Promoting cooperation in nature conservation

Protected Areas and Rangeland Management Planning in the South Caucasus

A Review of Current Approaches

May 2008

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Federal Ministry for Economic Cooperation and Development

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Preface

This document is an output from the Ecoregional Programme for the Southern Caucasus. This Programme is carried out within the bilateral cooperation between the German Federal Ministry for Economic Cooperation and Development, KfW Development Bank and the countries of the Southern Caucasus. The Transboundary Joint Secretariat[1] coordinates implementation of the Programme in cooperation with the Ministry of Nature Protection of Armenia, Ministry of Ecology and Natural Resources of Azerbaijan and Ministry of Environment Protection and Natural Resources of Georgia.

The Programme is supporting the creation of three new national parks – in the Samur-Yalama region of Azerbaijan and on the Armenian and Georgian parts of the Shirak region around Lake Arpi in Armenia and in Javakheti in Georgia. One of the Joint Secretariat's tasks is to provide guidance to the national park implementation teams on management planning including participatory land use planning and range land management planning. As a step towards preparing that guidance, the Joint Secretariat carried out an assessment of current approaches to national park management planning in the region.

Consultants hired on behalf of the Joint Secretariat visited the region in January, February and March 2008. Through workshops, key informant interviews and by studying management plans and other documents the Consultants obtained information about the current legal and institutional frameworks of the three countries and actual practice in management planning for protected areas. They could then contrast current approaches in the region with internationally accepted good practice, for example IUCN's guidelines for the management of protected areas and lessons from the management of protected areas in other regions.

This report presents the Consultants' assessment of current approaches in the region. It identifies in particular a need to strengthen the adaptive character of management and to put greater emphasis on co-management of natural resources, the conservation of which are the reason for a protected area's designation. Those two aspects of protected areas management form the core of the guidance which the Joint Secretariat is preparing for the three national parks' implementation teams.

The Joint Secretariat and its Consultants wish to thank the many experts in the region who freely provided information and their opinions. The assessment presented here would not have been possible without their input. Responsibility for the analysis and conclusions rests solely with the Joint Secretariat.

Transboundary Joint Secretariat for the Southern Caucasus
Baku, Tbilisi and Yerevan
May 2008

[1] The Transboundary Joint Secretariat is managed through a consortium consisting of Österreichische Bundesforste(ÖBf) AG, Austria and GITEC Consult GmbH, Germany

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Acronyms

BKNP	Borjomi-Kharagauli National Park
BMZ	Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung (German Federal Ministry for Economic Cooperation and Development)
CBD	Convention on the Conservation of Biodiversity
ECP	Ecoregional Conservation Plan for the Caucasus
FSD	Farming Systems Development
FSU	Former Soviet Union
GEF	Global Environment Facility
GIS	Geographical Information System
GPS	Global Positioning System
IUCN	International Union for the Conservation of Nature
KfW	Kreditanstalt für Wiederaufbau, KfW Entwicklungsbank (German Development Bank)
MEPNR	Ministry of Environment Protection and Natural Resources, Georgia
MENR	Ministry of Ecology and Natural Resources, Azerbaijan
MNP	Ministry of Nature Protection, Armenia
MOA	Ministry of Agriculture
NGO	Non-governmental Organization
NP	National Park
PA	Protected Areas
RLM	Range Land Management
USSR	Union of Soviet Socialist Republics
TJS	Transboundary Joint Secretariat for the Southern Caucasus
WB	World Bank

1 Introduction

1.1 Background

This report has been prepared by the Transboundary Joint Secretariat (TJS) for the Southern Caucasus as a step towards preparing regional guidance on protected areas management planning. The TJS was established in 2007 to coordinate the implementation of the BMZ/KfW Nature Conservation Programme for the Southern Caucasus. The Programme includes the creation of three new national parks, one in each of the three South Caucasus countries of Armenia, Azerbaijan and Georgia. Providing guidance on management planning is one of the ways in which the TJS is supporting the national parks projects.

1.2 Purpose

The purpose of the report is to provide an assessment of the issues surrounding national parks management, the relationship national parks to land use planning and rangeland management, the existing framework of policies, agreements and legislation and to identify the strength and weaknesses compared to internationally accepted best practices. The objective of the assessment is to provide a firm basis from which to develop guidelines for protected areas planners and managers which are relevant and useful and, critically, address the challenges of developing a functionally efficient protected areas system which supports the national parks.

1.3 Methodology

The assessment presented in this report is based on information and opinions obtained in discussions with key informants in the region and a review of relevant documents including a sample of protected area management plans, national policy documents and relevant legislation. The key informants included policy holders in the relevant ministries, protected areas managers and people who have been or are currently involved in preparing management plans for protected areas in the region. A full list of the people with whom discussions were held is at Annex 1. The information was then analysed to identify key issues and challenges facing protected areas managers and planners.

2 Current situation

2.1 Regional context

2.1.1 Political and Administrative Framework

Despite a common past as part of the former Soviet Union (FSU) there are considerable differences between the three countries' current political and administrative systems. Those differences affect their various approaches to protected areas management and management planning. However, a common factor is that all three countries have grown their protected areas system from the previous system of *zapovedniks* (IUCN Category I) and *zakazniks* and currently all national parks are based around a core zone that was formerly a *zapovednik.*

PAs development and management is under the responsibility of key ministries and their agencies and departments as follows:

Georgia Ministry of Environment Protection and Natural Resources (MEPNR) through its Agency for Protected Areas

Armenia Ministry of Nature Protection (MNP) through its Bio-resources Management Agency

Azerbaijan Ministry of Ecology and Natural Resources (MENR)

Many of the ministries do now build the capacity, skills and funds for detailed Protected Area management planning in order not to depend on foreign donors, consultants and seconded local experts from various government institutions and from NGOs

2.1.2 Legal framework

There is a heavy reliance on regulation and state ownership of biodiversity resources with limited opportunities to delegate or devolve authority to local non-state actors. This creates a restrictive environment for co-management. A protective approach towards biodiversity is not creating the security of tenure that will encourage local community investment in common pool biodiversity resources. However, there are some provisions within the laws that could be used to promote local management arrangements. As a consequence biodiversity conservation is most effectively achieved on state lands that have been alienated from local communities. In areas where local communities have customary or *de facto* access, for instance where the state has insufficient material resources to police the system, there are few incentives available to promote sustainable management of biodiversity. As a result conflicts arise between the state and non-state actors leading to an inevitable loss of biodiversity and lack of development opportunities based upon sustainable management.

2.1.3 Social and Economic Framework

Regionally, the social and economic framework can be characterised as an emergent or transitional economy experiencing rapid change in many sectors of the economy and society. While such change is to be welcomed and conservation should not stand in the way of development, rapid change poses considerable risks to the environment and biodiversity. A coherent strategy that considers both protected areas and biodiversity utilisation is a prerequisite if regional, national and local aspirations are to be realised without significant loss of the natural values that are an important component of every society.

Increasing private ownership of livestock and uncontrolled land use led to a breakdown of the previous grazing carrying capacities ("norms) that existed under the Soviet times. Combined with a massive drop in per capita income and high unemployment led to a dependence on animal husbandry in which grazing carrying capacities greatly exceeded the "norms" leading to serious rangeland degradation. The threats to the various national parks' unique and fragile environments, eco-systems and ecology in all three countries include overgrazing, cutting of wetlands for hay, uncontrolled fuelwood collection, unregulated irrigation water use and overuse of resources. The root causes of these threats are some or all of the following: poverty, low productivity subsistence agriculture, lack of affordable energy alternatives to fuelwood and lack of alternative employment opportunities. Public or societal perceptions vary across the region and within the three countries range from strong public support and awareness of the need for conservation to a chronic lack of awareness, particularly at the local or site level, reflecting a difference in priorities and the harsh realities of rural life.

2.2 Protected areas system

2.2.1 Regional Systematic Approach

Within the framework of the Ecoregional Conservation Plan (ECP)[2] a systematic approach has been established in all three countries spatially defining biodiversity conservation requirements within a network of protected areas designed to protect ecosystems and ecosystem functions, key habitats and species, representative landscapes and important corridors for migration and population viability.

While the spatial requirements of a systematic approach have been defined, the ECP identifies considerable gaps that will need to be filled by expanding the existing protected areas network and in some cases creating new ones.

2.2.2 National Parks

The limitations of the former Soviet Union (FSU) system of strictly protected areas have been widely recognised in the region and the development of national parks as an integral component of the protected areas system in all three countries offers a more flexible alternative of managing land use in favour of biodiversity and natural heritage conservation[3]. National parks are clearly an important component of the protected areas system in the region.

Strict protection remains an important tool in preventing the loss of natural values, particularly biodiversity, from the system. However, it is important to recognise that protection is the most costly form of conservation management and should therefore be applied to the most critical and important areas. Other, more cost-effective mechanisms to achieve conservation, which will be discussed in this report, could be applied to large parts of the protected areas network.

2.3 Institutional arrangements

Institutionally, protected areas are embedded within countries' ministries of environment, reflecting the focus on biodiversity conservation priorities. While this is the "natural home" for protected areas it is important to note that national parks in particular are increasingly likely to take on a rural development role with particular emphasis on tourism requiring an additional set of skills and experience not necessarily found within environmental institutions.

While existing arrangements are adequate and logical, institutional restructuring may well be required to reflect the changing role of protected areas and in particular national parks[4].

The development of management plans has been entirely through external funding, principally from the World Bank-Global Environmental Facility (WB-GEF) and the WWF-Critical Ecosystem Partnership Fund (WWF-CEP). The current status of national park management plans is:

[2] AN ECOREGIONAL CONSERVATION PLAN FOR THE CAUCASUS May 2006 Second Edition ISBN 99940-58-55-X, Tbilisi, Georgia, http://www.wwf.de/fileadmin/fm-wwf/pdf_neu/Kaukasus_OEkoregionaler__Naturschutzplan__May06.pdf

[3] National parks have a number of zones that allow for traditional use, managed nature and economic activity as well as a strictly protected core zones whereas a strict nature reserve or *zapovednik* restricts any form of management or use.

[4] At the time this assessment was carried out, the Georgian Department of Protected Areas was in the process of transforming from a department subordinated to the MEPNR to an Agency. The Agency will operate outside the civil service pay structure and give it greater flexibility in national parks income generation.

- Armenia 3 + 1 in preparation
- Azerbaijan 1 + 3 proposed
- Georgia 5 + 2 in preparation

Management plans have been prepared almost entirely by contracted non-governmental organisations (NGOs) and international companies.

There are a number of advantages in "outsourcing" the technical skills and experience necessary to develop park management plans including:

- The cost-effectiveness of developing a body of experience and skills that does not have to be replicated in the management institutions if this can be captured within regional NGOs;
- Greater cross-fertilisation of ideas at the regional level and more effective sharing of experience than might be realised through state institutional channels;
- Access to funding in addition to international donor and state fund.

However it should also be noted that there should be sufficient capacity developed within the state management institutions to coordinate management planning activities and regulate standards to ensure quality, compatibility and compliance.

2.4 Financing protected areas

Despite considerable external donor support to the development of management plans there is chronic under-financing of the protected areas system, threatening the future of national parks and other components of the system. Under-financing reflects the demands on state budgets by other sectors as well as national priorities and a general lack of awareness at a political level of the potential role of conservation and protected areas in the development process particularly as they relate to marginalised rural areas.

The challenge of financing the protected areas system is widely recognised. The current strategies for meeting these financing needs can be characterised as:

- National budgets provide core funding to the national parks but are currently insufficient to meet existing operational costs of the current national parks and will not be sufficient to cover development costs or an expansion of the protected areas system;
- Donor funding through various projects has financed the majority of developments in the national parks to date. However, donor funding should not be considered as a long-term strategy for sustainable protected areas financing. Protected areas management is essentially interacting with the processes of land use and as such is a continuous process. Projects have a finite lifespan and should be intended to address specific constraints to the sustainable management of the biodiversity and other natural values within the protected areas system;
- Trust funds are being investigated as a mechanism by many conservation organisations around the world to secure long term financing for management activities. Regionally, the Caucasus Protected Areas Fund (CPAF) has already been established. While trust funds are increasingly being used globally as a means of financing with some success there are limitations to the use of trust funds to cover the opportunity costs[5] (which may be considerable) that result from protected areas; costs which are mostly absorbed by local communities and are the cause of most conflicts;

[5] The value of an opportunity that is lost or sacrificed when the choice of one course of action requires that another must be given up. For example, an opportunity cost could be a reduction in the number of livestock units on grazing land in order to allow regeneration of vegetation. Opportunity costs are often overlooked by conservation planners and can be the catalyst for conflicts with neighbours.

- Partnerships with NGOs to provide specific services to the national parks that would not necessarily be found within the core capacities of the statutory institutions;
- Revenue generation and retention is increasingly recognised as a means to cover management costs although the mechanisms for achieving this are not yet fully in place. The ability of protected areas to generate and retain revenue should always consider the following:
    - Adjustments may need to be made to existing legislation particularly in relation to local taxation and any Land Code;
    - It may be necessary to establish the principle of paying for services with the public;
    - Charging should always reflect the provision of a service or a legitimate management cost to the protected area;
    - Local communities may already be incurring significant opportunity costs and as a matter of principle the protected area should always consider local community or private enterprise revenue generation before park income. In other words the protected area management should not be competing with the private sector/local community for commercial business, and;
    - Revenue generated should remain in the protected area and be invested in development, projects or even direct compensation payments to local communities that are already suffering opportunity costs.
    - Very few protected areas are self-sufficient and it is important not to raise expectations as to how "profitable" a national park might be.

2.4.1 Consequences of an Under-financed System

Under-financing of the protected areas system is evident in a number of ways, most notably in some instances of poor morale and lack of motivation among staff as a result of poor remuneration and conditions of service. However, the conflicts between the protected areas and local community interests also reflect an inability of the parks to stimulate economic activity sufficiently to off-set local opportunity costs. The consequences of under-financing the system will inevitably lead to a gradual loss of the natural values including the biodiversity values.

2.4.2 Increasing the Protected Areas System

The ECP has clearly identified a need to expand the network of protected areas based upon a regional approach to biodiversity conservation, a move that is broadly supported across the region. However, expanding the system of protected areas will place even greater strains on the available resources. If the system is to be expanded it should be done so through a range of financing mechanisms including the use of the full range of IUCN Categories (Category I to VI) that would allow for cost and benefit sharing arrangements as a means of financing the system.

3 Approach to PA Management Planning

All three countries have developed management plans for national parks with many similarities between their approaches to management planning. There is a broad acceptance of the IUCN management planning guidelines[6] throughout the region which is reflected in the structure of the existing management plans and the design of national

[6] http://www.iucn.org/dbtw-wpd/edocs/PAG-010.pdf

parks (e.g. in zoning). Regionally, national parks are intended to meet the classification of an IUCN Category II protected area. The strengths and weaknesses of the system are reflected in this report

This report focuses on the common issues that park planning has to address and the common challenges to national park managers. It is important not to regard these issues and challenges as a judgement of the current regional status but rather as lessons and experience from the process of park planning. Furthermore, they are challenges and issues which, in one form or another, are being faced by conservationists and park planners everywhere.

3.1 Participation

It is important to understand what *participation* is and what useful role it can play in the planning and management of national parks. Given that large parts of the envisaged ECP protected areas system currently include people and these people may rely in a very large part on the resources that are contained in the protected areas it is useful to understand the possible implications of protective management and agree consensual mechanisms for biodiversity management wherever possible. This is the basis of participation and should not be confused with awareness raising exercises or simply communicating messages about the importance of the protected area.

Participation with rural people, "local people", and "local communities" or whatever term we may apply to the people who live close to protected areas must be a two-way process that takes place throughout the planning stages and is an integral part of the implementation of management activities. Globally, there is a tendency for protected areas managers to treat participation simply as a task in their work schedule. Such an attitude often reflects a restrictive policy framework in which participation is limited to determining the needs of the "local community" or raising "awareness" of conservation and the protected area.

Both of those approaches to participation - identifying development needs or making communities aware of the values of protected areas - are unlikely to achieve any meaningful conservation results as they ignore the fact that "rural people" have a close relationship with natural resources and are often confined by regulations in their options to manage them. Furthermore, raising the awareness of local people about a protected area when they are already very aware of the implications of such developments can risk raising expectations beyond what can realistically be delivered by such activities as "ecotourism" or simply reinforce local perceptions that conservationists do not fully understand their predicament.

According to the key informants in the region up to now interaction and participation of adjacent users or neighbours has been restricted to exclusion from the core zones and the development of activities in the support zones of national parks or, in a limited manner, in the traditional use and development zones. Those were mostly seen as isolated attempts to generate income (generally through mechanisms unrelated to the management of biodiversity and/or through targeted infrastructure development projects), allow specific activities, and create awareness or understanding for the conservation objectives of the park. For national park managers juggling with restrictive budgets, participating with "local people" might seem as just one more onerous task, because the options for involving the stakeholders in management are currently limited or not foreseen at all.

Such efforts towards participation in management of biodiversity can be characterised as *regulatory* rather than *participatory*. In effect the park's authority places limits upon local

communities rather than promoting their active and consensual management of these resources for a common purpose or purposes.

Ultimately it is the farmer or community who will accept or reject the technology, intervention or proposal. However, while the farmers know their socio-economic situation, resources, specialised knowledge and risk aversion, technical and social scientists, national park managers and government officials can provide additional insights into their problems and opportunities. In the end it is a partnership – an iterative two-way process which experience has shown greatly increases the chances of sustainable success.

3.2 Management Approaches

The discussion on the political and administrative framework noted that, regionally, the current protected areas system had grown out of the FSU *zapovednik* system. This system placed great emphasis on a scientific approach towards biodiversity protection and was understandably "driven" by ecologists and biologists. It is important to recognise and credit the deep commitment of ecologists and biologists in creating the protected areas system that exists today. However, the functions of protected areas are changing in order to accommodate the needs of people who depend on the resources they contain. The processes that threaten protected areas' natural values are also changing.

Therefore, it becomes increasingly important that an inter-disciplinary approach toward management is adopted. While it would appear that an inter-disciplinary approach is being adopted across the region, the additional and varied range of skills necessary for modern-day protected areas management still need to be institutionally embedded; management is currently dominated by a technocratic and scientific approach. This is manifest in the poor performance of interventions targeted at controlling community uses within the national parks and their buffer zones and are frequently identified as both a threat to the parks and a weakness in the management.

3.2.1 Lack of Management Options

The changing role of protected areas and the inclusion of different zones and support areas within a national park management plan necessitate an equally flexible range of management options and tools which, because of a restrictive legal framework and short experience, is currently under-developed within the regional protected areas system.

3.2.2 Conservation Decision-making Options

Conservation managers have a range of options to address any specific conservation issue. The first options are whether to protect a resource or to allow it to be used, accepting that utilisation can and often does enhance the status of a natural resource by giving it value to those who live closest to it.

Making the decision as to whether to protect or utilise requires a range of information much of which may have very little to do with scientific principles and more to do with the less glamorous practicalities of available financial resources and existing *de jure* and *de facto* property rights.

If the resource cannot be protected because resources are unavailable and there is no opportunity to utilise it then effectively, society is abandoning the resource to possible biological or economic extinction.

Having made a decision to protect a wild resource there are then a number of strategies available to managers which can be broadly characterised as:

- Confrontational – in which the state simply denies access to existing users;

- Compensation – in which the state compensates resource users for their opportunity costs;
- Alternative livelihoods trade-off strategy – in which those that are dependent upon the resource are provided with alternative livelihoods that are equal or more profitable than those that they are expected to give up. In its most extreme case this implies a trade-off or *quid pro quo* that the alternative livelihood is dependent upon the individuals observing the rules or forfeiting his or her livelihood. In a more passive form such a strategy can be based on simply providing or stimulating growth in other economic activities[7], and;
- Resource replacement – in which an alternative resource is offered to ease pressure on wild harvested resources, for instance gas can replace the need to collect firewood.

A decision to sustainably use a wild resource provides conservation planners and managers with a further option. Sustainable use of a wild resource requires a clear framework in which the benefits of conservation management are equal or greater than the costs of management and are captured at a local level where those who are incurring the costs of management are effectively represented. Furthermore, utilisation requires addressing issues such as tenure and pricing, authority and responsibility to provide the security necessary for local people to invest in conservation management.

3.2.3 Regional Implications of a Limited Range of Options

The creation of various zones within national parks and "support" or "buffer zones" surrounding it provides a framework for participation in management planning as well as the direct management of the natural values or resources. However, it also creates a new dynamic between the institutional managers of the protected areas and the local communities who may have longstanding and historical claims to these areas and the resources within the park boundaries as well as depending upon them for their present livelihoods.

While it would be unwise to advocate one strategy over another across the region, it is reasonable to state that the current framework does not allow enough flexibility for management planners and managers to attempt a range of strategies and select those that are most cost-effective in the specific management circumstances of individual protected areas. In many instances interventions are based upon a single and unproven strategy, for example, by absorbing local community opportunity costs by promoting eco-tourism. The more options a manager has, the less risky management becomes.

3.2.4 Sharing Costs

Associated with the under-financing of the protected areas system is the lack of any mechanisms to share the costs of conservation management. The cost benefit relationship of conservation management forms the basis of sustainable use as a management tool. There are few opportunities within the current national parks management framework to effectively agree the sort of co-management agreements necessary to achieve sustainable use of the natural values (including biodiversity resources) within the national parks.

[7] Resource replacement and alternative livelihoods can alter the relative values of the wild resources *in situ*. Use may, and often does, improve the status of the used population. This is the basis of the argument for use as a conservation tool and the argument carries the corollary that non-use is the risky option. Arguably, the precautionary principle can therefore be applied in this sense: it is risky not to use resources – therefore we should use them (SASUG, IUCN Species Survival Committee, Sustainable Use Issues and Principles).

There is an understandably natural resistance to the types of arrangements necessary to promote sustainable use in protected areas. Countries emerging from a command and control approach to management often require considerable conceptual adjustments in order to gain the confidence to devolve authority and responsibility for natural resources; a devolution which is necessary to provide the strength of tenure or proprietary rights which will be necessary for any co-management agreements. Furthermore, the current use of the IUCN Categories for protected areas and particular emphasis on Category I and II makes it hard to develop sustainable use systems given a restrictive legal framework.

However, such co-management through contracted or delegated management or devolved management arrangements could provide savings to the system in terms of reduced conflict, sustainable management practices and a rationalisation of the role and responsibilities of the statutory management institutions.

3.2.5 Wilderness – Myth and Reality

Considerable emphasis is placed upon wilderness areas in many of the existing management plans. While the former *zapovedniks* (now the core zones of the national parks) might be considered as wilderness areas it is apparent that much of the protected areas system has been heavily influenced by people in the past and is currently under significant human use.

Common property systems and customary rights of access are not easily recognised by modern state structures that lean towards private or state property systems. However, there appears to be considerable customary use of many of the areas currently included in the territories of the national parks; such use has to be accommodated if the aims of the ECP are to be realised. While most conservation decisions can be considered to be "value judgements" the use of traditional use zones to gradually depopulate or remove human activity from an area within a national park (which is apparently a strategy in some management plans) is questionable on a number grounds, not least its ethical implications.

3.2.6 Management Decision-making

When managing for conservation it is important to remember *"the expectations of different players highlight a fundamental difficulty in the degree to which the outcome of any multivariate problem can be predicted. In the hard sciences like physics and chemistry the majority of variables are known and can often be controlled precisely in an experimental sense. So predictions about outcomes can be reasonably precise. In fields such as ecology, economics, wildlife management, politics, business and the social sciences generally, there is a large number of known and potential variables, all subject to continual change, all interacting with each other in ways that may be predictable or non-predictable. Precise prediction about outcomes is much more difficult. Applying science per se to the problem makes absolutely no difference to the inability to predict precisely or accurately when you have complex multivariate problems - it is a reality.*

By way of example, in conservation and sustainable use we do our best to identify and account for the most important variables based on current knowledge. But we have to deal repeatedly with situations in which a variable considered unimportant or trivial one day, assumes monumental proportions the next. On occasion it is discovered that the most important variable was not identified and not measured". [8]

[8] Dr. Grahame Webb, Director, Wildlife Management International

The purpose of a management plan is to set out clear objectives, decide on the most cost-effective strategies to achieve these objectives and then through a number of interventions proceed to *manage* the defined area.

Too much emphasis on, or investment in, detailed studies before designing interventions may not be desirable and a more flexible and adaptive approach in which the management plan sets out the objective and strategy leaving the managers to work out practical and effective solutions using a variety of options at the site level may be more cost-effective.

While many of the management plans state that they are following an adaptive management approach, it is not clear how this is embedded in the plan. Furthermore, an adaptive approach, given the intensity of use over much of the territory of the national parks, would require much greater participation by resources users in both the planning and management of the resources.

An adaptive management approach to management planning and subsequent management requires considerable institutional capacity to provide planners and managers with the confidence to embark on a particular intervention without the "certainty" of a detailed study. However, given the normal time allocated for planning, it is unlikely that any detailed study can accurately predict the outcomes of an intervention and yet they lend authority to an intervention that can result in managers only discovering that assumptions were not correct after a three or five-year implementation period.

Given the complexity of managing multi-use areas within the national parks and the importance of support zones, management plans should set out broad and specific conservation objectives, describe the strategies necessary to achieve these objectives and describe a number of interventions that have a clear rationale and allow the managers flexibility to test and adapt the interventions.

With such a complexity of land use issues both in and surrounding the parks a management plan that provides a rigid set of discrete instructions to park managers is unlikely to allow him or her enough flexibility.

3.2.7 Monitoring

As stated above, in management planning for protected areas there is rarely the time or the resources for detailed studies on which to base management decisions. Furthermore, it is unlikely that a detailed study will identify all of the variables necessary for exact predictions because of the complexity with which managers are dealing. Therefore, it is reasonable for managers to make informed decisions on the understanding that they have clearly identified what is known and what is an assumption, and described the intervention. It is then possible to monitor the effectiveness of the intervention.

Monitoring is critical to an adaptive management approach. There are three broad reasons for implementing a monitoring programme[9]:

1. Assessing the effectiveness of an intervention (adaptive management);
2. Regulatory (audit function), and;
3. Detecting incipient change (early warning)

In the context of conservation management at the protected area level monitoring will be largely carried out to assess the effectiveness of the various interventions in the operational plan in achieving the plan's *objectives*, the first reason given above.

[9] Adapted from Monitoring for Conservation and Ecology. *Ed.* Goldsmith F. B. Chapman & Hall, 1992

Implementation of the plan will need to be monitored at a number of levels. These can be broadly defined as:

1. Assessing the effectiveness of the individual activities (monitoring performance);
2. Assessing the effectiveness of the various activities in achieving the outcome (monitoring the impact), and;
3. Assessing the effectiveness of the various outcomes on achieving the objective (monitoring the change).

At the implementation level the protected area manager should monitor the project's progress for:

1. Implementation – did we do what we planned to do (i.e. is the intervention still untested because the implementation was poor);
2. Effectiveness – did the plan meet the predicted objectives (i.e. has the plan been tested and found to have flaws), and;
3. Validation of the model's parameters and relationships (i.e. which assumptions, variables and interactions were correct).

There is a natural tendency to study rather than monitor. However, monitoring implies that there is an intervention that will cause some changes in the status or value of a particular component. While baseline studies can be carried out by inventory and studies, they should be measured against the resources that are available and their value to the management interventions. A critical question in any monitoring programme should be: "*why are we collecting this data?*"

3.2.8 A Rational Approach to Protected Areas Management Planning

Management planning for protected areas is a means to an end and not an "end in itself"; the "end" is the efficient management of land and resources upon which society has placed specific values, many of which are intangible[10]. While many of these values can be identified by various means[11] the fact remains that at the site level they must compete with tangible values of other land uses that may compete with biodiversity.

In developing a framework for decision-making it is important to consider the major threats resulting in biodiversity loss and the degradation of other protected areas values in terms of *cause* and *effect.* This is necessary because, historically, conservation managers have tended to address the symptoms of biodiversity loss – for instance over exploitation – rather than the root causes – which may not be immediately obvious and may have a sectoral, spatial or temporal distance from the immediate problem and be rooted in issues surrounding *tenure and pricing*, *costs and benefits* and *authority and responsibility*.

This report does not advocate utilisation over protection; nor does it suggest that the State should abrogate its responsibility for protected areas management. Rather, it serves to illustrate that there is a continuum from the strictly protected nature reserves (*zapovedniks*) through varying degrees of anthropogenic landscapes to the completely altered areas of intensive farming and urban or industrial areas. The core zones of national parks (often former *zapovedniks*) represent very small components of extremely valuable areas with high biodiversity value that may well have to be protected by the

[10] For instance existence values, future use values and unsubstantiated values attached to possible tourism developments etc.

[11] Timothy M. Swanson and Edward B. Barbier *Economics for the Wilds, Wildlife, Wildlands, Diversity and Development.*

state, but in other areas, the natural values of biodiversity, natural and cultural heritage and ecosystem function can, and often already are, an integral part of rural people's social, cultural and development opportunities.

The principle challenges that were identified by key informants were under-financing and conflicts with "local communities" or "local people". Arguably it is not possible to impose a solution through increased regulation and legislation. Increasing protection is only likely to further stretch the already limited material resources available to management institutions and an over-reliance on project funding is simply not sustainable. Furthermore, the conflicts between the state and non-state actors at the level of the protected areas are signs that local people are challenging the status of the protected areas, most likely because they represent significant opportunity costs and the protected areas designation, in many instances, disrupts historical and customary rights of access to the biodiversity resources.

Therefore any solution lies within the system and the key players. Allowing local players, (e.g. the farming communities, NP managers and the various government institutions) to devise local solutions to the conflicts through an analytical, participatory and reasoned approach with a number of options available based upon scientific (e.g. the vulnerability of the resource), the available finances, the root causes of the threat, existing social and administrative framework and existing arrangement of biodiversity utilisation.

4 Review of Existing Approaches to Rangeland Management

As rangeland management (RLM) planning was dealt with in a specific mission the approach and results for this issue differ from the general NP management planning findings. This is mainly due to the fact that the variety of factors the rangeland management planners will have to deal with are even more complex than the NP management planning. Nevertheless the team as a whole supports a homogenous participatory approach of adaptive co-management that will have to result in different approaches and methods in the support zones and the varying use zones inside and outside of protected areas, depending on *responsibility and authority, tenure and pricing and costs and benefits*.

4.1 Land tenure and management

Land tenure and taxes and charges (e.g. land tax, lease payments, nature use fee etc.) are complicated issues and often a matter of confusion and contradiction between various ministries and levels of government.

In Georgia the MOA should be the policy-maker and set the rules and regulations but there have been few changes since the 1960s. Land inside the NPs is state-owned land and the traditional use rangeland can be leased to farmers with the agreement of the MENR but the income goes to the local government. Outside the NPs the rangeland can be private (individuals and companies), communal or state. There are standard MOA lease agreement forms. Land can be leased for up to 49 years. According to the MOA more rangeland will be sold under the State Property Agricultural Land Privatisation Law soon to be enacted and implemented by the Ministry of Economy. This was not known at the Borjomi Municipality who recently became the first in the country to digitize land use maps. In Georgia rangeland within the NPs is the responsibility of the Ministry of Nature Protection and outside the NPs it is the overall responsibility of the MOA although the Borjomi MOA suggested that there were few rules and regulations to prevent rangeland overgrazing and degradation.

According to the Ministry of Agriculture (MOA) in Armenia all rangeland is state-owned. Lease agreements are made between the regional (rayon) Land Distribution Committee and the farmer. Others say that rangeland might be state, community or privately owned. Lease agreements can range from 5 to 99 years and include details of carrying capacity. The inclusion of more detailed "rules of grazing" is not known. National parks in Armenia allow livestock to be grazed in the parks in the traditional use zones. In Armenia rangeland management within the NPs is the responsibility of the Ministry of Nature Protection and outside the NPs it is the overall responsibility of the MOA but with communities having a responsibility to protect the environment under the Law of Local Self-Government and other laws and by-laws.

Whatever the rules and regulations, enforcement is generally weak

4.2 Technical findings

4.2.1 Status of rangeland management planning in the region

Extensive flora and vegetation surveys were conducted under the USSR during the 1940s and 1950s using standard survey and vegetation analysis and classification systems used throughout the Caucasus counties. The geo-botanical survey methods and vegetation analysis and classification systems were long established under the USSR system. The methods are consistent throughout the Caucasus countries. Some doubt has been raised as to their suitability for some habitat classification and for assessing ecological succession. The former might have some justification as far as bird and fauna habitats are concerned.

Only one major rangeland management (RLM) study has been completed in the three countries and that was prepared for the Borjomi-Kharagauli NP (BKNP) in Georgia in 2002, 2004 by a WWF consortium. Geo-botanical and vegetation condition studies were carried out at the Vashlovani, Lagodekhi and Tusheti NPs in Georgia during 2006 for the World Bank/GEF. Smaller geo-botanical and/or habitat studies have been carried out on both the Armenian and Georgian sides of the Javakheti plateau.

In the opinion of the study team, the RLM study for the BKNP – the only comprehensive RLM plan to have been completed - was very well done. The surveys were conducted professionally with very comprehensive inventories and analyses prepared which would be expected for a NP baseline survey and will form the basis for future monitoring and management of the ecosystems. The recommendations for the rehabilitation of degraded rangeland were comprehensive and practical. A livestock component was included and an action plan prepared to allow the community in the support zone to improve their livestock production systems and livelihoods.

The BKNP RLM plan is the "best practice" for the region and provides a benchmark for further improvement. The BKNP management team is aware of the limitations of the RLM plan and the areas, in which it can be improved, especially with the development of useful maps and practical recommendations and extension and training materials and field tools practical recommendations for NP management and rangers, communities, livestock owners and shepherds.

Though the BKNP RLM plan is well designed, the whole plan suffers from insufficient funding so that the proposals and improvements still await implementation.

4.2.2 Grazing management

Discussion with MOA staff at various levels and other people indicated that very few people were familiar with the carrying capacity "norms". Although carrying capacity is

supposed to be part of the lease agreement most agree that stocking numbers are way over the old "norm", for example 4-5 times over near Tusheti national park in Georgia. Following independence in the early 1990s there was an increase in private ownership of livestock and uncontrolled grazing which has led to a serious deterioration of rangeland condition in many areas. In Azerbaijan the problem was further impacted by the refugee and high unemployment problems. It was estimated by the MOA that 40-45 % of the winter pastures was in serious condition with erosion and poor to very poor grass cover. It is not known if the carrying capacity of the rangelands was reassessed to reflect this deterioration but either way the grazing populations are reported to be several times the "norms" in many areas.

A discussion with an innovative private farmer (see box below) from the Javakhq project area in Armenia shows that considerable improvements in the grazing and livestock production systems can be made. Possible constraints in his farming systems were identified and further improvements to the farming systems can be made and adapted to the village and smallholder farming systems. It is important to work closely with both the farmers and the technical extension services.

Box 1

Private farmer from Darik Village, Javakhq project area, Armenia

An interesting discussion was held with a large and innovative private farmer who owned one of the 17 villages in the project area and hired three other families. This farm was not typical of the traditional permanent livestock systems in the area because he moved some cattle to another farm at a lower altitude.

This farmer has introduced many new management techniques that were new to the area and possibly to Armenia. These included:

- Spring rest of the rangeland (until 15-20 June compared with 15-20 May locally)
- Electric fencing to control grazing; rotational grazing
- Takes water to other areas of the rangeland to improve pasture utilisation – by taking although electric pump would be better
- Imported varieties of oats; silage-making using oats and pea
- Haymaking using machinery
- Artificial insemination of local cows with improved breeds – Limmosin and Swiss Brown
- Start supplementary feeding of grazing cows from Sept.
- Concentrate supplements are fed to cows – some to pregnant cows and more to lactating cows
- Special care is taken of cattle in bad weather (e.g. hot weather, snow storms etc.)
- Transfer of male weaners to another farm at a lower altitude

4.2.3 Improvements to rangeland management planning

There are a number of ways in which RLM planning can be improved; some (such as improved extension materials, manuals and other field toolkits) might require additional inputs to those possible under current levels of financing for national park management planning. Improvements include:

- Consider the use of satellite imagery if available
- Use GIS facilities and GPS equipment in the survey
- Extend the survey, perhaps as a lesser level of detail, to the support zone
- Produce detailed 3-D maps for catchments, villages, districts etc.

- Produce a summary ecologically sustainable land management charts showing the major vegetation types against a degradation gradient
- Produce charts of village 3-D maps and of photos of various stages of degradation in villages to facilitate discussions with the communities
- Convert the recommended techniques for rangeland rehabilitation into appropriate extension and training materials for rangers, communities, livestock owners and shepherds: charts, leaflets, booklets and PowerPoint modules
- Prepare a baseline estimate of carrying capacity
- Develop a toolkit (booklet) for visual assessment of pasture type and condition
- Develop a manual for improved gazing management to maximise animal profitability while sustaining and/or improving the ecological condition of the vegetation type and condition
- Develop a manual for improved livestock production within the whole farming system.

4.2.4 Geo-botanical and vegetation assessment methods

The geo-botanical survey methods used for the BKNP study were the traditional methods developed during the USSR period. These methods are used consistently across all three South Caucasus countries and on the basis of the results of the BKNP study can produce excellent results.

Some questions have been raised about the suitability of these survey techniques to accurately to (1) classify some of the habitats required by zoologists and (2) ecological successions required by ecologists.

For the existing studies the exist survey techniques should remain. However, a manual should be prepared to more accurately describe their methods and procedures. At some time in the future the classifications used need to be modified to consider various wildlife and bird habitats relevant for zoologists and ecologists in the Caucasus.

4.2.5 Integrated rural development in the support zone

The threats to the national parks' unique and fragile environments, eco-systems and ecology in all three countries include overgrazing, cutting of wetlands for hay, uncontrolled fuelwood collection, unregulated irrigation water use and overuse of resources. The root causes of these threats are some or all of the following: poverty, low productivity subsistence agriculture, lack of affordable energy alternatives to fuelwood and lack of alternative employment opportunities.

In Azerbaijan lack of coverage of the World Bank's projects on irrigation scheme rehabilitation and credit supply to the villages in the support zone has placed even more pressure on the villagers to graze in the forests of the planned Samur-Yalama national park.

It is therefore essential that integrated community development programs be considered for the supports zone and that a substantial part of the financing be embedded in the NP management and business plans and be partly linked to qualification of various environmental criteria. Components of an integrated community development program could include:

- Environmental awareness education
- Environmental rehabilitation funds
- Community infrastructure (e.g. water supplies, roads repairs, school repairs etc.)
- Farming systems development (on-farm demonstrations, farmer training and extension, veterinary services, market, credit etc.)
- Skill training for off-farm work.

The inclusion of a larger community development component does not exclude the project seeking further funds from government and other donor programs.

5 Conclusions

The shortage of financing and conflicts between the various actors at the local level are not unique to the Caucasus, indeed they characterise most protected areas systems around the world. Modern conservation has its roots firmly in the protected areas movement which has resulted in today's global system of protected areas. However, more recently there has been a growing awareness that protection alone is not sufficient to maintain biodiversity. As result there has been a gradual progression towards an approach to biodiversity conservation that regards local people and their dependence on local biodiversity resources as less of a threat and more of an opportunity.

The development of more liberal and people centred policies has been driven by a number of imperatives that have been identified as[12]:

- Wildlife loss and environmental degradation – a growing awareness that the existing policies and legislation have been unable to curtail large-scale environmental degradation and wildlife loss;
- Indigenous rights imperative – the recognition of the rights of indigenous communities to use natural resources for their economic and cultural survival;
- Human development needs – the recognition of the basic human need for development in rural areas has led biodiversity to be linked with social and economic development;
- Land tenure and social reform – the need to resolve inequity in land tenure has resulted in changes in land ownership and the recognition of communal rights of access to, and use of, public and communally owned lands, and;
- Expenditure or economic imperative – where the high costs of managing the biodiversity estate has led to policies and legislation that encourage different management processes to reduce, share or meet these costs.

While the strength and relevance of these various imperatives may vary within the region the fact remains that the protected areas system, despite the considerable efforts and developments so far, is currently under stress and that expanding the system will further stress the limited resources of the state to conserve biodiversity.

Against this background it is important to look at the strategies that have been tried elsewhere to provide a more effective system to conserve biodiversity. Protection is obviously one strategy and it should be clearly stated that this remains the most important mechanism for conserving biodiversity. However, the limitations of protection can be measured by:

- The state's ability to sustainably finance the system;
- The continued willingness of external agencies to provide funding not just for protected areas development but also for their operational costs and the opportunity costs of local people whose livelihoods are adversely affected by protected areas, and;
- The willingness of local people to absorb any opportunity costs and restricted rural economic development opportunities.

[12] i)Steiner, A. And Rihoy, E, (1995). The Commons Without Tragedy? Strategies for Community Based Natural Resources Management in Southern Africa. ii) Simbotwe, M. P. (1993) In: Voices From Africa: Local Perspectives on Conservation. Eds. D. Lewis and Carter, N. WWF Washington D.C. iii) Rudge, J., Hurst, F. And Hunter, N. Literature Review of Wildlife Policy and Legislation. Natural Resources Institute, University of Greenwich.

There is an imperative to explore all the ways in which biodiversity can be sustainably managed. The bulk of the protected areas system in the region consists of land over which there are existing claims of access to the resources. Furthermore, the areas immediately adjacent to the national parks and strict nature reserves are vital to the sustainability of the biodiversity resources. Influencing the land uses both in the parks and in the areas surrounding them is critical to the sustainability of any network.

Failure to positively influence biodiversity considerations in the land uses in these areas will result in a gradual fragmentation of the system until it consists of a series of isolated islands that are vulnerable to catastrophic or stochastic events.

Realising that the state has limited resources for the management of protected areas and the natural values (e.g. biodiversity) outside of the protected areas is vital for their sustainable management. Therefore it becomes necessary for national parks planners and managers to seek to influence the land or wild resource management in areas where they do not have complete authority over the biodiversity resources to be fully in control or responsible. Furthermore, given limited material resources, regulatory approaches that severely restrict "local people's" use of biodiversity risk alienating biodiversity from rural livelihoods, creating an either/or situation in which people can either have biodiversity or they can have development.

It is important to stress that there is no "blueprint" approach; establishing land use systems that allow biodiversity and other natural values to be competitively and sustainably integrated with other land use systems are needed. It will require considerable analysis, patience, the transfer of some authority and benefits, and importantly, time.

Such an approach also requires the prevailing authority and society in general to recognise a number of realities. This often needs a period of adjustment and is a necessary step in the process to rationalising the management of these resources. These realities might include:

- There are limitations to the *role* that the state agencies can play in ensuring that there is sustainable management of biodiversity and other wild resources;
- There are finite *financial* resources available to the state authorities for the protection of biodiversity and other natural values of the protected areas system;
- Protected areas cannot exist in *isolation* from the rest of land use. For a sustainable system there needs to be linkages with land uses outside the protected areas that promote sustainable biodiversity conservation;
- There may be historical *rights of access* to many of these resources although these may not be formally recognised by the state. Although many national parks are created on state lands the people living locally may perceive a historical right of use of the resources and this will have to be taken into consideration in the internal zoning plan;
- People will only conserve a resource when the *benefits of conservation are greater than the costs*;
- The *opportunity costs* of conservation are very often considerable and rural people who live closest to the resources (whether it is wildlife or a protected area) are frequently the ones who absorb those costs;
- Many rural people regard biodiversity and other natural values as an important part of their *livelihood* and its sustainable use is of real concern to them, and;
- Many rural societies have historically used, and are currently using, these resources and their use may be an important part of the overall management.

Given *the right conditions*[13] they can normally manage many, if not all, of these resources with minimum assistance from the state.

Therefore one of the purposes of protected areas management planning is to seek to develop mechanisms that allow the sustainable management of biodiversity (and other natural values such as cultural values and landscapes) on land that is not totally protected (e.g. the economic zone, traditional use zone) within the protected areas abut also on land surrounding the protected areas.

Management planning for national parks (and other categories of protected areas) is partly about creating the *right conditions* for sustainable management both in and around the protected area. Creating the right conditions[14] for sustainable management of biodiversity might reasonably include:

- Giving biodiversity a focussed value to those who live with it;
- Enabling those who live with and bear the costs of biodiversity to be the primary beneficiaries of its management;
- Allowing those who live with the biodiversity resources to participate in determining the control of access and benefits from its management;
- Recognising biodiversity in its own right as an integral and viable component of national land use policy;
- Recognising that biodiversity is a unique natural resource offering various opportunities for sustainable rural development and economic utilisation and that the protected areas system serves as a valuable reserve of biodiversity resources for neighbouring communities;
- Creating incentives for sustainable biodiversity management at the community level by devolving the authority to manage and benefit from biodiversity to an appropriate representative community institution;
- Incorporating the role of traditional systems, traditional knowledge, uses and other cultural aspects in biodiversity management in planning and implementation. Such appropriate traditional institutions, knowledge and forms of management should be enhanced and also incorporated into national strategies and biodiversity management techniques;

A progressive and rational approach to biodiversity conservation does not advocate utilisation over protection; nor does it suggest that the state should abrogate its responsibility for protected areas management. Rather, it serves to illustrate that there is a continuum from the strictly protected nature reserves (*zapovedniks*) through varying degrees of anthropogenic landscapes to the completely altered areas of intensive farming and urban or industrial areas. The core zones of national parks (often former *zapovedniks*) represent very small components of extremely valuable areas with high biodiversity value that may well have to be protected by the state, but in other areas, the natural values of biodiversity, natural and cultural heritage and ecosystem function are an integral part of rural people's social, cultural and development opportunities.

Under the FSU, the system of state control and strict protection may have protected biodiversity resources within the *zapovedniks.* However, the political, social and economic framework within which the *zapovedniks* were once framed was not, in itself, sustainable. Following independence and the introduction of free-market reforms, particularly with respect to agriculture and property, new pressures have come to bear upon the

[13] Recognising that if this is not possible then protection is an option that the state can apply.

[14] Adapted from: *A Brief Guide to the Establishment of Community Resource Management Areas (CREMAs), A User Manual*. Collaborative Resource Management Unit, Wildlife Division (Forestry Commission) 2004

environment and biodiversity - pressures arising from individual or local needs rather than the needs of a centralised administration and requiring solutions that address the issues at an appropriate level and in an equitable manner.

The majority of the protected areas system in the south Caucasus (including large parts of the national parks) will include land over which the non-state actors will have considerable and legitimate or customary rights. Furthermore, they will depend upon this land for their very existence – economically, socially and culturally. The challenge to regional protected areas planners is to include the natural values (biodiversity, heritage, landscape, future uses and ecosystem function) and the various interests of these people in the planning and management of these areas.

The changing face of protected areas, including national parks, therefore requires an approach that is more inclusive of people in the management of their natural values; an approach that is more participatory and provides incentives for conservation rather than a restrictive system of state sanctions that excludes participation in the planning and management of these resources. Conservation management will need to address the inequalities and inefficiencies in the allocation of *costs and benefits* of conservation, *tenure and pricing* of natural values and the *authority and responsibility* for their management. Such an approach is supported by the Convention on the Conservation of Biodiversity (CBD) and is reflected in Article 11 of the Convention that requires members, to *"as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity".*

To avoid imposing a blueprint approach to park planning, protected areas management planning will need to consider:

- Broad participation at the level of the rural communities/people that both use areas within the park and the land that surrounds the park where practicable that clearly defines, through a participatory process, the risks and assumptions of any intervention;
- Broad participation by the existing socio-administrative structures that exist around the park;
- The ability of the protected areas authority to enter into binding agreements with defined user groups and landowners regarding the use of biodiversity and subsequent flow of revenue;
- Clear elaboration of a variety of strategies to achieve biodiversity conservation according to the zone and prevailing conditions and level of threats;
- An operational plan that sets out the interventions as discrete activities with a clearly defined objective with measurable indicators, risks and assumptions and a means to adapt the intervention with experience.

The threats to the various national park unique and fragile environments, eco-systems and ecology in all three countries include overgrazing, cutting of wetlands for hay, uncontrolled fuelwood collection, unregulated irrigation water use and overuse of resources. The root causes of these threats are some or all of the following poverty, low productivity subsistence agriculture, lack of affordable energy alternatives to fuelwood and lack of alternative employment opportunities.

Adaptive co-management inside and outside of the NPs will be required to support the state and civil society activities to alleviate the poverty and improve the rural development in a way that sustains both the ecological as well as the human resources present in the region.

Annex 1: List of People met:

Armenia

Dr. Aram Aghasyan	TJS National Expert
Dr. Armen Gevorgyan	TJS National Coordinator
Dr. Tatyana Danielyan	Ministry of Nature Protection, Head of the Biodiversity Department
George Fajvush	Institute of Botany, Academy of Science, Yerevan
Karen Manvelyan	Director WWF Armenia
Andranik Ghulijanyan	Director FREC Yerevan
Tigran Grigoryan	Director Lake Sevan NP
Gagik Martirosyan	Deputy Director Lake Sevan NP
Robert Avagyan	Planning Specialist Lake Sevan NP
Peter Herbst	Legal Specialist WB Forest Development Project
Dr. Razmik Sahakyan	Head, Department of Animal Grazing and Animal Feeds, Science Centre, Ministry of Agriculture
Dr. Rubik Shahazizyan	Coordinator, Watershed Management Component, World Bank-funded Natural Resource Management and Poverty Reduction Project (2002-2007) under Min. Natural Protection
Arthur Hambardzumyan	Head of Legal Department, Ministry of Nature Protection
Karine Grigoryan	Head of Legal Department, Ministry of Agriculture
Ashot Santrosyan	Lake Arpi National Park Project Coordinator
Armen Khechoyan	Farmer, Darik Village, National Park Project Area
Dr. Djirajr Vardanyan	Director, Institute of Botany

Georgia

Mike Garforth	TJS Regional team leader
Rita Khidirbegishvili	TJS Regional advisor
Lali Tevzadze	TJS Georgia national expert
Lasha Moistsrapishvili	Deputy Head of the Protected Areas Agency and Javakheti NP Project Director
Tea Barbakadze	Head of Planning Department of the Protected Areas Agency
Otar Tsamalaidze	Director of the Kazbegi NP
Zaal Kvantaliani	Director of the Sataplia SNR
Tobias Garstecki	Coordinator, IUCN South Caucasus Programme
Eka Kakabadze	IUCN expert
Paata Shanshiasvili	Programme Manager of the US Deparment of the Interior Protected Areas Project
Dr. Giorgi Sanadiradze	Director, WWF Caucasus Programme Office

Irakli Shavgulidze	Chairman, NACRES (Noah's Ark Centre for the Rescue of Endangered Species)
Levan Sukhbulidze	Expert, NACRES
Kakha Artsivadze	Expert, NACRES
Ramaz Gokhelashvili	Director, IUCN South Caucasus Programme
Marjam Shortadze	Director ELKANA
Irakli Dvali	Lawyer, Protected Areas Agency
Ednar Mickanadze	Head, Land Use and Regional Relations Branch, Department of Agricultural Development, Ministry of Agriculture
Toma Dekanoidze	Director, Borjomi-Kharagauli National Park
Natia Muladze	Chief of Visitors Service, Borjomi-Kharagauli National Park
Natela Gogoladze	Deputy Director, Borjomi Regional Municipality
Tamaz Metreveli	Head of Agricultural Division, Borjomi Regional Municipality
Dr George Arabuli	Director, Botanical Dept of Georgia National Museum
Azerbaijan	
Sadagat Mammadova	TJS National Expert and Programme Director for the Samur-Yalama national park project
Emin Mustafayev	TJS National Coordinator
R. Aghayev	Legal Department, Ministry of Ecology and Natural Resources (MENR)
Elchin Mustafayev	Department for the Protection of Biodiversity and Development of Specially Protected Areas (DPBDDSPA) in the MENR
I. Pashayev	Liaison Specialist in DPBDDSPA in the MENR
R. Allakhveriyev	Liaison Specialist in DPBDDSPA in the MENR
G. Aghayev	Specialist in DPBDDSPA in the MENR
Israfil Israfilov	Specialist in DPBDDSPA in the MENR
Kh. Kazimov	Specialist in DPBDDSPA in the MENR
Hartmut Müller	Director of Sirvan National Park
H. Safirov	Deputy Director of Hirkan NP
E. Valiyev	Acting Director of Absheron NP
M. Bakhishov	Deputy Director of Ag-Gol NP
A. Abbasov	Deputy Director of Kizilaghaj NP
F. Sadigov	Project manager in WB PIU Shah Dag and Ordubad NP
I. Babayev	Zoological Institute, Academy of Science
S. Salmonov	Department Director Forest Development Department
R. Ibrahimov	Specialist of the Forest Development Department
G. Amrahova	Specialist in DPBDDSPA in the MENR
Adil Ozuyov	Ichtiologist Biodiversity Training Centre

Vugar Ahmedzadeh	Specialist in DPBDDSPA in the MENR
Salmay Mamedova	Chief Advisor in DPBDDSPA in the MENR
Leyla Suleymanle	Specialist in DPBDDSPA in the MENR
Vahid Hajiyev	Professor, Director of Institute of Botany, Azerbaijan National Academy of Sciences
Chingiz Farajov	Head, Cattle Breeding Division, Ministry of Agriculture