF project are estimated at 2,175,000 \$. This figure is in addition to the PDF-B resources estimated to be spent in activities related to the conservation of the arid and semi-arid zone. In addition, there are some efforts by international NGOs targeted at specific research in arid ecosystems.

The baseline analysis also shows several programs targeted at the Caucasus region. The bulk of their resources goes to regional capacity building activities, and to a lesser extent, coordination between the different Ministries of Environment. The European Union and TACIS are main sponsors in this area. In addition, international NGOs have allocated relatively small amounts to increase cooperation between local NGOs in the three countries.

The alternative proposed by this UNDP/GEF project builds upon this baseline. This project takes into account current and projected capacity building programs, and adds components specifically related to management of transboundary ecosystems. The alternative greatly enforces coordination aspects considered essential for management of the ecosystem. Government units and NGOs are the main beneficiaries.

The baseline lacks agreed transboundary management criteria, although it shows some plans for selected portions of the ecosystem. The baseline also lacks a monitoring system with which to assess the impact over time of human activities in the arid and semi-arid zone. The alternative proposed by this project addresses these issues and places additional emphasis on integrating local land users and communities in the development of alternative land use strategies.

Matrix of Incremental Costs

| <p>Global Environmental Benefit</p> <ul style="list-style-type: none"> • Transboundary coordination for conservation and sustainable use of the arid and semi-arid zone. | <p>Baseline B</p> <ul style="list-style-type: none"> • Minimal coordination between government units and NGOs (\$39,000) • Elementary formal communication exchange among some NGOs (\$20,000) | <p>Alternative A</p> <ul style="list-style-type: none"> • An established broad coordination mechanism among governments and NGOs and communities with emphasis on: <ul style="list-style-type: none"> a) <i>Participatory design and implementation</i> b) <i>Joint management criteria of a transboundary system</i> • Establishment of effective information exchange network in the region (\$63,800) | <p>Increment A-B</p> <ul style="list-style-type: none"> • Effective management of a transboundary ecosystem with extensive participation of local land users. (\$216,780) • Established communication exchange between public organizations and institutions. (\$43,800) |
|--|---|--|---|
| <p>Subtotal</p> | <p>\$59,000</p> | <p>\$319,580</p> | <p>\$260,580</p> |

Matrix of Incremental Costs (cont.)

| Global Environmental Benefit | Baseline B | Alternative A | Increment A-B |
|---|---|---|--|
| <ul style="list-style-type: none"> Development of capacity in Government and public organizations for sustainable management of a transboundary ecosystem. Development of environmental awareness | <ul style="list-style-type: none"> Regular capacity building in institutional development and environmental issues for government and public organizations in the three countries (\$1,224,600) Irregular meetings for environmental awareness (\$15,000) | <ul style="list-style-type: none"> Capacity building in institutional development with additional emphasis on building technical capacity for the management a transboundary ecosystems. In particular the additional capacity includes: <ul style="list-style-type: none"> a) <i>Strategic planning</i> b) <i>Public relations and Fundraising</i> c) <i>Information management</i> d) <i>Management of transboundary bioresources</i> (\$1,307,700) Systematic workshops, publications and seminars for environmental awareness (\$80,920) | <ul style="list-style-type: none"> Institutional and technical capacities developed by Government units and NGOs' are further strengthened on specific-issues directly related to the management of the arid and semi-arid zone. (\$83,100) Land users and other stakeholders agree that medium-term benefits from preserving the arid and semi-arid area outweigh short-term gains from unsustainable use. (\$65,920) |
| Subtotal | \$1,239,600 | \$1,388,620 | \$149,020 |

Matrix of Incremental Costs (cont.)

| Global Environmental Benefit | Baseline B | GEF Alternative A | Increment A-B |
|---|--|---|---|
| An established biodiversity monitoring system for the Arid and Semi-Arid zone | <ul style="list-style-type: none"> • Series of conferences and training on Biodiversity monitoring techniques (\$73,821) • Uncoordinated research initiatives targeted at a reduced number of species (\$17,300) • Data collection within limited sectors of the arid and semi-arid zone (\$12,000) • No dissemination of data collected (\$0) | <ul style="list-style-type: none"> • Workshops among biodiversity experts targeted at synchronization of methodologies and strategies for biodiversity inventory (\$80,821) • Comprehensive assessments of biodiversity in the entire region (\$149,110) • establishment of mechanisms for extensive and long-term data collection and biodiversity monitoring in the whole ecosystem (\$47,520) • preparation of regular publications and creation of a web site for biodiversity data base (\$20,000) | <ul style="list-style-type: none"> • Standardization of inventory methodologies and a greater capacity to analyze collected data from the different sectors of the ecosystem. (\$7,000) • Precise description of biodiversity baseline situation with which to measure/assess changes in the ecosystem health (\$131,810) • Reliable data on population and habitat degradation monitoring the status of the entire arid and semi-arid zone (\$35,520) • Data accessible to public organizations and individuals (\$20,000) |
| Subtotal | \$103,121 | \$297,451 | \$194,330 |

Matrix of Incremental Costs (cont.)

| Global Environmental Benefit | Baseline B | GEF Alternative A | Increment A-B |
|--|--|---|---|
| <p>Development of participatory integrated transboundary management criteria and its implementation on selected areas as part of replicable demonstration pilot projects</p> | <ul style="list-style-type: none"> • Current revision and upgrading of management plans for selected reserves in the arid and semi-arid zone (\$30,000) • Strengthening of Vashlovani Reserve (\$2,175,000) • Identification of gaps in legislation related to nature conservation (\$25,000) • Limited field activities aimed at promoting habitat conservation. (\$40,000) | <ul style="list-style-type: none"> • Participatory development of transboundary management criteria for the arid and semi-arid zone (\$123,000) • Strengthening of Vashlovani Reserve (\$2,175,000) • Analysis of formal <i>and</i> informal institutions defining land use rights in the project area. (\$53,300) • Implementation of replicable pilot demonstration projects based on sustainable use of the arid and semi-arid zone. (\$192,970) | <ul style="list-style-type: none"> • Alternative land use strategies agreed among communities and other relevant stakeholders ensuring the protection of the ecosystem (\$93,000) • \$0,00 • Policy recommendations for development and enforcement of land use rights promoting transboundary biodiversity conservation (\$28,300) • The feasibility of alternative land use patterns is validated (\$152,970) |
| Subtotal | \$2,270,000 | \$2,544,270 | \$274,270 |
| TOTAL | 3,671,721 | 4,549,921 | \$878,200 |

12. TIMETABLE OF ACTIVITIES

Activities for months 1-14

| Components/Months | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| Establishment of coordination unit | | | | | | | | | | | | | | |
| Establishment of consultation mechanisms | | | | | | | | | | | | | | |
| Establishment of steering committee | | | | | | | | | | | | | | |
| Steering committee meetings | | | | | | | | | | | | | | |
| Workshops | | | | | | | | | | | | | | |
| Environmental awareness activities | | | | | | | | | | | | | | |
| Biodiversity assessment | | | | | | | | | | | | | | |
| Socio-economic assessments | | | | | | | | | | | | | | |
| Legal assessment | | | | | | | | | | | | | | |
| Design of database | | | | | | | | | | | | | | |
| Database updating | | | | | | | | | | | | | | |
| Design of first draft of management criteria | | | | | | | | | | | | | | |
| Design of Pilot Projects | | | | | | | | | | | | | | |
| Circulation of first draft of agreed criteria | | | | | | | | | | | | | | |
| Final draft of management criteria | | | | | | | | | | | | | | |
| Design of financial support for agreed measures | | | | | | | | | | | | | | |
| Transfer of manag. to activities to gov. units | | | | | | | | | | | | | | |
| Implementation of pilot projects | | | | | | | | | | | | | | |
| Tripartite Reviews | | | | | | | | | | | | | | |

Activities for months 15-29

| Components/Months | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Database updating | | | | | | | | | | | | | | | |
| Steering committee meetings | | | | | | | | | | | | | | | |
| Workshops on technical capacity building | | | | | | | | | | | | | | | |
| Environmental awareness activities | | | | | | | | | | | | | | | |
| Transfer of activities to governments units | | | | | | | | | | | | | | | |
| Implementation of pilot projects | | | | | | | | | | | | | | | |
| Tripartite Reviews | | | | | | | | | | | | | | | |

Appendix 1.
Some Background Information on Proposer Institution
Noah's Ark Center for the Recovery of Endangered Species (NACRES)

Contact Information

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Mission

Noah's Ark Center for the Recovery of Endangered Species (NACRES), a non-governmental, non-profit organization, was founded in 1989 to safeguard the increasing number of endangered species in the Caucasus and to promote public awareness in the field of environmental protection. NACRES became a member of the World Conservation Union (IUCN) in 1994.

Priorities

Inventory of biodiversity (specially rare and endangered species); Establishment of a breeding center for threatened species; Species recovery intervention; Natural recovery and Reintroduction; Environmental education; Collaboration with legislative and executive sectors of Georgia, Armenia, Azerbaijan concerning biodiversity protection.

General activities

NACRES has been active in: a) drawing up laws for parliamentary consideration and lobbying the Parliament to sign different environmental conventions and treaties (such as lobbying the Government to adhere to the Convention on International Trade in Endangered Species of Flora and Fauna-CITES). b) elaborating and implementing new methodologies for wildlife conservation, such as a method for the reintroduction of captive-raised mammals into their natural habitat. c) carrying out various education activities, participating in television and radio programs, and publishing articles in the local and international press.

Latest accomplished projects

Biodiversity Country Study Programme of UNEP

In April, 1994 Georgia signed the Convention on Biological Diversity and requested aid from UNEP, Nairobi, to carry out a country study. The Ministry of Environmental Protection of Georgia mandated NACRES as implementing agent for the Programme which began on July 1, 1995. The Georgian Country Study was terminated in English and Georgian in 1997.

Assessment Research for Brown Bear (Ursus arctos) Recovery in the Republic of Georgia (supported by the World Society for the Protection of Animals)

The project has been elaborated as a result of NACRES' findings, which show that the species has become endangered in Georgia given its low population numbers. The exact situation

and conditions necessary for survival had not been determined at that time. A preliminary feasibility study carried out by NACRES showed that the main reasons which led the species' decline in last years are poaching and habitat destruction. An assessment of existing populations was made and a plan for recovery is drawn up.

Current projects

Biodiversity Strategy and Action Plan (funded by GEF; Implementing partner: World Bank)

A National Strategy and Action Plan for the Biodiversity conservation is being drawn up as a subsequent step of the Biodiversity Country Study. The program began in 1997. NACRES acts as a local implementing agency of the project along with two other local NGOs.

Monitoring of Endangered Mammals in Natural Reserves of Georgia (funded by WWF Switzerland)

The project concerns ecological assessment of populations of endangered carnivores (especially the wolf) as umbrella species of wildlife in the reserves of Georgia.

Wildlife Regional Study (funded by the MacArthur Foundation)

The project is targeted at applied research of endangered vertebrate species throughout of the Caucasus and grassroots collaboration in Georgia, Armenia, Azerbaijan.

NACRES has been supported by:

Mgeli-Fund for the Caucasian Wolf (Switzerland); ISAR - Clearing House on Grassroots Cooperation in Eurasia (USA); IUCN -The World Conservation Union; The Swiss League for the Nature Protection; Fauna & Flora International (UK); Sacred Earth Network (USA); Open Society-Georgia Foundation; WSPA -The World Society for the Protection of Animals (UK); British Know How Fund (UK); Environmental Public Advocacy Center (USA); American Bar Association (USA); Armenian Assembly of America (USA); The World Bank; The MacArthurs Foundation (USA); UNDP;

Appendix 2 Profiles of the Countries

GEORGIA

(According to the Biodiversity Country Study, 1996)

Georgia is situated in south-east Europe, in the central and western region of the Transcaucasus. Extreme western and eastern borders of the country are defined by 40°05' and 46°44' east longitude, while southern and northern borders are within the 41°07' and 43°35' parallels north latitude. Hypsometrical points on the territory of Georgia range from 0 (the Black Sea coast) up to 5,068m (Mtsvane Shkhara in the Caucasus). Georgia is bordered on the north by Russia, on the south by Armenia and Turkey, on the east by Azerbaidjan, and on the west by the Black Sea. The territory of the country is 69,5 thousand km²; the total length of its borders is 1968,8 km, of which 1160,4 km are terrestrial.

Georgia is characterised by a diversity of natural conditions, mainly due to a contrasting topographical relief: high, medium and low mountains, highland plateau and plains systems. The primary orographic units are the mountains of the Greater Caucasus, the plains between mountains, the mountains of the Lesser Caucasus, and volcanic mountains of southern Georgia.

From the biodiversity point of view the Caucasus has developed as a distinctive geographical region. The region is important as a link between Europe and Asia as well as Palearctic and Middle East. A relatively small area of the region includes high differentiation of geographical zones from humid subtropics to arid semi-deserts. Vertically it comprises all zones including the nival. This accounts for a high diversity of animal and plant species (many of them endemic only to the Caucasus) and habitats. Species and habitats are tightly linked throughout the Caucasus and the region is a route for various migratory species.

Georgia, as an organic part of the Caucasus is inhabited by the species typical for both northern and southern zones of the earth. The primary orographic units are the mountains of the Greater Caucasus, the plains between mountains, the mountains of the Lesser Caucasus, and volcanic mountains of southern Georgia. The diversity of the climate is conditioned by 1) Georgia's position on the periphery of the northern edge of a subtropical zone, and 2) the Black Sea and the Caucasus (which protect the country from cold north air masses).

Ecosystems include sub-alpine coniferous forests, meadows, wetlands, peat bogs, and lakes, coniferous and beech forests, oak woodlands, caves and mountain gorges, Colkheta wetlands forests with evergreen undergrowth, Mediterranean and sub-Mediterranean communities, steppe grasslands, arid light woodlands, riparian shrub and forest vegetation along rivers.

Flora: 4,500 vascular plants, including 9% endemic species. Approx. 2000 of these are of economic importance.

Fauna: freshwater fish include 84 species (including Acipenserids which are threatened); saltwater species numbered approximately 100 along the Georgian coasts 20 years ago. Overfishing has drastically reduced species numbers and no recent statistics are available. Small mammal diversity includes 79 species, some endemics, in four orders: Insectivores, Chiropters, Rodents and Lagomorphs, and 3 orders of large and medium mammals--carnivores, ungulates and cetaceans, or 30 species such as bear, wolf, hyena, Caucasian mountain goat, chamois, red and roe deer, 2 species of dolphin and 1 of porpoise.

Threats are as diverse as species and habitats. Over-fishing of marine resources; river pollution caused by inadequate runoff enforcement; poaching, overgrazing of pasture lands used by

ungulates, thus diminishing medium and large mammals' food bases. Overuse for agriculture has produced salinization, threatening small mammals and plant life. Forest destruction affects not only flora but both large and small mammal habitats causing degradation and fragmentation. Plant diversity affected by illegal commerce, forest destruction, grazing in forests and in fragile ecosystems.

AZERBAIJAN

(According to the State of Environment of Azerbaijan, 1997)

The Republic of Azerbaijan occupies the southeast part of the Caucasus isthmus and its small southern part. It covers the southeast of the Greater Caucasus, a part of the Lesser Caucasus, the Talysh Mountains with the vast Kura-Araks depression in between. Geographically the republic is located within the limits of the part of Eurasia, which is closely connected with the Aral - Caspian depression and is located near the conventional border between Europe and Asia.

In addition to the continental part, the republic's territory also includes several islands located along the Caspian coastline. These islands include: Nargin, Zhiloy, Bulla, Svinoy and Glinyany.

Latitudes 38⁰5" and 41⁰55" North and longitudes 44⁰50" and 50⁰23" East outline the 86.6 thousand sq. km territory, excluding the islands some of which are located beyond the above mentioned eastern meridian. Azerbaijan borders with the Dagestan Republic of the Russian Federation in the North (approximately 340 km), with Georgia in the northwest (approximately 340 km), with Armenia in the southwest (approximately 760 km), while Armenia separates Azerbaijan from the autonomous republic of Nakhichevan which borders Turkey (11 km), and Iran in the south (more than 600 km). The eastern border lies through the Caspian Sea between Russia, Turkmenistan and Iran, the coastline being more than 800 km. The main part of the border is of natural origin (rivers and mountain ranges) and it only lies on conventional lines in some parts.

The average height of the republic equals 384 m with the highest elevation being 4466 m (Mount Bazardyuzu) and the lowest point - 27 m along the Caspian coastline.

ARMENIA

(According to Armenia Factbook, 1996)

The Republic of Armenia is located in south-central part of the Transcaucasus. The highest peak of the country is Mt. Aragats (4090m). The country is bordered by Georgia (164 km) north, Azerbaijan (566 km) east, Iran (35 km) south, Nakhichevan (Azerbaijan-221 km) west and Turkey (268 km) west.

The territory of the country is 29,8 thousand km²;

The country is inhabited by 3200 different species of vascular plants. From these 350 are endemic and 500 are in Red Data Book, these are divided into different classes.

Ornithofauna is represented by 350 different species of birds, of which 52 are represented in the Red Data Book. Only one of these species is endemic of Armenia, the Armenian gull. Ground nesting birds are special to this region and most can be found in the Red Data Book.

To add to numerous plants and birds there are 63 species of reptiles and amphibians (9 amphibian and 54 reptile). In the Armenian Red Data Book 15 of these species are represented. Ten species

are endemic to the Armenian plateau. In the transboundary zone 24 species of reptiles and 6 of amphibians can be found.

Seen here are also 83 species of mammals, 18 of which are in the Red Data Book. Of these 3 are endemic to the plateau.

Four orders of Ichthiofauna are cyprinid fishes (Cypriniformes), salmonids (Salmoniformes), sheatfishes (Siluriformes), cyprinodonts (Cyprinodontiformes). About 30 species and subspecies are found in the country. The taxonomy of some of these species is not yet precise. Endemic species include 6 fish. Found in the Red Data Book are 2 species.

APPENDIX 3.
List of Some Threatened Species of the Arid Zone

AMPHIBIANS

| # | Species | English Name | Included in Red Data Book or Red List of at least one of the countries concerned | Proposed IUCN Status |
|----|---|-----------------------|--|----------------------|
| 1. | <i>Bufo viridis viridis</i> Laurenti, 1768 | Green toad | + | Vulnerable |
| 2. | <i>Hyla savignyi</i> Audouin, 1827 | Yellow-lemon treefrog | + | Vulnerable |
| 3. | <i>Rana maocnemis</i> Boulger, 1885 <i>and</i> <i>Rana</i> [var.] <i>camerani</i> Boulger, 1886 | Caucasian brown frogs | + | Vulnerable |

REPTILIA

| # | Species | English Name | Included in Red Data Book, Red List of at least one of the countries concerned | Proposed IUCN status |
|----|------------------------------|----------------------|--|----------------------|
| 1. | <i>Ablepharus pannonicus</i> | Snake-eyed skink | + | Endangered |
| 2. | <i>Agama caucasica</i> | Caucasian agama | + | Vulnerable |
| 3. | <i>Coluber jugularis</i> | Large whip snake | + | Endangered. |
| 4. | <i>Coluber najadum</i> | Dahl's whip snake | + | Vulnerable. |
| 5. | <i>Coluber ravergieri</i> | Mountain racer | + | Endangered. |
| 6. | <i>Eiris collaris</i> | Collared dwarf snake | + | Endangered. |

| | | | | |
|-----|--------------------------------|-------------------------|---|------------|
| 7. | <i>Eiris modestus</i> | Ring-headed dwarf snake | | Vulnerable |
| 8. | <i>Elaphe dione</i> | Dione snake | | Vulnerable |
| 9. | <i>Elaphe hohackeri</i> | Caucasian snake | + | Endangered |
| 10. | <i>Elaphe quatuorlineata</i> | Four lined snake | + | Vulnerable |
| 11. | <i>Emys orbicularis</i> | European pond terrapin | | Vulnerable |
| 12. | <i>Eremias arguta</i> | Steppe-runner | + | Vulnerable |
| 13. | <i>Eremias velox</i> | Rapid fringed lizard | + | Endangered |
| 14. | <i>Eryx jaculus</i> | Sand boa | + | Endangered |
| 15. | <i>Eumeces schneideri</i> | Schneider's skink | + | Vulnerable |
| 16. | <i>Lacerta caucasica</i> | Caucasian lizard | + | Endangered |
| 17. | <i>Lacerta media</i> | Three-lined lizard | | Vulnerable |
| 18. | <i>Lacerta strigata</i> | Five-streaked lizard | | Vulnerable |
| 19. | <i>Malpolon monspessulanus</i> | Montpellier snake | + | Endangered |
| 20. | <i>Mauremys caspica</i> | Stripe-necked terrapin | | Vulnerable |
| 21. | <i>Natrix natrix</i> | Grass snake | | Vulnerable |
| 22. | <i>Natrix tessellata</i> | Water snake | | Vulnerable |
| 23. | <i>Ophisops elegans</i> | Snake-eyed lizard | + | Endangered |

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|-----|---------------------------------|-----------------------|--|---|-----------------------|
| 24. | <i>Pseudopodus apodus</i> | Glass lizard | | | Vulnerable |
| 25. | <i>Telescopus fallax</i> | Cat snake | | + | Endangered. |
| 26. | <i>Testudo graeca</i> | Spar-thighed tortoise | | + | Vulnerable |
| 27. | <i>Typhlops vermicularis</i> | Worm snake | | + | Endangered |
| 28. | <i>Vipera (Daboia) lebetina</i> | Lebintine viper | | + | Critically endangered |
| 29. | <i>Vipera ursini</i> | Orsini's viper | | | Critically endangered |

BIRDS

| # | Species | English Name | Included in Red Data Book, Red List of at least one of the countries concerned | Proposed IUCN Status |
|----|-------------------------|-------------------|--|----------------------|
| 1. | <i>Pelecanus ispus</i> | Dalmatian pelican | + | Endangered |
| 2. | <i>Egretta garzetta</i> | Little egret | + | Vulnerable |
| 3. | <i>Egretta alba</i> | Great white egret | + | Vulnerable |
| 4. | <i>Ardea cinerea</i> | Grey heron | | Vulnerable |
| 5. | <i>Ardea purpurea</i> | Purple heron | + | Vulnerable |
| 6. | <i>Ciconia nigra</i> | Black stork | + | Endangered |
| 7. | <i>Cygnus olor</i> | Mute swan | + | Vulnerable |
| 8. | <i>Cygnus cygnus</i> | Whooper swan | + | Vulnerable |
| 9. | <i>Anser anser</i> | Greylag goose | | Vulnerable |

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|-----|----------------------------------|----------------------|--|---|-----------------------|
| 10. | <i>Milvus migrans</i> | Black kite | | | Vulnerable |
| 11. | <i>Haliaeetus albicilla</i> | White tailed eagle | | + | Critically Endangered |
| 12. | <i>Gypaetus barbatus</i> | Bearded Vulture | | + | Vulnerable |
| 13. | <i>Neophron percnopterus</i> | Egyptian Vulture | | + | Endangered |
| 14. | <i>Gyps fulvulnerables</i> | Griffon Vulture | | + | Vulnerable |
| 15. | <i>Aegypius monachus</i> | Black Vulture | | + | Endangered |
| 16. | <i>Circaetus gallicus</i> | Short-toed eagle | | + | Vulnerable |
| 17. | <i>Circus aeruginosus</i> | Marsh harrier | | | Vulnerable |
| 18. | <i>Circus maourus</i> | Pallid harrier | | + | Vulnerable |
| 19. | <i>Accipiter gentilis</i> | Goshawk | | | Vulnerable |
| 20. | <i>Accipiter nisus</i> | Sparrow hawk | | | Vulnerable |
| 21. | <i>Accipiter brevipes</i> | Levant sparrow hawk | | | Vulnerable |
| 22. | <i>Buteo rufinus</i> | Long-legged buzzard | | | Vulnerable |
| 23. | <i>Buteo lagopus</i> | Rough-legged buzzard | | | Vulnerable |
| 24. | <i>Aquila chrysaetos</i> | Golden eagle | | + | Endangered |
| 25. | <i>Hieraetus penatus</i> | Booted eagle | | | Vulnerable |
| 26. | <i>Pandion haliaetus</i> | Osprey | | + | Vulnerable |
| 27. | <i>Falco columbarius</i> | Merlin | | | Vulnerable |
| 28. | <i>Falco subbuteo</i> | Hobby | | | Vulnerable |
| 29. | <i>Falco peregrinus</i> | Peregrine | | + | Critically Endangered |
| 30. | <i>Alectoris (graeca) chukar</i> | Chukar | | | Vulnerable |
| 31. | <i>Francolinus francolinus</i> | Black francolin | | + | Endangered |
| 32. | <i>Perdix perdix</i> | Grey partridge | | + | Vulnerable |
| 33. | <i>Porphyrion porphyrio</i> | Purple gallinule | | + | Vulnerable |
| 34. | <i>Tetrax tetrax</i> | Little bustard | | + | Endangered |
| 35. | <i>Otus tarda</i> | Great bustard | | + | Endangered |
| 36. | <i>Coracias garrulus</i> | Roller | | | Vulnerable |
| 37. | <i>Cercotrichas galactotes</i> | Rufous bush chat | | + | Vulnerable |
| 38. | <i>Phoebastria erythrogaster</i> | | | + | Vulnerable |

MAMMALS

| # | Species | English Name | Included in Red Data Book, Red List of at least one of the countries concerned | Proposed IUCN Status |
|-----|--------------------------------|-------------------------------|--|-----------------------|
| 1. | <i>Ocidura gueldstaedti</i> | Caucasian white-toothed shrew | + | Vulnerable |
| 2. | <i>Sorex volnuchini</i> | Volnuchin's shrew | | Vulnerable |
| 3. | <i>Myotis bechsteini</i> | Bechstein's bat | + | Endangered |
| 4. | <i>Miniopterus schreibersi</i> | Long-winged bat | + | Endangered |
| 5. | <i>icetulus migratorius</i> | Grey hamster | | Endangered |
| 6. | <i>Mesocricetus brandti</i> | Brandt's hamster | + | Critically Endangered |
| 7. | <i>Terricola majori</i> | Bush vole | + | Endangered |
| 8. | <i>Terricola daghestanicus</i> | Daghestanian bush vole | + | Endangered |
| 9. | <i>Lutra lutra</i> | Otter | + | Critically Endangered |
| 10. | <i>Martes foina</i> | Beech marten | | Vulnerable |
| 11. | <i>Ursus arctos</i> | Brown bear | | Endangered |
| 12. | <i>Hyaena hyaena</i> | Striped hyena | + | Critically Endangered |
| 13. | <i>Canis lupus</i> | Wolf | | Vulnerable |
| 14. | <i>Canis aureus</i> | Golden jackal | | Vulnerable |
| 15. | <i>Felis silvestris</i> | Wildcat | - | Vulnerable |
| 16. | <i>Felis chaus</i> | Jungle cat | + | Critically Endangered |

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|-----|----------------------|-----------------|---|-----------------------|
| 17. | Felis (Lynx) lynx | Lynx | + | Critically Endangered |
| 18. | Gazella subgutturosa | Persian gazelle | + | Critically Endangered |