

**LAKE ARPİ
NATIONAL PARK
and
Sanctuaries:
(a) Akhuryan Gorge,
(b) Ardenis and (c) Alvar**

**MANAGEMENT PLAN
2009-2019**

**Dr. Goetz Schuerholz
Gyumri-Armenia
20th of September 2009**

Lake Arpi National Park Management Plan

Foreword

The Lake Arpi National Park Management Plan has been elaborated under the auspices of the Worldwide Fund for Nature (WWF) with funding from the German Bank for Reconstruction and Development (KfW). The Management Plan is a statutory requirement by the Government of Armenia (GoA) in recognition of the importance of organized planning as appropriate management tool for protected areas, and as such it complies with all legal requirements for National Parks in Armenia.

This Management Plan is unique as it is the first in Armenia that has been elaborated in a truly participatory multidisciplinary and multi-stakeholder fashion addressing the needs of Support Zone communities and the challenges of sustainable conservation and financial sustainability.

Over the past year members of the Management Planning Team of Lake Arpi National Park (LANP) negotiated agreements on the planning process and on substantive issues arising from the competing interests in the designated project area. The Planning Team members developed policies and management guidelines for the sustainable use of the communal lands located inside and outside the LANP and the sustainable development issues related to its Support Zone. The recommendations contained in this Management Plan are the results of those negotiations and initiatives.

The recommendations made by the Management Plan are not a simple compromise between interests, but rather an interconnected set of agreements that together describe a consensus among the Planning Team members, who are elected members from the Lake Arpi National Park Support Zone communities and NGOs engaged in the project area. The recommendations are an attempt to satisfy all of the community and stakeholder interests to the greatest extent possible. While each interest group represented by the Planning Team may not have achieved all of its original objectives, each is able to agree that its interests have been accommodated to an acceptable degree by this package of recommendations and policies.

By signing this Management Plan, the Planning Team members on behalf of their special interest groups have indicated their agreement that the Management Plan is in a form that should now be approved and adopted by the Ministry of Nature Protection of the Republic of Armenia.

Goetz Schuerholz
Management Plan Facilitator
For the Lake Arpi National Park and its Support Zone

Acknowledgements

The Planning Team expresses its gratitude to KfW for the financial assistance and facilitation of the planning process. Thanks are extended to WWF Armenia for its continuing support. The efforts of Hamlet Gasparyan and Meline Tovmasyan, who effectively and efficiently coordinated the Working Groups, are greatly appreciated. Special thanks are given to Tigran Melkumyan, who provided invaluable GIS support to the planning process. Without his relentless effort this work could not have been achieved in such a professional manner.

Lake Arpi National Park Management Plan

PREFACE

Official Names of the Lake Arpi National Park and Sanctuaries

The official term chosen for this conservation area under The Government Decision No. 405-N from April 16, 2009 is “Lake Arpi National Park” –State Non-Commercial Organization (LANP) named after Lake Arpi and its water catchment areas, which form the Western Section of the National Park.

There are three designated Sanctuaries located in the extended Support Zone of the Western and Eastern Sections of the LANP to be administered by the LANP Authority (Map 1):

- The “Akhuryan Gorge Sanctuary”, named after the Akhuryan River that drains the Javakheti/Ashotsk Plateau via the “Gorge”;
- The “Ardenis Sanctuary” named after the Ardenis Community; and
- The “Alvar Sanctuary” named after the the Alvar Community, located to the South of the wetlands formed by the Akhuryan River.

Map 1: Location of the Lake Arpi National Park and Associated Sanctuaries

Lake Arpi National Park Management Plan

Preparation of the Management Plan

In order to adequately address the broad spectrum of issues and use potential of the Lake Arpi National Park (LANP), associated Sanctuaries and Support Zone the following six Working Groups were assembled, composed of democratically elected representatives of Support Zone communities and Non-Government, Non-for Profit Organizations (NGO) active in the target area: (a) National Park Boundaries, (b) Traditional Use Program, (c) Protection Program, (d) Lake Arpi Management Program, (e) National Park Governance, and (f) Support Zone Program.

Working through a sequence of workshops and special consultations, the Working Groups with assistance of local and international sector specialists and under guidance of the Management Plan Facilitator compiled information and interests, identified issues, reviewed the output of consultations, defined conservation values of the LANP and Sanctuaries, agreed on the LANP boundaries, resource and land use inside and outside the LANP and Sanctuaries, the Zoning of the LANP, and drew up a set of policies and guidelines that set the framework for the different Management Programs incorporated into this Management Plan. A process of consensus was used to resolve competing interests and produce a package of land use and resource management agreements, which form the basis of this Management Plan. The planning process lasted a full calendar year (October 2008 to September 2009).

The Working Groups under guidance of the Facilitator assembled all information and agreements into this general Management Plan, which then was reviewed by key stakeholders, senior staff of the Ministry of Nature Protection (MoNP), and NGOs before final approval by the Government of Armenia at the end of 2009.

The collection, presentation and discussion of data by the different Working Groups at cross-sectoral information and planning sessions helped establish a sound working relationship among members of the Working Groups and assisted in the development of true ownership of the Management Plan. Thanks to this highly participatory planning process, an outstanding team spirit evolved amongst working group members and other stakeholders that proved invaluable for management cooperation on all levels. The chosen planning method and process may therefore serve as a proven model to other protected areas in Armenia in need of management plans.

Arrangement of the Management Plan

The LANP is divided into four Sections:

- Section I, labelled '**Introduction to the Lake Arpi National Park and Sanctuaries**', provides the LANP Authority and stakeholders with the basic information needed for placing the National Park (NP) and Sanctuaries into a geographic, legal, biophysical and socio-cultural context. Section I is dedicated to the background and conceptual framework of the LANP and Sanctuaries.
- Section II, labelled '**Vision and Goals**', provides a Vision Statement for the target area until the year 2030 and specifies the long-term goals and key strategies to be adopted to reach the long-term targets.

Lake Arpi National Park Management Plan

- Section III, labelled '**Zoning**', describes the zoning of the LANP and associated Sanctuaries, which facilitate the management of the target area.
- Section IV, labelled 'Management Programs', provides the policies and management guidelines guiding the sustainable conservation management of the target areas. This part is considered the Manager's 'Handbook' when in doubt and when in need of management guidance. It provides the framework for the elaboration of annual work plans and program specific budgets.

All financial aspects and the budget related to the LANP are subject to a complementary document to this Management Plan titled "**Lake Arpi National Park Business Plan**". It identifies the park's operational budget, comparing operational costs to potential revenues. Furthermore, it details fund raising strategies and financial mechanisms that will assist to cover expected budget shortfalls of the LANP, creating a more sustainable basis for the future management of the park.

The Management Plan provides the framework for the future management of the LANP and associated Sanctuaries and will be used as basis for the annual work plans to be elaborated by senior staff. The Management Plan will require periodic review and adjustment as objectives are attained or modifications become necessary. A review of the Management Plan is suggested to take place in five-year intervals.

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LAKE ARPI NATIONAL PARK MANAGEMENT PLANNING TEAM

The members of the Lake Arpi National Park Management Planning Team, the undersigned, as representatives of the Park's Support Zone communities and different interest groups, have reached a consensus on this Management Plan, and request the Government of Armenia to approve this Management Plan for implementation.

Working Group 1: National Park Boundaries;
Working Group 2: Support Zone Program;
Working Group 3: Traditional Use Program;
Working Group 4: Protection Program;
Working Group 5: Lake Arpi Management Program;
Working Group 6: National Park Governance

Group Leader: ardan Vardanyan
Group Leader: Vachik Sumbulyan
Group Leader: Karlen Bdoyan
Group Leader: Karen Ghazaryan
Group Leader: Artak Badeyan
All Five Group Leaders

Coordinators of Working Groups:
Hamlet Gasparyan and Meline Tovmasyan

Gyumri, the 20th of September 2009

Working Group 1: National Park Boundaries

Signature _____
Team Leader: Vardan Vardanyan (Shaghik) School Principal

Signature _____
1. **Koryun Sumbulyan** (Bavra) Bavra Mayor

Signature _____
2. **Samvel Sarukhanyan** (Garnarich) Electrician

Signature _____
3. **Grigor Tarzyan** (Tsaghkut) Deputy Mayor

Signature _____
4. **Ishkhan Vardanyan** (Zorakert) Farmer

Signature _____
5. **Sargis Tumasyan** (Ardenis) Farmer

Signature _____
6. **Robert Sarukhanyan** (Aghvorik) Farmer

Signature _____
7. **Gugark Kuyumchyan** (Berdashen) Farmer

Signature _____
8. **Hovhannes Grigoryan** (Tavshut) Farmer

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Signature_____

9. **Vardan Harutyunyan**; Representative Amasia Sub Region State Cadastre Committee

Signature_____

10. **Martin Torosyan**; Representative Ashotsq Sub Region State Cadastre Committee

Signature_____

11. **Vahan Tumasyan** (Gyumri) Director of NGO “Shirak “

Working Group 2: Support Zone Program

Signature_____

Team Leader: Vachik Sumbulyan (Bavra) Farmer/ Mathematician

Signature_____

1. Mergel Gharibyan (Ardenis) Ardenis’s Mayor

Signature_____

2. Tsolak Ghukasyan (Shaghik) Farmer

Signature_____

3. Mamikon Davityan (Aghvorik) Farmer

Signature_____

4. Ervand Akhtskhetsyan (Berdashen) Deputy Mayor

Signature_____

5. Andranik Nuriganyan (Tavshut) Veterinarian

Signature_____

6. Vardges Soghoyan (Tsaghkut) Farmer

Signature_____

7. Alla Khachatryan (Gyumri) Director of NGO “Arax”

Signature_____

8. Knarik Khachatryan (Gyumri) Director of NGO “Erkinq“

Working Group 3: Traditional Use Program

Signature_____

Team Leader: Karlen Bdoyan (Tsaghkut) Tsaghkut’s Mayor

Signature_____

1. Grigor Tarzyan (Tsaghkut) Deputy Mayor

Signature_____

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2. Robert Sarukhanyan (Aghvorik) Farmer

Signature_____

3. Ararat Abgaryan (Garnarich, Paghakn) Farmer

Signature_____

4. Davit Santosyan (Shaghik) Farmer

Signature_____

5. Kamo Gabrielyan (Bavra) Mechanic

Signature_____

6. Vardan Petrosyan; Shirak's RGB Department of Agriculture and Nature Protection;
Senior Specialist –livestock and range management

Working Group 4: Protection Program

Signature_____

Team Leader: Karen Ghazaryan (Ardenis) Farmer

Signature_____

1. Karapet Soloyan (Aghvorik) Farmer

Signature_____

2. Arman Hakobyan (Garnarich) Teacher

Signature_____

3. Samvel Demurchyan (Shaghik) Farmer

Signature_____

4. Arthur Abgaryan /Ardenis / Farmer

Signature_____

5. Ghazaros Ghazaryan (Garnarich) Farmer

Signature_____

6. Arthur Gevorgyan / Representative of MEK-Cultural Experimental Center

Working Group 5: Lake ArpiManagement Program

Signature_____

Team Leader: Artak Badeyan (Shaghik) Shaghik's Mayor

Signature_____

1. Vardan Poghosyan (Tsaghkut) School Principal)

Signature_____

2. Vahan Mkrtchyan (Zorakert) Mechanic

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Signature_____

3. Rubik Soghoyan (Aghvorik) Mechanic

Signature_____

4. Vahag Muradyan (Garnarich) Mechanic

Signature_____

5. Naghash Muradyan (Tavshut) Farmer

Signature_____

6. Raphayel Mkhitarian (Gyumri) Director of NGO “Erord Bnutyun”

Working Group: National Park Governance

Signature_____

1. Vardan Vardanyan /Shaghik / Director of school

Signature_____

2. Vachik Sumbulyan /Bavra / Farmer/ Mathematician

Signature_____

3. Karlen Bdoyan (Tsaghkut) Mayor

Signature_____

4. Karen Ghazaryan (Ardenis) Farmer

Signature_____

5. Artak Badeyan (Shaghik) Mayor

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Acronyms used

ABM	Agency of Bioresources Management
BMZ	German Ministry of Economic Development
BSAP	Biodiversity Strategy and Action Plan
CAMPFIRE	Communal Areas Management Program For Indigenous Resources
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resource Management
CC	Carrying Capacity (livestock)
UNFCCC	UN Framework Convention on Climate Change
UNCCD	UN Convention to Combat Desertification
CIS	Community of Independent States
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
GEF	Global Environmental Facility
GoA	Government of Armenia
GTZ	German International Organization for Technical Cooperation („Deutsche Gesellschaft für Technische Zusammenarbeit GmbH“)
HQ	(NP) Headquarters
IUCN	International Union for Nature Conservation
KfW	German Bank for Reconstruction and Development (“Kreditanstalt für Wiederaufbau”)
LANP	Lake Arpi National Park
MNP	Ministry of Nature Protection
MNR	Ministry of Natural Resources
MoU	Memorandum of Understanding
NGO	Non Governmental Non-for Profit Organization
NP	National Park
PA	Protected Area
R&M	Research and Monitoring
MA	Ministry of Agriculture
SMES	State Ministry of Education and Science
SNCO	State Non-Commercial Organisations
SPA	Specially Protected Area
UNDP	United Nations Development Program
WWF	World Wide Fund for Nature

Lake Arpi National Park Management Plan

Spelling of Communities and Rivers Used in this Management Plan

Communities

Aghvorik	Darik	Shaghik
Alvar	Garnarich	Sizavet
Amasia	Ghazanchi	Tavshut
Aravet	Hovtun	Tsaghkut
Ardenis	Krasar	Yeghnajur
Ashotsk	Lorasar	Yerizak
Bavra	Mets Sepasar	Zarishat
Berdashen	Paghakn	Zorakert
Pokr Sepasar	Saragyugh	

Rivers:

Achkajur	Ghazanchi
Akhuryan	Ghukasyan
Akhuryan Channel	Gijget
Arevadzor	Heghnaget
Ashnak	Karakhanget
Dzknaget	Karmrajur
Dzoraget	Katarajur
Eghnajur	Shaghik
Tsaghkashen	

SECTION I: INTRODUCTION TO THE LAKE ARPI NATIONAL PARK

1.1 History, Location and Purpose of the Lake Arpi National Park and Sanctuaries

The establishment of the LANP and Sanctuaries forms part of the “Caucasus Initiative”, launched by the German Ministry of Co-operation and Development (BMZ), with focus on biodiversity conservation in the unique Caucasus Ecoregion and the promotion of trans-boundary cooperation for biodiversity conservation in Javakheti as one field of co-operation between Armenia and Georgia.

Following a feasibility assessment in 2003, the countries of Armenia and Georgia unanimously agreed on conservation efforts, financially supported by Germany through its Bank for Reconstruction and Development (KfW), to be concentrated on the Transboundary Javakheti-Shirak Priority Conservation Area (see Map 2) which straddles the border region between Turkey, Armenia and Georgia. Focus of this initiative is the establishment of a National Park and wetland conservation areas on either side of the International Border and the sustainable development of the respective Support Zones of the conservation units.

The project to establish Lake Arpi National Park was launched in September 2007, implemented by the World Wide Fund for Nature on behalf of KfW under the auspices of Armenia’s Ministry of Nature Protection. On completion and agreement of the LANP boundaries, Lake Arpi National Park was confirmed by the Government of the Republic of Armenia through **Decision No. 405-N on 16th of April 2009**.

Map 2: Priority Conservation Areas of the Caucasus Ecoregion

(the map used here was an old map and it should be replaced by a newer version of the ECP map!)

1.2. Justification for the Creation of Lake Arpi National Park and Associated Sanctuaries

1.2.1 Lake Arpi National Park Justification

The Lake Arpi National Park is located in the northern Shirak Marz/region, an integral part of the central Caucasus Isthmus, constituting the Western Section of the Lesser Caucasus mountain chain. The park is stratified into a Western- and Eastern Section separated by a highway connecting Armenia and Georgia. The Western Section covers all of Lake Arpi and its water catchment areas; the Eastern Section, the West-facing slopes of the Javakheti Mountain. The National Park borders Turkey to the West and Georgia to the North. The total area of the LANP is 25,357 ha --not including the Support Zone. Its geographic location is: 43°29'55.102"E and 41°6'53.178"N (Western Section) and 43°55'44.156"E and 41°7'27.494"N (Eastern Section).

The Mountain steppes, sub-alpine grasslands and the hygrophilous grasslands, which characterise Lake Arpi and its water catchment areas, are unique to the Caucasus and found only within this Region, straddling the international borders with Turkey and Georgia. The corresponding ecosystems are currently not included in the Protected Area System of Armenia.

The reasons for providing priority protection to the targeted ecosystems may be summarized as follows:

- Urgent need to provide legal protection to Lake Arpi and adjacent wetlands as a designated Ramsar site (declared in 1993) in order to prevent further environmental degradation. Several of the bird species reported for the Arpi area are listed in the Red Data Book of Armenia whilst others are locally and internationally threatened. Numerous bird species typical for Lake Arpi continue to suffer as a result from damming and enlargement of the Lake, untimely changes in the Lake's water table (water used for downstream irrigation), untimely grass cutting along the shorelines of the Lake, and the introduction of exotic fish and plant species.
- Protection of unique sub-alpine grasslands and mountain steppes, which are under-represented by Armenia's protected area system;
- Armenia's need to comply with its legal obligations under the Convention of Biological Diversity in setting aside representative samples of unique ecosystems.
- Opportunity for trans-boundary cooperation and joint land use management between Armenia and Georgia.

Additional benefits from a protected area in this region are:

- Provision of tangible benefits to Support Zone communities and contribution to poverty alleviation within an economically marginalized region.
- Community empowerment through application of a participatory planning strategy and co-management of protected areas.

1.2.2 Sanctuary Akhuryan Gorge Justification

The gazettment of the Akhuryan Gorge Sanctuary is pending Government approval. The Akhuryan Gorge has been included into the larger LANP Planning Region and has been provided the conservation status category “Sanctuary” because of its unique ecological and geo-morphological features. Due to the distinct micro-climate in the Gorge - differing significantly from the harsh climate characterizing the higher elevation Ashotsk Plateau - unique ecosystems have evolved with species not found elsewhere in the area. The only fragments of the relic *Populus tremula* forests within the Shirak Region are located along the steep slopes and floodplain of the Gorge. The Gorge ecosystems are endangered on a regional level. The Gorge provides refuge to several rare, threatened and endangered species of flora and fauna listed in the Armenian Red Book (such as the Barred warbler (*Sylvia nisoria*), Common raven (*Corvus corax*) and Clouded Apollo (*Parnassius mnemosyne*)). It is rich in biodiversity and provides significant opportunities for scientific, ecological research and recreation.

More than 90% of the land surface area enclosed by the East- and West Section of the LANP is drained by the Akhuryan and Ghukasyan Rivers through the “Akhuryan Gorge”, a spectacular erosion canyon formed over millennia by the waters of the two rivers. The upper part of the Gorge is typified by a two kilometre wide valley, which narrows further downstream into a canyon with steep, rocky side walls.

The land of the Akhuryan Sanctuary (1,374 hectares) is entirely composed of communal lands belonging to the Communities of Amasia, Alvar, Krasar and Hovtun. The Sanctuary’s geographic location is: 43°47'17.858"E and 41°0'45.735"N.

1.2.3. Sanctuary Ardenis Justification

The gazettment of the Ardenis Sanctuary is pending Government approval. The Sanctuary Ardenis protects the mostly ephemeral wetlands to the South of the Ardenis Community and the Ardenis Pond, which drains into the wetlands under protection. The wetlands provide critical breeding habitat to several wetland dependent bird species, the rare Common crane (*Grus grus*) being one of the more prominent summer residents. This Sanctuary forms part of the designated Lake Arpi Ramsar Site.

The land of the Ardenis Sanctuary (99 hectares) is owned by Ardenis and Aghvorik communities. The geographic location of the Ardenis Sanctuary is: 43°43'58.114"E and 41°4'11.97"N.

1.2.4. Sanctuary Alvar Justification

The gazettment of the Alvar Sanctuary is pending Government approval. The Sanctuary Alvar protects mostly ephemeral wetlands and oxbows formed along the former Akhuryan riverbed. The wetlands are man-made, which developed after the Akhuryan River was converted into an artificial channel built during the 1950s. The Alvar wetlands are characterized by high diversity in flora and fauna with numerous species registered by Armenia’s Red List. The most prominent mammal species found in the Sanctuary is the endangered European otter (*Lutra lutra*). The wetlands provide

Lake Arpi National Park Management Plan Section 1: Introduction

critical breeding habitat to several wetland dependent bird species, including the Common crane (*Grus grus*), and important staging areas to migratory bird in fall and spring. The oxbow lakes are also the only sites for the Yellow water-lily (*Nuphar luteum*) in Armenia. Like the Ardenis Sanctuary, the Alvar Sanctuary forms part of the Lake Arpi Ramsar Site.

The land of the Alvar Sanctuary (429 hectares) is owned largely by the state and a small portion by Alvar, Ardenis and Berdashen communities. The geographic location of the Sanctuary is: 43°42'57.892"E and 41°3'16.546"N.

1.3. Overall Purpose of the Creation of the Lake Arpi National Park and Sanctuaries

On the basis of the values described above, the overall purpose for the creation of the LANP, the three associated Sanctuaries, and the overall purpose of the sustainable development of the Support Zone of the LANP may be defined as:

“To protect and conserve the diversity of landscapes, ecosystems and flora and fauna represented by the Protected Areas, to assist Support Zone communities in their economic advancement, and to provide opportunities for the enjoyment and benefit of the people of Armenia and the World”

1.4. The National Context

Armenia has a total land surface area of 29,743 sq km and 1,289 sq km of lakewater surface with Lake Sevan being the largest freshwater body in the Caucasus Region. The population of the country is around 3 million and decreasing by 0.03% annually.

In 1988, the Spitak Earthquake killed tens of thousands of people and destroyed multiple towns in northern Armenia, such as Leninakan (modern-day Gyumri) and Spitak. The harsh situation caused by the earthquake and subsequent events made many residents of Armenia leave and settle elsewhere in the world. The effects of the earthquake had a profound impact on the Support Zone communities of the Lake Arpi National Park. Many people left the area in the aftermath of the earthquake, never to return. Abandoned houses and ruins are a common sight in communities throughout the Support Zone of the LANP.

Following its independence in 1991 Armenia's transformation process from a socialist central planning system to a market economy significantly affected rural areas where it led to a breakdown of economic structures and social services resulting in a high un-employment rate. Due to the lack of economic alternatives numerous families reverted to subsistence agriculture and animal husbandry, a sector poorly controlled by the Government and existing Laws. The abandonment of the socialist agricultural cooperatives, the privatization of livestock herds, hand-in-hand with the dismantling of industrial production facilities and processing plants are partly responsible for the still growing rural poverty typifying the Support Zone of the LANP. Armenia's labour force by occupation indicates

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that today 46.2% of the country's employment is provided by the agriculture sector, the remainder by industry and services.

The total area under protection in Armenia in form of **State Reserves** (3), **National Parks** (3), **State Sanctuaries** (25), **and Natural Monuments** is 308,000 hectares (6 % of the country's land surface area and 4% Lake Sevan). *State Reserves* enjoy the strictest protection status of the four protected area categories in use, followed by *National Parks* (equivalent of IUCN category II) and *State Sanctuaries* (IUCN category IV). State Sanctuaries are areas which may have scientific, educational, historical, cultural and/or economic value. The main goal of Sanctuaries, however, is the protection of ecosystems and species listed as "rare", "threatened" or "endangered", and/or which are of high scientific and ecological significance. Sanctuaries do not enjoy the status of a "Legal Person" under State Law as do National Parks. In Armenia, 91% of the terrestrial protected areas are forest ecosystems. It is recognized that several ecosystems are under-represented in the National Protected Area System. That applies in particular to Mountain Steppe and Sub-alpine Tundra Ecosystems typifying the Javakheti Ashotsk Region.

In 1995 the Ministry of Natural Resource (MNR) was entrusted with all aspects of Armenia's protected area system that is administered by the Bioresources Management Agency created in August 2002 by Government Decision N 1236-N under the umbrella of the MNR (now renamed "Ministry of Nature Protection").

The creation of the LANP and associated Sanctuaries significantly add to the overall viability of Armenia's still expanding Protected Area System.

1.5. Enabling Policy and Legislation

Since independence in 1991, a series of new Laws has been developed in Armenia, including regulations relating to Protected Areas (1991), a Land Code (1991) and a Forest Statute (1994). A Law relating to the protection of flora and fauna is currently being prepared by the Ministry of Nature Protection to be reviewed by NGOs and scientific institutions before final government approval. Key Laws relating to biodiversity conservation and protected areas are:

- Law on Principles of Environmental Protection (1991)
- Law on Protected Areas (2006)
- The Land Statute (1991)
- The Water Statute (1992)
- The Forest Statute (1994)
- Law on Environmental Impact Assessment (1995)
- Law on Nature Protection and Payments for Use of Natural Resources (1998)
- Law on Flora 1999
- Law on Fauna 2000

The most relevant Laws regarding biodiversity conservation and protected areas are the **Forest Statute** and the **Law on Protected Areas**. The Forest Statute regulates the protection and use of forest, including the conservation of biodiversity within such areas. The Statute stipulates that all

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forests are State property, and the Government is responsible for their use. However, the economic situation, including private land ownership, is not addressed by these regulations. The Forest Statute is currently under revision by the Ministry of Nature Protection. It is aimed at regulating relations with respect to biodiversity conservation, protection and regeneration.

The **Law on Protected Areas** outlines procedures for the establishment and management of protected areas and their relationships with other sectors. Under this Law, State Reserves, State Conservation Areas, National Parks and Natural Monuments are considered protected areas. The Law on Protected Areas is based on those developed elsewhere in the former Soviet Union, and does not account for the changing socio-economic and political situation in Armenia, particularly with regard to land privatisation and the establishment of the private sector. A number of issues need to be clarified under the existing Law, particularly the rights and responsibilities of public and private sectors, and the role and participation of local communities and NGOs in protected areas. In addition, clear plans for conservation regimes and opportunities for sustainable use are not included in this Law, and the status of different protected areas is not considered. The current system is restrictive and would benefit from a broader range of protected area categories being recognised.

Laws on Flora and Fauna provide scientifically determined regulations on the conservation, management and regeneration of natural populations of plants and animals. These Laws regulate both the conservation and use of wild species.

The **Law on Nature Protection and Payments for Use of Natural Resources** defines payments made for use of biological and natural resources, including who needs to pay, types of payments, levels and methods of payment, and mechanisms to deal with violation of this Law. This Law was only adopted at the end of 1998, and specific Regulatory Acts have not yet been developed.

In the 1990s Armenia has joined a number of International Conventions and Agreements which relate to biodiversity conservation. Obligations regarding biodiversity conservation resulting from these Conventions are summarized as follows:

- **Convention on Wetlands of International Importance** especially Waterfowl Habitat (Ramsar Convention, 1971). Armenia ratified the Ramsar Convention in 1993; however despite the international importance of Lake Sevan and Lake Arpi, little has been done to implement the obligations under this Convention.
- **Convention on Biological Diversity** (CBD, Rio de Janeiro, 1992). This Convention was ratified by Armenia in 1993, and the first stage of implementation is currently being undertaken along with the development and implementation of the National Biodiversity Strategy and Action Plan to meet reporting requirements to the Convention (2003).
- Convention concerning the Protection of the World Cultural and Natural Heritage (**World Heritage Convention**, Paris, 1972). This Convention was ratified by Armenia in 1993; however there is little available information on its implementation.

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- **United Nations Convention to Combat Desertification** (UNCCD, Paris, 1994). The UNCCD was ratified by Armenia in 1997. A project is currently being developed to meet obligations under this convention.
- **United Nations Framework Convention on Climate Change** (UNFCCC, Rio de Janeiro, 1992). The UNFCCC was ratified by Armenia in 1993, and “First National Communication of the Republic of Armenia under the United Nations Framework Convention on Climate Change”, was published in October 1998 the production of the second country study is underway.
- **Convention on International Trade in Endangered Species of Wild Fauna and Flora** (CITES, Washington 1973). Armenia has “accessed” the convention (October 2008) but not yet ratified.
- **Convention on the Conservation of European Wildlife and Natural Habitats** (Bern Convention, 1979). Armenia joined the convention in August 2006 and ratified in April 2008.

In 1993 the Republic of Armenia was among the first countries to ratify the Convention on Biological Diversity. In becoming a Party to the Convention, Armenia accepted its commitment to biodiversity conservation and sustainable use within the country, as well as to active co-operation in tackling the biodiversity issues of regional and global relevance, including the sharing of genetic resources and biodiversity information. Under its obligations to this Convention, the Government of Armenia has undertaken the production of a First National Report on Biodiversity in Armenia, and the development of a Biodiversity Strategy and Action Plan (BSAP). These were financed by GEF via UNDP, and undertaken by the Ministry of Nature Protection with the collaboration of a range of leading national specialists.

The BSAP outlines a national strategy for biodiversity conservation, defines the priorities for implementation of this strategy, and integrates these priorities with plans for sustainable development and other relevant projects and programs. The BSAP provides the basis for effective and integrated conservation, taking into account the current socio-economic conditions, and incorporates a range of short-, medium- and long-term actions to promote biodiversity conservation, sustainable use and regeneration.

Prior to the collapse of the former Soviet Union a number of Laws regulated biodiversity conservation outside protected areas, including human activities around rivers, water catchment areas, use of pastures, and collection of plant and animal species. However, many of these regulations are now out of date, and do not take the new economic situation into account. A number of Key Laws relating to the use of biological resources have still not been adopted (such as the Laws on Fauna and Flora), and there is currently no legislation regulating bio-safety or ecotourism. Many of the Laws do not correspond to international standards, and there are still a number of international biodiversity-related Conventions to which Armenia does not yet belong.

The most relevant International Conventions/Agreements in the context of the Lake Arpi National Park and related Sanctuaries are the Convention on Biological Diversity and the Ramsar Convention. Article 8 of the CBD obliges member states to:

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- Establish a system of protected areas with representative samples of all ecosystems (terrestrial and aquatic) characteristic for the country;
- Develop guidelines for the selection, establishment and management of protected areas;
- Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species (flora and fauna) in natural surroundings;
- Regulate or manage biological resources important for the conservation of biological diversity with a view to ensuring their conservation and sustainable use;
- Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species; develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations.

The Ramsar Convention emphasizes the need to conserve wetlands of great importance, which requires member states to include at least one wetland on the list of Wetlands of International Importance (i.e., Lake Arpi is one officially proclaimed and recognized Ramsar Site).

In 1997 a **Bilateral Agreement** entered into force between the Government of Armenia and the Government of the Republic of Georgia on co-operation in environmental protection (including co-operation on nature conservation issues). This agreement created the legal basis for further development of co-operation in the field of protection of migratory species of birds and mammals and their migration routes (Article 6). Article 8 of the Agreement directly assesses the obligations of both parties in terms of co-operation concerning the establishment of transboundary protected areas to protect transboundary ecosystems.

In the context of the establishment of the LANP and associated Sanctuaries, the following land related legislation applies:

The **Constitution of Armenia**, adopted in 1995, recognises and protects the right of ownership of land and other real property. It guarantees free development and equal protection of all forms of property including land and real estate. However, under exceptional circumstances, the Constitution provides the State with the power to acquire private property for public purposes. Such acquisition should be accompanied by compensation to the owner.

The **Civil Code of Armenia** (1999) abolished outdated rules governing private commerce and property, and encourages free-market activities, and guarantees individual property rights.

The new **Land Code**, enacted by the Parliament in July 2001, regulates all details concerning the rights and restrictions of ownership including land use, preservation of nature and resources, and control over land in the context of the Civil Code (see Art. 202 - Civil Code). The Law is directed towards sustainable development in the rural areas of the country. With regard to potential restrictions in private land use caused by the establishment of protected areas, mainly the following provisions are of relevance:

- Rights and restrictions of land leasing (Art. 36, 37)
- Land mortgage (Art. 39)
- Change of land plot boundaries, consolidation and subdivision (Art. 95)

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- Rights and restrictions of land parcel division (Art. 96)
- Approval procedure of the land use plan (Art.142 – 146)
- State control of land use (Art. 147, 148)

The goal of the new Land Code is to support the development in rural areas. In particular, it is also directed to introduce proper land use planning, an important feature for the Support Zone of the LANP and associated Sanctuaries.

1.6. Administrative Framework

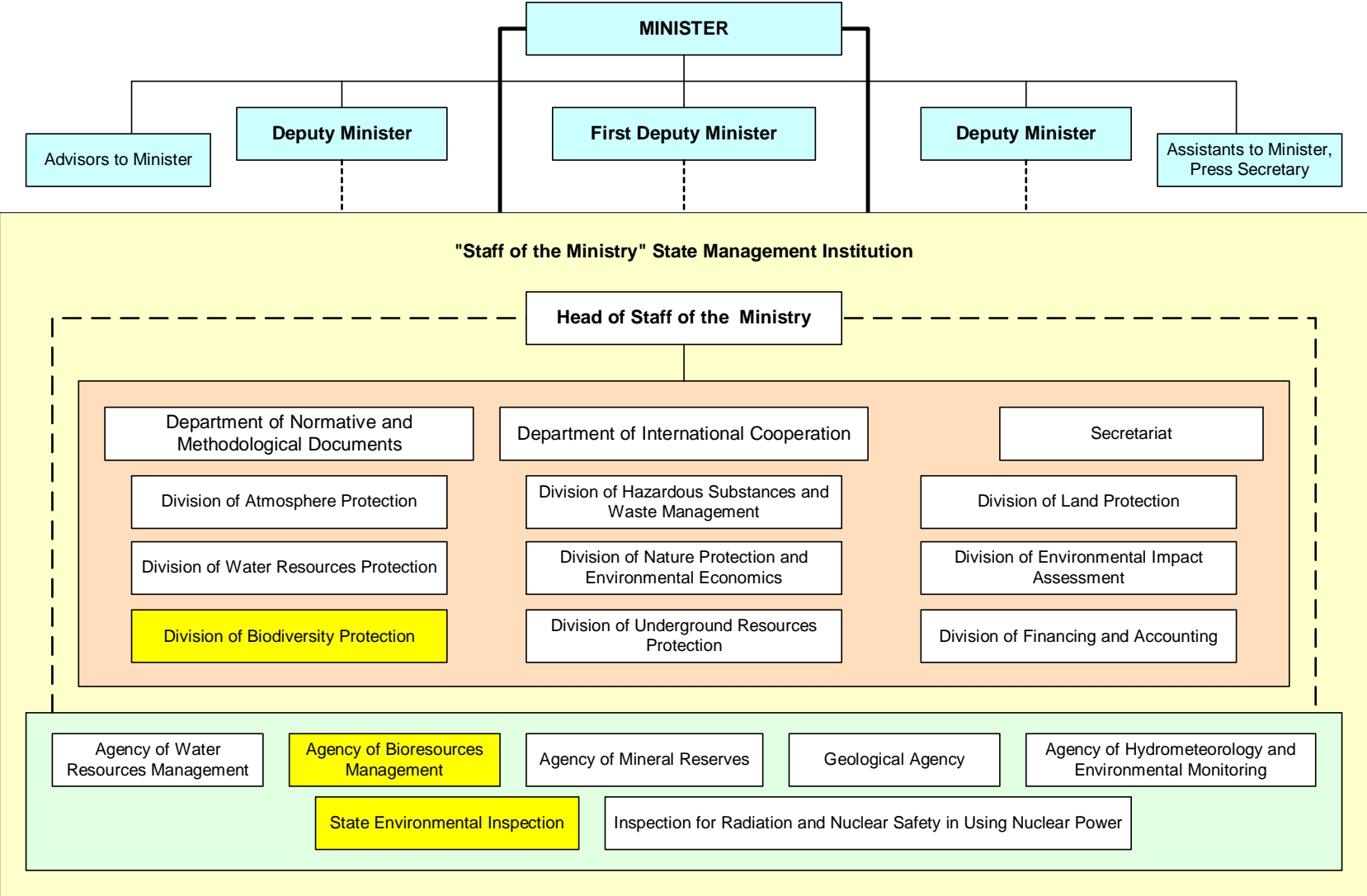
1.6.1. The Ministry of Nature Protection of Armenia and Subordinated Units

Armenia's environmental administration is characterised by a strong vertical management structure with limited Authority for the regional agencies. The central agencies are responsible for policy development and drafting of regulations.

The **Ministry for Nature Protection (MNP)** has overall responsibility for the management of biodiversity conservation and sustainable use in the Republic of Armenia (RoA). The Ministry implements State Policy relating to biodiversity conservation, sustainable use and species regeneration, and oversees environmental regulations, the development of principles for and monitoring of natural resource use. The central department of the MNP is responsible for biodiversity conservation, inter-ministerial co-ordination, and international collaboration on this issue.

The new regulation and structure of the Staff of the Ministry of Nature Protection of the Republic of Armenia was approved by Governmental Decision in August 2002. The organisational structure of the Ministry of Nature Protection is shown by Figure 1.

Figure 1: Organisational Chart of the Ministry of Nature Protection



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The **Division of Biodiversity Protection** is a Structural Unit of the MNP. The main responsibilities of the Division are as follows:

- Development of the overall policy and strategy concept on biosafety issues;
- Preparation of terms of reference and preparation of arrangements necessary for drafting the legislative and sub-legislative normative-methodological texts in the field of protection, use and reproduction of biodiversity and bioresources (including specially protected areas);
- Development of environmental regulations related to the use of wildlife, bioresources and specially protected areas, and to the issue of permits for use and export-import of wild plants and animals;
- Maintaining the Red Books of Armenia;
- Methodological support in policy-making for the Ministry's Units involved in conservation of bioresources and specially protected areas; and
- Co-ordinating the preparation of National Programs.

The **Agency of Bioresources Management** is a separate unit of the MNP. The Agency was established in August 2002 by Governmental Decision and is responsible for scientific research, conservation, ensuring the sustainable use and reproduction of natural ecosystems (including forests), landscapes and biological diversity, objects of flora and fauna, natural heritage and supporting the management and state policy formulation in the corresponding fields. One of the four Divisions of the Agency of Bioresources Management is in charge of Specially Protected Areas Management.

In the frame of its competence the Agency:

- Ensures the conservation, reproduction and sustainable use of bioresources and biodiversity, and elaborates the normative and methodological Acts in the corresponding fields;
- Prepares and implements research work on flora and fauna;
- Implements activities for sustainable use, restoration and reproduction of flora and fauna;
- Prepares national statistics, inventories and conducts monitoring, sets up data bases and cadastres of wild flora and fauna;
- Participates in the assessment of the state of ecosystems, prepares scientific analyses and implements projects;
- Prepares proposals for the sustainable use of ecosystems and bioresources and for their reproduction;
- Conducts scientific and experimental activities in the field of use and reproduction of ecosystems and natural resources; and
- Licenses the use of flora and fauna.

During 2002 several state budget institutions and organisations, including National Parks and some of State Reserves under the Authority of the MNP, have been reorganised as “State Non-Commercial Organisations” (SNCO). They have the advantage to establish their own financial budget and may keep revenues and profits stemming from own economic activities to be reinvested in new equipment and human resources development. Under the Ministry of Nature Protection the following SNCOs were grouped:

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- “Sevan” National Park” SNCO (SPA)
- “Dilijan” National Park” SNCO (SPA)
- “Khosrov Forest” State Reserve” SNCO (SPA)
- “Shikahogh” State Reserve” SNCO (SPA)
- “Park and Reserve Complex” SNCO (are included SPAs).

The “Erebuni” State Reserve, “Sev Lich” and “Vordan Karmir” State Sanctuaries as SPAs belong to the “Park and Reserve Complex” SNCO. The recently established three sanctuaries of “Khor Virab”, “Gilan” and “Goravan” are managed by “Khosrov Forest State Reserve” SNCO, while “Plane Tree Grove” sanctuary is managed by “Shikahogh State Reserve” SNCO.

The former Republican Environmental State Inspection was reorganised as the **State Environmental Inspection** by Governmental Decision in March 2002. The Regulation of the State Environmental Inspection as a separate unit of the MNP was approved by Governmental Decision in July 2002. According to the Regulation, the main goal of the State Environmental Inspection is to promote the protection of the environment and natural resources, their sustainable use and reproduction.

The Inspection is the key environmental enforcement agency. Initially, the Inspection was designed as the water, air pollution and land contamination control agency. Later the Inspection was empowered as enforcement Authority related to nature and forest protection.

The State Environmental Inspection has a network of 11 Regional Branches with its headquarters in Yerevan. The territorial Authority of the regional offices is identical with administrative borders and they are usually based in the Marzpet Headquarter. The Minister is the official Head of the Inspection and there is also a Chief Inspector who manages the Inspection.

The Inspection ensures the compliance with the environmental legislation in the following areas: air and water pollution, land use, biodiversity conservation and forest protection. For Law violations the Inspection can impose corrective measures, fines, compensation of damages or refer crime to prosecution. The Inspection operates in accordance with the annual work plan. The overall work plan summarises the work plan of the Regional Inspections and must be approved by the Ministry.

The Inspection controls the enforcement of the environmental legislation. In the field of protection and use of bioresources the Inspection controls the enforcement of:

- The norms and contract responsibilities for the conservation, use and reproduction of flora and fauna, forest and specially protected areas;
- The prescribed requirements for the export and import of wild flora and fauna; and
- The prescribed requirements of the existing rules for the protection of representative flora and fauna included in Red Books.

In addition to the above mentioned Institutions, the Ministry of Agriculture, the Ministry of Education and Science, the State Committee on Real Property Cadastre, and the State Customs Committee with their regional networks share responsibilities regarding the use of natural resources.

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1.6.2. Ministry of Agriculture

The Republic of Armenia Ministry of Agriculture (MA) is the executive authority which develops and implements government's policies in the field of agriculture and forestry management.

The Ministry of Agriculture is an executive body and, among others, has overall responsibility for:

- Elaboration and implementation of the economic policy of the Government in the field of agriculture and food;
- Elaboration of projects for agrarian and food security policy and their implementation;
- Reservoir management (including the **Lake Arpi Reservoir**);
- Supporting seed-farming and livestock breeding, combating quarantine disease of agricultural cultivated plants and the most harmful organisms, organisation of livestock anti-epidemiological activities, implementation of quarantine restrictions;
- Implementation of agrarian inspection;
- Forest management

The MA is responsible for the management of **Agro-Biodiversity** (the Shirak/Javakheti grassland ecosystems are of global importance in this respect) and this is implemented through a number of structures within the Ministry:

- The State Land Cultivation Inspectorate
- The State Soil Inspectorate
- The Department for Protection of Agro-biodiversity
- The State Inspectorate for Livestock Breeding and Husbandry
- The Veterinary and Animal-breeding Department
- Livestock Breeding and Valuable Livestock Species Treatment Department
- The Department for Plant Cultivation, Selection and Nurseries
-

Regional Agrarian Inspectorates are responsible for monitoring Agro Biodiversity. The Ministry of Agriculture manages all forested lands in Armenia through the “Hayantar Enterprise” (Armenian Forest SNCO). The Hayantar currently takes responsibility for thirteen Forestry Sanctuaries.

1.6.3. Ministry of Territorial Administration

The Ministry of Territorial Administration of the Republic of Armenia is a central body of executive authority which develops and implements Government policies, other legal acts, and Ministry regulations.

1.6.4 Ministry of Education and Science

The new Regulation and structure of the Staff of the **Ministry of Education and Science** was approved by Governmental Decision in September 2002. The Ministry of Education and Science develops educational and scientific programs related to biodiversity conservation.

1.6.5. State Committee of Real Property Cadastre

The **State Committee of Real Property Cadastre** is the Republic's executive body responsible for:

- Registration of all immovable property (including land), the Land Cadastre and land allocations;
- Participation in the formulation of land policy and land management principles, as well as in the development of land use schemes, participation in preparation of their terms of reference;
- Preparation and approval of regulations related to the land use schemes.

1.6.6. State Customs Committee

The **State Customs Committee** is an executive body, which is responsible for monitoring the import and export of fauna and flora species, and plays a role in the implementation of relevant health and phyto-sanitary regulations.

There is no effective co-operation between the State Customs Committee and the State Environmental Inspection. The Inspection cannot control the export and import of the wild flora and fauna species and currently there are no reliable data on the respective volumes of wild flora and fauna traded.

1.6.7. Armenian Hunting and Fisheries Union

The **Armenian Hunting and Fisheries Union** (“Hay Vors Miutyun”) is responsible for issuing hunting and fishing permits, in co-ordination with the MNP. The Union was previously financed by the State and was active in all the main hunting regions covering an area of 84,000 ha. The Union currently has a membership of 2,000 hunters, but receives no State support and struggles to conduct its anti-poaching and supplementary activities at a much smaller scale.

1.7. Lake Arpi National Park

The Lake Arpi National Park was legally confirmed by The Government of the Republic of Armenia (RA) Decision No. 405-N from April 16, 2009 titled: “on Establishment of the Lake Arpi National Park and on Approval of the Charters of the Lake Arpi National Park and the “Lake Arpi National Park” State Non-Commercial Organization.

According to this Decision following stipulations are made:

- Establish the Lake Arpi National Park in the Shirak Province of the Republic of Armenia, on the eastern slopes of the Eghnakhagh Ridge, the south-western slopes of the Javakhq Ridge and the mountain grasslands, subalpine meadows and wetland ecosystems between them, including the basins of Lake Arpi, Lake Ardenis and left tributaries of the Akhuryan River headwaters, for the purpose of protection of landscapes and biological diversity, natural monuments and their components, natural development, restoration and sustainable use.
- Define that the State Body liable for managing the Lake Arpi National Park - the State Non-commercial Organization - is the Ministry of Nature Protection of the Republic of Armenia.
- Allow the Lake Arpi National Park State Non-Commercial Organization to implement activities within the regulations specified by legislation of the Republic of Armenia.

Permissible activities specified by the Decision, which are of significant importance to the sustainable development of the LANP’s Support Zone and its communities, is the use of haymaking, livestock grazing, setting up of apicultural facilities, and the gathering of minor products.

Another critical part of the Decision is to ensure that within a 2-month term after the date of effectiveness of this Decision the Lake Arpi National Park State Non-Commercial Organization is registered with the Republic of Armenia.

In accordance with Chapter III of the Decision Article 11, the Organization Management of Lake Arpi National Park is implemented by its founder, its authorized body and acting body, the Director.

In this context it is important to note that this Article implies the potential for co-management by an authorized body, which allows for participation of Support Zone communities and local representatives as key stakeholders of the LANP.

With reference to financing the operational costs of the LANP, the Charter as part of the Decision specifies that “financial resources of the organization ensue from transfers of the state budget of the Republic of Armenia and charges incurred from implementation of activities, provision of services, land leasing, donations, benevolent support and other sources not opposed to the legislation of the Republic of Armenia”.

In this context it is important to note that the Charter stipulates continuing use by Support Zone communities of communal lands incorporated into the LANP in a sustainable way according to policies and regulations designed specifically for this purpose.

In addition:

The Charter provides the legal opportunity for the LANP to retain revenues generated linked to the resource use inside the park (in the “Traditional Use Zone”), tourism, fishing, fundraising, water use, etc.

Lake Arpi National Park is composed of two Sections: (a) The Western Section which covers the water catchment areas of Lake Arpi with a total of 20,450 hectares and the Eastern Section protecting the upper watersheds draining the Javakheti Ridge to the West onto the Javakheti Ashotsk Plateau with an area total of 4,907 hectares.

The Economic Use Zone (referred to in this Management Plan as “Traditional Use Zone”) is entirely composed of Communal Lands (13,098 hectares) and Private Lands (221 hectares). The Communal Lands constitute 52% of the LANP, the Private Lands 0.9 % of the LANP. Names and geographic locations of Support Zone communities are provided by Table 1.6. Of the 19 Support Zone communities, 16 provide communal lands inside the LANP.

Table 1.7: Villages and their location within the Support Zone of the LANP

NAME	X_COORD	Y_COORD		NAME	X_COORD	Y_COORD
Aghvorik	43.76421	41.07561		Paghakn	43.65829	41.06607
Ardenis	43.71947	41.07631		Saragyugh	43.83704	41.14428
Bavra	43.81100	41.12094		Shaghik	43.59215	41.04907
Berdashen	43.67059	41.05723		Sizavet	43.83930	41.10286
Darik	43.67858	41.11994		Tavshut	43.80757	41.08710
Garnarich	43.60257	41.07523		Tsaghkut	43.62467	41.09845
Ghazanchi	43.83485	41.07259		Yeghnajur	43.57220	41.09252
Lorsar	43.60421	41.11200		Yerizak	43.64980	40.98241
Mets						
Sepasar	43.82894	41.04838		Zarishat	43.65877	40.99890
				Zorakert	43.66185	41.09215

1.7.1. Boundary Description and Reference Points

This Chapter describes the Boundaries of the LANP and associated Sanctuaries by major reference Points. A more detailed description is provided by Annex 1. The Boundary definition process of the LANP was implemented in close collaboration with all communities sharing a common boundary with the LANP. All boundary disputes had been resolved during the participatory planning process.

Map 3 shows the key reference Points used in the following boundary description of the Lake Arpi National Park.

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Map 3: Lake Arpi National Park Key Reference Points (Western and Eastern Section)

Starting with the **Western Section** of the LNP, Reference Point 1 of the LANP boundary is located at the south-western corner of the LANP exactly 1 km to the north-west of the international boundary with Turkey (see Table 1.7.1.).

From Point 1 the Boundary proceeds in north- easterly direction to Point 2 (distance: 0.5 km). From this Point it turns north-west following the fence line of the Russian Military Zone to Point 5 (distance: 2 km). From Point 5 the Boundary coincides with the course of the River Karakhanget following the river to Point 33 (distance: 11 km).

From Point 33 the Boundary proceeds in westerly direction to Point 34 (distance: 0.6 km) following the administrative border of Zarishat. From here it proceeds to the north-west following the community border of Berdashen to Point 35 (distance: 0.5 km). From here it proceeds along the Berdashen communal pasture boundary to Point 43 (distance: 4 km).

From Point 43 it follows the road leading to Lake Arpi where it meets the Lakeshore at Point 45 (distance: 0.4 km). From Point 45 the Boundary circles Lake Arpi following the designated Lake buffer zone boundary to Point 101 to the South of Shaghik village (distance: 16 km).

From Point 101 the Boundary coincides with Shaghik Creek, following the Creek westwards to Point 102 (distance: 0.5 km). From this Point it follows the border of the secondary community pasture belonging to the Voghi community to Point 116 (distance: 2.2 km). From here it runs in north westerly direction to Point 117 (distance: 0.5 km) from where it turns east to Point 119 (distance: 0.4 km).

From Point 119 the Boundary continues to the north-west to Point 121 (distance: 0.5 km), from where it continues in north westerly direction to Point 126 (distance: 2 km). From here it follows the course of the Creek Karmrajur to Point 128 (distance: 0.6 km). From here it proceeds to the North along the Garnarich communal pasture boundary to Point 130 (distance: 1.5 km). From this Point it coincides with a seasonal road in north easterly direction to Point 131 (distance: 1.1 km) where it turns west to Point 132 (distance: 0.3 km).

From Point 132 the Boundary proceeds northerly crossing the Garnarich Creek at Point 133 (distance: 1.5 km), continuing to the North where it intersects a seasonal road at Point 134 (distance: 0.5 km). From this Point it follows the Garnarich Creek north easterly to Point 135 (distance: 1.2 km) continuing to the North to Point 137 (distance: 0.8 km).

From Point 137 the Boundary proceeds in north-easterly direction where it meets the Garnarich community boundary at Point 143 (distance: 3.5 km). From here it continues in north-easterly direction to Point 148 (distance: 2 km) from where it turns East to Point 150 (distance: 1 km). From here it follows the Tsaghkut communal pasture boundary to Point 154 (distance: 0.8 km) where it crosses a tributary of the Heghnaget River.

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From the River at Point 154 the Boundary follows the border of the Tsaghkut designated hay meadows in easterly direction to Point 155 (distance: 0.2 km). From here it turns south-east to Point 159 (distance: 1 km). From 159 it turns north-east to Point 162 (distance: 0.7 km), then east to Point 167 (distance: 1 km) continuing to the East where it coincides with the intersecting community boundaries of Tsaghkut and Zorakert at Point 170 (distance: 2.7 km).

From Point 170 it follows the community administrative border of Zorakert south to Point 171 (distance: 0.4 km), then proceeding in easterly direction along a seasonal road to Point 176 (distance: 2 km). From here the Boundary proceeds in southerly direction following the course of the Dzoraget River to Point 180 (distance: 1.2 km). From here it turns south-east to Point 183 (distance: 1 km), then east to Point 186 (distance: 1 km).

From Point 186 the Boundary turns south, crossing the main access road to Darik, proceeding to Point 187 (distance: 0.7 km). From here it runs in easterly direction to the intersection of the communal boundaries Zorakert/Ardenis at Point 188 (distance: 0.3 km). From here it continues in southerly direction to Point 190 (distance: 0.4 km) and Point 195 (distance: 1.5 km) along the Boundary of the designated arable land category of Ardenis.

From Point 195 the Boundary runs east following the Ardenis access road to Point 198 (distance: 1 km), from where it continues to Ardenis Pond at Point 199 (distance: 0.2 km). It then follows the shoreline of the Pond to Point 202 (distance: 0.6 km). From here it proceeds along the Boundary of some private land lot to Point 205 (distance: 0.7 km).

From Point 205 the Boundary runs straight east to Point 206 (0.3 km) where it turns to the south east up to Point 212 (distance: 2 km). From here it follows the Ardenis access road to Point 215 (distance: 1.8 km). From here it proceeds along the communal pasture boundary of Aghvorik to Point 226 (distance: 3 km), continuing in south- easterly direction to where it meets the access road at 227 (0.1).

From Point 227 the Boundary follows the road north-east, crossing the community borders of Aghvorik and Tavshut at Point 230 (distance: 1 km). From this Point it follows the community boundary of Tavshut to the North at Point 236 (distance: 2 km), which is located at the intersection of the community boundaries of Aghvorik, Tavshut and Bavra. From here it runs in north-westerly direction to Point 240 (distance: 1.3 km) where it meets the international boundary with Georgia.

From Point 240 the northern boundary of the LANP is formed by the international boundary with Georgia proceeding for 45.6 km to within 1 km of the tri-country boundary intersection (Armenia, Georgia and Turkey). From this intersection the LANP Boundary follows the 1 km security buffer line with Turkey (the 1 km buffer from the Turkish border constitutes a designated Military Security Zone) for 29.2 km south where it meets the Boundary Reference Point 1.

In the **Eastern Section** of the LANP starting at the south-west corner of the Eastern Section of the Lake Arpi National Park (Point 241), the Boundary coincides with the Boundary of the State Land running north to Point 245 (distance: 3 km). From here it continues along the State Land Boundary (shared with Ghazanchi communal lands) to Point 250 (distance: 2.4 km), continuing north along the State Land Boundary to Point 254 (distance: 4.8 km). It continues along the State Land Boundary

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shared with Saragyugh to Point 262 (distance: 4.9 km) coinciding with the International Boundary with Georgia.

From Point 262 the LANP Boundary follows the International Boundary with Georgia to the East at Point 268 (distance: 6 km). From here it follows the height of the land (water divide) of the Javakheti Ridge to the South, reaching the Javakheti Peak (2910 m) at Point 292 (distance: 11 km). From here the Boundary turns west to the starting Point 241 (distance: 2.8 km).

Table 1.7.1.: Coordinates of Key Reference Points of Lake Arpi National Park

Arpi Lake National Park Key Boundary Reference Points

Reference Point	Longitude	Latitude		Reference Point	Longitude	Latitude
1	43.634065259	40.959712899				
2	43.639708961	40.967741408		167	43.622094386	41.113439067
5	43.627081082	40.983813518		170	43.652336777	41.107433488
33	43.674964063	41.030301223		171	43.651119680	41.104655616
34	43.667309740	41.030140922		176	43.669647836	41.108498147
35	43.664626114	41.034665995		180	43.668842620	41.101783128
43	43.651998815	41.058121312		183	43.676257378	41.097227567
45	43.650249408	41.058966970		186	43.683466373	41.095525152
101	43.593221401	41.043807780		187	43.686423769	41.089197668
102	43.586350579	41.045562250		188	43.690202111	41.088147344
116	43.564472659	41.039091615		195	43.700947583	41.077871888
117	43.561433407	41.043028922		198	43.711737084	41.076018650
119	43.564918781	41.044088053		199	43.714677397	41.075453551
121	43.559532445	41.046432156		202	43.717690130	41.078033160
126	43.552852720	41.051822078		205	43.717284311	41.079811973
128	43.546443004	41.052160789		206	43.721553784	41.080363236
130	43.536885525	41.059465522		212	43.734410204	41.073692384
131	43.542430327	41.068459186		215	43.753364252	41.072934013
132	43.538937443	41.068373602		226	43.770704216	41.082351827
133	43.537300291	41.070179864		227	43.771673191	41.081958861
134	43.537223686	41.072009959		230	43.778219987	41.085183517
135	43.547842291	41.076886247		236	43.768527415	41.099383896
137	43.549028280	41.083529302		240	43.751439205	41.108727625
143	43.573110965	41.106721768		241	43.915416011	41.065511317
148	43.588284007	41.115054969		245	43.907086236	41.079743475
150	43.597736809	41.114040693		250	43.895061416	41.098053826
154	43.602229546	41.116404647		254	43.890238677	41.140844703
155	43.604195876	41.116778787		262	43.901875603	41.166260616
159	43.609517506	41.110559576		268	43.954242812	41.165700228
162	43.614082108	41.114941310		292	43.946443376	41.072703665

1.7.2. Akhuryan Gorge Sanctuary

Starting at the southern outflow of the Akhuryan River (see Map 4) at Point 1 the Boundary of the Sanctuary proceeds in north westerly direction along the height of the land of the Ridge bordering the Gorge to the West to Point 36 (distance: 7 km). From here the Boundary proceeds in north-easterly direction to Point 77 where it intersects the Akhuryan River (distance: 7.5 km).

From Point 77 the Boundary turns south-west following the upper tree line of the aspen stands lining the Akhuryan River to the East up to Point 102 (distance: 2 km). From here it proceeds along the communal pasture boundary of Krasar to Point 107 (distance: 0.8 km). The Boundary then turns into south-easterly direction along a seasonal road to another seasonal road intersection at Point 121 (distance: 1.5 km). It then follows along the pasture boundary of the Krasar Community to the intersection of the community boundaries of Krasar and Hovtun at Point 167 (distance: 5 km).

From Point 167 the Boundary runs south following the ridge line of the mountain which borders the River Canyon to the East at Point 205 (distance: 3.5 km). From here it proceeds to starting Point 1 (distance: 0.8 km). The Key reference points of the Akhuryan Sanctuary boundaries are presented by Table 1.7.2.

Map 4: Akhuryan Gorge Sanctuary

Table 1.7.2.: Coordinates of Key Reference Points of Akhuryon Gorge Sanctuary

Reference	Longitude	Latitude
1	43.79742523000	40.96513486200
36	43.74870031000	41.00932994400
77	43.81469414900	41.02597316300
102	43.80094739200	41.01346039700
107	43.80658478600	41.00954833100
121	43.79136376700	41.00806909700
137	43.78760434900	41.00020788400
205	43.79760681100	40.96446220600

1.7.3. Ardenis--and Alvar Sanctuaries

i) Ardenis Sanctuary

Starting at the Northwestern corner of the Ardenis Sanctuary (see Map 5), Point 1, the Boundary proceeds in south easterly direction parallelling the Ardenis Creek to the North at Point 16 (distance: 1 km). From here it continues in south-easterly and northerly direction to Point 62 (distance: 2.5 km).

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From Point 62 the Boundary turns south to Point 67 (0.7 km). From here it turns in easterly direction and then to the North along the border of the southern floodplain border of the Ardenis Creek to the starting Point 1 (distance: 3 km). For reference points see Table 1.7.3.

ii) Alvar Sanctuary

Starting at the Northwestern corner of Alvar Sanctuary at the Akhuryan River Irrigation Channel, Point 1, the Boundary follows the northern line of the wetlands to the East to Point 107 (distance: 8.9 km). From here the Boundary turns west to the starting Point covering the entire Alvar wetlands (distance: 6.5 km). For reference points see Table 1.7.3.

Table 1.7.3: Coordinates of the Reference Points of Ardenis and Alvar Sanctuaries

Points Alvar	Longitude	Latitude	Points Ardenis		
1	43.728916	41.074663	1	43.728916	41.074663
16	43.737993	41.07129	16	43.737993	41.07129
62	43.75301	41.069003	62	43.75301	41.069003
63	44.75301	42.069003			
64	45.75301	43.069003			
65	46.75301	44.069003			

Map 5: Ardenis and Alvar Sancturries

1.8. Biophysical Framework of the Lake Arpi National Park and Sanctuaries

1.8.1 Climate

The Javakheti/Ashotsk Plateau is characterised by a harsh, predominantly continental climate, considered extreme and inhospitable. The Plateau is located at elevations ranging from 1,500 to 3,100 m. Average temperature in mid-July is recorded at 15°C for the central part of the Plateau. Mean temperature ranges from -13°C in January to +13°C in July with an annual average of +1°C. There are 210 days annually with a daily temperature above Zero Centigrade. The vegetation period averages 160 days. Approximately 2,400 hours of sunshine are recorded for the area. The mean annual precipitation is 550 mm. Winds are pronounced in spring and fall.

Due to the harsh climate and high elevation, the Javakheti Plateau is typified by a treeless mountain steppe and sub alpine and alpine meadows. The region has remained treeless since the Ice Age. Artificial pine plantations dating back to the Soviet era are scattered throughout the Plateau (established between 1930 and 1950).

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Due to the inhospitable climate and harsh living conditions, the population density in the target area is relatively low with a continuing trend of emigration from the area. In winter time, the project area experiences big communications challenges for almost six months due to snow levels of 1,5 m and above.

1.8.2. Geology/Soils/Geomorphology

The Javakheti Region of Armenia is located on a high mountain plateau. Geographically, it represents the northernmost part of the mountain plateaus of the Near East. To the North and West it is bordered by the slopes of the Hektapinski (or Gukasanski) Ridge, to the East by the Javakheti Ridges and to the South it gradually connects with the Yerevan Plateau. The total area covered by the Armenian Section of the Plateau and surrounding mountains is approximately 350 sq km.

Geologically, the Plateau is composed of volcanic rock materials originating from the Miocene, Upper Pliocene and the Pleistocene. Elevations range from 1,500 to 3,042 m. The Plateau is composed of a flat table and softly undulating terrain. Except for the Ardenis Pond (surface area of approximately 10 ha), Lake Arpi with a total surface area of approximately 3,100 ha is the only Lake found in the Armenian Section of the Plateau. Wetlands characterise the Akhuryan drainage system to the South of the Plateau. The Lakes were formed as a result of volcanic activity.

Soils vary with elevation, slope, and edaphic conditions. The higher reaches of the Akhdag and Javakheti mountain ranges are characterized by mountain meadow soils, turning into meadow brown semi-desert soils at the foothills. The larger part of the Lake Arpi Plateau is covered by chernozems, interspersed with meadow-swamp soils found mostly in depressions and along the old Akhuryan Riverbed. Bedrock surface soils characterize the sidehills of the Akhuryan River Gorge.

1.8.3. Hydrology

The Western Section of Lake Arpi National Park protects all water catchment areas (22,000 hectares) of Lake Arpi. The Eastern Section of the LANP (4,907 hectares) protects the larger part of the water catchment areas of the Ashotsk and Ghukasyan Rivers draining the West-facing slopes of the Javakheti Mountain Ridge. Both rivers merge with the Akhuryan River north of the Akhuryan Gorge, draining the Plateau via the Gorge. The Javakheti Plateau is one of the most important water catchment and supply areas of Armenia, providing potable water to the city of Gyumri and numerous other communities, and irrigation water to downstream users in the Ararat Valley .

Lake Arpi had been a natural Lake until 1950 (or 1956, see below?) when it was dammed to provide irrigation water via an artificial canal constructed parallel to the Akhuryan River for the Akhuryan Reservoir, located south-west of the Region's capital Gyumri, near the Turkish border. The canal water is also used to operate the Gyumri hydro-electric power plant. Prior to damming, the lakewater volume averaged 5 Mio m³. The Lake's average depth used to be less than 50-70 cm and its total water surface area approximately 5 km². In 1950s Lake Arpi was converted into a Reservoir.

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On completion of the Dam the average water surface area of the Arpi Reservoir increased to 22,1 km² with a volume increase to an average of 90 Mio km² and an average depth of 1-1.5 m. The maximum storage capacity of the Reservoir is 110 Mio m³. From 2001 to 2002 the Reservoir was used to less than half its capacity, resulting in significant fluctuations of its water table. The Lakewater reaches its highest volume by June.

The Ministry of Agriculture had been provided official Authority over the Arpi Reservoir in 1995 through its Directorate of Reservoirs. Changes in management responsibility for Arpi Reservoir management Authority are under review.

The largest and most important of the six tributaries of Arpi Reservoir is River Chivin, providing almost 30% of the total inflow into the Reservoir. The inflow is located to the North-west of the lake. River Chivin is fed by more than 60 natural springs. River Chivin provides about 25 million m³ of water per year to the Arpi Reservoir.

The Eastern Section of the Plateau characterized by Rivers Ashotsk and Ghukasyn and their tributaries has a significantly higher water storage capacity resulting in a much more balanced flow regime, taking into consideration the significant abstraction for drinking water (down to Gymri Region out of this upper basin) from two locations upstream of the gauging station at Krasar. The main reason is obviously a much higher storage capacity of subterrain soils (young volcanic formations, high porosity of tuff), also formed by the high flow volumes of upwelling groundwater at the locations of abstraction. Mean monthly flows in April and June cover only 40% of the annual flow compared to 65% in the Zorakert River Basin, one of the Lake Arpi feeder stream. This relation is to be considered as natural as the drinking water abstraction is almost stable throughout the year. Also the relative discharge per catchment area (litres per second/sq. km) is more than 50% higher than in the western part of the upper Akhuryan Basin. Downstream of the Arpi Reservoir this natural hydrological flow regime is heavily altered. Roughly 80% of the annual flow is discharged in the period June to October while in the period April to June only about 20%. Mean monthly flows in July and August are roughly 15 times higher than in low flow periods.

Wetlands, marshes and oxbows are mostly found along the former Akhuryan River below the village of Berdashen. The Ardenis Pond (10 ha) is the only other natural Lake located on the Javakheti/Ashotsk Plateau in Armenia. All villages situated in the Support Zone of the LANP receive their potable water from natural springs located inside the LANP.

It is important to note in this context that the Water Resources protected by the Lake Arpi National Park and Sanctuaries are the most important feature of the Javakheti/Ashotsk Plateau reflecting the critical need for sustainable protection of catchment areas for the benefit of Armenia and the Plateau's ecosystems.

1.8.4. Vegetation and Flora

Armenia supports a surprisingly high diversity of plant and animal species, including numerous endemic, relic and rare species. Armenia is botanically diverse; some 3,500 species of vascular plants have been recorded, giving a density of higher plants (100 spp. / km²) that is one of the

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highest in the world. Armenia is considered one of the most important centres for **Agro-Biodiversity** in the world, with extensive areas supporting wild relatives of crops and agricultural varieties.

Endemic plant species represent 3% of vascular plants in Armenia (as compared to 1.5% in other Caucasus Regions). The overall species diversity in Armenia is relatively high, particularly with respect to lower plants, given the size of the country.

Biogeographically, the Javakheti Plateau forms part of the Musket-Javakheti Biogeographical Area, represented by steppes, meadow-steppes, sub-alpine and alpine meadows, wetlands and petrophilous vegetation. Meadows and meadow-steppes are most characteristic for the Javakheti Region. Steppe plant communities (located between 1,800 –2,500 m) grow mostly on chernozem soils. They are characterized by *Festuca salcata* and *Stipa capillata* grasses, mostly found along slopes of southern exposure and in flat areas. Dominant herbs include *Dactylis glomerata*, *Trifolium alpestre*, *Medico dzavakhetica* and several *Geophytes* (i.e., *Gagea*, *Muscari* etc.). Field steppes occur only along northern slopes which are dominated by *Stipa tirsia* accompanied by *Betonica macrantha* and *Aster ibericus*. The vegetation of the region is characterized by mesophilous features.

The plant community “hygrophilous tall grasslands” (upper limit is 2,000 m) is dominated by *Phragmites australis*, *Typha latifolia*, *T. angustifolia* or *T. laxmanii*, *Schoenoplectus lacustris* and *Sch. tabernaemontani*. Rare and endangered species such as the Siberian iris (*Iris sibirica*), Slender gladiolus (*Gladiolus imbricatus*), *Traunsteinera sphaerica* and *Sellia rosenii* which are all included in Armenia’s Red Data Book are still common to the tall grasslands typifying the surroundings of Lake Arpi and the Akhuryan wetlands. “Hydrophilous short grassland” has developed above 2,300 m elevation. It is confined to small areas. Dominant species include several species of the *Equisetes* genus. Smartweed (*Polygonum amphibium*) dominates the Lake Arpi vegetation.

The Javakheti Plateau remained treeless throughout the Holocene until today. Unaltered landscapes are found in elevations above 2,000 m where mountain steppe dominates. Pristine natural landscapes appear to be confined to the upper reaches of the mountain ridges and the hilly terrain straddling the borders with Turkey and Georgia. The latter is a result of the “No-Access” Russian Military Zone along the border with Turkey which now constitutes the Core Zone of the LANP.

Mountain steppes are the dominant landscape for most of Armenia, particularly at altitudes above 1,500 m (at altitudes of up to 2,000 m in the North and 2,400-2,500 m to the South). Sub-alpine meadows in the target area occur at elevations above the transitional zone of the mountain steppe ecosystem (above 2 000 m) to be replaced by alpine meadows/alpine tundra along vertical transitions, found up to 3,000 m in the LANP.

Around 670 species of higher plants have been recorded in the area of which 22 are included in the Red Data Book of Armenia and 22 are endemic to this part of the Caucasus. The abundance of many ornamental plants – orchids, gladioluses, irises, poppies and lilies – makes the area very attractive in spring and summer time.

1.8.5. Fauna

Of around 17,500 invertebrate and vertebrates species recorded for Armenia, approximately 329 are considered to be rare or declining in population size. Approximately 2% of the faunistic species are endemics. According to the zoogeographic subdivision of the Caucasus, Javakheti belongs to the Sevan Asia Minor Sub-Province of the eastern Mediterranean Province. Animal species found in the area are also typical for eastern Turkey and south-western Georgia. About 40 species of mammals are recorded (or expected to occur) for the Javakheti Plateau, represented by six insectivorous species, eight bat species, 13 rodent species, one hare species, ten carnivore species and two ungulates. Both ungulate species however as well as lynx and bear are rare visitors in this treeless region. Larger mammal species currently found on the Plateau are the European hare (*Lepus europaeus*), the Marbled polecat (*Vormela peregusna*), Badger (*Meles meles*), European otter (*Lutra lutra*), Red fox (*Vulpes vulpes*) and Wolf (*Canis lupus*). Hares, foxes, and wolves are spread throughout the entire region, whereas the Marbled polecat is recorded only at the border with Georgia (surroundings of the Lake Madatapa).

Five mammal species are listed in Javakheti as declining in population size: two hamster species (*Cricetulus migratorius* and *Mesocricetus brandti*), Wolf, European otter, and Marbled polecat. Two species of Armenia are found only in this region: the Nehring's mole rat (*Nannospalax nehringi*) and the Marbled polecat. Six of the species listed are endemic to the Caucasus: Nehring's mole rat (*Nannospalax nehringi*), Brant's hamster (*Mesocricetus brandti*), two vole species (*Terricola daghestanicus*, *Terricola nasarovi*), and the shrews *Sorex caucasicus* and *Neomys schelkownikowi*. The habitat of these species concentrates on the border of the Plateau that is shared by Armenia and Georgia and the Javakheti Mountains.

The only non-native wild mammal is the muskrat *Ondatra zibethicus*, which was introduced to the Khanchali Lake in the middle 1980s and meanwhile has colonised most of the Javakheti Lakes, including Lake Arpi and Ardenis Pond.

The Javakheti Plateau is better known for its avifauna. The territory of Arpi Lake is identified by Birdlife International as Important Bird Area (IBA). More than 140 bird species have been recorded for the area -mostly for the Georgian Section of the Plateau- of which 80-85 species are known to nest in the target area. The other species are either migrants, summer visitors or their status remains unclear. Most of the bird species are related to the Lakes and Wetlands of the Plateau. Some of the more common species include thirty representative of the *Charadriiformes* family (ten of them are nesting in the area) and 24 species of the *Anseriformes* family of which ten are known to nest on the Plateau. Seven species are of global conservation concern.

The Javakheti Region is one of the few areas in the Caucasus where breeding populations of the Common crane (*Grus grus*), White stork *Ciconia ciconia*, Great White Pelican (*Pelicanus onocrotalus*), Dalmatian Pelican (*Pelicanus crispus*), and Velvet scoter (*Melanita fusca*) are found. Storka are common to the northern part of the Armenian Section of the Javakheti Plateau.

The Velvet scoter (*Melanita fusca*) occurs on Lake Arpi, as well as breeding pairs of the Dalmation pelican (*Pelicanus crispus*). The Armenian Gull (*Larus armeniacus*) is the only endemic water-related species at Lake Arpi with a large breeding colony found on two small islands of the Lake.

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Thirteen species of amphibians and reptiles are reported for the Javakheti Plateau including the green toad (*Bufo viridis*), two species of frogs (*Rana macrocnemis* and *Rana ridibunda*), six species of lizards (*Anguis fragilis*, *Lacerta agilis*, *Darevskia valentini*, *D. nairensis*, *D. armeniaca* and *D. unisexualis*), and four species of snakes (*Natrix natrix*, *N. tessellata*, *Coronella austriaca*, *Vipera sp.*). The Darevesky's viper (*Vipera darevskii*) is endemic to the Caucasus Region. The only locations in the world where this species has been found so far are along the Javakheti Mountain ridge in the north-eastern part of the planning area. All four lizard species are endemic to southern Georgia, Armenia and eastern Turkey, although the key range of *D. valentini* and *D. armeniaca* lies on the Javakheti Plateau. The lizards *D. nairensis* and *D. unisexualis* are recorded exclusively for the southern limits of the Javakheti Plateau. All other amphibian and reptilian species are evenly distributed over the region.

The aquatic fauna of the Lake Arpi and Ardenis Pond remained largely undisturbed until 1946 when the dam was established at Lake Arpi converting the natural Lake into a Reservoir. Former native fish species of commercial interest to local communities included the three species of *Salmo fario* (Lakeform), *Leuciscus cephalus orientalis*, and *Barbus lacerta cyri*.

In the early 1960s, *Coregonid* fish species from northern Russia jointly with Carp (*Cyprinus carpio*) were introduced to Lake Arpi. At a later stage, the Crucian carp (*Carassius carassius*) from southern Russia spread throughout the Lakes and Ponds of the Plateau including the Arpi Reservoir and Ardenis Pond. As a result, the native fish fauna and the benthic flora and fauna changed dramatically.

The number of insects and other invertebrates is rather low, but the presence of many endemic species for Armenia, Southern Caucasus and the wider Caucasus Ecoregion is seen as particularly valuable. Lake Arpi and its adjacent areas are characterized by mostly water related species. For this area 10 species of dragonflies have been recorded, 8 species of othopterous insects, 139 species of beetles, 14 species of butterflies and moths. One beetle sub-species endemic to Armenia has been recorded (*Elaphrus hypocrita araxellum*) three sub-species of beetles endemic to the Southern Caucasus (*Silpha carinata armeniaca*, *Pachnophorus tessellatus armenus*, *Bembidion nitidulum fraxator*). Furthermore, two species of beetles (*Carabus cribratus*, *Omophlus caucasicus*) and three sub-species of butterflies (*Pieris pseudorapae suffossa*, *Meleageria daphnis versicolor*) endemic to the Caucasus Ecoregion have been found. The Blue butterfly (*Maculinea arion*) which is included in IUCN's Red List of Threatened Species has been recorded.

The mountain ranges north of Lake Arpi above 2100 m bordering Georgia to the North are rich in invertebrates (i.e., 8 species of othopterous insects, 16 species of butterflies and moths and 173 species of beetles of which 2 species are endemic to Armenia: *Trechus melanocephalus* and *Nocaracris cyanipes*).

For the Eastern Section of the LANP along the west facing slopes of the Javakheti Mountain two species of dragonflies, 8 species of othopterous insects, 16 species of butterflies and moths, and 202 species of beetles have been identified.

The invertebrate fauna of the Akhuryan River Gorge is highly diversified. Five 5 species of dragonflies, 9 species of orthopterous insects, 13 species of butterflies and moths and 177 species of

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beetles have been recorded of which *Coccidula lithophiloides*, *Stenobothrus sviridenkoi* and *Montana armeniaca* are endemic to Armenia.

1.9. Socio-Economic and Cultural Framework

1.9.1. Demography

Located in the Lesser Caucasus Mountains, Armenia is landlocked being bordered by Azerbaijan with 566 km shared boundary to the East, Azerbaijan-Naxcivan exclave with 221 km shared boundary to the East, Georgia with 164 km shared boundary to the North, Iran with 35 km shared boundary to the South, and Turkey with 268 km shared boundary to the West.

Armenia declared its independence from the collapsing Soviet Union on 23 September 23 1991. Following its independence, a wave of migration by Armenians looking for a better life elsewhere occurred. An Armenian Diaspora has existed throughout the nation's history. An estimated 60% of the total eight million Armenians worldwide live outside the country, with one million each in the U.S. and Russia. Significant Armenian communities are located in Georgia, France, Iran, Lebanon, Syria, Argentina, and Canada. The current population of the country is around 3 million and decreasing.

The Republic of Armenia is administratively divided into the Provinces of Marzer, Aragatsotn, Ararat, Armavir, Geghark'unik', Kotayk', Lorri, Shirak, Syunik', Tavush, Vayots' Dzor, and Yerevan (the Capital of Armenia).

The LANP and its associated Sanctuaries and Support Zone are located in the northern part of the Shirak/Marzer Provinces. These are the former Amasia and Ashotsk Districts in Shirak. First settlements in this area date back, at least, 5,000 years. In the past, this high Mountain Region was used mostly seasonally for summer livestock grazing, hunting and fishing. Current settlements and ethnic composition were influenced by a number of different factors during the past three decades.

In 1988, the area suffered from a major earthquake causing major damage to the northwestern part of the country. Numerous villages were destroyed and many houses damaged, never to be reconstructed. Initially, the project area was settled by ethnic Azeris. Following the earthquake and rising tensions between the Armenian and Azeri population, the ethnic Azeris started to leave the area already from 1989 onwards. With the breakdown of the Soviet Union in 1991 and the following war with Azerbaijan, Armenians previously living in Georgia around Lake Paravani, decided to move back to Armenia and to settle in the Lake Arpi area, currently constituting the majority of the population in the LANP Support Zone. When the people arrived to settle in the Support Zone communities, they had to fend for themselves, mostly living below poverty levels, mostly relying on artisanal agriculture and livestock. By 1991, the Soviet built kolkhoz enterprises (cattle farms, dairies) within the larger LANP area, had already collapsed exacerbating the problem of unemployment.

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The total number of registered communities located in the Support Zone of the LANP is 14 (registered as “qualifying communities”) with a combined population of 4,754 (see Table 1.9.1.). Except for the small settlement of Darik (3 families), all Support Zone communities are located outside the LANP boundary.

Table 1.9.1.: Population of the LANP Support Zone communities

Village Name	Registered Population	Actual Population	Number of Registered Households
Aghvorik	136	84	40
Ardenis	146	127	41
Bavra	620	500	141
Berdashen (Paghakn)	292	284	65
Garnarich (Yeghnajur)	259	261	75
Ghazanchi	605	542	145
Mets Sepasar	948	866	226
Saragyugh	213	170	46
Shaghik	184	124	35
Sizavet	395	385	88
Tavshut	430	391	93
Tsaghkut (Lorasar)	286	186	71
Zarishat (Yerizak)	105	100	53
Zorakert (Darik)	135	131	40
Total	4754	4151	1159

1.9.2. Local Economy, Actual Land and Resource Use

No larger industries or factories as found during the Soviet era in the LANP Support Zone exist anylonger. None of the previous kolkhoz enterprises which were either based on meat production or dairies has remained operational. Several small factories are operational restricted to the cities of the District.

The service sector in the LANP Support Zone plays a minor role, mostly restricted to small-scale trade (mobile traders) selling minor goods in the villages. Other private and public services are concentrated in the town of Gyumri, where larger shops, restaurants, petrol stations and hotels can be found.

The economy of the LANP Region is largely based on subsistence agriculture. Major economic activities in the past centred on meat and dairy factories which all but one had been abandoned in the Post Soviet era. The only surviving operation is a small cheese processing plant located in Mets Sepasar.

Although most families live of subsistence agriculture, numerous persons from the Support Zone communities work abroad (mostly in Russia) supporting their families at home. Others receive cash

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remittances from relatives living abroad. A small percentage of the local work force is employed in the service industry and other sectors. Others are working as seasonal labourers. Job opportunities are very limited within the region.

Honey production, collection of mushrooms and herbs (“shushuk”) is practiced in almost every village of the Support Zone for household use only.

Due to the isolation of the LANP Support Zone, poor road conditions and transport facilities, access to potential markets for cash crops is very limited and goods sold in the target area come at high prices. At current there are few incentives for cash crop production due to the low land capacity; agricultural surplus production is practically non-existent. Families focus on small gardens within the vicinity of their homes where they grow for their subsistence needs potatoes, vegetables and herbs.

Agricultural machinery is in high demand as available tractors, mowers and transport facilities are basically outdated and in poor condition. Privately owned machinery is offered on service basis against payment in cash or in kind. Every second household owns at least one horse which plays again an important role in fulfilling local transport requirements. Bee-keeping can also be found on a small-scale level. Numerous areas classified as “arable lands” in the LANP Support Zone are currently used as pasture and hay-fields. Others are cultivated with livestock fodder crops.

Previous efforts involving the drainage of wetlands and irrigation for the cultivation of crops such as potatoes and grains generally showed rather poor results due to the extreme climatic conditions, poor soil fertility and the short vegetation period. Consequently, many fields have been abandoned in favour of livestock production. It may safely be assumed that any agricultural activities will remain marginal in the target area considering the elevation, unfavourable climate and soils.

Livestock production on the mostly community owned natural grasslands surrounding the Support Zone villages, is the most important economic activity for villagers in the Lake Arpi Region. Relatively low range productivity, overstocking (over-grazing) and poor range control, however, are responsible for the visible range deterioration with localized signs of erosion throughout the Javakheti/Ashotsk Plateau. The communal grazing areas are leased out by the communities to livestock owners on a 25-year Lease basis.

In this context it is noteworthy that Lease fees constitute the most important source of revenue for the communities, mostly used to cover operational costs.

Cattle and sheep are predominant in the local economy. The village usually employs one shepherd who grazes cattle or sheep from individual owners except for calves and breeding bulls. Smaller communities have developed a rotation scheme among family members with participation of all involved families. Cheese is the cash crop in the region as alternative production schemes do hardly exist or are not possible at all in the given climate.

Cattle are indispensable to rural households, providing milk, cheese, yoghurt, butter and sour cream. One of the most important aspects of cattle breeding is the production of manure which collected and dried in the summer constitutes the only source of energy for most households of the LANP Support

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Zone communities (cooking and heating for the 8 months long, harsh winters). Dairy products and dung-bricks play an important role in the local subsistence economy and may also explain the rather high cattle numbers per household.

The wetlands located along the former Akhuryan River are mostly used for hay-making. Hay producing areas are in short supply and insufficient for the currently high livestock numbers which have exceeded the carrying capacity of much of the Plateau's designated grazing areas.

Although there is repeated interest to develop fish farms and to intensify fishing in Lake Arpi, there are at present no commercial fishing activities of any importance. The potential for commercial fishery at Lake Arpi is considered low although artisanal fishing for subsistence may be more important to local families as a source of protein.

1.9.3. Land Tenure

After independence in 1991 land reforms focused on land privatization. From 1991 to 1993 the Republic of Armenia experienced a rapid privatization wave, transferring much of the land and buildings into private property. Most of the Soviet style State Farms and agricultural co-operatives were dismantled and/or privatized. Until now, more than 60% of the land cadastre titling, including surveying and mapping, is completed.

Large tracts of land remain in State ownership. Pasture land and forests have not been subject to privatization. Both land use categories are available for leasing only. According to the new Land Code, enacted by Parliament in 2001, State-owned lands can be converted to agricultural land or used for other purposes if the proposed use does not contravene other State Laws (i.e., important conservation areas, land designated for common use etc.).

Land privatization in the LANP Support Zone concentrated in the past mostly on family plots and structures within communities, not affecting the land surrounding communities. A very low percentage of land in the LANP and Support Zone has been privatized. Most livestock grazing areas and hay-fields have been converted into communal ownership. During the land privatisation process, each family member obtained 1 hectare of land. On average, local farm families with less than three children cultivate now 5 hectares, families with more than three children up to 10 hectares.

SECTION II: VISION AND GOALS FOR THE LAKE ARPI NATIONAL PARK

2.1. Vision

The “Vision” for the Lake Arpi National Park and its Support Zone has been developed at the kick-off workshop that started the participatory Management Planning Process for the LANP in October 2008. The Vision was elaborated by the 78 multi-stakeholder workshop participants, composed of LANP Support Zone community members, representatives from the three Government levels, scientists, resource specialists, Private Sector representatives and NGOs active in the target area. The Vision Statement expresses the long-term view by the workshop participants and the communities located in the Support Zone of the LANP and forms the basis for strategies needed to reach the goals embedded in the Vision Statement (to be achieved by the year 2030). Key elements of the Vision Statement as expressed by the workshop participants include:

- LANP and Support Zone community-based, and co-managed;
- LANP own legal entity and independent administrative structure;
- Long-term tangible and intangible benefits to the Support Zone communities and future generations;
- Sustainable resource use of the designated Economic Use Zone inside the NP Support Zone;
- Long-term conservation benefits especially from water, biodiversity and tourism;
- Improved economic conditions stabilizing population;
- Tourism development to favour employment by locals;
- Population growth dependent on economic growth;
- Sound Management Plan for LANP and Support Zone;
- Well regulated issues related to Lake Arpi;
- Local processing of agricultural products, livestock and other resources;
- Sustainable drinking water;
- Alternative energy sources;
- Future generations with improved living conditions thanks to international assistance Programs;
- Government commitment supports development of target area;
- Clean environment;
- Adequate health care system;
- Educational facilities, capacity development, cultural centers;
- Expansion and diversification of agriculture;
- Winter sport facilities;
- Protection of land surrounding Lake Arpi;
- Carpet production;
- Improved social infrastructure;
- High level of environmental awareness;
- Small enterprises created;
- Support Zone communities enjoying special privileges regarding business establishment and sustainable resource use inside Support Zone and communal lands inside the NP;
- High level of biodiversity of LANP is protected.

The elements to be incorporated into the Vision Statement reflect the wish by the workshop participants for the sustainable use of the communal lands to be incorporated into the LANP requiring the participatory elaboration of policies, rules and regulations which safeguard the sustainability of the proposed resource- and land use of the LANP and its Support Zone. The resulting Vision Statement reads as follows:

Vision Statement for the Lake Arpi National Park, affiliated Sanctuaries and Support Zone:

By the year 2030 Lake Arpi National Park and its Support Zone will be known as an outstanding community-planned area which is successfully protected and used as a result of an efficient and effective collaborative community-based management that is based on a sound Management Plan and Business Plan for Lake Arpi National Park and associated Sanctuaries, fully endorsed by the Government of Armenia. A representative sample of the unique sub-alpine grassland communities characterizing the Shirak Region enjoys sustainable protection which is extended to the protection of the watersheds feeding Lake Arpi, one of the most important water sources in Armenia. International and national investments in the LANP and Support Zone have contributed to the sustainable protection and management of the park and Lake Arpi stabilizing the livelihood of the Support Zone people. This has been achieved through an innovative approach to the sustainable economic development of the Support Zone based on the enhancement and diversification of the agricultural- and livestock sectors, supported through the successful establishment of on-site processing facilities handling locally generated products that are successfully marketed nationally and abroad. The target area is known for its high quality water resources, production of alternative energy, and successful creation of small-scale enterprises with focus on honey production, sheep-wool processing and traditional carpet making. The combined efforts have resulted in new job opportunities, rising living standards, stabilizing the population in Support Zone villages, a high level of environmental awareness, and visible improvement of the social infrastructure. The Lake Arpi area has evolved into a useful model for progressive community-based and operated land use planning and sustainable development in Armenia.

2.2. Goals and Objectives

The overriding objective for the LANP is “to maintain its current character as a high mountain landscape and to manage it as a sustainable resource use area ensuring its maintenance and natural evolution of ecosystem structure and function”. Based on this long-term objective, the management goals and short-term objectives are defined as follows:

Goal 1: Sustainable protection of the biological diversity and ecological integrity of Lake Arpi National Park and associated Sanctuaries Akhuryan Gorge, Ardenis and Alvar.

This will be achieved through:

- **Zoning** the LANP into different use areas;
- Elaborating and implementing practical and meaningful **Management Programs** guiding the sustainable use and administration of the target area as integral part of the Management Plan;
- Implementing the Management Plan through a competent, well trained and -equipped team composed of Government and Support Zone community representatives (**co-management**);
- Demarcating the Boundaries of the conservation areas and controlling access and land/resource use;
- Establishing close collaboration between LANP administration, community Rangers and resource users;
- Collaborating with the authorities for the Javakheti National Park in Georgia, which will share a common border with the LANP, defining and implementing joint protection, and use policies and jointly enforcing the rules and regulations applied to both areas.

Goal 2: Commitment by the Regional Authority, Support Zone communities and LANP and Sanctuary users to the harmonic development and protection of the conservation areas in accordance with the Management Plan and supporting Business Plan.

This will be achieved through:

- Promoting the importance of the LANP and sustainable Support Zone development on a national regional and local level;
- Establishing the LANP and Support Zone as a useful model for community-based and operated land use management;
- Proving to the Support Zone constituents that the LANP and Sanctuaries provide direct and indirect economic and social benefits.

Goal 3: The economic development of the Region and the Support Zone of the LANP is enhanced through the creation of the LANP.

This will be achieved through:

- Implementing the Management Plan and Business Plan and promoting the economic development of the LANP and the Shirak Region;

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- Generating benefits to constituents through the use of LANP resources;
- Developing capacity of the co-managed LANP personnel and user groups and ensuring know-how transfer for well targeted and compatible support zone activities;
- Improving natural resource management and **protection of high quality water sources** originating from the LANP;
- promoting inter-ministerial and international donor support for the benefit of regional development.

Goal 4: Promote the LANP and Support Zone as a tourist destination.

This will be achieved through:

- The elaboration of a well designed, targeted, marketed and implemented Tourism Program that makes full use of the cultural, educational and recreational opportunities offered through the LANP, its Support Zone, and the Region within given limitations;
- The development of a visitor infrastructure meeting international standards within recognized limitations.

Goal 5: Financial sustainability of the LANP, associated Sanctuaries and Support Zone.

This will be achieved through:

- The elaboration and implementation of a well designed Business Plan that makes full use of revenue-generating opportunities from the LANP centred on the sustainable protection and use of **high quality potable water** for downstream communities, the provision of irrigation water, and water for downstream hydro-electric power plants.

Goal 6: The LANP and its Support Zone serve as a sound Community-based Natural Resource Management Model for the Republic of Armenia and neighbouring countries.

This will be achieved through:

- Hands-on training and capacity development in sustainable resource and land-use management;
- Participation of Support Zone communities in the elaboration and implementation of the LANP Management Plan, supporting Business Plan and the Support Zone Development Plan to be embedded into a Spatial Integrated Land Use Plan for the Shirak Region jointly developed with representatives from Support Zone communities;
- The LANP's contribution to the country's biodiversity conservation efforts and protected area system and the sustainable socio-economic development of the Region;
- Wide distribution of this Management Plan, supporting Business Plan and sustainable Support Zone Development Plan for learning purposes.

SECTION III: ZONING OF THE LAKE ARPI NATIONAL PARK AND SANCTUARIES

3.1. Zoning Concept

The “Zoning” of a National Park is a common management tool which facilitates management and enforcement of rules and policies applying to a designated use zone within a National Park. The LANP Planning Team decided to use this tool in order to guide infrastructure development as well as traditional and future resource use in due consideration of ecologically sensitive Core Areas to be set aside for safeguarding the ecological integrity of the LANP and affiliated Sanctuaries. The Charter of Lake Arpi National Park stipulates the LANP stratification into the following four zones in accordance with Armenia’s Law on Protected Areas:

- Reserve
- Recreational
- Economic

The Armenian term “Reserve (Zone)” equals the internationally widely used term “**Core Zone or Intangible Zone**”, the Armenian term “Recreational (Zone)” the international term “**Visitor or Tourism Zone**”, and the Armenian term “Economic (Zone)” the international term “**Traditional Use/or Multiple Use Zone**”. It is pointed out that the Boundaries of management zones used in context with National Parks are strictly arbitrary. Their sole purpose is facilitation of management by designated area. Internationally, several other zone categories are in use with a large flexibility of application. “**Recuperation Zone**” is another commonly used term for degraded areas which are temporarily set off-limits until the carefully monitored recuperation process is completed. On successful recuperation this zone can be converted into any other more fitting zone category. The only zone with stricter boundary regulations is the “**Core Zone**” which enjoys the highest protection status protecting the core ecological values of the ecosystem(s) a National Park is expected to protect. In accordance with the Armenian State Law, the “Reserve Zone” of a National Park does not permit access and/or any use by the public. It is set aside for ecosystem conservation and protection of biological diversity. The only permissible uses are research and/or monitoring.

For the purpose of clarity and to avoid any misconception the seemingly more fitting term “**Core Zone**” instead of the Armenian term “Reserve Zone” will be used for this Management Plan and supporting documents. This is mostly because the term “Reserve” used in context with internal zoning of a national park may be mistaken for the term “Reserve” constituting a different protected area category within the Armenian Law on Protected Areas.

In accordance with the LANP Charter, the Economic Use Zone permits sustainable and well controlled land- and resource use. Again, for the purpose of clarity and to avoid confusion the more common and more fitting term “**Traditional Use Zone**” will be used instead of “Economic Zone” for this Management Plan. This is to avoid any misunderstanding regarding the permissible use inside a National Park, which excludes any commercial economic activity in compliance with the definition provided by the International Union of Nature Conservation (IUCN) for the protected area category II, the category assigned to the target area by the Republic of Armenia.

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According to the LANP Charter and Armenian Law, the “Recreational Zone” of a national park permits controlled tourism and recreational activities as defined by the Management Plan.

It appears prudent to emphasize that zone boundaries of a National Park are flexible and can be changed if needed for management purposes at any time. This is in contrast to the perimeter boundary of a National Park which requires a legal geo-referenced survey with cadastral boundary markers to be gazetted and subsequently entered into the national cadastre. Any change to the National Park perimeter boundaries requires official approval by the Republic of Armenia. In comparison there are no binding rules guiding the internal zoning concept. Ecological baseline information and common sense are, therefore, the logical tools to be applied to a sensible and meaningful zoning of the Lake Arpi National Park and associated Sanctuaries.

Although not specifically addressed by Armenia’s Law on Protected Area is the importance of the area bordering the National Park, commonly referred to as “**Support Zone**” (formerly widely known as “buffer zone”). There appears international consensus on the importance of the Support Zone which generally is recognized as an economically marginalized area, due to its isolation and use restrictions placed on people who traditionally may have used the area placed under special protection. One of the Key stipulations of the agreement between the German Government and Armenia on the creation of the Lake Arpi National Park has been the designation of a Support Zone to be subject to an Economic Development qualifying for financial assistance under this Agreement in order to secure the cooperation of the communities sharing a common boundary with the LANP. This has been taken into account by this Management Plan and its supporting Business Plan and Support Zone Development Plan (separate documents).

A preliminary Zoning of the LANP was suggested by the participants of the Management Planning Start-up Workshop in October 2008, subsequently fine-tuned by the five Working Groups assembled from the workshop participants. The consensus decision is to use the zone categories stipulated by the Armenian Law on Protected Areas. However, due to the relatively low value of the LANP proper as a tourist destination, the location of many tourist attractions are located rather outside than inside the LANP, and because all of the LANP except for the “Core Zone” will continue to be used by Support Zone communities for livestock grazing and hay-making, it was decided to forego a specially designated “Recreation (=Tourism) Zone”. Instead controlled and well monitored tourism will be permitted in all of the “Economic Use Zone” where no adverse ecological impacts from tourism are expected to occur. Provisions are, however, made to change this policy if required and designate tourism areas as may become necessary.

Key premise for the creation of Lake Arpi National Park and its associated Sanctuaries are to strike a balance between conservation goals and sustainable land/resource use of communal lands located inside the Lake Arpi National Park and the Sanctuaries. The zoning plan formulated here shows how the balance between the two demands is to be struck in the different parts of the LANP and Sanctuaries. It reflects the allocation of the areas’ resources to the policies guiding the different resource uses. The chosen Zones for Lake Arpi National Park are shown by Map 6.

Map 6: Zoning of Lake Arpi National Park

3.1.1. Core Zone

i) Rationale and Objectives: In accordance with IUCN guidelines for Core Zones of National Parks, the rationale and objectives center on the protection of ecologically unique ecosystems, or parts thereof, which preferably should not have been modified by man. Core Zones have to include representative samples of ecosystems typical of the park. Overall objectives for this zone are the protection and maintenance of biological diversity and natural landscapes, scientific research, environmental monitoring, and environmental education. In essence, the IUCN guidelines are reflected by the Armenian Law on Protected Areas and the Charter for the Lake Arpi National Park.

ii) Policies and Management Guidelines: Key policies and management guidelines addressing the Core Zone of the LANP as proposed by the Planning Team of the LANP Management Plan read as follows:

- The Core Zone(s) should be exempt from active management;
- The use of this zone is confined to Law enforcement activities, strictly controlled research, and educational activities;
- Research activities are only permitted under special permit;
- No permanent research facilities can be established in this zone;
- Research should respect the ecological integrity of the Core Zone;
- Live capture of animals and collection of plant specimens for scientific purposes will be allowed under exceptional circumstances and with special approval by the LANP Management Board and the Ministry of Nature Protection only;
- Copies of research results (raw and processed data) must be provided to the LANP Authority on completion of any research conducted in this Zone;
- The Core Zone may share borders with any other zone except for the Support Zone (“buffer” needed between the Support Zone and the Core Zone). For practical reasons it was decided to forego this stipulation for the Eastern Section of the LANP which now borders communal lands along its western boundaries;
- Access to the Russian controlled Military Zone via the Traditional Use Zone by authorized Military- and Government personnel requires special park permits and is subject to a Memorandum of Understanding between the Government of Armenia and the Russian Military Authority.

iii) Description: The 12,259 hectares Core Zone of the LANP is composed of two parts: The western part (7,352 hectares) covers all but a 1 km wide buffer of the Russian controlled Military Zone bordering the International Border with Turkey to the West and all of Lake Arpi. It protects the most important water catchment areas of the tributaries of Lake Arpi characterized by mostly virgin mountain steppe ecosystems, which have not been used for livestock grazing since the early establishment of the Military Zone in the middle of the last Century and Lake Arpi proper. To the East, the Western Core Zone borders the communal lands of five Support Zone villages which form part of the “Traditional Use Zone” of the LANP (see Map 6).

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The eastern part of the Core Zone (4,907 hectares) encompasses the entire Eastern Section of the LANP. It protects the upper water catchment areas of the tributaries of the Ghukasyan River draining the west-facing slopes of the Javakheti Mountains. This area is covered by mountain steppe ecosystems with insignificant exposure to livestock grazing and/or any other human activities in the past. All of the Eastern Core Zone constitutes State land and is free of human conflicts. The Eastern Core Zone borders Georgia to the North, the water divide of the Javakheti Ridge to the East and the communal lands of five Support Zone communities to the West.

The policies regulating the use of the Core Zones are defined by the Management Programs of this Management Plan (see Chapter 3.2.).

3.1.2. Traditional Use Zone of Lake Arpi National Park

The Traditional Use Zone of the LANP is composed of two parts the terrestrial and Lake Arpi (which also includes part of the “Core Zone” in form of the two bird islands). Because of the different policies and guidelines applying to the two parts of the Traditional Use Zone the two parts are described individually (following Sub-Chapters).

3.1.2.1 Terrestrial Part of the Traditional Use Zone

i) Rationale and Objectives: The rationale and objectives for the establishment of the Traditional Use Zone of the LANP centers on the continuation of well controlled and regulated traditional low impact use of the communal lands which constitute the entire Traditional Use Zone of the LANP. ‘Traditional use’ is defined as ‘historic use’ having taken place well before the legal creation of the LANP and which forms an essential part of the livelihood of Support Zone communities.

Adverse impacts of traditional use in National Parks frequently occur after a breakdown in traditional socio-cultural and socio-economic structures such as in the case of the LANP, where overstocking and poorly regulated livestock movement on the communal lands included in the LANP have led to overgrazing and localized erosion after the breakdown of the structure created during the Soviet era. Under these circumstances a continuation of the traditional use may only be justified if: (a) a total ban on such uses would cause undue economic hardships to the people, (b) the traditional use can be re-established without causing environmental damage, and (c) no acceptable alternatives can be found outside the park area. All three factors apply to the LANP.

Against this background it has been a consensus decision by the LANP Planning Team to allow for a continuation of the current land use under well controlled and regulated conditions. The current use of communal lands located inside the LANP by area is illustrated by Table 3.1.2.-a.

Eight of the sixteen registered Support Zone communities contribute communal land to the LANP incorporated into the Traditional Use Zone all located in the Western LANP Section. All of the Eastern LANP Section is State Land. A total of 48% of the total communal pasture owned by the eight communities (14,944 hectares) is located in the Traditional Use Zone of the LANP. The largest contributions are made by Aghvorik (76%), Ardenis (64%), Zorakert (61%) and Tsaghkut (57%) as

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shown by Table 3.1.2.1-a. Only 2 hectares of grazing land is privately owned within the 25,357 hectares large LANP.

Table 3.1.2.1-a: Communal Pasture Located Inside the Traditional Use Zone of the LANP

Community	Communal Pasture Inside LANP in ha	Total Communal Pasture in ha	% inside LANP	Private Pasture in LANP in ha	Private Pasture in Support Zone
Shaghik	48	288	16	0	0
Garnarich	954	2169	44	0	0
Tsaghut	882	1521	58	0	0
Zorakert	1044	1713	61	0	0
Zarishat	307	2097	14	0	0
Ardenis	843	914	92	0	0
Berdashen	341	1049	32	2	3
Aghvorik	826	1078	77	0	0
Saragyugh	0	717	0	0	7
Bavra	0	381	0	0	1
Sizavet	0	823	0	0	5
Tavshut	0	495	0	0	0
Ghazanchi	0	1001	0	0	0
Mets Sepasar	0	698	0	0	6
	5245	14944		2	22

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Table 3.1.2.1-b: Communal Hay Meadows Located Inside the LANP

Community	Communal Hay Field Inside LANP in ha	Total Communal Hay Field in ha	% inside LANP	Private Hay Field in LANP in ha	Private Hay Field in Support Zone
Shaghik	42	85	49	0	0
Garnarich	219	484	45	26	110
Tsaghut	197	330	60	0	0
Zorakert	241	361	67	0	0
Zarishat	82	741	11	0	34
Ardenis	98	197	50	0	0
Berdashen	0	127	0	0	0
Aghvorik	0	261	0	0	0
Saragyugh	0	329	0	0	0
Bavra	0	276	0	0	0
Sizavet	0	626	0	0	463
Tavshut	0	44	0	0	15
Ghazanchi	0	456	0	0	0
Mets Sepasar	0	110	0	0	110
	879	4427		26	732

Table 3.1.2.1-c: Communal Arable Land Located Inside the Traditional Use Zone of the LANP

Community	Communal Arable Land Inside LANP in ha	Total Communal Arable Land in ha	% inside LANP	Private Arable Land in LANP in ha	Private Arable Land in Support Zone
Shaghik	94	112	84	30	0
Garnarich	207	681	30	40	203
Tsaghut	324	575	56	81	95
Zorakert	438	659	66	42	198
Zarishat	55	1066	5	0	110
Ardenis	128	612	21	0	210
Berdashen	19	677	3	0	499
Aghvorik	262	672	39	0	110
Saragyugh	0	477	0	0	425
Bavra	0	773	0	0	700
Sizavet	0	841	0	0	628
Tavshut	0	611	0	0	374
Ghazanchi	0	1352	0	0	197
Mets Sepasar	0	925	0	0	761
	1527	10033		193	4510

Lake Arpi National Park Management Plan Section III: Zoning

Zorakert is leading the list of communities with the most Hay Meadows located inside the LANP (67%) followed by Tsghkut with 60 %, and Ardenis with 50% (see Table 3.1.2.-b). It is apparent that the dependency of the Support Zone communities on hay from the LANP Traditional Use Zone is of critical importance for maintaining livestock in the winter. The feeding period is unusually long because of the high and long lasting snow cover in the target area with a late start-up of the growing season which does not occur before the beginning of May. Winter fodder for livestock in the target area is a recognized rare commodity. The combined total of Hay Meadow land owned by the eight Support Zone communities inside the Traditional Use Zone is 879 hectares which equals almost 20% of the total Hay Meadow Land owned by the Communities (see Table 3.1.2.1-b). A combined total of 26 hectares privately owned Hay Meadows are located inside the LANP.

The importance of arable land to the Support Zone communities of the Western LANP Section located inside the Traditional Use Zone is highlighted by Table 3.1.2.1-c. Shaghik Community leads the list with 84%, followed by Zorakert with 66% and Tsaghkut with 56%. Although the total community-owned arable land inside the LANP constitutes only 0.1% of the combined total of arable land owned by the communities, it is of significant importance to the Shaghik, Zorakert and Tsaghkut Communities (see Table 3.1.2.-c).

ii) Policies and Management Guidelines: Special policies apply to Park Visitors of the Traditional Use Zone (see Chapter 3.1.3.). No special Tourism Zone has been designated for the LANP for reasons explained earlier. Park visitors are permitted to access the Traditional Use Zone in compliance with the policies, rules and regulations described in the visitor brochure to be handed out to park visitors free of charge jointly with the entrance permit. Policies applying to tourism inside the LANP are described as follows:

- There will be no tourism infrastructure inside the LANP (except for one camping area “Pine” located at the southern shore of Lake Arpi;
- Park visitors need a special permit issued by the LANP Authority for park entry;
- No overnight camping/stay is permitted inside the LANP;
- Visitors are permitted to visit the Traditional Use Zone without guiding services;
- Guide services by guides from Support Zone communities will be available (information to be supplied by LANP Authority);
- Tour guides and operators have to comply with the rules and regulations spelled out in the special “Memorandum of Understanding” and contract agreements with the LANP Authority, a pre-condition for operating in the LANP area;
- Special norms apply to the use of horses (the norms are specified in the agreements with the horse operators from the Support Zone communities);
- Trail-riding and the use of horses require a special permit; the use of local guides for horse related activities inside the LANP is mandatory.
- Horse operators have to be certified by the LANP Authority;
- Visitor activities are subject to monitoring;

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iii) Description: The Traditional Use Zone of the LANP is composed of 100 % communal lands provided by communities of the Support Zone. This zone is confined to the Western Section of the LANP, bordering the Core Zone to the West, the International Border with Georgia to the North and the Support Zone to the South and East. The Traditional Use Zone encompasses the Darik settlement, an enclave, composed of a year-round privately owned dairy production ranch using communal land leased from Support Zone communities.

3.1.2.2 Lake Arpi Part of the Traditional Use Zone

i) Rationale and Objectives: The protection of Lake Arpi as a registered Ramsar site (1993) is crucial for the protection of its unique flora and fauna. The Lake is of global significance as a critical staging area for migratory birds in spring and fall and as a breeding site for the endemic Armenian gull and the Dalmatian pelican (only breeding colony in Armenia). The breeding colonies of the two species are located on the two rocky Lake Islands (8 and 4 hectares respectively).

Following its conversion into a reservoir, Lake Arpi has tripled in size and depth. Untimely changes in the water table, uncontrolled fishing, and the introduction of exotic fish species continue to have significant adverse impacts on the Lake's sensitive ecology.

The overriding objectives for Lake protection are: "conservation of the Lake's and shoreline's sensitive ecology, safeguarding the Lake water quality, regulating water consumption/extraction, and enforcing sound policies and management guidelines which regulate the use of the Lake resources and the use of the Lake as an attractive recreation area".

ii) Policies and Management Guidelines: Following policies and management guidelines applied to the Lake management have been developed by the Lake Arpi National Park Planning Team:

- Protect the water catchment areas of the Lake and feeder streams by better regulating livestock use of upper watersheds and through conservation oriented training of community shepards (total of 70 shepards);
- Prevent sedimentation of the Lake by sound erosion control measure in catchment areas;
- Protect the shoreline of the Lake by providing a 30 m buffer to be free of livestock and use along the shoreline of the Lake, designating specific watering sites for livestock and installing livestock water troughs in villages bordering the Lake;
- No hunting permitted on the Lake or the LANP at large;
- No use of motorized boats on the Lake except for law enforcement purposes by LANP Rangers;
- The use of non-motorized boats is permitted requiring a special permit by the LANP Authority (row boats, canoes and kayaks) with no more than 30 permits issued for boaters per day;
- Fees for Lake use permits will be 1,000 Drams per kayak, canoe/day and 2,000 Drams/row boat/day;
- Access to the two Lake Islands is not permitted except for scientists with a valid research permit and by enforcement personnel for enforcement purposes; floating markers will be used to demarcate the buffer surrounding the Islands;

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- Four official Lake access ramps will be provided at the communities of Garnarich, Tsagkhut, Paghakhn, and Shaghik; concrete boat launching ramps will be constructed at the access Points to prevent erosion; there will be no other Lake access open to the public;
- Access ramps will be maintained by the LANP Authority in cooperation with lakeshore communities regulated by a Memorandum of Understanding;

Policies and management guidelines related to fishing read as follows:

- Commercial fishing will be banned for two years;
- Well controlled commercial fishing will commence on recovery of commercial fish species population;
- Commercial licences will be issued attached to quotas based on proper inventories to be conducted every second year by a professional fishery biologist contracted by the LANP Authority for this purpose;
- Commercial fishing permits will be subject to public bidding; preference will be given to Support Zone residents;
- Each commercial permit will be for a minimum of 500 kg of fish; 20% of the actual market value of the fish will be returned to the LANP Authority; 80% of this revenue will be allocated to the Support Zone fund and 20% to the LANP budget;
- The minimum net size will be no less than 4 cm in diameter;
- Commercial fishing will be restricted to the use of row boats; the season for commercial fishing will be from the 30th of August to the 30th of October to avoid interference with sport anglers and other Lake visitors and to lessen the impact of fish-dependent bird species rearing their young during this time;
- Sport fishing will be permitted from the 15th of June to the 1st of December against a permit issued by the LANP Authority;
- Ice-fishing will be permitted under a permit;
- Two types of sport angling licences will be issued by the LANP Authority: an annual licence (5,000 Drams), and a daily licence (400 Drams); the proceeds are returned to the LANP budget;
- Catch limits, equipment specifications and other restrictions will be specified on the angling licence and permit;
- Special permits will be issued by the LANP Authority for subsistence fishing to local residents free of charge; the use of nets will not be permitted for subsistence fishing;
- Sport fishing will be restricted to 4 kg/day;
- Sport fishing will only be permitted using a licensed local guide;

Other policies and guidelines applied to the management of Lake Arpi are:

- A sound monitoring system will be established and implemented, monitoring water quality, quantity and distribution;
- Monitoring of fish stocks and their food chain, migratory birds, and especially breeding populations of pelicans and Armenian gulls will be mandatory in accordance with the LANP Research and Monitoring Program;
- Buildings can not be constructed within 30 m of the high water mark of the Lake constructed at the Lake;

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- The forests surrounding the Lake will not be utilized; no new trees will be planted inside the LANP;
- Controlled sewage disposal from villages within the vicinity of the Lake will receive priority attention within the Support Zone Development Plan;
- The water monitoring station at the dam will be re-calibrated in order to properly measure water extraction from the Lake (the minimum volume needed to maintain the Lake's ecosystem is set at 5 Mio m³);
- Applications for commercial water extraction from tributaries of the Lake Arpi requires a rigorous environmental impact assessment and a permit authorized by the LANP Management Board.

Policies associated with the two campsites planned at the shoreline of Lake Arpi are covered by Chapter 4.4 (Tourism Program) of this Management Plan; other policies applying to the management of Lake Arpi Researvoir are provided by Chapter 4.1.4.5 of this Management Plan.

iii) Description: Lake Arpi is located in the Western Section of Lake Arpi National Park. The 30 m wide buffer protecting the Lakeshore against livestock borders the Support Zone and the Traditional Use Zone of the LANP. The origin of Lake Arpi is considered tectonic. The Lake bottom is covered by alluvial sediments. Rock outcrops along the shoreline and on the Lake Islands are composed of andesites. Major feeder streams of the Lake draining the Core Zone and the larger part of the Support Zone include the Karmrajur, Katarajur, Yeghnajur, Tsaghkut, Zorakert and Bazirkhan Rivers. Lake Arpi is bordered by the communities of Shaghik, Garnarich, Tsaghkut, Zorakert and Paghakn (see map 6).

3.1.3. Support Zone

i) Rationale and Objectives: The overall objectives for the establishment of a Support Zone for the LANP are: (a) to gain the support of local people for the sustainable protection of the conservation area; (b) equity sharing through revenues generated by the LANP and the Support Zone from resources protected by the park (i.e., water, grazing and haying areas, fish resources from Lake Arpi, etc.); and (c) to make use of environmental education and awareness building opportunities offered by the LANP.

The economic development of the Support Zone has to be compatible with the overall conservation objectives of the LANP, being an integral part of the conservation unit. The Support Zone Development Plan of the LANP is embedded in the Integrated Spatial Land Use Plan for the larger Shirak Planning Region (separate document complementary to this Management Plan).

ii) Policies and Management Guidelines:

Key policies applied to the Support Zone are:

- Economic development and land-/resource use have to be compatible with the conservation objectives of the LANP;

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- To provide Support Zone communities with traditional use opportunities;
- To assist Support Zone communities in their economic development;
- For the LANP Director as the Government representative to jointly with representatives of the Support Zone communities administer the LANP (LANP Management Board).

iii) Description:All communities with communal land located inside the LANP Traditional Use Zone and all communities sharing a boundary with the LANP are located within the Support Zone of the LANP (19 communities and hamlets). The Support Zone covers an area of 32,555 hectares.

3.1.4. Sanctuaries

3.1.4.1 Akhuryan Gorge Sanctuary

i) Rationale and Objectives:The rationale for the special protection of the Akhuryan Gorge centers on its unique ecological features as a result of a combination of its geological/geo-morphological characteristics and special micro-climate. The flora and fauna of the Gorge is rich in biological diversity with numerous rare, endemic and endangered species recorded which are not found elsewhere on the Ashotsk/Lake Arpi Plateau. The Key objective for this area is “to declare the Gorge a “Sanctuary” in accordance with the Armenian Law on Protected Areas in order to provide protection to its unique ecosystems which are increasingly threatened by high livestock numbers currently exceeding the carrying capacity of the Gorge, and against other disturbances”. The Gorge will be administered by the Lake Arpi National Park Authority.

ii) Policies and Management Guidelines:Livestock grazing is permitted under controlled and well regulated conditions specified in agreements by the LANP Authority with the respective communities which own communal lands in the Sanctuary. Other policies:

- For the Hovtun Community to enter into an agreement with the Ministry of Nature Protection to assign the strip of land to the East of the Akhuryan River inside the Gorge to the Amasia community (the small land area under question is of little use to the Hovtun Community because of access problems and would be more fitting to form part of the Amasia communal lands inside the Gorge);
- To close the river banks to livestock activity: no livestock allowed below the Gorge road, more precisely between the Gorge access road and the Akhuryan River, and the left side of the River;
- To close the Akhuryan Gorge access road to livestock movement and as travel/transport corridor;
- Grazing inside the Gorge should not commence before the 15th of May; grazing to be regulated as follows:
 - first grazing cycle 35 days from May 15th to June 20th;
 - second cycle after 20 days rest from first cycle from July 10th to July 20th;
 - third cycle after 15 days rest from second cycle from August 15th to September 15th .
 - All livestock to be removed from the Sanctuary by September 30th;
- Strict adherence to carrying capacity rules designated to Gorge communal pastures; violations of herders exceeding carrying capacity stipulations are subject to fines and the

Lake Arpi National Park Management Plan Section III: Zoning

same conditions imposed on grazing/hay-making related violations inside the Traditional Use Zone of the LANP;

- Protection of all relic aspen stands typical for this Sanctuary against livestock; no livestock activity close to aspen stands is permitted;
- To define jointly with community authorities and herders livestock access to the Akhuryan River inside the Gorge in strategic location in order to minimize damage by livestock;
- No man-made structures of any kind such as buildings, pipelines, transmission lines, roads, dams etc. are permitted over and beyond the existing pipelines and dams;
- For any repair work on pipes and other structures inside the Sanctuary a permit by the LANP Authority is required;
- No vehicle traffic permitted on Gorge access road except under special permit by the LANP Authority;
- The Gorge road will be closed by a barrier (key available for authorized persons only);
- No commercial resource use from the Gorge (except water) is permitted;
- Use of organic fertilizer for grasslands in the sanctuary requires special permit from LANP Authority; no use of un-organic fertilizer and/or pesticides permitted;
- No tree cutting of any kind permitted;
- Collection of medicinal plants for personal use is permitted but subject to a special permit by the LANP Authority;
- Monitoring activities of the Gorge will follow the LANP monitoring plan to be designed by the Chief of the Monitoring Program;
- Tourism activities are permitted in compliance with the Support Zone Tourism Program; activities are restricted to hiking and nature observation, birding, mountain biking, and cross country skiing; one campsite permitted as described by the Tourism Management Program (see Chapter 4.4.) for the Support Zone of the LANP;
- Sport angling is permitted under a special angling permit issued by the LANP Authority with restrictions and rules defined on the angling licence;
- Training to be provided to herders using the Sanctuary.

iii) Description: The Akhuryan Gorge Sanctuary is located at the drop off of the Ashotsk/Javakheti Plateau to the South. It does not form part of the designated Support Zone of the Lake Arpi National Park (because it does not share a boundary with the LANP as a pre-condition to qualify). The Gorge has been identified as a unique conservation area of special protection needs within the Integrated Spatial Land Use Planning Process for the Shirak Region implemented within the framework of creating Lake Arpi National Park (separate supporting document of this Management Plan).

3.1.4.2 Alvar and Ardenis Sanctuaries

i) Rationale and Objectives: The purpose of setting aside both wetland areas as Sanctuaries is because both are part of the officially designated Lake Arpi Ramsar Site and therefore of international importance for waterfowl, migratory birds and nesting areas of rare and endangered species. The objectives for the creation of both Sanctuaries are “to protect the fragile wetland ecosystems and bird breeding areas against unsustainable land- and resource use”.

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ii) Policies and Management Guidelines: Policies and guidelines applying to the Alvar and Ardenis Wetland Sanctuaries are summarized as follows:

- To secure minimum water flow of the Akhuryan River; during dry years convert water from the canal to feed the original River to maintain minimum water requirements;
- To convert officially designated livestock grazing areas into hay meadow category in both areas;
- Hay making is not to begin before the 15th of August;
- Existing Leases are honored; new Leases are subject to the same policies defined for the Traditional Use Zone of the LANP; new Leases for hay-making will consider a year of “rest” every fourth year for all hay meadows; the year of “rest” is exempt from Lease payments;
- Machinery used for hay-making is restricted to vehicles with rubber wheels and light tractors only; horse-drawn equipment is preferred over gas-/diesel powered vehicles;
- Boundaries of both sanctuaries are to be posted;
- Communities currently managing the two areas under the communal land scheme to be informed about the change of status of both areas and implications;
- Land currently classified as “arable” land to be converted into category “hay meadow”;
- No use of fertilizer and pesticides permitted and no introduction of exotic plant and animal species;
- Hunting will be allowed in compliance with Armenia hunting rules;
- non-commercial collection of medicinal plants is permitted requiring a special permit from the LANP Authority;
- Livestock has to be kept away from the lakeshore of Ardenis Pond;
- The drainage of effluents and animal waste from the Ardenis Creek into the Ardenis Sanctuary to be terminated;
- To honour existing Leases applying to the Alvar Sanctuary;
- To monitor status of vegetation to be included into the LANP Monitoring Program.

iii) Description: The Alvar Sanctuary is located along the Akhuryan River approximately 12 km downstream from the Lake Arpi Dam. All of the area is State Land. On expiry of existing Leases no new Leases will be issued for this State Sanctuary.

The Ardenis Sanctuary is located to the South of Ardenis Pond formed by a natural land depression. A detailed description of the site location for both areas has been provided by Chapters 1.1.3 (Sanctuary Ardenis) and 1.1.4. (Sanctuary Alvar) of this Management Plan.

3.1.5. Summary Activity/Use Matrix for designated Conservation Units

The following summary activity matrix (Table 3.1.5.) lists the range of activities recommended by the Planning Team for the LANP. The list of activities is based on identified current and potential uses. New uses may arise in the future and should be guided by the intent reflected in this matrix of activities. Three categories of activities are described:

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Permitted Activities: are those allowed under normal management guidelines and regulations.

Restricted Activities: may be those compatible under certain circumstances and stricter-than-normal management guidelines.

Not Permitted: these activities are considered incompatible with the management objectives for the related zone, or with the capability of the zone to sustain such activity.

Table 3.1.5.: Summary Activity/Use Matrix for Designated Conservation Units

	Zone	Permitted	Restricted	Not	Explanation / Rationale
Livestock grazing (controlled and designated areas only)	TUZ, SZ,		✓		subject to permit
Hay making (controlled and designated areas only)	TUZ, SZ,		✓		subject to permit
Non-commercial collection of medicinal plants and other plant specimens	TUZ, SZ,		✓		Subject to permit
Commercial fishing	AL		✓		Subject to permit
Sport angling			✓		Subject to permit
Non motorized boating	AL		✓		Subject to permit
Research	All		✓		
Monitoring	All	✓			
Hunting	All except CZ, TUZ		✓		✓
Horseback riding, mountain biking, hiking	All except CZ		✓		Subject to permit
Species introduction				✓	
Species re-introduction	All		✓		Subject to feasibility study
Captive breeding				✓	
Wildlife enclosures				✓	
Camping (designated areas only)	TZ,SZ,AS				Subject to permit
Use of pesticides	SZ		✓		
Vehicle use	SZ , AS and TUZ		✓		Subject to permit in AS and TUZ
Agriculture (designated areas only)	TUZ,SZ, ALAS		✓		Subject to permit
Mineral exploration	SZ		✓		Subject to impact assessment
Helicopter use	SZ		✓		Emergency Only
Pest management			✓		Under special circumstances
Recreational Leaseholds				✓	
Commercial development	SZ			✓	
Utility corridors (transmission, pipeline)	SZ		✓		
Tourism infrastructure development	SZ, TUZ, AS		✓		According to infrastructure development plan

CZ - Core Zone; TUZ - Traditional Use Zone; AS – Akhyrian Sanctuary;

SZ - Support Zone; ALAS - Alvar- and Ardenis Sanctuary; AL – Lake Arpi

SECTION IV: MANAGEMENT GUIDELINES FOR OPERATIONS

Management Programs

This section describes five Management Programs, which facilitate the elaboration of activity schedules, annual work plans and budgets in accordance with the stipulations of the Vision Statement for the LANP. The Management Programs chosen for this Management Plan are:

- **Administration Program**
Sub-Program: Accounting and Finance
Sub-Program: Maintenance
- **Traditional Use Program**
- **Protection Program**
- **Tourism, Environmental Awareness, Public Relations Program**
- **Research and Monitoring Program**

In the following Chapters the policies, management guidelines, infrastructure and personnel needs related to each of these Management Programs are presented.

Although a Management Plan is the basis for the long-term planning horizon (20 years), a periodic revision is commonly done in five-year intervals. Revisions are necessary in order to periodically adjust the operational part of the Management Plan (Section IV of this Plan) in response to changing realities and framework conditions. Periodic changes may be required in particular with respect to priority settings and strategies that are designed to meet the overall goals and objectives for the LANP. In this light, the LANP Planning Team proposes to review the Management Plan in five year intervals.

4.1. Administration Program

4.1.1. Governance of the Lake Arpi National Park and Support Zone

The Lake Arpi National Park Working Groups, representing the Planning Team responsible for the policies and management guidelines for the LANP, unanimously decided that the LANP management should proceed under the guidance and supervision of a Management Board with proper representation of the Support Zone communities as key stakeholders of the LANP. This is in due consideration of all of the park area except for the Core Zone (12,259) being communal land owned and managed by the communities of the Support Zone. It is under this premise that the Support Zone communities contributed communal lands to the LANP to be managed jointly with the Minsitry of Nature Protection under a separate Agreement.

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i). The LANP Management Board

The Governance of the Lake Arpi National Park and Support Zone will be the responsibility of the LANP Management Board working under the umbrella of the Ministry of Nature Protection. The Management Board will be composed of the following members:

- The LANP Director (permanent non-voting member)
- One additional LANP staff member (permanent non-voting member)
- One representative of the Regional Governor's Office (Head of the Environment Department) (permanent member)
- One representative of the Ministry of Agriculture;
- One representative of the Territorial Administration;
- One representative of the State Committee of Real Property Cadastre;
- One representative of the Transboundary Committee (permanent member)
- One representative of the local NGO Forum,
- Five representatives of Support Zone communities.

LANP Park staff, the Head of the Regional Environmental Department (or his representative) and the Transboundary Committee are permanent members of the Management Board. All other members are elected by their constituents. The community representatives are elected by ballot with one candidate each proposed by the following five groups of communities and elected by the respective Community Councils. Group 3 composed of two Communities only will alternate its representation on the Board.

- Group 1: Shaghik, Garnarich and Tsaghkut
- Group 2: Zorakert, Berdashen and Zarishat
- Group 3: Ardenis and Aghvorik
- Group 4: Bavra, Saragyugh and Sizavet
- Group 5: Tavshut, Ghazanchi and Mets Sepasar

Key functions and responsibilities of the LANP Management Board are to:

- Review and approve the annual LANP operational plan and budget submitted to the Board by the Director of the LANP in the fourth quarter of each calendar year;
- Arbitrate cases of grievances and conflict;
- Deal with general and contentious issues submitted by Support Zone communities on behalf of their constituents;
- Recommend changes to the Management Plan (approval rests with MoNP) and supporting Business Plan if necessary;
- Sign a Memorandum of Understanding with the Russian Military for access by the Military to the Military Zone as part of the Core Zone of the LANP;
- Specify potential field of collaboration between the LANP and NGOs;
- Seek outside specialist advice on issues which cannot be solved by the Board;
- Approve out-sourcing of contract labour and research if necessary;

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- Present LANP annual budget and operational plan to the Ministry of Nature Protection for endorsement;
- Approve appointment of LANP staff and Park Rangers proposed by the LANP Director and his staff;
- Approve LANP perimeter boundary changes if necessary and register changes with the National Cadastre.

The Management Board elects its Chairperson (majority vote) for a three-year period from amongst the elected Board Members. The Chairperson of the Management Board will announce dates for re-election of Board Members well in advance. It will be the responsibility of the Chair to:

- Arrange and implement four Board meetings annually;
- Prepare and elaborate the agenda for each meeting to be distributed amongst Board Members one week prior to each meeting;
- Chair the Board meetings.

Emergency Board meetings can be called by the Board Chair or his/her representative at any time if required.

The Key functions of the LANP Director or his representative will be to:

- Present the annual operational plan and budget of the LANP at the Board meeting for Board approval;
- Provide a briefing at each Board meeting on progress made regarding the operational plan;
- Report on the budget and all other matters arising in need of Board attention and approval;

Any complaints by Support Zone constituents or other stakeholders related to LANP require a written description of the issue to be forwarded and processed by the Management Board to be at the meeting following the complaint. The Board is ultimately responsible for conflict resolutions and may request legal assistance from the Ministry of Nature Protection as required.

Elected Board Members will automatically be excluded if absent from Board meetings three times in a row. For any other reasons (i.e. gross misconduct) the Board will decide on dismissal by majority vote. If the LANP Director does not meet his responsibilities the Board will submit a written complaint to the Minister of Nature Protection to address the issue. The Board will be consulted on hiring and dismissing of LANP staff by the Park Director. The Board will also be consulted by the Ministry of Nature Protection on candidates proposed for the LANP Director position. Senior positions becoming available within the LANP structure will be publicly advertised. Applicants will be pre-screened by the LANP staff and submitted to the Management Board for approval.

The LANP Management Board maintains the contact with the Trans-boundary Committee composed of representatives from Georgia and Armenia, through its own representative on the Trans-boundary Committee as a permanent Board Member.

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ii) Lake Arpi National Park Authority

The administrative structure of the LANP Authority follows a common staff - line organization, which facilitates reporting procedures. The Program Chiefs operate on the same administrative level and have equal reporting lines. The organizational structure allows for easy and transparent expansion. Depending on the work volume of a Program, additional positions can be added or removed as required, still maintaining clear reporting lines and responsibilities.

The Administration Program of the LANP covers three Sub-Programs dealing with the park's organizational structure, personnel requirements, personnel functions and responsibilities, training, infrastructure development and infrastructure maintenance, equipment purchase, accounting and finance. Due to the small size of the LANP and insufficient work volume the three Sub-Programs will be consolidated under one single "**Administration Program**" to be headed by the Chief of Administration.

The organizational chart (Figure 2) specifies the number of personnel needed for the management of the LANP and associated Sanctuaries. The LANP is headed by the Park Director who is appointed by the Ministry of Nature Protection and one Assistant Director (if deemed necessary) by the Ministry of Nature Protection. Both staff positions together are supported by one secretary and one driver.

The LANP Planning Team proposes to keep LANP staff numbers to a minimum without jeopardizing the sustainable protection of the LANP and its associated Sanctuaries (minimize operational costs). The LANP does not require extensive staff for the following reasons:

- Relatively small overall size of the LANP (25,348 ha) of which a large part (7,352 ha) of the 12,259 ha Core Zone is self-protected being located within the Military "No-Access" Zone protected by Russian Military;
- The only potential threat to the relatively homogenous grassland-dominated ecosystems of the LANP are impacts from livestock over-utilization and hay making; both seasonal and strictly controlled activities;
- No threats exist to the LANP for the six- months winter period when the ground is snow covered requiring limited enforcement activities;
- Low land-/and resource use conflicts due to ownership in the LANP by park neighbours who operate on communal lands inside the LANP's Traditional Use Zone and participate in the management of the LANP;
- Active involvement in Law enforcement and monitoring by 18 Community Rangers provided by the Support Zone communities.

In this light the following LANP staff composition is proposed:

The Protection Program to be headed by a Program Chief (Chief Ranger); the Programs (a) Tourism/ /Public Relations/Environmental Awareness and (b) Research and Monitoring to be consolidated and headed by one Chief of Programs; the Management Programs Lake Arpi/Resource Use inside the Traditional Use Zone/Support Zone to be consolidated and headed by one Chief of Programs; and

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the Program Administration to be headed by one Program Chief. There will be four Program Chief Positions on the same administrative level.

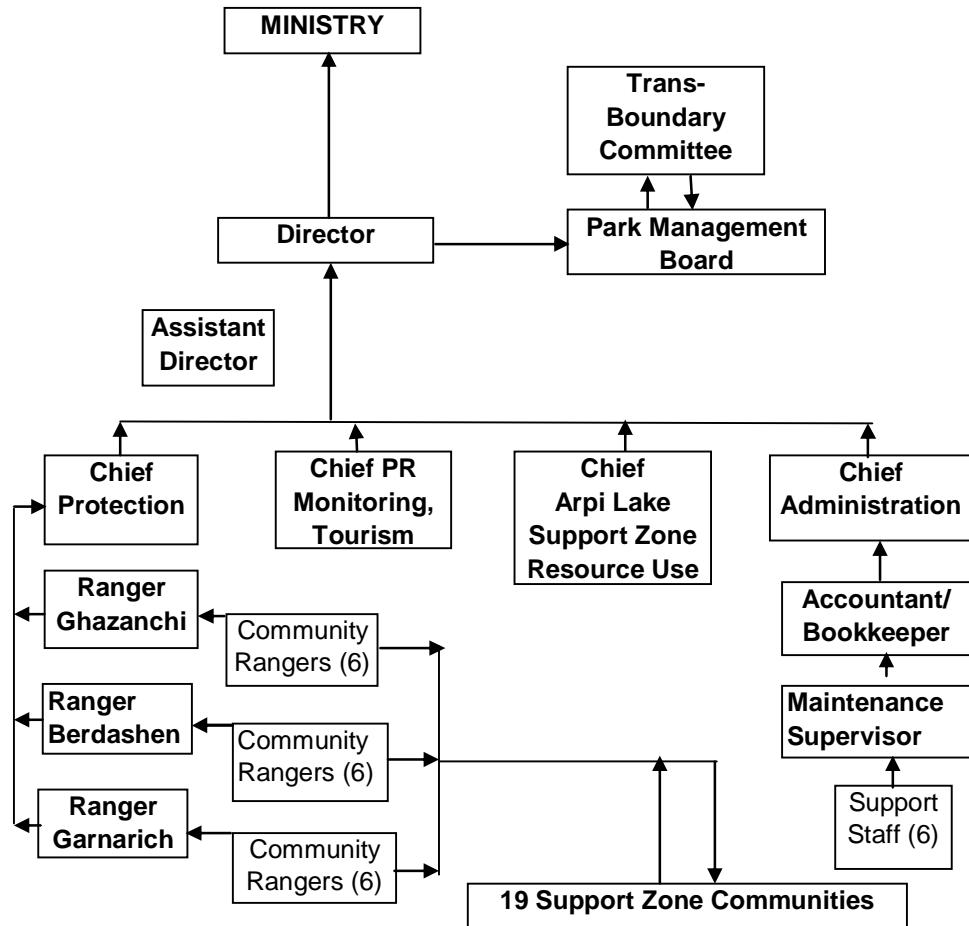
The Chief Ranger will be responsible for the three LANP Rangers located at Ghazanchi, Berdashen and Garnarich. Each Park Ranger will be responsible for the cooperation with and guidance of the 18 Community Rangers associated with the LANP.

The Chief of the Administration Program will be assisted by one Accountant/Bookkeeper and one Maintenance Supervisor. This position will also be responsible for the six support staff reporting to the Maintenance Supervisor (2 night guards, one caretaker at LANP headquarters, one driver and one machine operator).

The total number of permanent staff of the LANP should not exceed 20 persons at any time. Additional positions that may be required in the future may be one Assistant to the Chief of the Monitoring/Tourism Program and one to two Assistants to the Chief of the Lake Arpi/Support Zone/Traditional Use Programs. Depending on the future work load, the Lake Arpi Program may require its own Chief.

The staff structure proposed by this Management Plan will be 17 permanent LANP employees. Eleven well qualified, trained, motivated and well equipped staff supported by a six member support team for a National Park of 25,00 hectares of which only 14,000 hectares require active management, appears quite sufficient to implement the proposed Management Programs and to protect the ecological integrity of the park's ecosystems.

Figure 2: Organizational Structure of Lake Arpi National Park



The LANP Management Authority will operate under the supervision of the LANP Management Board and the Ministry of Nature Protection. The LANP Management Authority will assume full responsibility for the day-to-day activities of the LANP and its overall protection and management in accordance with the Management Plan, Business Plan and Annual Operational Plans. More specifically the LANP will:

- Elaborate annual work plans and budgets for each Management Program to be consolidated by the the LANP Director and senior staff;
- Provide Authority to the Chief Ranger to advertise and select Park Rangers in collaboration with the LANP Administration Unit;
- Community Rangers to be approved by the Chief Ranger;
- Be responsible for the implementation of the operational plan and work Programs, their regular adaptation and impact-monitoring;
- Design, issue and enforce all resource use licences, permits and Lease agreements (tourism operators) related to the LANP and associated Sanctuaries;

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- Retain all revenues generated by the LANP to be deposited into the LANP Trust Account to be used for the LANP operations; any surplus revenue from the LANP will be paid into the Support Zone Endowment Fund and dedicated to the sustainable economic development of the LANP Support Zone.

Staff Functions and Responsibilities: In order to permit Management Program-specific and inter-sectoral management without friction, it is important to precisely describe staff functions and responsibilities for each senior position as follows.

Park Director: The principle functions and responsibilities of the Park Director are to officially represent the LANP on all LANP and LANP related matters of the Support Zone; to assume overall responsibility for park staff and management, to prepare and present consolidated annual budgets and work plans for the LANP Management Board and to generally lobby park matters.

Employment Requirements: academic degree, preferably in a resource management related field, sound experience in management of people and administration, skills in dealing with the public and proven leadership qualities and a minimum of eight years professional experience.

Deputy Director: The functions are in principle the same as specified for the Park Director. The Assistant Director reports to the Park Director. It is suggested that under given framework conditions (low work volume, small-seized LANP and literally the “stand-still” of the LANP during the 7 months winter season) the Park the Director may appoint any of the Senior Staff as “Deputy Director”. It appears not to be justified to appoint a Deputy Director in addition to the four senior staff positions as normally required under Armenian Law.

Employment Requirements: Academic degree in a resource management related field, basic management experience and a minimum of four years professional experience.

Chief Administration Program: The Chief of the Administration Program will assume the overall responsibility for the three Sub-Programs Maintenance, Human Resources and Finance/Accounting.

Employment Requirements: Academic degree, preferably in economics and administration and/or social sciences; sound experience in the management of people and administration and skills in all aspects of human resource management with a minimum of 6 years related work experience. This position is affiliated with three Administration Sub-Programs: (a) Human Resources, (b) Accounting and Finance, and (c) Procurement and Maintenance. The Sub-Program “Human Resources” requires familiarity with the development of a staff code and procedure manual that describes all staff-related matters. The procedure manual will deal with recruitment procedures (job description, advertisement of a position, interviews and selection of suitable candidate), rate scale and allowances/incentives, equity questions, mandatory leave procedures, sick leave and compensation, grievance procedures, maternity leave, insurance matters, and many other aspects in accordance with Armenian Civil Service Policies. Responsibilities also include recruitment and compensation of seasonal and contract labour.

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Head of Sub-Program Accounting and Finance: The Head of this Sub-Program (Accountant/Bookkeeper) is responsible for the overall park budget and all financial matters related to the LANP. The incumbent will produce an accounting and bookkeeping procedure manual. The manual will detail procedures related to the overall budget (accounting and bookkeeping) and budget segments related to the Management Programs and Sub-Programs, procurement of goods and services, taxes and contracts which all have to conform to requirements by the Public Service of the Republic of Armenia. The incumbent should be familiar with Armenia's accounting procedures and legal requirements regarding Tax Laws etc. The person should have sound experience in financial and budget planning for governmental institutions.

Employment Requirements: Academic degree or equivalent experience in bookkeeping, accounting and financial management with proven familiarity and background in all aspects of procurement and budgeting and the public tendering of contract labour with a minimum of 5 years experience.

Head of Sub-Program Maintenance:The Head of this Sub-Program (Maintenance Supervisor) is responsible for the overall maintenance of infrastructure and equipment of the LANP and Sanctuaries. He will elaborate a detailed maintenance schedule for the LANP and Sanctuaries' infrastructure and assign maintenance staff accordingly. He will be responsible for the preparation of annual work-plans and a maintenance budget. He will prepare the terms of reference for maintenance work to be out-sourced and supervise implementation. He will be fully responsible for quality control of maintenance work performed. He will report to the Chief of Administration.

Employment Requirements: Proven knowledge of maintenance-related work from the public or private sector. Special trade skills are an asset. Familiarity and background in all aspects of work with contract labour and a minimum of 5 years work experience are prerequisites.

Chief Protection Program: The principle functions and responsibilities of the Program Chief (Chief ranger) are: to prepare and oversee the implementation of annual work plans and budgets for the LANP and associated Sanctuaries' Protection Program; to assume overall responsibility for all protection related matters; to establish protocols and agreements for co-operation with other enforcement agencies, especially as it relates to the Russian Military Zone (part of the LANP); to prepare job descriptions for Ranger positions and the hiring of Rangers; to assist in the preparation of training Programs and the establishment of Ranger beats; to coordinate activities with other Management Programs as needed. The Chief of this Program will lead and manage the three Park Rangers and 18 Community Rangers under his command. The responsibilities include the establishment of an excellent working relationship with other enforcement agencies and Support Zone communities. The Chief Ranger will assume ultimate responsibility for the processing of violation reports filed by the Park- and Community Rangers.

Employment Requirements: Sound Law enforcement experience in matters related to natural resource management, preferably in context with protected areas; proven skills in public relations, people management and leadership.

Park Ranger: The key functions and responsibilities of the LANP Park Ranger is biodiversity protection and the enforcement of policies, rules and regulations described in this Management Plan and the Charter of the LANP National Park and associated Sanctuaries. It is of critical importance

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for the Park Rangers to closely cooperate with and supervise the Community Rangers assisting the Park Rangers in the enforcement of policies related to the sustainable land-/and resource use of communal lands located in the Traditional Use Zone of the LANP. Park Rangers with the assistance of Community Rangers will also assume co-responsibility for the implementation of the LANP Monitoring Program under supervision of the Chief of the Monitoring Program. Park Rangers will reside in Support Zone villages in order to establish a sound relationship with the communities and LANP users that must build on trust and mutual respect.

Employment Requirements: Technical degree in resource protection/Law enforcement related field, physical fitness, integrity, knowledge of the legal framework related to Armenia's protected areas, preferably combined with previous working knowledge in the area of Law enforcement. Park Rangers will receive basic training and continuing in-service training.

Chief Research and Monitoring, Public Relations and Visitor Program: The Chief of this Program will be entrusted with the responsibility of three consolidated Programs (Research and Monitoring, Public relations and the Visitor Program). It is proposed to consolidate the three Programs due to the relatively low work volume of each individually. Under given circumstances it appears not justified to add additional staff over and above this one position of the three consolidated Management programs. With increasing work volume however additional staff may be hired. This could be either an assistant to the Chief of the Consolidated Program or if so justified create a new Chief of program position for a division of the Consolidated Management Program.

The principle functions and responsibilities of the Chief of this Consolidated Program are: to assume overall responsibility for this Program; to produce, in close cooperation with the Chiefs of the other Management Programs (Arpi Lake Support Zone and Resource Use Program and the Protection Program) information materials such as brochures, fact sheets etc. for the benefit of park visitors and Support Zone communities; to supervise and control jointly with Park Rangers and Community Rangers visitor infrastructure (LANP access, billboards, camp sites etc.); to propose the fee structure for park visitors and operators and design a practical booking and fee collection system; to provide liaison services to tour operators and tourism related infrastructure and services in the Support Zone of the LANP; to assist in the establishment of a tourism association in the region, and to contribute to the implementation of the Regional Tourism Development Plan and the marketing of tourism opportunities offered by the LANP and Support Zone; to prepare and implement Program-specific annual work-plans and budgets; to assist in the in-service training of Park Rangers and Community Rangers related to functions associated with the Tourism Program. In absence of a separate Monitoring Program, the incumbent of this position will assume overall responsibility for the LANP and Sanctuary Monitoring Program; design and supervise the Monitoring Program and prepare ToR for contracts and supervise out-sourced monitoring activities.

Employment Requirements: Academic degree and experience in business administration/natural resource management, experience with tourism and monitoring; proven communication and public relation skills, writing skills, computer literacy and knowledge of the English language with a minimum of 5 years work-related experience.

Chief Lake Arpi Lake-, Support Zone- and Resource Use Program: The Chief of this Program will be entrusted with the responsibility of three consolidated Programs (Research and Monitoring,

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Resource Use –including Lake Arpi- and the liaison with the Support Zone activities affecting the LANP (=Support Zone Program). It is proposed to consolidate the three Programs due to the relatively low work volume of each individually. Under given circumstances it appears not justified to add additional staff over and above this one position of the three consolidated Management programs. With increasing work volume however additional staff may be hired. This could be either an assistant to the Chief of the Consolidated Program or if so justified create a new Chief of program position for a division of the Consolidated Management Program.

Principle functions and responsibilities are: to supervise the implementation of the land- and resource use taken place in the Traditional Use Zone of the LANP (terrestrial and Lake Arpi) and to provide “liaison” with respect to all LANP Support Zone matters and Support Zone communities that relate to the LANP.

The Resource Use Program covers livestock grazing and range management, issuing resource use-, access-, and any other licences and permits pertaining to the use of the LANP land and resources (including all Lake Arpi related activities such as fishing and recreation); to archive and process baseline data resulting from environmental monitoring; and land-/resource use within the LANP and associated Sanctuaries and all monitoring as required by the other Management Programs; actively pursue cooperation with agencies and institutions related to his areas of responsibility and to elaborate ToR for cooperation accordingly.

Employment Requirements: Academic degree in a natural resource related field, experience in the range management. Computer skills are a required prerequisite as well as at least four years work experience in a job-related field.

It is suggested that Support Zone Program related functions and responsibilities are become a shared shared responsibility of all Management programs.. The LANP staff jointly with the Community Rangers will cooperate closely on all matters related to interactions between the LANP and Support Zone.. In close co-operation with the district authorities, key stakeholders and the Private Sector, the LANP personnel assists in the development and implementation of projects associated with the LANP and Support Zone. This also includes the development of a sound working relationship with local NGOs active in the Support Zone and interested in LANP matters.

Community Ranger: Key functions of the Community Ranger will be enforcement of policies, rules and regulations related to the Traditional Use Zone of the LANP and the associated Sanctuaries on behalf of the LANP and the respective community which employs the Community Ranger. Other responsibilities include enforcement of policies and rules and regulations applying to land-and resource use in the Support Zone, environmental Law enforcement and other tasks assigned to the Community Ranger by the respective Community Council.

Employment Requirements: Minimum of high school Diploma and community related work experience; registered resident of the community of employment; physical fitness and proven integrity.

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All staff members are subject to an annual evaluation. A template of a job performance appraisal report is attached as Annex 2 to this report. The LANP Budget will be subject to an annual audit by an independent auditor to be determined by the LANP Management Board.

LANP Staff and Community Ranger Training : It is recognized that important elements for staff motivation are: (a) a clear job description for each position with clearly identified functions and responsibilities, (b) opportunities for career development, and (c) attractive wages complemented through a sound fringe benefit package. It is the responsibility of the LANP Director to jointly with staff member to elaborate a precise position description and discuss career development opportunities. Wages of LANP staff covered by base funding of the Ministry of Nature Protection are subject to the rules and regulations of common rate scales used by the Government of Armenia. Any deviation, including potential topping up has to be negotiated with the LANP Management Board. It should be considered to design a performance based incentive system until official rates have reached acceptable levels.

As part of the career development, each staff member is entitled to training opportunities. Preference will be given to in-service training. Special skills which cannot be obtained through in-service training will be subject to external training. In-service training will apply to all staff members. Senior staff will be given the opportunity to periodically participate in career advancing and job-related seminars. The training Program will be tailored to the needs and availability of funding once per year. Training will be monitored and evaluated annually. Where a staff member cannot be adequately trained by means of in-service training, use will be made of external training facilities and opportunities wherever possible.

It will be the responsibility of the Park Director and senior park staff to propose an annual training schedule covering all LANP personnel. The Training Program forms an integral part of the park's overall budget. The training schedule has to be approved by the Park Management Board. Park Rangers will receive a 14 - day base training when entering the service to be provided by Government personnel and specialists from the Private Sector. Community Rangers will receive a 10 - day base training under supervision of the Chief Ranger of the LANP.

The following annual in-service training schedule is proposed for LANP staff and Community Rangers:

National Park Director:	7 days
Senior LANP Staff and Professionals:	7 days
Rangers:	4 days
Community Rangers	3 days

4.1.2. Infrastructure Related to the Administration Program

Generic policies and guidelines related to all LANP Infrastructure include:

- The design of structures, billboards, boundary markers, gates and any other infrastructure of the LANP should harmonize with its surroundings;

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- Constructions should be practical and aesthetically pleasing;
- Billboards and notice boards posted along the LANP boundaries and other places should convey clear messages, carry the LANP Logo and be made of durable materials in order to reduce maintenance costs;
- All physical infrastructure should follow the same theme in design to be in tune with the barren steppe ecosystems and rolling hills characterizing the landscape of the target area;
- For all construction local materials and labour should be used if available;
- All structures should be sound and earthquake-safe.

4.1.2.1. LANP Headquarters

The site selected for the LANP Headquarters is located to the East of the Lake Arpi Dam, within the vicinity of the Paghakn Community. The site was chosen because of its strategic location at the intersection of the two access roads to Lake Arpi, one road leading directly to the regional capital Gyumri (approximately 25 km), the other to the major Highway connecting to the Georgia International Border crossing at the Community of Bavra (25 km). The second reason for choosing this site is in compliance with the expressed wish by the LANP Working Groups to locate Headquarters close to the cluster of remote communities surrounding the Lake (see Map 7).

The space requirements for Headquarters, out-buildings and landscaping will be approximately 7,000 m². The structures on the existing site will be demolished and materials will be salvaged for re-use, in particular the tuff blocks which constitute the major materials used for the walls of the structures. The salvaged tuff blocks will be utilized for the planned perimeter wall (1.2.m high) to surround the compound as a protection against livestock and as special landscaping feature. The building site belongs to the State and will therefore be available free of charge. Water and power is readily available from the nearby Dam. The site is accessible via a 1 km long all-weather gravel road branching off from the main access road to Lake Arpi.

The total floor space requirement of the LANP Headquarters is 325 m², composed of:

- 5 offices: 125 m² (25 m² each)
- Conference room to seat 30 persons: 60 m²
- Small kitchen: 15 m²
- Storage room and archive: 20 m²
- Reception area with info booth: 25 m²
- Gender separated toilet facilities: 15 m²
- One guestroom with bathroom: 25 m²
- Attached or separate garage and storage area: 40 m²

The LANP Headquarter complex will have a primary sewage treatment plant to serve staff houses if constructed on the same compound. The site development plan includes a parking area for guest and staff parking. The construction of the LANP Headquarters will be subject to an architectural design competition, hand-in-hand with the proposed staff housing to be constructed on or close to the same site. For the construction of the new buildings, materials and labour locally available will be given preference. The design of all buildings and structures to be established related to the LANP and

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associated Sanctuaries should be unobtrusive, fitting into the landscape (characterized by open grasslands and unobstructed views with surrounding mountains as backdrop).

Map 7: Lake Arpi National Park Infrastructure: Administration Program

4.1.2.2. Senior Staff Housing

Due to the relative isolation of Park Headquarters and the lack of suitable housing facilities for senior LANP staff in close proximity of the LANP Headquarters, it appears prudent to provide a single family dwelling for the LANP Director and a duplex with two bachelor suites for senior staff. Other staff will have to find accommodation in neighbouring villages. For practical and strategic reasons it is desirable that senior LANP staff resides close to the LANP Headquarters and not commute daily to the next available location offering suitable accommodation (Gyumri and Mets Sepasar). This would require lengthy travel, costly vehicle use, and isolation from Support Zone villages. Also road access in winter to Lake Arpi is extremely difficult, especially if the access roads are not cleared of snow.

Single Family Building: A suitable building site is readily available at the Headquarter compound. One advantage offered by this location is that the same service facilities of the LANP Headquarters would be available for the staff house (primary treatment plant, water supply and electrical power).

The space requirements for this building, garage and landscaping is approximately 600 m². The single family unit will accommodate a family with two to three children. The closest school available is located in the village of Berdashen (2 km distance).

The floor space requirements (plus outdoor space for garden and parking)

- Large Living/dining room (70 m²)
- 2 bathrooms (14 m²)
- 2 bedrooms (18 m² each)
- Kitchen and storage/utility room (30 m²)
- Storage (16 m²)
- Garage (25 m²)

Duplex: A suitable building site is readily available at the Headquarter compound. One advantage offered by this location is that the same service facilities of the LANP Headquarters would be available for staff house (primary treatment plant, water supply and electrical power).

The space requirements for this building, garage and landscaping is approximately 600 m². The duplex is composed of two bachelor suites sharing the same living space.

The floor space requirements (plus outdoor space for garden and parking):

- Large Living/dining room (40 m²)
- 2 bathrooms (14 m²)

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- 2 bedrooms (18 m² each)
- Kitchen and storage/utility room(20 m²)
- Storage (12 m²)
- Double garage (50 m²)

4.1.2.3. Road Access to the LANP and Sanctuaries

The LANP will have four different road access gates, three serving the Western Section of the Park, and one the Eastern Section (see Map 7). The Paghakn access is located to the West of the village Paghakn. It provides access to the Pine Campsite located at the shoreline of Lake Arpi close to a Pine forest (2 km distance from the park access gate). The second road access gate is located in the vicinity of Shaghik village. It is principally used by Russian Military Personnel as main access to the southern part of the Military Zone. The third road access serves the Hamlet of Darik, a dairy operation enclave located in the Traditional Use Zone of the LANP, a permanent settlement by a single family. The fourth official gate is located due east of the Community Sizavet with road access from Ghazanchi and Bavra (see Map 7).

The Infrastructure related to each of the main access Points of the LANP (except for the Sizavet access) is composed of one (open gate) with a gate post located on either side of the road; one billboard showing a Map of the LANP and providing pertinent information; two public septic toilets and a parking area for up to 10 vehicles. The total space requirement per site is approximately 600 m². The Sizavet LANP will have a locked gate with a “No Entry” sign only. Access to the Eastern Section of the LANP is by special permit only. There is no public access to the Core Zone of the LANP.

4.1.2.4. Seasonal Road Access and Access Closures

Seasonal road access relates to fair weather “tracks” traditionally used by Leaseholders from Support Zone communities to access their Lease-land in the Traditional Use Zone of the LANP. This takes place mostly during the haying season but may also apply to beekeepers transporting beehives, persons with Leases of agricultural land and livestock owners occasionally needing vehicle access to service livestock watering devices etc. Seasonal road access related to Leaseholders with valid permits is from the 1st of May to the 30th of November. Seasonal road access Points are described as follows. Access Points are numbered as shown by Map 7.

Seasonal Road Access (road barriers 1-4): Serving mostly Leaseholders from the Zarishat and Yerizak communities with valid Leases for hay meadows located inside the Traditional Use Zone.

Seasonal Road Access (road barrier 5): Serving mostly Leaseholders from the Berdashen- and Shaghik communities with valid Leases and permits applied to the Traditional Use Zone. Road tracks currently located adjacent to the official barrier will be permanently closed by earthwall/ditch.

Seasonal Road Access (road barrier 8): Key access by Russian Military to the Military Zone (Central and Southern Core Zone of the LANP) and users with valid Leases and permits applied to the Traditional Use Zone.

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Seasonal Road Access (road barrier 9): Serving mostly Leaseholders from the Shaghik community with valid Leases for hay meadows located inside the Traditional Use Zone.

Seasonal Road Access (road barrier 10): Key access by Russian Military to the Military Zone (Northern Core Zone of the LANP) and mostly Leaseholders from the Yeghnajur community with valid Leases for hay meadows located inside the Traditional Use Zone and the Western Core Zone of the LANP.

Closed Road Access (road barrier 11): This road access will be closed permanently (earth wall) and posted correspondingly.

Road Access (road barrier 12): Serving mostly Leaseholders from the Tsaghkut community with valid Leases for the Traditional Use Zone.

Seasonal Road Access (road barrier 14): Serving mostly Leaseholders from the Zorakert community with valid Leases for the Traditional Use Zone.

Seasonal Road Access (road barrier 15): Serving mostly Leaseholders from the Ardenis community with valid Leases for the Traditional Use Zone.

Seasonal Road Access (road barriers 16 and 17): Serving mostly Leaseholders from the Aghvorik community with valid Leases for the Traditional Use Zone.

Seasonal Road Access (road barrier 18): Serving the Sargyugh community members with special permits by the LANP Authority to enter the Eastern Core Zone of the LANP.

Seasonal Road Access (road barrier 20): Community members with special permits by the LANP Authority to enter the Eastern Core Zone of the LANP only.

The Infrastructure related to each of the seasonal road access Points is confined to a locked road barrier and a sign indicating that a special access permit is required to use the gate. Road access barriers 9 and 10 will be posted indicating restricted access (Access for Military Use and special permit holders only). Access gates 18 and 20 will be posted indicating that entry is restricted to special permit holders only.

4.1.2.5. Lake Arpi

Lake Arpi access to the public and for special permit holders is restricted to four access Points located within the vicinity of the communities Shaghik, Garnarich, Tsaghkut and Berdashen (see Map 7). Access restrictions apply in order to facilitate the control of persons using the lake for recreation and/or commercial fishing. Although lake access is free of charge any lake use by visitors and community members requires a special permit issued by the LANP Authority.

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One of the key problems with lake access is related to changing water tables. Permanent structures such as boat launching pads build of concrete are of little use during the late summer season when the lake water table is at its lowest. Permanent concrete pads, however, build at the high water mark, will serve lake users at least for one part of the season and will assist in preventing erosion.

The Infrastructure related to each of the four lake access Points includes a concrete pad enabling boat launching without damaging the shoreline (applies to high water level only), a small floating ramp build of wood and floating devices, which will be removed and stored at the closure of each season and before freeze-up by the middle of November. At each of the four designated boat launching sites a billboard will be posted providing pertinent use restrictions. A vehicle parking area within the vicinity of each launching pad will be established (capacity 10 vehicles). A public (septic) toilet will be installed at each parking lot. Buoys are used to demarcate the no-entry buffer zones around the two Islands of the lake; 10 buoys for the smaller of the two Islands and 20 for the larger are expected to be sufficient in numbers.

In order to prevent livestock use of the lake for watering, a total of seven self-filling water troughs are established, one each for the villages of Shagik, Garnarich, Tsaghkut, Zorakert and Paghakn and one self-filling trough each at a strategic location between Tsaghkut and Zorakert and Paghakn and Zorakert.

4.1.3. Sub-Program Maintenance

4.1.3.1. Rationale and Objectives

The Sub-Program Maintenance includes the planning, regular servicing, replacement, control and monitoring of all fixed structures, equipment, and other movable assets of the LANP. This Sub-Program will proceed under guidance of the Maintenance Supervisor in close collaboration with all park staff. The Maintenance Supervisor will develop a standardized maintenance schedule for the infrastructure and equipment of the LANP. The Key Objective for this Sub-Program is the maintenance of the LANP's infrastructure and equipment in accordance with an annually updated maintenance schedule. The guiding principles related to this Sub-Program are:

- Infrastructure and equipment management (including inspections and stock control) to be done in accordance with generally accepted norms, standards and practices, as elaborated by the Maintenance Supervisor;
- Preventive maintenance.

4.1.3.2. Policies

The following policies apply to the Sub-Program Maintenance:

- Maintenance Supervisor elaborates a maintenance schedule to be updated annually;
- Implementation of standard and simple maintenance tasks are assigned to staff positions and Community Rangers as specified by the maintenance schedule;

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- Maintenance work beyond the capability of LANP staff and Community Rangers will be out-sourced;
- Abuse of infrastructure and equipment will be prevented through proper training and capacity development;
- Equipment will be standardized in order to facilitate servicing and repairs;

In order to optimize the operational life of equipment and infrastructure, the Maintenance Supervisor will assure high quality servicing and maintenance. The Maintenance Supervisor will elaborate an annual work plan and budget for infrastructure and equipment maintenance and replacement. The budget will also include training costs for skill development, which may be required by staff members in order to responsibly comply with the assigned tasks. This may include driving lessons and special training for equipment use as part of the preventive Maintenance Program. The Maintenance Supervisor will assure quality control of the work performed and will keep the maintenance records in good order. He/she will provide maintenance training to LANP Rangers and Community Rangers and jointly with the Senior Rangers supervise the maintenance work carried out by Rangers. The Maintenance Supervisor will elaborate terms of reference for maintenance contracts that will be out-sourced. He/she will assume full responsibility for the quality control and supervision of the work performed by contractors. The Maintenance Supervisor will assure that all maintenance work is in compliance with environmental impact guidelines for the LANP. Geo-referenced LANP Infrastructure locations are provided by Annex 3 and equipment list by Annex 4.

4.2. Protection Program

4.2.1. Rationale and Objectives

The guiding principles and objectives for this Program are the effective protection of:

- The ecological integrity of the Lake Arpi National Park Core Zones;
- The Traditional Use Zone of the LANP and associated Sanctuaries against over-utilization by livestock and against inappropriate land use causing adverse environmental impacts;
- The water resources of the LANP and Sanctuaries, in particular the natural springs providing drinking water to Support Zone and downstream communities;
- Lake Arpi and its bird Islands against adverse impacts from recreation and fishing.

The sustainable protection of the LANP and its associated Sanctuaries will benefit the conservation of biological diversity, resource- and land users, Support Zone communities, and the Republic of Armenia at large. Sustainable protection will be achieved through the services of three well trained, equipped and motivated LANP Rangers supported through a motivated Corps of 18 Support Zone Community Rangers in close cooperation with Leaseholders active in the Traditional Use Zone of the LANP and its three associated Sanctuaries. Community cooperation and ownership in the LANP and Sanctuaries will be achieved through the participatory implementation of the LANP Management Plan, the benefits received by the communities through the Economic Development of the LANP's Support Zone and continuing community outreach.

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The Protection Program will be carried out under the supervision of the Chief of the Protection Program (Chief Ranger). He/she is assisted by three Park Rangers and 18 Community Rangers. In due consideration of the **small size** of the LANP (effectively 12,000 ha Core Zone and 13,000 ha Traditional Use Zone composed of communal and private land), **low level of threats** to the LANP, and the **long and harsh winters** (6-7 month snow cover) when enforcement is reduced to a minimum, three Park Rangers supported by 18 Community Rangers appear more than sufficient to handle the Protection Program of the LANP and three affiliated Sanctuaries in an efficient and effective manner. The three LANP Control Areas and their corresponding Community Rangers are listed by Table 4.2.1. Under the supervision of the Chief Park Ranger, located at the LANP Headquarters, the three Park Rangers will synchronize their enforcement activities and will be in radio-contact with each other at all times.

Table 4.2.1.: LANP Control Areas and Associated Community Rangers

Control Area	Community Ranger Village	# Community Rangers
Control Area I Park Ranger Station Garnarich	Shaghik, Garnarich, Zarishat, Berdashen, Alvar	5
Control Area II Park Ranger Station Ardenis	Tsaghkut, Zorakert, Ardenis, Aghvorik, Tavshut, Bavra,	6
Control Area III Park Ranger Station Ghazanchi	Sargyugh, Mets Sepasar, Sizavet, Ghazanchi, Krasar, Pokr Sepasar, Amasia	7

Base training of the Community Rangers will focus on legal matters related to the LANP, Sanctuaries and responsibilities of the Community Rangers, resource licensing and permit system by the LANP Authority, legal rights, patrolling and enforcement, personal conduct while on duty and how to interact with the public and LANP/Sanctuary users. Community Rangers will have the right to check permits and user licences inside the LANP and Sanctuaries and report directly to the Park Ranger to whom they have been assigned.

4.2.2. Ranger Control Areas

The LANP and Sanctuaries are divided into three control areas, two of which are approximately equal in size. Each is assigned to one Park Ranger. The three control areas are stratified into 18 sub-units, each assigned to one Community Ranger. The sub-units encompass all communal land inside and outside the conservation area for which the corresponding Community Rangers assume enforcement responsibility (see Map 8). The Community Rangers as community employees will be fully responsible for environmental Law enforcement related to communal lands outside the Boundaries of the LANP and Sanctuaries on behalf of the respective Community. For enforcement activities on communal lands located inside the LANP and the Sanctuaries, Community Rangers will operate under the supervision and guidance of the LANP Park Rangers. The LANP Park Ranger Control Areas and corresponding Community Ranger Sub-Units are described as follows.

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Map 8: Control Areas (“Beats”) of Park Rangers and Community Rangers

4.2.2.1. Park Ranger Control Area I

Control Area I (approximately 11,000 hectares) covers the southern half of the Western Section of the LANP. It includes all of Lake Arpi and the Alvar Sanctuary and the southern portion of the Western Core Zone of the LANP (Russian Military Zone). Due to the “No Access” policy applied to the Military Zone, the size of the actual Control Area I is only 7,500 hectares (total minus half of the 7,352 Military Zone). The Ranger station for this Control Area is strategically located in the Community of Garnarich. Major focus of the control activities for this Control Area is Lake Arpi and the Alvar Sanctuary. For the control of lake activities this Ranger will be supplied with a motorized boat. The rest of this Control Area will be patrolled by horse or on foot.

The Park Ranger responsible for Control Area I will closely cooperate with the Community Rangers from Shaghik and Garnarich regarding the control of public use of Lake Arpi. It is expected that Law enforcement applied to Lake Arpi will thematically be the most demanding control effort of all three Control Areas and the most-time consuming. Control responsibilities for Lake Arpi will also be shared with the Community Rangers of Zorakert and Tsaghkut as per formal agreement between the Park Rangers of Control Area I and II. Officially the Zorakert and Tsaghkut Rangers report to the Park Ranger of Control Zone II.

Close cooperation will also be necessary with the Community Ranger of Alvar who reports to the Park Ranger of Control Area I but assumes shared responsibilities for the Alvar and Akhyurian Sanctuaries, the latter being part of Control Area III.

4.2.2.2. Park Ranger Control Area II

Control Area II (approximately 11,000 hectares) covers the northern half of the Western Section of the LANP. It includes approximately 65 % of the Support Zone of the LANP and approximately half of the northern part of the Russian Military Zone. As mentioned in context with Control Area I, as a result of the “No Access” policy applied to the Military Zone the size of the Control Area II is in reality only 7,500 hectares (total, minus half of the 7,352 Military Zone). The Ardenis Sanctuary is also part of this Control Area. The Ranger Station for this Control Area is located in the Community of Ardenis. Major focus of the control activities for this Control Area is the Support Zone of the LANP. The Park Ranger responsible for Control Area II will closely cooperate with the Park Ranger responsible for Control Area I, especially in support of Law enforcement efforts related to Lake Arpi.

4.2.2.3. Park Ranger Control Area III

Control Area III (approximately 6,000) covers the entire Eastern Section of the LANP (all part of the Core Zone) and the Akhyuran Sanctuary. Although the smallest in size, this control area is the most isolated and spread out of the three Control Areas. The Ranger Station for this Control Area is located in the Community of Ghazanchi. Major focus of control activities related to Control Area III is the Eastern Core Zone of the LANP and the Akhyurian Gorge Sanctuary. Since the control of this area is expected to require frequent long distance travel a Russian Jeep as principle mode of transport will be assigned to this Ranger Station.

4.2.3. Policies and Management Guidelines Related to the Protection Program

It should be noted that it will be extremely difficult to control access to the LANP and the Sanctuaries since all boundaries are wide open and do not present natural barriers. Major policies related to access of the LANP and associated Sanctuaries are summarized as follows:

- All LANP and Sanctuary access requires a LANP entry and user permit issued by the LANP Authority;
- Access to the LANP Traditional Use Zone is restricted to Leaseholders in good standing with Leases inside the Traditional Use Zone and LANP visitors with a valid visitor permit;
- Access by Leaseholders and/or their designated family members/helpers is subject to a permit (free-of charge issued by the LANP Authority);
- Leaseholders with a valid access permit will receive a key for the locked access gates located at the seasonal LANP entry Points and at the Akhyurian Gorge access road;
- No overnight stay by Leaseholders permitted inside the LANP;
- The type of permitted vehicles to be used by Leaseholders is specified on the special seasonal access permit;
- Special permits are required by Leaseholders with land located inside the Military area of the LANP; permits require agreement by Russian Military Authority;
- Livestock access to Lake Arpi not permitted between Garnarich and Paghakn; where self-filling watering stations will be installed to meet livestock watering needs;

Policies applying to Park- and Community Ranger duties and performance are to:

- (Park Rangers jointly with the Chief Ranger) elaborate control schedules for the three Control Areas;
- (Park Rangers jointly with the Chief Ranger) elaborate cooperation agreements and work schedules for Community Rangers;
- Diligently pursue violators of rules and regulations applying to the LANP;
- Collaborate closely with other enforcement agencies, Russian Military and International Border Control Authority as required to be regulated by official Memoranda of Understanding to be elaborated by the LANP Chief Ranger;
- Implement monitoring in accordance with the schedules and duties specified in the annual work programs;
- Monitor activities of resource use Leaseholders and livestock herders, LANP and Akhuryan visitors and Lake Arpi users in collaboration with the Program Chiefs;
- Play an active role in the LANP Maintenance Sub-Program as specified by the Work Programs to be elaborated by the LANP Maintenance Supervisor;
- Report and process violations;
- Issue fines for access- and LANP use related violations;
- Fines to be paid to the LANP Authority to form part of the overall LANP budget;
- Confiscate illegal goods originating from the LANP and initiate the prosecution process related to the violators;
- (Community Rangers jointly with the Park Rangers) assume responsibility for the enforcement of policies, rules and regulations and management guidelines applying to the

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sustainable use of land and resources and environmental monitoring inside the LANP as specified by supervising Park Ranger;

- (Community Rangers) report all enforcement matters related to communal lands inside the LANP boundaries and Sanctuaries to supervising LANP Ranger;
- (LANP Park Rangers jointly with the Community Rangers) elaborate an effective and efficient Control Program for each Control Area and Community Ranger Sub-unit;
- (Community Rangers) communicate once per week with respective LANP Ranger;
- (Park Ranger) communicate once every second day with the LANP Chief Ranger;
- (all Rangers) be pro-active in environmental awareness building and fostering good public relations;
- (LANP Ranger) participate in and implement all tasks assigned by the Chief Ranger;
- to strictly comply with on- and off-duty responsibilities expected from Rangers in uniform;
- (LANP Rangers) carry a weapon for self-defense;
- (LANP Rangers and Community Rangers) wear uniform when on duty;
- (all Rangers) take part in the in-service Training Program as specified by the Annual Work Program;
- Maintain an active field-book as specified by the job description;
- (LANP Rangers) complete weekly time sheets issued and controlled by the Chief Ranger.

Illegal goods originating from the LANP and Sanctuaries will be confiscated by the Rangers and auctioned off under the Authority of the Chief Ranger once per year. The proceeds enter the LANP annual operational budget. 15% of the proceeds are awarded as incentive payment to the Ranger who successfully apprehended the respective violator.

Access by the Military will be regulated by a Memorandum of Understanding between the LANP Authority and the Military. Access by Military vehicles will be permitted throughout the year. Restrictions are defined by the Memorandum of Understanding.

4.2.4. Infrastructure

4.2.4.1. Boundary Demarcation

All road access related infrastructure of the LANP and the Akhuryan Gorge Sanctuary has been covered by the Administration Program (Chapter 4.1.) of this Management Plan. As indicated earlier, for most parts there is no visible difference between areas located inside and outside the LANP and Sanctuary boundaries. It therefore appears prudent to properly demarcate such boundary sections where access related problems most likely may occur. Two types of boundary markers will be used: cairns built of natural field stones and notice boards. The demarcation process is expected to be lengthy extending at least over two to three seasons (construction season from May to October). It is apparent that the demarcation process cannot be completed within one season. The LANP boundary is therefore stratified into three priorities (see Map 9) which allow proper spacing of the demarcation process as needed. The total boundary length of the LANP is 109.3 km, the Akhuryan Sanctuary 26.9 km, Ardenis Sanctuary 7.2 km and the Alvar Sanctuary 16.5 km.

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Highest Priority has been assigned to the Boundary section starting at Preference Point 5, following the shoreline of Lake Arpi and ending at Point 8 (see Map 9, Reference Points 5 to 8). The length of this boundary section is 25.7 km. There is no doubt that most conflicts and the highest pressure on the LANP will occur along this boundary section in need of priority attention. Cairns and notice boards will be used in strategic locations and in a distance from each other which allows for easy recognition of the Boundary. In open areas cairns should be spaced apart not further than 100 m. Where possible, cairns should be placed on high Points. The placement and total number of Notice Boards to be used is left to the discretion of the LANP staff. Notice Boards will mostly concentrate on the Boundary section around Lake Arpi and in areas likely to be frequented by Support Zone Constituents. Highest priority is also given to the 29 km boundary section from Yeghnajur to Aghvorik (see Map 9, Reference Points 9 to 12). In open areas the use of cairns appears most useful being clearly visible from a long distance.

Medium Priority has been given to the Boundary sections with boundaries following natural features such as creeks, rivers and roads, not requiring sophisticated additional demarcation. A few signs in strategic places may be sufficient. The total length of medium priority boundaries is 23.1 km (see map 9, Section 3 to 5, 8 to 9, and 12 to 13). Along this boundary section Cairns are to be used in open terrain with good visibility.

Low Priority is assigned to the entire Western Boundary of the Eastern Core Zone of the LANP. The Eastern Core Zone is mostly self-protected to the East, with the 14.2 km long boundary following the ridgeline of the Yavakheti Mountain Chain which is difficult in access (see Map 9, Reference Points 15 to 16). A few cairns and signs in strategic locations along this boundary will be sufficient for demarcation. The western boundary of the Eastern LANP Section is also of low priority. Since the Eastern LANP Section is largely free of resource use and land-/resource use conflicts and mostly self-protected, a few cairns and signs in strategic locations will be sufficient to demarcate the 14.8 km long Western Boundary of the Eastern Section of the LANP (see Map 9, Reference Points 14 to 15). The only Boundary Section of low priority at the Western LANP Section is a 2.5 km long stretch at the south western corner of the LANP (see Map 9, Reference Points 1 to 3).

Map 9: Boundary Demarcation Priorities

The northern boundary of both LANP Sections coincides with the International Border between Georgia and Armenia. Since this border is well demarcated, no additional demarcation appears necessary. The same applies to the western boundary which is located inside the Russian Military Zone not requiring any demarcation.

Boundary demarcation of the Ardenis and Alvar Sanctuaries requires a few sign posts only to be placed in strategic locations. For the Boundary demarcation of the Akhuryan Gorge mostly cairns will be used interspersed with signs to be placed in strategic locations, for the other two Sanctuaries signs will be used.

4.2.4.2. Ranger Stations

Park Rangers and Community Rangers are fully integrated into Support Zone communities in order to facilitate a good working relationship with the key stakeholders of the LANP and associated Sanctuaries. An agreement will be signed between the LANP Management Board and the three communities of Park Ranger residence (Garnarich, Ardenis and Ghazanchi), which confirms that the three communities will provide one office each for the use by the respective Park Ranger --free of charge. The offices will be fully furnished and equipped by the LANP Authority and the operational costs (electricity, fuel etc.) will form part of the LANP operational budget. While there is no problem for the Communities of Garnarich and Ghazanchi to provide office space to the Park Rangers, space may not be available at Ardenis. The alternative for Ardenis would be that the Park Ranger establishes his office at his personal residence. Related costs would be covered by the LANP budget.

The 18 Community Rangers as employees of the communities in which they reside will be integrated into the community administrative infrastructure with no obligations by the LANP Authority. It will also be the responsibility of the respective communities to provide their Community Ranger with suitable mode of transport (horses).

4.2.5. Equipment

Park Rangers are required to wear a uniform when on duty. Summer and winter uniforms including shoe-wear will be supplied by the LANP. Each Ranger will receive one standard Ranger kit (packsack, binoculars, lantern, first aid kit, etc.). Easy access to the LANP and Sanctuaries combined with rather short travel distances do not require Park- or Community Rangers to stay in the field overnight when on patrol. Therefore, no camping gear such as sleeping bags and tents is required. Each Ranger will have his personal horse to be supplied by the Ranger. The Ranger will be fully responsible for his personal horse to be reimbursed for its use a flat monthly rate for the months of March to November and any other expenses. A set of full horse gear (saddle, bridle and blankets)

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will be covered by the LANP budget. The Rangers will be paid for the winter fodder of their horses at the going rate for hay.

Each Voluntary Ranger will be supplied a winter- and summer set of a uniform jacket, shirts and hat displaying the insignia of the LANP and a name tag reading "Community Ranger". Community Rangers will be supplied a mobile telephone for communication with the Park Ranger to whom they report. Community Rangers will have their personal horses. The costs for horse gear and maintenance costs of the horses will be shared by the Community- and the LANP budget.

4.3. Arpi Lake, Support Zone and Resource Use Program

4.3.1. Guiding Principles

Support Zone communities dedicated their communal lands to the Lake Arpi National Park now classified as a designated Traditional Use Zone of the LANP under the premise that they: (a) maintain their rights to their communal land, (b) are permitted to actively participate in the management and the decision-making processes related to the LANP through equal representation (in numbers) on the LANP Management Board, and (c) receive assistance for the sustainable economic development of the LANP Support Zone. The rights to continue the use of the communal lands inside the Traditional Use Zone under the same conditions as before will be Key to the sustainability of the LANP as a National Park. Part of these community rights are to retain sole Authority over the issuing of land and resource use Lease permits as in the past and to retain the annual revenues generated by the Leases. It is apparent that communities will not be able to function without this source of income. Under these conditions the Support Zone communities have agreed to adhere to a controlled use of land-and resources inside the LANP that is compatible with the overall conservation objectives of the National Park.

Land-and resource use permitted inside the Traditional Use Zone and the three Sanctuaries associated with the LANP are highlighted by Table 4.3.1. The Table demonstrates that permissible land-and resource use related to the Traditional Use Zone and the Sanctuaries is a win-win situation for both the LANP and the Support Zone communities.

Table 4.3.1: Land- and Resource Use Options Offered by the Traditional Use Zone

Resource Use Opportunity	Community Benefits	LANP benefits
Land-and resource use Lease	yes	yes
Livestock grazing	yes	yes
Hay production	yes	yes
Beekeeping Leases	yes	yes
Artesanal collection of medicinal plants	yes	yes
Artesanal collection of other plant products	yes	yes
Artesanal collection of mushrooms	yes	yes
Sport angling Lake Arpi and Akhyurian River	yes	yes
Commercial fishing Lake Arpi	yes	yes
Non-motorized boating Lake Arpi	yes	yes
Potable water supply	yes	yes
Trail-riding	yes	yes
Hiking tourism (includes cultural tourism)	yes	yes
Original research opportunities	yes	yes
VIP visits	yes	yes

4.3.2. Policies and Management Guidelines

The following policies and management guidelines which have been developed jointly with the LANP Working Groups refer to the **management** of land- and resource use taking place in the Traditional Use Zone of the LANP (including Lake Arpi). The policies and guidelines listed under this Chapter are closely linked to the policies and management guidelines listed under Section III (“Zoning”), more specifically, Chapter 3.1.3 “Traditional Use Zone”. While the policies under the “Traditional Use Zone” rather apply to **the land-base**, the policies under this consolidated Management Program are addressing **management and resource user issues** and are therefore listed under the Header **Management Programs**.

The following policies are grouped under the generic headings “Land- and Resource Use Leases”, “Livestock Grazing”, “Hay Meadows”, “Agricultural Land” and “Other Policies” which do not fit into one of the previous groups.

Key policies addressing **Land- and Resource Use Leases**:

- Land and Resource use Leases are issued by the Communities offering the Lease;
- Lease fees are set by the Community offering the Lease;
- Lease preference will be given to Community Members of the Community offering the Lease; the second choice would be Community Members of other Communities from the Support Zone.
- Existing Leases will be honoured;
- Persons not registered with one of the Support Zone communities applying for a Lease will only be considered if there are no other contenders from within the Support Zone;
- Sub-leasing by principle Leaseholders is permitted; the conditions attached to the original Lease equally apply to the sub-lessee;
- Leases may be supplied to cooperatives in need of contiguous land (combined Leases of individual Leaseholders);
- Responsibilities of the communities issuing Leases and permits include the employment of one Community Ranger to be in charge of enforcement of policies and rules applying to communal lands inside the Traditional Use Zone; corresponding wages will be paid by the community;
- Lease and resource use permits specify rules, regulations and conditions of the use;
- No structures of any kind are permitted to be established by Leaseholders on the Leased land.

Key policies and management guidelines addressing **Livestock Grazing** and corresponding Leases are defined thus:

- Livestock grazing will be permitted in principle;
- Each family has the right to a minimum of 2 hectares communal grazing land;
- Maximum land size for grazing Lease will be 15 hectares; minimum size 2 hectares;

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- Lease fees are set by the Community offering the Lease; recommended fees will be 3000 Drums/ha of pasture land; fees will be adjusted every fourth year;
- Lease duration for new Leases will be 8 years renewable provided satisfactory performance by the Leaseholder;
- It is the responsibility of the Leaseholder to comply with the conditions specified by the Lease Permit. Standard conditions are:
 - not to exceed designated carrying capacities of Leased land (number of livestock by species as indicated by permit);
 - no fencing permitted;
 - no sheep and goats are permitted on slopes more than 15⁰;
 - Leaseholder can decide on livestock species to use on Leasehold (1 cow = 6 sheep or goats) within designated carrying capacity limits applied to the Leased land;
 - no livestock grazing within active drainage channels, water courses and natural springs supplying drinking water to Support Zone communities;
 - to provide water tanks in areas with water shortage (avoid slopes for positioning tanks) and to prevent contamination of drinking water;
 - use of specified watering sites for livestock only.

Penalties for exceeding the carrying capacity of designated Lease area is set as follows: first offence results in a notice/warning issued; second offence in a fine of 4,000 Drums/cow/horse (or 1,000 Drums/sheep or goat); third offence in the loss of the Lease.

The following policies apply to **Hay Meadows** over and above the policies applied to designated livestock grazing areas:

- Minimum size of hay meadows per Leasehold is 1 hectare and maximum size 7 hectares;
- No hay meadows should be located on slopes sensitive to erosion;
- No use of heavy machinery causing soil compaction and erosion is permitted;
- No livestock permitted on hay-meadows after the harvest before the 30th of October;
- Use of artificial fertilizers, pesticides and introduction of agronomic alien grass/ herb or any other plant or animal species is not permitted.

Penalties for violations regarding policies and conditions affiliated with a hay-meadow Lease are the following: for a first offence a notice/warning is issued; for a second offence a fine of 4,000 Drums/ha is levied; a third offence results in the loss of the Lease.

Key policies and management guidelines addressing designated **Agricultural Land** of the Traditional Use Zone are defined as follows:

- Land classified as arable land not suitable for agriculture should be re-classified and converted into hay-meadows or grazing areas on expiry of existing Leases;
- Re-classification of land use categories will be the responsibility of the Community Council;

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- The minimum size of an agricultural Lease will be 1 hectare, the maximum size 5 hectares;
- The size per crop field should not exceed 2 hectares;
- An annual crop rotation is recommended;
- The rotation should follow a three-year cycle (fallow every third year); no Lease payment is required for the fallow year;
- Irrigation of crop fields only permitted on completion of an Environmental Impact Assessment which must prove that no adverse ecological impacts will be caused by irrigation;
- On slopes no vertical ploughing permitted;
- No agricultural activity permitted on slopes exceeding 10°.

Other policies applying to the Traditional Use Zone:

- Water pipes supplying drinking should be placed underground where possible;
- All springs supplying potable water to Support Zone communities to be protected by a 1.3 m high stone perimeter wall (responsibility of LANP Authority);
- Identified archaeological sites should be protected;
- Artesanal collection of medicinal plants (home use only) permitted under a collection permit by the LANP Authority;
- The use of potable water by Support Zone communities with communal land inside the LANP will be free of charge;
- Community Council may designate bee-keeping Sanctuaries to be Leased to beekeepers against a fee of 5000 Drums/hectar; bee-keeping Leases are issued by Communities; bee-keeping Leases have a duration of 8 years renewable after 4 years;
- No fencing of bee-keeping areas permitted;
- Only local bee species are permitted;
- No use of track vehicles permitted;
- Existing artificial pine plantations are permitted to remain; no new tree planting permitted inside the LANP;
- Support Zone Community members are allowed to enter the LANP without a permit;

4.4. Tourism, Environmental Awareness/ Public Relations and Research and Monitoring Consolidated Program

4.4.1. Guiding Principles

Due to the relatively low overall work volume expected to be linked to this overarching Management Program it appears justified to consolidate the Management Programs “Tourism”, “Environmental Awareness/Public Relations” and “Research and Monitoring”. The three consolidated Management Programs have a relatively high inter-dependency and are the most suitable of to be grouped into one single program reducing the need for additional staff. It is hoped that the consolidation creates synergies especially favouring tourism development since favourable framework conditions for tourism require *inter alia* a high level of **environmental awareness** and sensitivity to the need for a clean and healthy environment, **sound public relations** and an effective protection of the LANP and its resources, all to be regularly assessed through an effective **research and monitoring**. It is hoped

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that once favourable framework conditions have been created, the tourism product can be placed on the national and international “radar screen” through a well targeted marketing campaign.

The guiding principle for **tourism development** related to the LANP and the Shirak Region at large is to capitalize on the rather limited opportunities offered by the target area for the benefit of communities located in one of the poorest and economically most disadvantaged regions of Armenia.

The guiding principle for **environmental awareness building** in the target area is to sensitize Support Zone communities and land- and resource users to the need for responsible land- and resource use management and the creation of a sustainable environment, which ultimately will benefit the people in their efforts to improve their living conditions and to contribute to favourable framework conditions for tourism.

The guiding principle for a sound **public relation strategy** is to properly present the image of a well managed LANP, associated Sanctuaries and Support Zone in tune with the overall conservation management objective for this Region. This image should be presented to the outside world: locally, nationally, and internationally. The latter is of particular interest for tourism development and continuing efforts to secure long-term funding from the international donor community for the sustainable economic development of the target area.

The overriding objective of this concerted effort is for the LANP and larger Planning Region to become locally and regionally known as a model for progressive spatial land use planning and sustainable economic community development guided by sound land- and resource conservation strategies. It is recognized that the remote LANP area with limited resources cannot create a tourism market but rather depends on “windows of opportunities” within the existing market situation.

Tourism opportunities offered by the LANP proper undoubtedly are mostly related to the use of Lake Arpi (i.e., sport fishing, non-motorized boating, bird-watching and camping) and the three Sanctuaries, the latter being especially attractive as unique sites for bird watchers and persons interested in flora. It is safely assumed that the LANP and Support Zone never will constitute a prime tourism area.

The LANP and Sanctuaries offer a potential for scientific tourism and research related to different academic degree Programs. Interesting opportunities exist to conduct original research in steppe- and sub-alpine tundra ecosystem ecology, especially in combination with sustainable use for livestock grazing. This Management Plan stipulates the promotion of research topics to be offered to the national and international scientific community.

Limited opportunities for cultural tourism are offered by the LANP and Support Zone mostly concentrated on activities related to livestock and herding. This experience would include traditional food and meals.

A widely acknowledged recreational opportunity offered by the Support Zone of the LANP - to a lesser degree by the LANP - focuses on cross-country skiing and possibly other winter sports.

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Tourism development for the Shirak Region has been subject to an overall regional tourism development strategy initiated within the framework of the project leading to the establishment of the LANP and this Management Plan. It forms part of the Integrated Spatial Land Use Development Plan (ISLUP Atlas) produced by the project.

Tourism Development will also form part of the LANP Support Zone Economic Development Plan produced by this project. It will deal with infrastructure development inside the LANP Support Zone, training related issues, proposed horseback riding activities, tourism service sector, operators, and marketing. In this light a close collaboration between the LANP Authority, subject specialists and the Support Zone association of tourism will be essential.

4.4.2. Objectives and Policies

i) Related to Tourism:

- To provide suitable low impact niche products with focus on nature- based tourism and recreational opportunities within the LANP and Support Zone;
- To create favourable framework conditions for specialized tourism including:
 - acceptable standards for accommodation and services offered;
 - clean and garbage free villages;
 - acceptable hygienic conditions of Support Zone villages and houses (organized sewage disposal, sustainable clean potable water supply, restricted livestock movement inside villages, livestock watering sites outside villages, etc.);
- To actively pursue Private Sector involvement for tourism development;
- To promote and facilitate Community Based Tourism initiatives in the LANP and Sanctuaries and Support Zone;
- To contribute to socio-economic development and sustainable job creation in the Support Zone of the LANP through a well designed Visitor Program;
- To generate revenues that can directly contribute to the maintenance and running costs of the LANP and benefit Support Zone communities;
- To encourage NGO involvement in tourism education, training, awareness and capacity building processes and efforts;
- To promote knowledge about the historical and cultural aspects of the Support Zone people as well as the natural environment;
- To establish a monitoring and evaluation system aimed at ensuring the sustainability of the proposed niche tourism;
- To address visitor safety issues within the Tourism Program;
- Tourism development related to the LANP and Support Zone will be market- and demand-driven involving mostly the Private Sector;
- (Rather limited) opportunities for commercial concessions offered by the LANP will be made available to the Private Sector by means of a transparent public tender process;

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- Tourism activities will be based on the natural strengths and attributes of the LANP and Support Zone (wilderness character):
 - cross-country skiing and other non-motorized winter sports are permitted inside the LANP Traditional Use Zone and associated Sanctuaries in accordance with the rules and regulations guiding tourism activities inside the LANP (no littering etc.);
 - motorized winter sports will only be permitted outside the LANP boundaries in accordance with the Support Zone Development Plan;
 - the use of mountain bikes inside the LANP and Sanctuaries is subject to rules and regulations to be defined by the Integrated Tourism Development Plan to be elaborated by the Chief of this Consolidated Management Program for the conservation areas;
- Tourism development will concentrate on the Support Zone in order to maximize benefits to Support Zone communities;
- Local guides, drivers, providers of horses and other service providers should be given preference over outsiders offering the same services;
- Road and LANP/Sanctuary Boundary signs, billboards and other signs addressed at tourists and visitors should relay clear and un-ambiguous messages and be placed in strategic locations;
- Cairns to be constructed of natural stones should preferably be used to mark trails leading to viewPoints and other sites of interest;
- Points of Interest and View Points should be clearly demarcated and secured;
- The LANP Logo (still to be designed) should be prominently displayed on all billboards and signs used in context with LANP related tourism;
- Fees for tourism activities inside the LANP and Sanctuaries will be defined by the LANP Authority;
- Entry and recreational use permits for the LANP and the use of campsites will be issued by the LANP Authority; if facilities and operations are handled through a concession, all matters related to the concessions will be handled by the Concessionaire in cooperation with the LANP Authority;
- The fee structure for tourists is two-tiered: gate fees for national tourists will be 200 Drums/day and 1000 Drums/day for foreigners;
- The use of the LANP operated campsites will be 1000 Drums/night for adults and 500 Drums/night for children up to 12 years;
- Concessionaires will return 10% of revenues generated from concessions to the LANP Authority to form part of the operational budget;
- No overnight stay by tourists will be permitted inside the LANP and Sanctuaries except for the designated campsites;
- LANP and Sanctuary visitors are required to take their personal garbage out on leaving the conservation areas.

ii) Related to Environmental Awareness: Environmental Awareness Building will be mainstreamed into all activities related to the LANP Support Zone and tourism. Corresponding strategies will be part of the Support Zone Development Plan elaborated in parallel to this Management Plan. Although awareness building strategies and delivery will mainly focus on formal

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education involving teachers and schools, adults from the Support Zone communities will be targeted for specific information/awareness seminars and events. Awareness Building responsibilities will be mostly delegated to NGOs, although the LANP staff will actively be involved jointly with the Community Rangers in the implementation of the Program to be developed by the Chief of the consolidated Tourism, Environmental Awareness and Public Relations Program. Written materials on key environmental issues of concern to the LANP and the Support Zone, fact sheets and other information will be produced and delivered in accordance with the stipulations of the Support Zone Development Plan.

Guidelines for Environmental Awareness Activities are highlighted as follows:

- To invite school classes to the LANP for hands-on experience involving teachers and students;
- To organize visits by University students interested in protected area matters;
- To organize meetings and joint environmental action Programs together with local NGOs (principle target groups: local environmental NGOs);
- To organize on a regular basis press conferences and prepare jointly with journalists materials on the LANP and Support Zone issues for television and local newspapers (principle target groups: media representatives, and the general public);
- To organize VIP visits to the LANP with focus on potential donors and major decision makers from Government and the Private Sector (principle target groups: major decision makers and potential donors);
- Jointly with other park staff prepare information materials, and suitable park related souvenirs such as t-shirts, baseball caps, buttons, stickers, posters, calendars etc. to be sold at the Bavra Kiosk and the Ghazanchi Visitor Centre;
- Once/year hosting an open-house event at the LANP Headquarters in Paghakan; (Principle target group: Support Zone communities);

The environmental education and awareness activities will be a combined effort by LANP staff and Community Rangers.

iii) Related to Public Relations: There are numerous techniques suitable to communicate information about the LANP, its Support Zone, approach to sustainable land- and resource management, participatory planning processes, co-management of conservation areas and many more, each with its own merit. In order to optimize the impact of methods to be employed a combination of different approaches should be chosen on completion of the development process of the target area.

The first activity will be the production and distribution of a brochure of the LANP, associated Sanctuaries and its Support Zone, to be followed by leaflets and fact sheets for the use in schools and the Tourism Program, a field-guide book, poster campaign, and the use of a local radio and television spot under guidance of the LANP staff. The Chief of the consolidated Program Tourism, Environmental Awareness and Public Relations will assume overall responsibility. He will design a comprehensive, practical and effective package which should be kept simple, easy to interpret and understand, directly related to the local situation, with low technology inputs and costs, and easy to implement.

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iv) Related to Research and Monitoring: Research and Monitoring (R&M) defines research and environmental monitoring needed to facilitate the management of the LANP, more specific to guide sustainable resource utilization in the Traditional Use Zone. Required research will be outsourced; research preference will be given to applied research which directly contributes to management enhancement. The LANP, associated Sanctuaries and Support Zone have the potential to provide mostly system-related research opportunities to University students and researchers from Armenia and abroad. Research opportunities are tangible assets provided free of charge by the LANP in return for the research data to be delivered to the LANP Authority.

Monitoring specified by the Management Programs of this Management Plan will be implemented by LANP staff unless it requires special expertise beyond internal capability in which case Government agencies and suitable research institutions will be approached. Monitoring will be guided by the Chief of the consolidated Management Program who also will be responsible for professional data storage and processing. All monitoring data should be socialized and GIS processed. This is to be done in close cooperation with the Gyumri Data Centre which will have full GIS capability established within the framework of the LANP establishment. Park Rangers and Community Rangers will play a key role in the Monitoring Program.

Environmental Monitoring covers all land- and resource use Leases and activities inside the Traditional Use Zone of the LANP. Also included in the Monitoring Program are visitor information and monitoring of the most frequented by visitors of the LANP related facilities. The Program Chief will develop a comprehensive Monitoring Program and schedule including practical monitoring indicators. No infrastructure related to this Program has been planned.

4.4.3. Tourism Related Infrastructure

The tourism infrastructure of the LANP is kept to a minimum simply because of limited opportunities offered by a relatively small area that is easy in access not requiring overnight stay inside. No tourism infrastructure is planned for inside the LANP except for one camp site at the southern shorelines of Lake Arpi (see map 10). Additional tourism infrastructure may evolve over time but is expected to occur in the Support Zone of the LANP outside the jurisdiction of the LANP Management Board. Because of the open terrain and easy access typifying the Plateau there is no need to establish distinctive hiking trails and circuits as common for other National Parks which offer a larger diversity in scenery combined with greater challenges and attractions to nature-based tourism.

It appears prudent at this Point to start tourism development modestly and let it take its course. Expansion will evolve in step with demand that may be increased through proper marketing over time. Tourism Infrastructure inside the LANP and Sanctuaries is composed of one camping site at the lakeshore of Lake Arpi, four boat launching pads (see Chapter 4.1.4.5.), and one camping site inside the Akhyurian Gorge. Billboards and the four official LANP entry gates are covered under the Administration Program. The second camping ground at Lake Arpi is located close to Shaghik within the Support Zone of the LANP. Other infrastructure located outside the LANP boundaries which are financed by the LANP development budget are billboards along major access roads, one

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small Visitor Center at Ghazanchi, one Information Stand at Bavra and three Points of interest (see Map 10).

Map 10: Tourism related Infrastructure

4.4.3.1. Camp Sites “Shaghik”, “Pine” and “Krasar Gorge”

The three camping areas (see Map 10) have a similar lay-out. With a capacity of 20 persons and 10 tents per site all three camps will be self-catering. The **Shaghik Camp** is located to the East of Shaghik village at the Lakeshore nestled into an aspen grove with a beautiful view across the Lake and surrounding hills (see Map 10). This camping area is served by a very productive natural spring producing high quality water draining into the Lake. The site can be reached via a fair weather dirt track (300 m long) branching off the Lakecircuit road. Arrangements will be made with the Shaghik Community for campsite maintenance. In lieu of this commitment the Shaghik Community will retain the revenues generated by this campsite.

The second campsite **Pine Camp** is strategically located at the Western shoreline of the Lake approximately 1 km distant from the main LANP access gate at Paghakn. It is situated within the vicinity of a pine stand close to the shoreline offering excellent views across the Lake and the mountains to the North and West of the LANP. One of the bird islands of the Lake is within close distance of this campsite with good bird watching opportunities. A small spring at this site will supply good quality water to visitors. This site will be either serviced by LANP staff or by the Paghakn community.

The **Krasar Gorge Camp** is located inside the Gorge close to a waterfall at the left of the Akhyurian River. The setting of this campground is spectacular. The site is surrounded by the steep rocky walls of the River Canyon. This camp is offered primarily as an overnight staging area to mountain bikers and hikers. This campground will be maintained by LANP staff or one of the neighbouring communities.

The space requirements for the infrastructure of the **Shaghik and Pine** Camps will be 5,000 m² each and 4,000 m² for the **Krasar Gorge** Camp. Key functions of the Shaghik and Pine sites will be nature experience in a beautiful natural setting, bird-watching, hiking, boating and fishing; of the Krasar Camp, nature experience and bird watching in a natural setting. Facilities at each site will include:

- 10 designated/demarcated tent areas
- 2 chemical toilets
- 1 roofed picnic site with rustic table
- 10 fire pits
- Washing facility (self-filling trough)
- Parking area for 10 vehicles

In addition, the Pine Camp site will have a boat launch pad and an observation platform constructed of wood for bird watching.

4.4.3.2. Ghazanchi Visitor Centre

The Visitor Centre will be strategically located within the vicinity of the Ghazanchi Community along the Highway connecting the city of Gyumri with the border crossing to Georgia at the Bavra

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Community (see Map 10). The total space requirement will be 150 m² indoors, 120 m² outdoors and 150 m² parking area. It will be run as a Concession under the umbrella of the LANP Authority. Its key functions will be to provide information on the LANP and its Support Zone and serve local artists to exhibit their works. Attached is a small restaurant/snack bar and a kiosk offering local artifacts, products and other items for sale. The building will be composed of:

- Exhibition area (exponates from excavations, artworks etc.): 30 m² indoor- and 120 m² outdoor space
- Snack bar/restaurant: 40 m²
- Sales area (local products, art work): 20 m²
- Equipment storage: 20 m²
- Kitchen: 20 m²
- Bathrooms (2)
- Info-panel/billboard

4.4.3.3. View Points and Sites of Interest

The view Point “**Earthwaching**” is located on top of a prominent hill outside the community Mets Sepasar, approximately 2 km to the West of the Highway (see Map 10). It provides a 360⁰ spectacular view covering the entire Ashotsk Plateau and surrounding mountains. A very old Chapel is located on top of the hill as well as an archaeological site displaying stone walls of ancient buildings. At the foot of the hill remnants of military fortifications dating back to Roman times are visible. This site will be maintained by the Community of Mets Sepasar. The site development will be financed by the KfW development fund for the LANP.

Development of the site will include:

- Rehabilitation of the stone church;
- Illumination of a prominent cross;
- Installment of a bronze round table with an engraved legend of the features visible from this view Point;
- Construction of a 1m high stone wall to protect the archaeological site;
- Rehabilitation and conversion of a large water concrete retainer to serve as site for special art events (40x20m);
- Billboard at the Roman Military Site;
- Parking area with a capacity for 20 vehicles and tour buses;
- Foot path marked by a total of 15 cairns build of natural stone leading from the parking area to the hilltop;
- 2 public chemical toilets located at the parking area.

The Info Point “**Birdwatching**” is located at the intersection of the access roads to Lake Arpi, located outside the Berdashen Community. This Info Point could either be run from the LANP Headquarter or confined to a billboard providing the required information on birds and other Lake Arpi features. This site should also include a covered Billboard showing a location map and

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overview map of the LANP and Support Zone. The site will have a parking area with a capacity for 15 vehicles and one chemical toilet. It will be serviced by LANP personnel.

Other Billboards displaying a map of the LANP area and providing additional information will be placed at the access road Gymri / Lake Arpi at the ISLUP boundary close to the Highway Mets Sepasar. It will be located at the branch-off leading to a Point of interest at Ghazanchi. Another sign will mark the road to the Visitor Center. And signs will be placed and close to Bavra and Aghvorik, the latter drawing attention to an archeological site located in the Traditional Use Zone to be reached from Aghvorik. Other signs will be placed close to Garnarich and Shaghik, the latter Pointing out the Shaghik Camp Ground. All Billboards and LANP- related road signs will be maintained by the LANP staff (see Map 10).

A small Information Kiosk will be established at Bavra, attached to its administrative center. It will provide visitors from Georgia crossing the border into Armenia with information on the LANP and Points of interest on the Ashotsk Plateau.

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4.5. Summary of Infrastructure and Maintenance

Geo-referenced Infrastructure locations for the LANP and associated Sanctuaries are provided by Annex 3. Table 4.6 summarizes Infrastructure and Equipment maintenance requirements by Management Program.

Table 4.5: Maintenance Schedule for Key LANP Infrastructure and Equipment

Category and Item	Monitoring Frequency	Maintenance	Park Staff	Out-sourced
INFRASTRUCTURE				
1 Administration Program				
headquarters Paghakn	annually	as needed	x	
4 LANP entry gates	bi-monthly / season	as needed	x	
3 Ranger Stations	annually	as needed	x	
15 seasonal access gates	annually	as needed	x	
4 Arpi boat ramps	bi-monthly / season	as needed	x	
boundary markers (cairns)	annually	as needed	x	
boundary signs	annually	as needed	x	
2 Protection Program				
Covered by other Programs				
3. Tourism Program				
visitor center Ghazanchi	bi-monthly / season	as needed		x
Point of interest Mets Sepasar	4x-monthly / season	as needed		x
Point of interest Aghvorik	4x-monthly / season	as needed		x
information kiosk Bavra	4x-monthly / season	as needed		x
information kiosk Paghakn	4x-monthly / season	as needed	x	
camp ground Shaghik	4x-monthly / season	as needed		x
camp ground Pine	4x-monthly / season	as needed	x	
campground Krasar Gorge	4x-monthly / season	as needed	x	
10 billboards	once/month/season	as needed	x	
EQUIPMENT				
1 Administration Program				
All electronic equipment as follows: (5 pers. Computers, 2 printers, 1 fax machine, 2 copiers, 1 LCD projector, 1 TV set and DVD, 2 digital cameras, 1 camcorder, 3 GPS units, 1 audio-visual unit)	1 x/year or as-needed	Annually		x
2 Russian jeeps	1 x/month	annually		x
1 tractor trailer	2x/month	annually		x
1 outboard engine	1 x/month in season	annually		x
1 generator	1 x/month	annually		x
2 Protection Program				
1 Russian jeep	1 x/month	annually		x
2 motorcycles	1 x/month	annually		x
4 horse (shoeing, de-worming etc.)	2x/season	monthly	x	
5 horse saddles and horse gear	2x/year	as needed	x	
3 Other Programs				
No equipment				

4.6. Annual Work Plan and Budget

The Program Chiefs of the LANP in collaboration with the staff under their supervision will elaborate a Work Plan and corresponding Budget for their respective Management Program once per year. The Work Plan and Budget have to be in compliance with the LANP Management Plan and supporting Business Plan. The individual Work Plans will be discussed amongst senior LANP staff, amended, fine-tuned and consolidated into the Annual Operational Plan to be submitted by the LANP Director during the last quarter of the calendar year to the LANP Management Board for approval.

The Work Plans describe the activities planned for the following year organized in chronological order by calendar week and Management Program. The work schedules of Rangers and Community Rangers as well as out-sourced activities have to be incorporated into the overall Work Plans. The Work Plans will also detail all new infrastructure development for the following year, assigning responsibilities and making provisions for work quality control. The Chiefs of Management Programs will assume the overall responsibility for the timely and efficient implementation of the Work Plans.

Annexes

SECTION V: BUDGET AND FINANCING

The LANP budget and all finance matters are subject to the LANP Business Plan elaborated in support of the LANP Management Plan. The rationale for the elaboration of a separate document dealing with all financial matters related to the LANP is highlighted as follows. Apart from a detailed five-year documentation of revenues and operational expenses of the LANP, the Business Plan will provide detailed information on potential funding sources to cover expected shortfalls of the operational costs not covered by the State Budget. The Business Plan will elaborate fund-raising strategies and provide highly detailed financial spreadsheets which will facilitate the elaboration of annual Work Plans and Budgets in chronological order.

The Business Plan is a proven tool for fund-raising purposes and of particular importance when approaching the international donor community for funding. The LANP Business Plan will be similar in structure and lay-out as common Business Plans used by the Private Sector to document the financial status of an Enterprise.

The objectives of the Business Plan for the Lake Arpi National Park are to:

- Highlight key activities of the first three years (expected completion date of the establishment of the Lake Arpi National Park and associated Sanctuaries);
- Outlines future Programs and Strategies aimed at revenue generation and fund raising opportunities in order to safeguard the financial sustainability of the LANP;
- Keep internal and external stakeholders updated on LANP financial matters and activities;
- Obtain Ministerial approval of the financial strategies proposed by the Business Plan complementary to the LANP Management Plan.

The LANP Business Plan will be based on the Vision Statement and related Goals of the LANP Management Plan. It is guided by the Zoning stipulations of the LANP and its Management Programs described in this Management Plan.

The Business Plan analyses the current and future budget of the LANP by comparing operational costs to revenues expected to be generated by the LANP and The Core Funding to be received from the Government of Armenia.

It is hoped that the two complementary documents, the LANP Management Plan and supporting Business Plan, provide the LANP Management Board with the guidance and wisdom to successfully safeguard the sustainability of the Conservation Areas for the benefit of the Support Zone communities and Armenia at large. It is further hoped that both plans may serve as a model to the country demonstrating the overall benefits and win-win situation of truly participatory planning, decision making and Governance of protected areas of Armenia.

Against this background, the Planning Team is pleased to submit this Management Plan to the Republic of Armenia for approval.

Lake Arpi National Park Management Plan Section V: Budget and Financing

Contributors to the Management Plan

The Management Plan has been written by Prof. Dr. Goetz Schuerholz with contributions provided by the persons listed in the following Table and based on the discussions and contributions provided by the Planning Working Groups assembled in support of the Management Plan Conceptualization. The Author of this Management Plan has designed and facilitated the Participatory Planning Process leading to this Management Plan.

The Maps used in the Management Plan were produced by Tigran Melkumyan who closely cooperated with the Author of this Management Plan throughout the Planning and Management Plan Production Process.

Author	Contribution
Aghasyan, Levon	Arpi Lake Fauna: Amphibians and Reptiles of Shirak Region (<i>Amasia and Ashotsk regions</i>)
Ananyan, Vasil	Ornithological Observations in the Northern Shirak Province, Armenia: (<i>within the limits of the planned Arpi National Park Territory</i>)
Anoush Nersesyan, Zhanna Hakobyan	Floristic review of the Arpi National Park
Fivush, Georgi	Vegetation of the territory, proposed for National Park "Arpi"
Gevorgyan, Suren	Socio-economic data of the Planned Area
Hakobyan, Susanna Jenderedjian, Karen	Lake Arpi Ramsar Site and National Park: biological and ecological survey
Hirsch, Udo	Possibilities for Economic Development in Arpi Lake National Park Support Zone: Projects and Recommendations
Kalashyan, Mark	Invertebrates
Malkhasyan, Alexandr	Mammalian Fauna of the Planned Arpi Lake National Park
Nersesyan, Anoush Hakobyan Zhanna	"Arpi" National Park presumable vegetation
Pipoyan, Samvel	Fish World of Arpi Lake
Promberger, Barbara and Christoph	Feasibility Study: Horse riding in the Lake Arpi Area
Rast, Georg	Technical Report: Hydrological Situation of LANP Area
Sahakyan, Razmik	Description and use of natural feeding-stuff of Arpi Lake National Park
Sahakyan, Suren	"Arpi Lake" National Park Area's Hydrological Situation
Schuerholz, Goetz	Integrated Spatial Land Use Planning in Javakheti Plateau Planning Area :Background and Participatory Planning Process
Schuerholz, Goetz	Arpi Lake National Park: Background and Participatory Planning Process
Steinmetzer, Karin	Pre-study: Tourism Development Potential in the Protected Area of Armenia's Javakheti (Ashotsk) Region; "Tourism Assessment Lake Arpi National Park" –field assessment report; Tourism Development in the Lake Arpi National Park: Towards a shared Vision and Action Plan" –16.10.08 Workshop Report
Tovmasyan, Meline	Opinion Survey of People of LANP Proposed Support Zone: "Perceptions and Expectations from Lake Arpi National Park"
Tovmasyan, Meline	Socio-Economic and Demographic Data of 14 LANP Support Zone communities

LIST OF ANNEXES

Annex 1: Geo-referenced Boundary Points of Lake Arpi National Park and Sanctuaries

Annex 2: Template Job Performance Appraisal

Annex 3: Geo-referenced Infrastructure Locations

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Annex 5: Equipment Administration Program

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ANNEX 1: Geo-referenced Boundary Points

i) Boundary Reference Points of the Lake Arpi National Park

Point	Longitude	Latitude	Point	Longitude	Latitude
1	43.639788000	40.959713000	147	43.584836285	41.114110379
2	43.642766000	40.967741000	148	43.588284007	41.115054969
3	43.644169700	40.971526289	149	43.593271257	41.114041760
4	43.631067279	40.982151617	150	43.597736809	41.114040693
5	43.627081082	40.983813518	151	43.597741599	41.115625347
6	43.629639750	40.985271582	152	43.600035675	41.114794692
7	43.628587238	40.986064686	153	43.601123751	41.114873818
8	43.629484668	40.987789314	154	43.602229546	41.116404647
9	43.631540611	40.992180952	155	43.604195876	41.116778787
10	43.630955292	40.993087213	156	43.605028758	41.115146576
11	43.631861135	40.993066187	157	43.606951936	41.113433942
12	43.631499847	40.997008534	158	43.607316507	41.111767399
13	43.632250181	40.997838536	159	43.609517506	41.110559576
14	43.631720678	40.998156405	160	43.611715084	41.113271813
15	43.631843713	40.999103313	161	43.612610688	41.113228846
16	43.631268827	41.000465135	162	43.614082108	41.114941310
17	43.630562418	41.002437680	163	43.614569732	41.114120803
18	43.629198095	41.002889682	164	43.615502916	41.113958509
19	43.625707688	41.006060595	165	43.616346501	41.114242492
20	43.625562356	41.007628778	166	43.618511429	41.113736967
21	43.623863570	41.008882268	167	43.622094386	41.113439067
22	43.622000767	41.008033908	168	43.625691130	41.111834373
23	43.617517631	41.008370282	169	43.642252955	41.107451636
24	43.622926270	41.010467230	170	43.652336777	41.107433488
25	43.625478965	41.011042931	171	43.651119680	41.104655616
26	43.627713563	41.015857172	172	43.655261558	41.105535976
27	43.629358961	41.018183191	173	43.659685447	41.107218883
28	43.640989119	41.026342483	174	43.666781055	41.107202667
29	43.641976690	41.024576162	175	43.667389510	41.108598399
30	43.651759387	41.025719381	176	43.669647836	41.108498147
31	43.664852695	41.027496011	177	43.671052275	41.107030549
32	43.672328491	41.027192360	178	43.673332338	41.105770955
33	43.674964063	41.030301223	179	43.672516994	41.104276744
34	43.667309740	41.030140922	180	43.668842620	41.101783128
35	43.664626114	41.034665995	181	43.671956685	41.100236996
36	43.667253507	41.038220723	182	43.674442439	41.098943060
37	43.663729062	41.041391067	183	43.676257378	41.097227567
38	43.666232451	41.044092326	184	43.680514746	41.096940356
39	43.659302501	41.049908216	185	43.680365312	41.096257401
40	43.660993468	41.051964272	186	43.683466373	41.095525152
41	43.659831417	41.052075795	187	43.686423769	41.089197668
42	43.656632423	41.059602978	188	43.690202111	41.088147344
43	43.651998815	41.058121312	189	43.689957670	41.086591780
44	43.653200071	41.059079379	190	43.691144280	41.085247611
45	43.650249408	41.058966970	191	43.694102082	41.085217244
46	43.651125712	41.060224775	192	43.698048974	41.084302995
47	43.651055236	41.062285588	193	43.701123926	41.082611663

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Point	Longitude	Latitude	Point	Longitude	Latitude
48	43.651942805	41.063007769	194	43.701809650	41.079966386
49	43.651818976	41.064804046	195	43.700947583	41.077871888
50	43.651655762	41.066258256	196	43.705409239	41.077911689
51	43.655354457	41.068686720	197	43.708348037	41.077589800
52	43.648845091	41.068487901	198	43.711737084	41.076018650
53	43.645657134	41.069501892	199	43.714677397	41.075453551
54	43.644180282	41.071709966	200	43.717046954	41.075718499
55	43.645079409	41.074026636	201	43.718553645	41.077040609
56	43.647629833	41.077343221	202	43.717690130	41.078033160
57	43.651359472	41.079916214	203	43.714575052	41.078554011
58	43.656069696	41.083426132	204	43.714629074	41.079212716
59	43.652998764	41.084650800	205	43.717284311	41.079811973
60	43.653989063	41.086347682	206	43.721553784	41.080363236
61	43.648748557	41.089691562	207	43.725303944	41.077625551
62	43.644638565	41.093082900	208	43.730766890	41.076486832
63	43.645312318	41.094573130	209	43.730410439	41.075622313
64	43.635282235	41.096829093	210	43.731819925	41.075660447
65	43.632690708	41.097913826	211	43.734216905	41.074650854
66	43.628555721	41.096713737	212	43.734410204	41.073692384
67	43.629679812	41.094495701	213	43.739860945	41.072739695
68	43.626099144	41.091264856	214	43.746362109	41.071742462
69	43.624597874	41.089229011	215	43.753364252	41.072934013
70	43.625120970	41.087660271	216	43.754884330	41.076071258
71	43.621806112	41.084937040	217	43.756666170	41.078071493
72	43.618053988	41.084216731	218	43.755834366	41.080383653
73	43.616404670	41.083489214	219	43.759705467	41.081579877
74	43.615660105	41.081150883	220	43.760592872	41.081534331
75	43.614688503	41.079282328	221	43.761468948	41.082560918
76	43.614058432	41.076270953	222	43.763813743	41.082177379
77	43.612394802	41.076021218	223	43.764498957	41.083683649
78	43.611524002	41.075146406	224	43.765926964	41.084306931
79	43.609413455	41.075702905	225	43.766731994	41.082531919
80	43.608474181	41.076727688	226	43.770704216	41.082351827
81	43.605633296	41.076421595	227	43.771673191	41.081958861
82	43.602698673	41.074758942	228	43.774749609	41.084601879
83	43.599844612	41.074802600	229	43.776325045	41.083420063
84	43.598669049	41.073795521	230	43.778219987	41.085183517
85	43.599890583	41.071745783	231	43.775587098	41.087150555
86	43.601305841	41.069594646	232	43.774516253	41.088417751
87	43.602301106	41.066814016	233	43.772822268	41.088633829
88	43.602152988	41.065295182	234	43.771119779	41.091866366
89	43.600573036	41.064655592	235	43.771720506	41.092836064
90	43.598507763	41.065383167	236	43.768527415	41.099383896
91	43.597884828	41.064066575	237	43.759157925	41.100111871
92	43.597596232	41.056974369	238	43.758510428	41.101626600
93	43.596590918	41.055189480	239	43.755051621	41.104506624
94	43.598350687	41.054142912	240	43.751439205	41.108727625
95	43.593636451	41.051437595	241	43.915416011	41.065511317
96	43.592345804	41.051169956	242	43.916266790	41.069039840
97	43.592288291	41.050165140	243	43.919115753	41.081463589
98	43.593330195	41.048424244	244	43.910596890	41.080038117

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Point	Longitude	Latitude	Point	Longitude	Latitude
99	43.594949441	41.048092982	245	43.907086236	41.079743475
100	43.593730098	41.044823628	246	43.902815473	41.083136158
101	43.593221401	41.043807780	247	43.902079195	41.087890867
102	43.586350579	41.045562250	248	43.895644094	41.093962248
103	43.586742419	41.043210231	249	43.895498295	41.094985864
104	43.577780558	41.043770772	250	43.895061416	41.098053826
105	43.575915795	41.043234803	251	43.894012601	41.111360204
106	43.575255746	41.042009688	252	43.891862793	41.128541111
107	43.574346592	41.042974836	253	43.890483222	41.139117665
108	43.573033233	41.041984437	254	43.890238677	41.140844703
109	43.572699392	41.041429125	255	43.892520326	41.141203689
110	43.572891899	41.040884727	256	43.904346398	41.141240433
111	43.573739983	41.040264900	257	43.911048735	41.143312824
112	43.573271205	41.039422908	258	43.912145082	41.144290322
113	43.573553926	41.038934078	259	43.912472447	41.153644517
114	43.569837131	41.040385616	260	43.912764969	41.159566697
115	43.565969285	41.039529873	261	43.904132857	41.164855384
116	43.564472659	41.039091615	262	43.901875603	41.166260616
117	43.561433407	41.043028922	263	43.908527965	41.169890932
118	43.562521963	41.043832173	264	43.924657049	41.171554005
119	43.564918781	41.044088053	265	43.935138866	41.174982209
120	43.562001345	41.045357757	266	43.950760810	41.172969641
121	43.559532445	41.046432156	267	43.949095790	41.167363767
122	43.557401824	41.046074148	268	43.954242812	41.165700228
123	43.555785508	41.046237585	269	43.957479727	41.161603631
124	43.555092466	41.049265996	270	43.957455601	41.159499560
125	43.552582547	41.049279515	271	43.959407257	41.156341998
126	43.552852720	41.051822078	272	43.957872885	41.153949385
127	43.548860579	41.052623093	273	43.957960452	41.150816173
128	43.546443004	41.052160789	274	43.955122006	41.142439602
129	43.543598258	41.059894909	275	43.955126535	41.140201862
130	43.536885525	41.059465522	276	43.957150009	41.135910706
131	43.542430327	41.068459186	277	43.959712113	41.132707337
132	43.538937443	41.068373602	278	43.961657227	41.127916713
133	43.537300291	41.070179864	279	43.956787987	41.125923691
134	43.537223686	41.072009959	280	43.951442404	41.119820803
135	43.547842291	41.076886247	281	43.953703989	41.117094963
136	43.550033146	41.081503242	282	43.953616944	41.114401379
137	43.549028280	41.083529302	283	43.951992104	41.112544826
138	43.553482458	41.088531531	284	43.951368230	41.111250779
139	43.557457563	41.090944123	285	43.951368898	41.110251784
140	43.559838245	41.091943955	286	43.954320536	41.106099673
141	43.560428491	41.094767085	287	43.950474521	41.101869296
142	43.562368004	41.098452573	288	43.949192523	41.096592876
143	43.573110965	41.106721768	289	43.946066161	41.091517587
144	43.574599919	41.107843489	290	43.943663615	41.088899028
145	43.574393277	41.108357846	291	43.946564919	41.086300058
146	43.576994301	41.109342869	292	43.946443376	41.072703665

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ii) Boundary Reference Points of the Akhuryan Gorge Sanctuary

Points	Longitude	Latitude	Points	Longitude	Latitude
1	43.79742523000	40.96513486200	102	43.80094739200	41.01346039700
2	43.79526050200	40.96610430900	103	43.80519400400	41.01192514200
3	43.79430907300	40.971111052600	104	43.80515295800	41.01169923400
4	43.79225906600	40.97465054000	105	43.80660514900	41.01109410900
5	43.78715829100	40.97724104700	106	43.80754815200	41.01027218900
6	43.78056740400	40.98184828900	107	43.80658478600	41.00954833100
7	43.77900026700	40.98191298600	108	43.80631934700	41.00927888100
8	43.77866488600	40.98446818400	109	43.80554597100	41.00934938900
9	43.77828629300	40.98490103100	110	43.80361776700	41.00880838200
10	43.77683034000	40.98569690100	111	43.80205703100	41.00825043100
11	43.77632417700	40.98634681800	112	43.79590063500	41.00678032400
12	43.77675918600	40.98731876700	113	43.79558952400	41.00676624000
13	43.77777696000	40.98795364900	114	43.79423164100	41.00705292200
14	43.77710321600	40.98875781300	115	43.79381222500	41.00719356900
15	43.77680174400	40.98947231200	116	43.79335802400	41.00750957100
16	43.77596212200	40.99033711700	117	43.79312909300	41.00794146400
17	43.77471940100	40.99072956800	118	43.79282716400	41.00801495900
18	43.77372197700	40.99121822900	119	43.79226226400	41.00787279900
19	43.77194222100	40.99169854800	120	43.79178378400	41.00786915900
20	43.77126547100	40.99265866600	121	43.79136376700	41.00806909700
21	43.77102888500	40.99430996700	122	43.79062515600	41.00861597400
22	43.77072674100	40.99505564500	123	43.78905658500	41.00794531600
23	43.76900773800	40.99669112100	124	43.78923393600	41.00758806500
24	43.76809660400	40.99696222400	125	43.78681062200	41.00691535300
25	43.76583008400	40.99703159000	126	43.78669715900	41.00616810500
26	43.76426999200	40.99676524000	127	43.78681848800	41.00590226100
27	43.76282527800	40.99693696700	128	43.78606559700	41.00579667300
28	43.76232660800	40.99727598100	129	43.78661128100	41.00417972600
29	43.76100736300	41.00013849100	130	43.78744010400	41.00419836900
30	43.76046948700	41.00089321000	131	43.78760576500	41.00380028700
31	43.75944787500	41.00184111300	132	43.78939410500	41.00391053400
32	43.75445964800	41.00482932200	133	43.78882852300	41.00292251700
33	43.75367165900	41.00495306500	134	43.78865914400	41.00207364300
34	43.75278890900	41.00547256000	135	43.78798476000	41.00108417900
35	43.75034940700	41.00752924700	136	43.78754609100	41.00050681200
36	43.74870031000	41.00932994400	137	43.78760434900	41.00020788400
37	43.75321287800	41.01308215800	138	43.78772611000	41.00001902200
38	43.75552486600	41.01548784300	139	43.78855179400	40.99955441600
39	43.75703320400	41.01652914300	140	43.78756002000	40.99950154700
40	43.75989589300	41.01751887400	141	43.78655950400	40.99924921700
41	43.76382538200	41.01749495900	142	43.78424459200	40.99852144100
42	43.76469338600	41.01776878800	143	43.78562663400	40.99676626900
43	43.76601992400	41.01920480500	144	43.78518979500	40.99658295800

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Points	Longitude	Latitude	Points	Longitude	Latitude
44	43.76722605200	41.02007740900	145	43.78368508100	40.99624669100
45	43.76934947000	41.02092673400	146	43.78316264200	40.99593263700
46	43.77126821000	41.02104640300	147	43.78334088400	40.99578618300
47	43.77305048600	41.02146217400	148	43.78376758900	40.99576576500
48	43.77366414500	41.02368407600	149	43.78422036700	40.99555782100
49	43.77516438100	41.02518796600	150	43.78442522700	40.99517313400
50	43.77766994000	41.02663637200	151	43.78345181700	40.99483993800
51	43.77845020400	41.02694223200	152	43.78329898100	40.99467165300
52	43.78089481500	41.02696811900	153	43.78397401800	40.99350312700
53	43.78684205600	41.02646877000	154	43.78364133000	40.99353329800
54	43.78740651900	41.02664003700	155	43.78318985200	40.99377390000
55	43.78995666700	41.02805558100	156	43.78284344700	40.99369559200
56	43.79226794800	41.02821208700	157	43.78254729800	40.99347547900
57	43.79349390400	41.02802653700	158	43.78071246600	40.99246270800
58	43.79481982200	41.02714765000	159	43.78128989000	40.99201032400
59	43.79509078800	41.02665450500	160	43.78337717000	40.99095032500
60	43.79509622600	41.02547400400	161	43.78369411200	40.99074933600
61	43.79466787000	41.02350888300	162	43.78410038600	40.99096724700
62	43.79819994300	41.02439408100	163	43.78296553000	40.98993483400
63	43.79885185300	41.02490156900	164	43.78309575400	40.98947907400
64	43.79910903700	41.02563252700	165	43.78387767600	40.98870037300
65	43.80098246800	41.02838307600	166	43.78429402200	40.98840214600
66	43.80178550200	41.02884660200	167	43.78488620200	40.98832358100
67	43.80491006700	41.02890180600	168	43.78629636200	40.98779699500
68	43.80548344400	41.02877119800	169	43.78611585800	40.98737551100
69	43.80624327100	41.02830113900	170	43.78655590900	40.98674337600
70	43.80652150700	41.02787160600	171	43.78728702100	40.98626005600
71	43.80677708700	41.02703218100	172	43.78822356900	40.98592687800
72	43.80747597000	41.02660700000	173	43.79047803200	40.98415335300
73	43.80840865400	41.02654837100	174	43.79027446800	40.98311325700
74	43.81203778300	41.02694997800	175	43.79035327000	40.98197347700
75	43.81329216300	41.02687514200	176	43.79046593700	40.98148047800
76	43.81423938500	41.02651747700	177	43.79062034500	40.98082145000
77	43.81469414900	41.02597316300	178	43.79081701900	40.98052904600
78	43.81344431600	41.02549515400	179	43.79155908900	40.97994485400
79	43.81234133300	41.02278444000	180	43.79227678000	40.97958622100
80	43.81058668300	41.02160427800	181	43.79305056000	40.97931948000
81	43.80976637800	41.02070357700	182	43.79442505900	40.97920580100
82	43.80862877600	41.02068339100	183	43.79500826200	40.97843712800
83	43.80746780900	41.02040775300	184	43.79547078800	40.97804038900
84	43.80640654700	41.01907353400	185	43.79606294100	40.97678976600
85	43.80629011900	41.01813530800	186	43.79722674800	40.97538931500
86	43.80730169900	41.01758336000	187	43.79737138300	40.97513695100
87	43.80692207200	41.01735681000	188	43.79741335900	40.97331624900
88	43.80606872100	41.01757198900	189	43.79836008400	40.97205264600
89	43.80518693900	41.01747664200	190	43.80130541200	40.97002401200

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Points	Longitude	Latitude	Points	Longitude	Latitude
90	43.80472361600	41.01728813800	191	43.80129658100	40.96981664600
91	43.80457734000	41.01704009200	192	43.80090232500	40.96929958400
92	43.80493883300	41.01604856600	193	43.80044337300	40.96880002400
93	43.80481909000	41.01586460100	194	43.80029820200	40.96841813900
94	43.80412459700	41.01598819100	195	43.80046194600	40.96811923100
95	43.80386976200	41.01579158200	196	43.80167461800	40.96685294300
96	43.80364838800	41.01553557400	197	43.80167610500	40.96653374000
97	43.80346851800	41.01540002100	198	43.80150963700	40.96597004800
98	43.80335176200	41.01492530700	199	43.80146686500	40.96506326500
99	43.80294868100	41.01462898200	200	43.80105556900	40.96438043700
100	43.80230291600	41.01471126000	201	43.80009742700	40.96374845500
101	43.80194229400	41.01419649400	202	43.79985567900	40.96364968200
			203	43.79854104800	40.96418024300
			204	43.79783875500	40.96402058100
			205	43.79760681100	40.96446220600

Annexes

iii) Boundary Reference Points of the Alvar Sanctuary

Point	Longitude	Latitude	Point	Longitude	Latitude
1	43.67561926700	41.05751935700	59	43.71787012300	41.06092759500
2	43.67612340500	41.05788531800	60	43.71884623300	41.06066067600
3	43.67671087700	41.05765795800	61	43.71931569800	41.05958678000
4	43.67754571900	41.05755048800	62	43.71999413200	41.05877392700
5	43.67897952300	41.05782805700	63	43.72097025500	41.05899801100
6	43.67909395400	41.05864875100	64	43.72088141900	41.05962362700
7	43.67907005700	41.05996174600	65	43.72187497600	41.06036510000
8	43.67886540400	41.06046876400	66	43.72340249900	41.06038223100
9	43.67927952800	41.06079185800	67	43.72296763800	41.06118888000
10	43.68018157300	41.06063594800	68	43.72330421700	41.06180375700
11	43.68148921000	41.05869104200	69	43.72416986100	41.06209779400
12	43.68266977700	41.05985075800	70	43.72575302700	41.06164901000
13	43.68337292900	41.05996342800	71	43.72651384600	41.06070190600
14	43.68416592700	41.05968605100	72	43.72919193000	41.06053468600
15	43.68576670300	41.05940567400	73	43.72883215100	41.06189626500
16	43.68864181600	41.06105532400	74	43.72841109700	41.06263613300
17	43.68934214300	41.06097158600	75	43.72928801700	41.06313712600
18	43.68994274300	41.06056863200	76	43.72982983400	41.06286866100
19	43.69036318200	41.05971391200	77	43.72997811400	41.06224045800
20	43.69034434900	41.05901327000	78	43.73074320500	41.06256203600
21	43.69319567500	41.06022028000	79	43.73112506900	41.06254731300
22	43.69388656100	41.06021433500	80	43.73149946900	41.06210604900
23	43.69526435800	41.05968621300	81	43.73049418900	41.06128249600
24	43.69671615900	41.06017036800	82	43.73040568100	41.06042213000
25	43.69737023900	41.06016695200	83	43.73073900900	41.05990685200
26	43.69832263700	41.05956650800	84	43.73177460100	41.05991433700
27	43.69887392400	41.05863099100	85	43.73384229100	41.05793920500
28	43.69984000300	41.05854475700	86	43.73522405000	41.05778547900
29	43.70100868100	41.05909893200	87	43.73515293600	41.05840983300
30	43.70165463100	41.05922019600	88	43.73559340100	41.05891562800
31	43.70232262200	41.05903301800	89	43.73648559400	41.05899260300
32	43.70227229400	41.05945521400	90	43.73803493700	41.05759583700
33	43.70190197600	41.05987670400	91	43.73866127900	41.05813894400
34	43.70173901700	41.06040955000	92	43.73925152800	41.05819499500
35	43.70203783200	41.06118680400	93	43.73988790100	41.05769186100
36	43.70242713400	41.06150198700	94	43.74035426800	41.05766328500
37	43.70290795400	41.06163693900	95	43.74081920200	41.05817110200
38	43.70396330800	41.06151254800	96	43.74136202800	41.05822053600
39	43.70444831100	41.06133943800	97	43.74192170800	41.05798887300
40	43.70490632500	41.06092794900	98	43.74226317400	41.05750498000
41	43.70529553200	41.06015593900	99	43.74336396700	41.05566687300

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Point	Longitude	Latitude	Point	Longitude	Latitude
42	43.70555491900	41.05978936100	100	43.74373171300	41.05509461200
43	43.70604589500	41.05949107300	101	43.74459919300	41.05514008300
44	43.70784315400	41.05986286000	102	43.74517525800	41.05424593500
45	43.70894623100	41.05980075600	103	43.74553502100	41.05346648300
46	43.71011171800	41.05898106900	104	43.74585054900	41.05313676100
47	43.70977754100	41.05978573300	105	43.74668779700	41.05289375200
48	43.70981520800	41.06038366600	106	43.74696770600	41.05252050000
49	43.71026741100	41.06072336900	107	43.74703581300	41.05210516400
50	43.71082505400	41.06082222600	108	43.74491359700	41.05116993800
51	43.71258786200	41.06087621300	109	43.74365612900	41.05281570500
52	43.71360617800	41.06121533600	110	43.73603998600	41.05202120300
53	43.71436191400	41.06115813300	111	43.72984852400	41.05146676800
54	43.71490030100	41.06113455700	112	43.71357493800	41.04912522100
55	43.71551105900	41.06080909600	113	43.70375936300	41.05106829100
56	43.71633251500	41.06057907600	114	43.70137921000	41.05193336800
57	43.71694774400	41.05995062400	115	43.69859800600	41.05165832000
58	43.71714655000	41.06052453700	116	43.69258342100	41.05145516900
			117	43.68475189500	41.05216511900

Annexes

iv) Boundary Reference Points of the Ardenis Sanctuary

Point	Longitude	Latitude	Point	Longitude	Latitude
1	43.728916002	41.074663000	51	43.748778002	41.067432000
2	43.729169002	41.074668000	52	43.748610002	41.067838000
3	43.729528002	41.074440000	53	43.748592002	41.068079000
4	43.730006002	41.073699000	54	43.748732002	41.068377000
5	43.730225002	41.073565000	55	43.748854002	41.068483000
6	43.730532002	41.073465000	56	43.749121002	41.068579000
7	43.731185002	41.073358000	57	43.749813002	41.068735000
8	43.731924002	41.073289000	58	43.750933002	41.069035000
9	43.732433002	41.073378000	59	43.751296002	41.069085000
10	43.733305002	41.073399000	60	43.751903002	41.068862000
11	43.733615002	41.073365000	61	43.752696002	41.068888000
12	43.735933002	41.072801000	62	43.753010002	41.069003000
13	43.736804002	41.072569000	63	43.753124002	41.068930000
14	43.737620002	41.072190000	64	43.753208002	41.068310000
15	43.738090002	41.071771000	65	43.753426002	41.067207000
16	43.737993002	41.071290000	66	43.753959002	41.064245000
17	43.737945002	41.071047000	67	43.754129002	41.063216000
18	43.738575002	41.070781000	68	43.751069002	41.062837000
19	43.739423002	41.070866000	69	43.750066002	41.062773000
20	43.739708002	41.070865000	70	43.749249002	41.062754000
21	43.739973002	41.070802000	71	43.748376002	41.062956000
22	43.740356002	41.070510000	72	43.747441002	41.063138000
23	43.740333002	41.070351000	73	43.746696002	41.063451000
24	43.740215002	41.070293000	74	43.746131002	41.063762000
25	43.740197002	41.070172000	75	43.744302002	41.065225000
26	43.740377002	41.069653000	76	43.742985002	41.066127000
27	43.740745002	41.068808000	77	43.740729002	41.067944000
28	43.740905002	41.068807000	78	43.740123002	41.068162000
29	43.740975002	41.069327000	79	43.739542002	41.068165000
30	43.741255002	41.069737000	80	43.739134002	41.068100000
31	43.741656002	41.069829000	81	43.737557002	41.067591000
32	43.741880002	41.069754000	82	43.735948344	41.067210705
33	43.742024002	41.069506000	83	43.734722002	41.067131000
34	43.742282002	41.069644000	84	43.732078002	41.067100000
35	43.742467002	41.069706000	85	43.731499002	41.067190000
36	43.742772002	41.069643000	86	43.731226002	41.067373000
37	43.742691002	41.069409000	87	43.730596002	41.067935000
38	43.742386002	41.069078000	88	43.730299002	41.068283000
39	43.741808002	41.068335000	89	43.730256002	41.068609000
40	43.741702002	41.068083000	90	43.729822002	41.068634000
41	43.742081002	41.067703000	91	43.728864002	41.068880000
42	43.742381002	41.067437000	92	43.728517002	41.069141000
43	43.743155002	41.066581000	93	43.728129002	41.069779000
44	43.744200002	41.065897000	94	43.727615002	41.071809000
45	43.745728002	41.065453000	95	43.727509002	41.072810000
46	43.746283002	41.065452000	96	43.727693002	41.073581000
47	43.747497002	41.065834000	97	43.727831002	41.073886000
48	43.748085002	41.066093000	98	43.727871002	41.074080000
49	43.749596002	41.066018000	99	43.728235002	41.074182000
50	43.749635002	41.066249000	100	43.728509002	41.074217000

Annexes

ANNEX 2: Ranger Job Performance Appraisal Template

Annual Ranger Job Performance Appraisal Report					
Period Covered:					
Date of Completion:					
Ranger Name:					
Ranger Control Post:					
Ranking	Excellent	Good	Satisfactory	Poor	Unsatisfactory
Work Ethics					
Punctuality					
Attendance					
Motivation					
Dedication					
Following Orders					
Reliability					
Self-Motivation					
Job Performance					
Compliance with Work Schedule					
Compliance with Annual Program					
Quality of Work					
Performance under Pressure					
Team Spirit					
Willingness to Accept New Tasks					
Volunteering					
Efficiency					
Effectiveness					
Horsemanship/horse care					
Care of equipment					
Willingness to cooperate with other authorities					
Ability to work without supervision					
Meets Deadlines					
Personal Conduct					
Professionalism					
Friendliness					
Uniform code					
Strengths					
Leadership Quality					
Comradery					
Special skills: specify					
Dealing with Public					
Dealing with Tourists					
Openmindedness					
Other Comments					

Annexes

ANNEX 3: LANP Geo-referenced Infrastructure Locations

3.1: Administration and Tourism Programs

Name	Latitude	Longitude
Information Points		
Info Point "Earthwatching"	41.08235612	43.76896958
Info Point "Earthwatching"	41.05312837	43.82026205
Visitor Centre	41.08073769	43.83081281
Info Point "Birdwatching"	41.06582904	43.65437435
Info Point	41.11630355	43.81381706
Lake Access Ramps		
Shaghik	41.047	43.594
Garnarich	41.076	43.611
Tsaghkut	41.093	43.63
Paghakn	41.061	43.651
Archaeological Sites		
Aghvorik	41.07991463980	43.77396049880
Mets Sepasar	41.05312837370	43.82026204810
Camp Sites		
Akhuryan Gorge	41.01219000	43.77901300
Berdashen	41.05400000	43.64000000
Shaghik	41.05600000	43.59900000
Headquarters	41.073	43.652
LANP Ranger Stations		
Garnarich	41.08	43.601
Ardenis	41.076	43.722
Ghazanchi	41.073	43..84
Billboards		
Ghazanchi Visitor Center	41.06774997	43.83925253
Mets Sepasar Archeological Site	41.04591301	43.82087197
Bavra Info Point	41.11153717	43.81288551
Paghakn Headquarter	41.06839153	43.66521749
Shaghik Camp Site	41.06370449	43.59631629
Amasia Road Cross	41.02441150	43.70952227
Akhuryan Gorge Camp Site	41.00410976	43.77861952
Berdashen Camp Site	41.05121191	43.65308178
Aghvorik Info Point "Earthwatching"	41.07668271	43.78302226
Garnarich	41.08069341	43.60170597

Annexes

3.2: LANP Road Access (seasonal and permanent)

LANP Road Access Points (Map 7)	Latitude	Longitude
1	40.976	43.639
2	41.004	43.628
3	41.018	43.629
4	41.026	43.654
5	41.055	43.658
6	41.059	43.655
7	41.044	43.593
8	41.043	43.587
9	41.046	43.556
10	41.099	43.563
11	41.114	43.594
12	41.107	43.642
13	41.108	43.67
14	41.094	43.684
15	41.075	43.715
16	41.072	43.751
17	41.081	43.758
18	41.141	43.904
19	41.109	43.894
20	41.083	43.903

3.3: Community Ranger Stations

Community Ranger	Location		Community Ranger	Location	
Pokr Sepasar	43.81202	41.04400	Lorasar	43.60421	41.11200
Mets Sepasar	43.82894	41.04838	Tsaghkut	43.62467	41.09845
Ashotsk	43.86614	41.03605	Darik	43.67858	41.11994
Krasar	43.82515	41.01628	Zorakert	43.66185	41.09215
Hovtun	43.81808	40.97034	Ardenis	43.71947	41.07631
Bavra	43.81100	41.12094	Aghvorik	43.76421	41.07561
Sizavet	43.83930	41.10286	Alvar	43.75057	41.04375
Tavshut	43.80757	41.08710	Aravet	43.77892	41.04618
Ghazanchi	43.83485	41.07259	Zarishat	43.65877	40.99890
Saragyugh	43.83704	41.14428	Yerizak	43.64980	40.98241
Yeghnajur	43.57220	41.09252	Amasia	43.77700	40.96432
Garnarich	43.60257	41.07523	Paghakn	43.65829	41.06607
Shaghik	43.59215	41.04907	Berdashen	43.67059	41.05723

Annexes

ANNEX 4: LANP Equipment

Administration Program	Protection Program
<ul style="list-style-type: none">• 5 personal computers• 1 central color laser printer• 1 small laser printer black and white• Complete furnishings of five offices• Complete set of office utensils for 5 offices• Landline telephones for five offices• Fully furnished meeting room to seat 30 persons• Basic kitchen equipment and furniture• Furniture for reception area• Storage shelves• 1 LCD projector• 1 TV and DVD set• 1 Screen• 1 Flipchart• 2 digital cameras• 1 camcorder• 3 GPS units• 2 pairs of binoculars• 2 spotting scopes• Complete set of basic tools (carpentry, masonry, mechanics, gardening)• 1 generator (5 kw)• 2 Russian jeeps (Headquarter car-pool)• 1 tractor trailer (4x4) and attachment for snow removal and hoe	<ul style="list-style-type: none">• 10 sets of uniforms Park Rangers• 36 sets Uniforms Community Rangers• 4 complete Ranger kits• 1 Russian Jeep• 1 Motorcycle• 5 sets of horse gear complete• 1 aluminium boat• 1 outboard engine (25 hp)• 1 rubber dinghy or small electric powered boat• 6 Life vests etc.