

**Institutional Support to the Albanian Ministry of Environment,
Forest and Water Administration for Sustainable Biodiversity
Conservation and Use in Protected Areas and the Management
of Waste**

**Management Plan for
Buna River
Protected Landscape
2016-2025**

January 2016

Contents

ACKNOWLEDGEMENTS	3
ABBREVIATIONS	4
INTRODUCTION	5
PART 1: DESCRIPTION OF THE AREA	10
1.1 Location and Context	10
1.2 Regulatory and Institutional Framework.....	12
1.2.1 Legal Status.....	12
1.2.2 Policies and Legislation	13
1.2.3 Stakeholders	15
1.2.4 Governance and Management Framework	16
1.3 Park’s ecological and socio-economic system	18
1.3.1 Overview.....	18
1.3.2 Ecosystem Structure, Ecosystem Services and Economic Activities	22
PART 2: EVALUATION OF THE PROTECTED AREA	30
2.1 Assessment of Values.....	30
2.2 Assessment of Threats.....	32
2.3 Assessment of Institutional Framework	35
PART 3: MANAGEMENT OF THE PROTECTED AREA	37
3.1 Positioning this Plan in the decision-making hierarchy	37
3.1 Vision and Objectives	38
3.2 Management Zones	38
3.3 Management Actions.....	40
3.3.1. Management Goal 1: Conservation of Ecological Values	41
3.3.2. Management Goal 2: Development of Livelihoods Based on Sustainable Use of Ecosystem Services.....	54
3.4 Monitoring Programme	68
PART 4: BUDGET PLAN.....	69
4.1 Monitoring Programme	69
4.2 Management Measures: Budget and Time Estimates	74
PART 5: ASSESSMENT OF IMPLEMENTATION	80
PART 6: REFERENCES / BIBLIOGRAPHY	87
PART 7: ANNEXES.....	94

ACKNOWLEDGEMENTS

Firstly, we would like to thank the members of the Shkodër District Forest Services Directorate, the Director and his technical staff for the continuous contribution and assistance they provided during the preparation of the management plan and for their enthusiastic participation to workshops and numerous field data collections campaigns.

We would also like to thank the staff of the Directorate of Biodiversity, Sector of Protected Areas, of the Ministry of Environment in Tirana who took active part to the various technical workshops and the training.

We would particularly like to thank Genti Kromidha, of INCA NGO, who dedicated a lot of his time to this work, contributing to the good communication of the project staff and experts with the local people, solving a lot of logistic issues and providing important technical inputs.

All the trainees that took part to the workshops and the on-the-job training activities of field data collection, providing a valuable contribution to the Plan preparation and that are individually listed in the Introduction chapter.

The mayors and officials of the Velipoje, Dajç, Ana Malit, Berdice and Bushat municipal units who actively participated to the meetings and provided support and inputs to various experts teams.

We would like to thank all the SGS (Shërbimi Gjeologjik Shqiptar) Laboratory staff, with a special mention to Dr. Xhume Kumanova, whose help was essential to assess the status of the water resources in the BRPL.

A special thank goes to Dr. Alfredo Guillet, for the constant technical contribution he provided during the Plan preparation.

Finally we would like to thank all the local people living in the Buna river Protected Landscape who helped us in one way or another and to whom this plan is dedicated, with the hope that it will contribute in finding a balance between their activities and their environment, conscious that the sustainable future of the human race will inevitably pass through the compromise between appropriation and respect of the natural resources.

ABBREVIATIONS

BREN	Balkan Regional Ecological Network
BRPL	Buna River Protected Landscape
BUND	Friends of the Earth, Germany
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CEPF	Critical Ecosystem Partnership Fund
CITES	Convention on International Trade in Endangered Species
DBPA	Directorate of Biodiversity and Protected Areas
DCM	Decision of the Council of Ministers
DFP	Directorate of Forests and Pastures
DFSD	District Forest Services Directorate
DGCS	Directorate General for Development Cooperation
DSS	Decision Support System
ECNC	European Centre for Nature Conservation
EURONATUR	European Nature Fund
EU	European Union
GIS	Geographical Information System
IBA	Important Bird Area
INCA	Institute of Nature Conservation in Albania
IPA	Important Plant Area
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
MoE	Ministry of Environment of Albania
NACFP	National Association of Communal Forest and Pastures
NAPA	National Agency for Protected Areas
NEN	National Ecological Network
NGO	Non-Governmental Organization
NTFP	Non Timber Forest Product
PA	Protected Area
PEEN	Pan European Ecological Network
PROGES	Proges Consulting, Rome
SAC	Special Area of Conservation
SJNP	Shebenik-Jabllanicë National Park
SPA	Special Protection Area
TFP	Timber Forest Product
UNEP	United Nations Environment Programme
WWF	World Wide Fund for Nature

INTRODUCTION

The Buna River – Velipojë Protected Landscape (BRPL or the Landscape) comprises one of the most important coastal wetlands areas of the country. Located between Lake Shkodra and the Adriatic Sea, the area was designated as a protected landscape in 2005, with a total extent of 23,027 ha. Situated around the delta of the Buna River, the Park supports a great variety of wetland communities. Together with recent coastal dune deposits and inland low karst ridges, the landscape includes a wide diversity of geological types, landscapes, habitats and plant and animal species. From a human perspective the BRPL includes parts of eight municipal units, for which the total area is 49,294 ha and the total population (2011) was 68,128 inhabitants. Local livelihoods, in the form of crop and livestock production, fishing and tourism, are strongly dependent on the use of constituent natural resources within the BRPL.

The present plan is the first management plan to be developed for the BRPL. It has been prepared as part of an on-going project providing institutional support to the Albanian Ministry of Environment (MoE), funded by the Italian Development Cooperation (DGCS) and implemented by IUCN Belgrade. Under this project management plans have been prepared for two protected areas, the BRPL and the Shebenik-Jabllanicë National Park. Based on these experiences a general guideline for the preparation of management plans for other protected areas in Albania is being prepared.

Planning team

The BRPL management plan has been prepared by a core team of technical experts from IUCN, Proges Consulting and Sapienza University of Rome, working in conjunction with the MoE, the Shkodër District Forest Services Directorate (DFSD) and the Institute of Nature Conservation in Albania (INCA) a local non-governmental organization (NGO). Additional technical experts from PROGES contributed to the planning process through specific consultant studies and participating in the series of planning workshops. These workshops included participation by local stakeholders in the form of representatives of Ana Malit, Berdice, Bushat, Dajc and Velipojë Communes; the Shkodër DSFD and Agricultural Directorate; the Municipality of Shkodër; the Shkodër Region; and the Drin Water Basin Agency; as well as experts from Shkodër University and local NGOs (Lake Shkodër Transboundary Forum and Ylber).

The plan was prepared and drafted by the following consultants (in alphabetical order):

- Fabio Attore Sapienza University of Rome
- Robert Cunliffe IUCN
- Michele De Sanctis IUCN
- Marco Falcetta PROGES Consulting
- Andrea Ghiurghi IUCN
- Tiziana Giuliani IUCN
- Francesca Pella IUCN
- Matteo Rossi IUCN
- Edoardo Scepi IUCN
- Genti Kromidha Institute for Nature Conservation in Albania NGO (INCA)

but it is also based on the direct contribution of many stakeholders and project collaborators who took active part to the 4 participative workshops executed for the preparation of this plan and to the data collection during the field campaigns of 2012 and 2013 in the BRPL (in alphabetical order):

- Albert Martini	Commune Velipoje, Shkodra
- Anila Neziri	Luigj Gurakuqi University of Shkodra
- Arben Pambuku	Institute of Geology, Tirana
- Donis Qyteza	Commune Velipoje, Shkodra
- Eduard Gajtani	Forest Directorate of Shkodra
- Elvin Shala	Forest Directorate of Shkodra
- Esmeralda Keci	Luigj Gurakuqi University of Shkodra
- Festim Broja	Forest Directorate of Shkodra
- Klaudio Ndoka	Luigj Gurakuqi University of Shkodra
- Miriam Ndini	Institute of Geology, Tirana
- Ndreke Shelqeti	Commune Bushat, Shkodra
- Ndue Pellumbi	Commune Velipoje, Shkodra
- Pashke Kopshti	Commune Dajc, Shkodra
- Shpresa Mustafa	Commune Dajc, Shkodra
- Sonila Marku	Institute of Geology, Tirana
- Tonin Macaj	Forest Directorate of Shkodra
- Valentin Gocaj	Commune Ana e Malit, Shkodra
- Xhavit Pellumbi	Commune Berdice, Shkodra
- Zeqir Ujkaj	Forest Directorate of Shkodra

Planning process

Being the first management plan to be prepared for this area, it was necessary to put considerable effort into collating existing baseline information. Specialist research studies were as well carried out to generate additional new data. These included identification and analysis of stakeholders, water resources, plant communities, fauna (mammals and birds) and socioeconomic features.

A series of four planning workshops were carried out with local stakeholders. The purpose of these meetings was to develop a Decision Support System (DSS) for the BRPL, and to use this as a tool to conduct a systematic analysis of the Park environmental and socio-economic conditions and dynamics, as well as to identify management actions. A preliminary understanding and description of the BRPL was developed based on local knowledge and supported by existing data. This was initially captured in the form of system matrices (workshop 1) and then system diagrams (workshop 2). Thereafter, indicators were identified for all system components, and the model was populated with existing GIS and tabular data in order to provide an operational DSS. Selected stakeholders were trained on the use of the DSS. The purpose of the third workshop was to then identify and evaluate potential values of and threats to the Park; to develop a vision and objectives for the Park and to use the DSS to identify possible management actions. Following the development of a draft financial plan, it was possible to provide the first complete draft of the management plan. The draft plan was reviewed and refined during the fourth and final workshop, and subsequently updated to provide a final draft version. Details of the process are shown in Table 1.

It is expected that the DSS tools and methodology put in place for the planning and management of the Buna River Protected Landscape (and during the same period also for the Shebenik-Jabllanicë National Park in the context of the same project) shall be used by the new Albanian Agency for Protected Areas to manage the entire national protected areas network (see Annexe 2 for a comprehensive overview on the DSS technology and methodology).

Table 1. Process followed for developing the management plan.

Step/Activity	Timing	Output
1. PREPARATION		
Initial planning	Sep-Oct 2011	Overall project work plan
2. DATA COLLECTION		
Stakeholder analysis	Oct-Nov 2011	Report on stakeholders and institutional capacity
Review of existing data, field data collection and analysis of data	Nov 2011 – Nov 2013	Technical reports
3. DEVELOPMENT OF DECISION SUPPORT SYSTEM (DSS)		
First stakeholders workshop	Jan 2012	Description of the system in the form of system matrices
Second stakeholders workshop	Feb 2012	Model of the system in the form of system diagrams
Training on development and use of the DSS	April 2012	8 stakeholders trained to use the DSS
Identification of indicators by technical experts and incorporation of GIS data	June 2012	Complete and operational DSS for the BRPL
4. EVALUATION AND IDENTIFICATION OF MANAGEMENT ACTIONS		
Third stakeholders workshop	Nov 2012	Cause-effect analysis using the DSS resulting in the identification of management actions
Synthesis of results to date	May 2013	Draft management plan
5. DEVELOPMENT OF FINANCIAL PLAN		
Initial estimates of time frames and budgets for management actions	Nov 2013	Draft financial plan
Second draft of management plan	Dec 2013	Updated draft of management plan
6. FINALIZATION		
Fourth stakeholders workshop – review of the draft management plan	March 2015	Final draft of the management plan incorporating results of the workshop. It has to be highlighted that, due to administrative constraints, the project was kept on-hold from January 2014 to February 2015 and as a consequence the process for the preparation of the management plan had to be suspended as well.
Formal submission of the MP to MoE/NAPA	January 2016	Final text submitted to MoE/NAPA for institutional follow up.

Purpose and use of the plan

The current BRPL operational structure essentially deals with routine administrative and surveillance tasks, with little focus on the monitoring and the management of the park's natural and cultural resources. With the view of filling this gap, the Plan deals with monitoring and managing the Park's ecological values and, hence, it does not cover the already on-going administrative services, the surveillance activities and the maintenance of infrastructures.

More specifically, building upon the environmental and socio-economic assessments and analyses presented in parts 1 and 2:

- part 3 defines the monitoring programmes for the protected area's natural and cultural values, and identifies a set of planning measures to improve the protected area effectiveness in conserving the constituent natural resources and contributing to sustainable development of local livelihoods;
- part 4 provides estimates for the human, infrastructural and financial resources to run the monitoring programme and implement the measures mentioned above;
- part 5 provides ways and methods to assess the plan implementation progress;
- part 6 lists the bibliographic references consulted during the planning process;
- part 7 includes 9 annexes providing:
 1. detailed documentation of the methods, instruments and phases of the planning process,
 2. data and information that substantiate the analysis presented in parts 2 and 3,
 3. the detailed monitoring programme and the related operational protocols.

The overall purpose of the plan is to guide the future development of the BRPL and to ensure that it is managed and used in a manner that is consistent with a vision of conserving the constituent natural resources and contributing to sustainable development of local livelihoods. Primarily the plan is intended to serve as a reference document and tool to guide and assess the programmes and management actions of personnel of the Regional Office (DSHP of Shkodër) who are responsible for the management of the Protected Landscape and for the implementation of the management plan.

The Plan provides the overarching strategic framework for the protected area's medium and long term management and, in this respect, it does not deal with all the routine administration of the protected area, such as the already on-going administrative services, surveillance and maintenance of infrastructures.

The plan will serve also as: a professionally presented document that can be used to source funding for implementation, and to ensure that such funds are allocated efficiently and effectively; a tool for communication and education about the protected area and to ensure continuity in management efforts. The plan will also identify and clarify the contribution of the BRPL towards on-going development of a national ecological network (NEN) and the broader Balkan Regional Ecological Network (BREN).

Target audience

The plan is primarily targeted toward personnel of the administration directly responsible for daily management of the BRPL. Other target audiences include local partners in the form of residents and resource users in the park; administrative personnel of the relevant Municipalities and municipal units; members of District and Region Administrations and technical agencies; the Shkodër Regional Environment Agency; other ministries, institutes and NGOs involved with spatial planning and the management of natural resources in this region; as well as potential technical and funding partners.

Duration and revision schedule

The plan is intended to cover the 10 year period from 2016 to 2025. The effectiveness of management actions will be formally monitored and assessed on an annual basis, as part of the

process of preparation of each subsequent annual work plan. This will provide regular opportunities to update and amend the initial management plan, and to ensure that it remains relevant to the vision, objectives and local context of the BRPL.

The BRPL is a relatively newly established protected area and the preparation of this plan is the first concrete effort toward establishing a comprehensive operational management of this protected area supported by a substantial amount of quantitative data. This plan therefore includes a large number of management actions targeted at further increasing the knowledge on relevant environmental and socio economic dynamics. The outcomes of the studies might lead to identify new management actions that shall be integrated in the plan when performing the above mentioned plan's updates and amendments.

Implementation of the plan: annual and multi-annual programming

The Parks' management team should develop annual and multi-annual programmes of activities that define specific tasks, events and targets required to complete the actions of the management plan. Work programmes should define a coherent, organised agenda or schedule of commitments (including commitments of actors other than the Parks' administration), instruments and/or activities that elaborate and implement each management action.

Plan structure

The plan is structured according to the standard format recently adopted by the MoE concerning management plans for all protected areas in Albania. The plan includes the following main chapters:

- Introduction
- Summary
- Part 1: Description of the area
- Part 2: Evaluation of the protected area and assessment of the institutional frame work
- Part 3: Management of the protected area
- Part 4: Financial plan
- Part 5: Monitoring and evaluation of management
- Part 6: References / Bibliography
- Part 7: Annexes.

PART 1: DESCRIPTION OF THE AREA

This section provides summary background information concerning the location and context of the BRPL, the prevailing regulatory and institutional framework and an overview of the system to be managed. Accompanying maps are presented in Annex 1, and additional detailed information pertaining to the DSS and specific aspects of the natural and socioeconomic systems in Annexes 2 to 9.

1.1 Location and Context

Location and Boundaries. The location and boundaries of the BRPL are outlined in DCM No. 682, dated 02.11.2005 (Annex 3). The Protected Landscape comprises an irregular block of land some 20 km long in the north-south direction and 6-15 km wide in the east-west direction, with a total area of 22,251ha. This is situated to the extreme northwest of Albania, along the border with Montenegro (to the west), and between Lake Shkodra (to the north) and the Adriatic Sea (to the south) (Map 1).

Local Administration. The bulk of the BRPL is situated within Shkodër Municipality of the Shkodër Region, with a minor portion to the southeast forming part of the neighbouring Lezhe Municipality of the Lezhe Region (Map 2). It includes parts of eight municipal units: Rrethinat, Ana e Malit, Dajç, Velipojë, Bërdicë and Bushat within Shkodër Municipality, plus small parts of Balldren i Ri and Shëngjin municipal units in Lezhë Municipality. Collectively these eight municipal units cover a total area of 49,294 ha (or 493 km²), and have a total population (2011) of 68,128 people, settled in 74 villages (Table 2).

Table 2. Summary details for the eight municipal units that contribute to the BRPL.

Municipal units	Municipality	Number of villages	Population 2011	Total land (ha)
Rrethinat	Shkodër	10	21,199	5,561
Ana e Malit	Shkodër	10	3,858	4,880
Dajç	Shkodër	11	3,885	5,282
Velipojë	Shkodër	10	5,031	7,221
Bërdicë	Shkodër	6	5,773	3,747
Bushat	Shkodër	14	14,149	8,164
Balldren i Ri	Lezhë	8	6,142	7,730
Shëngjin	Lezhë	5	8,091	6,709
TOTAL		74	68,128	49,294

Neighbouring Areas. The neighbouring areas comprise: to the north and east, the remaining portions of Ana e Malit, Bërdicë, Bushat, Balldren i Ri and Shëngjin (plus Shkodër) municipal units; to the south the Adriatic sea, and to the west the adjacent portion of Montenegro.

Regional Context. Shkodër is the principal city in the north of Albania. Founded in the 4th Century BC it is one of the oldest and most historic places in Albania, as well as an important economic and cultural centre. Through the ages it has retained its status as a major city in the Western Balkans due to its strategic positioning close to the Adriatic Sea and Italian ports, combined with land routes to other important cities and towns in the region. Within Albania, Shkodër is located 35 km north of Shëngjin Port, 80 km North of Rinas International Airport, 90 km North of Tirana and 110 km North of Durres Port and, in the region, it is 60 km to Podgorica (Montenegro) and 260 km to

Pristina (Kosovo). Regional integration is recognized as being essential to future economic development of this broader area. In addition to being a regional commercial centre, Shkodër is also an important university town.

Surrounded by mountains, Shkodër is located on the shores of Lake Shkodra, the largest lake in the western Balkans, at the junction of the Drin and Buna Rivers. Lake Shkodra straddles the boundary between Albania and Montenegro, and together with the contiguous BRPL, is recognised as an important transboundary conservation area. In addition to agricultural livelihoods, there is a growing tourism industry based on the scenic combination of mountains, lake and sea, combined with the rich historical and cultural resources of the area, including a growing culinary reputation. The nearby popular coastal destination of Velipojë is the closest coastal access for much of Kosovo.

Relation to National Ecological Network. The BRPL is one of 798 existing protected areas in Albania. Most of these comprise nature monuments of limited extent (n = 750). There are 55 more extensive protected areas covering a total area of 435,795 ha (Map 4). The BRPL is one of five Protected Landscapes. It accounts for 5% the overall extent of protected areas in Albania.

Within the Shkodër and Lezhë Regions there are a further six protected areas: Thethi National Park (2,630 ha) and the Bjeshka e Oroshit Protected Area with Multiple Use (4,745 ha) in the mountainous interior and, in the coastal lowlands, Lake Shkodër (26,535 ha), Kune-Vain-Tale (4,393 ha), Berzanë (880 ha) and Patok-Fushëkuqe- Ishem (5,001 ha) Managed Natural Reserves. Lake Shkodra Managed Nature Reserve is the largest of these, and together with the adjacent portion of Montenegro and the BRPL forms part of a much larger transboundary conservation area. The BRPL together with the Kune-Vain-Tale and Patok-Fushëkuqe- Ishem Managed Natural Reserves form part of a network of reserves situated in the coastal wetlands of Albania.

Contribution to International Ecological Networks. The BRPL has been identified as one of 45 Important Plant Areas (IPA); one of 25 potential Emerald Sites; one of 15 Important Bird Areas (IBAs); and forms part of one of three designated Ramsar sites within Albania (Table 3). It forms part of a much larger contiguous transboundary conservation area that includes the adjacent Lake Shkodra Managed Natural Reserve (26,535 ha) in Albania and the Skadar Lake National Park (40,000 ha) of Montenegro. The BRPL will also contribute to the developing Balkan Regional Ecological Network (BREN), to the European Greenbelt and to the Pan European Ecological Network (PEEN). It also contributes to global priority conservation areas as recognised by WWF (Global 200 Ecoregions) and CEPF (Hotspots and Key Biodiversity Areas).

Table 3. Contribution of BRPL to international ecological networks.

International Network	Notes
Important Plant Areas (IPAs)	Global network developed by Plantlife International. BRPL is one of 45 IPAs identified for Albania (AL02 - Skoda Lake and Buna River)
Emerald Network/Natura 2000 Network	European networks; Natura2000 covers member states of the European Union and the Emerald Network countries that are outside of the European Union. BRPL forms part of one of 25 potential emerald sites identified for Albania (AL0000021 - Protected Landscape of Buna River - Velipojë / Peizazhi i Mbrojtur i lumit te Bunes-Velipojë; 25,000 ha)
Important Bird Areas (IBAs)	Global network developed by BirdLife International. BRPL

	includes one of 15 IBAs identified for Albania (AL013 –Velipojë)
Ramsar Sites	Global network of key sites for the conservation and sustainable use of wetlands. BRPL forms part of one of three designated Ramsar sites in Albania (an additional eight potential sites have been identified)
Transboundary Conservation Area	The BRPL forms part of a much larger transboundary conservation area that includes the adjacent Lake Shkodra Managed Natural Reserve (26,535 ha) in Albania and the Skadar Lake National Park (40,000 ha) of Montenegro.
Balkan Regional Ecological Network (BREN)	BRPL forms part of the developing Balkan Regional Ecological Network
European Greenbelt	European network along the route of the former iron curtain, coordinated by IUCN, EURONATUR and BUND. The BRPL forms part of the Balkan and European Greenbelt.
Pan European Ecological Network (PEEN)	Pan European network covering 55 countries and coordinated by ECNC with support from UNEP. BRPL forms part of PEEN.
WWF Global 200 Ecoregions	Global network. BRPL contributes to three of the Global 200 Priority Ecoregions identified by WWF, namely: Ecoregion 123 (Mediterranean Forests, Woodlands and Scrub); Ecoregion 180 (Balkan Rivers and Streams Freshwater) and Ecoregion 199 (Mediterranean Sea)
CEPF global hotspots and Key Biodiversity Areas (KBAs)	Global network. Albania forms part of the Southwest Balkans Corridor which was identified as one of six priority corridors within the priority Mediterranean Basin Hotspot

1.2 Regulatory and Institutional Framework

1.2.1 Legal Status

The establishment, management and use of protected areas in Albania is governed by Law no. 8906, dated 6.6.2002 for Protected Areas, and as subsequently amended by Law No. 9868 dated 4.02.2008. The BRPL was established under this law through DCM No. 682, dated 02.11.2005 (Annex 2). This decree defines the status, location, area and boundaries of the Park; defines a simple pattern of zonation for the Park and corresponding levels of protection for each zone; allocates responsibility for management of the Park to the MoE; and requires the MoE in collaboration with other stakeholders to develop a draft management plan within one year of establishment of the Park. Motivations for establishment of the BRPL are not provided. According to the Ministry Decree No. 682 the total of BRPL is 23.027 ha.

Details of the four prescribed management zones, comprising core, sustainable use, recreational and traditional use zones, are provided in Table 4. The extent of these zones is depicted in figure 3.2 (see also Map 6, Annexe 1) and descriptions of the corresponding levels of protection for each zone are detailed in Annex 4. Given that the bulk of the area is zoned for traditional use (Level 4 protection), this best equates to IUCN Category VI – protected areas with sustainable use of natural resources.

Table 4. Designated management zones for the BRPL.

Zone (map units)	Level of Protection
Core (1a + 1b + 1c)	Level 1

Buffer / Sustainable use (2a + 2b)	Level 2
Transition/Recreation (3)	Level 3

A recent comprehensive revision done by the NAPA on protected areas cartography, revealed inconsistencies between the PAs extensions, the boundaries coordinates and the maps provided in the Government Decrees in many protected areas, including for the BRPL (see figure 1.1 below). NAPA is presently working to produce an updated official cartography of the BRPL boundaries and internal zoning.

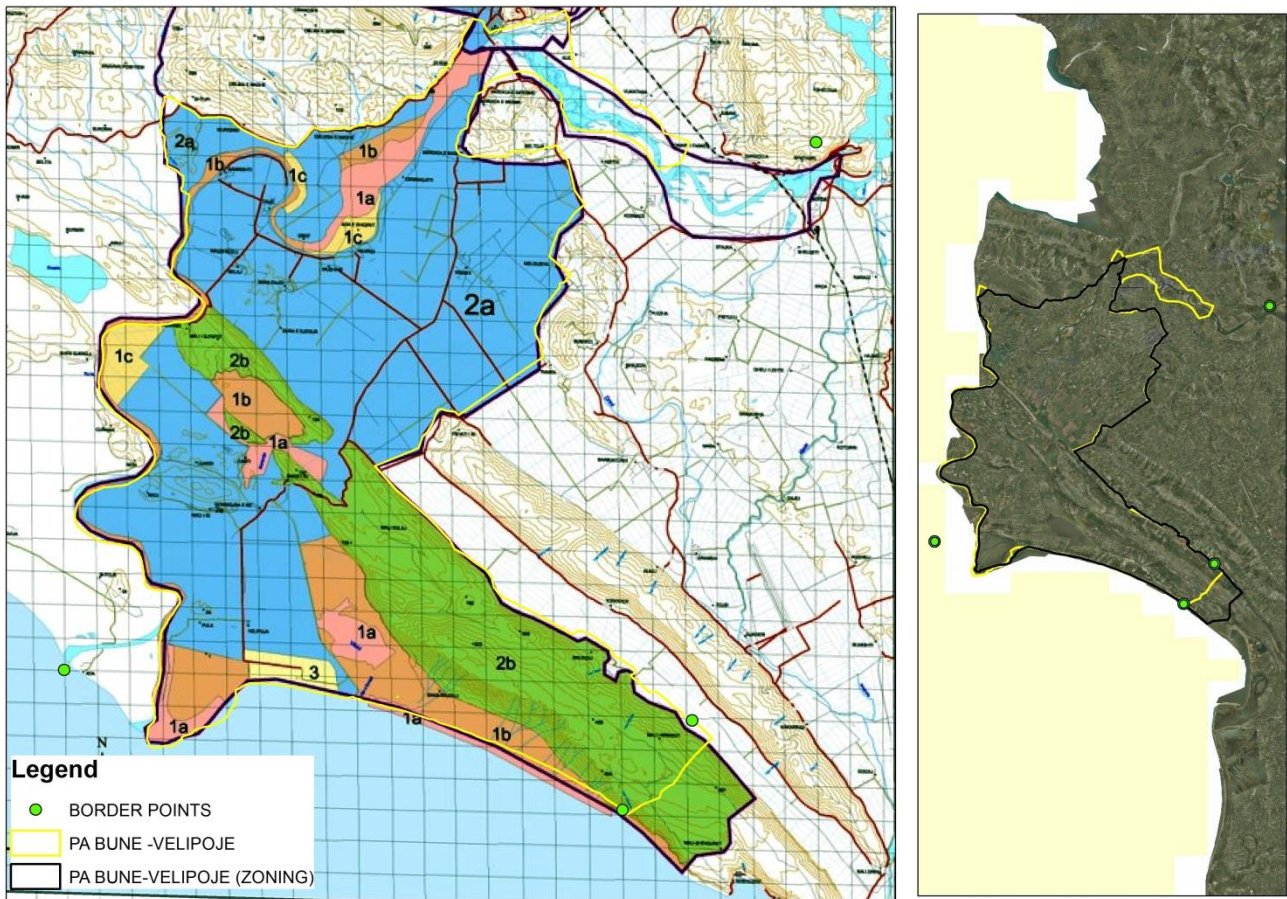


Figure 1.1 Maps showing the different boundaries according the MoE maps and the Government decree (yellow and black lines respectively) and some reference points (green dots) provided in the Decree (Source NAPA 2016).

1.2.2 Policies and Legislation

Lists of national strategies and plans of direct relevance to the management and development of natural resources, together with environmental legislation and participation by Albania in multilateral environmental agreements are provided in Annex 5. Those of greatest relevance for development and management of the BRPL are listed in Table 5.

Table 5. International regional and sub-regional agreements, national strategies, laws and bye laws and local plans relevant to management of the BRPL.

Agreements, Policies, Strategies, Legislation, Plans
INTERNATIONAL AGREEMENTS
The protection of world cultural and natural heritage (UNESCO)
International trade in endangered species of wild fauna (CITES)

Agreements, Policies, Strategies, Legislation, Plans
Conservation of migratory species of wild animals (BONN), including bats and African/Eurasian migratory waterbirds (AEWA)
Convention on Biological Diversity (CBD)
United Nations Framework Convention on Climate Change (UNFCCC)
United Nations Convention to Combat Desertification (UNCCD)
REGIONAL AND SUB-REGIONAL AGREEMENTS
European Convention for the Protection of the Archaeological Heritage
The Conservation of European Wildlife and Natural Habitats (Bern)
Environmental Impact Assessment in a Transboundary Context
Convention on the Protection and Use of Transboundary Waters and International Lakes
European Landscape Convention
ALBANIA NATIONAL STRATEGIES
Biodiversity (2000)
Energy (2002)
Forests and pastures (2004)
The second national environmental strategy (2006)
Wetlands (2006)
Environmental cross-cutting strategy (2007)
Agriculture and food (2007)
Intersectoral rural development (2007)
Transport (2008)
Tourism (2008)
Development and integration (2008)
Waste management (2011), and
Water supply and sewerage services (2011)
ALBANIA IMPORTANT LEGISLATION
Water resources, No. 8093 (1996)
The privatization of local hydropower plants, No. 8527 (amended) (1999)
Protected areas, No. 8906 (2002)
Environmental protection, No. 8934
Environmental impact assessment, No. 8990 (2003)
Power sector, No. 9072 (2003)
Protection of transboundary lakes, No 9103 (2003)
Forest and forestry services, No 9385 (2005)
Biodiversity protection, No. 9587 (2006)
Protection of the environment from transboundary effects, No. 9700 (2007)
Irrigation and drainage, No. 9860 (2008)
International trade of endangered species of wild fauna and flora, No. 9867 (2008)
Environmental protection, No. 9890 (2008)
Protection of wild fauna, No. 10006 (2008)
Territory planning, No. 10119 (2009)
Public health, No. 10138 (2009)
Hunting, No. 10253 (2010)
Mining, No. 10304 (2010)
Environmental protection, No. 10431 (2011)
Environmental impact assessment, No. 10440 (2011)
Environmental permitting, No. 10448 (2011)

Agreements, Policies, Strategies, Legislation, Plans
Integrated waste management, No. 10463 (2011)
ALBANIA BYE LAWS
The transfer of the communal forests and pastures under use and administration (1996)
List of Activities with an Environmental Impact for which an Environmental Permit is Needed, No. 805 (2003)
Functioning of Environmental Inspectorate, No. 24 (2004)
Public Participation in the Environmental Decision-making, No. 994 (2008)
Rules and Procedures for Drafting and Implementing the National Monitoring Programme, No. 1189 (2009)
Organization and Functioning of the Regional Environmental Agencies, No. 2 (2010)
Allocation of Inspection Functions and Technical Functions of Environmental Impact Assessment, Permits and Environmental Monitoring in the Regional Environmental Agencies, No. 139 (2011)
LOCAL PLANS
Local Environmental Action Plan (LEAP) for Shkodra (2005)
Strategy of Economic Development of Shkodra Municipality (2005)
Regional Development Plan for Shkodra – Lezha, 2005 – 2020 (2006)
Strategic Action Plan for Skadar/Shkodra Lake – Albania and Montenegro (2007)
Strategic Plan for Sustainable Tourism in Shkodra Region (2012-2020) (2012)
Velipojë Local Development Plan (2005)
Local Environmental Action Plan – Commune of Velipojë (2006)

1.2.3 Stakeholders

Key stakeholders for the BRPL include central government, particularly the Biodiversity and Protected Areas Directorate of the MoE; the National Agency for Protected Areas of Albania (NAPA); Shkodër and Lezhë regional authorities, the University of Shkodra; the Drini – Buna Water Basin Agency; Shkodër and Lezhë District authorities; Municipal and Commune authorities, CBOs and NGOs and the private sector, as shown in Table 6.

Table 6. Stakeholders relevant to the management of the BRPL.

Level	Location	Stakeholders
Central government	Tirana	MoE (Directorate of Biodiversity and Protected Areas)
Central level and Regions	Tirana	NAPA, central office RAPA, regional offices
Regional authorities	Shkodër and Lezhë	Regional Council Regional Development Office Regional Environmental Agency Regional Agriculture Directorate
Regional supporting institutions	Shkodër	Drini – Buna Water Basin Agency University of Shkodra University of Tirana
District authorities	Shkodër and Lezhë	District Forest Services Directorate District Agriculture Directorate District Education Directorate District Health Directorate

Local Administration		Shkodër and Lezhë Municipalities Administrations of each of the participant municipal units
CBOs – District	Shkodër	Fisheries Management Organization for Lake Shkodra Hunting Associations
CBOs - Commune/Village	Municipal units	Fishermen’s Associations Hunting Associations
NGOs – National	Tirana	INCA
Private sector	Shkodër and Lezhë	Tourism operators

1.2.4 Governance and Management Framework

Key institutions with direct roles in the management of the BRPL include the MoE, through its Directorate of Biodiversity and Protected Areas (DBPA), the NAPA, the Municipalities of Shkodra and Lezha and their administrative unit.

MoE. In 2005, the competencies for protected areas were transferred to MoE, as being more relevant for nature protection issues. Protected areas are currently among the responsibilities of MoE’s General Directorate of Environmental Policies, namely its two technical directorates, the Directorate of Biodiversity and Protected Areas (DBPA) and the Directorate of Forests and Pastures (DFP).

NAPA. Created in February 2015, the National Agency for Protected Areas did still not exist during the time of the preparation of this plan. Since its establishment the NAPA is responsible for the administration and management of protected areas, which is achieved through its executing agencies, the 12 Regional Administrations for Protected Areas (RAPA). Each regional administration has one director and it is structured in two sections: management and monitoring. The management section consists of a number of experts (2-4) responsible for addressing all management issues related to all the protected areas within the region. The monitoring section consists of a number of rangers assigned to different PA within that region. NAPA has 20 staff working in Tirana and 204 working at the regional level.

Directorate of Biodiversity and Protected Areas. The DBPA is responsible for the protection of natural habitats and ecosystems, protected areas and nature monuments, and for conservation of wild fauna and flora species. The DBPA comprises two thematic sectors, the Sector for Protected Areas and the Sector of Biodiversity. The total number of staff of the DBPA is seven, comprising the Director, two head of unit and two specialists in each unit. The role of the DBPA is limited to drafting legislation related to the protected areas and policies towards the development and strengthening of the national ecological network; developing the Emerald network and Ramsar site networks; and identifying IBAs and IPAs as well as potential Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

Municipalities and municipal units. Much of the BRPL comprises settled land, including a large number of small farms. As such local residents have an important role to play in terms of management of the BRPL. This is realised through land use practices on individual properties, through local user associations and through local administration effected through each municipal units. In practice local user associations remain relatively poorly developed and weak, such that the authorities of the Municipalities remain the dominant local stakeholders. Municipal units

activities are generally geared towards livelihoods and economic development. In practice the process of decentralization of management of natural resources remains relatively limited and incomplete. Roles and responsibilities between local and state structures remain poorly defined, and municipal units typically lack the necessary resources to implement their mandate in terms of local management.

1.3 Park's ecological and socio-economic system

This section provides a descriptive overview of the ecological and socio-economic system which characterizes the BRPL. This is presented in the form of text and summary diagrams showing the main components of the overall ecosystem and ecosystem services as well as principal inter-linkages. Further details are provided in Annexe 8.

1.3.1 Overview

Natural system

The BRPL includes the southern portion of the Buna River delta and associated floodplain and wetlands. The Buna River originates from the south eastern part of Lake Shkodra and discharges some 44 km downstream into the Adriatic Sea. Some 1.3 km downstream of Lake Shkodra, the Buna is joined by the Drin River, the largest catchment in Albania, resulting in a doubling of flow. This strong river flow has created one of the most important wetland systems in Albania providing important habitat for many animal and plant species. It serves as a compensating reservoir for the Buna floodplain, maintaining the water balance and reducing flooding. The sediments carried by the Buna have an important role for the morphology of the seashore and of the coastline, which is subject to strong coastal erosion in the Velipojë area. According to old descriptions (Reiser & Fuhrer, 1896; Kárpáti & Kárpáti, 1961; Kárpáti, 1962), the Buna delta was an impressive wilderness area. However, like other Mediterranean wetland areas, it has been strongly transformed during the last decades. Between 1947 and 1980 about 36 km² of agricultural lands were reclaimed or ameliorated from swamps and marshes, compared to only 2 km² of agricultural land that existed before then. In 1963 the Buna and Drin Rivers were artificially combined in order to help prevent flooding of the downstream Zadrima plain and the town Lezha. In the early 1970s a series of pump stations were installed, together with a system of drainage-irrigation canals, and in the 1980s three large dams were built along the Drin River for hydropower. These works have deeply changed the hydrogeological system and the land-use of the area. In general flooding and the amount of water in the Buna River have greatly decreased and much of the floodplain land has been converted to agricultural use. As in some other Albanian border regions, the area was under military protection till 1991, and due to this status, the area was effectively protected. In 1991 the status of the area changed and intense development of tourist infrastructure began along the coast of Velipojë, and this process is still continuing.

Geology and Landform. The protected area includes three main land units:

- The alluvial plain composed of holocenic loams and turfs deposited by the Buna River (Frasheri *et al.*, 2006) with marshlands, alluvial and riverine forests and lagoons;
- A range of low carbonatic hills comprising upper Cretaceous-Paleocene limestones and dolomites, and covered with arid Mediterranean vegetation. These hills run in southeast-northwest direction through the northern part of Velipojë Commune and the southern part of Dajç Commune, reaching a maximum altitude of 500 m at Black Peak (just to the north of Viluni Lagoon).
- A coastal holocenic dune system, composed of sands deposited by the Buna River, occurring as a narrow strip all along the coast.

Key natural features include:

- The Buna River, which flows through a well-defined and fast flowing channel, in places with a narrow fringe of riverine forest, and which for much of the western part of the BRPL marks the border with Montenegro.

- The Buna Delta/Velipojë wetland area covering a triangle of land between the Buna river, the sea and the western extremity of Velipojë Village. This area supports a diverse mosaic of wetland habitats, including Petharia marsh and a sizeable portion of alluvial forest. Previously designated as a Managed Natural Area, this area now comprises the core conservation area of the BRPL and is mainly fenced to protect against high tourism pressures.
- The Buna floodplain – this covers the major part of the BRPL, and has now mostly been converted to agricultural land.
- Domni freshwater marsh, comprising a substantial reed-bed area situated along the road from Shkodër to Velipojë, between the carbonatic hills at the junction of Dajç, Bushat and Velipojë municipal units.
- Viluni lagoon, comprising a substantial body of open brackish water situated in Velipojë Commune some two km to the east of Velipojë Beach. It comprises the terminal portion of a former large wetland complex extending from Shkodër to the ocean and including the Pentari – Domni – Murteme - Velipojë wetlands. The lagoon also receives water from the sea to which it is connected by a canal some 500 m long and 30-40 m wide.
- The Carbonatic hills extending through the BRPL from the Buna River in the northeast to the south-western corner of the reserve.
- Velipojë Beach, comprising a broad sandy beach extending some 6 km west from Viluni Lagoon to the mouth of the Buna River.
- Baks Rrjollj Beach, extending along the coast line to the east of Viluni Lagoon. Here the beach tends to be narrower and has the spectacular backdrop or the southern part of the Renci hills in the near background.

Climate. The climate is Mediterranean, characterized by dry-hot summers and mild-wet winters. The wind of murrilan, which is very characteristic of the area, makes the winters harsh; whereas in the summer the wind of Shiroku brings humidity. Mean annual rainfall is 1,075 mm, and the mean annual temperature is 15.3 °C. Precipitation is concentrated in the period from November to April (70-80% of annual total). In January the mean temperature is between 5 and 8 °C while in July it can range between 24 and 26 °C.

Water resources. In addition to the Buna River, the BRPL supports a great variety of surface wetland areas varying from seasonal to permanent and in nature from brackish to freshwater. The extent of wetlands has been greatly reduced through implementation of drainage measures in the 1970's. These canals and pump stations are still in place although many are now in poor conditions. Development of upstream dams on the Drin river has greatly modified the flow regime and lead to a marked reduction of sediment load in the Buna River. Nevertheless, the BRPL remains prone to flooding, and in January 2010 most of the area, particularly to the north of the carbonatic hills, was submerged.

In terms of groundwater, the BRPL supports a multilayer aquifer confined to the alluvial sediments, which reach tens of metres in depth and are recharged by direct infiltration, hydrologically connected surface waters (Buna River and drainage channels) and from groundwater flow coming from the karstic formations.

There are concerns about increasing levels of pollution relating to upstream mining and industrial development in the Drin catchment; the release of untreated waste waters, particularly from Shkodër; high levels of solid wastes, again mainly from Shkodër; and due to increased use of agricultural chemicals, including pesticides. Solid wastes carried by the Buna River and deposited into the sea often wash up on Velipojë beach, creating a significant concern for tourism use. In

addition, most sources of drinking water are derived from shallow wells that tap into the shallow aquifers which are the most prone to pollution, Only a few villages are supplied by authorized pumping stations that draw good quality water from deeper aquifers.

Plant communities. About 60% of the surface area of the BRPL has been converted to settlements and agricultural uses (fields, orchards, vineyards, pastures), particularly on the floodplain portion. Natural vegetation is largely confined to the remaining 40% of the area.

The vegetation of the BRPL has been described in a recent detailed study by De Sanctis et al. (2013). Within a limited area, the BRPL presents a high diversity of plant communities. This diversity is related not to the richness of the flora, which is not exceptional for a Mediterranean area, but to a complex mosaic of habitats related to subtle differences in the geology. Wetland and dry grassland vegetation are particularly diversified. Altogether 29 alliances and 49 associations were described, as follows:

- Sand dunes (5 associations)
- Wetlands (26 associations)
- Alluvial forests (5 associations)
- Vegetation of carbonatic hills (13 associations)

Three of these associations were described as new: *Clematido viticellae-Punicetum granatae* (low woodland on the lower parts of the carbonitic hills), *Medicago minimae-Aegilopetum triuncialis* (low grassland on disturbed areas on the back dunes of the Rroja beach) and *Periploco-Alnetum* (alluvial woodland on the Buna delta).

In addition, 10 vegetation series were recognized, those of the alluvial plain related to the age of deposits of Buna in relationship to the advancement of the delta in the Holocene, and those of the carbonatic range to lithological differences in relationship with altitude (and therefore geological age).

Important plant species and habitats. A total of 10 target plant species of particular conservation interest were identified (Maps 3-5 Annexe 1 and Annexe 6 – species with limited distribution, or threatened according to IUCN Red List criteria, or included in other international conventions). According to the red data list for Albania, four of these species are classified as Endangered, and the remaining six as Vulnerable. The latter includes *Salvia officinalis*, a shrub which is harvested for commercial purposes and which is threatened by over exploitation. Of these 10 species, nine are included in the red data list for Europe (three as Near Threatened, six as Least Concern) and six for the world (all Least Concern).

A total of 19 specific target plant communities of particular conservation interest were identified (Map 5 Annexe 1, Annexe 6). These comprise all five alluvial forest types, eight wetland types, three sand dune types and, on the carbonatic hills one dry oak community and two shrubland communities.

Fauna

The BRPL supports a wide diversity of animal species and is particularly rich in aquatic species. The fauna includes a large number of species that are of global, regional or national conservation concern.

Mammals. The most common mammal species within the BRPL include: *Lepus capensis* (Common Hare), *Vulpes vulpes* (Red Fox), *Canis aureus* (Golden Jackal), *Meles meles* (European Badger), *Mustela nivalis* (Least Weasel) and *Sus scrofa* (Wild Boar) (Beqiraj, 2006). Euronatur (2006) recorded the presence of 22 mammal species including *Canis aureus* (Golden Jackal), *Ursus arctos* (Brown Bear) and, in the Buna River, Buna delta and adjacent sea, *Tursiops truncatus* (Bottlenose Dolphin), and the globally threatened European Otter (*Lutra lutra*). In addition to habitat loss and fragmentation, mammal species are probably threatened by high levels of hunting.

Birds. The BRPL supports a rich bird community, particularly of waterbirds. Euronatur (2006) recorded the presence of 238 bird species. These included 114 breeding birds (status: breeding confirmed and probably breeding) and 16 species possibly breeding in the area. In addition 52 species are classified as regular and 51 as occasional passage migrants or winter visitors. Together with a number of species of conservation concern, the presence of high numbers of wintering waterbirds was one of the motivations for declaring the BRPL and Lake Shkodra as a Ramsar site. High and uncontrolled levels of hunting remain a major concern for bird populations within the BRPL.

Reptiles. Euronatur (2006) recorded the presence of 19 reptile species within the BRPL, all of which are included on the IUCN red data list of 2009: four as Near Threatened, 10 as Least Concern and five as Not Evaluated.

Amphibians. Euronatur (2006) recorded the presence of 11 amphibian species all of which are on the IUCN red data list 2012, one as endangered and 10 as least concern. The collection of frogs to supply to restaurants was reported to be widespread.

Freshwater fish. Euronatur (2006) recorded the presence of 143 freshwater fish species (Lake Shkodra, Buna River, Buna Sea and Viluni Lagoon). This includes the Adriatic Sturgeon (*Acipenser sturio*) which is almost extinct. This high species diversity reflects the diverse habitat mosaic of the Buna Delta. The Buna River also links and integrates the fish communities of the Adriatic Sea with those of the inland Lake Skadar and the Drin River system. Thus although the fish community is dominated by species typical of temperate freshwaters, it also includes a number of species from colder waters that have entered the system for Lakes Ohrid and Prespa at the headwaters of the Drin River, as well as a number of marine species.

Beqiraj (2006) notes that the Buna is essential for the migration of 13 fish species from inland waters to the Adriatic Sea. Among migratory species, six are globally threatened, namely the European sea sturgeon (*Acipenser sturio*), the Adriatic sturgeon (*Acipenser naccarii*) and the Starry sturgeon (*Acipenser stellatus*), the Twaite shad (*Alosa fallax*), the River lamprey (*Lampetra fluviatilis*) and the Brook lamprey (*Lampetra planeri*).

Concerns were raised about detrimental impacts arising through the introduction of alien fish species, as well as declining fish populations due to overfishing and use of inappropriate fishing methods (including dynamite), and potential impacts due to increasing levels of pollution.

Invertebrates. Little data exists concerning the occurrence of invertebrates within the BRPL. Euronatur (2006) recorded the presence of 217 species from the Viluni lagoon and Velipojë wetlands. Beqiraj (2006) notes that molluscs are the best known groups, and that three globally threatened mollusc species have been recorded (*Unio elongates*, *Unio crassus* and *Microcondylaea compressa*). Local residents raised concerns as to apparent detrimental impacts to bee

populations resulting through inappropriate use of agricultural pesticides. Beqiraj (2006) also notes that invertebrates are potentially very important bio indicators for the ecological status of the Protected Landscape.

Socioeconomic system

The main livelihood activities within the BRPL are crop and livestock production, including production of irrigated pastures for livestock. Tourism is also important to the local economy and, to a lesser extent fishing.

Agriculture. Ownership of land is highly fragmented and farm sizes are very small (mean size varies among municipal units from 1.0 to 1.9 ha). Big farms, defined as being larger than 10 ha in extent, or with more than 8 cattle or 150 sheep or goats, account for less than 5% of farms within the BRPL. Access to credit is limited, hampering the ability of farmers to invest in machinery and irrigation equipment. Roughly half the cropping area is used for fodder production, with a wide variety of cereals, vegetables, fruits and olives being grown on the remainder. The livestock community is dominated by cows (about 13,000 within the BRPL), sheep (about 20,000) and goats (about 3,000), which provide meat, milk and cheese. Given the small size of farm, and thus production, access to markets is limited, and most production is used for self-consumption or for direct selling.

Tourism. The main tourism activity is summer beach tourism, with some 80,000 to 200,000 visitors per year. The bulk of the visitors comes from Kosovo, and typically stays for only a short period (from a few days to two weeks). This type of high volume – low spending tourism results in high pressures to local resources, for example in terms of demand for services and the management of wastes (solid waste and wastewater). It is also a key driver for the on-going uncontrolled urban development. The quality of tourism services is generally low. There are also some hunting tourists, mainly from Italy.

Fishing. Lake Shkodra is the main site of fishing within the area, but additional fishing is carried out within the BRPL in the Buna River, in the sea, and in the larger wetland areas, particularly Viluni Lagoon. Freshwater fish catches appear to be declining, probably due to unsustainable (and often illegal) methods of fishing including, for example, the use of dynamite. Local residents who fish in the sea suffer strong competition from larger fishing vessels launched from the nearby port of Shëngjin. One company previously was awarded a licence to produce mussels in Viluni Lagoon, but after the 2010 floods this was discontinued in favour of mullet and eel fishing instead. The fish catch is completely absorbed by the local market. Concerns have been raised about the possible dangers of pollution to fish quality.

Infrastructure. Most villages within the BRPL face significant problems in terms of infrastructure. Only a few settlements are served by authorized water pumping stations, such that the majority of residents rely on private shallow wells from which the quality of water is uncertain. There are no wastewater treatment plants within the BRPL, and despite the presence of a recently constructed communal solid waste ground in Bushat, most municipal units continue without any formal system for the management of solid wastes.

1.3.2 Ecosystem Structure, Ecosystem Services and Economic Activities

Key structural components and inter-linkages of the ecosystem of the BRPL are shown in Figures 1.2 (main ecosystems), 1.3 (fauna), 1.4 (climate, land and water cycle), 1.5 (socio-economic system: agriculture and livestock sectors), 1.6 (socio-economic system: fisheries sector) and 1.7

(socio-economic system: tourism sector). These six diagrams represent a composite ecosystem model, as they are inter-linked through shared components (i.e. those which have the same name) that are represented in two or more diagrams. In the remainder of this document, when a specific reference is made to any of the ecosystem components identified in the above diagrams, the related text is highlighted as blue-underlined (e.g. [wetlands](#)).

The main components of the general ecosystem diagram (Figure 1.2) are:

- [landscape](#), comprising:
- [rangeland](#) ([grassland](#), [shrubland](#), [alluvial forest](#), [riverine forest](#), [dry oak forest](#), [wetlands](#) and [sand dunes](#)), and
- [transformed habitat](#) ([agricultural land](#) and [infrastructure](#)),

together with [ecosystem services](#) in the form of:

- [regulating services](#) ([water regulation](#) and [erosion regulation](#)),
- [provisioning services](#) ([non-timber forest products](#), [genetic resources](#), [livestock products](#), [fresh water fisheries](#), and [crops](#)) and
- [cultural services](#)([attractions and activities](#)).

The [fauna](#) (Figure 1.3) comprise:

- [livestock](#) ([cattle](#), [sheep](#), [poultry](#), and [dogs and cats](#)) and
- [wildlife](#) ([mammals](#), [birds](#), [reptiles](#), [amphibians](#), [fresh water fish](#), and [invertebrates](#))

The main linkages regarding [fauna](#) ([livestock](#) and [wildlife](#)) are through:

- use of [rangeland](#) and [wetlands](#),
- use of and damage to [agricultural land](#),
- harvesting of wildlife ([wildlife harvesting](#)) and fish ([fresh water fisheries](#)) and
- [agri-production](#)([pest and disease control](#) and [pollination](#) services).

Key climate, land and water cycle components (Figure 1.4) include:

- [climatic parameters](#) ([temperature](#) and [rainfall](#)),
- [land](#) and associated processes of [recharge](#), [runoff](#), [artificial drainage](#) and [coastal erosion](#),
- [water resources](#) in the form of [groundwater](#) and [surface water](#) ([river network](#), [lakes](#) and [sea](#)), and
- [water use](#) in the form of [drinking water](#) and use for [agriculture](#).

The main components of the socio-economic system diagrams (Figures 1.5, 1.6 and 1.7) are:

- agriculture and livestock sectors: [resources/factors of production](#), [farming systems](#), [production \(primary and processed\)](#) and [marketing and distribution](#),
- fisheries sector: [fisheries system](#), [production](#) and [marketing and distribution](#) and the
- tourism sector: [tourism supply](#) ([attractions and activities](#), [tourism infrastructure](#), [tourism related services](#) and [ancillary activities](#)) and [market](#).

Further descriptions of the occurrence, status, and interaction of ecosystem components with one another, relating to the natural system, infrastructure and development, the socioeconomic system and cultural features are provided in Annex 8.

Figure 1.2 - Main ecosystem

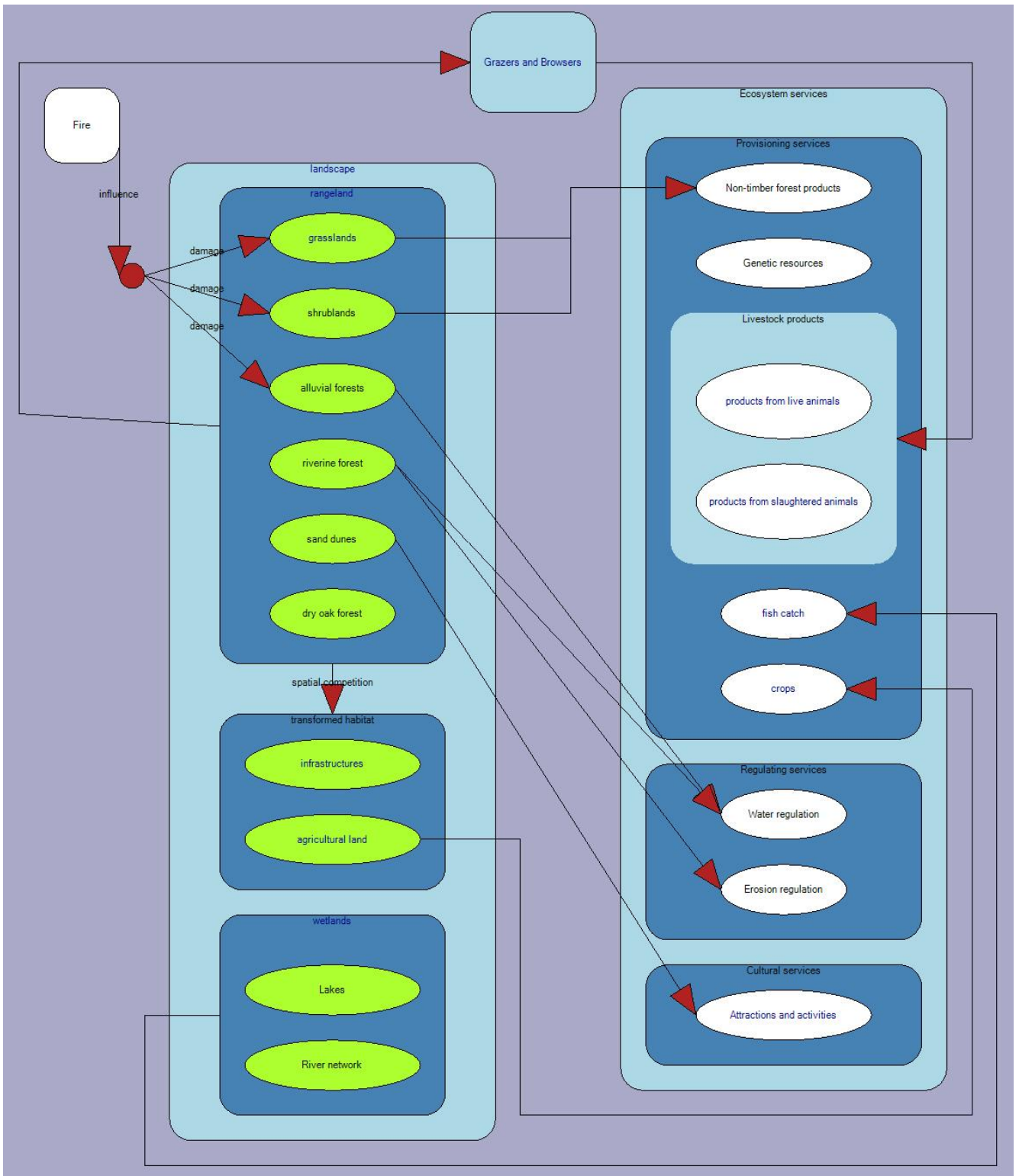


Figure 1.3 - Fauna

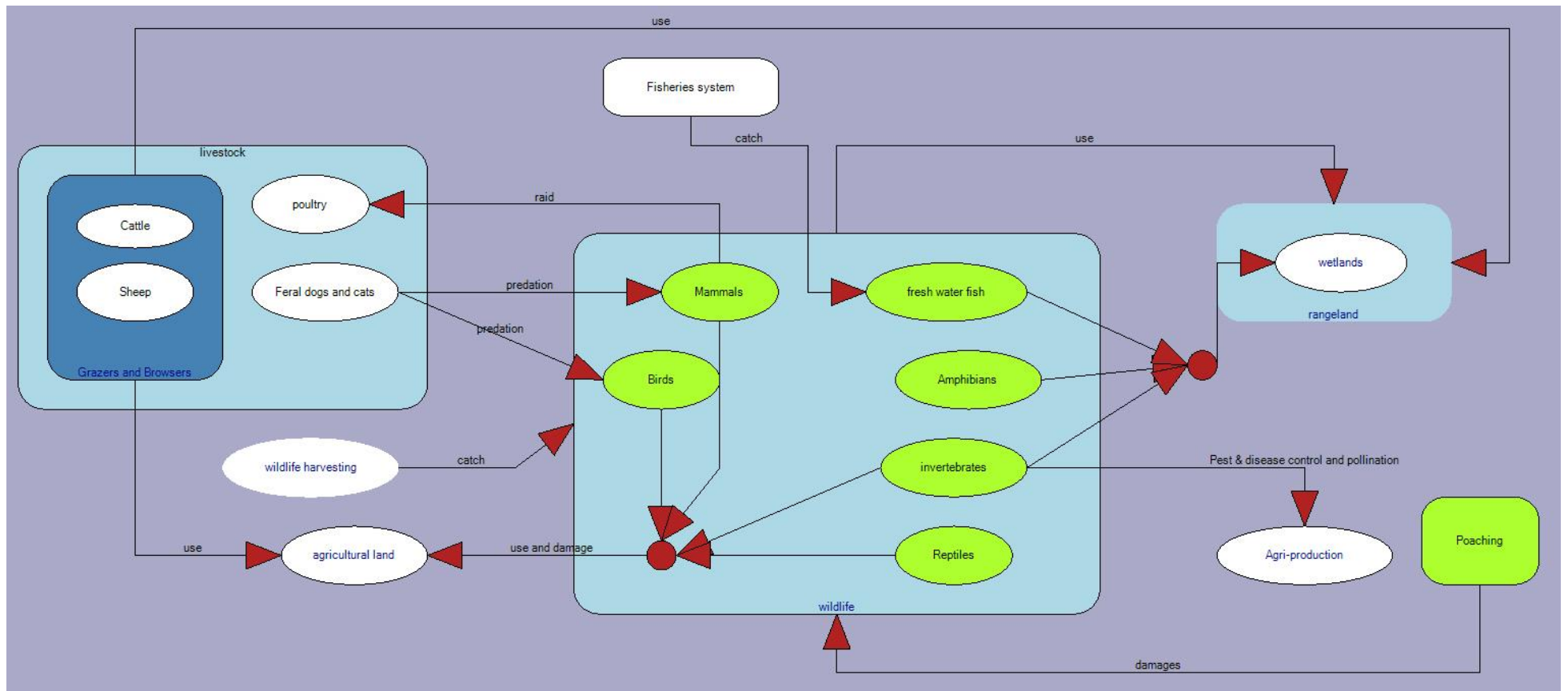


Figure 1.4 - Climate, land and water cycle

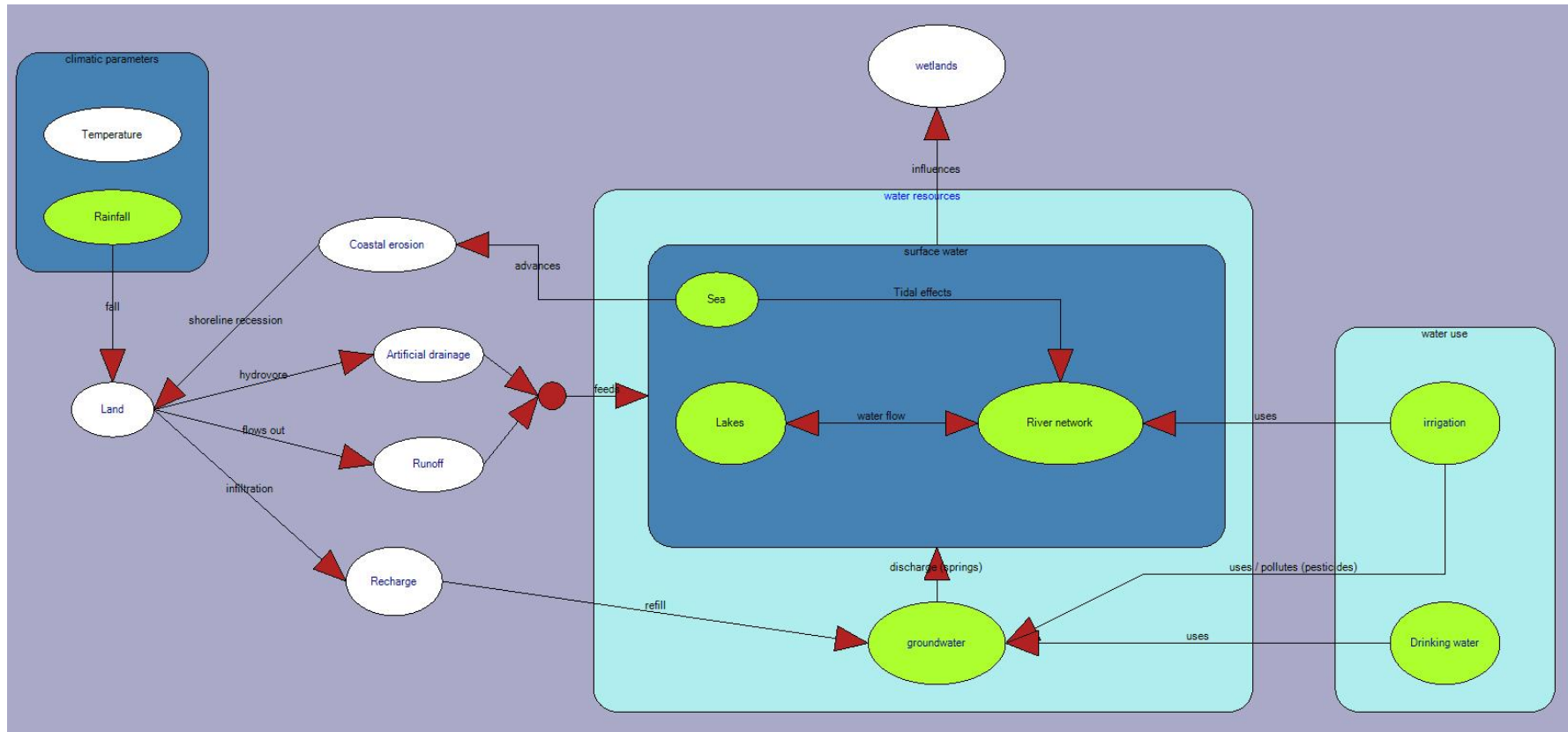


Figure 1.5 - Socio-economic system: agriculture and livestock sectors

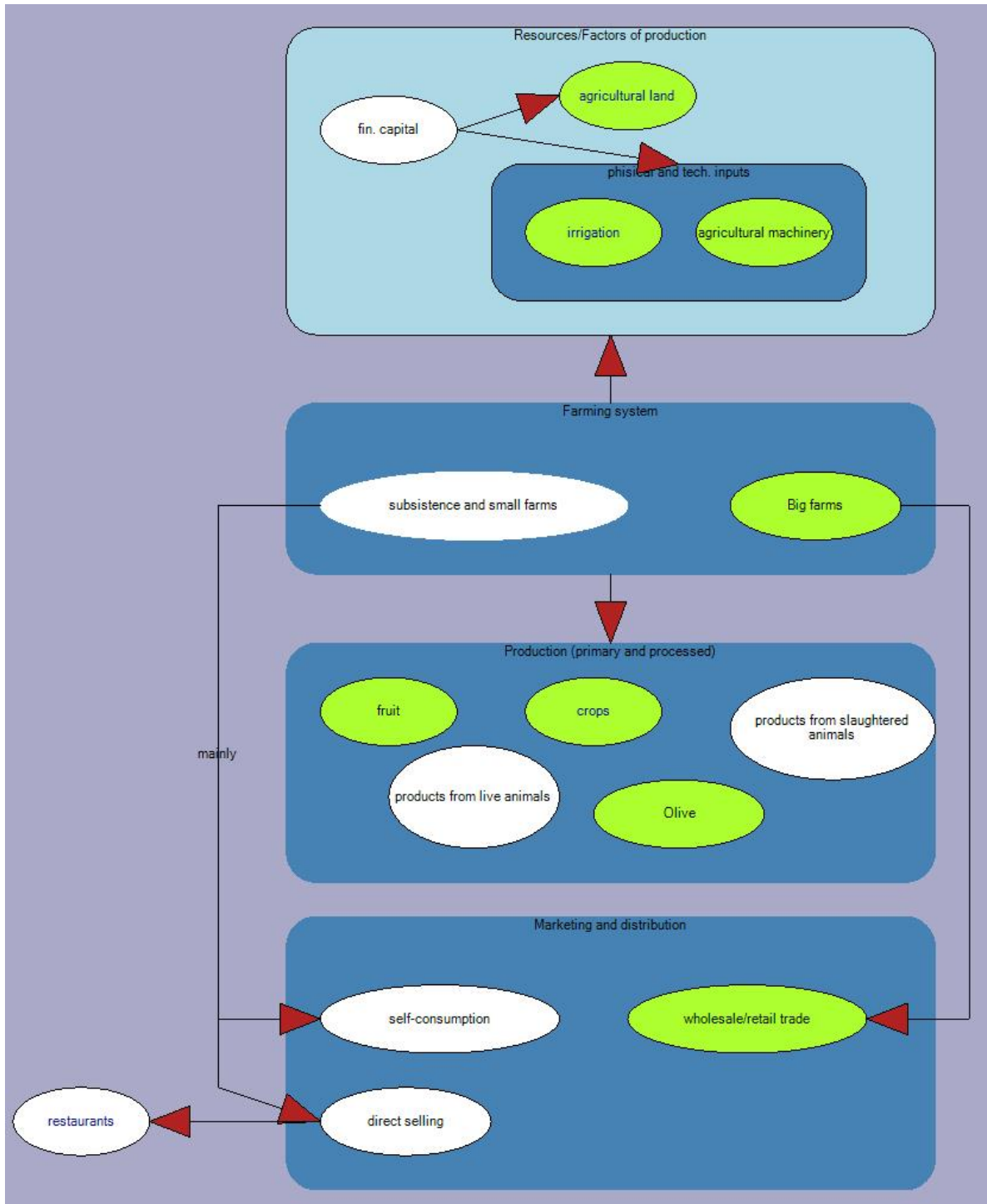


Figure 1.6 - Socio-economic system: fisheries sector

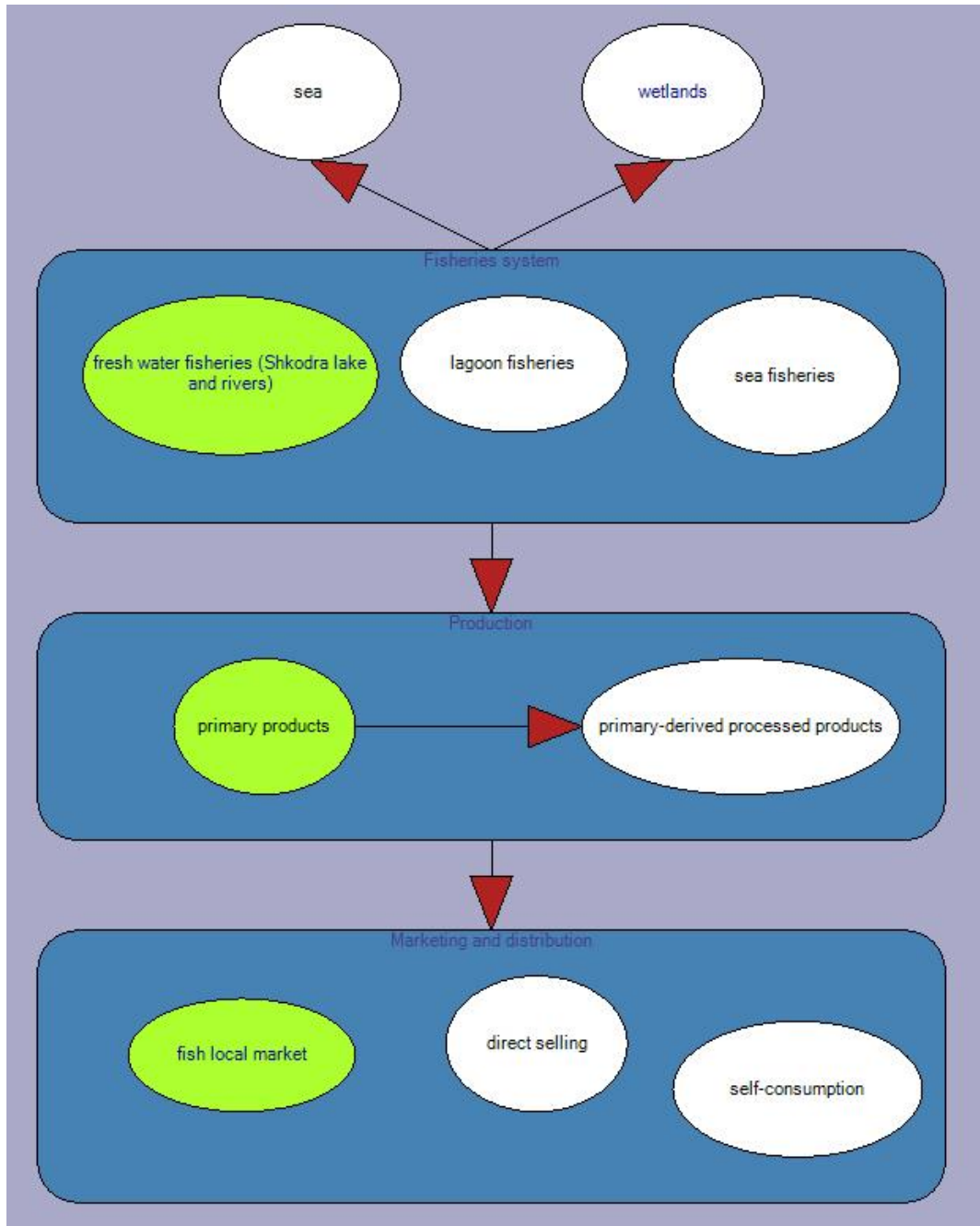
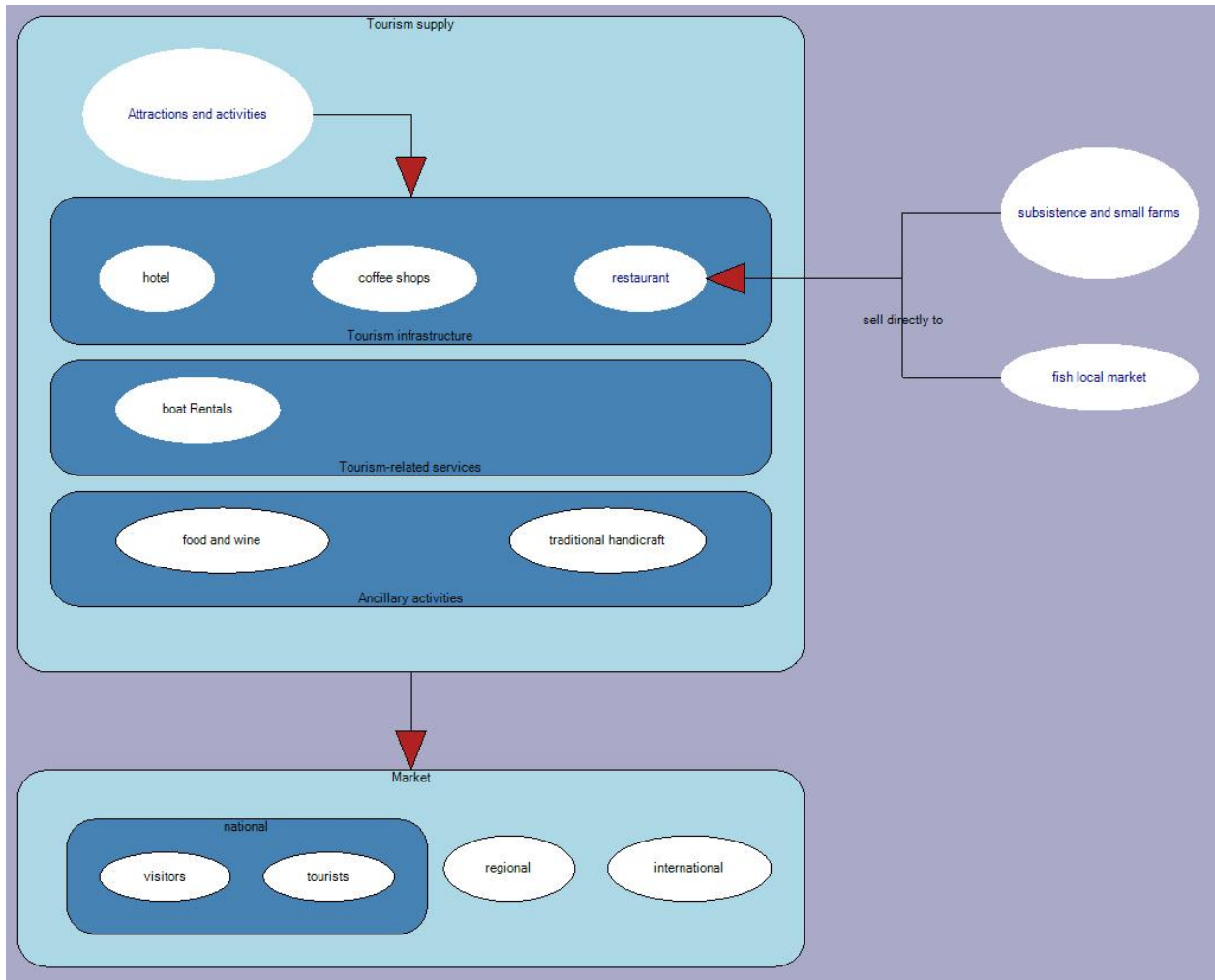


Figure 1.7 - Socio-economic system: tourism sector



PART 2: EVALUATION OF THE PROTECTED AREA

This section identifies the key features that must be protected in order to maintain the significance of the protected area (values), the factors that threaten these key values, assets and opportunities (threats), and the limitations and strengths of the current institutional framework. Values and threats are described in relation to the natural, socioeconomic and cultural systems, as described in Annexe 8 (reference is made to specific row numbers in this table).

2.1 Assessment of Values

Natural System

Key values, assets and opportunities of the natural system ([rangelands](#)) include important habitats; high plant and animal diversity, and the occurrence of a high number of endemic and threatened plant and animal species. We consider important habitats to be those listed in the Habitat Directive 92/43/CEE (thus important for the conservation of biodiversity in Europe), those restricted to Albania or with limited distribution, rare or hosting important species.

A total of 19 specific target plant communities of particular conservation interest were identified (Maps 4 and 5, Annex 1). These comprise all five alluvial forest types, eight wetland types, three sand dune types and, on the carbonatic hills one dry oak community and two shrubland communities.

[Alluvial forests](#) and [riverine forests](#). The hygrophilous forests (three types of [Alluvial forest](#) and two types of [Riverine forest](#), Row 1), which occur in aquatic environments in association with the Buna River and lagoons ([wetlands](#), Row 2), are particularly rich in endemic species (such as *Quercus robur* subsp. *scutariensis*), and include specific habitats listed in the Natura 2000 European network as being priority areas for conservation purposes. The alluvial and riverine forests provide habitat for a number of important terrestrial and avian animals ([mammals](#) and [birds](#), Row 9); these forests also provide important regulatory services in the form of protection from wind, protection from soil erosion ([erosion regulation](#), Row 22) and control of water flows ([water regulation](#), Row 23). The Velipojë forest comprises a key conservation area and is included within the strictly protected core conservation area of the BRPL; it has been fenced in order to protect it from excessive levels of use by visitors ([tourism sector](#), [attractions and activities](#), Row 32).

[Wetlands](#). The BRPL covers one of the largest and most important wetland systems in Albania. It includes a great variety of wetland habitats ([wetlands](#), Row 2; [sea](#), [lakes](#) and [river network](#), Rows 18-20), ranging from flowing to still, permanent to seasonal water bodies of different depths and quality from fresh to brackish waters. Six of the 22 associations are listed in the Natura 2000 European network as being priority areas for conservation purposes. Wetland communities by nature tend to be restricted in distribution and extent, and within the BRPL the overall occurrence of wetlands has been greatly reduced through drainage and conversion to [agricultural land](#) (Row 5), particularly on the alluvial floodplain area. Nevertheless the remaining wetlands provide essential habitat for a wide variety of fauna, notably aquatic animals, including [mammals](#) and [birds](#) (Row 9, particularly waterbirds and migratory birds), [reptiles](#) (Row 10), [amphibians](#) (Row 6), [fresh water fish](#) (Row 7) and [invertebrates](#) (Row 8). Key wetland areas include the Buna River and delta, Domni Marsh and Viluni Lagoon, and the Velipojë wetlands encapsulated within the core conservation area of the BRPL.

Wetland habitats are important areas for hunting ([wildlife harvesting](#), Row 25) and fishing ([freshwater fisheries](#), [lagoon fisheries](#) and [sea fisheries](#), Rows 26-28), and play an essential role in terms of groundwater recharge ([groundwater](#), Row 21), with the majority of residents in the BRPL being dependent on shallow aquifers for drinking water supplies ([drinking water](#), Row 34).

Sand dunes. [Sand dunes](#) (Row 3) are restricted to a narrow strip along the coast. The three habitats identified are all listed in the Natura 2000 European network as being priority areas for conservation purposes. Apart from having a restricted distribution, sand dune communities are highly threatened by high levels of use by tourists (beach tourism, cleaning operations and trampling), and also by on-going [coastal erosion](#) (Row 14 - probably related to upstream dam development in the Drin basin which has reduced the level of sediment in the Buna River and thus discharge to the coastal area).

Dry oak forests and **shrublands.** [Dry oak forests](#) together with [shrublands](#) and dry [grassland](#) communities (Row 4), within the BRPL are restricted to the carbonatic hill outcrops. Such vegetation, in general is recognized as being important for conservation purposes, and constitutes one of WWF's global 200 priority ecoregions (Ecoregion 123 - Mediterranean Forests, Woodlands and Scrub). Three of the identified constituent habitats (two shrubland communities and one dry oak forest type) are listed in the Natura 2000 European network as being priority areas for conservation purposes. These hilly area form important grazing areas for [livestock](#) and which, together with [fire](#), and [soil erosion](#), comprise key ecological factors concerning the maintenance of these habitats (Row 4). These hilly areas also support *Salvia officinalis* which is harvested for commercial purposes ([non-timber forest products](#), Row 24).

High Species Diversity. The species richness of the BRPL in general is not exceptional for a Mediterranean area. However, it does support a complex mosaic of habitat types, particularly in terms of wetlands, and is correspondingly particularly rich in terms of wetland plant (microalgae and aquatic macrophytes) and animal species: 143 fresh water fishes, 11 amphibians, 19 reptiles, 238 bird and 22 mammals species (and, although not well studied, probably of invertebrates too).

Important plant species.

A total of 10 target plant species of particular conservation interest were identified: *Quercus robur* from alluvial forests; *Butomus umbellatus*, *Hydrocharis morsus-ranae*, *Nymphaea alba* and *Trapa natans* from wetlands; *Pancratium maritimum* from sand dunes and, on the carbonatic hills, *Satureja Montana* from dry oak forests, and *Hypericum perforatum*, *Origanum vulgare*, *Salvia officinalis* from dry grassland communities. *Salvia officinalis* is harvested for commercial purposes ([non-timber forest products](#), Row 24), and is reported to be threatened by over harvesting.

Important animal species. Important animal species include the globally threatened European Otter (*Lutra lutra*); all 19 reptile and 11 amphibian species; six globally threatened fish species, namely the European sea sturgeon (*Acipenser sturio*), the Adriatic sturgeon (*Acipenser naccarii*) and the Starry sturgeon (*Acipenser stellatus*), the Twaite shad (*Alosa fallax*), the River lamprey (*Lampetra fluviatilis*) and the Brook lamprey (*Lampetra planeri*); the Dalmatian Pelican (*Pelecanus crispus*), and three globally threatened mollusk species (*Unio elongates*, *Unio crassus* and *Microcondylaea compressa*).

The BRPL is also important for migratory birds and fishes.

Socioeconomic System

Socio-economic values of the BRPL are linked to the sustainable use of the provisioning services its ecosystem can provide. These include the presence of [groundwater](#) (Row 21) and its use for drinking purposes and for irrigated agriculture ([drinking water](#), Row 34 and [water use agriculture](#), Row 33); productive [agricultural land](#) (Row 5) enabling the production of crops, fodder and livestock ([production \(primary and processed\)](#), Row 36); the presence of attractive beaches that form the basis for a growing tourism sector ([attractions and activities](#), Row 40); fish resources that are exploited through [fresh water fisheries](#), [lagoon fisheries](#) and [sea fisheries](#) (Rows 26-28); birds and mammals that form the basis of hunting activities ([wildlife harvesting](#), Row 25); and shrubs such as *Salvia officinalis* which are collected for commercial trade ([non-timber forest products](#), Row 24).

Cultural System

Rozafa Castle, strategically located between the junction of the Drin and Buna Rivers and overlooking Shkodër town, is the most famous historical landmark in the region. The bulk of the BRPL was until recently a swampy wilderness, such that it is devoid of any such major historical features. However, the visual attractiveness of the landscape, in particular the alluvial forest of the Velipojë wetlands comprises an important tourism and thus cultural resource.

In Europe, there are only a few examples where pastoralism is still practised on a scale as large as in the BRPL. Associated with this, Euronatur (2006) documented the presence of a number of primitive and indigenous breeds of domestic animals, including Siska pigs, Busha cattle and Zackel sheep, whilst noting that goat, horse and donkey populations require further investigation.

The particular rural feel of this landscape comprises a considerable tourism asset, but which in the face of uncontrolled and haphazard urban development, is fast being lost.

2.2 Assessment of Threats

Natural System

Key direct threats to the natural system include modification, fragmentation and loss of habitat, overuse of resources, pollution particularly of water resources, and the establishment of alien fish species.

Water resources. The main threat to water resources is due to increasing levels of pollution, resulting from upstream mining and industrial development in the Drin catchment; the release of untreated waste waters, particularly from Shkodër town; poor management of solid wastes, particularly with respect to Shkodër; and due to increased use of agricultural chemicals such as fertilizers and pesticides ([river network](#) and [groundwater](#), Rows 20 and 21). Solid wastes carried from Shkodër by the Buna River are deposited into the sea, resulting in pollution of coastal areas too. The flow regime has already been greatly modified through diversion of the Drin into the Buna River and through the building of dams in the upstream catchment area mainly for hydropower purposes ([river network](#), Row 20); it is possible that additional dams will be built resulting in further impacts to the flow regime.

These impacts represent a direct threat to wetland systems ([wetlands](#), Row 2) and aquatic organisms ([amphibians](#) and [fresh water fish](#), Rows 6 and 7), and also to human populations,

principally in the form of contaminated drinking water supplies ([water use: drinking water](#), Row 34). The washing up of solid wastes on Velipojë beach also creates a significant concern for tourism use.

Rangelands. Erosion of the river banks along the Buna River comprises a particular threat to [riverine forests](#), which are restricted to a narrow belt along the course of the river ([riverine forest](#), Row 1). Such forests play an important role in terms of both erosion and flood control ([erosion regulation](#) and [water regulation](#), Rows 22 and 23).

Another important threat to [alluvial forests](#) comes from tourism activities, in the form of both high levels of use ([attractions and activities](#), Row 40) and also due to continuing uncontrolled development ([tourism infrastructure](#), Row 41). This applies in particular to Velipojë forest and wetland complex within the core protected area.

The extent of [wetlands](#) within the BRPL have already been drastically reduced through drainage works which have enabled their conversion to agricultural uses ([wetlands, infrastructure](#), Row 2), to the extent that the bulk of the floodplain area is now under intensive agricultural production ([agricultural production](#), Row 5). Additional threats come in the form of deteriorating water quality, in particular relating to run-off from adjacent agricultural fields (in some cases leading to eutrophication), and high levels of utilization by livestock.

[Sand dunes](#) are another component that is highly threatened, largely due to tourism related impacts in the form of both high levels of direct use (beach tourism) and the development of infrastructure to service the beach tourists ([sand dunes](#), Row 3). Coastal erosion is another important threat, which is related to upstream dam construction resulting in reduced sediment loads in the Buna River, and hence lower rates of sediment deposition in coastal systems ([sand dunes](#), Row 3).

The vegetation of the carbonatic hills ([dry oak forests](#), [shrublands](#) and [grasslands](#)) appears to be in reasonable status and relatively stable (Row 4). Potential impacts include fires, overgrazing by livestock and soil erosion. The shrub *Salvia officinalis* is believed to be threatened by excessive levels of harvesting ([non-timber forest products](#), Row 24).

Fauna. The use of inappropriate and unsustainable forms of harvesting were identified as a major threat to animal populations, in the form of excessive levels of hunting of mammals and birds ([wildlife harvesting](#), Row 25) and the harvesting of fish (for example, using dynamite and fishing during the spawning season) ([fresh water fisheries](#), Row 26). Collection of frogs was also reported to occur, but the impact of this was not clear ([wildlife harvesting](#), Row 25). Pollution poses another important threat, particularly to aquatic organisms, but attention was also drawn to detrimental impacts to bee populations resulting due to inappropriate uses of agricultural pesticides (Row 35). The introduction and establishment of several alien fish species was noted to comprise a serious threat to certain fish populations ([fresh water fish](#), Row 7). On-going development will necessarily result in further habitat fragmentation which will be an additional threat to certain animals.

Socioeconomic System

Broader constraints faced by local communities include poor socio-economic conditions; lack of local and regional employment opportunities; limited potential of livelihood options; poorly developed infrastructure and services (lack of safe drinking water supplies; poor road access; poor

access to education and health facilities), and difficulties in accessing finance and markets. People are thus forced to rely heavily on the use of natural resources, so providing pressure for damaging and unsustainable uses of resources.

Apart from threats relating to the unsustainable use of resources, such as over-grazing by livestock; excessive levels of hunting of mammals and birds; damaging techniques and unsustainable levels of fish harvesting, and damaging methods and unsustainable levels of harvesting of plants, the main threats to livelihoods concern limited access to financial resources and poor access to markets; and particularly for tourism on-going uncontrolled and insensitive development that could rapidly reduce the attractiveness of the area to visitors. Sector specific threats include:

Water ([water use](#)) – the pollution of [groundwater](#) (Row 21) due to upstream industrial and mining development; poor management of waste waters and solid wastes, and the use of fertilizers and pesticides for agricultural purposes, and the limited development of safe water supplies based on deeper aquifers ([drinking water](#), Row 44).

Agriculture ([farming system](#), [financial capital](#), [irrigation](#) and [agricultural machinery](#), Row 35) – key constraints include land fragmentation and the small farm sizes, limited levels of production, difficulties in accessing credit and therefore investing in mechanization and irrigation, and in accessing markets. Additional threats relate to the high risk of flooding and the associated poor status of some of the drainage canals and pump stations ([water use](#), [agriculture](#), Row 33). Damage by birds to crops and losses of livestock to wildlife were noted, but were not considered to be significant ([birds](#) and [mammals](#), Row 9).

Tourism. One of the key threats to tourism is the continuing focus on high volume – low spending tourists, which results in major demands on services and potentially unsustainable impacts to the environment (for example to sand dune communities) (Row 41, [tourism infrastructure](#), [tourism-related services](#) and [ancillary activities](#)). The quality of tourism services is reported to be low. Continued growth of tourism is a key driver of on-going uncontrolled development, such that the character of the area is rapidly changing and which ultimately is likely to be detrimental to the sustainability of tourism within the BRPL.

Fisheries and aquaculture. Current fishing practices are considered to be unsustainable and to be reflected in diminishing fish catches ([primary products](#), Row 38). Fishermen in the sea face strong competition from larger vessels that launch from the nearby Shěngjīn Port ([sea fisheries](#), Row 28). Increasing levels of pollution pose a potential risk in terms of quality of fish for consumption ([primary-derived processed products](#), Row 38).

Infrastructure. Key limitations of infrastructure include the limited availability of safe supplies of drinking water ([drinking water](#), Row 34), the absence of facilities for treatment of waste waters and solid wastes; poor road access to many places; and the poor status of drainage infrastructure (canals and pump stations); and the absence of flood control works.

Cultural System

The principal threat to cultural resources comprises the rapid and unregulated nature of development that is leading to a rapid change in the nature of the area. It appears that there is also a danger of loss of important local breeds of livestock.

2.3 Assessment of Institutional Framework

Until February 2015, responsibility for management of protected areas in the former Shkodra district, which includes the important Lake Shkodra Managed Natural Reserves, fell to the Protected Areas Section of the District Forest Services Department (DFSD). As a consequence, the BRPL, until February 2015, lacked any dedicated administrative and management structure.

Personnel were initially employed by the forestry services, and none of them had any specific training relating to the management of protected areas. Moreover, there was no existing management plan; the staff lacked any job descriptions; and there were no clear operational procedures, including for monitoring and reporting.

Management was carried out on a day-by-day basis and was mainly related to inspection and patrolling. If someone was charged for an illegal activity inside the Protected Landscape, the case was sent to the jurisdiction of the Police; in many cases the resulting fines remained unpaid and if they were paid the revenues were sent directly to the central government rather than being retained locally.

The BRPL also suffered from unclear divisions of responsibilities and integration between sector ministries and national/local authorities, for example between the former communes and the DFSD, as well as those relating to territorial planning and the construction of new infrastructure such as houses, and tourism developments. There was an absence of mechanisms whereby local communities, such as the communes, could contribute formally towards park management.

In summary the BRPL has had until very recently no management infrastructure or permanent presence within the Protected Landscape. The operational budget was entirely inadequate and the existing management team lacked the necessary technical skills and equipment for effective management of the area. Similar inadequacies existed in terms of the broader supporting institutional environment, which suffered from a lack of clarity of roles, and similar constraints in terms of skills and finances.

Since February 2015, the established National Agency for Protected Areas, NAPA, offers a new important institutional opportunity for improving protected areas management in the country and it is rapidly improving the operational environment for the SJNP management. NAPA is responsible for the administration and management of protected areas, which is achieved through its executing agencies, the 12 Regional Administrations for Protected Areas (RAPA).

The RAPA regional administration in Shkodra, responsible for the management of the BRPL, has one director and it is structured in two sections: management and monitoring. The management section consists of 3 experts responsible for addressing all management issues related to all the protected areas within the region (the BRPL, the Lake Shkoder Managed Nature Reserve and the Thethi National Park). The monitoring section consists of 4 specialists and 14 rangers assigned to different PA within that region, 5 of which are for the BRPL.

The current development of a management plan provides an important opportunity towards improving the management capacity of the Protected Landscape. The management plan will

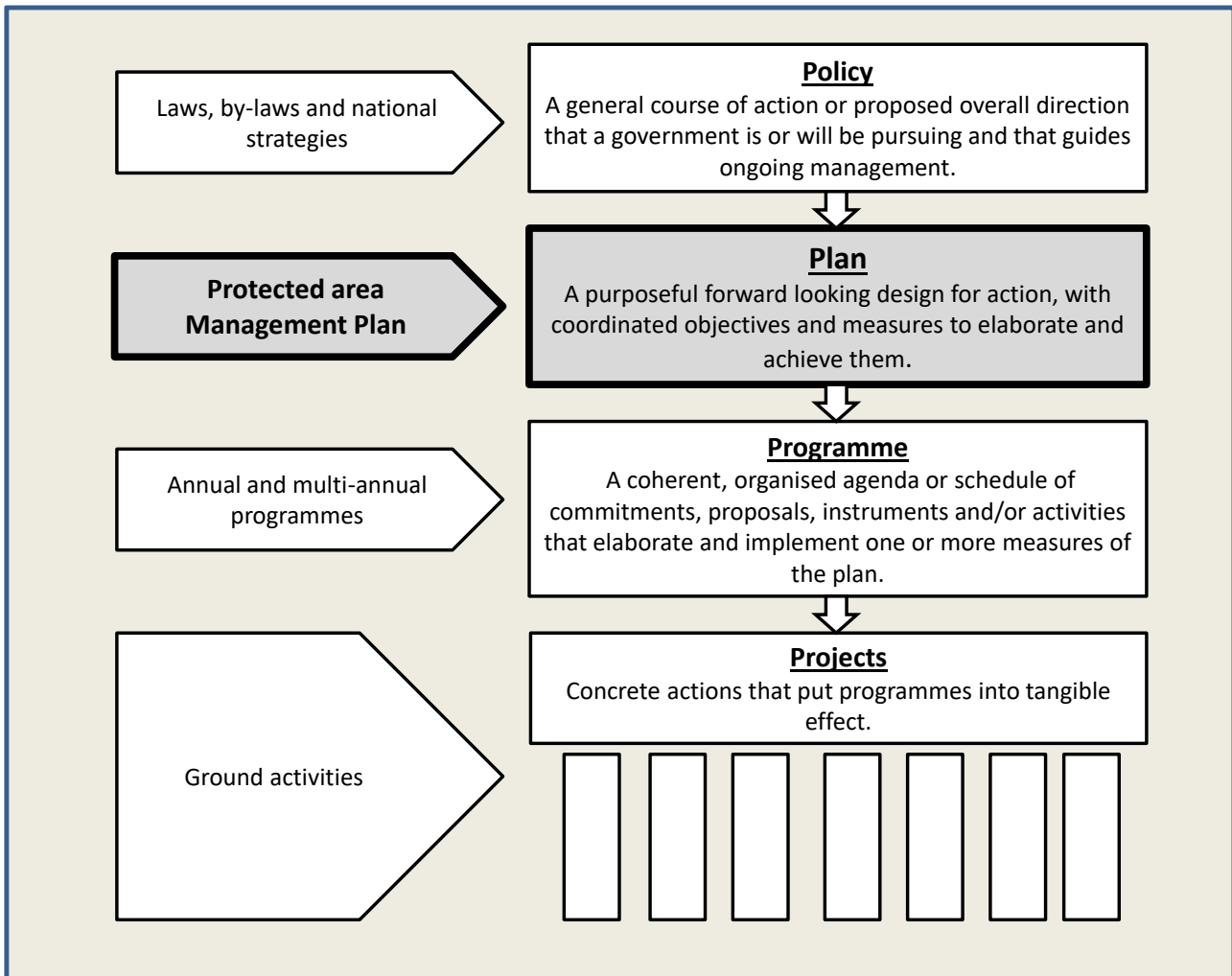
improve knowledge about the BRPL; will provide clear direction for management efforts; and can serve as a tool for communicating the BRPL and for raising revenues. At the same time there are on-going efforts at the national level to improve environmental management in the country, which should gradually deliver an improved overall operational environment for park management.

PART 3: MANAGEMENT OF THE PROTECTED AREA

3.1 Positioning this Plan in the decision-making hierarchy

There is a hierarchy of levels in decision making which corresponds to the different phases of the protected areas management process, comprising projects, programmes, plans and policies (see Figure 3.1).

Figure 3.1. The Plan in the decision-making hierarchy (adapted from: OECD 2006)



Logically, policies shape the subsequent plans, programmes and projects that put those policies into practice. Policies are at the top of the decision-making hierarchy. As one moves down the hierarchy from policies to projects, the nature of decision-making changes, as does the nature of management tasks needed. Policy-level analysis tends to deal with a wider range of scenarios and planning options. Project-level activities usually have well defined and prescribed specifications.

Consistently with this logic, this plan: i) elaborates the policies defined in the Albanian law N. 8906 for Protected Areas and cabinet Decision N. 682/2005 proclaiming the BRPL to develop specific

Vision and Objectives for the protected area, ii) designs a set of coordinated Management Measures for the achievement of the said objectives and iii) identifies a number of Management Actions implementing each of the said measures.

As anticipated in the Introduction, this plan should be used to source funding for implementation, and to ensure that such funds are allocated and spent efficiently and effectively. As these funds progressively become available, the Protected Area's management team will have to define an annual or multi-annual Programme for the implementation of each plan's Action. These programmes should define a coherent, organised agenda or schedule of commitments (including commitments of actors other than the Protected area's administration), instruments and/or activities that elaborate and implement each management action.

3.1 Vision and Objectives

Vision: Management of the BRPL will be aimed at preserving its ecological and cultural values, while developing untapped potentials of socio-economic activities directly linked to the sustainable use of the services granted by the Protected Landscape's ecosystem.

Consistently, two main objectives have been defined for management of the Protected Landscape as outlined below:

Objective 1: Conservation of ecological and cultural values

- Conservation of rangelands
- Conservation of wildlife
- Conservation of water resources

Objective 2: Development of livelihoods based on sustainable use of ecosystem services

- Development of agriculture and livestock sectors
- Development of tourism sector
- Development of safe supplies of drinking water

3.2 Management Zones

Existing management zones comprise (Map in figure 3.2):

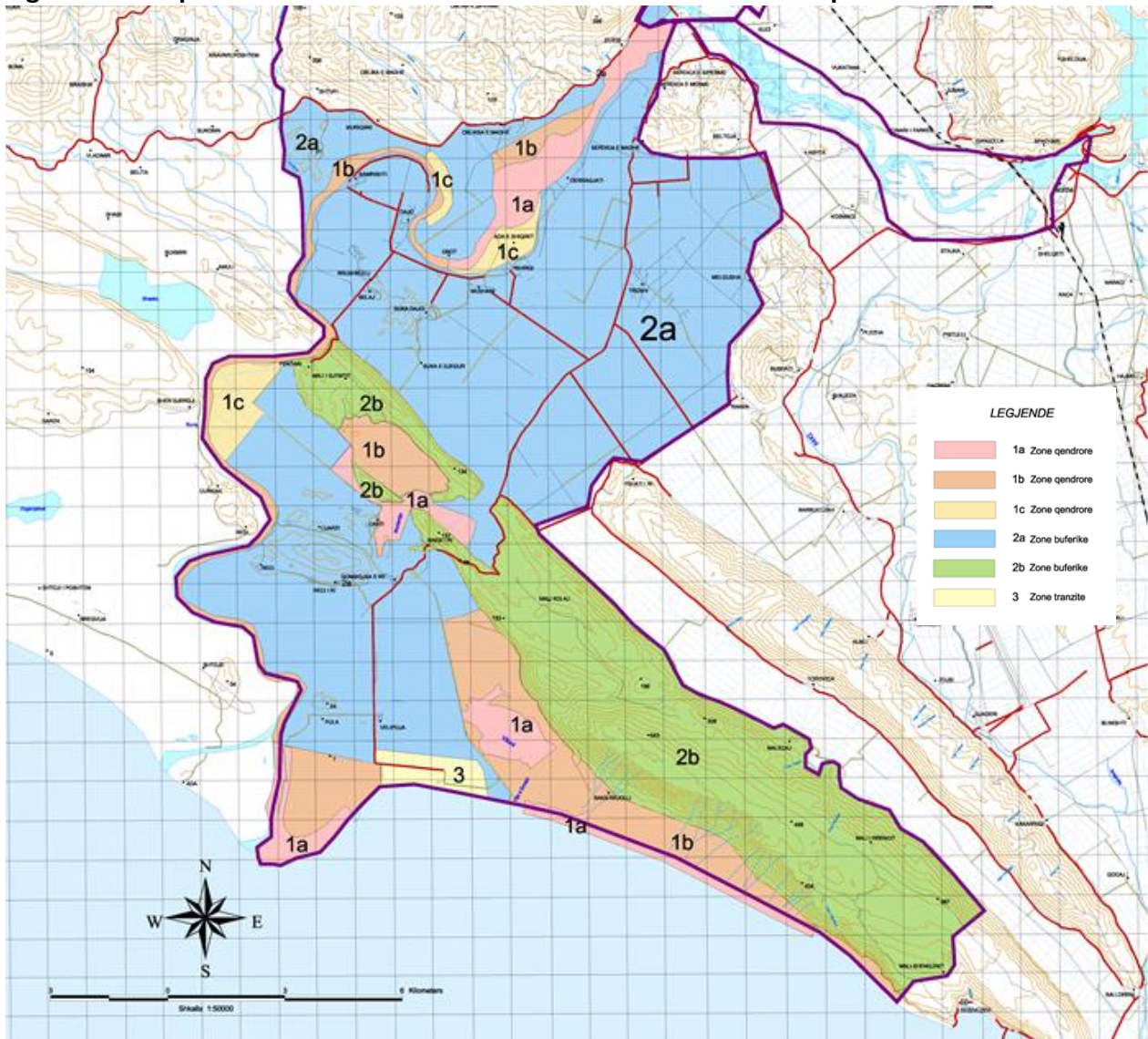
- Core Zone (1a, 1b, 1c on map in figure 3.2): with Level 1 protection,
- Buffer/Sustainable Use Zone (2a, 2b on map): with Level 2 protection,
- Transition/Recreational Zone (3 on map): with Level 3 protection.

For the purpose of this management plan, proposed management activities have been identified according to the main ecosystem components comprising the natural and artificial habitats which make up the [Landscape](#) component of the Park ecosystem (see Figure 1.2), rather than in relation to the existing management zones. Each management action is thus directly linked to one or more of the following components:

- [Landscape](#)

- [Rangelands \(Grassland, Shrubland, Alluvial forest, Riverine forest, Dry oak forest, Wetlands, Sand dunes\)](#)
- [Transformed habitat \(Agricultural land, infrastructure\)](#)

Figure 3.2. Map of the zonation of the Buna River Protected Landscape



3.3 Management Actions

Potential management actions were identified through a systematic analysis of all components of the Park's ecological and socio-economic systems described in Section 1.3. This was executed through sequential steps illustrated in the tables of Annexe 8 where each row, numbered from 1 to 23, describes one step of the analysis.

The analysis was focused both on system components and their interactions, aimed at identifying the conservation status and threats of ecosystem components, the current use/overuse/untapped potential of ecosystem services and, finally, the development potential of economic activities related to the use of ecosystem services. In this way, each management action is directly derived from and targeted to the relevant system components or interaction between them, intrinsically accounting for all possible systemic side-effects and, thus, serving to reduce the risk of turning today's economic successes into tomorrow's environmental and/or social challenges.

A total of 44 management actions were identified. These are presented in relation to the two main management Goals for the Park; namely the *Conservation of ecological and cultural values* and the *Development of livelihoods based on sustainable use of ecosystem services*, and further organized into a number of management Measures as shown in Table 7.

Table 7. Summary of management actions in relation to management goals and measures.

MANAGEMENT GOAL Management Measure	MANAGEMENT ACTIONS
1 CONSERVATION OF ECOLOGICAL AND CULTURAL VALUES	
1.1 Conservation of Rangelands	1.1.1 to 1.1.5
1.2 Conservation of wildlife	1.2.1 to 1.2.14
1.3 Conservation water resources	1.3.1 to 1.3.3
2 DEVELOPMENT OF LIVELIHOODS BASED ON THE SUSTAINABLE USE OF ECOSYSTEM SERVICES	
2.1 Development of agriculture and livestock sectors	2.1.1 to 2.1.4
2.2 Development of tourism sector	2.2.1 to 2.2.3
2.3 Development of safe supplies of drinking water	2.3.1 to 2.3.4

The following sections provide further details of each Measure and Action in a tabular form. In describing each Action the number of the row of the table in Annexe 8 is provided as a reference to the related step of the above described cause-effect analysis.

The following parameters are provided for each management Action:

- The entity (organization or stakeholder) with primary responsibility for ensuring its implementation,
- The Action's performance assessment indicator(s) with the related Baseline and Target.

3.3.1. Management Goal 1: Conservation of Ecological Values

Three broad Measures, targeted at the main components of the natural system, are proposed in order to promote conservation of ecological values in the BRPL, namely:

Measure 1.1: Conservation of rangelands

Measure 1.2: Conservation of wildlife

Measure 1.3: Conservation of water resources

Measure 1.1 Conservation of Rangelands

Rationale:

The principal plant communities identified for the rangeland area in the BRPL are [alluvial forests](#), [riverine forests](#), [dry oak forests](#), [shrublands](#), [grasslands](#), [wetlands](#) and [sand dunes](#). Analysis of rangelands indicates that [riverine forest](#), which occurs as a thin strip along the banks of the Buna River, is threatened by erosion of river banks and by urban development (also [alluvial forest](#)); that [wetlands](#) have undergone a marked reduction over the past 30 years, mainly due to the development of a drainage network and the associated conversion of wetlands to agricultural land; and that virtually all [sand dunes](#) have been strongly modified by cleaning operations, trampling and beach tourism and are further threatened by coastal erosion, due in part to construction of upstream dams which have reduced the sediment load in the Buna River. Proposed management actions are focused on restoring and/or sustaining the current extent and status of these priority components. For the remaining low-priority communities of [dry oak forests](#), [shrublands](#) and [grasslands](#), a “wait-and-see” approach based on standard monitoring of habitat conservation status is suggested.

Objective:

To maintain the state of [alluvial forests](#), [wetlands](#), [dry oak forests](#), [shrublands](#) and [grasslands](#) and to improve the state of [riverine forests](#) and [sand dunes](#) within the BRPL.

Achievement indicators

Achievement indicators and related baseline values have been defined for each component of the protected area’s ecological and socio-economic system (see section 1.3). These are available in digital format and can be consulted through tables, maps and charts in the NAPA’s DSS (see Annexe 2). Management targets for the said indicators are presented in the table below.

Ecosystem components/ service (including Natura 2000 habitat/species)	Target
Alluvial forests	Each indicator keeps at least its baseline value
Riverine forests	Indicators included in the relevant monitoring programme maintain at least their baseline values, until the funds to start the implementation of Action 1.1.1 and 1.1.5 are available. As the above funds are available the targets for these indicators are defined as part of the Programme for the implementation of Actions 1.1.1 and 1.1.5
Wetlands	Each indicator keeps at least its baseline value
Sand dunes	Indicators included in the relevant monitoring programme maintain at least their baseline values, until the funds to start the implementation of Action 1.1.8 are available. As the above funds are available the targets for these indicators are defined as part of the Programme for the implementation of Action 1.1.8
Grasslands	Each indicator keeps at least its baseline value
Landscape	Each indicator keeps at least its baseline value
Non-timber forest products	Data available

Management Actions:

Description of Action [Reference to cause-effect analysis]	Management Zone	Responsibility for implementation	Achievement indicator			
			Target ecosystem components/ service (including Natura 2000 habitat/species)	Indicator	Baseline	Target

<p>(1.1.1) Afforestation of degraded and fragmented riverine forest areas along the Buna River.</p> <p>[ANNEXE 8 - ROW 1]</p>			<p>riverine forest</p>	<p>Fragmentation indicators (DSS 371-374) Ellenberg indicator (DSS 380-385)</p>	<p>See NAPA's DSS</p>	<p>Indicator's target must be provided in the Programme for the implementation of this Action</p>
---	--	--	--	---	-----------------------	---

<p>(1.1.2) Develop mechanisms to improve inter-institutional coordination between the NAPA (particularly through its regional office, RAPA), the municipalities and the municipal units, such that the NAPA can actively influence: i) urban development, ii) drainage networks management, iii) agricultural land reclamation management and developments (for example, develop maps of key wetlands not to be affected by land reclamation projects)</p> <p>[ANNEXE 8 - ROW 1]</p>			<p>landscape</p>	<p>Number of inter-institutional agreement(s) signed</p> <p>Number of inter-institutional committee(s) established</p> <p>Presence of synergic and complementary actions in the various plans</p> <p>Absence of duplications or conflicting actions in the various plans</p>	<p>No agreement signed</p> <p>Inter-institutional committee(s) not established</p> <p>Information not available</p> <p>Information not available</p>	<p>Agreement(s) signed</p> <p>Inter-institutional committee(s) established</p> <p>All synergic potentials are valorised</p> <p>Duplication are absent</p>
--	--	--	----------------------------------	--	--	---

<p>(1.1.3) Implement a public and institutional awareness campaign on the importance of Riverine Forest vegetation and wetlands for e.g.: erosion prevention, water regulation, biodiversity conservation (meetings, seminars, leaflets, events, school activities, nature tracks...)</p> <p>[ANNEXE 8 - ROW 1]</p>			<p>riverine forest wetlands</p>	<p>Level of awareness</p>	<p>Data not available</p>	<p>Level of awareness increased (target level to be defined in the Programme for the implementation of this Action)</p>
---	--	--	---	---------------------------	---------------------------	---

<p>(1.1.4) Restore remnant sand dune areas in order to reconstruct the typical habitat sequence for sand dunes and enforce strict protection measures in all areas with remnant sand dune communities</p> <p>[ANNEXE 8 - ROW 3]</p>			<p>sand dunes</p>	<p>Ellenberg indicators (DSS 395-401)</p> <p>Fragmentation indicators (DSS 390-391)</p>	<p>See NAPA's DSS</p>	<p>Indicator's target must be provided in the Programme for the implementation of this Action</p>
<p>(1.1.5) Assess the conservation status and sustainable harvesting of <i>Salvia officinalis</i></p> <p>[ANNEXE 8 - ROW 4]</p>			<p>grasslands</p> <p>non-timber forest products</p>	<p>Harvested quantities</p> <p>Relative occurrence of the different harvesting methods and tools</p> <p>Population abundance and distribution (DSS 443-445)</p>	<p>Data not available</p>	<p>Data available</p>

Measure 1.2 Conservation of Wildlife

Rationale:

Analysis of [wildlife](#) in the BRPL ([mammals](#), [birds](#), [reptiles](#), [amphibians](#), [fresh water fish](#) and [invertebrates](#) – Rows 5-14) reveals large data gaps in relation to the occurrence, distribution and status of constituent species. Management actions are thus primarily directed towards improving knowledge of wildlife species and the impacts of utilization on wildlife populations ([wildlife harvesting](#)), as well as strengthening protection and awareness of sustainable hunting and fishing practices.

Objectives:

- 1) To improve the knowledge on the fauna ([mammals](#), [birds](#), [reptiles](#), [amphibians](#), [freshwater fish](#) and [invertebrates](#)) and the conservation status of target species.
- 2) To improve the protection and attain the sustainable use of wildlife.

Achievement indicators:

Achievement indicators and related baseline values have been defined for each component of the protected area's ecological and socio-economic system (see section 1.3). These are available in digital format and can be consulted through tables, maps and charts in the NAPA's DSS (see Annexe 2). Management targets for the said indicators are presented in the table below.

Ecosystem components/ service (including Natura 2000 habitat/species)	Target
Amphibians	Full dataset available
Fresh water fish	Full dataset available
Invertebrates	Full dataset available
Mammals	Full dataset available

Birds	Full dataset available
Reptiles	Full dataset available

Management Actions:

Description of Action [Reference to cause-effect analysis]	Responsibility for implementation	Achievement indicator			
		Target ecosystem components/ service (including Natura 2000 habitat/species)	Indicator	Baseline	Target
(1.2.1) Assess the conservation status of Albanian water frog <i>Pelophylax shqipericus</i> in the BRPL ANNEXE 8 [ROW 5]		amphibians	Albanian water frog relative abundance	Data not available	Data available
(1.2.2) Assess the extent of frog collecting activities and the impact of this on frog populations ANNEXE 8 [ROW 6]		wildlife harvesting	Harvested quantities Frog species relative abundance	Data not available	Data available
(1.2.3) Assess the impacts to native fish populations caused by introduced alien fish species such as <i>Carassius auratus</i> and <i>Perca fluviatilis</i> . ANNEXE 8 [ROW 7]		fresh water fish	Technical report and data	Not applicable	Not applicable

<p>(1.2.4) Verify the status of the sturgeon <i>Acipenser spp.</i> in the Buna River with the view of its possible reintroduction.</p> <p>ANNEXE 8 [ROW 7]</p>		<p>fresh water fish</p>	<p>Sturgeon relative abundance</p>	<p>Data not available</p>	<p>Indicator's target must be provided in the Programme for the implementation of this Action</p>
<p>(1.2.5) Review fishing regulations and improve law enforcement on illegal fishing practices (e.g. review zoning, control and fines, and improve awareness).</p> <p>ANNEXE 8 [ROW 8]</p>		<p>fisheries system</p>	<p>Map of zoning reviewed</p> <p>Law review</p> <p>Level of awareness</p>	<p>Not available</p> <p>Not available</p> <p>Data not available</p>	<p>Map available</p> <p>Law reviewed</p> <p>Level of awareness increased (target level to be defined in the Programme for the implementation of this Action)</p>
<p>(1.2.6) Baseline survey of invertebrate species to monitor species of concern, in particular Coleoptera, Odonata and Lepidoptera.</p> <p>ANNEXE 8 [ROW 9]</p>		<p>invertebrates</p>	<p>Technical Report and data</p>	<p>Not applicable</p>	<p>Not applicable</p>
<p>(1.2.7)) Assess the conservation status of mammal species in the BRPL</p> <p>ANNEXE 8 [ROW 11]</p>		<p>mammals</p>	<p>Technical Report and data</p>	<p>Not applicable</p>	<p>Not applicable</p>

<p>(1.2.8) Strengthen enforcement of the hunting ban (e.g. improve inspection capacities), including the demarcation of the Protected area boundaries and internal zones.</p> <p>[ANNEXE 8 – ROW 12]</p>		<p>rangeland</p>	<p>Number of patrols and area covered</p> <p>Number of penalties</p>	<p>Not available</p> <p>Not available</p>	<p>Significant percentage (> 50%) of the Park covered by the patrols, covering all the habitat categories and all the ranges of altitude</p> <p>Initial increase followed by steady decrease</p>
<p>(1.2.9) Assess impacts of hunting and poaching activities on mammal and birds populations</p> <p>ANNEXE 8 [ROW 12]</p>		<p>wildlife harvesting</p>	<p>Technical Report and data</p>	<p>Not applicable</p>	<p>Not applicable</p>
<p>(1.2.10) Work with hunting associations and hunting tourism operators to raise awareness on sustainable hunting practices for targeted mammal and birds species</p> <p>ANNEXE 8 [ROW 12]</p>		<p>wildlife harvesting</p>	<p>Level of awareness</p>	<p>Data not available</p>	<p>Level of awareness increased (target level to be defined in the Programme for the implementation of this Action)</p>

<p>(1.2.11) Control of feral dogs and cats to reduce predation on wild mammal and bird populations</p> <p>ANNEXE 8 [ROW 13]</p>		<p>mammals birds</p>	<p>Number of wild mammals and birds predated by feral dogs and cats</p>	<p>Data not available Not applicable</p>	<p>Indicator's target must be provided in the Programme for the implementation of this Action</p>
<p>(1.2.12) Assess the conservation status of birds, in particular the wintering species.</p> <p>ANNEXE 8 [ROW 11]</p>		<p>birds</p>	<p>Technical Report and data</p>	<p>Not applicable</p>	<p>Not applicable</p>
<p>(1.2.13) Raise awareness and train farmers on crop protection measures to limit losses to birds.</p> <p>ANNEXE 8 [ROW 13]</p>		<p>poultry agricultural land dogs and cats</p>	<p>Level of awareness</p>	<p>Data not available</p>	<p>Level of awareness increased (target level to be defined in the Programme for the implementation of this Action)</p>
<p>(1.2.14) Assess the conservation status of the "Near Threatened" Herman's tortoise <i>Testudo hermanni</i>, European pond terrapin <i>Emys orbicularis</i>, Four-lined snake <i>Elaphe quatuorlineata</i>, in the BRPL</p> <p>ANNEXE 8 [ROW 14]</p>		<p>reptiles</p>	<p>Technical Report and data</p>	<p>Not applicable</p>	<p>Not applicable</p>

Measure 1.3 Conservation of Water Resources

Rationale:

Analysis of the [water resources](#) ([lakes](#), [river network](#), [groundwater](#), and [sea](#)) indicates that pollution is a key threat to [water resources](#) in the BRPL. Key sources of pollution include inflows of polluted water from Lake Shkodra, contamination resulting from agricultural activities and releases of untreated household wastewaters.

According to local knowledge, flood events occur very often due to both the hydraulic flow regime of the Buna River and the bad status of the artificial drainage channels.

Proposed management actions are directed towards facing the hydraulic risk of the BRPL and to raising awareness of impacts relating to poor management of wastes.

Objective:

To assess and mitigate the hydraulic risk of the BRPL, and to improve the public awareness with reference to the solid waste correct management.

Achievement indicators:

Achievement indicators and related baseline values have been defined for each component of the protected area's ecological and socio-economic system (see section 1.3). These are available in digital format and can be consulted through tables, maps and charts in the NAPA's DSS (see Annexe 2). Management targets for the said indicators are presented in the table below.

Ecosystem components/ service (including Natura 2000 habitat/species)	Target
Landscape	Positive trend on abandoned waste
river network	Hydraulic risk mitigation relating to Buna River floods

Management Actions:

Description of Action	Responsibility for implementation	Achievement indicator
-----------------------	-----------------------------------	-----------------------

[Reference to cause-effect analysis]		Target ecosystem components/ service (including Natura 2000 habitat/species)	Indicator	Baseline	Target
<p>(1.3.1) Promote public and institutional awareness campaigns for solid waste management in the BRPL (events, school activities, meetings, seminars, leaflets, etc.)</p> <p>[ANNEXE 8 - ROW 23]</p>		<p>landscape</p>	<p>Level of awareness</p>	<p>Data not available</p>	<p>Level of awareness increased (target level to be defined in the Programme for the implementation of this Action)</p>
<p>(1.3.2) Clear and maintain channels beds to allow adequate water flows during heavy rainfall events in priority areas.</p> <p>[ANNEXE 8 - ROW 23]</p>		<p>river network</p>	<p>Actual vs. Design discharge</p>	<p>Data not available</p>	<p>Actual vs. Design discharge = 1</p>
<p>(1.3.3) Carry out a hydraulic risk assessment study of the Buna River.</p> <p>[ANNEXE 8 - ROW 23]</p>		<p>river network</p>	<p>Technical Report and data</p>	<p>Not applicable</p>	<p>Not applicable</p>

3.3.2. Management Goal 2: Development of Livelihoods Based on Sustainable Use of Ecosystem Services

Three Measures are proposed to promote the development of the main sectors of the local economy in a manner that is consistent with sustainable use and conservation of the natural resources of the area.

Measure 2.1: Development of agriculture and livestock sectors

Measure 2.2: Development of tourism sector

Measure 2.3: Development of safe supplies of drinking water

Measure 2.1 Development of Agriculture and Livestock Sectors

Rationale:

Analysis of the agricultural sector reveals strong constraints in terms of farm sizes, access to capital and access to markets, such that most production is for self-consumption. Proposed interventions are targeted to three specific issues: the inappropriate use of pesticides, resulting in detrimental impacts to bee populations and thus to honey production and to pollination and productivity of fruit trees; the limited access to markets for crop and livestock products; and losses of crops and livestock due to wildlife.

Objective:

- 1) To improve management of agricultural pesticides: through improved regulation, enforcement and awareness activities.
- 2) To improve marketing and commercialization of agricultural products through an integrated promotional system and support to farmers associations.
- 3) To reduce losses of crops and livestock to wildlife through improved management and implementation of appropriate protection measures.

Achievement indicators:

Achievement indicators and related baseline values have been defined for each component of the protected area's ecological and socio-economic system (see section 1.3). These are available in digital format and can be consulted through tables, maps and charts in the NAPA's DSS (see Annexe 2). Management targets for the said indicators are presented in the table below.

Ecosystem components/ service (including Natura 2000 habitat/species)	Target
---	--------

Resources/factors of production(land, irrigation systems, other means)	Indicators on the use of banned pesticides and on the total amount of pesticides used in agriculture show a steady decrease in the next 10 years
Farming system	Indicators related to farmer associations undergo an average 30% increase
production (products from live animals, products from slaughtered animals, crops)	Agricultural production Indicators undergo an average 15% increase
Marketing and distribution	Data on marketing and commercialization of agricultural products becomes available to calculate build-up an adequate baseline for the related indicators

Management Actions:

Description of Action [Reference to cause-effect analysis]	Responsibility for implementation	Achievement indicator			
		Target ecosystem components/ service (including Natura 2000 habitat/species)	Indicator	Baseline	Target
(2.1.1)Review enforcement mechanism on the use of pesticides, with the aim of identifying ways and methods to regulate the use of certain pesticides in the flowering season and to promote the use of biological control measures for insect pests. [ANNEXE 8 - ROW 10]		farming system Invertebrates	Technical Report and data	Not applicable	Not applicable

<p>(2.1.2) Provide public and institutional awareness campaigns concerning the environmental impacts of the inappropriate use of pesticides in the BRPL (meetings, conventions, signage, multimedia, etc.)</p> <p>[ANNEXE 8 - ROW 10]</p>		<p>farming system</p>	<p>Level of awareness</p>	<p>Data not available</p>	<p>Level of awareness increased (target level to be defined in the Programme for the implementation of this Action)</p>
---	--	---------------------------------------	---------------------------	---------------------------	---

<p>(2.13) Improve commercialization of agri-livestock products:</p> <ul style="list-style-type: none"> - Carry out a market analysis to identify typologies and potential quantities of crops and agri-food products requested by the market, as well as potential target markets - Create a labelling and promotion system to link agricultural and livestock products to the BRPL (traditional crops and products; organic production methods, etc.). <p>Envisaged activities include:</p> <ul style="list-style-type: none"> ➤ Designing a promotion strategy and related action plans, including labelling message (based on the outputs of the market analysis); ➤ Establishing a body responsible for the promotion of agri-food and other products of the BRPL or appointment of a responsible person from the Farmers Association; <p>- Implement the promotional action plan(s) that may include label design; web site development; public relations; trade shows; any other special events needed; and advertising.</p> <p>[ANNEXE 8 - ROW 16]</p>		<p>Production (primary and processed)</p> <p>Marketing and distribution</p>	<p>Volume and value of sales per specific crops and livestock products identified in the market analysis.</p> <p>Presence of a market analysis developed by selected products</p> <p>Presence of a promotion strategy and related actions plans</p> <p>Presence of a body in charge of promotional actions</p> <p>Park products' label</p> <p>Number of participations to fairs/trade events</p> <p>Increase in sales after specific advertising campaigns</p>	<p>N/A</p>	<p>Increase by 30%</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>>5</p> <p>to be defined in the Programme for the implementation of this Action)</p>
--	--	---	--	------------	--

<p>(2.1.4) Reduce the fragmentation of farming systems through agreements and/or associations between farmers, so as to improve market access and reduce input costs</p> <p>[ANNEXE 8 - ROW 16]</p>		<p>Production (primary and processed) Marketing and distribution</p>	Value and volume of sales per typology	N/A	to be defined in the Programme for the implementation of this Action)
			Estimated value of direct sales by main typology (DSS 80)		to be defined in the Programme for the implementation of this Action)
			Baxho total turnover (DSS 81)		to be defined in the Programme for the implementation of this Action)
			Slaughterhouses total turnover (DSS 81)		to be defined in the Programme for the implementation of this Action)

			Intermediate consumption (Indicator not present in the DSS – definition: it represents the value of all goods and services used as inputs in the production process, excluding fixed assets whose consumption is recorded as fixed capital consumption)		to be defined in the Programme for the implementation of this Action)
--	--	--	--	--	---

Measure 2.2 Development of Tourism Sector

Rationale:

Analysis of the tourism sector (Rows 17 and 18) reveals that it is currently dominated by summer “beach” tourism which can be characterised as high volume and low spending in nature, and which has a relatively restricted season. Analysis further indicates that the quality of tourism services is generally low, and that tourism is a key driver of on-going uncontrolled urban development within the BRPL. The proposed management actions seek to improve the quality of tourism services through carrying out a skills assessment of tourism operators and providing appropriate training, and through improving coordination of local development activities; and to support growth of the tourism sector through the diversification of products and so extending the tourism season.

Objective:

To improve the quality of tourism services through identifying needs of tourism operators and providing appropriate training, and through improving coordination of local development activities; and to diversify and extend the length of the tourism season.

Achievement indicators:

Achievement indicators and related baseline values have been defined for each component of the protected area’s ecological and socio-economic system (see section 1.3). These are available in digital format and can be consulted through tables, maps and charts in the NAPA’s DSS (see Annexe 2). Management targets for the said indicators are presented in the table below.

Ecosystem components/ service (including Natura 2000 habitat/species)	Target
<u>tourism supply (attractions and activities, hotels, restaurants)</u>	Tourism supply Indicators undergo an average 10% increase
<u>tourism-related services (boat rentals and other services)</u>	Indicators of tourism-related services undergo an average 10% increase
<u>market (international)</u>	Indicators assessing the origin of tourists show a not-negligible share of tourism from countries other than Albania and Kosovo

Management Actions:

Description of Action [Reference to cause-effect analysis]	Management Zone	Responsibility for implementation	Achievement indicator			
			Target ecosystem components/ service (including Natura 2000 habitat/species)	Indicator	Baseline	Target

<p>(2.2.1) Improve quality of tourism services</p> <ul style="list-style-type: none"> -Carry out a tourism skills and knowledge assessment and a training needs analysis -Develop a full curriculum, identifying learning goals and outcomes -Delivery of training for tourism operators -Establishment of a tourism vocational school - Development of the BRPL web site <p>[ANNEXE 8 – ROW 17]</p>			<p>attractions and activities</p> <p>tourism-related services</p>	<p>Number of certified trained professionals who find a job in the local tourism industry</p> <p>Percentage of tourists visiting the area for a second or successive time</p> <p>Increase in the range of tourism services on offer</p> <p>Improved perceived services quality</p> <p>Total annual turnover (hotel) (DSS 9)</p> <p>Annual turnover (boats) (DSS 13)</p> <p>Number of tourist arrivals (DSS 25)</p> <p>Number of international tourists (DSS 27)</p> <p>Average length of</p>	<p>Data not available</p>	<p>to be defined in the Programme for the implementation of this Action</p>
--	--	--	---	--	---------------------------	---

<p>(2.2.2) Activate inter-institutional coordination mechanisms to mainstream proposals of this BRPL Management Plan into the new Velipojë Master Plan currently in preparation</p> <p>[ANNEXE 8 – ROW 17]</p>			<p>attractions and activities</p>	Number of inter-institutional agreement(s) signed	0	1
				Number of inter-institutional committee(s) established	0	1
				Presence of synergic and complementary actions in the various plans	N/A	N/A
				Absence of duplications or conflicting actions in the various plans	N/A	N/A

<p>(2.2.3) Investigate the opportunity to diversify the tourism sector and extend its season through:</p> <ul style="list-style-type: none"> • assessment and analysis of potential tourism products, and current and future market trends for proposed products, • prioritization of the products based on their relative market potential, • assessment of the level of constraints facing alternative tourism products, • formulation of recommendations for the short, medium and long-term tourism development based on diversification of types of products on offer <p>[ANNEXE 8 – ROW 18]</p>			<p>market (national, regional, international)</p>	<p>Technical report including the following elements:</p> <ul style="list-style-type: none"> • lines of tourism products • related target areas • market segments • short/medium/long term scenarios 	<p>Not applicable</p>	<p>Not applicable</p>
---	--	--	---	--	-----------------------	-----------------------

Measure 2.3 Development of Safe Supplies of Drinking Water

Rationale:

Initial surveys conducted on the [groundwater](#) in the BRPL have highlighted major problems related to chemical pollution and unsafe and uncontrolled withdrawals of drinking water. The proposed management actions seek to address this issue by means of comprehensive testing of all groundwater sources used for drinking purposes, in particular relating to tourism infrastructure in Velipojë Commune, and including for the presence of pesticides; and to raise awareness as to the importance of safe water supplies.

Objective:

To identify safe sources of groundwater for drinking purposes through comprehensive testing of groundwater resources, including for the presence of pesticides; and through raising awareness about the importance of safe water supplies for drinking purposes.

Achievement indicators:

Achievement indicators and related baseline values have been defined for each component of the protected area’s ecological and socio-economic system (see section 1.3). These are available in digital format and can be consulted through tables, maps and charts in the NAPA’s DSS (see Annexe 2). Management targets for the said indicators are presented in the table below.

Ecosystem components/ service (including Natura 2000 habitat/species)	Target
Groundwater	None of the sources used for drinking purposes polluted by pesticides or microbiological components
Drinking water	None of the sources used for drinking purposes polluted by pesticides or microbiological components

Management Actions:

	Managem ent Zone	Responsibility for implementation	Achievement indicator
--	---------------------	--------------------------------------	-----------------------

Description of Action [Reference to cause-effect analysis]			Target ecosystem components/ service (including Natura 2000 habitat/species)	Indicator	Baseline	Target
(2.3.1) Specific survey at village scale aimed to locate and analyse(with reference to indicators defined in the DSS for both drinking water and groundwater components) all the groundwater sources used for drinkable purposes			groundwater drinking water	See NAPA's DSS (all indicators attached to these target ecosystem components)	Data not available	Data available
(2.3.2) Specific survey aimed to locate and analyse(with reference to indicators defined in the DSS for both drinking water and groundwater components) the groundwater exploited by every touristic infrastructure in the Velipojë Commune			groundwater drinking water	See NAPA's DSS (all indicators attached to these target ecosystem components)	Data not available	Data available

<p>(2.3.3) Activate inter-institutional coordination mechanisms with the Health Institute or other relevant institutions to validate chemical analysis especially in terms of pesticides presence</p>			<p>groundwater</p>	<p>Agreement signed and enforced (yes/no)</p>	<p>No</p>	<p>Yes</p>
<p>(2.3.4) Reinforcement of drinking water safeguards through public education and awareness (meetings, conventions, signage, multimedia, etc)</p>			<p>drinking water</p>	<p>Level of awareness</p>	<p>Data not available</p>	<p>Level of awareness increased (target level to be defined in the Programme for the implementation of this Action)</p>

3.4 Monitoring Programme

The Park's monitoring is organised in four main thematic programmes as follows:

- Rangelands
- Water resources and land
- Wildlife
- Socio-economic system.

Each of the programmes is further divided in sub-programmes to assess through quantitative indicators the status and evolution trends of each component of the BRPL ecological and socio-economic system as described in Section 1.3. Each sub-programme includes the following elements:

- Monitoring rationale;
- Monitoring goal;
- Targeted system components;
- Indicators (calculation algorithm and data needs, rationale, update frequency);
- Data Collection Procedure (Team, Fieldwork Equipment, Protocol, References).

The Monitoring Programme is provided in Annexe 9.

PART 4: BUDGET PLAN

This section details all the elements to budget the implementation of the monitoring programme and the management measures described in Part 3.

4.1 Monitoring Programme

Considering that the bulk of the equipment for the implementation of the monitoring programme has been purchased by the project and is currently available to the park, the budget for the monitoring programme will just derive by adding the staff unit costs to the needed human resources input, as present in the following tables. Such unit cost depends on how the park managers will eventually recruit the said human resources (e.g. hiring permanent staff, contracting university or NGOs).

Human resources schedule: socio-economy monitoring team																																								
Tasks	Baseline surveys												Monitoring																											
	2012				2013				2014				2015				2016				2017				2018				2019				2020							
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
SE monitoring: Population *		3w				3w								3w				3w				3w				3w				3w				3w				3w		
Data collection																																								
Calculation of indicators																																								
Analysis of indicators and update of management plan																																								
SE monitoring: Fisheries **						4w								4w				4w				4w				4w				4w				4w						
Data collection																																								
Calculation of indicators																																								
Analysis of indicators and update of management plan																																								
SE monitoring: Agriculture and livestock breeding ***		3w				3w								3w				3w				3w				3w				3w				3w						
Data collection																																								
Calculation of indicators																																								
Analysis of indicators and update of management plan																																								
SE monitoring: Tourism (4 staff)						8w								8w								8w								8w										
Data collection																																								
Calculation of indicators																																								
Analysis of indicators and update of management plan																																								

* 6 people (1 per Commune involved in secondary data collection; 1 involved in data calculation and analysis, as well as update of the MP)

** 1 staff involved in secondary data collection and analysis

*** 6 people (1 per Commune involved in secondary data collection; 1 involved in data calculation and analysis, as well as update of the MP)

4.2 Management Measures: Budget and Time Estimates

Accurate budget and time estimates for the implementation of the planning measures and actions described in Section 3.4 will derive from the activity=>inputs=>budget analysis which will be executed at the programming stage (see *Figure 3.1: The Plan in the decision-making hierarchy*). Nevertheless, considering that this plan is also to be used to source funding, a preliminary assessment of the needed budget for the implementation of the said measure and actions has been worked out as in the table below.

Management action	Preliminary assessment of needed allocations			
	Time frame (Years)		Budget (Euro)	
	Min	Max	Min	Max
Objective 1: Conservation of ecological values				
<i>1.1 Conservation of Rangelands</i>				
(1.1.1) Afforestation of degraded and fragmented riverine forest areas along the Buna River	5	10	100,000	1,000,000
(1.1.2) Develop mechanisms to improve inter-institutional coordination between the NAPA (particularly through its regional office, RAPA), the municipalities and the municipal units, such that the NAPA can actively influence: i) urban development, ii) drainage networks management, iii) agricultural land reclamation management and developments (for example, develop maps of key wetlands not to be affected by land reclamation projects)	1	3	10,000	20,000
(1.1.3) Implement a public and institutional awareness campaign on the importance of Riverine Forest vegetation and wetlands for e.g.: erosion prevention, water regulation, biodiversity conservation (meetings, seminars, leaflets, events, school activities, nature tracks...)	1	3	20,000	60,000
(1.1.4) Restore remnant sand dune areas in order to reconstruct the typical habitat sequence for sand dunes and enforce strict protection measures in all areas with remnant sand dune communities	2	4	60,000	150,000
(1.1.5) Assess the conservation status and sustainable harvesting of <i>Salvia officinalis</i>	2	4	30,000	45,000
<i>1.2 Conservation of Wildlife</i>				

Management action	Preliminary assessment of needed allocations			
	Time frame (Years)		Budget (Euro)	
	Min	Max	Min	Max
(1.2.1) Assess the conservation status of Albanian water frog <i>Pelophylax shqipericus</i> in the BRPL	2	3	20,000	30,000
(1.2.2) Assess the extent of frog collecting activities and the impact of this on frog populations				
(1.2.3) Assess the impacts to native fish populations caused by introduced alien fish species such as <i>Carassius auratus</i> and <i>Perca fluviatilis</i> .	3	5	55,000	100,000
(1.2.4) Verify the status of the sturgeon <i>Acipenser spp.</i> in the Buna River with the view of its possible reintroduction.	3	10	55,000 (only the 3-year study)	7,000,000 (in case of the reintroduction programme)
(1.2.5) Review fishing regulations and improve law enforcement on illegal fishing practices (e.g. review of zoning, patrolling, improve awareness etc.)	3	5	30,000	50,000
(1.2.6) Baseline survey of invertebrate species to monitor species of concern, in particular Coleoptera, Odonata and Lepidoptera	2	3	40,000	60,000
(1.2.7) Assess the conservation status of mammal species in the BRPL	3	5	30,000	50,000
(1.2.8) Strengthen enforcement of the hunting ban (e.g. improve inspection capacities), including the demarcation of the Protected area boundaries	3	10	90,000	300,000
(1.2.9) Assess impacts of hunting and poaching activities on mammal and birds populations, including training of 2 staff during 1 month	1	3	5000 >35,000 (if patrolling equipment is not purchased as per action 1.2.8)	15,000 > 50,000 (see minimum budget))

Management action	Preliminary assessment of needed allocations			
	Time frame (Years)		Budget (Euro)	
	Min	Max	Min	Max
(1.2.10) Work with hunting associations and hunting tourism operators to raise awareness on sustainable hunting practices for targeted mammal and birds species	1	3	20,000	60,000
(1.2.11) Control of feral dogs and cats to reduce predation on wild mammal and bird populations	3	5		
(1.2.12) Assess the conservation status of birds, in particular the wintering species	2	5	15,000	30,000
(1.2.13) Raise awareness and train farmers on crop protection measures to limit losses to birds	1	3	20,000	60,000
(1.2.14) Assess the conservation status of the "Near Threatened" Herman's tortoise <i>Testudo hermanni</i> , European pond terrapin <i>Emys orbicularis</i> , Four-lined snake <i>Elaphae quatuorlineata</i> , in the BRPL	2	3	20,000	30,000
<u>1.3 Conservation of Water resources</u>				
(1.3.1) Promote public and institutional awareness campaigns for solid waste management in the BRPL (events, school activities, meetings, seminars, leaflets, etc.)	1	3	20,000	60,000
(1.3.2) Clear and maintain channels beds to allow adequate water flows during heavy rainfall events in priority areas.	2	3	200,000	500,000
(1.3.3) Carry out a hydraulic risk assessment study of the Buna River.	1	2	15,000	30,000
Objective 2: Development of livelihoods based on sustainable use of ecosystem services				
<u>2.1 Development of agriculture and livestock sectors</u>				
(2.1.1) Review enforcement mechanism on the use of pesticides, with the aim of identifying ways and methods to regulate the use of certain pesticides in the flowering season and to promote the use of biological control measures for insect pests.	0,5	1	30,000	60,000
(2.1.2) Provide public and institutional awareness campaigns concerning the environmental impacts of the inappropriate use of pesticides in the BRPL (meetings, conventions, signage, multimedia, etc.).	0,5	2	50,000	150,000

Management action	Preliminary assessment of needed allocations			
	Time frame (Years)		Budget (Euro)	
	Min	Max	Min	Max
<p>(2.1.3) Improve commercialization of agri-livestock products:</p> <p>1) Carry out a market analysis to identify typologies and potential quantities of crops and agri-food products requested by the market, as well as potential target markets</p> <p>2) Create a labelling and promotion system to link agricultural and livestock products to the BRPL (traditional crops and products; organic production methods, etc.). Envisaged activities include:</p> <ul style="list-style-type: none"> ➤ Designing a promotion strategy and related action plans, including labelling message (based on the outputs of the market analysis); ➤ Establishing a body responsible for the promotion of agri-food and other products of the BRPL or appointment of a responsible person from the Farmers Association; <p>3) Implement the promotional action plan(s) that may include label design; web site development; public relations; trade shows; any other special events needed; and advertising.</p> <p>Note: Actions 2.1.1, 2.1.2 and 2.1.3 are part of a single work package and, in order to produce a seamless and cumulative effect, they should be considered all together. Therefore, timeframe and costs' ranges have been included for each of the actions consistently the structure of this table. It has anyhow to be considered that, when looking at the whole set of the three actions the timeframe foreseen in this table does not imply "additionality", as the actions might start almost simultaneously.</p>	1	2	80,000	150,000
<p>(2.1.4) Reduce the fragmentation of farming systems through agreements and/or associations between farmers, so as to improve market access and reduce input costs</p>	1	2	30,000	80,000

2.2 Development of tourism sector

Management action	Preliminary assessment of needed allocations			
	Time frame (Years)		Budget (Euro)	
	Min	Max	Min	Max
(2.2.1) Improve quality of tourism services <ul style="list-style-type: none"> • Carry out a tourism skills and knowledge assessment and a training needs analysis • Develop a full curriculum, identifying learning goals and outcomes • Delivery of training for tourism operators • Establishment of a tourism vocational school • Development of the BRPL web site 	0.25 (only needs analysis)	2	10,000 (only needs analysis)	100,000
(2.2.2) Activate inter-institutional coordination mechanisms to mainstream proposals of this BRPL Management Plan into the new Velipojë Master Plan currently in preparation	0.5	2	5,000	20,000
(2.2.3) Investigate the opportunity to diversify the tourism sector and extend its season through: <ul style="list-style-type: none"> • assessment and analysis of potential tourism products, and current and future market trends for proposed products, • prioritization of the products based on their relative market potential, • assessment of the level of constraints facing alternative tourism products, • formulation of recommendations for the short, medium and long-term tourism development based on diversification of types of products on offer 	0.25	1	30,000	70,000
<i>2.3 Development of safe supplies of drinking water</i>				
(2.3.1) Specific survey at village scale aimed to locate and analyse (with reference to indicators defined in the DSS for both drinking water and groundwater components) all the groundwater sources used for drinkable purposes	1	2	30,000	60,000
(2.3.2) Specific survey aimed to locate and analyse (with reference to indicators defined in the DSS for both drinking water and groundwater components) the groundwater exploited by every touristic infrastructure in the Velipojë Commune	1	2	30,000	60,000

Management action	Preliminary assessment of needed allocations			
	Time frame (Years)		Budget (Euro)	
	Min	Max	Min	Max
(2.3.3) Activate inter-institutional coordination mechanisms with the Health Institute or other relevant institutions to validate chemical analysis especially in terms of pesticides presence	1	2	10,000	20,000
(2.3.4) Reinforcement of drinking water safeguards through public education and awareness (meetings, conventions, signage, multimedia, etc)	1	3	20,000	60,000

PART 5: ASSESSMENT OF IMPLEMENTATION

This section specifically concerns how to monitor and evaluate progress towards implementation of the management plan in terms of achieving the overall objectives of the Protected Landscape. It is not to be confused with the Monitoring Programme focusing on the BRPL's environmental and social parameters, which is presented in Section 3.4 and carried out in order to evaluate the state of the Protected Area's values.

The purpose of monitoring is to provide a structured process for checking progress towards the implementation of the management actions, and thus the overall progress in terms of achieving the management goals identified for the Protected Landscape.

Monitoring should be carried out regularly on an annual basis and in conjunction with preparation of the annual work plan for the following year.

The monitoring assessment should be done by the BRPL administration, in conjunction with central MoE staff and representatives from each Commune.

Monitoring should be carried out using the evaluation system or tool shown in Table 9 which comprises a management effectiveness tracking sheet.

Results of the monitoring process should be documented in a brief report. In addition to the completed management effectiveness tracking sheet, this should include details of the participants; when and where the exercise was carried out; details of the major successes and constraints and lessons learnt; and the main conclusions and recommendations concerning development of the subsequent annual work plan.

Table 9. Management effectiveness tracking sheet.

MANAGEMENT Goal / Measure and Objective / Action		Target Met (Yes/No/Partially) (Indicators baselines and targets are presented in Section 3.3)	Realization			Budget	
			not started	in process	completed	Allocated	Spent
1	CONSERVATION OF ECOLOGICAL VALUES						
1.	Conservation of Rangelands						
1	Objective	To improve the status of alluvial forests , riverine forests , wetlands and sand dunes within the BRPL					
	Management Action	1.1.1 Afforestation of priority riverine forest areas					
		1.1.2 Improve inter institutional coordination in order to influence urban planning and development					
		1.1.3 Clearing of river beds and drainage channels					
		1.1.4 Improve management of water release from River Drin dam					
		1.1.5 Awareness campaign on the importance of riverine forests					
		1.1.6 Improve inter institutional cooperation in order to influence land drainage and reclamation programmes					
		1.1.7 Awareness campaign on the importance of wetlands					
		1.1.8 Restore and protect remnant sand dune areas					
		1.1.9 Assess the conservation status of <i>Salvia officinalis</i>					

MANAGEMENT Goal / Measure and Objective / Action		Target Met (Yes/No/Partially) (Indicators baselines and targets are presented in Section 3.3)	Realization			Budget	
			not started	in process	completed	Allocated	Spent
1. 2	Conservation of Wildlife						
	Objective	To improve knowledge of the occurrence of fauna (mammals , birds , reptiles , amphibians , freshwater fish and invertebrates), the conservation status of species of interest, and impacts of utilization; and to improve the protection and sustainable use of wildlife					
	Management Action	1.2.1 Assess the conservation status of <i>Pelophylax shqipericus</i> (Albanian water frog)					
		1.2.2 Monitoring of amphibian populations as an indicator of water quality in wetlands					
		1.2.3 Assess the extent and impacts of frog harvesting					
		1.2.4 Assess the impacts of alien fish species					
		1.2.5 Review plans for protection of sturgeon					
		1.2.6 Review fishing regulations and strengthen enforcement measures					
		1.2.7 Collaborate with other organizations concerning surveys and monitoring of invertebrates					
		1.2.8 Assess the conservation status of mammal species					

MANAGEMENT Goal / Measure and Objective / Action	Target Met (Yes/No/Partially) (Indicators baselines and targets are presented in Section 3.3)	Realization			Budget	
		not started	in process	completed	Allocated	Spent
1.2.9 Assess impacts of hunting and poaching on mammal populations						
1.2.10 Raise awareness on sustainable hunting practices						
1.2.11 Assess impacts of domestic animals to mammal and bird populations						
1.2.12 Assess the conservation status of birds, in particular the wintering species						
1.2.13 Assess impacts of hunting and poaching on bird populations						
1.2.14 Raise awareness on sustainable hunting practices						
1.2.15 Assess the conservation status of "Near Threatened" reptile species						
1.3	Conservation of water resources					
Objective	To improve the management of wastewater and solid wastes in order to reduce pollution and improve the quality of water resources within the BRPL					
Management Action	1.3.1 Design and build sewage collection systems					
	1.3.2 Design and build wastewater treatment systems					

MANAGEMENT Goal / Measure and Objective / Action	Target Met (Yes/No/Partially) (Indicators baselines and targets are presented in Section 3.3)	Realization			Budget	
		not started	in process	completed	Allocated	Spent
1.3.3 Design and implement a solid waste collection system						
1.3.4 Improve water distribution infrastructure						
1.3.5 Awareness campaigns for solid waste management						
2	DEVELOPMENT OF LIVELIHOODS BASED ON SUSTAINABLE USE OF ECOSYSTEM SERVICES					
2.1	Development of agriculture and livestock sectors					
Objective	To improve the management of agricultural pesticides, improve the marketing of agricultural and livestock products and reduce losses of crops and livestock to wildlife					
Management Action	2.1.1 Review regulations on the use of pesticides and strengthen enforcement measures					
	2.1.2 Awareness campaigns on the importance of bees and the management and use of pesticides					
	2.1.3 Market analysis of crop and livestock products					
	2.1.4 Create a labelling and promotion system for selected crop and livestock products					
	2.1.5 Promote farmers associations					
	2.1.6 Raise awareness on measures to protect crops from birds					

MANAGEMENT Goal / Measure and Objective / Action	Target Met (Yes/No/Partially) (Indicators baselines and targets are presented in Section 3.3)	Realization			Budget	
		not started	in process	completed	Allocated	Spent
2.1.7 Raise awareness on measures to reduce losses of livestock to wildlife						
2.2	Development of tourism sector					
Objective	To improve the quality of tourism services, and to diversify and extend the length of the tourism season					
Management Action	2.2.1 Analysis of skills and training needs for tourism operators					
	2.2.2 Training of tourism operators					
	2.2.3 Improve inter institutional cooperation in order to influence development of Velopoje Master Plan					
	2.2.4 Assess opportunities to diversify tourism and extend the tourist season					
2.3	Development of safe supplies of drinking water					
Objective	To identify safe sources of groundwater for drinking purposes, and to raise awareness about the importance of safe water supplies for drinking purposes					
Management Action	2.3.1 Survey all groundwater sources used for drinking purposes					
	2.3.2 Survey all groundwater sources used for tourism services in Velipojë Commune					

MANAGEMENT Goal / Measure and Objective / Action	Target Met (Yes/No/Partially) (Indicators baselines and targets are presented in Section 3.3)	Realization			Budget	
		not started	in process	completed	Allocated	Spent
2.3.3 Cooperate with relevant institutions to validate chemical analyses including of pesticide levels in water						
2.3.4 Awareness campaign on the importance of safe supplies of drinking water						

PART 6:REFERENCES / BIBLIOGRAPHY

Project Reference Documents

- 1. Project Overall Work Plan, December 2011**
- 2. Project Achievements 2.2 and 2.4 - Technical Report, June 6th 2012**
- 3. *Development of the Management Plan for the Buna River Protected Landscape - Report of the first stakeholders' consultation workshop, Velipoje, January 25th - 26th 2012***
- 4. *Development of the Management Plan for the Buna River Protected Landscape - Report of the second stakeholders' consultation workshop. Daiç, February 22nd 24th 2012***
- 5. *Development of the Management Plan for the Buna River Protected Landscape - Report of the third stakeholders' consultation workshop, Ana e Malit, November 6th - 8th 2012***
- 6. *Development of the Management Plan for the Buna River Protected Landscape – Report of the Fourth and final stakeholder consultation workshop, Shkodra, March 3rd – 4th 2015***

Bibliography

1. Water Resources

AA.VV. (2006), Lake Shkodër Transboundary Diagnostics Analysis, Final Report, World Bank (IBRD) Project, Ref. 9P6515/R/FKE/Nijm.

AA.VV. (2010), AQMOD Development - Hydrogeological Study of Aquifers in the Bojana Delta (Montenegro), in: Water Program for Environmental Sustainability WPA Phase II Final Report, UNESCO-IHP Project, SISTER Reference 22111200HYD.

AA.VV. (2011), Report on hydrologic system of Shkodër, in: RIVA Integrated Project for the Environmental Re-qualification of the Shkodër Lake, ITALIAN PROGRAMME OF SUPPORT TO REGIONAL COOPERATION.

AA.VV. (2011), Report on vulnerability and hazard analysis of the Shkodër area, in: RIVA Integrated Project for the Environmental Re-qualification of the Shkodër Lake, ITALIAN PROGRAMME OF SUPPORT TO REGIONAL COOPERATION.

Balek J. (1961), Hydrological regimes of Albania rivers, Academy of Science, Czechoslovak.

Eftimi R. (2010), Hydrogeological characteristics of Albania, AQUAMundi, Scribo Ed., DOI: 10.4409/Am-007-10-0012

Giantris P. D. (2007), Trans-Boundary Waters and Integrated Water Resource Management in the Western Balkans Region. Tirana.

Pano N., Frasheri A. (2006), Outlook on seawaters dynamics and geological setting factors for the albanian adriatic coastline developments., Journal of Natural and Technical Sciences, Academy of Sciences of Tirana, Tirana.

Pano N., Avdyli B. (2009), A method to estimate Buna River discharge, Albania, Hydrology Days Proceedings, Tirana.

Poci E., (2011), Hydrology of the transboundary Drin river basin, "GIS in Water Resource" conference proceedings, University of Texas, Austin.

2. Flora, Vegetation and Plant Ecology

- Barina Z., Pifkó D. (2008), Addition and amendments to the flora of Albania. Willdenowia 38: 455-464.
- Barina Z., Pifkó D., Mesterházy A. (2009), Contribution to the flora of Albania. Willdenowia 39: 293-297.
- Barina Z., Pifkó D., Pintér B., Bräuchler Ch. (2010), News from the early spring flora of Albania. Acta Botanica Hungarica 52: 239-245.
- Demiri, M. (1983), Flora ekskursioniste e Shqipërisë. Shtëpia Botuese e Librit Shkollor, 986 pp., Tiranë.
- Desfayes, M. (2004), Additions to the vascular flora of Albania. Annali di Botanica 4: 155-157.
- Dimitrov D. (1997), Contribution to the flora of the western Balkan Peninsula. Phytologia Balcanica 3 (1): 139-141.
- Dimitrov D. (1998), A supplement to the flora of the Balkan Peninsula. Phytologia Balcanica 4 (3): 57-60.
- Dring J., Hoda P., Mersinllari M., Mullaj A., Pignatti S., Rodwell J. (2002), Plant communities of Albania – A preliminary overview. Annali di Botanica 2: 7-30.
- Guillet A., Malatesta L., Falchetta M., Attorre F. (2012), Systemic Spatial Decision Support Systems: an integrated, computer-aided tool for biodiversity conservation. Plant Biosystems 146: 814-826.
- Hàjek M., Hájková P., Sopotlieva D., Apostolova I., Velez N. (2008), The Balkan wet grassland vegetation: a prerequisite to better understanding of European habitat diversity. Plant Ecology, 195: 197-213.
- Horvat I., Glavač V., Ellenberg H. (1974), Vegetation Südosteuropas. Geobotanica Selecta 3. Fischer Verlag, Stuttgart.
- Markgraf E. (1932), Pflanzengeographie von Albanien. Stuttgart 105: 1-130.
- Paparisto K., Demiri M., Mitrushu I., Qosja Xh. (1988), Flora e Shqipërisë, Vol. 1. Akademia e Shkencave e RPS të Shqipërisë, pp. 457, Tiranë.
- Paparisto, K., Vangjeli, J. and Ruci, B. (1996). Flora e Shqipërisë, Vol. 3. Akademia e Shkencave e RPS të Shqipërisë, pp. 457, Tiranë.
- Poldini L. (1988), Übersicht des Verbandes *Ostrya-Carpinion orientalis* (*Quercetalia pubescentis*) in SO-Europa. Phytocoenologia 16(1): 125–143.
- Qosja XH, Paparisto K., Demiri M., Vangjeli J., Balza E. (1992), Flora e Shqipërisë, Vol. 2. Akademia e Shkencave e RPS të Shqipërisë, pp. 217-225; 294-300, Tiranë.
- Rakaj M. (2009), Floristic and chorological news from north Albania. Botanica Serbica, 33: 177-183.
- Ruci B., Vangjeli J., Mullaj A. (2000), Specie vegetali e habitat rari e minacciati in Albania. Cahiers Options Méditerranéennes 53:179-190.
- Tutin T.G., Burges N.A., Valentine D.H., Walters S.M., Webb D.A. (Eds.). (1964-80), Flora Europaea 1-5. Cambridge University Press, Cambridge.
- Vangjeli J., Mullaj A., Ruci B. (1995), Red Book: Threatened and rare plant species of Albania. Tirana.
- Vangjeli J., Ruci B., Mullaj A., Qosja Xh., Paparisto K. (2000), Flora e Shqipërisë, Vol. 4. Akademia e Shkencave e Republikës së Shqipërisë, Tiranë.

Westhoff V., Van der Maarel E. (1978), The Braun-Blanquet approach. In: Whittaker, R.H. (Ed.) Classification of plant communities: 287–399. Dr.W. Junk, The Hague.

3. Fauna and Animal Ecology

Andersen J. (1962), Roe deer census and population analysis by means of a modified marking release technique. In: The exploitation of natural animal population. Le Cren E.D. e Holdgate M.W. (ed.). Blackwell Scientific Publications, Oxford: 72-82 pp.

Anonymous (2009), Skylark, *Alauda arvensis* factsheet. EU Wildlife and Sustainable Farming project: 8 pp.

Anonymous (2008), Group of Experts on the Conservation of Invertebrates, draft report. Convention on the conservation of European wildlife and natural habitats, Strasbourg, 15 July 2008
Norway: 63 pp.
<https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=1296532&SecMode=1&DocId=1435096&Usage=2>

Bego F, Krystufek B., Paspali G., Rogozi E. (2008), Small terrestrial mammals of Albania: annotated list and distribution. *Hystrix Italian Journal of Mammalogy*, 19 (2): 3-21.

Bertolero A., Cheylan M., Hailey A., Livoreil B., Willemsem R. E. (2011), *Testudo hermanni* (Gmelin 1789)—Hermann's tortoise. In: Rhodin AGJ, Pritchard PCH, van Dick PP, Saumure RA, Buhlmann KA, Iverson JB, Mittermeier RA (eds) Conservation biology of freshwater turtles and tortoises: a compilation project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs , 5: 059.1–059.20

Bibby C.J., Hill D.A., Burgess N.D. and Mustoe S. (2000), Bird Census Techniques. Academic Press: 302 pp.

Bifolchi A. and Lode T. (2005), Efficiency of conservation shortcuts: an investigation with otters as umbrella species. *Biological Conservation*, 126: 523-527.

BirdLife International (2004), Birds in the European Union: a status assessment. Wageningen, The Netherlands: BirdLife International: 59 pp.
http://www.lpo.fr/images/liste_rouge_europeene/birds_in_the_eu.pdf

Conroy J.W.H. and Chanin P. (2000), The status of the Eurasian otter (*Lutra lutra*) in Europe - a review. *Journal of the International Otter Survival Fund*, 1: 7-28.

Cox N., Chanson J. and Stuart S. (Compilers) (2006), The Status and Distribution of Reptiles and Amphibians of the Mediterranean Basin. IUCN, Gland, Switzerland and Cambridge, UK: 51 pp.

Crawford A. (2003), Fourth Otter Survey of England. Technical Report W1-061/TR. Environment Agency, Bristol

Crivelli A.J. (1996), ACTION PLAN FOR THE DALMATIAN PELICAN (*Pelecanus crispus*) IN EUROPE. http://ec.europa.eu/environment/nature/conservation/wildbirds/action_plans/docs/pelecanus_crispus.pdf: 29 pp.

Crivelli, Nazirides and Jerrentrup (1996), ACTION PLAN FOR THE PYGMY CORMORANT (*Phalacrocorax pygmeus*) IN EUROPE. http://ec.europa.eu/environment/nature/conservation/wildbirds/action_plans/docs/phalacrocorax_pygmeus.pdf: 25 pp.

Delany S. (2005), Guidelines for participants in the International Waterbird Census (IWC). Consultation draft Wetlands International: 15 pp.

European Commission (2009), European union management plan 2009-2011. Technical Report, Lapwing *Vanellus vanellus*: 58 pp.
http://ec.europa.eu/environment/nature/conservation/wildbirds/hunting/docs/Lapwing%20EU_MP.pdf

Fehér Z., Eross Z., Kontschán J. and Murányi D. (2004), Collecting sites of the zoological expeditions of the Hungarian Natural History Museum to Albania (1992–2003). *Folia Historico Naturalia Musei Matraensis*, 28: 67–82.

Freyhof J. and Brooks E. (2011), European Red List of Freshwater Fishes. Luxembourg: Publications Office of the European Union: 62 pp.

Freyhof J. (2012), Threatened freshwater fishes and molluscs of the Balkan, Potential impact of hydropower projects. Unpublished report, ECA Watch Austria & EuroNatur: 81pp.

Gaillard J.M., Boisaubert B., Boutin J.M., Clobert J. (1986), L'estimation d'effectifs à partir de capture-marquage-recapture: application au chevreuil (*Capreolus capreolus*). *Gibier Faune Sauvage* 3: 143-158.

Harvey D.J., Gange A. C., Hawey C. J.S and Rink M. (2011), Bionomics and distribution of the stag beetle, *Lucanus cervus* (L.) across Europe. *Insect Conservation and Diversity*, 4: 23–38.

Haxhiu I. (1998), The Reptilia of Albania : Species composition, distribution, habitats. *Bonner Zoologische Beitrage*, 48 (1): 35-37.

Hysaj E. and Bego F. (2008), PËRHAPJA, GJENDJA DHE DIETA E LUNDËRZËS (*LUTRA LUTRA* L.) PËRGJATË LUGINËS SË DRINOS. Proceedings of the International Conference on Biological and Environmental Sciences, Tirana: 8pp.

Jablonski D. (2011), Reptiles and amphibians of Albania with new records and notes on occurrence and distribution. *Acta Societatis Zoologicae Bohemicae*, 75: 223–238.
http://www.danieljablonski.com/a/soubory/Jablonski_2011_Distribution_Amphibia_Reptilia_Albania_ASZB.pdf

Jefferies D. J. (1986), The value of otter *Lutra lutra* surveying using spraints: an analysis of its success and problems in Britain. *Otters, Journal of the Otter Trust* 1: 25–32.

Kalkman V. J. (2000), Records on the dragonfly fauna of northwestern Albania (Odonata). *Libellula*, 19 (½): 107-111.

Kalkman V. J., Boudot J.-P., Bernard R., Conze K.-J., De Knijf G., Dyatlova E., Ferreira S., Jović M., Ott J., Riservato E. and Sahlen G. (2010), European Red List of Dragonflies. Luxembourg: Publications Office of the European Union: 40 pp.

Kruuk H., Conroy W. H., Glimmerveen U. and Ouwkerk E. J. (1986), The use of spraints to survey populations of otters *Lutra lutra*. *Biological Conservation* 35: 187–194.

Kruuk H. and Conroy W. H. (1987), Surveying otter *Lutra lutra* population: a discussion of problems with spraints. *Biological Conservation* 41:179–183.

Kruuk H., Carss D.N., Conroy J.W.H., Durbin L. (1993), Otter (*Lutra lutra*) numbers and fish productivity in rivers in north-east Scotland. *Symposium of Zoological Society of London* 65: 171–191.

- Lunnon R.M. and Reynolds J.D. (1991), Distribution of the otter *Lutra lutra* in Ireland, and its value as an indicator of habitat quality. In: Bioindicators and environmental management. D.W. Jeffrey, Madden B. (Eds.) Academic Press, London: 435-443.
- Mason C. F. and Macdonald S. M. (1987), The use of spraints for surveying otter *Lutra lutra* population: an evaluation. *Biological Conservation* 41: 167–177.
- Mazzotti S., Bertolucci C., Fasola M., Lisi I., Pisapia A., Gennari R., Mantovani S. and Vallini C. (2007), La popolazione della testuggine di Hermann (*Testudo hermanni*) del Bosco della Mesola. *Quad. Staz. Ecol. civ. Mus. St. Nat. Ferrara*, 17: 91-104.
- Meriggi A. (1989), Analisi critica dei metodi di censimento per la fauna selvatica (Aves, Mammalia). *Ricerche di Biologia della Selvaggina* 58: 1-59.
- Meriggi A. and Alieri R. (1989), Factors affecting Brown hare density in northern Italy. *Ethology, Ecology and Evolution* 1: 255–264.
- Murányi D. (2007), Contribution to the Odonata fauna of Albania. *Folia Entomologica Hungarica Rovartani Kozlemények*, 68: 41-53.
- Nieto A. and Alexander K.N.A. (2010), European Red List of Saproxyllic Beetles. Luxembourg: Publications Office of the European Union: 56 pp.
- Panzacchi M., Genovesi P. and Loy A. 2009. Piano d’Azione Nazionale per la Conservazione della Lontra (*Lutra lutra*). Minister of Environment – ISPRA: 203 pp.
- Pollock, K.H., Nichols, J.D., Brownie, C. & Hines, J.E., 1990 - Statistical inference for capture-recapture experiment. *Wildlife Monographs*: 107: 1-97.
- Prigioni C., Bogliani G., Barbieri F. (1986), The Otter *Lutra lutra* in Albania. *Biological Conservation*, 36: 375-383.
- Prigioni C. (1996), Distribution of mammals in Albania. *Hystix*, 1-2: 67-73.
- Prigioni C., Remonti L., Balestrieri A., Sgrosso S., Priore G., Mucci N. and Randi E. 2006. Estimation of otter (*Lutra lutra*) population size by fecal DNA typing in Southern Italy. *Journal of Mammalogy*, 87(5): 855–858.
- Rakaj N. and Flloko A. (1995), Conservation status of freshwater fish of Albania. *Biological Conservation* 72: 195-199.
- Ramsar Convention Secretariat (2013), The Ramsar Convention Manual: a guide to the Convention on Wetlands (Ramsar, Iran, 1971), 6th ed. Ramsar Convention Secretariat, Gland, Switzerland: 112 pp. <http://www.ramsar.org/pdf/lib/manual6-2013-e.pdf>
- Ranius T., Aguado L. O., Antonsson K., Audisio P., Ballerio A., Carpaneto G. M., Chobot K., Gjurašin B., Hanssen O., Huijbregts H., Lakatos F., Martin O., Neculiseanu Z., Nikitsky N. B., Paill W., Pirnat A., Rizun V., Ruicănescu A., Stegner J., Süda I., Szwatko P., Tamutis V., Telnov D., Tsinkevich V., Versteirt V., Vignon V., Vögeli M., Zach P. (2005), *Osmoderma eremita* (Coleoptera, Scarabaeidae, Cetoniinae) in Europe. *Animal Biodiversity and Conservation* 28.1: 1-44.
- Reuther C. and Hilton-Taylor C. (2004), *Lutra lutra*. In: IUCN 2007. 2007 IUCN Red List of Threatened Species. <http://www.iucnredlist.org/details/12419/0>
- Ruiz-Olmo J., Loy A., Cianfrani C., Yoxon P., Yoxon G., de Silva P.K., Roos A., Bisther M., Hajkova P. and Zemanova B. (2008), *Lutra lutra*. In: IUCN 2013. IUCN Red List of Threatened Species. <http://www.iucnredlist.org/details/12419/0>

Schneider-Jacoby M., Schwarz U., Sackl P., Dhora D., Saveljic D. and Stumberger B. (2006), Rapid assessment of the Ecological Value of the Bojana-Buna Delta (Albania / Montenegro). Euronatur, Radolfzell: 103 pp.

Schneider-Jacoby M. and Spangenberg A. (2010), Bird Hunting Along the Adriatic Flyway – an Assessment of Bird Hunting in Albania, Bosnia and Herzegovina, Croatia, Montenegro, Slovenia and Serbia. – In: Denac, D., Schneider-Jacoby, M. and Stumberger, B. (eds.). Adriatic flyway – closing the gap in bird conservation. Euronatur, Radolfzell, pp. 32–51.

Shumka S., Papparisto A., Grazhdani S. (2008), Identification of non-native freshwater fishes in Albania and assessment of their potential threats to the national biological freshwater diversity. BALWOIS 2008 – Ohrid, Republic of Macedonia – 21, 31 May 2008: 6 pp.

Smith K. G. and Darwall W. R. T. (Compilers) (2006), The Status and Distribution of Freshwater Fish Endemic to the Mediterranean Basin. IUCN, Gland, Switzerland and Cambridge, UK: 44 pp.

Stubbs D., Hailey A., Pulford E., Tyler W. (1984), Population Ecology of European Tortoises: Review of Field Techniques. Amphibia-Reptilia, 5 (1): 57-68 pp.

Stubbs, D. (1989), *Testudo hermanni*, Hermann's Tortoise. In: Swingland & Klemens (ed.), The Conservation Biology of Tortoises. IUCN, Gland, Switzerland: 34-36.

Temple H.J. and Terry A. (Compilers) (2007), The Status and Distribution of European Mammals. Luxembourg: Office for Official Publications of the European Communities: 48 pp.

Temple H.J. and Cox N.A. (2009), European Red List of Amphibians. Luxembourg: Office for Official Publications of the European Communities: 44 pp.

Temple H.J. and Cuttelod A. (Compilers) (2009), The Status and Distribution of Mediterranean Mammals. Gland, Switzerland and Cambridge, UK : IUCN: 44 pp.

Van Swaay C., Cuttelod A., Collins S., Maes D., Lopez Munguira M., Šašić M., Settele J., Verovnik R., Verstrael T., Warren M., Wiemers M. and Wynhof, I. (2010), European Red List of Butterflies. Luxembourg: Publications Office of the European Union: 60 pp.

Vangeluwe D., Beudels M.-O., Lamani F. (1996), Conservation Status of Albanian Coastal Wetlands and Their Colonial Waterbird Populations (Pelecaniformes and Ciconiiformes). Colonial Waterbirds, Vol. 19, Special Publication 1: Ecology, Conservation, and Management of Colonial Waterbirds in the Mediterranean Region: 81-90.

Webb E. B., Smith L. M., Vrtiska M. P., and Lagrange T. G. (2010), Effects of Local and Landscape Variables on Wetland Bird Habitat Use During Migration Through the Rainwater Basin. Journal of Wildlife Management 74 (1): 109-119

Wetlands International (2010), Guidance on waterbird monitoring methodology: Field Protocol for waterbird counting. Report prepared by Wetlands International: 15pp. <http://www.wetlands.org/LinkClick.aspx?fileticket=SzPEwscxuXs%3D&tabid=2791&mid=11794>

Willemssen R.E. (1995), Status of *Testudo hermanni* in Greece. In: Ballasian, Donato (ed.), Red Data Book on Mediterranean Chelonians: 110-118. Edagricole - Edizioni Agricole, Bologna, Italy

4. Socio-Economic

European Union Delegation in Albania (2011), Albania 2011 – Progress Report, accompanying the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL, Enlargement Strategy and Main Challenges 2011-2012.

European Union Delegation in Albania (2010), Analytical Report, accompanying the COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL, Commission Opinion on Albania's application for membership of the European Union.

GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) (2010), Strategic Concept for Regional Development for Shkodër County.

Law on organization and function of Local Governments, No. 8652, dated 31.07.2000.

Social and economic data at <http://www.instat.gov.al/>.

The Government of Albania and UN in Albania (2010), Albania National MDGs Report.

UNDP (2005), Country Programme Document for Albania 2006-2010.

UNDP (2011), Strategic Planning in Shkodra Region - Towards Sustainability of Tourism.

UNDP (2011), Map of economic resources and strategic potential of Shkodër and Vlora regions.

UNDP (2010), Valorisation of endogenous territorial potentials for the ART GOLD ALBANIA 2 Programme – Proposed strategic guidelines for LED of Shkodra.

PART 7: ANNEXES