United Nations Development Programme
Conservation of Biodiversity and Sustainable Land
Use Management in Dragash/Dragaš

EMBASSY OF FINLAND
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Sustainable Development Atlas

Framework for a comprehensive and balanced rural development for the Municipality of Dragash / Dragaš Kosovo[1]

Volume I: Introduction and Methodology

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Acronyms

BOD	Biological Oxygen Demand
CBD	Biodiversity Convention International Treaty signed in 1992
CORINE	Coordination of Information on the Environment
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora.
CLC	CORINE Land Cover
DEP	Department of Environment Protection
EC	European Commission
ECNC	European Centre for Nature Conservation
ECT	Energy Community Treaty
EIA	Environmental Impact Assessment
EPAP	European Partnership Action Plan
ESK	Energy Strategy for Kosovo 2009 - 2018
EU	European Union
FFH-Directive	EU-Flora-Fauna-Habitat Directive (Council Directive 1996/105/EC)
FMSN	Faculty of Mathematic and Nature Sciences
FSC	Forestry Stewardship Council (Council Standards for Administration of Forest)
GDP	General Domestic Production
GIS	Geographic Information System
GMO	Genetically Modifying Organisms
HC	Hydro-central plant
HMIK	Hydrometeorological Institute of Kosovo
HCV	High Conservation Value Forests - Forests managed under Forestry Stewardship Council standards
IUCN	International Union for Conservation of Nature
KEAP	Kosovo Environmental Action Plan
KEK	Kosovo Energy Corporation
KEPA	Kosovo Agency for Environment Protection
KFA	Kosovo Forest Agency
KINP	Kosovo Institute for Nature Protection
kW	Kilowatt
MAFRD	Ministry of Agriculture, Forestry and Rural Development
MDP	Municipal Development Plan
MEF	Ministry of Economy and Finance
MEM	Ministry of Energy and Mining
MESP	Ministry of Environment and Spatial Planning
MEST	Ministry of Education, Science and Technology
MTI	Ministry of Trade and Industry
MTPT	Ministry of Transport and Post Telecommunication
NGO	Non Governmental Organization
NPA	Nature Protected Area
PSFM	Project for Sustainable Forest Management
SAPB	Strategy and Action Plan for Biodiversity
SD	Sustainable Development
SDA	Sustainable Development Atlas
SEA	Strategic Environmental Assessment
SHPP	Small Hydropower Plant
SoE	Socially Owned Enterprise (formerly Sharr Prodhimi/Šarproizvod) Socially-Owned enterprises were created by the Law on Enterprises and the Law on Associated Labour of Yugoslavia. The Kosovo Trust Agency has the authority to administer all socially-owned enterprises that were registered in Kosovo as of 31st December 1988 and any subsequent date. The Agency has the mandate to privatise such enterprises through specific procedures.
USAID	US Agency for International Development
WB	World Bank
WFD	Water Framework Directive 2000/60/EC

1. Guiding words

Land use has a spatial impact. It takes place at a certain location, utilises the properties of this location and influences the properties of this as well as surrounding locations. Depending on the type of land use, this influence may have a significant and long-lasting effect. Often, (for example, in the case of erosion) these adverse effects render this type of land use impossible and it may mean that this certain location loses its usability for many other types of land use too.
Development measures have a spatial component too: investments take place at specific locations. The suitability of the location has a great influence on the costs of the development measure. There is also a great influence on the costs generated through negative effects of choosing an unsuitable location for the development measure. Future generations often have to pay the price for development errors.
As both suitable land resources and money are usually scarce commodities, and as safeguarding resources for future generations is one of the key aspects of sustainable development, taking spatial aspects into consideration is necessary.
The atlas has been prepared for policy-makers, planners and decision makers in Kosovo, more specifically in the municipal-ity of Dragash/Dragaš. It summarises the scientific knowledge of relevant influencing factors that have a tangible impact on the sustainability of development in the plan-ning area.
To make it a useful tool, it provides objec-tives for an economically effective, socially fair and environmentally compatible devel-opment that will not only raise the living conditions of present generations but also preserve and ensure development oppor-tunities for future generations.
More spe-cifically, the atlas analyses the existing development status, identifies further de-velopment potentials, shows development objectives and identifies suitable develop-ment tools. This is carried out for clearly delineated areas or locations (“zones”). Therefore, the results are published as a sustainable development-guiding atlas.
The results should not be used as strict instructions of what to do and where to do it. Rather they indicate development prob-lems but also development potentials, and appropriate directions for sustainable de-velopment.
The authors of these guidelines are scien-tists. As such they are well aware of their role in society and aware that policy-formulation is the domain of the political level. As scientists they offer the best available knowledge that may support pol-icy formulation, planning and decision making on a sound, rational and ultimately sustainable platform.
The final choice - what a society is heading towards - is a political choice and must be decided by politicians and by concerned citizens. Scientists can simply provide the necessary information and expertise to help make such choices.
Thus planning and co-ordination is a good starting point. Before any project, or before a measure is implemented, the govern-ment first has to set priorities about where action is most required. It must co-ordinate the many necessary measures with a view of maximising the overall benefit and co-ordinating their mutual support. And the government must do this at the best-suited locations and with consideration of the specific conditions of the site. This is al-ways a site-specific task because money is spent at specific sites or locations.
This atlas provides the necessary informa-tion for sustainable planning and decision-making. It shows sustainability its place.

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Salim Jenuzi – Mayor of the Municipality of Dragash

2. Introduction

Dragash/Dragaš is a mountainous area covering 433.7 square kilometres, located in the southern region of Kosovo - Prizren, characterised today by its high level of poverty, migra-tion and great landscape beauty amongst many other elements.
The first development challenge is providing the Municipality with adequate instruments to promote development based on conservation of biodiversity, adequate land use management and an enabling development conditions for its communities.
Within this framework the Municipal Development Plan will fill an important institutional gap, and will provide a frame-work for the development of related development strategies, namely economic development, the integration of waste / water & energy strategies, and the definition of protected areas.
One ultimate goal / target of the project is to achieve protection of the Sharr/Šar Mountain that lies within the territory of Dragash/Dragaš. A large area currently under mandate by the Kosovo Privatization Agency (around 22,000 ha) will potentially be protected under the Sharr/Sar National Park Law. In order to increase the Sharr/Šar National Park into Dra-gash/Dragaš’s territory, a feasibility study needs to be undertaken. This feasibility study re-quires expert input and specific studies, some of which relate to biodiversity, water resources, forests, social and economic sectors, geology and geomorphology, cultural background, and an analysis of the state of the environment. All together these studies will inform decisions on protection categories.

Development has a spatial dimension

Based on the fact that the spatial dimension is a crucial aspect when planning sustainable development, the Sustainable Development Atlas (SDA) procedure is introduced. Its properties include practicality, transparency, and arbitration between the conflicting interests of economy and ecology. The method employs GIS-technology to produce rapid support for the sustainable management of resources.
The rationale behind this approach is that development has a spatial dimension and that any development measure creates costs, not only through its implementation but also if negative effects require repair, e.g. if the measure was carried out at an unsuitable location. In order to minimise costs and negative effects, and to ensure sustainability, it is necessary to identify the most suitable locations for development measures.
The approach divides the multi-faceted and complex task of rural sustainable development into a number of “key fields” of development, including biosphere, cultivation, water, health etc. Geospatial assessment data is collected for each of these key fields. Assessment includes the land resources as well as its suitability for and sensitivities towards the various types of land use.
Using techniques of geographical information system, those geospatial assessment zones are run through a hierarchical system of decisions and thereby transformed into guidance zones. Those guidance zones are either zones which – with regards to the key field - need protection, zones which need rehabilitation or zones which have potential for development. In a further step the guidance zones of the various key fields need to be harmonised, as con-flicts may occur between them. The sustainable atlas is comprised of baseline maps – the B-maps (geomorphology, land potential, etc.), maps for assessment – the A maps, and guidance zones for the key fields – the G-maps, including integrated guidance. It provides the necessary information for sustainable planning and decision-making.

“Where best to do what?” - Key question in the development of the Municipality

The SD Atlas concept has proved to be a rapid though concise and transparent method to produce guidance for sustainable development. It comprises the assessment of all important resources, their evaluation according to criteria of sustainable development, the definition of development guidance and the proposal of suitable management tools in order to follow the guidance and reach the sustainable development objectives. Integration of the various guid-ance maps mediates conflicting objectives and results in an integrated development zone map. The general development structure of the planning area is proposed by the map for development centres and corridors. The atlas summarises the scientific knowledge of the relevant influencing factors that have a tangible impact on the sustainability of development in the planning region. To render it a useful tool, it provides objectives for an economically effective, socially fair and environmen-tally compatible development that will not only raise the living standards of present genera-tions but also preserve and ensure development opportunities for future generations. More specifically, the atlas analyses the existing development status, identifies further development potentials, shows development objectives and identifies suitable development tools.
The key question in the development of the municipality is therefore not “What to do?” but rather “Where best to do what?” (i.e. what are the optimal locations and sites for urban ex-pansion, where do schools need upgrading, where are the sensitive ecosystems located that require protection, where should ecological agricultural management be supported? etc). This atlas addresses the spatial dimension of sustainable development and provides answers to the most pressing development issues.

The SD-Atlas – the basis for a Strategic Environmental Assessment

The Strategic Environmental Assessment (SEA) is a continuous and adaptive process pro-viding a structured approach to integrating environmental considerations into decision-making processes, at the municipal, sub-regional or regional planning level.
The SEA is a formal process that systematically assesses the environmental effects of de-velopment policies, plans, programmes and other proposed strategic plans. SEA is effectively a proactive approach to integrating environmental considerations into more strategic levels of decision-making, which are consistent with principles outlined in Agenda 21. In so doing, it is intended to help prevent environmental damage caused by policies and plans. An SEA requires a broader and less detailed assessment, of course, in comparison to a project Environmental Impact Assessment (EIA). Consequently, it takes place at an earlier stage of plan preparation and decision-making.

In summary, SEA seeks to achieve the following aims and functions:

- identify environmental implications and issues of sustainable development;
- consider a broad range of possible strategic alternatives, including the best practical environmental option, and to specify appropriate mitigation measures;
- provide an early warning of both significant impacts and cumulative effects, and thereby reinforce the preparation of any project-based EIA;
- place an emphasis on meeting environmental objectives and maintaining natural condi-tions;
- provide a broad perspective, a lower level of detail, a vision and an overall framework;
- account for a multi-stage process, overlapping subject matter and an iterative decision-making process; and,
- focus on sustainability and the source of environmental degradation.

Kosovo's Law on Strategic Environmental Assessment (Law No.03/L-230) states in Article 2 that an SEA report is "obligatory for plans and programs from spatial planning..., which give a frame for future development projects..." where it is likely that there are significant envi-ronmental effects. Consequently SEAs are required for all MDPs. Furthermore it is advisable that the SEA is carried out in conformity with EC legislation.

The SDA delivers substantial input and orientation to the MDP and the respective SEA. As the compilation process of the MDP is closely interlinked with and based on the production and findings of the SDA, options and strategies developed under the MDP always take envi-ronmental aspects and guidance into consideration during the whole process. As a conse-quence it can be assumed that all options and strategies incorporated in the MDP will be in line with the framework set by environmental and sustainability considerations.

As a result the process for establishing a coherent SEA will be significantly facilitated through the SDA (see also Figure 2 1).

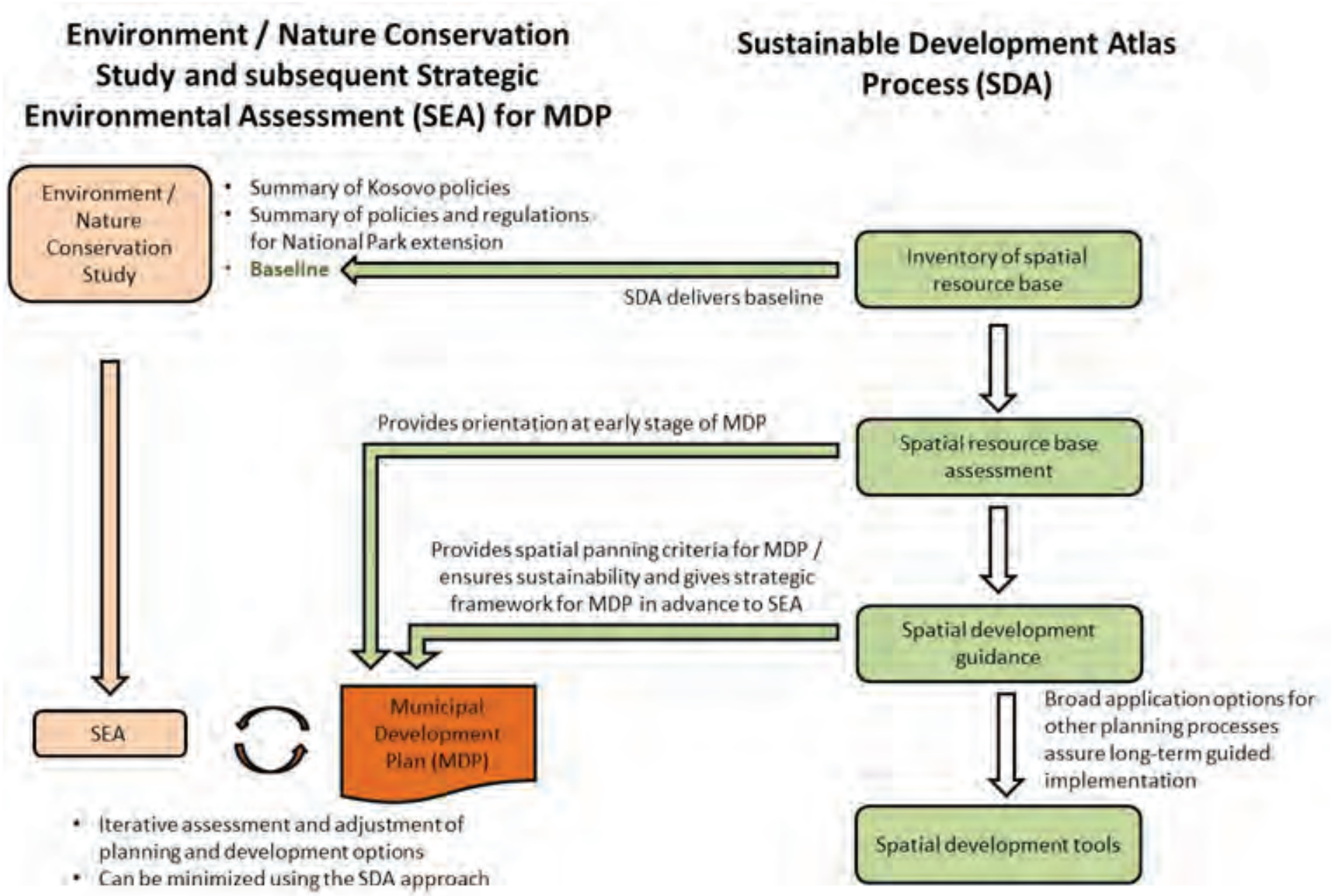

Figure 2 1: Relationship between the MDP, related Strategic Environmental Assessment and the guidance provided by the Sustainable Development Atlas

3. Concept and methodology

3.1. Concept [2]

The concept design is based on the information needs of policy-makers, planners and deci-sion makers involved.
1. They first need information on the present status of the resource base.
2. Based on the main features of such resource status evaluation, they can formulate and co-ordinate spatial development objectives.
3. To finally implement such development objectives they need to identify appropriate tools and demonstrate the most suitable location.

Consequently, the concept comprises four steps:

Step 1: Compilation of basic information like topography, terrain model, land-use, geology, climate, natural resources, biodiversity and population/infrastructure.

Step 2: Spatial resource base assessment in the various sectors and fields of sustainable development. Such assessments provide information including:

- What are the present conditions of a resource?
- What problems and constraints exist and at which sites or locations are they most pressing?
- How sensitive are resources against adverse impacts or when they are utilised?
- What are the development opportunities still available and where?

Step 3: Spatial development guidance as to which actions could lead most efficiently and most appropriately to increased sustainability. Such objectives provide information such as:

- Which issues must be addressed and solved as soon as possible and where?
- In which sectors and where are problems, deficits, and over-exploitation?
- Which resources must be rehabilitated and at which sites?
- Which resources need protection and where?
- What are the most suitable sites for further development?
- How best to solve development conflicts?
- How best to coordinate between the various sectors and demands of development?

Thus the spatial development objectives do not only provide guidance for individual sectors but also indicate how to coordinate interaction between them.

Step 4: Spatial development integrated guidance and tools summarises the different fields in order to give clear and integrated guidance for the spatial planning of the region of focus to implement measures which lead to increased sustainability. It can include sites where the application of certain tools will lead to the best results. Such tools may include programmes and plans (for example water management plans, agricultural development plans, ecological compensation schemes or reforestation programmes and legal settings and guidelines).

Figure 1 indicates the connection between spatial resource base assessment, spatial devel-opment objectives, and implementation of those objectives through spatial development tools.

[2] Based on: Bemmerlein-Lux F.A. et al.

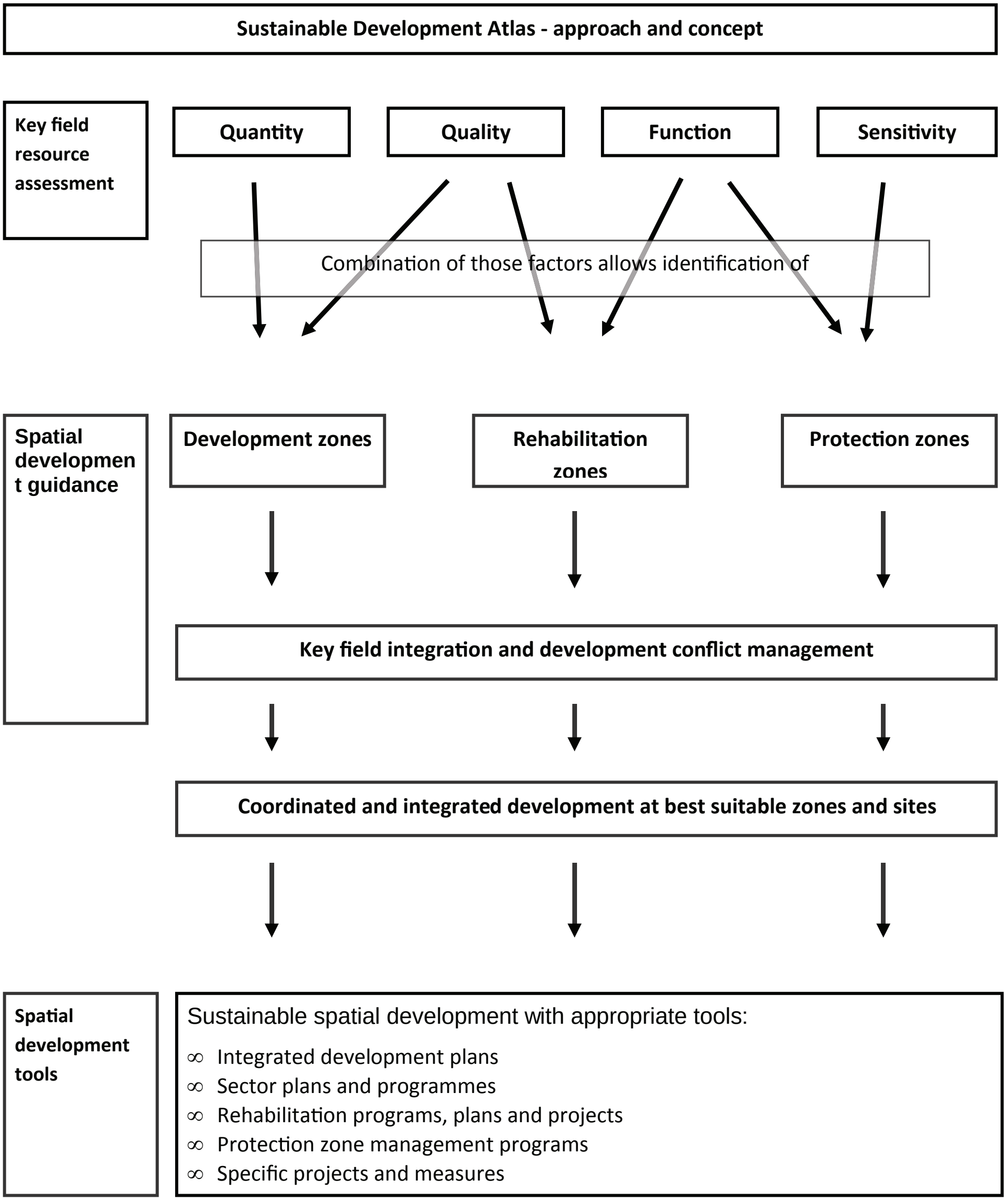

Figure 3-1: Approach of the Sustainability Atlas

3.2. Step 1 and 2 - Resource base and assessment

According to the most relevant development problems and priorities, we apply assessment to four SDA dimensions, namely the natural, the human, the economic and the institutional re-sources. We further subdivide those SDA dimensions into SDA key fields, on which base the assessment is being carried out.

SDA Dimension	Natural resources	Economic resources	Human resources	Institutional resources
SDA Key Field	Ecosystems Water Soil	Economic struc-ture Agriculture (food and cash crop, animal husbandry) Forest Tourism Energy	Infrastructure Health Education	Administration Environmental management

Assessment considers four factors of influence:

• The availability or quantity of the resource base – how much or little, how easy or difficult to access?
• The quality of the resource base – how good or bad?
• The functions or services that the resource has for society, nature or the economy - how much is needed, what for, and where?
• The sensitivity or vulnerability of a resource against stress, impacts or inadequate utili-sation, which may negatively affect its functions, quantity, quality, availability: how sensi-tive or how robust?

For each resource, extent and spatial (geographical) distribution/ location of these four factors are considered and evaluated. Only where any of the four factors is highly relevant for devel-opment are such sites or areas finally designated as zones. This evaluation of planning and management relevance is the basis to formulate appropriate sustainable development objec-tives. In short, this first step provides the relevant information for each SDA key field, highlighting the problems and showing development opportunities and their location of relevance.

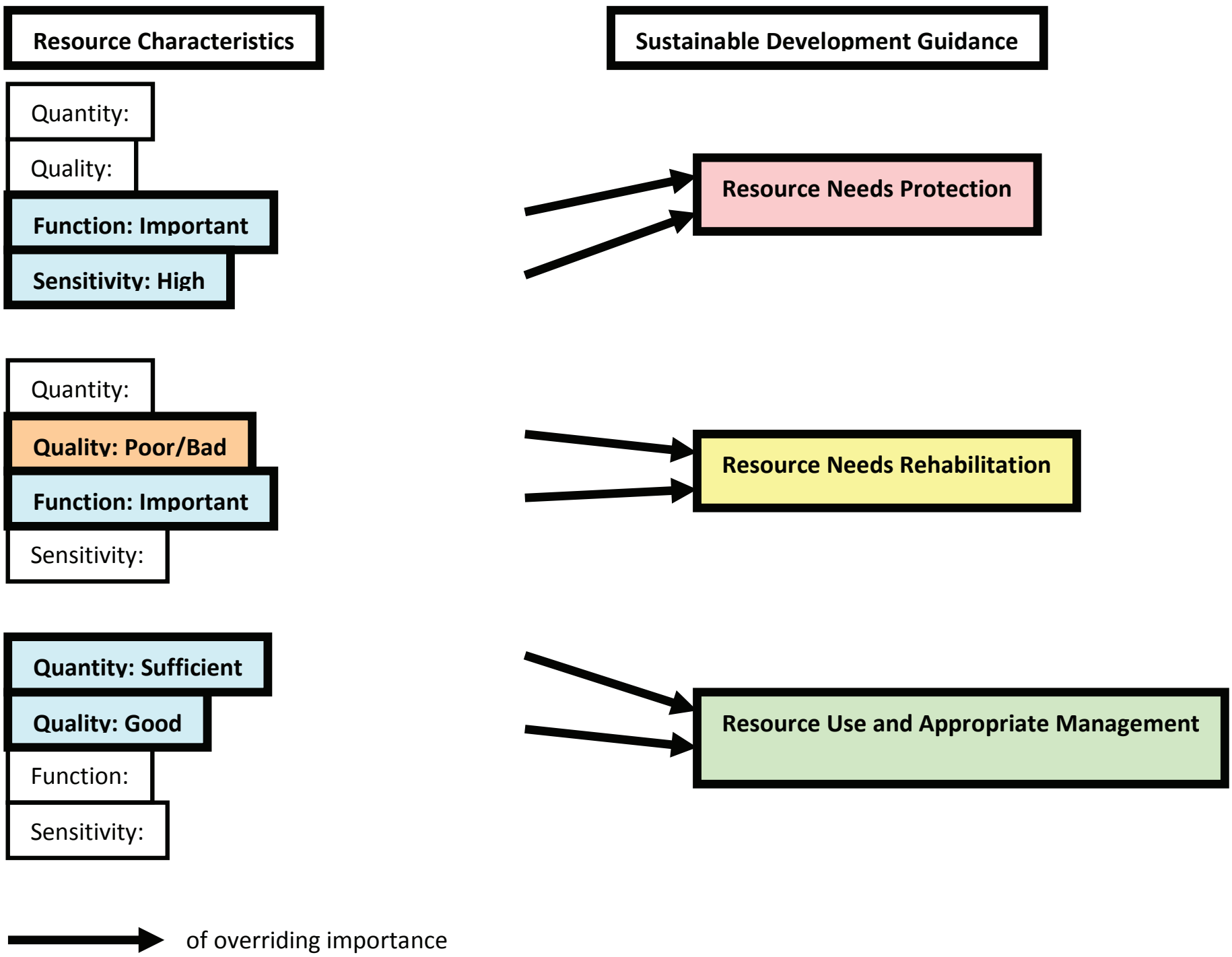

Figura 3-2: Objektivat e zhvillimit hapësinor:nga vlerësimi i AZHQ për resurse në Udhëzues AZHQ

3.3. Step 3 - Spatial development objectives

The most appropriate development objective depends on combinations of these four factors in a given situation and at a specific site. Generally, there are three different sustainable development objectives:
1. Resources with important functions but presently of poor/ bad quality (polluted, de-graded, insufficient etc.) are in need of rehabilitation/upgrading/enhancement. This may be the case for eroded lands, polluted waters, bad road connections, or poorly equipped schools. The development thrust is to restore the resource so that it optimally serves so-ciety, nature and/or the economy.
2. Resources that are highly sensitive and of high importance for nature or society need protection. This must be done with the view to ensure their availability for present and future generations;
3. Resources abundantly available and which have good quality should be developed for sustainable utilisation. Overuse must be avoided, sensitivity threshold must not be exceeded and the use must be for the best benefit of the society. Sustainable utilisation also includes the coordination of conflicts. Such conflicts may arise if different demands for a single resource are in conflict which each other. In such case, a rational and fair compromise needs to be found.
It is obvious that assessment and development guidelines require evaluation; they require judgemental or normative statements in terms of good or bad, relevant or less relevant and the like. For any resource a sufficient quantity, a good quality, an important function, or cer-tain sensitivity must be defined. This is accomplished through comparison with benchmarks, quantitative development objectives, standards etc. For each of the SDA key fields an evaluation approach has been developed in the form of a decision tree. These evaluation procedures reflect the underlying SD policies and objectives, national, regional and/or mu-nicipal targets as well as scientific knowledge.

3.4. Step 4 – Integration of the spatial development objectives

Taking into consideration the results from step 3, efficient recommendations are defined through step 4. Integrating the spatial development objectives of the different development fields needs decisions as to priorities. Among these priorities are overarching national or re-gional planning ambitions and/or strategies, development goals of the municipality and political decisions by the responsible administrations and communities. However, technical restrictions play an important role. Two examples can explain this point: 1) Erosion-prone areas are not suitable for erosion-favouring land uses, even if there is political will for these land uses to occur; 2) Soils with excellent properties for agriculture are also excellent for forests, but the agricultural sector may be given priority.
The integrated maps are an important part of the Strategic Environmental Assessment that guides the Municipal Development Plan as they suggest the Spatial Resistance of different zones and support the setting of priorities for a sustainable development.

3.5. The zoning concept

The presentation of results in this atlas is based on a zoning concept, an approach that has been developed for land use management purposes. It refers to the subdivision of a planning area into discrete sub-areas of a certain function (“zones”). Typical zones are protection zones (for example natural reserves or water protection zones) or development zones (for example zones for urban expansion or industrial development, or reforestation zones).
The purpose of zoning is to regulate land use in a zone in such a way that the function of the zone is ensured. Land use regulations normally include:
• provisions that certain uses must take place (for example to plant trees in areas zoned as forest lands),
• permits for certain uses that may take place (a road may be constructed in areas zoned as forest lands); and
• prohibition of other uses not allowed to take place (industrial development is normally not allowed in areas zoned as forest lands).

The delineation of the zone boundaries may be based on administrative boundaries, on spatial natural features (for example watersheds), or on a combination of both. For example the reforestation potential may be defined by a specific climatic regime and certain soil properties within an administrative unit, for example a province or a municipality. To become effective, land use regulations should be enforced irrespective of land ownership.

The atlas results are presented as a series of thematic zone maps:

B-Maps for Step 1 (compiling baseline data): All required basic information is put on thematic maps. This basic topographic and thematic information is used for the resource assessment in Step 2.

A-Maps for Step 2 (resource assessment): Zones of development deficits and potentials, including problem zones (pollution, degrada-tion), resource potential zones or zones with highly sensitive resources. These are summa-rised as resource assessment zones. They are mapped individually for each SDA key field.

G-Maps for Step 3 (development objectives: Zones indicating the most appropriate development objectives. Logically structured and transparent decision criteria are used to conclude the development objectives. (Figure 3 3 gives one example of a "decision tree" to derive the different zones). The development objectives zones comprise of:

- **Rehabilitation zones:** indicating areas in need of immediate improvement / uplifting / enhancement. This might be the case because its present status hinders the development process. In these zones rehabilitation is the overriding development issue.
- **Protection zones:** indicating areas, which require preservation or protection in order to ensure its function for present and future generations. In these zones protection is the overriding development issue and other uses in such zones must be harmonised with this objective. It is important note that "protection" is not meant in a legal sense, but as a planning category.
- **Development zones:** indicating areas which have the potential for appropriate sustainable development. Following a careful balance between possible conflicts of the requirements of the various SDA key fields, the best kind of development is identified.

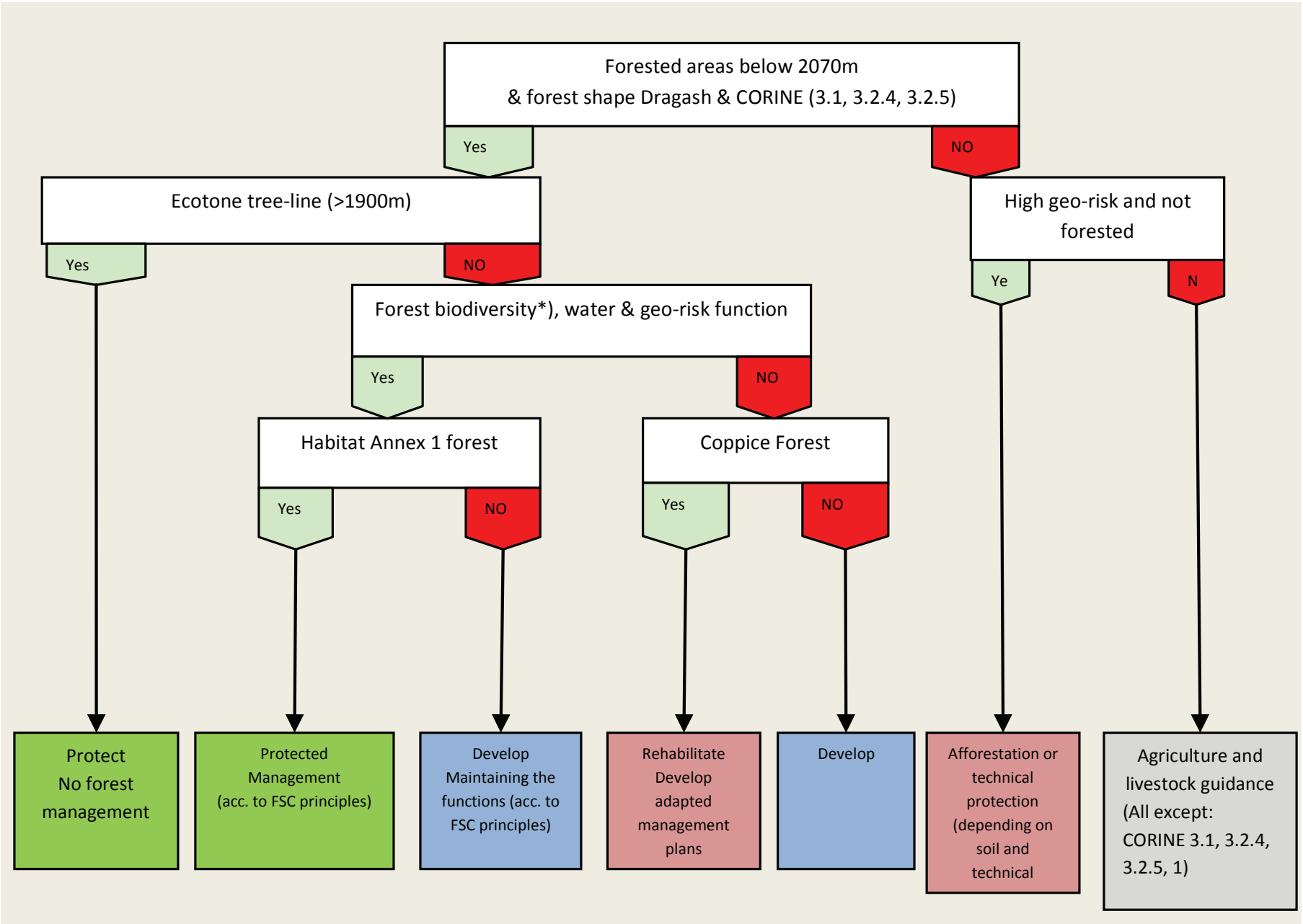

Figure 3-3: Decision tree for the key resource 'Forest'

(*) – only considering Habitat Directive-Annex 1 stands without coppice forest
Explanation - CORINE
1 Artificial surface
3.1 Forests
3.2.4 Transitional woodland/shrub
3.2.5 Transitional woodland/shrub

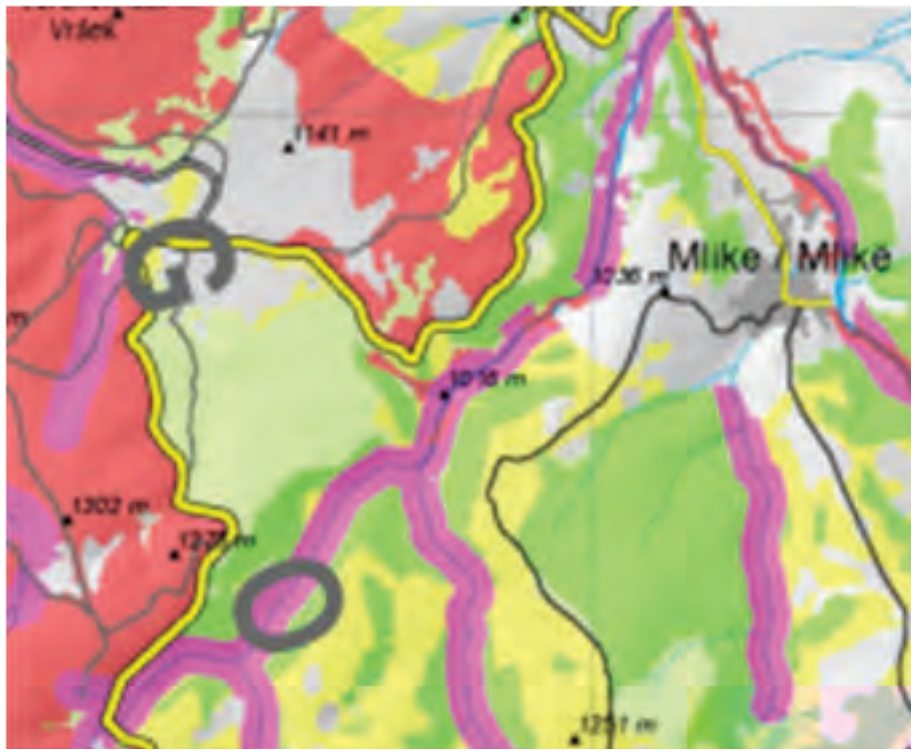

Figure 3-4: Fragment of SDA Guidance Map for the key resource "Forest"

IG-Maps for Step 4 (Integrated Guidance Maps)

After balancing conflict these results are integrated into **Integrated Guidance Maps.** The latter include:

a) overall **Spatial Resistance**, defined by very high, high, middle and low spatial resis-tance. Resistance indicates the sum of slope, severity of natural hazards, biodiversity, special land uses, forest functions, prolificacy of soils, and natural protection areas (National Park). The higher the resistance the more conflicts of land uses exist and have to be taken into account in planning issues for infrastructure, settlement and other productive uses.
and
b) the **Functional Structure** in the form of development centres and corridors.
Development corridors in connection with development centres are major tools to ensure the well-structured and concentrated development of a planning region in a balanced way. It avoids urban sprawl and takes advantage of agglomeration effects.
Development **centres** are the centres where urban development (industrial and commer-cial development; social and administrative infrastructure) should concentrate. They pro-vide services to the surrounding rural areas and villages including administrative services, market facilities, health, and educational social and cultural services. They therefore should be within easy reach of their rural surroundings. Development centres have a distinct hierarchy from national and provincial centres to district centres and finally the ru-ral development centres.

Development centres are connected by development **corridors.** Future development and investments into infrastructure should concentrate along those corridors. Green belts and zones assure the environmental integration of settlements with a function for local recrea-tion, local climatic buffer zones and ecologically relevant corridors for maintaining and protecting biodiversity.

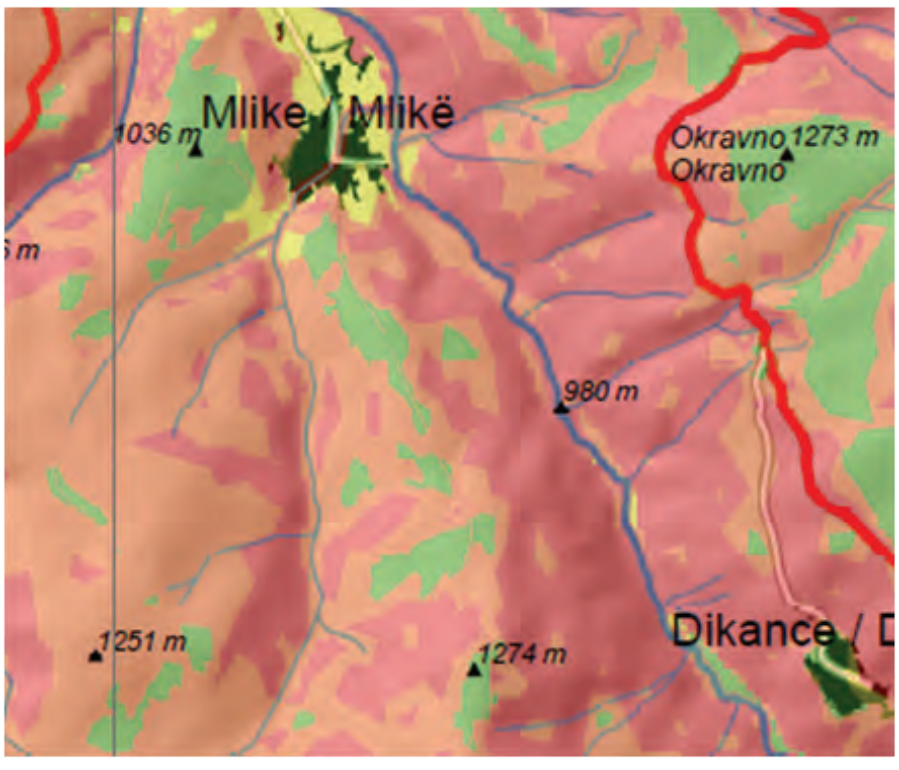

Figure 3-5: Fragment of Spatial Resistance Map

Figure 3-5: Fragment of Spatial Resistance Map

Figure 3-6: Fragment of Functional Structure Map

3.6. Summary

The SD Atlas results are a series of thematic zone maps, including:
Base Maps: For orientation and reference the atlas additionally contains important base maps providing information on lands, geology, climate etc.
• Assessment Maps display zones of problems (pollution, degradation), resource potential zones, or zones of highly sensitive resources. We summarise them as resource assessment zones.
• Guidance Maps display zones which indicate the most appropriate development objectives such as protection, rehabilitation, and development. We summarise them as guidance zones.
• Integrated Guidance Maps: It is very likely that superimposing the various Guidance Maps will unveil areas where the different zones give conflicting guidance. The Spatial Resistance Map provides information for the MDP regarding in which zones conflicts between different land uses are to be expected. The Spatial Structure Map suggests a well-structured municipal development, considering the potentials and restrictions of the Municipality.

4. The municipality of Dragash/Dragaš

Dragash/Dragaš is the southernmost municipality in Kosovo, sharing borders with the neighbouring countries of FYR Macedonia to the east and south, and Albania to the west. The municipality's coordinates are 41 50' 58" - 42 09' 03" in northern latitude and 20 35' 39" - 20 48' 26" in longitude. To its north, Dragash/Dragaš is bordered by Prizren municipality which is the centre of the South Kosovo region. Dragash/Dragaš town is 37km from Prizren town.
The municipality covers an area of 433,7km^3 , approximately 4% of the entire territory of Kos-ovo and is eighth largest of Kosovo's thirty municipalities. Dragash/Dragaš municipality com-prises 35 settlements with the small town of Dragash/ Dragaš as the municipal centre. The municipality is edged by the high Sharr/Šar Mountains on its southern and eastern sides, stretching into FYR Macedonia and Albania. This mountain range extends northeast-southwest for approximately 70km in length and 30km in width, with a total surface area of about 1600km^2. 900km^2 (56.25%) of this area lies in FYR Macedonia, with 690 km^2 (43.12%) in Kosovo and 10 km^2 (0.63%) in Albania. A special characteristic of Dragash/Dragaš are the extended areas of pastureland that has made the area suitable for livestock farming, agricul-ture and agricultural products.
The Sharr/Šar range in Kosovo is divided into three regions comprising the Ljubo-ten/Brezovica winter sports and tourism area, the central Prizren zone, and the Dra-gash/Dragaš section comprising Gora/Gorë and Opojë/Opolje. 18.5% of this mountain range is over 2000m above sea level. The highest mountain of the entire Sharr/Šar area is Mount Korab (2764m), while the highest summit is Titov Vrv at 2747m. In Dragash/ Dragaš the most important peaks are: Koritnik in the northwest on the border with Albania (2262m), Kodra e Karanikolles/ Karanikolin Vrh in the northeast (2409m), Maje/Vrh in the east (2493m), Kryet e Kagit/Kaćina Glava north of Brod (2207m), Vraca e Madhe/Velika Vraca in the southeast (2536m, highest peak) and Kesula e Priftit/Popova Šapka in the southwest (2075m).Topographically Dragash/Dragaš can be divided into its main river sub-basins: with the Restelica/Restelicë river, the Pllava river (in the Opojë/Opolje region, including the eastern parts of the Sharr/Šar Mountain area in Dragash/Dragaš), and the Lepenc (in the southern part of the municipality). A fourth system lies around Brezne/Brezna, where the area drains via an underground karst structure to the Prizren area. Two of these main water courses belong to the large Drini i Bardhe/Beli Drim (White Drin) river basin draining through Albania and into the Adriatic Sea: the Pllava River with its tributaries in the north, and the Restelica River which flows into the Pllava River. The third main water course – the Lepenc River Basin - lies in the south and drains mostly through FYR Macedonia into the Aegean Sea.
However, the territory is more frequently identified as comprising the two areas of Opojë/Opolje in the north and Gora/Gorë in the south. The hilly and mountainous geography has influenced the development of small, concentrated, rural village settlements along the three main valleys, but is also the cause of the municipality's isolation and current infrastruc-tural and other problems. According to the slope profile, 55% of the territory is classed as steep or very steep, and respectively provides limited or no access for machines. This limits opportunities for agriculture as well as for the extension of roads and settlements.
The altitude of the municipality varies between 750 and 2550 m above sea level, with the average lying at 1620 m. The largest proportion - 40.3% of the territory – is classified as high montane, with an altitude between 1450 m and 2050 m. The mountain range in the north of municipality reaches altitudes of between 1100 m and 2200 m. 30.4% of the area lies at the montane region (1050 – 1350 m above sea level), with 20.3% of the total area being signifi-cantly higher and ranging in altitude from 2050 to 2550 m, the level at which trees do not grow (timberline). Only 6% of the territory is sub-montane (2600 ha at altitude 750 – 1050 m above sea level), located in the north around the Pllava valley, and the lower parts of the Brod and Restelica River valleys. This indicates that the municipality is generally of high altitude and mountainous especially when compared to the average altitude for the whole of Kosovo of 800 m above sea level. The neighbouring municipality of Prizren is at an average altitude of 400 – 500 m above sea level.

[3] Dragash/Dragaš territory after adjustment of borders in 2012.

5. Maps of the Sustainable Development Atlas 1:30 000

B Baseline maps

Overview of the municipality of Dragash / Dragaš

- B1.1 Overview of the municipality
- B1.2 Topographic map of the municipality

Population and settlements

Geology and mineral resources

Soil

Climate

Water Resources

Real land-use

- B7.1 Real land-use
- B7.2 Special land-uses

Biosphere resources – vegetation

Biosphere resources – fauna

A Assessment maps

Assessment of biodiversity

- A1.1 Assessment of biodiversity – vegetation and flora
- A1.2 Assessment of biodiversity - fauna

Proposed extension of Sharr/Šar National Park

- A2.1 Sharr/Šar National Park - ownership structure
- A2.2 Sharr/Šar National Park - topographic map

Assessment of water resources - regeneration, threats, and quality

Assessment of natural hazards

- A4.1 Assessment of natural hazards - erosion risk
- A4.2 Assessment of natural hazards - avalanche risk
- A4.3 Assessment of natural hazards - landslide risk and flood-prone areas

Assessment of agriculture and forest

- A5.1 Assessment of forest and agriculture - condition of forest
- A5.2 Assessment of agriculture and forest - forest functions
- A5.3 Assessment of agriculture and forest - productive capacity of soils
- A5.4 Assessment of agriculture and forest - livestock and suitability for crops

Assessment of solid waste

Assessment of cultural heritage and tourist potential

Assessment of health, medical services, and civil protection

Assessment of education

Assessment of economy, infrastructure, and energy

- A10.1 Assessment of economy, infrastructure, and energy – roads and transportation
- A10.2 Assessment of economy, infrastructure, and energy – energy
- A10.3 Assessment of economy, infrastructure, and energy – businesses

G Guidance maps
Guidance maps referring to natural resources – preconditions for the MDP
G1-1 Nature conservation
G1-2 Zoning of Sharr/Šar National Park
G2-1 Forest
G2-2 Agriculture
G3 Water and sanitation
Guidance maps part of the MDP – integral part of the MDP
G4 Settlements
G5 Roads and traffic
G6 Education
G7 Health
G8 Tourism
IG Integrated guidance maps
IG1 Spatial resistance
IG2 Functional structure

Table 5 1: List of SDA Maps

6. Glossary

Biodiversity	Variety of living organisms that includes diversity within species and between different species, genetic diversity, and ecosystem diversity.
CORINE Land Cover Project (CLC)	CORINE stands for “Coordination of Information on the Environ-ment” - CLC. It is a pan-European project to provide comparable data set of land cover for Europe.
Development zones	Zones of coordinated development: identification of development and best use after careful balancing between demands from and possible conflicts between the various sectors and key fields.
NATURA 2000	Network of important ecological areas of European Union founded with Habitat Directive (1992) and Bird Directive(1979)
Habitat Directive (and Annex of)	An abbreviated expression for the EU-Flora-Fauna-Habitat Direc-tive (Council Directive 1996/105/EC) (also called FFH directive)
Ecological corridor	Ecological component or connection of some components which allow free movement of organisms from one site to another and constitute part of the ecological network.
Protection zones	Zones where the SD key fields (resources) are in need of preser-vation or protection in order to ensure their availability and function for present and future generations. In these zones protection is the overriding development issue and other uses in such zones must be harmonised with this objective.
Rehabilitation zones	Zones where SD key fields (resources) are in need of immediate improvement / uplifting / enhancement. This might be the case be-cause their present status disturbs the development process. In those zones rehabilitation is the overriding development issue.
SPA	Special Protected Area (declared area in accordance with EU Di-rective for wild birds, the most suitable territories in number and size for the conservation of species listed in Annex I and for regularly occurring migratory species)
SAC	Special Area of Conservation (a site of community importance de-clared through legal administrative measures and/or contract act where measures of necessary conservation are implemented, in order to maintain or restore nature habitat conservation and/or population of the species for which the area has been declared to have favourable status.).

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United Nations Development Programme
Conservation of Biodiversity and Sustainable Land Use Management in Dragash/Dragaš

EMBASSY OF FINLAND
PRISTINA

Volume II: Baseline

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March 2013

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1. Baseline Maps

1.1. Overview of the Municipality of Dragash / Dragaš

Contents:

- Topography
- Settlements and their administrative boundaries
- Road connections
- Main watercourses

The main messages:

Dragash / Dragaš Municipality is a rather isolated and wild area at the southern tip of Kosovo with borders to Albania in the west and FYR Macedonia in the east, and a total territory of 433,7 km^2 [1]. The Municipality is char-acterised by the high chains of the Sharr/Šar Mountains preventing easy access to the Municipality. The average altitude of the Municipality's territory is around 1.620m above sea level. Prizren region, at the foot of the Sharr/Šar Mountains, is at an altitude between 400 and 500m. The mountain range in the north of the Municipality of Dragash / Dragaš reaches altitudes between 1.100 and 2.200m.
The most important peaks are Koritink in the NW (2262m), Kodra e Karanikolles/Karanikolin Vrh in the NE (2409m), Maje/ Vrh in the E (2493m) Kryet e Kagit/Kaćina Glava north of Brod (2207m), Vraca e Madhe/ Velika Vraca in the SE (2536m, highest peak) and Kesula e Priftit. Popova Šapka in the SW (2075m). The lowest point of the Municipality is south of Mount Koritnik, at 731m, where the Pllava River drains to Albania.
Most settlements in Dragash / Dragaš Municipality are located in sub-montane region between 1.000 and 1.500m above sea level. The altitude profile of the Municipality shows that only 6% of its territory is below 1.000m (2.600ha), and located in the north of the territory in the valley of the Pllava river and its tributaries (bright green areas in the map); approximately 26% (13.100ha) belongs to the montane region, again situated around Pllava valley and the lower parts of the valleys of the Brod and Restelica Rivers (light green areas in the map); approximately 43% (18.700ha) is in the high montane region and features major parts of the Gora/Gorë region (yellow areas in the map); finally approximately 21% (8.800ha) is in the sub-alpine and alpine region above the timberline along the border to FYR Macedonia and around Mount Koritnik (brown areas in the map.

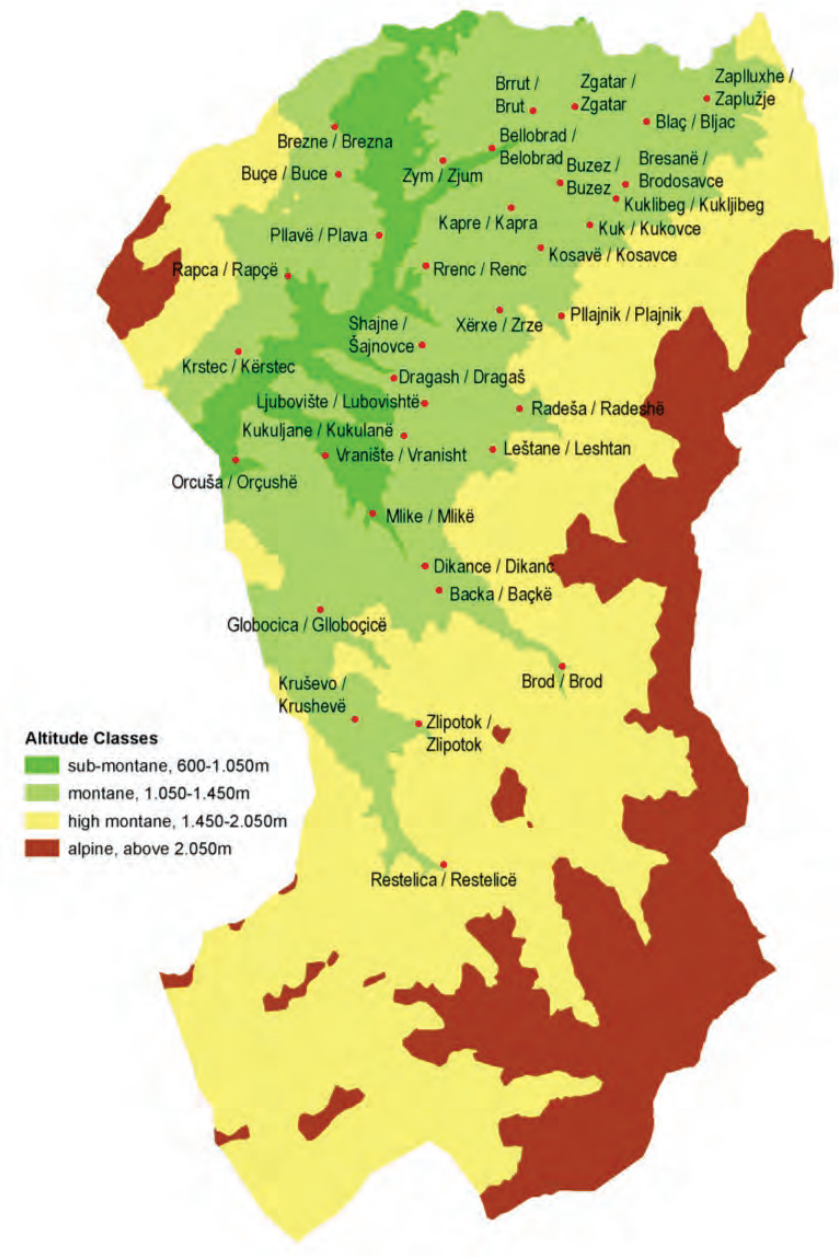


Figure 1 1: Altitude classes in the territory of Dragash / Dragaš Municipality

[1] After adjustment of National borders in 2012

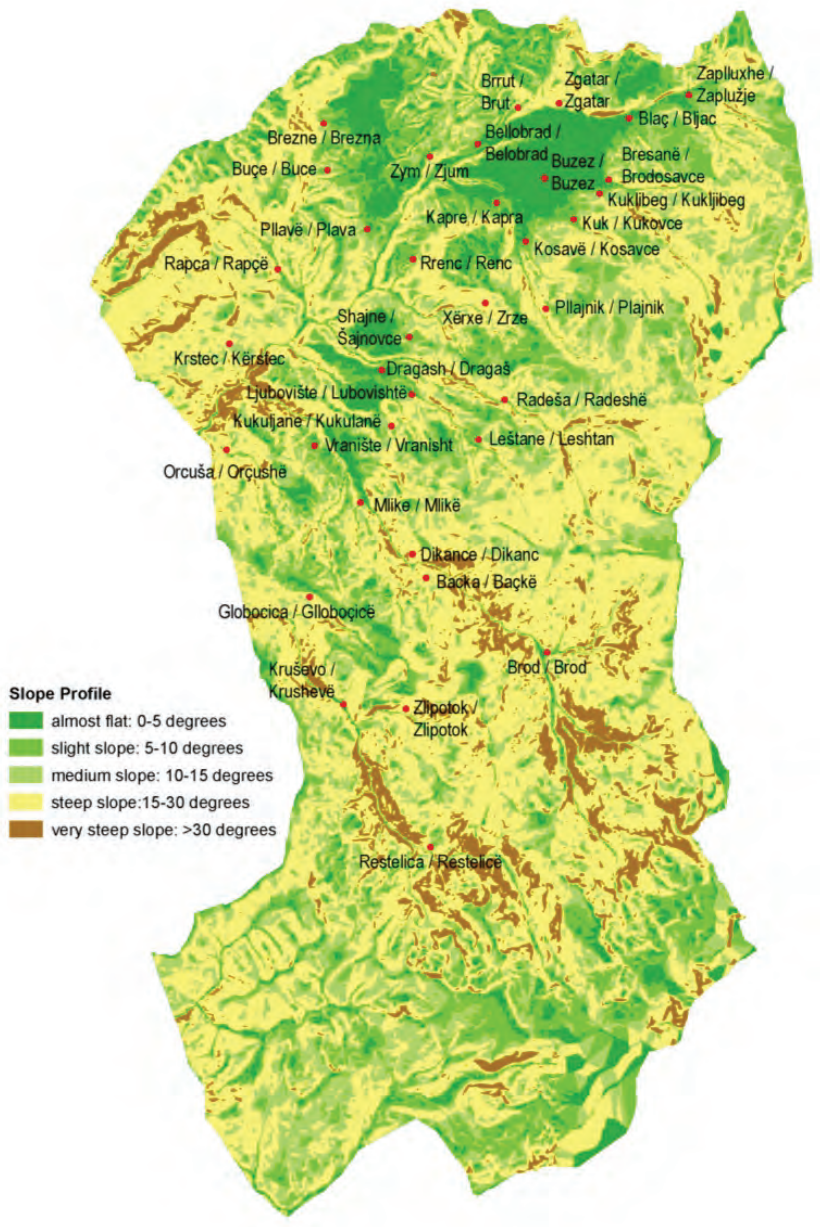


Figure 1 2: Slope classes in Dragash / Dragaš Municipality

The slope profile of the Municipality shows that almost 55% of the territory is steep or very steep (brown and yellow areas in the map); almost flat and easy to cultivate areas account for approximately 9% and are mostly located in the northern part of the Municipality in Opojë/Opolje region (dark green areas in the map). Smaller flat areas can be found in the higher mountain areas in the centre and the south. Slight and medium sloped areas account for approximately 36% and are closely related to the flat areas (light green areas in the map).

There are only two roads entering the Municipality from Prizren: one paved road climbing the hill from Zhur/Žur entering close to Brezne / Brezna and a dirt road entering close to Zaplluxhe / Zaplužje. There is only one dirt road from Restelica / Restelicë to the border of Albania and FYR Macedonia in the south and several footpaths to Albania and FYR Macedonia through subalpine and alpine terrain.

The main water courses are:
• River Pllava with its tributaries in the north, Restelica River (later flowing into Pllave River) both belonging to the Drini I Bardhe/ Beli Drim River Basin and draining to Albania;
The Lepenc River Basin in the south with the Black River draining to Albania and partly to FYR Macedonia.

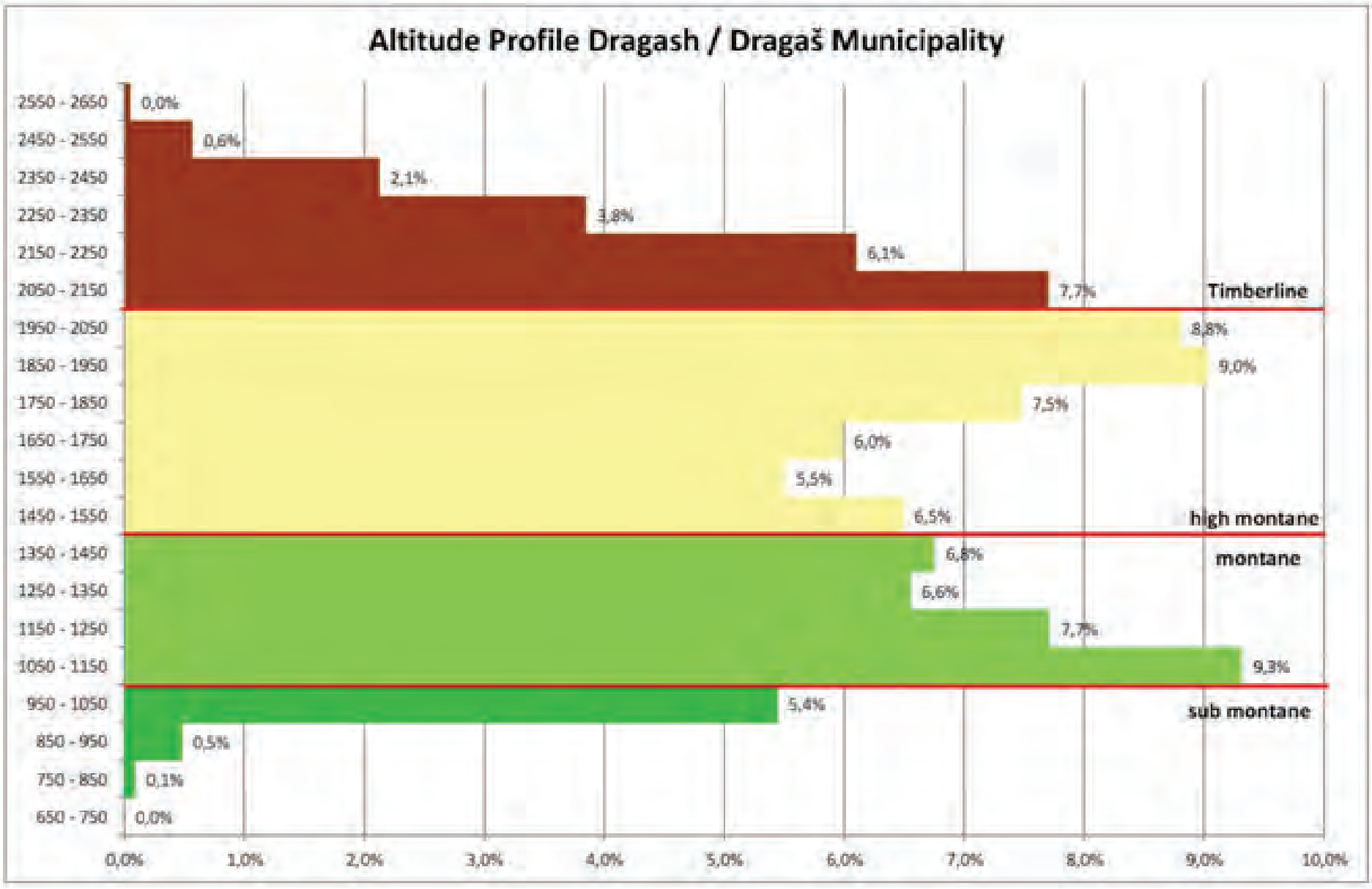


Figure 1 3: Altitude Profile of the territory of Dragash / Dragaš Municipality

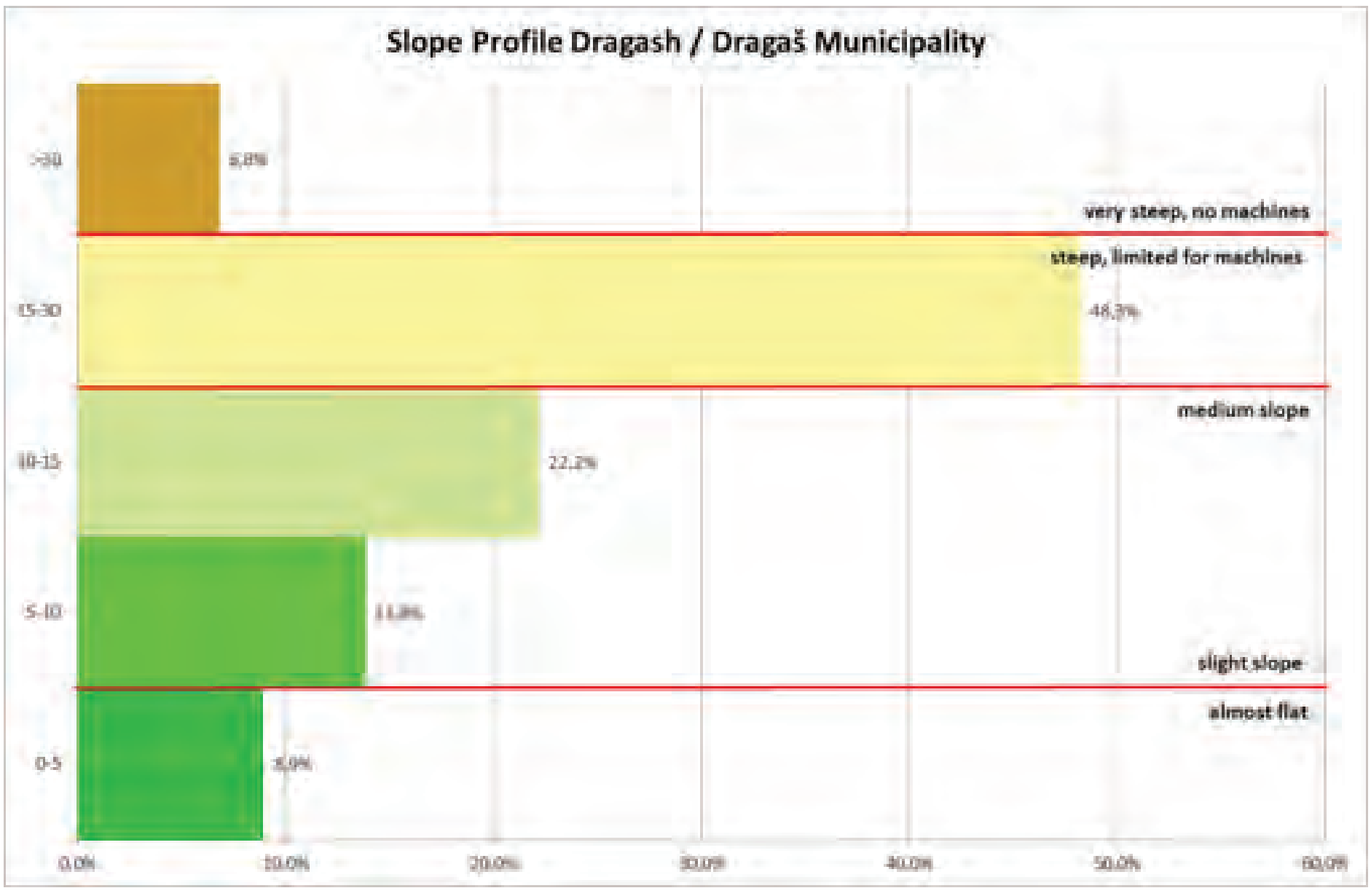
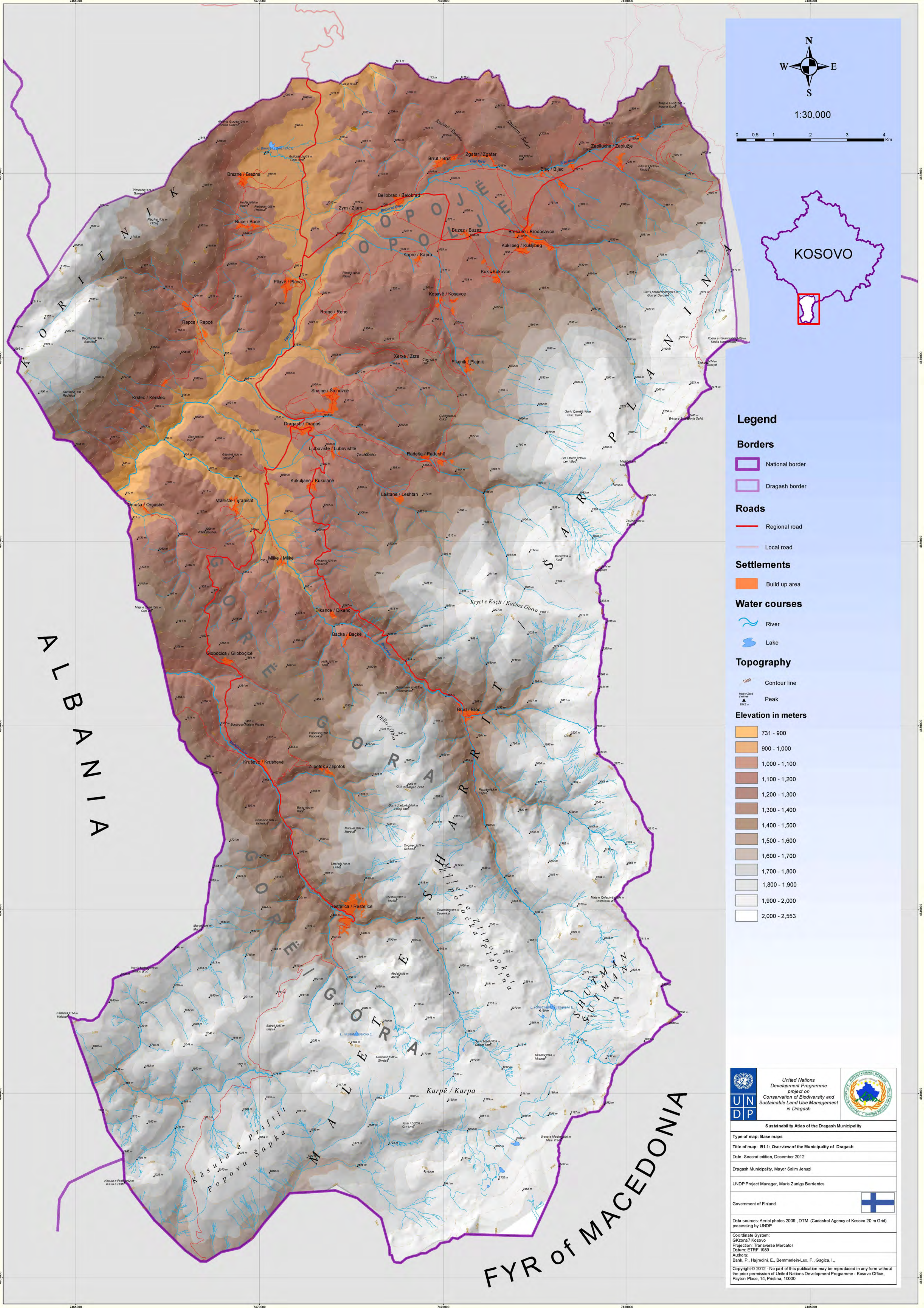


Figure 1 4: Slope profile of the territory of Dragash / Dragaš Municipality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N
W
E
S
1:30,000
0 0.5 1 2 3 4 Km
KOSOVO
Legend
Borders
National border
Dragash border
Roads
Regional road
Local road
Settlements
Build up area
Water courses
River
Lake
Topography
Contour line
Peak
Elevation in meters
731 - 900
900 - 1,000
1,000 - 1,100
1,100 - 1,200
1,200 - 1,300
1,300 - 1,400
1,400 - 1,500
1,500 - 1,600
1,600 - 1,700
1,700 - 1,800
1,800 - 1,900
1,900 - 2,000
2,000 - 2,553
ALBANIA
FYR of MACEDONIA
K O R I T N I K
O P O J Ë
O P O L J E
Š A R P L A N I N A
S H A R R I T – Š A R
G O R Ë / G O R A
M A L E T E G O R Ë S
Brezne / Brezna
Buçe / Buce
Pllavë / Plava
Rapca / Rapçë
Krstec / Kërstec
Zym / Zjum
Bellobrad / Belobrad
Brrut / Brut
Zgatar / Zgatar
Zaplluxhe / Zaplužje
Blaç / Bljac
Buzez / Buzez
Bresanë / Brodosavce
Kuklibeg / Kukljibeg
Kapre / Kapra
Kuk / Kukovce
Kosavë / Kosavce
Rrenc / Renc
Xërxe / Zrze
Pllajnik / Plajnik
Shajne / Šajnovce
Dragash / Dragaš
Ljubovište / Lubovishtë
Radeša / Radeshë
Kukuljane / Kukulanë
Leštane / Leshtan
Vranište / Vranisht
Orcuša / Orçushë
Mlike / Mlikë
Dikance / Dikanc
Backa / Baçkë
Globocica / Gllobočicë
Brod / Brod
Kruševo / Krushevë
Zlipotok / Zlipotok
Restelica / Restelicë
Belobrad River
Blac River
Pllava River
Brod River
Leva
Rudinë / Rudina
Shullan / Šulan
Kryet e Kaçit / Kaćina Glava
Obllo / Oblo
Maletë e Zlipotokut / Zlipotočka planina
Karpë / Karpa
Kësula e Priftit / Popova Šapka
SHUTMAN / ŠUTMAN
L. Brenzes / Breznicko E.
L. i Kuatit / Kuatovo E.
L. i Shutmanit / Šutmansko E.
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
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Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Aerial photos 2009 , DTM (Cadastral Agency of Kosovo 20 m Grid) processing by UNDP
Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,
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Relevance of the information for other assessments:
Selected spatial information will be used for all assessment and guidance maps.

Data sources, material and reliability:
Topographic Map 1959
DTM: Cadastral Agency of Kosovo, 20m Grid; small areas near the borders substituted through digitization of isolines from the Topographic Map
Aerial Photos: 2009

Roads, settlements and rivers were digitised using the aerial photos and GPS data (selected points of water courses, forest roads)

Further suggestions for monitoring and/or improvement of data:
Replace the substituted areas of DTM with official data when available.

1.2. Population and infrastructure

Contents:

- Population size
- Number of Households
- Economic Activities
- Road Infrastructure

The main messages:

The Municipality of Dragash / Dragaš consists of 36 villages with a total territory of 433,7 km$^{2\ 2}$. Table 1 1 shows the development of the population in the villages between 1921 and 2011. The total population of Dragash / Dragaš Municipality grew by almost 300% within this period; between 1961 and 2011 the population almost doubled. Until 1981, the population of almost all of the villages grew constantly. Since 1981 the growth has been unequally distributed across the municipality. Map B1 (Figure 1 7) shows growth of population in Opojë/Opolje Region and Restelica / Restelicë between 1981 and 2011 and decline in the central belt of the municipality. Development in Dragash/Dragaš itself is almost the same comparing the data from 1981 and last census data from 2011 by Kosovo statistical agency

Population
(Data from Kosovo Statistical Agency, Census 2011) Estimate Munici-pality Territory in ha

Village	1921	1948	1953	1961	1971	1981	1991		2011	
Bačka / Bąckë	167	222	249	259	311	381	215		52	375
Bellobrad / Belobrad	232	415	345	385	568	808	998		948	435
Blaç / Bljać	360	474	503	594	797	1.123	1.415		1,455	967
Brezne / Brezna	590	908	871	946	1.410	1.971	2.465		1,990	912
Brod / Brod	1.863	2.248	2.229	1.604	1.485	1.685	1.741		1,544	4.822
Bresanë /	844	1.219	1.229	1.353	1.861	2.498	2.999		2,839	1.434
Brodosavce										
Brrut / Brut	450	596	584	575	798	1.097	1.319		1,164	843
Buçe / Buće	269	398	400	437	574	766	913		645	458
Buzez / Buzez	74	102	102	127	191	240	366		320	128
Dikance / Dikanc	162	318	320	349	392	282	257		124	605
Dragash / Dragaš	172	408	480	612	694	1.114	1.532		1,098	360
Globočica / Gllboçicë	391	648	683	757	813	1.002	968		960	2.340
Kapre / Kapra	154	214	255	265	354	496	582		452	319
Kosavë / Kosavce	300	488	486	525	720	912	1.033		905	652
Krstec / Kërstec	299	465	440	475	562	798	837		420	1.305
Kruševo / Krushevë	126	281	319	377	513	645	738		857	1.894
Kuk / Kukovce	433	640	655	669	985	1.335	1.619		1,658	664
Kuklibeg / Kukljibeg	234	408	383	409	516	658	916		852	827
Kukuljane / Kukulanë	361	543	551	482	605	777	621		235	965
Leštane / Leshtan		537	493	513	658	758	679		783	504
Ljubovište /	211	344	352	384	541	690	799		773	838
Lubovishtë										
Mlike / Mlikë	260	461	428	428	455	506	335		92	945
Orčuša / Orçushë		415	370	396	431	427	221		60	442
Pllavë / Plava		462	449	493	690	972	1.125		1,000	677
Pllajnik / Plajnik		322	321	365	485	549	576		405	634
Radeša / Radeshë	440	753	794	837	884	1.279	1.226		1,224	1.532
Rapča / Rapçë	622	889	877	885	1.125	1.647	1.781		853	2.059

[2] After adjustment of National borders in 2012

Restelica / Restelicë	745	1.393	1.471	1.772	2.576	3.476	4.274		4,698	8.483
Rrenc / Renc	127	188	177	202	292	473	685		581	350
Shajne / Šajnovce	440	626	639	705	921	1.253	1.415		1,069	957
Vranište / Vranisht		755	771	815	884	926	731		352	778
Xërxe / Zrze	90	215	202	205	269	335	373		236	353
Zaplluxhe / Zaplužje	470	667	663	666	967	1.275	1.504		1,273	1.314
Zgatar / Zgatar	435	435	401	415	640	818	985		885	426
Zlipotok / Zlipotok		486	488	532	568	625	619		610	2.712
Zym / Zjum	139	197	167	215	315	457	573		585	272
Municipality	11.460	20.140	20.147	21.028	26.850	35.054	39.435		33.997	43.581

Table 1 1: Population and territory of the villages of Dragash / Dragaš Municipality

Early results of the 2011 census were published in early autumn 2012 for the Municipality as a whole, while for village wise were available beginning of January 2013:

- No. of population: 33,997
- Ethnic background: 20,287 Albanian, 4,100 Bosniak, 8,957 Gorani
- Pupils in upper secondary school: male 1,038, female 591
- Status as being employed: 4,159 male, 302 female
- Age over 75: 3.5% (Kosovo average: 2,2%)
- No. of dwellings: 7,137; amongst which 1,043 in seasonal use, 2,813 vacant

Data on individual villages was given beginning of January 2013 These data are integrated in the village data-base established under the SDA.

All of the villages in the central belt are very small with a population below 1.000 inhabitants, except the village of Brod. Medium sized villages with a population between 1.000 and 3.500 are concentrated in the growing part of Opojë/Opolje Region in the north. Only onevillage have a population of more than 3.500 inhabitants, Restelica / Restelicë. Based on the data available from last census 2011, the average number of heads per household ranges from 3 in Mlike / Mlikë and Dikance / Dikanc to 11 in Kuklibeg / Kukljibeg (for detailed information please refer to volume 5 “SDA for Dragash – Data”).

Similar to population, businesses are distributed unequally (Figure 1 6). The business and economic centre is Dragash / Dragaš town, with more than 200 registered businesses out of 850 in the Municipality, covering most of the sectors present. Bresanë / Brodosavce and Restelica / Restelicë are the two business sub-centres with 8995 registered businesses respectively, mainly representing trade (shops), transportation, and catering businesses. In all other villages less than 50 businesses are registered. In two belts of small villages, one from Buçe / Buće to Pllajnik / Plajnik, and the second from Krstec / Kërstec to Zlipotok / Zlipotok less than 10 businesses are registered per village. Most of the villages are equipped with bars / restaurants / kiosks and some grocery shops. The biggest employers with more than 10 employees are located in Dragash / Dragaš (4 companies), with one each in Pllavë / Plava and Buzez / Buzez (for detailed information please refer to volume 5 “SDA for Dragash – Data”).

Relevance of the information for other assessments:

The population data is the basis of further planning of the Municipal Development Plan and used for all person-dependent calculations (such as supply needs, education, municipal services etc.).

Data sources, material and reliability:

- Data on population and households provided by UN Habitat (village data from Statistical Agency of Kosovo for the period of 1921 to 1981,)
- Kosovo statistical agency, census 2011
- Data collected during the village survey executed by UNDP (spring 2011): this data is a subjective estimation according to key persons in the villages and differ significantly from the estimates for 2008 and 2010. They will be used to cross-check the official data from the 2011 census.
- Business register of the Municipality. 160 out of 856 (almost 20%) of the businesses could not be identified during the field work. They either no longer exist or are not very active. The business register would require an update.

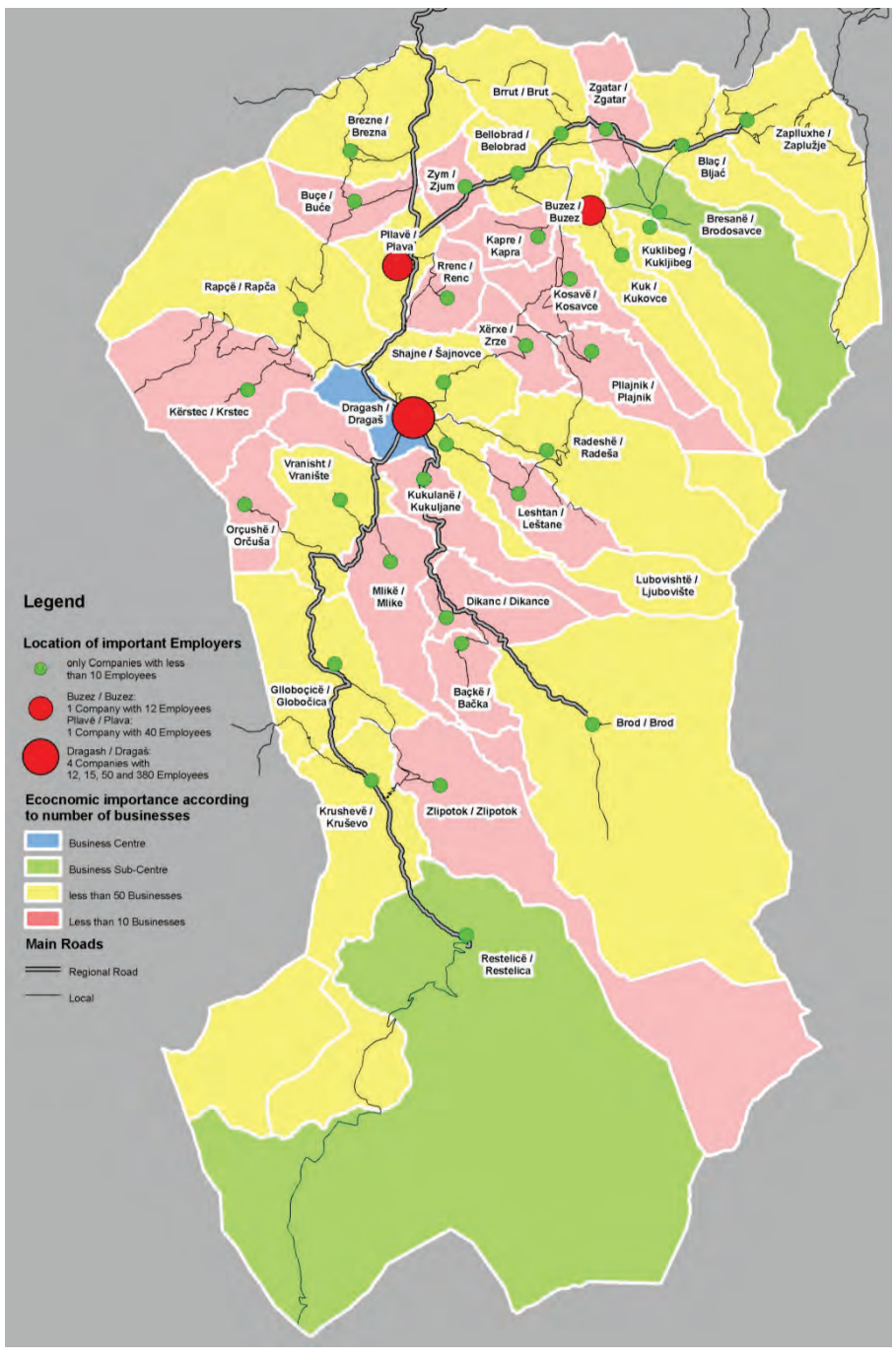
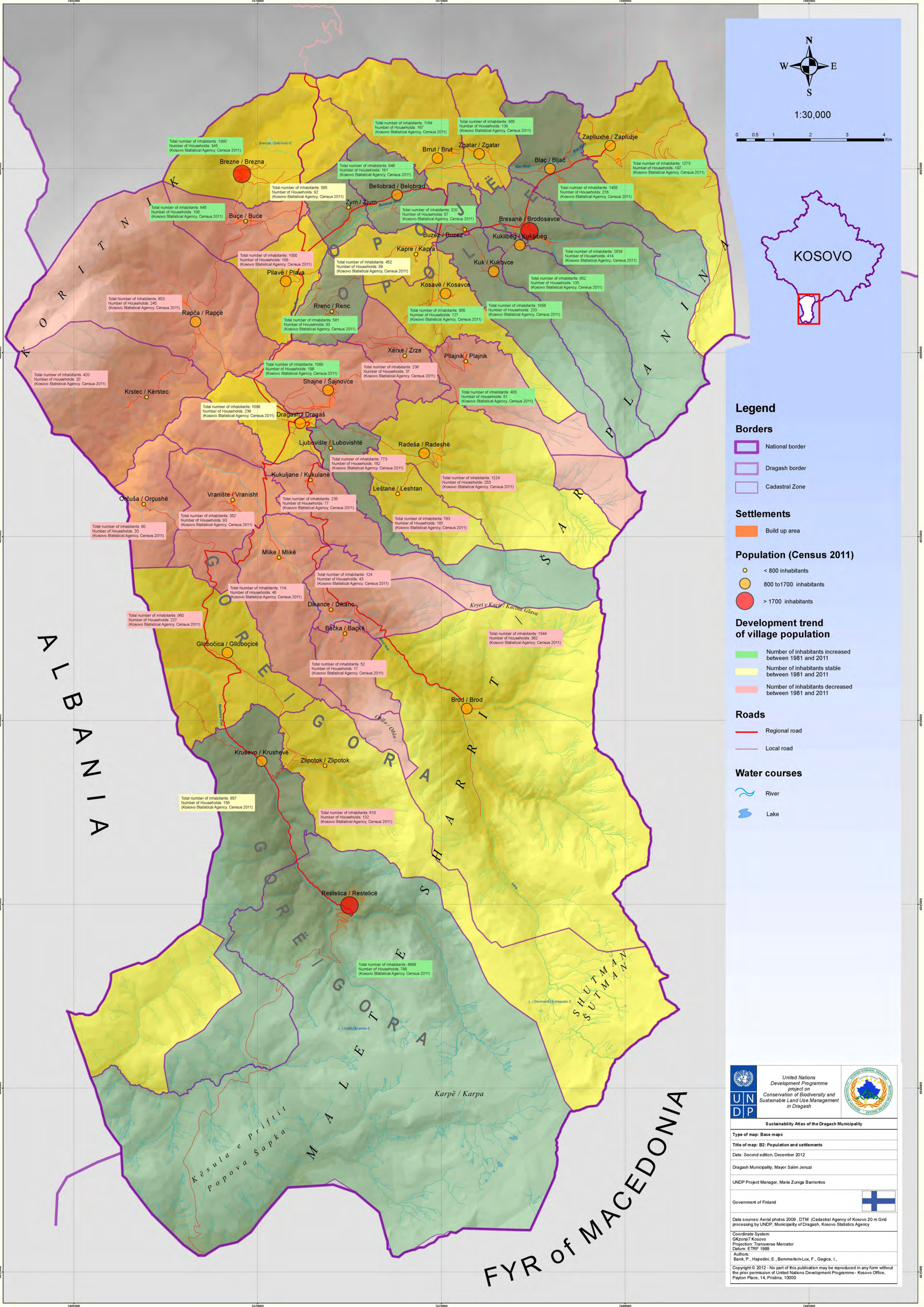


Figure 1 6: Distribution of businesses in the Municipality of Dragash / Dragaš



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KOSOVO
Legend
Borders
National border
Dragash border
Cadastral Zone
Settlements
Build up area
Population (Census 2011)
< 800 inhabitants
800 to1700 inhabitants
> 1700 inhabitants
Development trend of village population
Number of inhabitants increased between 1981 and 2011
Number of inhabitants stable between 1981 and 2011
Number of inhabitants decreased between 1981 and 2011
Roads
Regional road
Local road
Water courses
River
Lake
ALBANIA
FYR of MACEDONIA
KORITNIK
OPOLJE
OPOJË
ŠAR PLANINA
SHARRIT / ŠARR
GORE / GORA
GORË I GORA
MALET E GORA
SHUTMAN
ŠUTMAN
Kësula e Priftit
Popova Šapka
Karpë / Karpa
Kryet e Kacit / Kačina Glava
Obllo / Oblo
L. Breznes / Breznicko E.
L. i Kuatit / Kuatovo E.
L. i Shutmanit / Šutmansko E.
Belobrad River
Blac River
Plava River
Brod river
Restelica river
Leva
Brezne / Brezna
Total number of inhabitants: 1990
Number of Households: 345
(Kosovo Statistical Agency, Census 2011)
Buçe / Buće
Total number of inhabitants: 645
Number of Households: 108
(Kosovo Statistical Agency, Census 2011)
Zym / Zjum
Total number of inhabitants: 585
Number of Households: 92
(Kosovo Statistical Agency, Census 2011)
Bellobrad / Belobrad
Total number of inhabitants: 948
Number of Households: 161
(Kosovo Statistical Agency, Census 2011)
Brrut / Brut
Total number of inhabitants: 1164
Number of Households: 167
(Kosovo Statistical Agency, Census 2011)
Zgatar / Zgatar
Total number of inhabitants: 885
Number of Households: 139
(Kosovo Statistical Agency, Census 2011)
Zaplluxhe / Zaplužje
Total number of inhabitants: 1273
Number of Households: 197
(Kosovo Statistical Agency, Census 2011)
Blaç / Bljač
Total number of inhabitants: 1455
Number of Households: 218
(Kosovo Statistical Agency, Census 2011)
Buzez / Buzez
Total number of inhabitants: 320
Number of Households: 57
(Kosovo Statistical Agency, Census 2011)
Bresanë / Brodosavce
Kuklibeg / Kukljibeg
Total number of inhabitants: 2839
Number of Households: 414
(Kosovo Statistical Agency, Census 2011)
Kuk / Kukovce
Total number of inhabitants: 852
Number of Households: 135
(Kosovo Statistical Agency, Census 2011)
Total number of inhabitants: 1658
Number of Households: 233
(Kosovo Statistical Agency, Census 2011)
Kapre / Kapra
Total number of inhabitants: 452
Number of Households: 69
(Kosovo Statistical Agency, Census 2011)
Kosavë / Kosavce
Total number of inhabitants: 905
Number of Households: 127
(Kosovo Statistical Agency, Census 2011)
Pllavë / Plava
Total number of inhabitants: 1000
Number of Households: 156
(Kosovo Statistical Agency, Census 2011)
Rrenc / Renc
Total number of inhabitants: 581
Number of Households: 93
(Kosovo Statistical Agency, Census 2011)
Rapča / Rapçë
Total Number of Inhabitants: 853;
Number of Households: 245
(Kosovo Statistical Agency, Census 2011)
Krstec / Kërstec
Total number of inhabitants: 420
Number of Households: 20
(Kosovo Statistical Agency, Census 2011)
Xërxe / Zrze
Total number of inhabitants: 236
Number of Households: 37
(Kosovo Statistical Agency, Census 2011)
Pllajnik / Plajnik
Total number of inhabitants: 405
Number of Households: 51
(Kosovo Statistical Agency, Census 2011)
Shajne / Šajnovce
Total number of inhabitants: 1069
Number of Households: 198
(Kosovo Statistical Agency, Census 2011)
Dragash / Dragaš
Total number of inhabitants: 1098
Number of Households: 236
(Kosovo Statistical Agency, Census 2011)
Ljubovište / Lubovishtë
Total number of inhabitants: 773
Number of Households: 182
(Kosovo Statistical Agency, Census 2011)
Radeša / Radeshë
Total number of inhabitants: 1224
Number of Households: 253
(Kosovo Statistical Agency, Census 2011)
Leštane / Leshtan
Total number of inhabitants: 783
Number of Households: 181
(Kosovo Statistical Agency, Census 2011)
Kukuljane / Kukulanë
Total number of inhabitants: 235
Number of Households: 77
(Kosovo Statistical Agency, Census 2011)
Vranište / Vranisht
Total number of inhabitants: 352
Number of Households: 93
(Kosovo Statistical Agency, Census 2011)
Orčuša / Orçushë
Total number of inhabitants: 60
Number of Households: 20
(Kosovo Statistical Agency, Census 2011)
Mlike / Mlikë
Total Number of Inhabitants: 114;
Number of Households: 46
(Kosovo Statistical Agency, Census 2011)
Dikance / Dikanc
Total number of inhabitants: 124
Number of Households: 43
(Kosovo Statistical Agency, Census 2011)
Bačka / Baçkë
Total number of inhabitants: 52
Number of Households: 17
(Kosovo Statistical Agency, Census 2011)
Globočica / Glloboçicë
Total number of inhabitants: 960
Number of Households: 227
(Kosovo Statistical Agency, Census 2011)
Brod / Brod
Total number of inhabitants: 1544
Number of Households: 382
(Kosovo Statistical Agency, Census 2011)
Kruševo / Krushevë
Total number of inhabitants: 857
Number of Households: 159
(Kosovo Statistical Agency, Census 2011)
Zlipotok / Zlipotok
Total number of inhabitants: 610
Number of Households: 132
(Kosovo Statistical Agency, Census 2011)
Restelica / Restelicë
Total number of inhabitants: 4698
Number of Households: 788
(Kosovo Statistical Agency, Census 2011)
U N D P
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Base maps
Title of map: B2: Population and settlements
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Aerial photos 2009 , DTM (Cadastral Agency of Kosovo 20 m Grid processing by UNDP, Municipality of Dragash, Kosovo Statistics Agency
Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,
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1.3. Geology and mineral resources

Contents of the map:

Geological Map of Dragash/Dragaš Municipality with mineral resources – extracted from the "GEOLOGICAL MAP OF KOSOVO" 1:200,000

The main messages:
The Municipality of Dragash / Dragaš is part of the Sharr/ Šar Mountains forming the border between Kosovo and FYR Macedonia. The Sharr/Šar Mountains were formed in the same geological phase as the Alps and the Dinarides.
Half of the territory of Dragash / Dragaš Municipality is formed from various types of metamorphic rocks (Figure 1 8 and Figure 1 9). Two areas are dominated by various types of limestone which have undergone metamorphic processes. These areas are the Mount Koritnik and parts of the mountains around Brod / Brod and Restelica / Restelicë. Intrusions of Magmatites are mainly found in the central part of Dragash / Dragaš Municipality between Krstec / Kërstec, Dragash / Dragaš, Pllajnik / Plajnik, Brod / Brod, Zlipotok / Zlipotok and Kruševo / Krushevë. Larger areas of sandstone can be found in the far southwest of the mountains (Kesula e Priftit/ Popova Šapka), while smaller areas are scattered across the area. Approximately 20% of the municipality is formed from quaternary sediments of fluviatile or glacial origin. Major areas are in the north between Brezne / Brezna and Bresanë / Brodosavce, around Dragash / Dragaš, and along the valleys in the high mountains in the south of the municipality.

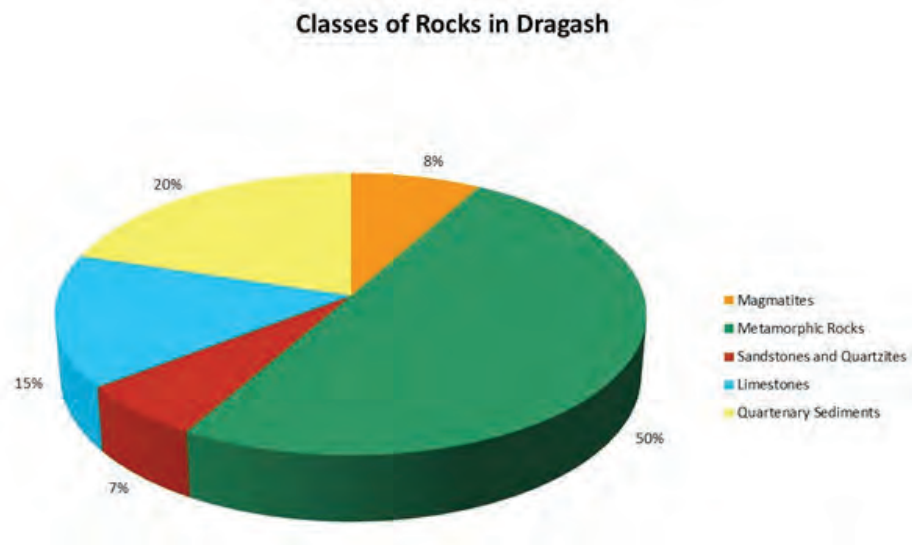

Figure 1 8: Classes of rocks in Dragash / Dragaš

Within the borders of the Municipality the Geological Map shows 8 sites of mineral deposits:
• 3 deposits of iron ore can be found around Zlipotok / Zlipotok
• 1 deposit with copper and mercury is located near Mlike / Mlikë
• 1 deposit with copper, lead and tin is located near Dikance / Dikanc
• 1 deposit with copper, lead, tin, molybdenum, wolfram and arsenic near Bačka / Backë
• 2 areas for quarries near Restelica / Restelicë and Ljubovište / Lubovishtë, both located in Paraschists.
Caves can be found in the limestone areas.

Relevance of the information for other assessments:

The geologic information is used for the assessment of the biodiversity potential and for the assessment of mining activities.

Data sources, material and reliability:

Independent Commission for Mines and Minerals / Komisioni i Pavarur për Miniera dhe Minerale - Nezavisna Komisija za Rudnike i Minerale 2006
Geology / Lithology: Based on Osnovna Geološko Karta SFRJ 1:100,000 – Geološki Institut, Beograd (1970-1984).
Reference system: Ellipsoid: Bessel 1841, Datum: MGI Austria
Topography: Vector data based on Topographical maps of former Yugoslavia 1:50,000 - edition 4-NIMA, series M709 - Copyright 1998 by the United States Government. No copyright claimed under title 17 U.S.C.
Magnetic Declination: 3.3° E
Map projection: Transverse Mercator

References

Geološka Karta Sr Srbije, 1 : 200,000 Beograd 1968, Zavod za Geološka i Geofizička Istraživanja, Languages: Serbo-Croatian and French).
Geological Map of Yugoslavia, 1 : 500,000 (printed 1971, 6 map sheets).
Geološko-Tektonska Karta Sap Kosovo, 1 : 100,000, Zagreb 1974, Geozavod Zagreb, Language: Serbo-Croatian.
Osnovna Geološka Karta Sfrj, 1 : 100,000, Beograd/Titograd/ Skopje1970-1984, Geozavod Beograd/Geološki Institut Beograd, Zavod za geološka istraživanja SR Crna Gora, Geološki zavod Skopje, Language: Serbo-Croatian).
Geološki Atlas Srbije (Geological Atlas of Serbia), 1 : 2,000,000, published by Ministry for Mining and Energetics Republic of Serbia and Geomagnetics Institute, ed. DIMITRIJEVIĆ M. D. et al., Beograd, 1994-2004, 16 map sheets themes
Kosovo: Land of Opportunity for European Mining and Energy; Mining Journal Special Publication, London, 2005
The Compilation of the Geoscientific Maps of Kosovo – Geological Map 1 : 100,000 – Description of the Map Compilation – Beak Consultants GmbH, Prishtinë, March 2006, 175 p.

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KOSOVO

Legend

- National border
- Dragash border
- Village

Roads

- Regional road
- Local road

Topography

- River
- Contour line (1900)
- Peak (Kik ▲ 1285 m Kik)
- Cave (Ω)
- Mining (Cu)

Geology

Quarternary sediment

- Lake and river sediments
- Proluvium
- Alluvium
- Fluvio-glacial sediment
- Deluvium
- Glacial sediment (moraine)
- Talus

Limestones

- Brecciated recrystallised limestone
- Recrystallised limestone
- Marble, cherty calcareous schist, partly black recrystallised limestone
- Cherty recrystallised limestone

Sandstones and quartzites

- Quartz sandstone, quartzite
- Metasandstone
- Quartzite, metaquartzsandstone
- Quartzite

Magmatites

- Metagabbro
- Diorite
- Syenite, albite syenite
- Metakeratophyre
- Granodiorite
- Metagranitic rocks (gneiss granite, leucogranite, granite)
- Metaquartz porphyre
- Rhyolite

Metamorphic rocks

- Metaconglomerate
- Metadiabase
- Orthoschist (epidote schist, actinolite, chlorite schist, partly diabase intercalations)
- Paraschist (phyllite, sericite schist, quartz schist, metasandstone)
- Phyllite

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Base maps

Title of map: B3: Geology and mineral resources

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Coordinator, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial photos 2009, DTM (Cadastral Agency of Kosovo 20 m Grid processing by UNDP, Geological Map 1:100000: Osnovna Geološka Karta SFRJ K 34-53, K 34-54, K 34-55, K 34-66, K 34-67, K 34-68, K 34-78 Beograd ....

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

ALBANIA

FYR of MACEDONIA

1.4. Soil

Contents of the map:

Soil map of Dragash / Dragaš Municipality – extracted from the "SOIL MAP OF KOSOVO" (1974/2006) - 1:200,000

The main messages:

"The presented soil map is a comprehensive overview presentation of the soils in Kosovo based on the available soil map sheets at a scale 1:50,000 from 1974.
The soil classification used for the map corresponds to the common regional soil classification. The distinction of the soils is partly based on the internationally known soil types (e.g. regosol, rendzina, gley) according to the systematic from FAO-UNESCO; partly based on the granulometric soil species (e.g. sandy soil, loamy soil, clayey soil); and partly on the soil substrata and the stage of soil development (e.g. degree of weathering of ferrous minerals: brownisation). As a result, different classifications like "regosol on flysch", "brownised deluvium" or "shallow brown soil on schists" are represented on the map side by side. Nevertheless, the classification applied on the map is very useful, since the map shows the most important soil characteristics. Based on the presented information, the user is able to derive possibilities for different specific land use, environmental aspects, necessary soil conservation, pedogenesis and other pedologic facts" (Independent Commission for Mines and Minerals 2006b).
The great variety of soils Dragash / Dragaš can be summarised to 8 classes (Figure 1 10):
• Bare rocks with hardly any development of soil cover approximately 1% of the surface, particularly in the steep, high mountains in the south;
• Young, sparsely developed Lithosols on all types of rocks are prevalent in steep areas along valleys and mountains and cover approximately 9% of the territory;

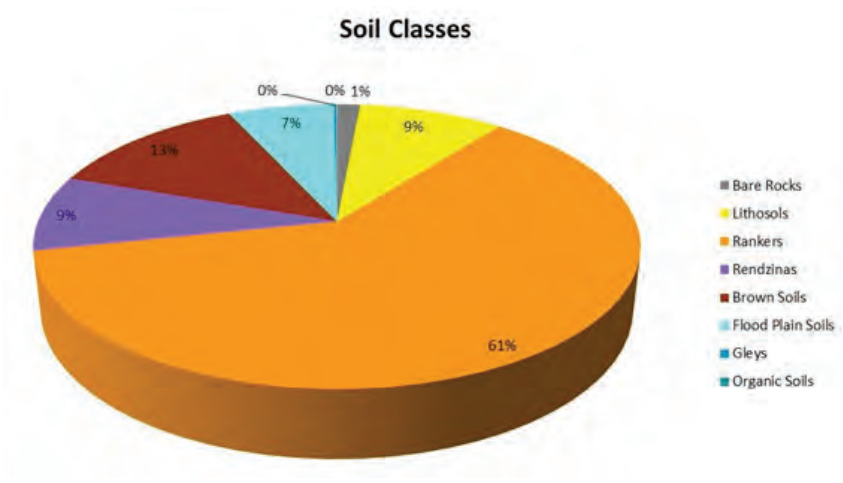


Figure 1 10: Soil classes in Dragash / Dragaš

• The next stage of soil development is represented by Rankers on acidic or neutral rocks and Rendzinas on limestone. These soils are usually only superficially developed and cover around 70% of Dragash / Dragaš – Rankers on the mountains along the eastern and southern border, and Rendzinas on the Mount Koritnik Massif in the north.
• Brown Soils, characteristic in approximately13% of the area are deeper developed and can be found along a belt from Brezne / Brezna and Brrut / Brut in the north to Kruševo / Krushevë in the south.
• Flood Plain Soils cover 7% of the municipality and can be found along the Pllava valley in the north, in the lower parts of the valley of the Brod River, and in parts of the valley of the Restelica River around Restelica / Restelicë.
• Gleys and organic soils are of minor importance, covering less than 1% in total. These types can be found in the area around Shutman, and Lake Brezne.

Relevance of the information for other assessments:

The soil information is used for the assessment of soil bonity (together with local expert knowledge) and for the erosion risk model used in the assessment map for natural hazards.

Data sources, material and reliability:

Independent Commission for Mines and Minerals / Komisioni i Pavarur për Miniera dhe Minerale - Nezavisna Komisija za Rudnike i Minerale 2006
Pedology: Digitised and compiled from: Pedološke Karta Socijalisticke Autonomne Pokrajine - Kosovo - 1 : 50,000, Beograd 1974, Institut za vodoprivredu "Jaroslav Ćerni"
Topography: Vector data based on Topographical maps of former Yugoslavia 1:50,000 - edition 4-NIMA, series M709 - Copyright 1998 by the United States Government. No copyright claimed under title 17 U.S.C.
Map projection: Transverse Mercator
Reference system: Ellipsoid: Bessel 1841, Datum: MGI Austria
Reliability:
The soil types are very broad and can only give a first impression for the more detailed work necessary for the assessment of soil bonity and biodiversity.

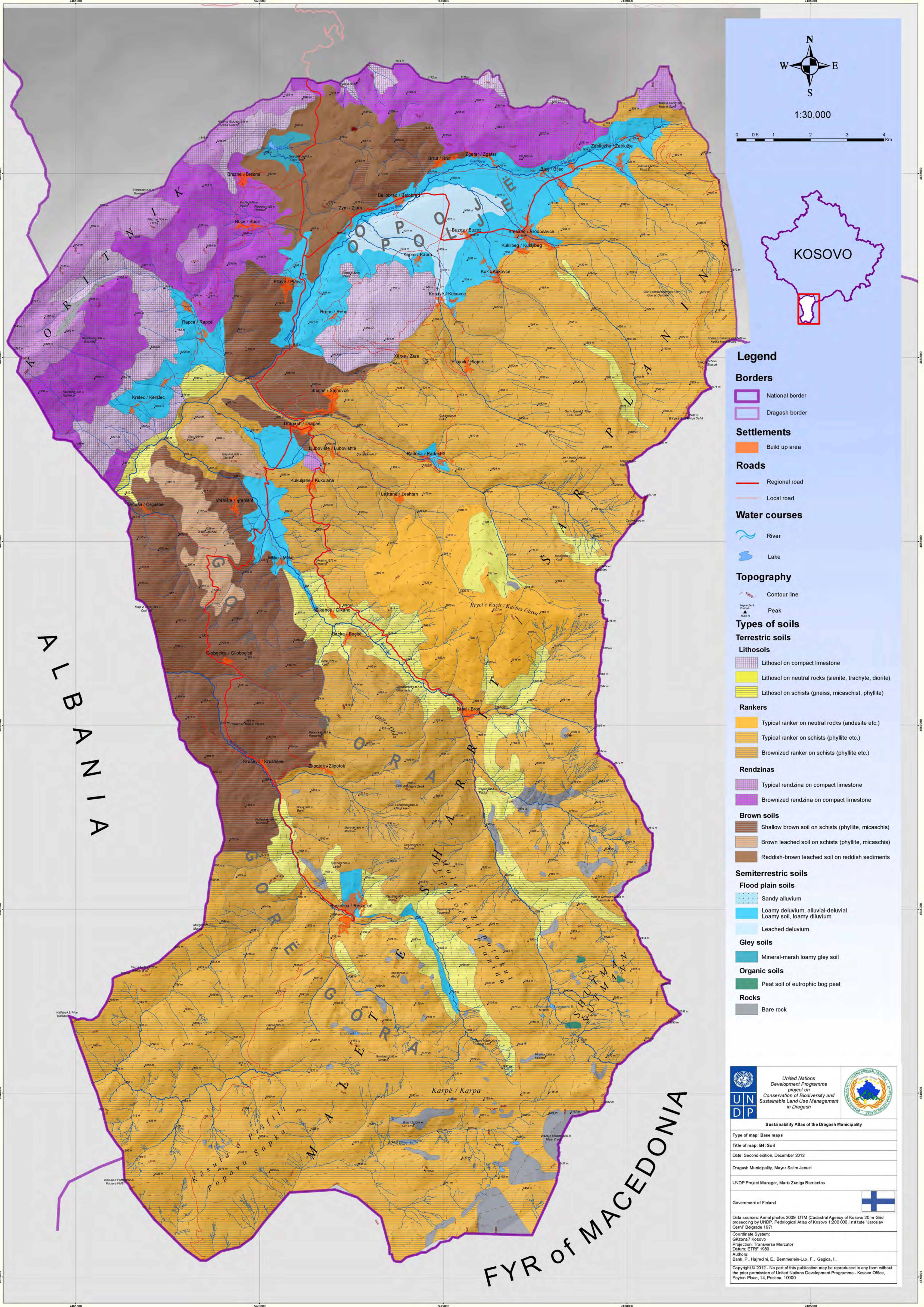
Further suggestions for monitoring and/or improvement of data:

Especially for the areas for agricultural use, detailed soil maps may be required.

References

Pawićević, N., Grujić, L., Ljubomir, M., Petar, K. And Gradimik, V.: Pedološke Karta Socijalističke Autonomne Pokrajine Kosovo – S.R. Srbija, scale: 1:50,000, Institut za vodoprivredu "Jaroslav Černi", Beograd, 1974.
IUSS Working Group WRB 2006: World reference base for soil resources. 2nd edition. World Soil Resources Reports No. 103. FAO, Rome, 2006

IUSS Ëorking Group ËRB 2006: Ëorld reference base for soil resources. 2nd edition. Ëorld Soil Resources Reports No. 103. FAO, Rome, 2006



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KOSOVO
Legend
Borders
National border
Dragash border
Settlements
Build up area
Roads
Regional road
Local road
Water courses
River
Lake
Topography
Contour line
Peak
Types of soils
Terrestric soils
Lithosols
Lithosol on compact limestone
Lithosol on neutral rocks (sienite, trachyte, diorite)
Lithosol on schists (gneiss, micaschist, phyllite)
Rankers
Typical ranker on neutral rocks (andesite etc.)
Typical ranker on schists (phyllite etc.)
Brownized ranker on schists (phyllite etc.)
Rendzinas
Typical rendzina on compact limestone
Brownized rendzina on compact limestone
Brown soils
Shallow brown soil on schists (phyllite, micaschis)
Brown leached soil on schists (phyllite, micaschis)
Reddish-brown leached soil on reddish sediments
Semiterrestric soils
Flood plain soils
Sandy alluvium
Loamy deluvium, alluvial-deluvial
Loamy soil, loamy diluvium
Leached deluvium
Gley soils
Mineral-marsh loamy gley soil
Organic soils
Peat soil of eutrophic bog peat
Rocks
Bare rock
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Base maps
Title of map: B4: Soil
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Aerial photos 2009, DTM (Cadastral Agency of Kosovo 20 m Grid prosecing by UNDP, Pedological Atlas of Kosovo 1:200 000, Institute "Jaroslav Cerni" Belgrade 1971
Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,
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ALBANIA
FYR of MACEDONIA
KORITNIK
OPOJË
OPOLJE
ŠAR PLANINA
GORË / GORA
SHARRI
MALET E GORËS
SHUTMAN
ŠUTMAN
Dragash / Dragaš
Brod / Brod
Restelica / Restelicë
Karpë / Karpa
Kryet e Kaçit / Kaćina Glava
Kësula e Priftit
Popova Šapka

1.5. Climate

Contents of the map:

• Rainfall pattern based on a regional Model
• Average temperatures – modelled based on the average temperature in Sharr/Šar Dragash/Dragaš

The main messages:

The Municipality has a subalpine climate with an average yearly temperature of 8,6° Celsius for Dragash / Dragaš.
The rainfall peak is in July, with subordinate peaks in September and November. The driest months are January to March and August. Approximately 50% of rainfall occurs during the vegetation period.

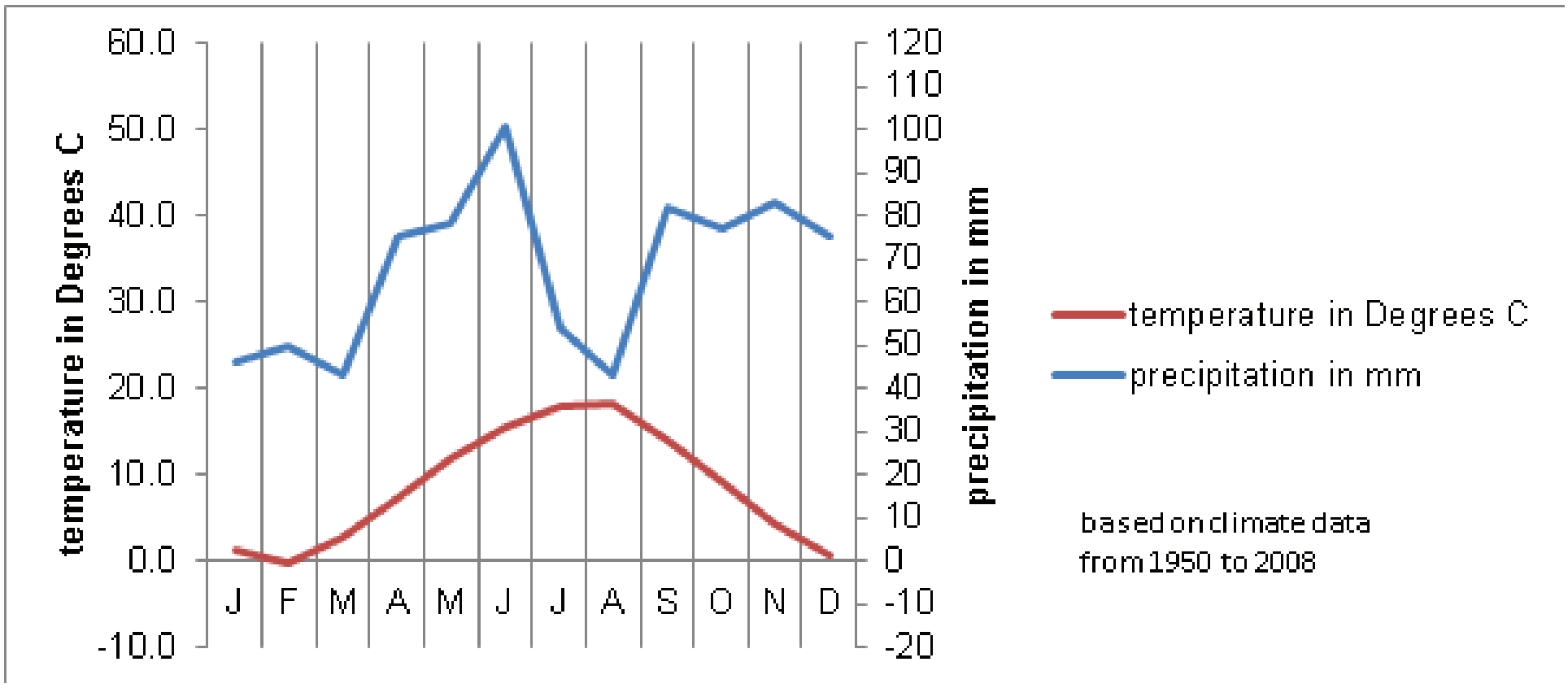


Figure 1-12: Climate diagram for Dragash / Dragaš

Average temperature in	Winter	Spring	Summer	Autumn	Vegetation period
Dragash °C	- 0,4	7,9	18,1	10,2	15,0

Table 1-2: Average seasonal temperature in Dragash / Dragaš

Precipitation and average Temp. during the vegetation period	April to September			October to March			Annual		
	mm	%	Temp. °C	mm	%	Temp. °C	mm	%	Temp. °C
Sharr Dragash	413	51,1	15,0	394	48,9	3,3	807	100	8.3

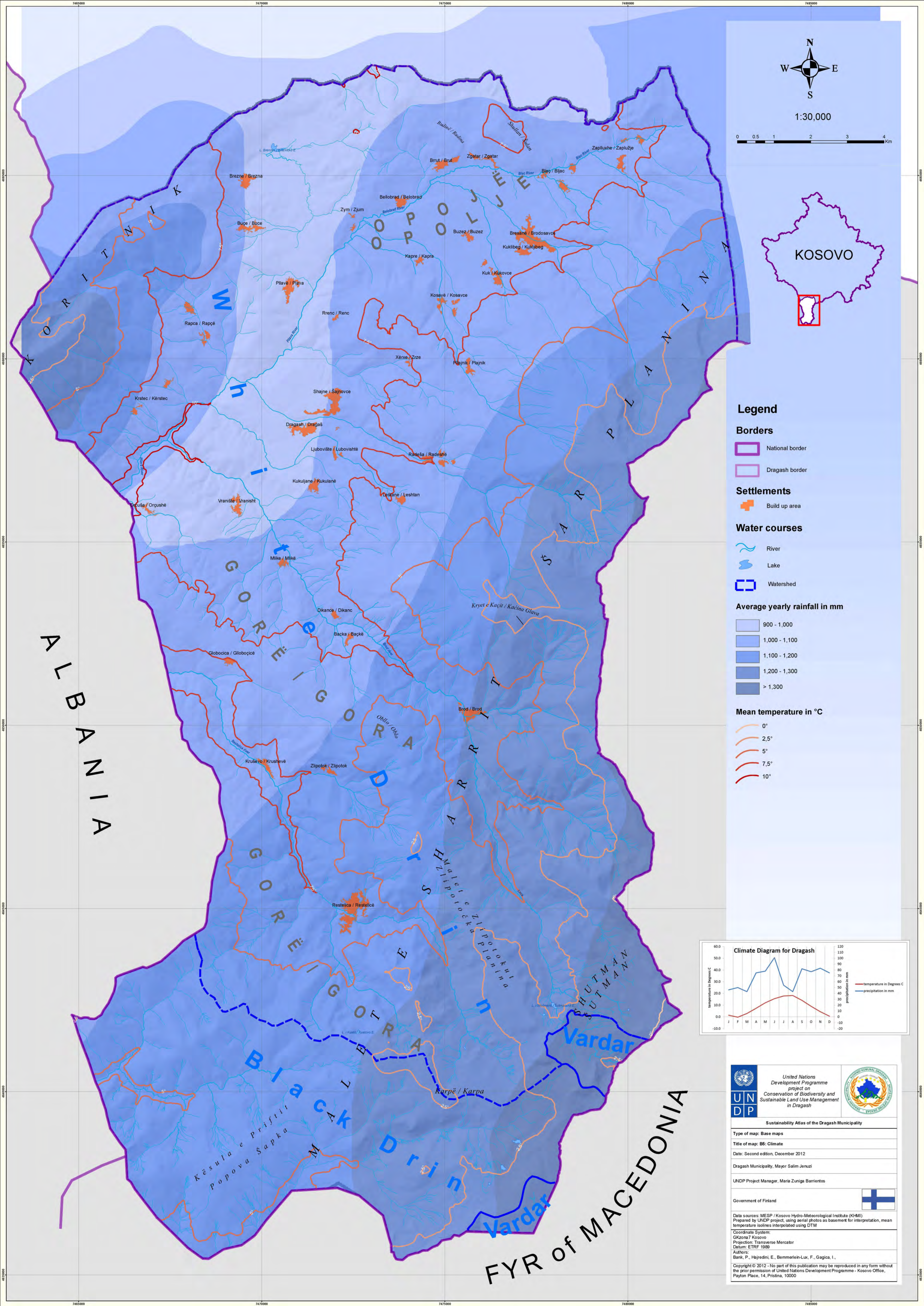
Table 1-3: Precipitation and average temperature during Vegetation Period

Relevance of the information for other assessments:

The climate data is used for the assessment of agriculture and forest activities and plays a role as one factor in the assessment of the erosion risk model.

Data sources, material and reliability:

Climate data for Dragash/Dragaš Prof.Dr.Sci. Sylë Tahirsylaj MMPH-IHMK, Prishtina (2011) - There is only one weather station in the municipality in Dragash / Dragaš. From 2008 onward no further data was collected.
For the temperature gradient it was assumed that for each 100m the gradient is 0,6 °C. The calculations for the temperature isolines used the average yearly temperature.



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KOSOVO
Legend
Borders
National border
Dragash border
Settlements
Build up area
Water courses
River
Lake
Watershed
Average yearly rainfall in mm
900 - 1,000
1,000 - 1,100
1,100 - 1,200
1,200 - 1,300
> 1,300
Mean temperature in °C
0°
2,5°
5°
7,5°
10°
Climate Diagram for Dragash
temperature in Degrees C
precipitation in mm
J F M A M J J A S O N D
temperature in Degrees C
precipitation in mm
ALBANIA
FYR of MACEDONIA
KORITNIK
OPOLJË
OPOLJE
ŠAR PLANINA
GORË / GORA
White Drin
Black Drin
Vardar
Vardar
SHUTMAN
ŠUTMAN
MALET E ZLIPOTOKUT
Malet e Zlipotokut
Zlipotočka planina
Këşula e Priftit
Popova Šapka
Kryet e Kaçit / Kačina Glava
Oblo / Oblo
Rudinë / Rudina
Shullan / Šulan
Karpë / Karpa
L. Brezns / Breznicko E.
L. i Kuatit / Kuatovo E.
L. i Shtumanit / Šutmansko E.
Brezne / Brezna
Buçe / Buce
Pllavë / Plava
Rapca / Rapçë
Krstec / Kërstec
Orcuša / Orçushë
Vranište / Vranisht
Zym / Zjum
Rrenc / Renc
Shajne / Šajnovce
Dragash / Dragaš
Ljubovište / Lubovishtë
Kukuljane / Kukulanë
Leštane / Leshtan
Radeša / Radeshë
Xërxe / Zrze
Pllajnik / Plajnik
Kosavë / Kosavce
Kapre / Kapra
Buzez / Buzez
Bellobrad / Belobrad
Brrut / Brut
Zgatar / Zgatar
Blaç / Bljac
Zaplluxhe / Zapluže
Bresanë / Brodosavce
Kuklibeg / Kukljibeg
Kuk / Kukovce
Mlike / Mlikë
Dikance / Dikanc
Backa / Baçkë
Globocica / Glloboçicë
Kruševo / Krushevë
Zlipotok / Zlipotok
Brod / Brod
Restelica / Restelicë
Pllava River
Belobrad River
Blac River
Brod river
Restelica river
Leva
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
UNDP
Sustainability Atlas of the Dragash Municipality
Type of map: Base maps
Title of map: B5: Climate
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: MESP / Kosovo Hydro-Meteorological Institute (KHMI)
Prepared by UNDP project, using aerial photos as basement for interpretation, mean temperature isolines interpolated using DTM
Coordinate System:
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Projection: Transverse Mercator
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1.6. Water resources

Contents of the map:

Natural Resources
- Watersheds and important sub-watersheds
- Rivers, creeks, lakes and springs
- Wetlands and forests

Water Supply
- Current water supply installations (extraction of surface water, springs used for village supply, water reser-voirs, treatment facilities, pipe system)
- Type of water supply in the villages (central supply by utility – self-organised supply, source of water used)
- Planned water supply system (reservoirs, treatment facility, pipes)

Waste Water Management
- Waste Water Treatment Plant and sewage system under construction near Kapre / Kapra
- Locations of uncontrolled discharge of untreated waste water to rivers and creeks (from UNDP Water Survey, 2011)

Hydropower
- Planned hydropower project Zhur/Žur (Water transfer system from the south to the reservoirs, two reservoirs, transfer to Zhur/Žur powerhouse)
- No data representing the planned small hydropower plants (SHPP) at Brod and Restelica River could be made available through the competent authorities.

The main messages:

Natural Resources
Due to the high average annual rainfall of 1.130mm/m^2, Dragash / Dragaš Municipality is a region of Kosovo with abundant water resources.
- The northern part of the municipal territory belongs to the basin of the White Drin draining to the Adriatic Sea (36.556ha = 84% of the territory), comprising the sub-basins of Restelica River, Brod River, Sotke River, Plava River and Prizren River. The part of Dragash / Dragaš territory draining to the Prizren River features a geological peculiarity: there is no surface water flow to Prizren River. The water leaves near Lake Brezna through a sinkhole and an underground carstic connection, resurfacing near Poslisht village in the vicinity of Prizren at a place called “Gurra”.
- The most south-western part of the municipal territory belongs to the Basin of Black Drin River also draining to the Adriatic Sea (6.532ha = 15% of the territory).
- Two small areas in the south-east of the territory drain via the Vardar River to the Aegean Sea (494ha = 1% of the territory).

Table 1 4 gives an overview on surface and annual rainfall received by the watersheds.

Watershed	Sub-Watershed	Surface in ha	Annual Rainfall in m^3
White Drin	Brod River	8.789	103.272.513
	Plava River	17.573	191.584.988
	Prizren River	2.435	24.161.538
	Restelica River	7.155	82.376.960
	Sotke River	603	6.075.304
White Drin Total		36.556	407.471.303
Black Drin	Black Stone Riveri	3.757	46.087.272
	Sherupa River	2.775	31.887.218
Black Drin Total		6.532	77.974.490
Vardar	Rrasangult River	160	2.137.545
	Silent Waters River	333	4.491.258
Vardar Total		494	6.628.803
Overall in Dragash / Dragaš Municipality		**43.581**	**492.074.596**

Table 1-4: Yearly rainfall in m^3 per watershed

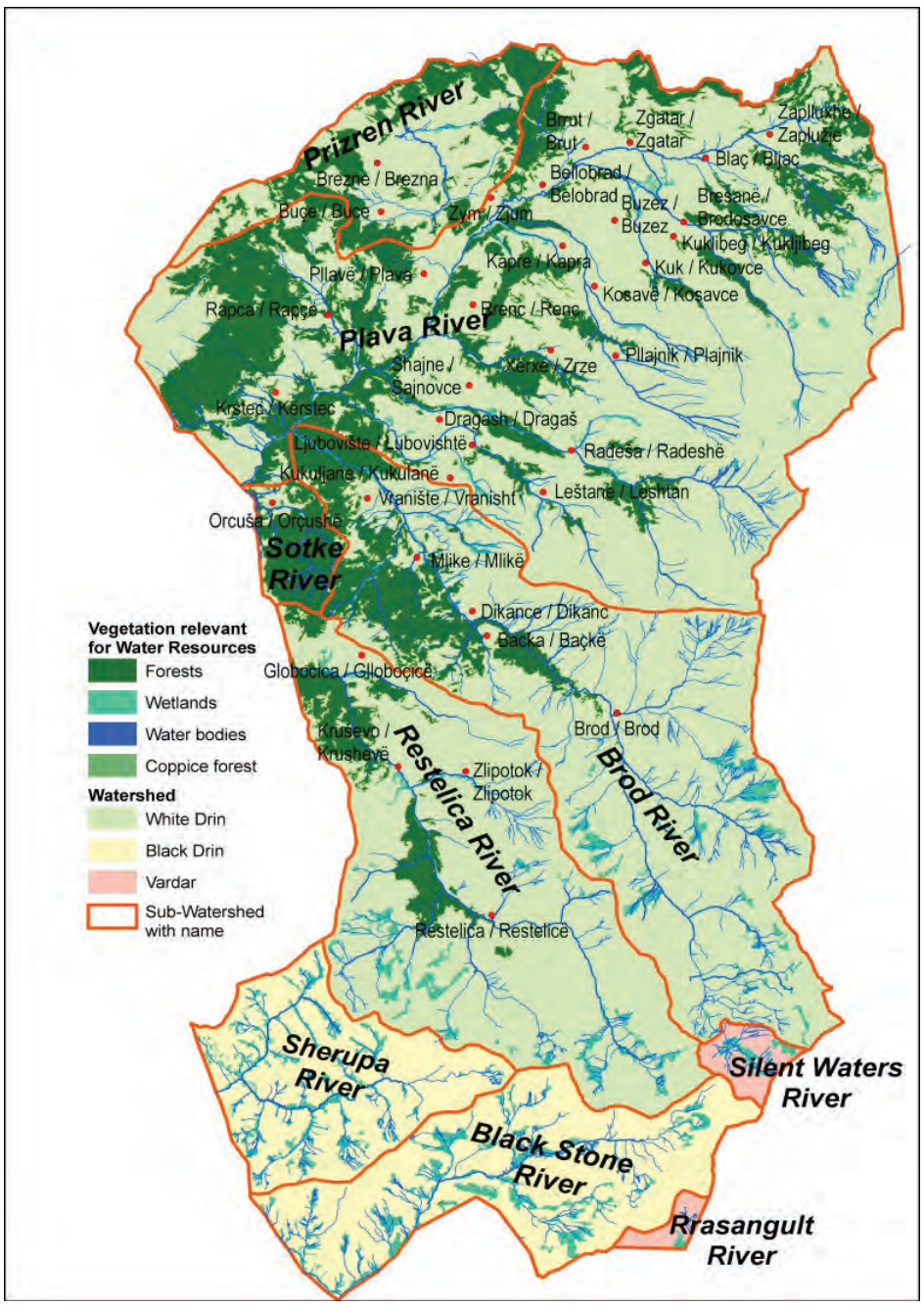

Figure 1-14: Watersheds in Dragash / Dragaš Municipality

Ecosystems providing for the regeneration of water resources and therefore buffering fast discharge of heavy rainfalls or snow melt (i.e. all types of forests and wetlands) are unequally distributed to the basins and sub-basins of the municipality. Table 1 5 gives an overview on the situation:

The southern sub-basins located in Gora/Gorë region feature significantly less water regenerative areas than the northern basins; all below 20% of the surface of the respective sub-basin. This is particularly caused by the lower forest cover, but partly balanced by the high abundance of wetlands in the higher mountain areas. Both facts advocate for efficient protection of these ecosystem types in Gora/Gorë region.

In the northern sub-basins the comparatively high covers of forests and coppice forests account for the higher proportion of water regenerative areas. Most prominent are the large forest areas at Mount Koritnik and in Sotke River sub-basin.

In total, the share of water regeneration areas in Dragash / Dragaš Municipality accounts for slightly above 20%.

Information on groundwater resources as an important element of the water regime is not available. A rough assessment of potential ground water occurrence in Dragash / Dragaš Municipality will be provided in Vol. 3 Assessment of the Sustainable Development Atlas.

Basin / Sub-Basin	Area for water resources regeneration in ha					
	Forests	Coppice Forests	Wetlands	Total	in % of total Surface	Total Surface in ha
White Drin	4.300	3.295	998	8.593	24%	36.556
Brod River	553	712	389	1.655	19%	8.789
Plava River	2.237	1.982	283	4.502	26%	17.573
Prizren River	491	431	15	936	38%	2.435
Restelica River	564	135	311	1.011	14%	7.155
Sotke River	455	35	0	490	81%	603
Black Drin	1		831	832	13%	6.532
Black Stone River	1		463	464	12%	3.757
Sherupa River	0		368	368	13%	2.775
Vardar	0		60	60	12%	494
Rrasangult River	0		9	9	6%	160
Silent Waters River	0		50	50	15%	333
Total Dragash / Dragaš Municipality	4.301	3.295	1.889	9.485	22%	43.581

Table 1-5: Area for water resources regeneration per watershed

Table 1 6 gives an overview of the density of water courses in the sub-basins in Dragash / Dragaš Municipality. The average density for the municipality is 2,1km of water courses per km^2 of surface area, with 0,4km of large permanent water courses and 1,7km of smaller, often temporary water courses.
The highest overall density (4,3km/km^2) is to be found in the in the sub-basins of Silent Waters River. Due to its location in the high montane and alpine zone, more than 80% of water courses in this sub-basin are small or temporary.
The lowest water course densities are to be found in the north of Dragash / Dragaš Municipality, in the Pllava River and Prizren River sub-basins, respectively with only 1,6 and 1,05 km/km^2.

Basin / Sub-Basin	Gjatësia e rrjedhave ujore në km small or temporary	large	Total	Total surface in ha	small or temporary	Density of Water Courses in km/km^2 large	Total
White Drin	536,4	155,2	691,6	36.556	36.556	1,5	1,9
Brod River	209,6	45,6	255,2	8.789	8.789	2,4	2,9
Plava River	195,5	78,4	274,0	17.573	17.573	1,1	1,6
Prizren River	24,5	1,2	25,6	2.435	2.435	1,0	1,1
Restelica River	97,9	27,9	125,7	7.155	7.155	1,4	1,8
Sotke River	8,9	2,2	11,1	603	603	1,5	1,8
Black Drin	185,2	14,5	199,7	6.532	6.532	2,8	3,1
Black Stone River	113,6	0,0	113,6	3.757	3.757	3,0	3,0
Sherupa River	71,7	14,5	86,1	2.775	2.775	2,6	3,1
Vardar	14,5	2,8	17,3	494	494	2,9	3,5
Rrasangult River	2,8	0,0	2,8	160	160	1,7	1,7
Silent Waters River	11,7	2,8	14,5	333	333	3,5	4,3
Total Dragash / Dragaš Municipality	736,1	172,5	908,6	43.581	43.581	1,7	2,1

Table 1-6: Water courses per watershed

Figure 1 15 and Table 1 7 which follow show the average monthly flow rates of major rivers in Dragash / Dragaš Municipality during the period from 1954-1985. The points of measurement are not known, but it can be assumed these are located close to the outlet of River Brod, and close to the border with Albania in the case of the Rivers Pllava and Restelica.

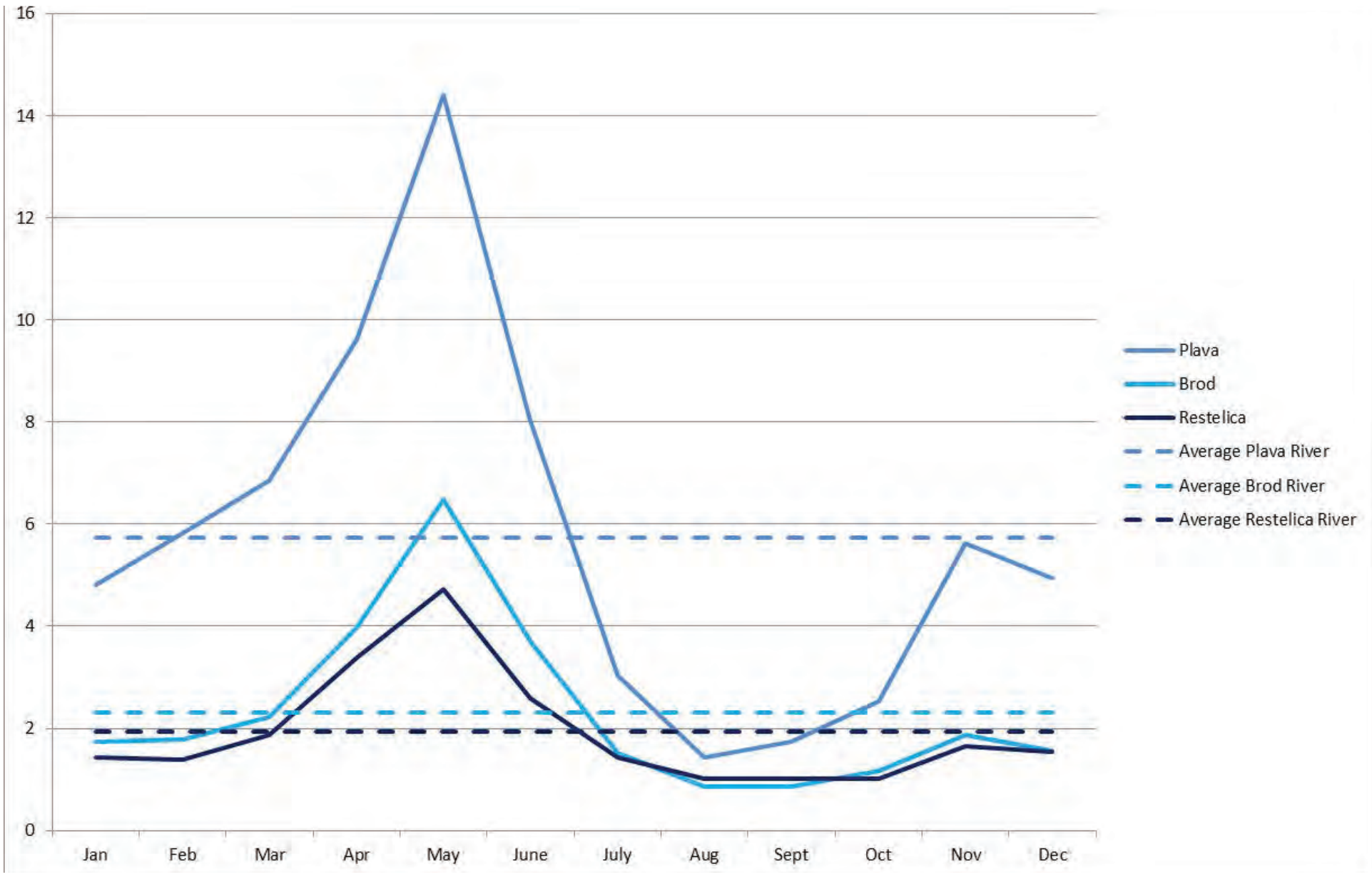

Figure 1-15: Flow rates of major rivers in Dragash / Dragaš Municipality

River	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Aver
Plava	4,82	5,83	6,86	9,63	14,4	8,04	3,04	1,43	1,74	2,52	5,62	4,95	5,74
Brod	1,73	1,78	2,21	3,97	6,48	3,71	1,52	0,86	0,86	1,16	1,86	1,57	2,31
Restelica	1,44	1,39	1,87	3,39	4,73	2,59	1,44	1,02	1,01	1,01	1,65	1,54	1,92

Colour code: Blue = month of maximum flow; Green = months with flow above average; Orange = months with flow below average; Red = month with minimum flow rate.

Table 1-7: Average monthly flow rates of major rivers

High flow season is dependent on snow melt and starts first in the Pllava River sub-basin, lasting from February to June; high flow season in the tributaries of the River Brod and Restelica starts only in April due to the higher altitude of the catchments, with a maximum in May for all three rivers. The end of the high flow season in June coincides with the monthly precipitation maximum. Later in the year, low rainfall influences minimum flow rates in August. Higher rainfall rates from September to December induce higher flow rates.

Water supply

Only two settlements in Dragash / Dragaš Municipality are currently supplied by a central water supply system operated by the local supplier Hidroregjoni Jugor - Dragash / Dragaš town, with an estimated population of 3.000 (2010), and Pllavë / Plava, with an estimated population of 1.400 (2010). In both cases surface water is used for supply.
All other settlements are supplied by their own systems depending either on springs or surface water. The lowest supply rate can be found in Brezne / Brezna, Mlike / Mlikë, and Rapča / Rapçë with only 20% of inhabitants being supplied. In Vranište / Vranisht only 30% are supplied, in Zgatar / Zgatar 50%, and in Brrut / Brut, Kapre / Kapra, Krstec / Kërstec, Restelica / Restelicë, and Rrenc / Renc 80%. All other villages reach a supply rate of 100%. The quality of drinking water is not supervised.
A total of 161 natural springs are used for supplying the villages with drinking water; the collected water is stored intermediately in a total of 92 reservoirs located in the villages. Besides Dragash / Dragaš, the settlements of Bresanë / Brodosavce and Zgatar / Zgatar are at least partly supplied with river water extracted from the water courses upstream the villages. In case of Zgatar / Zgatar this supply comes from the Blac River (Blaç / Bljacka reka); in Bresanë / Brodosavce it is from the Shehi i Madh creek (Reka e Shehit të Vogël / Reka e Šehit t Mad).
In the future, the municipality and Hidroregjoni Jugor plan to expand the central supply to the 16 villages listed in Table 2 1 in Annex Baseline Maps 2.1. Water will be abstracted from the Radesha River upstream of the village of Radeša / Radeshë, treated in a facility and distributed via a system of pipes and storage reservoirs to the villages.
Further details of water supply are analysed and discussed in the Water Master Plan for Dragash / Dragaš Municipality.
Waste water management
Waste Water Management is almost absent in Dragash / Dragaš Municipality which is leading to some severe impacts in several of the water courses. Details of these impacts will be discussed in Volume 3 Assessment of the SDA.
Currently a waste water treatment plant is being constructed at Kapre River, downstream from the village of Kapre/Kapra. The villages of Kuk / Kukovce, Kosavë / Kosavce, and Kapre / Kapra will be connected to this facility. It will serve three out of 27 villages, with a total of 4.253 (2010) inhabitants or approximately 10% of the population of the municipality. The waste water treatment plant will prevent the pollution load coming from these villages reaching Accumulation 1 (Bellobrad River) of the Zhur/Žur Hydropower Scheme, and will help to keep water quality there at an acceptable level.

During field surveys on water resources undertaken by UNDP in spring 2011, several uncontrolled discharge points of waste water to the rivers of Dragash / Dragaš could be identified. Some of these are caused by companies releasing untreated waste water into the surface water bodies. These locations are marked in the water resources map.
No other concrete plans to tackle the waste water problem in the municipality are known to UNDP.

Hydropower

The ample water resources of Dragash / Dragaš provide a huge potential for the generation of hydro power. One small hydropower plant (SHPP) is located on the River Brod. Two schemes are currently underway to exploit the local hydropower potential:
• The Zhur/Žur Hydropower Scheme: This is a peaking hydropower scheme with a total installed capacity of 305MW. The two plants will be located outside Dragash / Dragaš Municipality near the village of Zhur/Žur. Via a system of tunnels and canals, water will be transferred from the Black Stone River sub-basin and from the Restelica and Brod Rivers to a small, first reservoir in the River Pllava Valley, and from there to a bigger, second reservoir close to the village of Brezne / Brezna. The water will be led down to the two power plants via a tunnel with an altitude difference of 683,5m to 643m. Water flows of the rivers Caljane, Restelica, Brod and Pllave will be affected, as well as the carstic water flow from near Lake Brezna to “Gurra”. The Legal Decision for the construction of Zhur/Žur Hydropower Plant was taken by the Kosovo Assembly on July 24th, 2009.
• Along the Brod and Restelica Rivers the construction of six SHPPs is planned by an international consortium. Neither the exact location of outtakes and intakes nor exact data on the planned amount of abstraction have been available during compilation of the Sustainable Development Atlas. Based on the data available, a preliminary, short environmental assessment of the planned SHPP has been delivered by UNDP.

Relevance of the information for other assessments:

Water resources and their management are a major factor for local sustainable development and will be used for assessment and discussion of development options for the municipality.

Data sources, material and reliability:

Ilbrahimi, Halil: Rapid Water Quality Assessment in Streams and Rivers of Dragash/Dragaš Municipality, UNDP Contract No. 2011-IC-025, Pristina, 2011
HIDROPLAN Pristina: Plan for Water Supply of several Villages in Dragash / Dragaš Municipality, Pristina
Ministry of Environment and Spatial Planning: Kosovo Environmental Action Plan 2006-2010, Pristina, 2006
Ministry of Environment and Spatial Planning – Kosovo Environmental Protection Agency: The State of Water in Kosovo, Pristina, 2010
Ministry of Environment and Spatial Planning: Revising and updating the Kosovo Environmental Strategy (KES) and National

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KOSOVO

Legend

Borders
- National border
- Dragash border

Settlements
- Build up area

Roads
- Regional road
- Local road

Watersheds
- Watershed e.g. Drini i Bardhë
- Sub-watershed e.g. Plava river

Water courses
- River
- Lake
- Spring

Water supply
Current water supply installations
(Based on information provided by Hidroregjioni Jugor and UNDP Village Survey 2011)
- Extraction of river water for supply of villages
- Spring used for drinking water supply
- Existing water reservoir
- Water treatment facility
- Water pipe system

Planned water supply system
(Based on information provided by the Municipality and Hidroregjioni Jugor)
- Water reservoirs
- Water pipe system
- Water treatment facility

Waste water management
(Based on information provided by the Municipality and UNDP Village Survey 2011)
- Waste water treatment plant under construction
- Sewage system
- Direct and uncontrolled waste water discharge to river

Current type of water supply
(Based on information provided by Hidroregjioni Jugor)
- Central water suplly with surface water
- Self-organized water supply with surface water
- Self-organized water supply with well
- Self-organized water supply from spring

Planned hydropower project Zhur
- Area of Spatial Plan of HPP Zhur
- New lake
- Dam on river Plava
- Canal
- Tunnel

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Base maps

Title of map: B6: Water resources

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: MESP / Kosovo Hydro-Meteorological Institute, Municipality of Dragash, Hidroregjioni Jugor, Geological Map of Kosovo, aerial photo interpretation by UNDP, own data generated by UNDP

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Ibrahimi, H., Gagica, I.,

Environmental Action Plan (NEAP) 2011-2013, Pristina, 2011
Official Gazette Republic of Kosova: Decision GSH 03/2009 on Zhur Hydropower Plant
UNDP Dragash/Dragaš: Water Master Plan, GPS data, 2012
See also in Annex Baseline Maps 2.2.

Further suggestions for monitoring and/or improvement of data:

• Repeat water sampling during low flow season in 2012 (July / August) and check uncontrolled discharge of waste water
• Keep contact with Municipality and Hidroregionji Jugor and regularly update water supply system and plan-ning
• Amend information displayed with data from Water Master Plan
• Keep track of planning for utilisation of hydropower and regularly update data
• To include the mapping of waste water discharges that is being done by the team

1.7. Real land use

Contents of the map:

Interpretation of the latest aerial photos of the municipality (2009) based on the land use types defined under the pan-European CORINE Land Use Cover project. The CLC types have been amended with some specific types relevant for Dragash / Dragaš Municipality.

The main messages:

The territory of Dragash / Dragaš Municipality is characterised by natural grass- and shrubland interspersed by rocky or sparsely vegetated areas and wetlands, and forests. These main types of land uses account for over 60% of the municipality's surface. 39% of the land is used for agricultural purposes. Due to the high altitude, grasslands dominate over tillage and permanent cultures (30% versus 9%).
Only 1% of the surface is covered by settlements or infrastructures (see also Table 1 8).

Sub-Basin	Settle-ments	Agri-cultural areas	Pastures & meadows	Forests	Natural grass & shrubland	sparsely vegetated areas	bare rocks	Wetlands	Water bod-ies	Total in ha
Brod River	40	146	2.792	1.265	2.946	930	281	389	0%	8.789
	0%	2%	32%	14%	34%	11%	3%	4%		
Pllava River	361	2.620	4.985	4.219	3.806	1.199	102	283	0%	17.573
	2%	15%	28%	24%	22%	7%	1%	2%	3	
Prizren River	56	640	364	921	366	70	0	15	0%	2.435
	2%	26%	15%	38%	15%	3%	0%	1%		
Restelica River	67	385	2.728	699	2.206	562	196	311	0%	7.155
	1%	5%	38%	10%	31%	8%	3%	4%		
Sotke River	3		77	490	32	1			0%	603
	1%	0%	13%	81%	5%	0%	0%	0%		
Black Stone River		2	990	1	1.832	279	190	463	0%	3.757
	0%	0%	26%	0%	49%	7%	5%	12%		
Sherupa River		6	1.068		1.107	216	11	368	0%	2.775
	0%	0%	38%	0%	40%	8%	0%	13%		
Rrasangult River					81	59	11	9	0%	160
	0%	0%	0%	0%	50%	37%	7%	6%		
Silent Waters River					216	57	10	50	0%	333
	0%	0%	0%	0%	65%	17%	3%	15%	3	
Dragash/ Dragaš Munici-pality	527	3.798	13.003	7.596	12.591	3.373	800	1.889	0%	43.581
	1%	9%	30%	17%	29%	8%	2%	4%		

Table 1-8: Land Use types in Dragash / Dragaš Municipality in ha and %

7465000 7470000 7475000 7480000 7485000

4665000 4660000 4655000 4650000 4645000 4640000 4635000

N
W E
S

1:30,000

0 0.5 1 2 3 4 Km

KOSOVO

Legend

Borders
- National border
- Dragash border

Roads
- Asphalted road
- Gravel road
- Road surface undefined

Settlements
- Build up area

Water courses
- River
- Lake

Topography
- Contour line
- Peak

Land use types
- Artificial surfaces
- Arable land, permanent crops
- Heterogeneous agricultural areas
- Pastures
- Forests
- Shrub and / or herbaceous vegetation associations
- Open spaces with little or no vegetation
- Inland wetlands

Special land uses
- Orchards
- Firewood collection
- Mushroom collection
- Medical herb collection
- Wild fruit collection
- Beehive
- Cattle enclosures and shepherds installations (mountain areas)
- Fruit trees and berry plantations
- Industrial or commercial units
- Mineral extraction sites
- Dump Site

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Base maps

Title of map: B7.2: Special land use

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial photos 2009 , DTM (Cadastral Agency of Kosovo 20 m Grid) processing by UNDP

Coordinate System :
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

ALBANIA

FYR of MACEDONIA

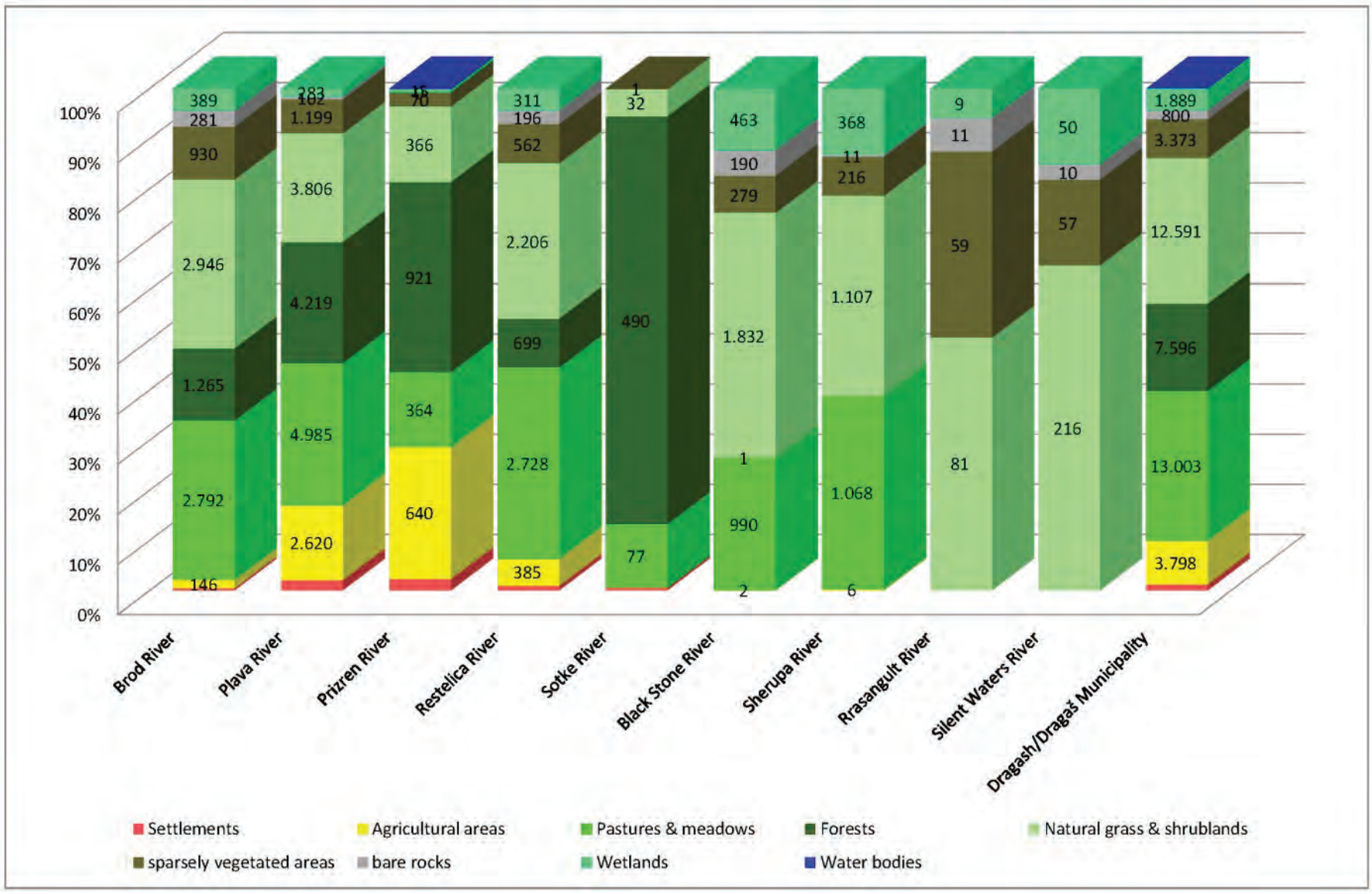


Figure 1-17: Comparison of land uses in the sub-basins of Dragash / Dragaš Municipality

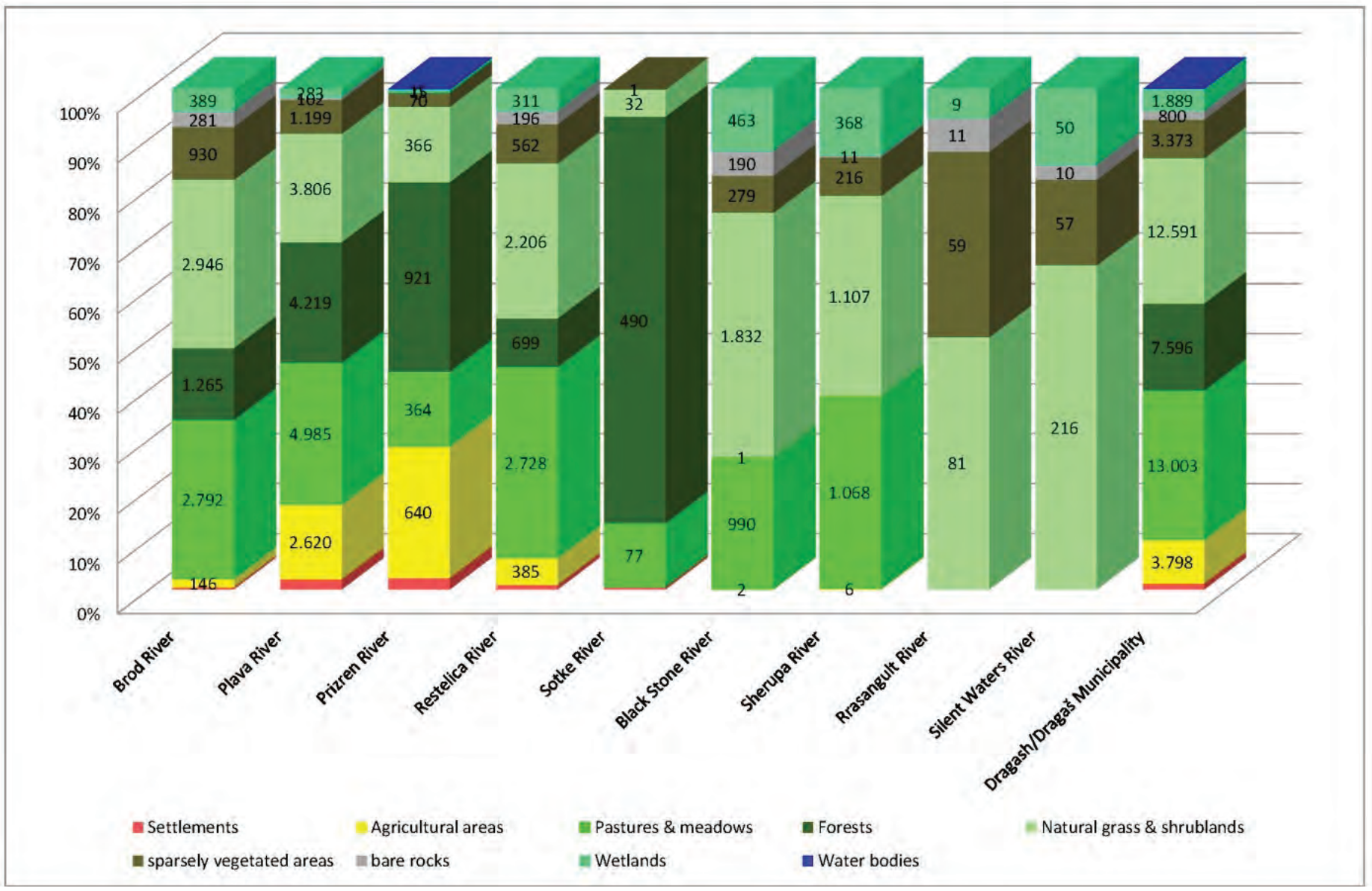
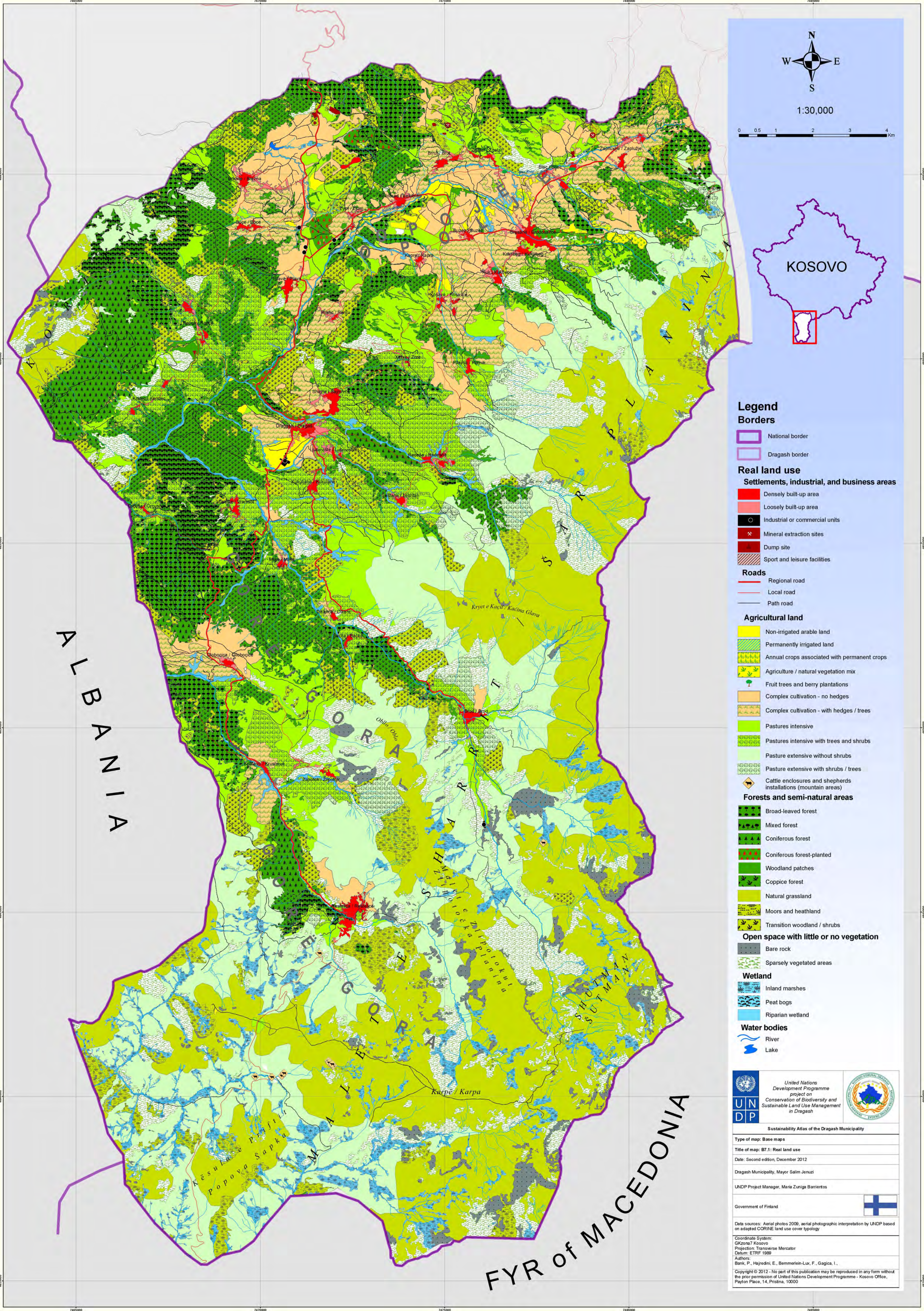


Figure 1-18: Comparison of land uses in the sub-basins of Dragash / Dragaš Municipality



N
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E
S
1:30,000
0 0.5 1 2 3 4 Km
KOSOVO
Legend
Borders
National border
Dragash border
Real land use
Settlements, industrial, and business areas
Densely built-up area
Loosely built-up area
Industrial or commercial units
Mineral extraction sites
Dump site
Sport and leisure facilities
Roads
Regional road
Local road
Path road
Agricultural land
Non-irrigated arable land
Permanently irrigated land
Annual crops associated with permanent crops
Agriculture / natural vegetation mix
Fruit trees and berry plantations
Complex cultivation - no hedges
Complex cultivation - with hedges / trees
Pastures intensive
Pastures intensive with trees and shrubs
Pasture extensive without shrubs
Pasture extensive with shrubs / trees
Cattle enclosures and shepherds installations (mountain areas)
Forests and semi-natural areas
Broad-leaved forest
Mixed forest
Coniferous forest
Coniferous forest-planted
Woodland patches
Coppice forest
Natural grassland
Moors and heathland
Transition woodland / shrubs
Open space with little or no vegetation
Bare rock
Sparsely vegetated areas
Wetland
Inland marshes
Peat bogs
Riparian wetland
Water bodies
River
Lake
U N D P
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Base maps
Title of map: B7.1: Real land use
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Aerial photos 2009, aerial photographic interpretation by UNDP based on adapted CORINE land use cover typology
Coordinate System: GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors: Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,
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ALBANIA
FYR of MACEDONIA
KORITNIK
OPOJË / OPOLJE
ŠARPLANINA
SHARR
GORË / GORA
MALET E GORËS
Brezne / Brezna
Buçe / Buće
Zym / Zjum
Belobrad / Belobrad
Belobrad River
Brrut / Brut
Zgatar / Zgatar
Zapluxhe / Zaplužje
Blaç / Bljac
Blac River
Buzez / Buzez
Bresane / Brodosavce
Kuklibeg / Kukljibeg
Kuk / Kukovce
Kapre / Kapra
Plavë / Plava
Kosavë / Kosavce
Rrenc / Renc
Rapçë / Rapče
Xerxe / Zrze
Pllajnik / Plajnik
Shajne / Šajnovce
Krstec / Kerstec
Dragash / Dragaš
Ljubovište / Lubovishtë
Radeša / Radeshë
Kukuljane / Kukulane
Leštane / Leshtan
Vranište / Vranisht
Orćuša / Orcushë
Mlike / Mlike
Dikance / Dikanc
Bačka / Backë
Globocica / Gllobočice
Brod / Brod
Oblo / Oblo
Kryet e Kaçit / Kaćina Glava
Kruševo / Krushevë
Zlipotok / Zlipotok
Restelica / Restelicë
Maletet e Zlipotokut / Zlipotočka Planina
SHUTMAN / ŠUTMAN
Leva
Karpë / Karpa
Kësula e Priftit / Popova Šapka
7465000
7470000
7475000
7480000
7485000
4665000
4660000
4655000
4650000
4645000
4640000
4635000

Agricultural areas with arable land, permanent crops and complex land uses composed of annual and permanent crops with hedges are concentrated in the Opojë/Opolje Region.
The sub-basins of the Pllava and Prizren Rivers account for 86% of these land use types, although only covering 46% of the Municipality. In the Gora/Gorë Region major areas can be found around Globočica / Gllboçicë, Kruševo / Krushevë and Restelica / Restelicë. Pastures and meadows are to be found mainly in a belt east of the villages at the foot of the higher mountains below 1.600m altitude within the sub-basins of Pllava, Brod and Restelica Rivers (see also Figure 1 19 and Figure 1 20).
The forests of Dragash/Dragaš account for 17% of the territory and are concentrated outside the Sharr/Šar Mountains. Major stock can be found along the Pllava, Restelica and Brod Rivers and in the area of Mount Koritnik with a high share of coppice forests (see also Table 1 5). The higher Sharr/Šar Mountains are almost bare of forests.
The Sharr/Šar Mountains are characterised by natural and semi-natural grass- and shrubland, associated with wetlands along the water courses and in depressions, sparsely vegetated and rocky areas. These land use types account for 43% of the municipal territory.

Relevance of the information for other assessments:

The actual land use will be used for the assessment of agriculture, forest and nature protection and forms the basic information about environmental characterisation in the municipality.

Data sources, material and reliability:

Most of the classification was undertaken through a combination of automatic interpretation and reworking by manual interpretation with some ground truthing exercises.
List of land use types is provided in the annex of Volume 4, Guidance for Development

Further suggestions for monitoring and/or improvement of data:

Correction according to field checks

1.8. Biosphere resources - vegetation

Contents of the map:

- Areas and points where a vegetation mapping was undertaken by UNDP experts in 2011 (partly field map-ping, partly desktop analysis); a total of 37 plant associations have been identified.
- Points of inventories of plants (from 2011)
- Assumed timber line (2050 m)
- Main types of land uses as background

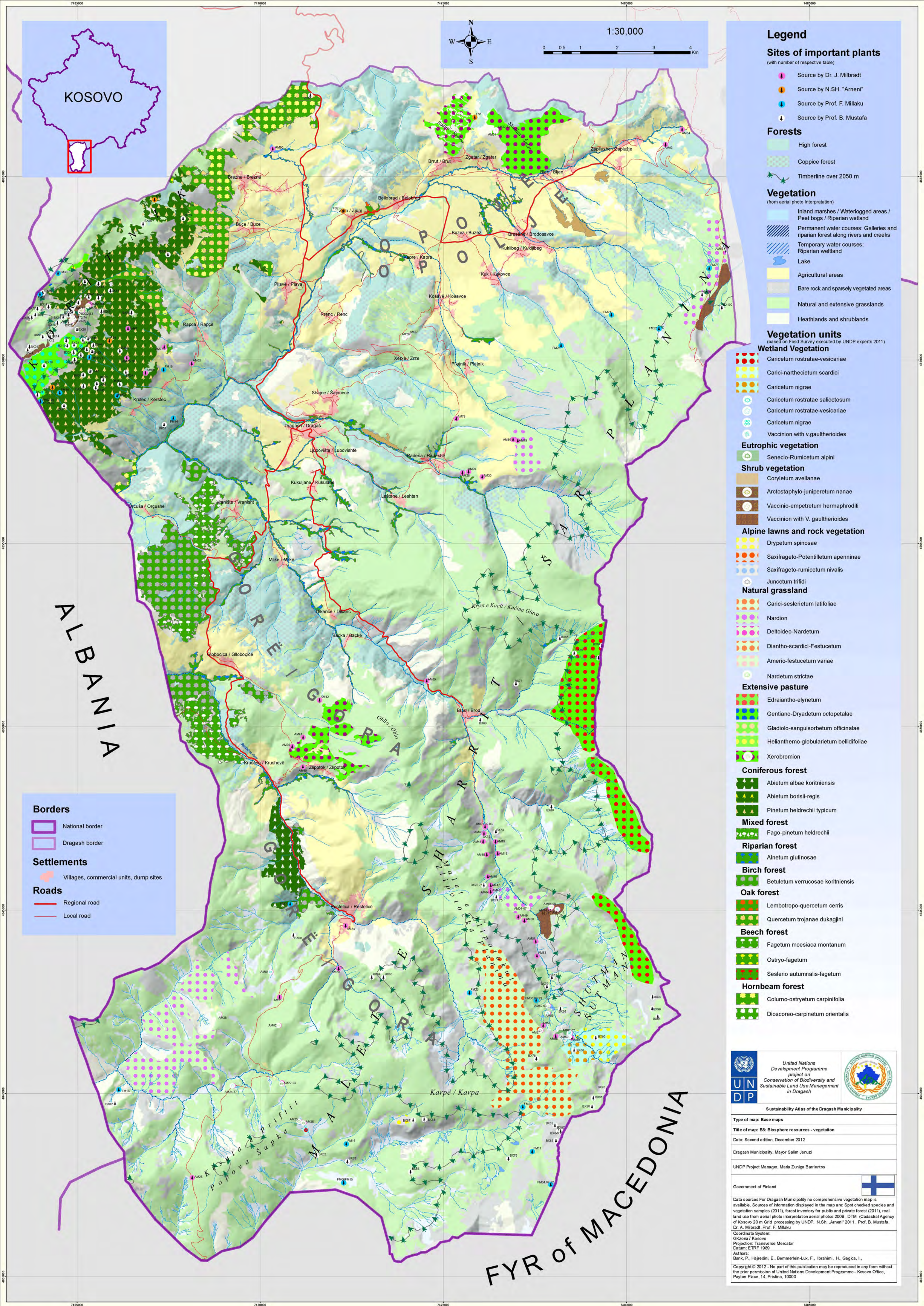
The main messages:

General situation
The extended range of altitudes between 730 and 2.650 m above sea level, the huge variety of bedrocks and soils, and influences from Mediterranean and Continental climates support a significant diversity of plant species and communities in the Municipality of Dragash / Dragaš. The Sharr/Šar Mountains are assumed to provide habitats for about 2000 vascular plant species. The overview research for the Dragash/Dragaš mountains located approximately 650 plant species. It is important to note that only some points were analysed and total plant lists were not recorded. that only some points and there not total plant lists were recorded.
Without human influence most of the areas below the timberline should be covered by forest. Through centuries of deforestation, grazing and frequent burning of trees and shrubs, the forest has vanished almost completely in the eastern and southern part of the municipality at altitudes above 1.700 m (Sharr/Šar Mountains).
The timber line is at about 2000 – 2100 m and best visible at Mount Koritnik in the northwest of the municipality. It can be assumed that above the timber line one can find conditions closest to nature in the municipality. These are areas covered by natural rock, alpine grass- and shrub-lands with natural wetlands such as peat-bogs and fens in depressions, containing a wide variety of typical and often important plant communities and species.
Forests in Dragash / Dragaš are a mixture of coniferous forests dominated by pines or firs, and broadleaved forests with beeches, oaks, birches, and hornbeams or a mixture of both. Approximately 40% of the forests in the municipality are more or less managed as coppice forests. Along the water courses, narrow strips of riparian forests dominated by alders are mostly abundant. The forests of Dragash / Dragaš host a wide variety of plant communities and species of importance. In particular, coppice forests are home to a great number of plant and animal species.
Pastures and meadows replacing natural forests are often managed extensively and are home to a considerable variety of plant species.
Arable lands and areas with a complex cultivation mix of tillage, permanent cultures, pastures, and often hedges were not in the focus of the field work undertaken. In particular, the areas with a high diversity of structures (Land use type: ‘Complex Cultivation with or without Hedges and Trees’, see Figure 1 20) are of high importance to local fauna.

Plant communities
During field and desk top work a total of 37 plant communities were identified in the focal areas (see Mustafa B., 2011) and Table 2 3 in Annex Baseline Maps 2.3). A complete list and description can be found in Vol. 5 Data of the Sustainable Development Atlas. The table below presents plant communities which were identified in the field and could be aligned with the provisions of Annex I of the EU Flora-Fauna-Habitat Directive, and are therefore of particular relevance for biodiversity issues (description taken partly from Mustafa B., 2011).

Species

During field work conducted by UNDP experts and a group of national scientists (Prof. Dr. F. Millaku et al.) elaborating a Red List for Kosovo, 650 species of plants could be located in territory of the municipality. A preliminary set of 37 species has been considered as the most important and endangered in the municipality by Mustafa B. (2011). This list is given in Table 2 4 in Annex Baseline Maps 2.4:


KOSOVO
1:30,000
0 0.5 1 2 3 4 Km
N
S
E
W
Legend
Sites of important plants
(with number of respective table)
Source by Dr. J. Milbradt
Source by N.SH. "Arneni"
Source by Prof. F. Millaku
Source by Prof. B. Mustafa
Forests
High forest
Coppice forest
Timberline over 2050 m
Vegetation
(from aerial photo Interpratation)
Inland marshes / Waterlogged areas / Peat bogs / Riparian wetland
Permanent water courses: Galleries and riparian forest along rivers and creeks
Temporary water courses: Riparian weltland
Lake
Agricultural areas
Bare rock and sparsely vegetated areas
Natural and extensive grasslands
Heathlands and shrublands
Vegetation units
(based on Field Survey executed by UNDP experts 2011)
Wetland Vegetation
Caricetum rostratae-vesicariae
Carici-narthecietum scardici
Caricetum nigrae
Caricetum rostratae salicetosum
Caricetum rostratae-vesicariae
Caricetum nigrae
Vaccinion with v.gaultherioides
Eutrophic vegetation
Senecio-Rumicetum alpini
Shrub vegetation
Coryletum avellanae
Arctostaphylo-juniperetum nanae
Vaccinio-empetretum hermaphroditi
Vaccinion with V. gaultherioides
Alpine lawns and rock vegetation
Drypetum spinosae
Saxifrageto-Potentilletum apenninae
Saxifrageto-rumicetum nivalis
Juncetum trifidi
Natural grassland
Carici-seslerietum latifoliae
Nardion
Deltoideo-Nardetum
Diantho-scardici-Festucetum
Amerio-festucetum variae
Nardetum strictae
Extensive pasture
Edraiantho-elynetum
Gentiano-Dryadetum octopetalae
Gladiolo-sanguisorbetum officinalae
Helianthemo-globularietum bellidifoliae
Xerobromion
Coniferous forest
Abietum albae koritniensis
Abietum borisii-regis
Pinetum heldrechii typicum
Mixed forest
Fago-pinetum heldrechii
Riparian forest
Alnetum glutinosae
Birch forest
Betuletum verrucosae koritniensis
Oak forest
Lembotropo-quercetum cerris
Quercetum trojanae dukagjini
Beech forest
Fagetum moesiaca montanum
Ostryo-fagetum
Seslerio autumnalis-fagetum
Hornbeam forest
Columo-ostryetum carpinifolia
Dioscoreo-carpinetum orientalis
Borders
National border
Dragash border
Settlements
Villages, commercial units, dump sites
Roads
Regional road
Local road
ALBANIA
FYR of MACEDONIA
KORITNIK
OPOLJE
ŠAR PLANINA
GORË / GORA
MALET E GORA
SHUTMAN / ŠUTMAN
Brezne / Brezna
Buçe / Buce
Bellobrad / Belobrad
Zjum / Zjum
Brrut / Brut
Zgatar / Zgatar
Zaplluxhe / Zaplužje
Blaç / Bljac
Buzez / Buzez
Bresane / Brodosavce
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Kuk / Kukovce
Kosavë / Kosavce
Rrenc / Renc
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Orcuša / Orçushë
Vranište / Vranisht
Mlike / Mlikë
Dikance / Dikanc
Backa / Baçkë
Globocica / Glloboçicë
Brod / Brod
Krušavo / Krushevë
Zlipotok / Zlipotok
Restelica / Restelicë
Karpë / Karpa
Kryet e Kaçit / Kaćina Glava
Obllo / Oblo
Malet e Zlipotockë / Zlipotok planina
Kësula e Priftit / Popova Šapka
Plava River
Restelica river
Leva
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Base maps
Title of map: B8: Biosphere resources - vegetation
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources:For Dragash Municipality no comprehensive vegetation map is available. Sources of information displayed in the map are: Spot checked species and vegetation samples (2011), forest inventory for public and private forest (2011), real land use from aerial photo interpretation aerial photos 2009 , DTM (Cadastral Agency of Kosovo 20 m Grid processing by UNDP, N.Sh. „Arneni" 2011, Prof. B. Mustafa, Dr. A. Milbradt, Prof. F. Millaku
Coordinate System: GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors: Bank, P., Hajredini, E., Bemmerlein-Lux, F., Ibrahimi, H., Gagica, I.,
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Relevance of the information for other assessments:
The information from this map is input for suggesting appropriate land management measures. Predominant factors of influence are the climatic factors of rainfall, temperature and humidity and the soil properties. Further-more it provides good orientation for the demarcation and zonation of the National Park.
For considerations of sustainability, this map shows the ecological potential of the Municipality and takes up the challenges formulated by the Municipality of Dragash/Dragaš to collect adequate data about its biodiversity to achieve a more complete list of habitats and species (Dragash/Dragaš Municipality (2010).

Data sources, material and reliability:
• Vegetation map in Lazarević, R. (1994): The vegetation types in use (associations) do not accord with the newest phytosociological norms. The precision of the map does not match the precision required for the Sustainable Development Atlas. Therefore this vegetation map is not included in Map B8.
• Vegetation units and species displayed as point information: results from field work undertaken by UNDP national and international experts. The field work was focused on areas above the timber line and on areas covered by forest (see also: Mustafa B. 2011, Milbradt 2011).
• Vegetation units displayed as area information results from desk top analysis undertaken by UNDP national experts.
• Preliminary results of field work of the Kosovo Red List Project undertaken by a group of national scientists; final report will be available in May 2012 (Millaku et al. 2011).

Further suggestions for monitoring and/or improvement of data:
For an environmental protection concept of the whole municipality, and especially for a management plan for the National Park, a detailed vegetation map meeting international standards is required (scale 1:25.000); this should also include a description of the plant communities including formative and important species. A detailed floristic inventory is required.

1.9. Biosphere resources - fauna

Contents of the map:

• Distribution of large mammals
• Important bird areas
• Hot spots of butterflies
• Aquatic insects and some other observed animals
• Rivers, creeks and wetlands

The main messages:

General Situation
Due to the high diversity of land uses and landscape structures, the territory of Dragash / Dragaš Municipality provides for a high diversity of habitats for numerous groups and species of animals. Besides the open grass-lands, areas of high forests, coppice forests, all types of wetlands and rocky and gravel areas are of high im-portance.
There are no systematic scientific studies available on the fauna of Dragash / Dragaš. However, data from NGOs, village residents, scattered information from literature and observations made by UNDP experts provide a good basis for an overview of the local fauna.

Mammals:
• Brown Bears (Ursus arctos): One of the highlights of the Sharr/Šar Mountains. Bears breed in forest sites (like the forest east of Bresanë/Brodosavce and Blaç/Blać, in Mount Koritnik or in the Hellenic Beech/fir forest between Restelica/Restelicë and Kruševo/Krushevë). They cross the border in the re-motest parts in the southeast and in the continuation of the Sharr/Šar National Park in the northeast. Bears are rarely observed in the high mountain grasslands and in the centre of the Opojë/Opolje region.
• Lynx (Lynx lynx): The lynx has a similar distribution pattern to the bear in the forested areas and forest borders at higher elevations, and in the borders with Albania.
• Wolves (Canis lupus): found all across the municipal territory
• Chamois (Rupicapra rupicapra): found in higher level ranges and rocky outcrops, and in the scree of subalpine and alpine areas
• Roe Deer (Capreolus capreolus): more or less found across the territory at lower altitudes (comple-mentary with Chamois)
• Wild Pigs (Sus scrofa): share the same area as Roe Deer - closer to agricultural areas

Birds:
NGO Finches provided data on Birds for the years 2004 to 2010, relating to 11 locations in the municipality. A total of 153 bird species have been observed during this period. The individual locations count between 27 and 85 different species. Approximately one third of these species are listed in the various Annexes of the EU Birds Directive (see Table 2 5 in Annex Baseline Maps 2.5). The findings show a high diversity of bird species in the municipality. The areas observed represent the different types of landscapes and habitats present in the municipality.
Fluturat:
40 species of butterflies have been observed so far in high mountain pastures and coppice forests. A pronounced diversity in high mountain pastures and in coppice forests is to notable, out of which 30 species are named either in Annexes II or IV of EU Habitat Directive, or are assessed as “endangered” or “vulnerable” by IUCN (see Table 2 6 in Annex Baseline Maps 2.6).
40 species of butterflies have been observed so far in high mountain pastures and coppice forests. A pronounced diversity in high mountain pastures and in coppice forests is to notable, out of which 30 species are named either in Annexes II or IV of EU Habitat Directive, or are assessed as “endangered” or “vulnerable” by IUCN (see Table 2 6 in Annex Baseline Maps 2.6).
Besides very commonly found species, three very rare species could be identified in the rivers of Dragash / Dragaš:
• Limnephilus petri found in the Brod River is and endemic species of the Balkan Peninsula being pre-sent only in Kosovo (and within Kosovo only in upper reaches of the Brod River) and in Bulgaria.

• Genus Trianodes found in Brezna Lake is the first and the only record of this genus in Kosovo so far.
• A single female specimen of genus Notidobia was found in a small streamlet on the upper side of the waste dump in Buzez/ Buzez village. This specimen belongs most probably to the group of Balkan en-demic species (Notidobia melanoptera, Notidobia bizensis or Notidobia nogradorum).
These relatively few and scarce results of adult aquatic insects in Dragash / Dragaš municipality reveal the very rich and specific fauna of this area. There is a need to collect data on this group of insects more extensively in order to correlate with management and conservation issues.

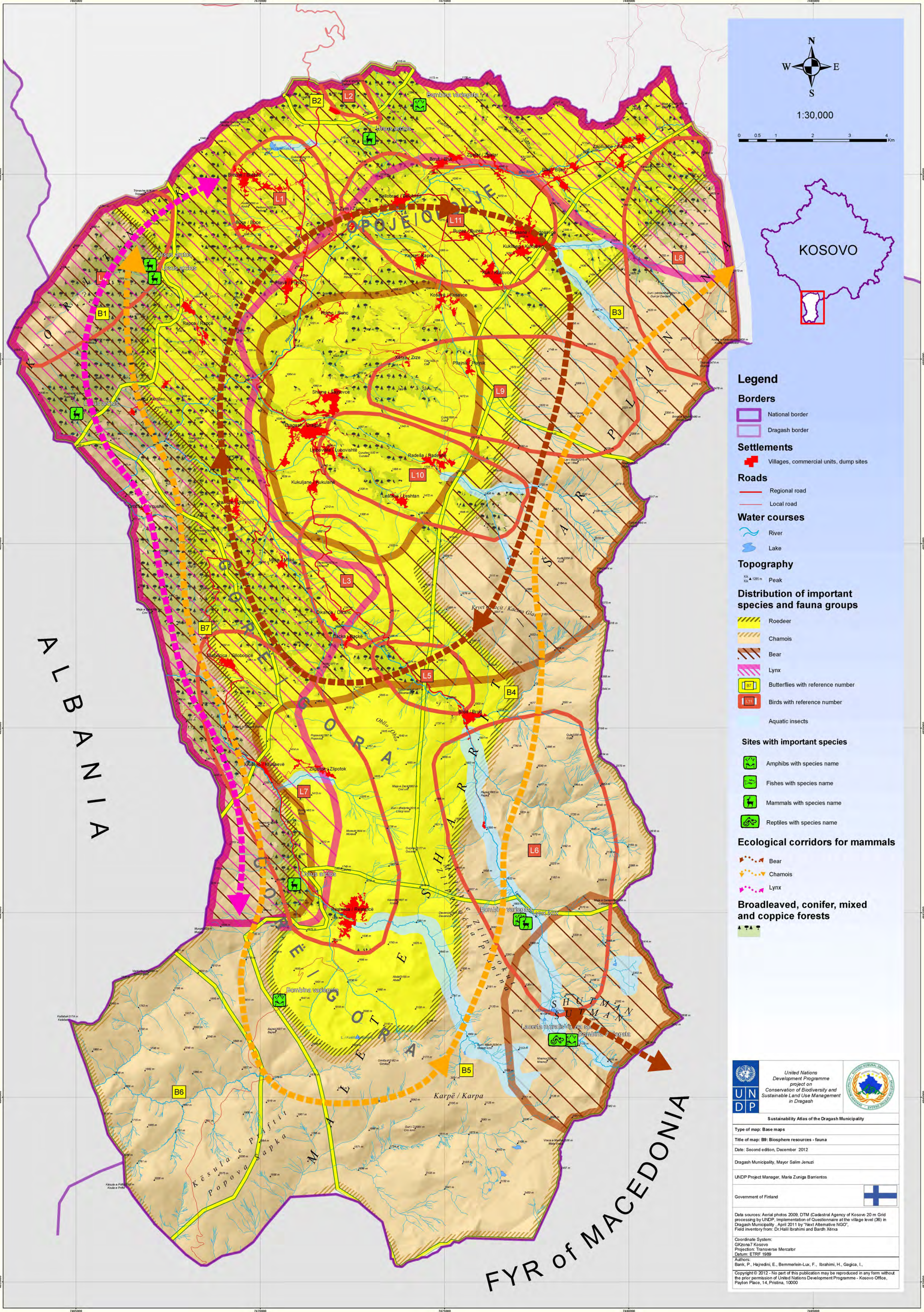
Amphibians and reptiles
5 amphibian (all Annex IV species) and 6 reptile species (5 Annex IV species) have been located. Since there is no systematic inventory for the area, these numbers are only random information. Considerable recordings can be expected from systematic investigation (see Table 2 7 in Annex Baseline Maps 2.7).

Relevance of the information for other assessments:
The information from this map is input for suggesting appropriate land management measures. Furthermore it provides a good orientation for demarcation and zonation of the National Park.

For sustainability considerations this map shows the ecological potential of the Municipality

Data sources, material and reliability:
Village questionnaire (UNDP 2011)
Project studies (Ibrahimi, 2011, FINCHES 2011, Mustafa B. 2011, Milbradt 2011 and Bemmerlein-Lux pers. com.)
See Annex for list of species in Vol. 5 of the Sustainable Development Atlas.
Reliability:
The distribution data was collected in the field and through surveys among local people and hunters. This data is in principal reliable – but for concrete management plans there is a lack of quantitative data.

Further suggestions for monitoring and/or improvement of data:
Although highly relevant for nature protection, amphibians and reptiles are not systematically inventoried.
More systematic studies also for aquatic insects, butterflies, birds, and mammals are necessary for the management plan of the National Park and conservation strategies of biodiversity hotspots outside of the park area.


ALBANIA
FYR of MACEDONIA
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KORITNIK
OPOJË/OPOLJE
GORE/GORA
SHARR/ŠAR PLANINA
MALET E GORËS/GORA
SHUTMAN / ŠUTMAN
Malet e Zlipotokut / Zlipotočka planina
Kësula e Priftit / Popova Šapka
Karpë / Karpa
Kryet e Kaçit / Kacina Glava
Obllo/Oblo
Dragash / Dragaš
Restelica / Restelicë
Brod / Brod
Ursus arctos
Bombina variegata
Lynx lynx
Lacerta muralis
Vipera sp.
B1
B2
B3
B4
B5
B6
B7
L1
L2
L3
L5
L6
L7
L8
L9
L10
L11
Legend
Borders
National border
Dragash border
Settlements
Villages, commercial units, dump sites
Roads
Regional road
Local road
Water courses
River
Lake
Topography
Peak
Distribution of important species and fauna groups
Roedeer
Chamois
Bear
Lynx
Butterflies with reference number
Birds with reference number
Aquatic insects
Sites with important species
Amphibs with species name
Fishes with species name
Mammals with species name
Reptiles with species name
Ecological corridors for mammals
Bear
Chamois
Lynx
Broadleaved, conifer, mixed and coppice forests
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Base maps
Title of map: B9: Biosphere resources - fauna
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Aerial photos 2009, DTM (Cadastral Agency of Kosovo 20 m Grid processing by UNDP, Implementation of Questionnaire at the village level (36) in Dragash Municipality , April 2011 by "Next Alternative NGO", Field inventory from: Dr.Halil Ibrahimi and Bardh Xërxa
Coordinate System: GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors: Bank, P., Hajredini, E., Bemmerlein-Lux, F., Ibrahimi, H., Gagica, I.,
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2. Annex to Volume II Baseline Maps

2.1. Water supply in the villages of Dragash / Dragaš Municipality

Village	Supply	Source	Supplied inhabitants	Future Supply
Bačka / Baçkë	own	Surface Water	100%	
Bellobrad / Belobrad	own	Source	100%	central
Blaç / Bljać	own	Source	100%	
Brezne / Brezna	own	Well	20%	central
Brod / Brod	own	Surface Water	100%	
Bresanë / Brodosavce	own	Surface Water	100%	
Brrut / Brut	own	Well	80%	central
Buçe / Buće	own	Surface Water	100%	
Buzez / Buzez	own	Surface Water	100%	
Dikance / Dikanc	own	Surface Water	100%	
Dragash / Dragaš	central	Surface Water	100%	central
Globočica / Glloboçicë	own	Surface Water	100%	
Kapre / Kapra	own	Well	80%	central
Kosavë / Kosavce	own	Surface Water	100%	
Krstec / Kërstec	own	Well	80%	central
Kruševo / Krushevë	own	Surface Water	100%	
Kuk / Kukovce	own	Surface Water	100%	
Kuklibeg / Kukljibeg	own	Surface Water	100%	
Kukuljane / Kukulanë	own	Surface Water	100%	central
Leštane / Leshtan	own	Surface Water	100%	central
Ljubovište / Lubovishtë	own	Surface Water	100%	central
Mlike / Mlikë	own	Well	20%	central
Orčuša / Orçushë	own	Source	100%	
Pllavë / Plava	central	Surface Water	100%	central
Pllajnik / Plajnik	own	Surface Water	100%	
Radeša / Radeshë	own	Source	100%	
Rapča / Rapçë	own	Well	20%	central
Restelica / Restelicë	own	Surface Water	80%	
Rrenc / Renc	own	Well	80%	central
Shajne / Šajnovce	own	Surface Water	100%	
Vranište / Vranisht	own	Well	30%	central
Xërxe / Zrze	own	Surface Water	100%	central
Zaplluxhe / Zaplužje	own	Surface Water	100%	
Zgatar / Zgatar	own	Well	50%	central
Zlipotok / Zlipotok	own	Surface Water	100%	
Zym / Zjum	own	Surface Water	100%	

Table 2-1: Water supply in the villages of Dragash / Dragaš Municipality

2.2. Data sources water resources Dragash / Dragaš Municipality

Information on map	Origin / Source	Reliability
Natural Resources		
Watersheds and important sub-watersheds	Digitised by UNDP from DTM	Best data available
Rivers, creeks, lakes and springs	According to reliability of DTM which is sufficiently matching with the Topographic Maps (1:25.000)	Best data available According to reliability of DTM which is sufficiently matching with the Topographic Maps (1:25.000)
Wetlands	Digitised by UNDP from aerial photos and topographic maps; Springs from aerial photos, topographic maps and village survey	Best data available; Locations derived from village survey should be checked during field work
Wetlands	Digitised by UNDP from aerial photos	Best data available
Water Supply		
Current water supply installations	Water reservoirs, treatment facility and pipes: Hidroregionji Jugor; reservoirs partly by UNDP experts (Field work) Surface water extraction, drink-ing water wells: UNDP Village Survey 2011 Drinking water extraction from rivers or springs: UNDP Water Master Plan field work, 2012	Best data available; Locations derived from village survey should be checked during field work.
Type of water supply in the villages	Hidroregionji Jugor	Best data available;
Planned water supply system	Hidroregionji Jugor; Municipality	Best data available;
Waste Water Management		
Waste Water Treatment Plant and sewage system	Municipality	Best data available;
Locations of uncontrolled discharge of untreated waste water to rivers and creeks	from UNDP Water Survey, 2011	Locations should be cross-checked and revised during second phase of field work in 2012;
Hydropower		
Planned hydropower project Zhur/Žur	Institute of Spatial Planning	According to official plan
Planned small hydropower plants (SHPP) on Brod and Restelica Rivers		

Table 2-2: Data sources water resources

2.3. Plant communities of Dragash / Dragaš listed in Annex I of EU-Habitat-Directive

Plant community (scientific name)	Description	Habitat-Directive Annex I Type
Wetland vegetation		
Caricetum – different varieties	Caricetum nigrae, Caricetum rostratae salicetosum, Caricetum rostratae-vesicariae: Peat-forming communities developed at the surface of oligotrophic to mesotrophic waters, with characteristics intermediate between soligenous and ombrogenous types.	7140 Transition mires and quaking bogs
Carici-narthecietum scardici	Wetlands mostly or largely occupied by peat- or tufa-producing small sedge and brown moss communities developed on soils permanently waterlogged, with a soligenous or topogenous base-rich, often calcareous water supply, and with the water table at, or slightly above or below, the substratum.	7230 Alkaline fens
Carici-narthecietum scardici Eutrophic vegetation		
Senecio-Rumicetum alpini	Nitrophilous tall herb communities at places in the montane to alpine areas where cattle is resting	Not in Annex I
Shrub vegetation		
Arctostaphylo-Juniperetum nanae	Alpine zone above the last zone of forest. Characteristic species of association are Juniperus nana, Vaccinium uliginosum, Thymus albanus, Nigritella nigra etc.	4060 Alpine and Boreal heaths
Vaccinio-Empetretum hermaphroditi	High mountain dwarf bilberry heaths Vaccinium-dominated dwarf heaths of the sub-alpine belt of southern mountains. With Vaccinium myrtillus, Vaccinium uliginosum s.l. Vaccinium vitis-idaea and, locally, Empetrum nigrum. They are rich in grassland species and often take the appearance of alpine grassland with dwarf shrubs.	4060 Alpine and Boreal heaths - High mountain dwarf bilberry heaths
Vaccinion with V. gaultherioides	Dwarf heaths dominated by Empetrum hermaphroditum, Vaccinium uliginosum, with Arctostaphylos alpina, Vaccinium myrtillus, Vaccinium vitis-idaea and lycopodes	4060 Alpine and Boreal heaths - High mountain Empetrum-Vaccinium heaths
Corylletum avellanae	Species diversity is greater than in the Central European beech woods and the Aremonio-Fagion constitutes an important centre of species diversity	91K0 Illyrian Fagus sylvatica forests (Aremonio-Fagion)
Alpine lawns and rock vegetation		
Drypetum spinosae	The association lies at an altitude over 2000m. Developed in rocky places. This association is poor in species. Most important species Drypis spinosa, Linaria alpina, Festuca picta etc.	8140 Eastern Mediterranean screes
Saxifrageto-Potentilletum apenninae	The association lies in the Sharr/Šar Mountains and Koritnik in limestone rocks. Components of this association are tertiary and relict species. Prominent species are Potentilla speciosa, Potentilla apennina, Saxifraga scardica, Aubrietia gracilis, Minuartia graminifolia	6110* Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi
Saxifrageto-Rumicetum nivalis	Wind edge naked-rush swards Meso-xerophile, relatively closed and unsculptured swards of Kobresia myosuroides (Elyna myosuroides) forming on deep, fine soils of protruding ridges and edges exposed to strong winds in the alpine and nival levels	6170 Alpine and subalpine calcareous grasslands
Juncetum trifidi	Boreo-alpine formations of the higher summits of mountains, with Juncus trifidus, Carex bigelowii, mosses, and lichens. Also included are associated snowbed communities.	6150 Siliceous alpine and boreal grasslands
Natural grasslands		
Different variants the Nardion	Deltoideo-Nardetum, Nardion, (Lino-)Nardetum strictae: Nardus stricta is edificator of the association. Either Hygrophilous perennial tall herb communities of montane to alpine levels of the Betulo-Adenostyletea class or Closed, dry or mesophil, perennial Nardus grasslands occupying siliceous soils in Atlantic or sub-Atlantic or boreal lowland, hill and montane regions. Vegetation highly varied, but the variation is characterised by continuity.	6230* Species-rich Nardus grasslands, on siliceous substrates in montane and sub-montane areas

Armerio-Festucetum variae	Above Pinetum heldreichii typicum	6170 Alpine and subalpine calcareous grass-lands
Carici-Seslerietum latifoliae	Calciphilous stepped and garland grasslands	6170 Alpine and subalpine calcareous grass-lands
Diantho-scardici-Festucetum	Xerothermophile, open, sculptured, stepped or garland grasslands	6170 Alpine and subalpine calcareous grass-lands
Extensive pastures		
Gentiano-Dryadetum octopetalae	Calciphilous stepped and garland grasslands in the highest peaks of Mount Koritnik. Characteristic species are Dryas octopetala, Gentiana verna, Carex leavis, Helianthemum canum. Other important species are Thymus albanus, Edrianthus graminifolius, Scabiosa columbaria, Gentiana kochiana etc.	6170 Alpine and subalpine calcareous grass-lands
Helianthemo-Globularietum bellidifoliae and	Wind edge naked-rush swards - Meso-xerophile, relatively closed and unsculptured swards of Kobresia myosuroides (Elyna myosuroides) forming on deep, fine soils of protruding ridges and edges exposed to strong winds in the alpine and nival levels	6170 Alpine and subalpine calcareous grass-lands
Edraiantho-Elynetum	Species-rich hay meadows on lightly to moderately fertilised soils of the plain to sub-montane levels, belonging to the Arrhenatherion and the Brachypodio-Centaureion nemoralis alliances. These extensive grasslands are rich in flowers and are not cut before the grasses flower and then only one or two times per year.	6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)
Gladiolo-Sanguisorbetum officinalae	Dry, frequently open grasslands on more or less calciferous sand	6120* Xeric sand calcareous grasslands
Coniferous forest		
Abietum borisii-regis	Endemic to the Balkans and in Kosovo is found only in the Sharr/Šar Mountains (in Restelica/Restelicë), lies at an altitude of 1500-1580m. In the eastern exposition. High endemism, characterised by the presence of Abies borisii-regis, Doronicum caucasicum, Galium laconicum, Lathyrus venetus, Helleborus cyclophyllus.	9270 Hellenic beech forests with Abies borisii-regis
Abietum albae koritniensis	Forests of Abies alba or of Abies alba mixed with Fagus sylvatica, Picea abies, Pinus sylvestris or Pinus nigra within the geographical range of Fagion moesiacum forests.	91BA Moesian silver fir forests
Pinetum heldrechii typicum	White-barked pine forests: Local treeline formations of Pinus heldreichii restricted to the southern Balkans, northern Greece and southern Italy, usually open and with undergrowth formed by stripped grasslands on dry, often stony or rocky soils.	95A0 High oro-Mediterranean pine forests
Mixed forest		
Fago-Pinetum heldrechii	White-barked pine forests: Local treeline formations of Pinus heldreichii restricted to the southern Balkans, northern Greece and southern Italy, usually open and with undergrowth formed by stripped grasslands on dry, often stony or rocky soils.	95A0 High oro-Mediterranean pine forests
Riparian forest		
Alnetum glutinosae	Typical for river valleys in terrain which is often flooded and has high humidity. On the tree layer dominates Alnus glutinosa and in shrubs layer are found Euonymus europea, Prunus padus, Viburnum opulus. Herbaceous species are Viola sylvestris, Euphorbia palustris, Teucrium chamaedrys, etc.	91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Pandion, Alnion incanae, Salicion albae)

Birch forest		
Betuletum verrucosae koritniensis	Fagus sylvatica forests. Species diversity is greater than in the Central European beech woods and the Aremonio-Fagion constitutes an important centre of species diversity.	91K0 Illyrian Fagus sylvatica forests (Aremonio-Fagion)
Oak forest		
Lembotropo-Quercetum cerris Quercetum trojanae dukagjini	Developed in Koritnik in an altitude from 300-900m.Geological composition is limestone and pedological cover is red. This association is under the influence of Mediterranean climate that comes from the river valleys of the Drini i Bardh/ Beli Drim. Very much influenced by human factor, so in a significant area instead of Quercus trojana species is developed Carpinus orientalis and Crataegus monogyna. Species characteristic of the association are Quercus trojana dukagjini, Pyrus amygdaliformis, Ruta graveolens, Acanthus balcanicus etc.	Locally defined 9250 Quercus trojana woods
Beech forest		
Fagetum moesiaca montanum	Fagus sylvatica or Fagus moesiaca forests. Fagus sylvatica is accompanied, at the higher altitudes and latitudes, by Abies alba and Picea abies. The forests have, even in the south of their range, a pronounced medio-European character, marked by the frequency of species such as Acer pseudoplatanus, Quercus petraea, Fragaria vesca, & Oxalis acetosella.	91W0 Moesian beech forests
Colurno-Ostryetum carpinifolia	Fagus sylvatica forests with species diversity greater than in the Central European beech woods and the Aremonio-Fagion constitutes an important centre of species diversity.	91K0 Illyrian Fagus sylvatica forests (Aremonio-Fagion)
Hornbeam forest		
Dioscoreo-Carpinetum orientalis	Moesian white oak woods, Thermophilous, sub-Mediterranean Quercus pubescens and Quercus virgiliana woods.	91AA *Eastern white oak woods

Table 2-3: Plant communities of Dragash / Dragaš listed in Annex I of EU-Habitat-Directive

2.4. List of most important and endangered plant species of the Dragash / Dragaš Municipality

Species	Albanian name	Serbian name	English name
Abies alba subsp. borisii-regis	Bredhi i maqedonisë	Makedonska Jela	Bulgarian Fir
Achillea holosericea	Barpezmi i gjithëmëndafshtë		
Colchicum macedonicum	Xhërrokulli maqedon	Makedonski Balućak-Mrazovac	Macedonian saffron
Crepis macedonica	Shmanga maqedonase	Makedonska Čekinjuša	Macedonian hawksbeard
Dianthus scardicus	Karafili i Sharrit	Šarplaninski karanfil	Sharr pink
Draba korabensis	Draba e Korabit		Korab's whitlow
Draba scardica	Draba e Sharrit		Scardica ëhitloë
Drypis spinosa	Dripis		
Erysimum pectinatum			
Festuca koritnicensis	Bishtëpelëza e Koritnikut	Vlasulja Koritnika	Koritnik fescue
Gentiana lutea	Sanëza e verdhë	Srčanik	Yelloë Gentian
Geranium subcaulescens			Dwarf Cranesbill
Juncus triglumis	Kulmaku	Sit	Yosemite dëarf rush
Linaria peloponesiaca	Linaria peloponeze		Peloponesiac Toadflax
Minuartia baldaccii	Minuarcia e Baldaçit		
Pinus heldreichii	Rrobulli	Munika	Bosnian Pine
Potentilla calabra	Zorrëca Kalabreze		Calabrise cinquefoil
Primula halleri	Aguliçe e Hallerit	Hallerov jaglac	Haller's Primrose
Ranunculus demissus var. Graecus Boiss	Zhabina e ulët		
Ranunculus montenegrinus	Zhabinorja malazeze		Montenegro's buttercup
Rhamnus orbiculatus	Pjerrëza rrethore		Buckthorn
Saxifraga scardica	Iriqëza e Sharrit	Šarplaninska kamenika	Scardica saxifrage
Scrophularia aestivalis	Skrofularja e verës		Autumn figëort
Senecio scopolii	Pulithi i Skopolit		
Silene pusilla	Klokëza e vockël	Mala pušina	
Spergularia vellesia subspecies graminea	Spergularia		
Thalictrum alpinum	Taliktri alpin		Alpine Meadow-rue
Thlaspi bellidifolium	Tlaspi gjethebukur	Čestika	Penny-cress
Thlaspi microphyllum	Tlaspi gjethevogël	Mala Čestika	Little leave Penny-cress
Thymus albanus	Listra shqiptare		Albanian thyme
Thymus doerfleri	Listra e Dorflerit		Dorfler thyme
Tozzia alpina	Tocia alpine		Alpine tozia
Triglochin palustris	Triglohini kënetor	Močvarna brula	Marsh Arroëgrass
Valeriana bertisceae	Haraqina e Bertiskut		Bertisce Valerian
Valeriana pancicii	Haraqina e Pancicit	Pančićev odoljen	Pancici Valerian
Veronica saturejoides	Veronika si shtërmen		Savory Leafed Speed Bunar
Viola grisebachina	Vjollca e Grisebakut	Grisebah ljubićica	Grisebach violet

Table 2-4: List of most important and endangered plant species

2.5. Bird species of Dragash / Dragaš listed on the Annexes of EU Bird Directive

Species (ordered according to families)	Species (ordered according to families)
Accipitriformes – Raptorial Birds	Gruiformes – Flufftails and Crakes
Accipiter brevipes	Crex crex
Accipiter gentiles	Rallus aquaticus
Aquila chrysaetos	Passeriformes - Passerines
Aquila heliaca	Anthus campestris
Circus cyaneus	Corvus corone cornix
Anseriformes - Waterfowls	Corvus frugilegus
Anas platyrhynchos	Corvus monedula
Caprimugliformes - Nightbirds	Ficedula albicollis
Caprimulgus europaeus	Ficedula parva
Charadriiformes – Waders and Gulls	Ficedula semitorqua
Tringa totanus	Lanius collurio
Ciconiiformes – Storklike Birds	Lanius minor
Nycticorax nycticorax	Lullula arborea
Columbiformes – Doves and Pigeons	Luscinia svecica
Columba livia	Melanocorypha calandra
Columba oenas	Parus ater
Columba palumbus	Pica pica
Sreptopelia decaocto	Pyrrhocorax pyrrhocorax
Streptopelia turtur	Pyrrhula pyrrhula
Falconiformes - Falcons	Sylvia nisoria
Falco columbarius	Troglodytes troglodytes
Falco naumanni	Turdus merula
Falco peregrinus	Turdus philomelos
Galliformes - Gamefowl	Turdus pilaris
Bonasa bonasia	Turdus viscivorus
Coturnix coturnix	Piciformes - Woodpeckers
Perdix perdix	Dendrocopos leucotos
Tetrao tetrix	Dendrocopos major
Galliformes	Dryocapus martious
Alectoris graeca	Strigiformes - Owls
	Asio flammeus
	Bubo bubo

Table 2-5: Bird species of Dragash / Dragaš listed on the Annexes of EU Bird Directive

2.6. Butterflies species observed in Dragash / Dragaš with endangered or vulnerable IUCN-Status or listed in Annexes II or IV of the EU Habitat Directive

Species (sorted according to Families)	English Name	Albanian Name	Serbian Name	EU-Habitat Directive	IUCN Status
Hesperiidae - Skippers					
Pyrgus andromedae	Alpine Grizzled Skipper	Hesperida alpine	Alpijska hesperida	0	Endangered
Pyrgus sidae	Yellow-banded Skipper	0	Lipicina hesperida	0	Vulnerable
Lycaenidaae – Gossamer-winged butterflies					
Aricia anteros	Blue Argus	0	Alpijski plavac	0	Endangered
Cupido minimus	Little Blue	0	Maleni plavac	0	Vulnerable
Iolana iolas	Iolas Blue	0	Pucavac	0	Endangered
Lycaena dispar	Large Copper	Flutura ngjyrëbakër	Veliki dukat	Annex II, IV	Vulnerable
Maculinea alcon	Alcon Blue	0	Mali pegavac	0	Vulnerable
Maculinea arion	Large Blue	0	Veliki pegavac	Annex II, IV	Vulnerable
Plebeius argyrognomon	Reverdin's Blue	0	Blistavi plavac	0	Vulnerable
Polyommatus eroides	False Eros Blue	0	Planinski plavac	Annex II, IV	0
Pseudophilotes baton	Baton blue	0	0	0	Endangered
Pseudophilotes bavius	Bavius Blue	0	Zagasiti plavac	Annex IV	Endangered
Satyrium acacie	Sloe Hairstreak	Flutura e sallgamit	Mali repkar	0	Vulnerable
Satyrium w-album	White-letter Hairstreak	0	Šumski repkar	0	Endangered
Thecla betulae	Brown Hairstreak	0	Brezov dukat	0	Vulnerable
Nymphalidae – Brush-footed butterflies					
Apatura ilia	Lesser Purple Emperor	0	Mali prelivac	0	Vulnerable
Apatura iris	Purple Emperor	0	Modri prelivac	0	Endangered
Argynnis pandora	Cardinal	0	Pandorina sedefica	0	Endangered
Brenthis ino	Lesser Marbled Fritillary	0	Inova sedefica	0	Endangered
Erebia gorge	Silky Ringlet	0	Zagasita erebija	0	Endangered
Erebia rhodopensis	Nicholl's Ringlet	Flutura rodopense	Rodopska erebija	0	Endangered
Euphydryas aurinia	Marsh Fritillary	0	Mocvarna sedefnica	Annex II	Vulnerable
Limenitis populi	Poplar Admiral	0	Veliki topolnjak	0	Endangered
Nymphalis antiopa	Camberwell Beaty	0	Kraljev plašt	0	Endangered
Satyrus ferula	Great Sooty Satyr	0	Veliki satir	0	Vulnerable
Papilionidae – Swallow-tail butterflies					
Papilio machaon	Swallowtail	Flutura bajrake	Lastin repak	0	Endangered
Parnassius apollo	Apolon	Apollo flutura	Apollo	Annex IV	Vulnerable
Zerynthia polyxena	Southern Festoon	Flutura me ilikë	Uskršnji leptir	Annex IV	Vulnerable
Pieridae – Pierid Butterflies					
Euchloe ausonia	Eastern Dappled White	0	Cipkasti belac	0	Endangered
Pieris brassicae	Large White	Flutura e lakrës	Veliki kupusar	0	Vulnerable

Table 2-6: Butterflies species observed in Dragash / Dragaš with endangered or vulnerable IUCN-Status or listed in Annexes II or IV of the EU Habitat Directive

2.7. Amphibian and reptile species observed in the Dragash / Dragaš Municipality

Species	English Name	Albanian Name	Serbian Name	EU-Habitat Directive	IUCN Status
Amphibians					
Bombina variegata	Yellow-bellied toad	Bretkoca barkverdhë	Žutotrbi mukac	Annex IV	LC-Least concern
Hyla arborea	Tree frog	Bretkoca e drunjve-gargaliqi	Gatalinka	Annex IV	LC-Least concern
Rana dalmatina	Agile frog	Bretkoca e pyllit	Šumska žaba	Annex IV	LC-Least concern
Rana graeca	Greek frog	Bretkoca greke	Grcka žaba	Annex IV	None
Salamandra salaman-dra	Common Fire Salamander	Salamandri zi e verdhë	Šareni daždevnjak	Annex IV	Least Concern
Reptiles					
Anguis fragilis	Slow-worm	Kokëzogëza	Slepić		
Lacerta agilis	Sand lizard	Hardhuca e shpejt	Siva gušterica	Annex IV	
Lacerta muralis	Wall lizard	Hardhuca e mureve	Zidni gušter	Annex IV	LC-Least concern
Lacerta viridis	Green lizard	Hardhuca e gjelbër	Zelembac	Annex IV	
Natrix natrix	Water snake	Gjarpri i barit, bollujca, bollujësa	Belouška	Annex IV	CR-Critically endan-gered
Vipera ammodytes	Viper snake	Neperka	Poskok	Annex II, IV	LC-Least concern

Table 2-7: Amphibian and reptile species observed in Dragash / Dragaš with endangered or vulnerable IUCN-Status or listed in Annexes II or IV of the EU Habitat Directive

United Nations Development Programme
Conservation of Biodiversity and Sustainable Land Use Management in Dragash/Dragaš

EMBASSY OF FINLAND
PRISTINA

Volume III: Assessment

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1. Assessment maps

The maps of step 2 show the results of an assessment process for the key fields. They depict the zones with resource potential or those with highly sensitive resources. Specifically, they are concerned with the following questions:
- What are the present conditions of the resources?
- What problems and constraints exist and at which sites or locations are they most pressing?
- How sensitive are the resources against adverse impacts or when they are utilised?
- What are the development opportunities still available and where?

The mapped challenges, potentials and development problems are the input for the next steps, the guidance maps and the strategic basis for the Municipal Development Plan.

A1	Assessment of biodiversity
	A1.1 Assessment of biodiversity – vegetation and flora
	A1.2 Assessment of biodiversity - fauna
A2	Extension of Sharr/Šar Mountain National Park
	A2.1 Extension of Sharr/Šar Mountain National Park - ownership structure
	A2.2 Extension of Sharr/Šar Mountain National Park - topographic map
A3	Assessment of water resources - regeneration, threats, and quality
A4	Assessment of natural hazards
	A4.1 Assessment of natural hazards - erosion risk
	A4.2 Assessment of natural hazards - avalanche risk
	A4.3 Assessment of natural hazards - landslide risk and flood-prone areas
A5	Assessment of agriculture and forest
	A5.1 Assessment of forest and agriculture - condition of forest
	A5.2 Assessment of agriculture and forest - forest functions
	A5.3 Assessment of agriculture and forest - productive capacity of soils
	A5.4 Assessment of agriculture and forest - livestock and suitability for crops
A6	Assessment of solid waste
A7	Assessment of cultural heritage and tourist potential
A8	Assessment of health, medical services, and civil protection
A9	Assessment of education
A10	Assessment of economy, infrastructure, and energy
	A10.1 Assessment of economy, infrastructure, and energy – roads and transportation
	A10.2 Assessment of economy, infrastructure, and energy – energy
	A10.3 Assessment of economy, infrastructure, and energy – businesses

Table 1 1: List of assessment maps

1.1. Assessment of biodiversity (A1)

1.1.1. Assessment of vegetation and flora (A1.1)

Contents of the map:

Ecologically important habitats and plant species (as background the land use is used). In detail:
• The mapped vegetation that is mentioned in Annex 1 of the European Habitat (see volume II of the SDA, section 2.8, Table 12: Plant Communities of Dragash / Dragaš listed in Annex I of EU-Habitat-Directive (EU 2007)
• Specific area with high potential for plant biodiversity (coppice forest, other old forests with natural regenera-tion, sparsely vegetated areas and high mountain rocks and wetlands)
• Habitat points with an evaluation of the observed plants with their protection categories according to recent studies in Dragash/Dragaš and in terms of international settings. Points of species include those that are:
o In one of the EU annexes
o IUCN categories
o In some Kosovo text with protection category
o Endemic (Kosovo, Balkan, SE Europe)

The main messages:

The map highlights the existing status (rareness) of mainly forests, rangelands, and wetlands. It allows the definition of potential protected areas requiring protection in order to preserve their ecological functions and services according to the Law of Nature Protection (i.e. strict nature reserve, special areas – SPAs and SAC, nature monuments and protected landscapes) and the zoning of the National Park as part of the National Park Management Plan.
The pattern of the map clearly shows that most of the outstanding ecological areas are within the proposed extension of the Sharr/Šar Mountain National Park. It confirms the findings of (and adds considerable detail to) the Preliminary identification of Natura 2000 Sites in Kosovo (Mustafa et al. 2009).
The coppice forests and extensive pastures and dry grasslands also have a very high value for biodiversity. However, these vegetation types are dependent on (traditional) land use management.
The vegetation and floristic resources are part of the information for an overall conservation strategy and will be combined with the faunistic assessment and ecological functions of forests to provide overall guidance for nature conservation.
The definition of different kinds of protected areas according to the Law of Nature Protection and the zoning of the Sharr/Šar Mountain National Park and can be based on this assessment.

Habitat types protected acc. to EU Flora-Fauna-Habitat Directive			
Vegetation	Annex I	Annex I* (Priority habitats)	Total in ha
Forests	2.933,9	397,1	3.331,1
In % of the Municipality	6,7%	0,9%	7,6%
Grasslands	1.483,8	13,9	1.497,7
In % of the Municipality	3,4%	0,0%	3,4%
Pastures	24,7	611,3	636,0
In % of the Municipality	0,1%	1,4%	1,5%
Rocky areas	597,7	9,1	606,9
In % of the Municipality	1,4%	0,0%	1,4%
Shrub and/or herbaceous vegeta-tion	107,5		107,5
In % of the Municipality	0,2%	0,0%	0,2%
Wetland, Water Bodies	66,5		66,5
In % of the Municipality	0,2%	0,0%	0,2%
Total area mapped	5.214,1	1.031,4	6.245,6
In % of the Municipality	12,0%	2,4%	14,3%

Table 1 2: Area and percentage of habitat types mapped, which are protected according to EU Flora-Fauna-Habitat Directive

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KOSOVO

Legend

Borders

- National border
- Dragash border
- National Park "Sharri"

Settlements

- Build up area

Roads

- Regional road
- Local road

Water courses

- River
- Lake

Topography

- Peak

Assesment of vegetation

Sites of important plants spacies

- 1-2 rare or endemic plant species
- 2-3 rare or endemic plant species
- More than 6 rare or endemic plant species
- Big old tree

Vegetation associations of high importance

(Associations listed in EU flora - fauna - habitat Directive, Annex I, endemic in Kosovo or the Balkans, or glacial or tertiary relic, or rare)

- Areas mapped by experts
- Locations mapped by experts

Natural vegetation above the tree line

Specific areas with high potential for plant biodiversity

- Forests with natural regeneration
- Coppice forests or shrubland
- Semi-natural open vegetation
- Characterized by rocks and gravel

Vegetation types based on land uses

- Arable land, permanent crops
- Heterogeneous agricultural areas
- Pastures
- Forests
- Shrub and/or herbaceous vegetation associations
- Open spaces with little or no vegetation
- Wetlands

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A1.1: Assessment of biodiversity – vegetation and flora

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources:Spot checked species and vegetation samples (2011, N.Sh. "Arneni", Prof. B. Mustafa, Dr. A. Milbradt, Prof. F. Millaku), forest inventory for public and private forest (2011), real land use from aerial photo interpretation (Aerial photos 2009), DTM (Cadastral Agency of Kosovo, 20m grid processed by UNDP

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Bemmerlein-Lux, F., Ibrahimi, H., Hajredini, E., Gagica, I.,

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Specific areas with high potential for plant biodiversity	Surface outside habitat types listed in Annex I EU Flora-Fauna-Habitat Directive (in ha)	In % of Dragash / Dragaš Territory
Forests with natural regeneration	1.023,4	2,3%
Coppice forests and shrubland	4.785,2	11,0%
Semi-natural open vegetation	17.071,2	39,2%
Characterised by rocks and gravel	694,6	1,6%
Total area with high potential	23.574,5	54,1%

Table 1 3: Area and percentage of vegetation types / land uses with high potential for plant biodiversity

Reference list	No. of plant species found in Dragash/Dragaš territory listed
IUCN Red List (categories near threatened or vulnerable)	2
EU Flora-Fauna-Habitat Directive – Annex II	4
EU Flora-Fauna-Habitat Directive – Annex V	2
Recommended for upcoming Kosovo Red List	119
Total no. of plant species identified during field work	438

Table 1 4: Numbers of important plant species

Data sources, material and reliability:

Mustafa B. 2011 dhe 2012, Arneni 2011, Millaku F. et al. 2011, Mustafa B. dhe H. Ibrahimi 2009, Pierre Galland et al. 2010, EU 2007, Mustafa B. et al. 2009

Further suggestions for monitoring and/or improvement of data:

Restrictions:

The systematic investigation covered only some parts of the Municipality with a focus on the subalpine and alpine region.

The spatial information about vegetation types (Rexhepi 1994) was lost during the conflict. Despite of the need for scientific investigation of the whole Municipality, the findings are sufficient to underline the extraordinary biodiversity of this part of the Sharr/Šar mountain chain.

For an environmental protection concept of the whole municipality, especially for a management plan for the National Park, a detailed and complete vegetation map (scale 1:25.000) would contribute additional relevant details of populations and their distribution.

1.1.2. Assessment of biodiversity - fauna

Contents of the map:

The map considers the distribution of animals with an evaluation of their protection categories (endemism, rareness) according to recent studies in Dragash/Dragaš and in terms of international settings.

- Bear, Lynx and chamois habitats and relevant ecological corridors
- Birds, aquatic insects, butterflies
- Other species (no systematic inventories)
- Areas with a structural diversity relevant for a high faunistic biodiversity such as extensive grassland in the subalpine and alpine level for butterflies and other insects, areas for highly specialised species like scree and rock formations, and high structural diversity like multi layered forests and/or open land with hedges, single trees and terraces.

The main messages:

About 94% of the municipality provides habitats for mammals, birds and butterflies according to the European Habitat Directive (including the Birds Directive – EU 2007 and 2009). Apart from the alpine habitats for Chamois, the subalpine, high mountain forests, and the ecotone of the forest-grassland transition are ecological corridors for lynx, bear, and wolf connecting the mountain ranges of the Sharr/Šar Mountain National Park with the mountains of FYR Macedonia and Albania. It confirms the findings of (and adds considerable detail to) the preliminary identification of Natura 2000 Sites in Kosovo (Mustafa et al. 2009).
The faunistic resources are part of the information that forms the basis of the proposal to extend the National Park and the future definition of different kinds of protected areas and species according to the Law of Nature Protection (strict nature reserve, special areas – SPAs and SAC, nature monuments and protected landscapes). Ecological corridors play an important role in allowing free movement of species from one site to another and constitute part of the existing ecological network.

Reference list	Big mammals	Birds	Reptiles	Amphibians	Butterflies	Aquatic invertebrates
IUCN Red List (categories near threatened or vulnerable)	4	2	[1]		26	
EU Flora-Fauna-Habitat Directive – Annex II	4		2		4	
EU Flora-Fauna-Habitat Directive – Annex IV	1		4	5	3	
EU Birds Directive (Annex I)		33				
Rareness in Kosovo (Rare, threatened or endangered)	1	30[2]		12	23	3[3]
Protected by Kosovo Laws	2					
Total no. of species identified 2011/12	5	154	8	5	44	6

Table 1 5: Number of animal species recorded within the Municipality during the studies 2011/12

[1] Critically endangered
[2] rare
[3] Very rare species, 2 of them most probably new for Kosovo

Data sources, material and reliability:

Mustafa B. and H. Ibrahimi 2009, Pierre Galland et al.2010, FINCHES (NGO) 2011, Ibrahimi H. 2011a, Ibrahimi H. 2011b, EU 2007 and 2009, Strauss, A. and Pezold, T. (compilers) (2009), Mustafa B. et al. 2009

Further suggestions for monitoring and/or improvement of data:

Restrictions:

The faunistic data is incomplete because no systematic inventories exist. While acceptable data exists for large mammals according to village surveys and information from the National Park Directorate (and from NGO Finches for birds), hardly any locatable information (nor species' lists) exist for reptiles, amphibians, small mammals, fish and insects. It is expected that the area contains considerable potential for the discovery of further endangered species

B2/No.1/1
L2-Kroi i hajdutit/No.32/13
FB1/1
FS2/1
L1-Brezna/No.85/25
L11-Bresanë/No.72/24
L4-Koritnik/No.33/15
FS5/1
FS6/1
B1/No.5/4
L8-Limth/No.73/27
B3/No.10/9
L9-Pllajnik/No.49/22
L10-Radesha/No.40/18
B7/No.1/1
L5-Brod/No.47/17
B4/No.13/9
L7-Restelica/No.54/16
FS3/1
L6-Shutman/No.33/15
AM49/1
AM50/1
AM21/1
B5/No.16/10
AM58/1
AM58/1
AM59/1
B6/No.6/5

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KOSOVO

Legend

Borders
- National border
- Dragash border

Settlements
- Villages, commercial units, dump sites

Roads
- Regional road
- Local road

Water courses
- River
- Lake

Topography
- Peak

Areas with high habitat potential for fauna
- Extensive grasslands for butterflies and other insects
- Habitat for highly specialized species
- High structural diversity
- Areas above tree line

Habitats of various fauna groups
- Habitats of mammals protected according to European Habitat Directive
- Bird's areas with total no. of species / no of species protected according to EU-Birds Directive
- Butterfly areas with total no. of species / no. of species listed in IUCN Red List
- Species location by experts with identifier
- River strips with populations of rare aquatic insects

Ecological corridors for mammals
- Bear
- Chamois
- Lynx

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A1.2: Assessment of biodiversity - fauna

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial photos 2009, DTM (Cadastral Agency of Kosovo 20 m Grid processing by UNDP, Implementation of Questionnaire at the village level (36) in Dragash Municipality , April 2011 by "Next Alternative NGO",
Field Inventory from: Dr.Halil Ibrahimi and Bardh Xërxa

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Bemmerlein-Lux, F., Ibrahimi, H., Hajredini, E., Gagica, I.,

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1.2. Sharr/Šar National Park (A2)

Contents of the map:

• Ownership structure
• Topographic map of Dragash/Dragaš Municipality with the border of the Sharr/Šar National Park

The main messages:

The Sharr/Šar National Park in Dragash/Dragaš covers 24.206 ha (55,5% of the Municipality's territory). Outside of the park will be 19.375 ha (44,5%). There is no arable land within the park (see Figure 1 4).
• 20.917 ha of the National Park are high mountain and alpine areas (higher than 1.650 m) and by nature only suitable for extensive grazing, forest and non-wood product collection and tourism.
• 2.671 ha are between 1.350 and 1.650 m of altitude suitable for extensive pasture management and
• 563 ha below 1.350 m are near watercourses, forest or land that is not suitable for agriculture.
• For 59 ha information on altitude is not available.
All possible uses and restrictions inside the park and its buffer zone have to be defined in a separate manage-ment plan.
The law on the National Park "Sharri", is declared on December 2012 by Assembly of the Republic of Kosovo).
The border is used in all assessment maps to provide the spatial information for assessing the influence of the National Park.
The ownership structure of the park is 82,8% (= 20.033 ha) former Socially Owned Enterprise (SoE) owned land, 11,5% (=2.794 ha) public land, 3,5% (=841ha) private land, and for 2,2% (=539 ha) of the parks territory are no cadastral data available

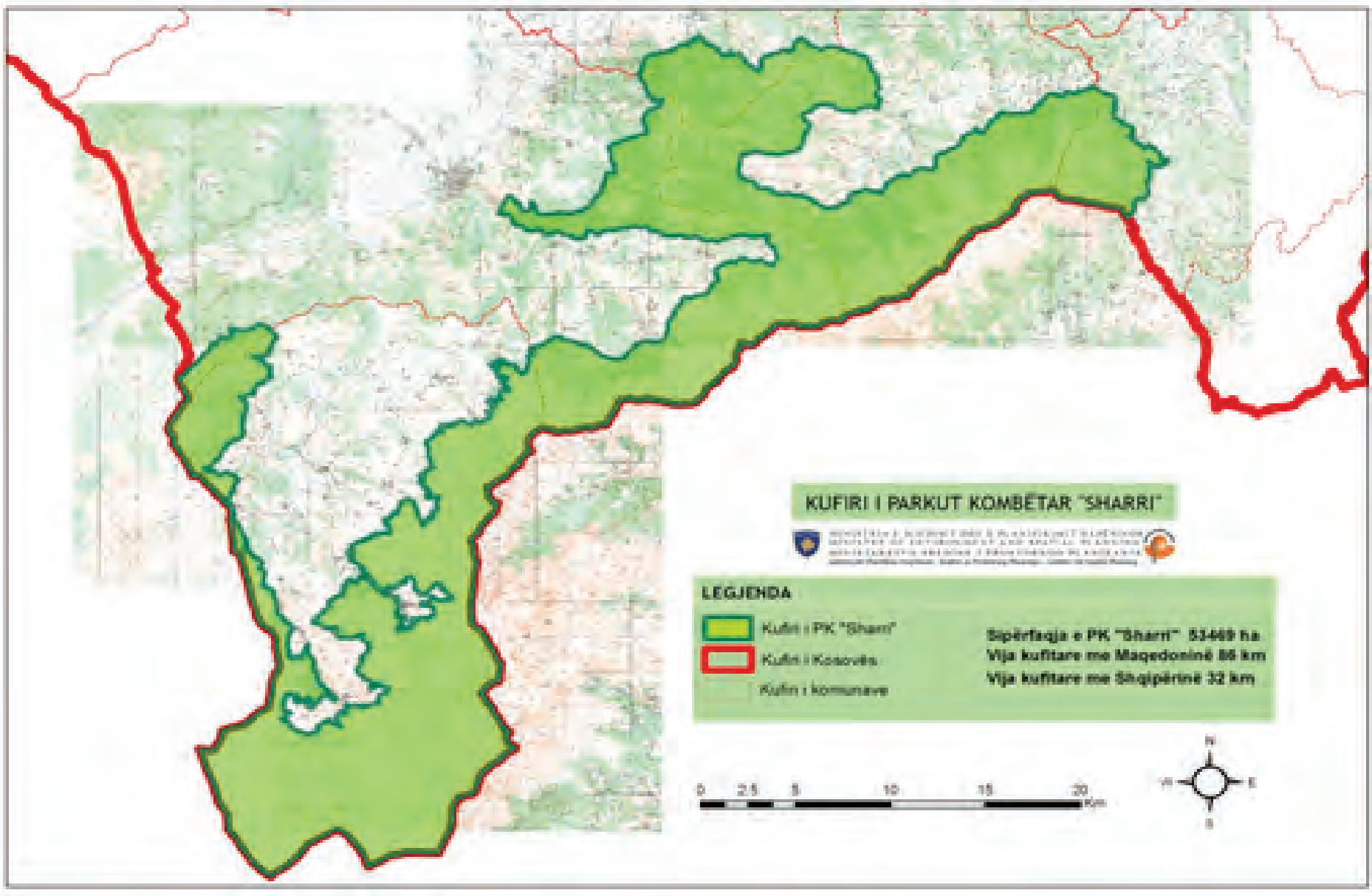

Figure 1 3: Sharr/Šar Mountain National Park border (Republic of Kosovo 2012)

Data sources, material and reliability:

Criteria for definition of the National Park Boarders (Bank et al. 2011):
The core area was identified according to its natural and landscape values and features, in addition to cadastral and property information and the latest aerial photos. In order to establish a clear and unambiguous border, determination has been undertaken at a scale of 1:5.000 applying the following criteria:
(1) Core area of the National Park is formed by the SoE owned land (Sharr Prodhimi/Šarproizvod) and connected public forest areas / public land. These areas also have high biodiversity and nature protection value.
(2) Additional areas are included in the National Park when one or more of the following pre-conditions are fulfilled:
a) Known or probable hot-spots of biodiversity or high natural and landscape values outside the areas mentioned under (1)
b) Private properties surrounded by areas under (1) are included.

Further suggestions for monitoring and/or improvement of data:

Restrictions:

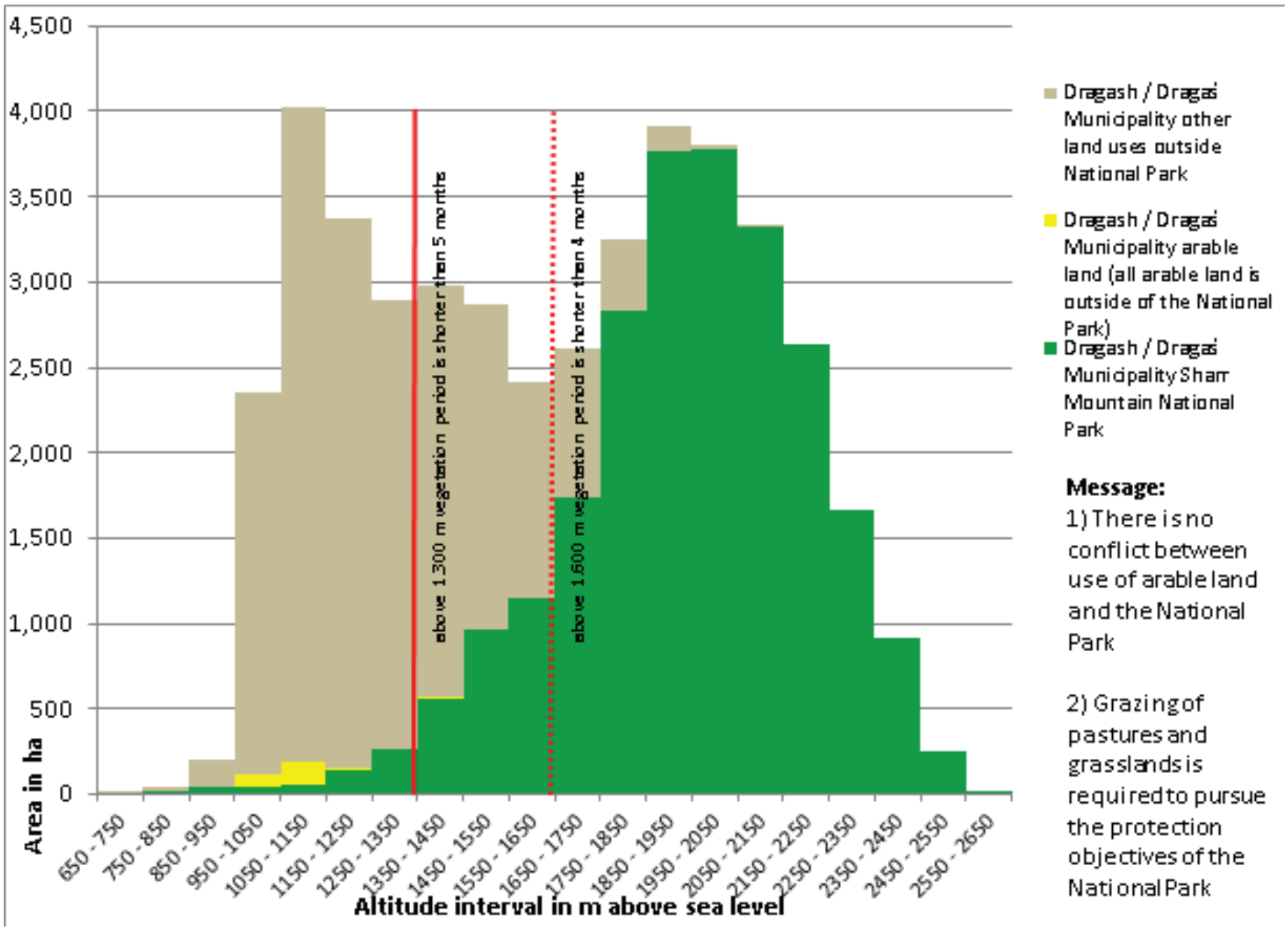

Figure 1 4: Area inside and outside the planned Sharr/Šar Mountain National Park in Dragash / Dragaš Municipality

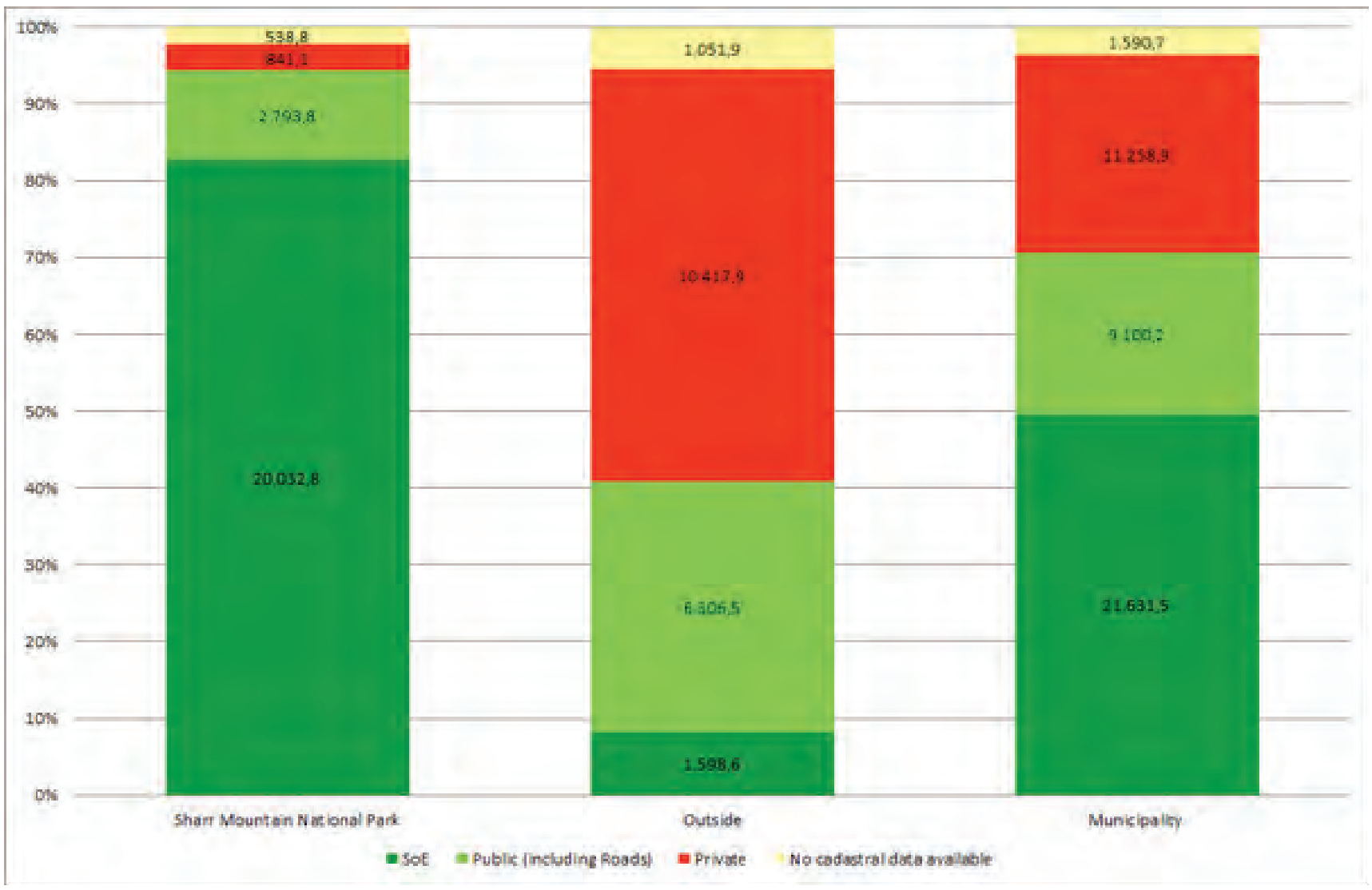

Figure 1 5: Ownership structure inside and outside Sharr/Šar Mountain National Park in Dragash / Dragaš Municipality

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Legend

Borders

- National border
- Dragash borders
- National Park “Sharri”

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A2.2: Border of National Park "Sharri" in Dragash Municipality - Topographic map

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial photos 2009 , DTM (Cadastral Agency of Kosovo 20 m Grid) processing by UNDP, Topographic map

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

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KOSOVO

Legend

Borders

- National border
- Dragash border
- Cadastral zone
- National Park "Sharri"

Settlements

- Build up area

Roads

- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel

Water courses

- River
- Lake

Topography

- Peak

Ownership of land

- Socially owned land inside proposed Sharr Mountain National Park
- Public property and roads inside proposed Sharr Mountain National Park
- (Most probably) private property inside proposed Sharr Mountain National Park
- No cadastral data available

Hiking

- Biking route
- Hiking trail

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of Map: Assessment maps

Title of Map: A2.1: Sharr National Park-ownership structure

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Cadastral Agency of Kosovo, Municipality, Draft border of National Park developed by MoEF and UNDP

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini E., Ibrahimi, H., Bemmerlein-Lux, F., Gagica, I.,

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1.3. Assessment of water resources

1.3.1. Water regeneration, threats and quality (A3.1)

Contents of the map:

The status of water resources, their quality and threats
• Watershed and sub-watershed boundaries, rivers and creeks, lakes
• Areas relevant for protection, regeneration and storage of water resources (wetlands, forests, buffer zones)
• Quality of surface water (biological quality, water analysis (BOD) Kosovo Institute of Health 2012)
• Rivers/rivulets with insignificant or no water flow in dry years
• Threats to quality and quantity of water resources

The main messages:

This map contains those features of the municipality's surface water resources that are relevant for sustainable development. "Ecologically important areas" related to wetlands/open water cover 1.892 ha (4,3%) of the Dragash/Dragaš area. According to Article 55 of the Law of Nature Conservation the protection of wetlands is stated as:
1. The wetlands including waters, in the meaning of this Law represents the nature values and for this they should be conserved in a natural or in a near nature state.
2. For the case of wetlands protection, including waters which are not regulated by this Law, shall apply the provisions of special acts.
3. Any natural lake and pond, nearby the embankments larger than 0, 01 ha, natural and artificial marsh measuring more than 0,25 ha, spring and ravines in riparian of two (2) meters, in the meaning of this Law represent the ecologically important area.
The map includes areas that are geologically suitable for regeneration and storage of water resources, all forests as well as all surface waters with a buffer of 20 m (see Table 1 6). The planned subalpine and alpine region of the National Park are especially important for clean water supply.

Water quality:

Two exemplary field surveys using a biological indicator system - one conducted during the wet season and one during the dry season - showed that 36% of the 45 sampled sites had fair to very poor quality and 64% excellent to good quality in the wet season. The BOD measurements from the Kosovo Hydro-meteorological Institute 2012 confirm the integrated water quality assessment (see Ibrahimi 2011b and 2012 and UNDP, 2012b) (see Table 2 3).
• Opojë/Opolje region: Pollution by sewage is significant. River strips downstream from settlements are generally polluted by organic load from those settlements. The most severe pollution can be observed in the Pllava River downstream from the village of Zaplluxhe/Zaplužje up to the last sample point downstream of Rrenc/Renc. The Waste Water Treatment Plant currently under construction downstream from Kosavë/Kosavce village will only reduce additional incoming load to the Pllava River from Kapre River. This might positively affect the water quality of the Pllava River downstream of Zym/Zjum village.
• Brezna/Brezne does not have a direct water-carrying body. The water drains into Lake Brezna and from there drains through the karst to the Prizren River basin.
• Gora/Gorë Region: The Restelica River is also significantly polluted. However, self-purification results in good water quality from Kruševo/Krushevë downstream. The Brod River has very good to good quality.
• During field surveys on water resources undertaken by UNDP in spring 2011, uncontrolled discharge points of waste water to the rivers were mapped. Some of these belong to companies releasing untreated waste water to the surface water bodies. These locations are marked.
• Most of the river stretches from the settlements and downstream are polluted by solid waste. Rehabilitation is required for heavily polluted river stretches. Rehabilitation is only sustainable if mechanisms are developed to prevent any further pollution.
• In corridors with high soil erosion potential along rivers there is a threat of pollutants (agrochemicals) and nutrients draining to the rivers. Buffer zones with undisturbed vegetation and erosion control should be in-stalled.
• Septic tanks, more small effluent treatment plants and managed sewer systems are the requirements for reducing pollution. This refers not only to private households but especially to small industry (REMATEX wool factory in Dragash/Dragaš town, MEKKA meat factory in Pllavë/Plava and all car repair, car wash sites and petrol stations).

Data sources, material and reliability:

• Locations of water quality assessments for biological and chemical parameters: Table 2 3, Table 2 4 and Table 2 5, in Annex 2.1
• Ibrahimi, 2011b and 2012
• Field survey of springs and water sources
• UNDP, 2012b
• Kosovo Hydro-meteorological Institute, 2012

Further suggestions for monitoring and/or improvement of data:

Since the competent authorities have not provided any spatial data (and environmental impact assessments) of the planned small hydropower projects, this planning data is not included. Any divergence of water may reduce the legally required biologically minimum flow in the dry seasons. This data, as well as average water flow / month, should be added to the information base.

	Area in ha	In % of Dragash/Dragaš Municipality
Rocks with potential for ground water	11.482 ha	26,5%
Wetlands	1.889 ha	4,4%
Forests with water regulation function	2.200 ha	5,1%

Table 1 6: Important areas for water regeneration

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KOSOVO

Legend

Borders

- National border
- Dragash border

Settlements

- Build up area

Roads

- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel
- Agricultural paths and roads
- Forest paths and roads
- Foot paths

Water courses

- River
- Lake
- Watershed e.g. Drini i Bardhë
- Sub-watershed e.g. Plava river

Topography

- Peak

Areas relevant for protection, regeneration and storage of water resources

- Regeneration and storage of water resources: Rocks with potential for groundwater, wetlands, forest with function for regeneration and regulation of water resources (Regeneration and storage
- Protection of water resources: all forests
- Protection of surface water bodies: 20m buffer zone along permanent and temporary water bodies
- Areas with very high to high soil erosion risk within a 100m buffer zone along permanent and temporary water bodies

Quality of surface water (UNDP Survey)

Survey 2011	Survey 2012
Excellent	Excellent
Very good	Very good
Good	Good
Fair	Fair
Fairly poor	Fairly poor
Poor	Poor
Very poor	Very poor
	Insignificant ammount of standing water
	No water at all

Threats for quality and quantity of water resources

Mostly uncontrolled discharge of waste water and dumping of solid waste

- Uncontrolled discharge of waste water into surface water bodies
- Illegal dump sites, threat for ground and surface water bodies
- Official land fill site
- Cattle enclosures and shepherds installations, potential threat for ground and surface water bodies
- Companies generating waste water with high organic load, potential threat for surface water bodies

Water Analysis performed by the Institute of Health 2012

- BOD less than 2,0 mg/l, clean
- BOD between 2.1 and 8,0 mg/l, moderately polluted
- BOD between 8,0 and 25,0 mg/l, BOD for efficiently treated municipal waste water
- BOD between 25,0 and 125,0 mg/l, polluted
- BOD more than 125,0 mg/l, heavily polluted

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map A3.1 Assessment of water resources – resources and their quality

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial photo interpretation by UNDP, field observations by UNDP team, Municipality

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Ibrahimi, Halil., Bemmerlein-Lux, F., Gagica, I.,

The competent authorities did not provide any spatial information related to Small Hydro Power projects currently discussed within Dragash / Dragas Municipality

PROJEKTOPOLUE

ALBANIA

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1.3.2. Water supply and threats (A3.2)

Contents of the map:

Highlighting quality of water supply and threats
• Current and planned water supply installations (extraction points, reservoirs, springs)
• Sensitive zones for water supply (such as abstraction points and their buffer zones)
• Threats of quality of water supply (compliance with standards)
• Waste water management

The main messages:

There is one water treatment facility in the Municipality (in Dragash / Dragaš town). A new facility is planned (also for Dragash / Dragaš town).

Waste water installations:
14 (39%) of Dragash/Dragaš municipality's villages have a sewage system, 14 are not connected to a sewer system and 8 are only partially connected. 31 of the villages (86%), irrespective of whether they have full, partial or no sewage connection, report problems (UNDP 2012: Field survey).
The villages that are not connected are: Bellobrad/Belobrad, Blaç/Bljać, Bresanë/Brodosavce, Brezne/Brezna, Brod/Brod, Buçe/Buće, Buzez/Buzez, Dikance/Dikanc, Dragash/Dragaš, Globočica/Gllboçicë, Ljubo-vište/Lubovishtë, Mlike/Mlikë, Orčuša/Orçushë, and Xërxe/Zrze. The number of households without sewage connection is therefore 2476, around 39% of the municipality population (13,084 persons).
The villages that are partially connected are: Brrut/Brut, Kosavë/Kosavce, Krstec/Kërstec, Kuk/Kukovce, Ku-kuljane/Kukulanë, Pllajnik/Plajnik, Pllavë/Plava and Rapča/Rapçë. This affects around 20% of the municipal population (6640 inhabitants; 1251 households).
Waste Water Management is almost absent in Dragash/Dragaš Municipality. Domestic waste water is discharged to surface water or groundwater without treatment (see map/Figure 1 8 for mapped discharge points). The main pollutants of concern include organic and inorganic pollutants, nitrogen and phosphorus compounds, heavy metals and pathogenic bacteria and viruses. Organic pollutants include organic solvents, cleaners and degreasers and other toxic organics.
Currently a waste water treatment plant is being constructed at Kapre River, downstream from the village of Kapre/Kapra. The villages of Kuk/Kukovce, Kosavë/Kosavce, Buzez/Buzez and Kapre/Kapra will be connected to this facility, which will serve four out of 27 villages, with a total of 3335 (2011) inhabitants or approximately 10% of the population of the municipality.

For drinking water supply:
• Abstraction points for drinking water (160 identified for the Water Master Plan) need at least a buffer zone of 300 m that prevents direct pollution and disturbance of the sources.
• 3 extraction points of river water for drinking water supply in the Opojë/Opolje Region need special attention for protection against pollutants in their catchment areas.
• The drinking water is stored in reservoirs. The quality of these reservoirs was examined during a field survey (UNDP, 2012b). 18 out of 66 reservoirs are not compliant with microbiological and/or chemical standards in Kosovo (see Table 1 7 and Table 2 4).

Village	Non compliance
Bellobrad / Belobrad	3 of 12 are non-compliant with Kosovo standards
Dragash / Dragaš	1 nga 1
Kosavë / Kosavce	3 nga 4
Kuklibeg / Kukljibeg	1 nga 1
Kukuljane / Kukulanë	1 nga 1
Leštane / Leshtan	1 nga 1
Zlipotok / Zlipotok	1 nga 3

Table 1 7: Non-compliance of water quality in reservoirs

Data sources, material and reliability:

• Locations of water quality assessments for biological and chemical parameters: Table 2 3, Table 2 4 and Table 2 5, in Annex 2.1
• UNDP 2012: Field survey of springs and water sources
• UNDP, 2012b
• Kosovo Hydro-meteorological Institute, 2012

Further suggestions for monitoring and/or improvement of data:

Water monitoring throughout Kosovo is poor and there is no proper hydrological data. The data for specific pollutants with pollutant concentrations and discharge information is not available.

[4] Data from Village Survey Results, based on official population estimates from 2008.

1.4. Assessment of natural hazards (A4)

1.4.1. Erosion risk (A4.1)

Contents of the map:

The map depicts the erosion risks based on the sensitivity of soils. Included are potentially unstable soils along roads (using the width of the road). The zones of soil erosion risk are a function of:
- soil types and texture,
- precipitation,
- slope properties,
- current land use management, and
- vegetation cover.

The main messages:

The map allows identification of zones in need of soil stabilisation measures and appropriate land manage-ment/ land use forms. Taking erosion risk into consideration is especially relevant for agriculture and pasture management and for any construction activity. The assessment should have consequences for the prevention measures of road repair and construction, and for the planning of reforestation activities.
The main agricultural areas of Opojë/Opolje exhibit only low to medium risk of erosion. However, careful man-agement of intensive pastures and arable fields is required. This includes the maintenance/preventing destruction of terraces and hedges in land used for agriculture. Soil erosion risk is equally low in the high elevated grasslands of the Sharr/Šar Mountains which are characterised by slight slopes. The main areas of very high soil erosion risk are located along the steep slopes of the valleys of the Sharr/Šar Mountains and at Mount Koritnik.
Figure 1 10 shows that soil erosion risk does not depend significantly on the altitude of the terrain. However, in the arable areas below 1.300m above sea level high and very high soil erosion risk is slightly lower than in the more elevated areas. Figure 1 11 shows, that within the cadastral zones of Bačka / Bąçkë, Brod / Brod, Krstec / Kërstec, Orčuša / Orçushë, Radeša / Radeshë, and Rapča / Rapçë soil erosion risk is highest with a total share of very high and high risk areas in more than 60% of the cadastral zone; the average for the municipality is 53,4% of very high and high risk areas. On the other hand over 70% of the cadastral zones of Bellobrad / Belobrad, Buzez / Buzez, Dragash / Dragaš, Kapre / Kapra, Pllavë / Plava, and Zym / Zjum only exhibit moderate or low soil erosion risk.
The villages of Restelica / Restelicë, Pllavë / Plava, Blaç / Bljać, Brrut / Brut, Globočica / Gllboçicë, and Radeša / Radeshë are prone to soil erosion in their close vicinities. This fact should be considered during further spatial development of these settlements.

Data sources, material and reliability:

The model is outlined in the “Model for erosion risk“” (Annex 2.2) (EULUP 2011)

Further suggestions for monitoring and/or improvement of data:

The quality of the risk analysis is highly dependent on the reliability of the input data. In particular, the soil map available is of limited reliability due to its small scale.
Analysis could be significantly improved using more detailed soil data.

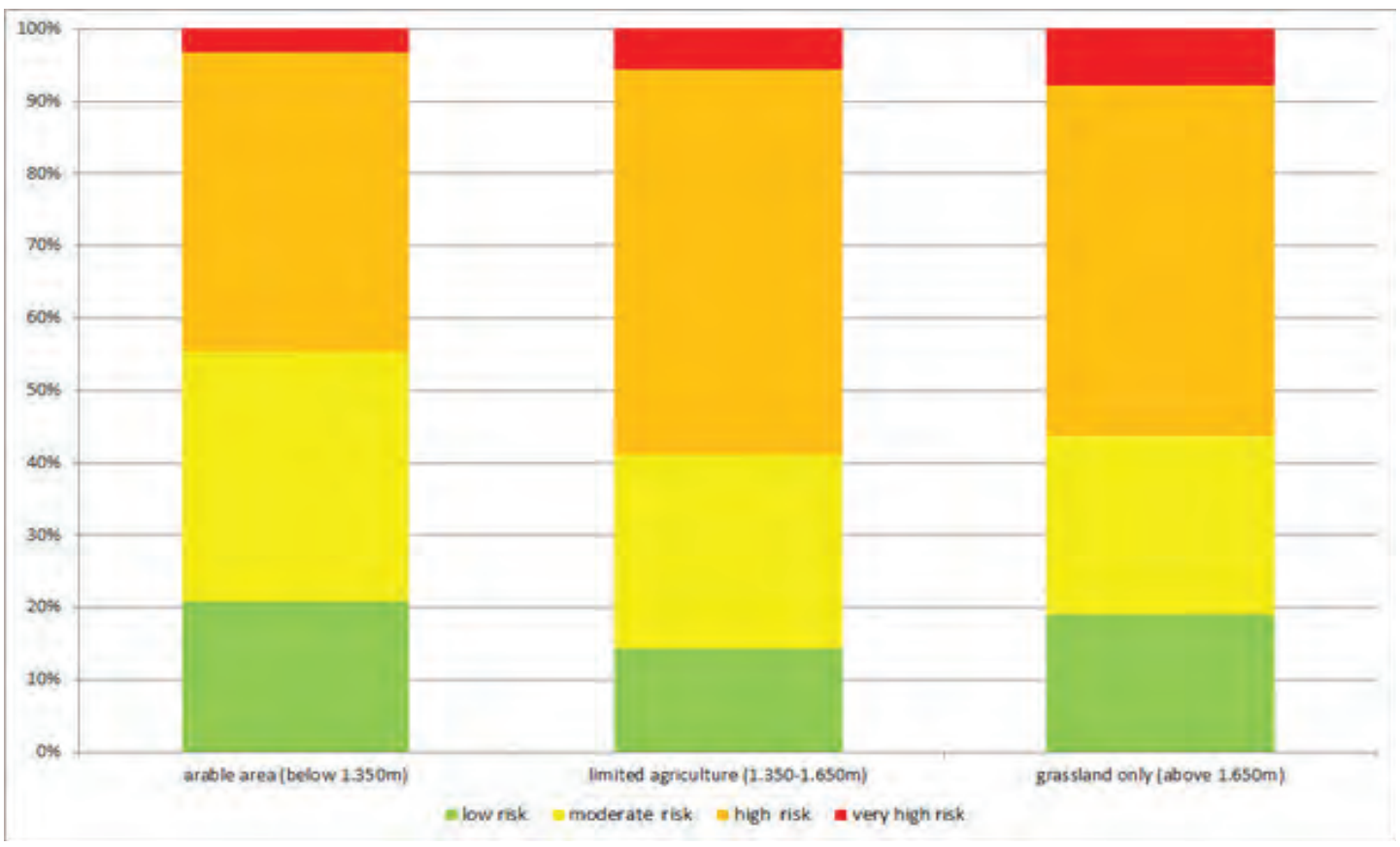
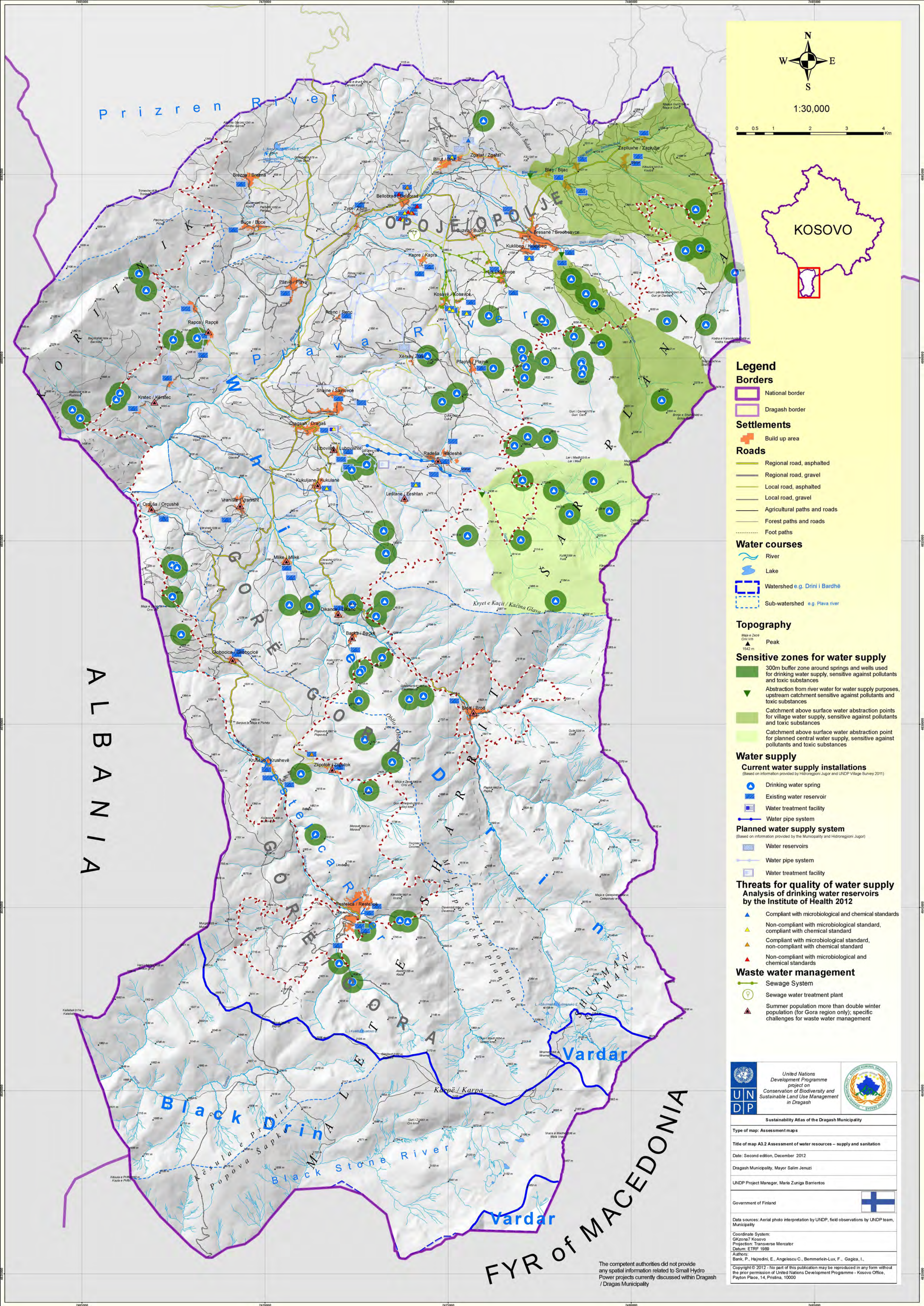


Figure 1 10: Soil erosion risk in the different altitude classes



1:30,000
KOSOVO
ALBANIA
FYR of MACEDONIA
Prizren River
Plava River
White Drin
Black Drina
Black Stone River
Vardar
Restelica River
OPOJË / OPOLJE
Dragash / Dragaš
Legend
Borders
National border
Dragash border
Settlements
Build up area
Roads
Regional road, asphalted
Regional road, gravel
Local road, asphalted
Local road, gravel
Agricultural paths and roads
Forest paths and roads
Foot paths
Water courses
River
Lake
Watershed e.g. Drini i Bardhë
Sub-watershed e.g. Plava river
Topography
Peak
Sensitive zones for water supply
300m buffer zone around springs and wells used for drinking water supply, sensitive against pollutants and toxic substances
Abstraction from river water for water supply purposes, upstream catchment sensitive against pollutants and toxic substances
Catchment above surface water abstraction points for village water supply, sensitive against pollutants and toxic substances
Catchment above surface water abstraction point for planned central water supply, sensitive against pollutants and toxic substances
Water supply
Current water supply installations
(Based on information provided by Hidroregjioni Jugor and UNDP Village Survey 2011)
Drinking water spring
Existing water reservoir
Water treatment facility
Water pipe system
Planned water supply system
(Based on information provided by the Municipality and Hidroregjioni Jugor)
Water reservoirs
Water pipe system
Water treatment facility
Threats for quality of water supply
Analysis of drinking water reservoirs by the Institute of Health 2012
Compliant with microbiological and chemical standards
Non-compliant with microbiological standard, compliant with chemical standard
Compliant with microbiological standard, non-compliant with chemical standard
Non-compliant with microbiological and chemical standards
Waste water management
Sewage System
Sewage water treatment plant
Summer population more than double winter population (for Gora region only); specific challenges for waste water management
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Assessment maps
Title of map A3.2 Assessment of water resources – supply and sanitation
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Aerial photo interpretation by UNDP, field observations by UNDP team, Municipality
Coordinate System: GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors: Bank, P., Hajredini, E., Angelescu C., Bemmerlein-Lux, F., Gagica, I.,
Copyright © 2012 - No part of this publication may be reproduced in any form without the prior permission of United Nations Development Programme - Kosovo Office, Payton Place, 14, Pristina, 10000
The competent authorities did not provide any spatial information related to Small Hydro Power projects currently discussed within Dragash / Dragas Municipality

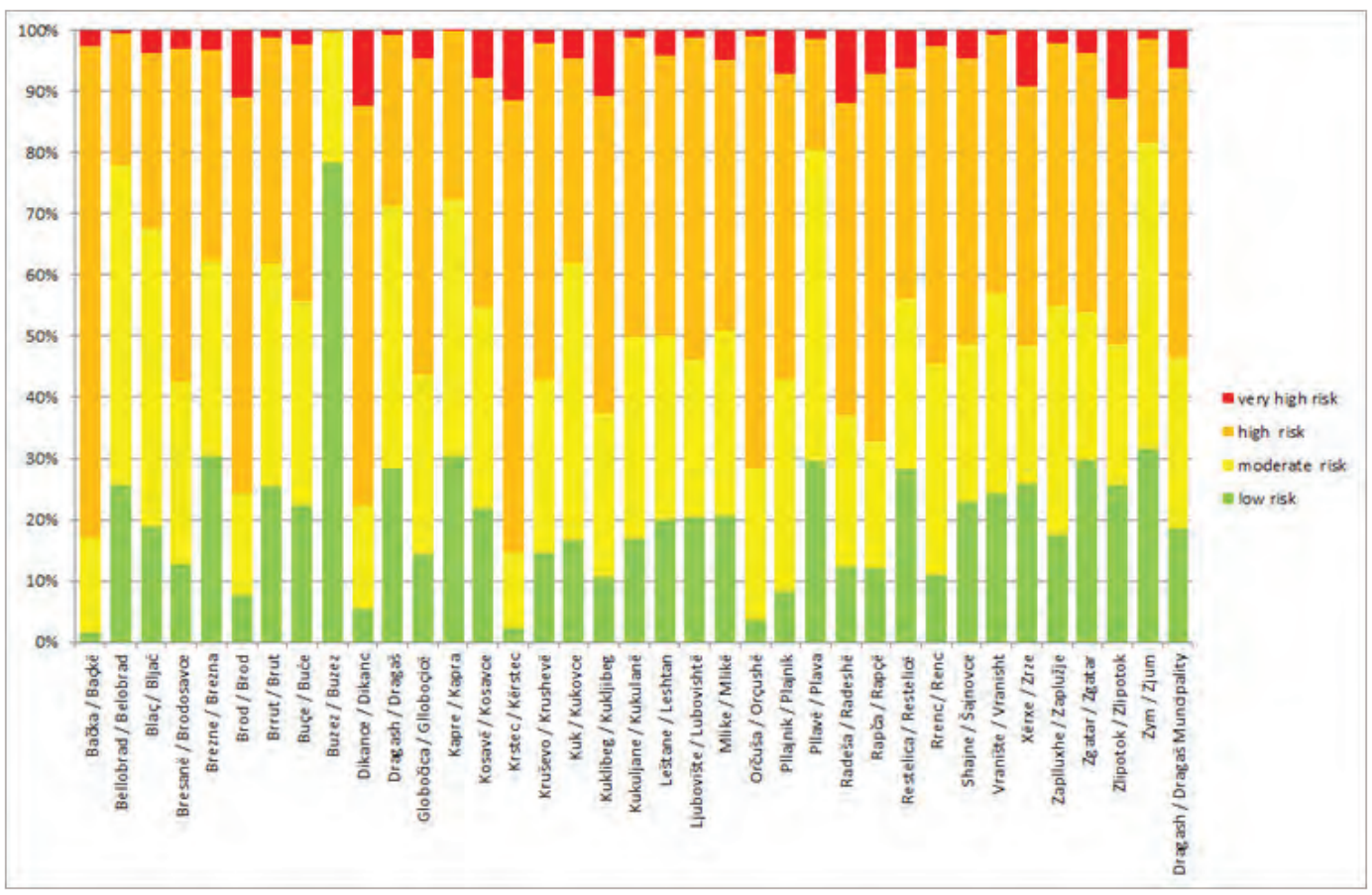


Figure 1 11: Soil erosion risk within the cadastral zones of Dragash / Dragaš Municipality

1.4.1. Avalanche risk (A4.2)

Contents of the map:

The map depicts the avalanche risk based on a model using:
- Steepness
- Wind direction in combination with ridges and depressions
- Exposition
- Length of the slope and diversity of landforms
- Vegetation, particularly forest / non forest

The main messages:

Avalanche risk is highest in the mountain areas and needs to be taken into consideration if winter sport installations are planned. Nevertheless the following points for the settlement area and roads are important and should be considered seriously:
- Restelica/Restelicë is the settlement with the highest and most extended avalanche risk in Dragash/Dragaš
- Most of the other villages are only at medium risk for wet snow avalanches. Only in Blaç/Blać are there smaller areas with high risk. Other villages with high risk zones are at least partly protected by forest.
- Roads from Globočica/Gllobočicë – Restelica/Restelicë and Dikanc/Dikance – Bačka/Baçkë – Brod and the connection roads between Kosavë/Kosavce, Xërxe/Zrze, and Pllajnik/Plajnik are at risk. The forests along these roads need very careful protection (see also forest function assessment in Figure 1 22: Assessment of the forest functions (A5.2)) and/or reforestation.
- Existing avalanche protection forest should be protected, well-managed, and expanded.
- The MDP should foresee for afforestation in medium and high risk areas around the villages where soil conditions allow for planting forest trees.
- For short term protection or in areas where afforestation is not possible, technical protection measures are advisable.
- Control of intentional and unintentional burning of bushland, heathland, and Juniperus communities (community initiatives and control).
- The MDP should assign village expansion only to areas which are not affected by avalanche risk.

Figure 1 13 shows the amount of avalanche risk within the territory of the municipality:
- A total of 1.185ha shows an increased high risk of avalanches due to NW to NE-exposition and slopes steeper than 30 degrees; out of these, 801 ha are not protected by forest.
- An additional 1.774ha show a high risk of avalanches, out of which 1.344ha are not protected by forest.
- 4.223ha show an increased potential risk due to NW to NE-exposition and slopes between 20 and 30 degrees, of which 3.004ha are not protected by forest.
- 6.867ha show a potential risk; of this, 5.333ha are not protected by forest.

Figure 1 14 gives an overview on the situation in direct vicinity (300m radius) of the settlements:
- A total of 185ha shows a high risk or an increased high risk, of which 141ha are not protected by forest.
- A total of 855ha shows potential risk, of which 647ha are not protected by forest.

Data sources, material and reliability:

The model is outlined in “Model for avalanche risk analysis” (Annex 2.3), http://www.powderguide.com/de/mountain-knowledge/basics/article/mountain-knowledge/
The model applied only identifies the regions where avalanches can be triggered. The areas where avalanches can pass or hit are not identified by the model.

Further suggestions for monitoring and/or improvement of data:

In case of Restelica/Restelicë detailed analysis has been executed by an Austrian team. Similar analysis should be executed for other high risk areas (villages and important roads).

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KOSOVO

Legend

Borders

- National border
- Dragash border

Settlements

- Build up area

Roads

- Regional road
- Local road

Water courses

- River
- Lake

Topography

- Isoline
- Peak

Soil erosion risk

(according to analysis using modified EULUP Methodology)

- Low risk
- Moderate risk
- High risk
- Very high risk

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A4.1: Assessment of natural hazards – soil erosion risk

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial photo interpretation by UNDP, application of erosion risk model based on EULUP approach

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

ALBANIA

FYR of MACEDONIA

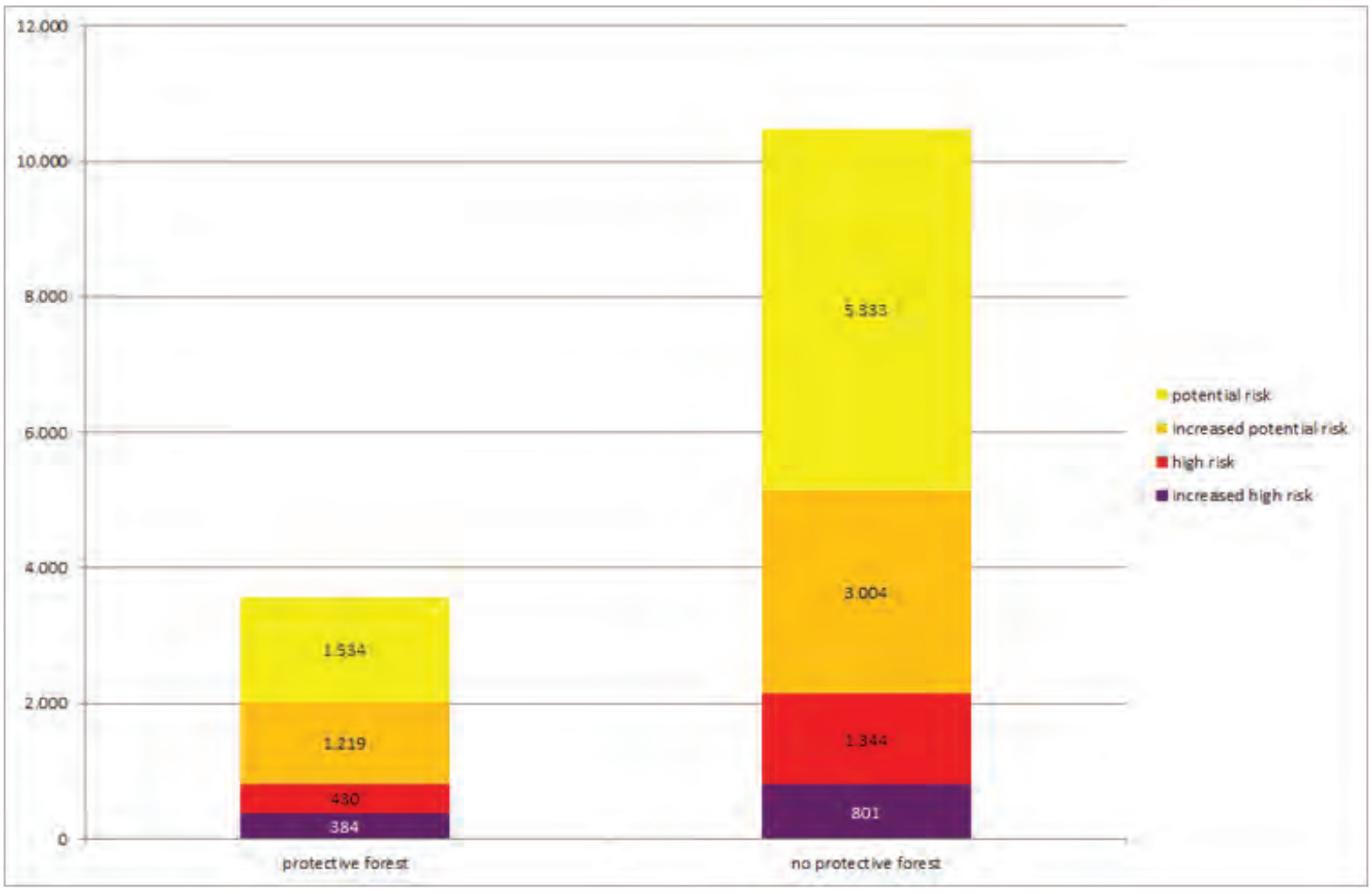

Figure 1 13: Avalanche risk areas within the Municipality

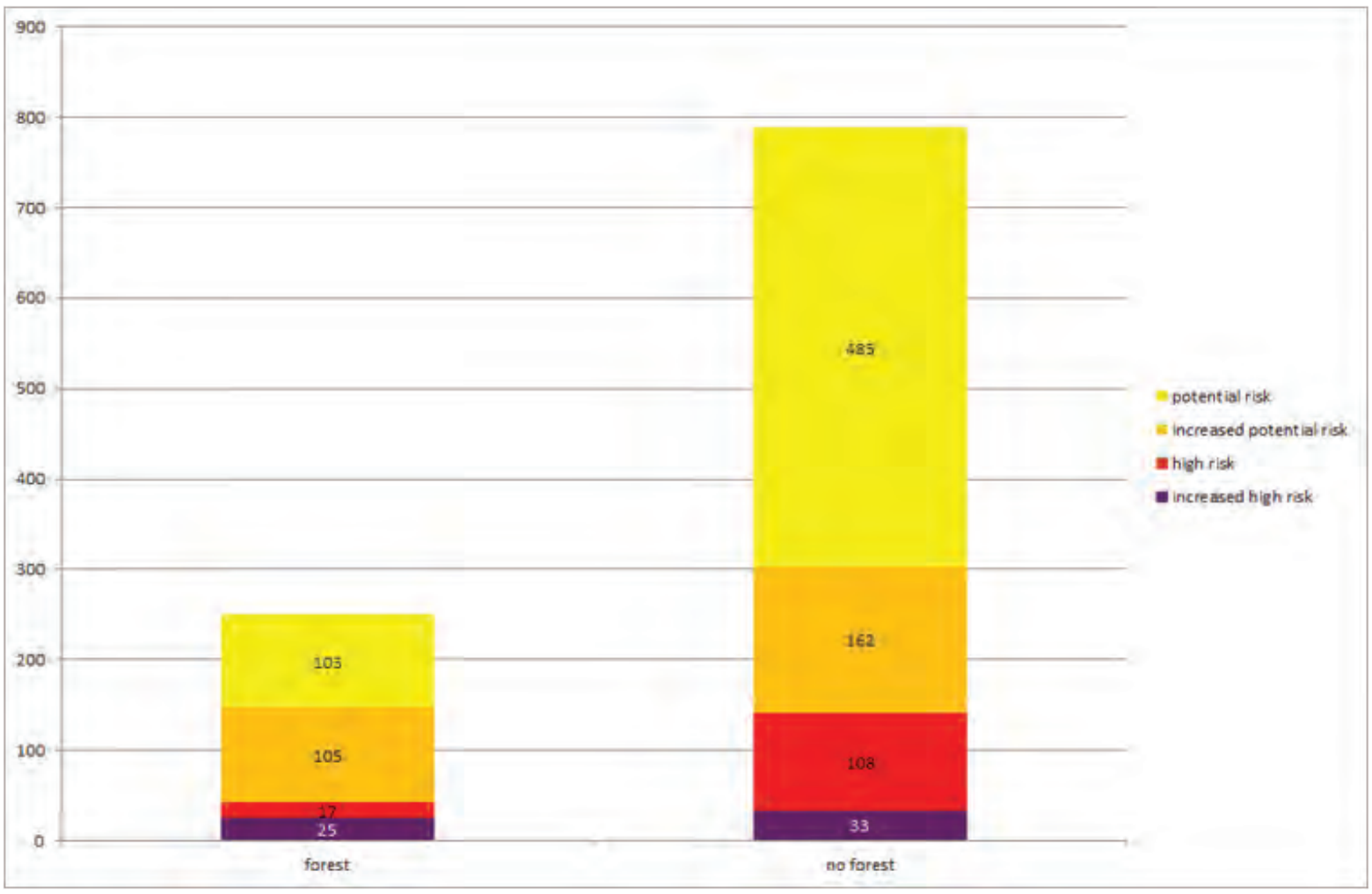

Figure 1 14: Avalanche risk areas within 300m distance from settlements

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KOSOVO

Legend

Borders

- National border
- Dragash border
- Cadastral zone

Settlements

- Build up area

Roads

- Regional road
- Local road

Water courses

- River
- Lake

Topography

- Isoline
- Peak (Maja e Zezë / Crni Vrh, 1542 m)

Avalanche risk based on slope and exposition

- Low risk
- Medium risk
- Increased medium risk in E-, N- and NW-exposition
- High risk
- Increased high risk in E-, N- and NW-exposition

Protection function of forests, transitional woodland and shrub vegetation

- 10 – 40% Crown cover, transitional woodland, shrubs: Limited protection function
- 41 – 70% Crown cover: Medium protection function
- > 70% Crown cover: Good protection function

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A4.2: Assessment of natural hazards – avalanche risk

Date: Second Edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial photo interpretation by UNDP, application of avalanche risk model developed by UNDP

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

1.4.2. Landslide, rockfall and flood-prone areas risk (A4.3)

Contents of the map:

The map depicts the landslide, rockfall and flood prone area risks based on models using:
• Slope
• Quaternary sediments
• Sparsely vegetated areas / rock
• Rock type
• Sparsely vegetated areas
- Flood prone areas – according to communication with villages
- Fire prone areas – according to communication with villages

The main messages:

Landslide and rockfall risks occur mostly in the higher mountain areas, in the unpopulated subalpine and alpine areas, and can be relevant for hikers and shepherds. Nevertheless there are high risks close to roads and settlements in Blaç/Blać, around Restelica/Restelicë and between Dikanc/Dikance and Brod.
Table 1 8 shows the length of local and regional roads prone to landslides or rockfall.
Flood prone areas are not very pronounced in the municipality and flooding is rare.
Fire prone areas are not based on a systematic inventory and are incomplete. Bushland and badly managed forests and pine plantations are prone to fire, especially in the hot and dry climatic situations during the summer. The risk of self-incineration is low, but the habit of burning harvested fields and high mountain heathland poses a serious problem.

	Crossing bare rock areas	Crossing sparsely vege-tated areas	Crossing torrent beds prone to landslide	Volumi potencial vjetor i vjelur / m3
Local roads	235m	7.595m	96m	5 358
Regional roads	47m	2.480m	51m	4 879

Table 1 8: Roads exposed to landslide and rock fall risk

Data sources, material and reliability:

The model is outlined in “Model for landslide risk” (Annex 2.3)
The model applied only identifies the regions where landslides or rockfall can originate. The areas where landslides or rockfall can pass or hit are not identified by the model.

Further suggestions for monitoring and/or improvement of data:

A systematic inventory of fires is required, since the available data is very incomplete and based on information from local village residents.
A systematic inventory of road segments exposed to rock fall is required, since GIS-based analysis does not sufficiently reflect the risk.

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KOSOVO

Legend

Borders

- National border
- Dragash border

Settlements

- Build up area

Roads

- Regional road, asphalted
- Local road, asphalted
- Local road, gravel
- Local road, type of pavement unknown

Water courses

- River
- Lake

Topography

- Isoline (1000)
- Peak (e.g. Maja e Zezë / Crni Vrh 1542 m)

Landslide risk including torrents

- Low
- Moderate
- High
- Very high

Risk of rock fall

- Likely
- Very likely

Flood prone areas

(according to local knowledge)

Fire prone areas

(according to local knowledge)

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A4.3: Assessment of natural hazards – landslide risk, flood and fire prone areas

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial photo interpretation by UNDP, application of landslide risk model developed by UNDP; flood prone areas according to local knowledge

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

1.5. Assessment of forest and agriculture (A5)

1.5.1. Conditions of forests (A5.1)

Contents of the map:

The map shows the age structure of the public and private forests and gives basic information about the man-agement classes, including areas with a high density of degraded forests

The main messages:

Hundreds of years of pasture has left about 17,1 % remaining of the original forested area of Dragash/Dragaš Municipality (8.124 ha), mainly in the North Western part of the area. 5.199 ha of all the forests are public (64 %) including the outstanding old Bosnian Pine forest in Koritnik, which is over 70 years old. Of this forest on Koritnik mountain, 1.160 ha are part of the planned National Park and one of the biodiversity highlights in the Municipality.
The private forest (2.925 ha) is mainly coppice forest (2.814 ha) and an important source of firewood for the community. The total area of coppice forest is 4.048 ha.
Plantations cover 211 ha (approximately 3 % of the total forest area) in only a small areas north of Dra-gash/Dragaš.
The 2.462 ha of forests on thin soils need special care in forest management in order to prevent erosion and maintain their water retention capacities.
18 ha of forest are degraded due to illegal harvesting, forest fires or other unspecified reasons.
The mixed forests, forests over 70 years old, and the alpine forest-grassland transition at the treeline are habitats for Bear and Lynx and form part of their regional ecological corridors.

Data sources, material and reliability:

Arneni, N.SH.T (2011), MAFRD-KFA (2009, 2010a and b)

Further suggestions for monitoring and/or improvement of data:

The soil – forest relation, especially the thin soils, should be verified with filed investigations. Potential sites for priority reforestation should be derived from the risk assessment maps (Figure 1 12, Figure 1 15 and Figure 1 16)

Management unit	Harvesting Incomes in Euro	Expenses of harvesting and extraction	Net annual Income in Euros	Potential Volume annually harvested/ m 3
Koritniku II	229 858	83 067	146 791	5 358
Opoja	184 685	55 085	129 600	4 879
Bredhiku	260 717	80 553	126 164	7 104
Sum	675 260	218 705	402 555	17 341
Private Forest	92 925	35 407.74	57 517.3	4425.97
Total	768 185	254 112.74	514 072.3	21 766.97

Table 1 9: Income from forest harvesting in both public/private sectors

Municipalities	Area for thinning	Norms (man days) Harvesting/Extraction/Transport			Total working man-days
Dragash/Dragaš	2 000 ha	606	400	200	1 206

Table 1 10: Job opportunities in thinning and cleaning

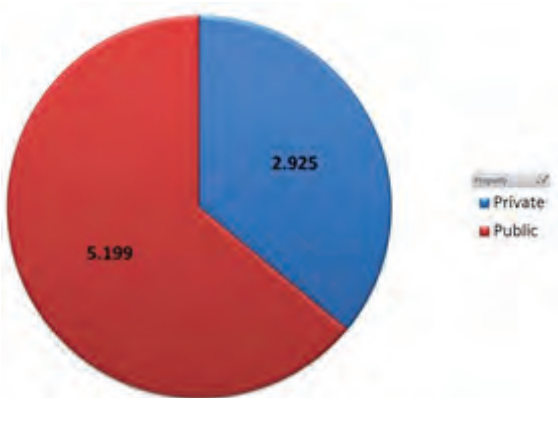

Figure 1 17: Property situation in Dragash / Dragaš forests (in ha)

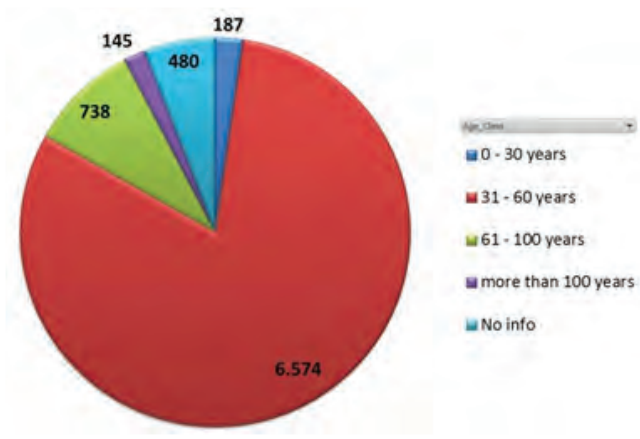

Figure 1 18: Age classes in Dragash / Dragaš forests (in ha)

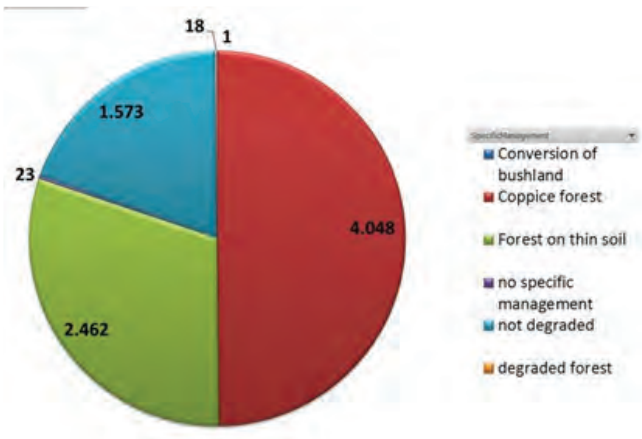

Figure 1 19: Specific management requirements in Dragash / Dragaš forests (in ha)

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KOSOVO

Legend

Borders

- National border
- Dragash border
- National Park "Sharri"

Settlements

- Build up area

Roads

- Regional road
- Local road

Water courses

- River
- Lake

Topography

- Peak

Condition of forests

Ownership structure of forest

- Private property and property of other bodies
- Public property

Areas with degraded forest stock

- Areas with high density of degraded forests

Selected forest management classes

- Even aged conifer forests
- Forests on thin soils

Age structure of forests

- Less than 20 years
- 21 - 35 years
- 35 - 70 years and mixed age stands
- older than 70 years

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A5.1: Assessment of forest and agriculture – condition of forest

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Forest inventory for public and private forest (2011), real land use from aerial photo interpretation (aerial photos 2009), DTM (Cadastral Agency of Kosovo, 20m grid processed by UNDP)

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

ALBANIA

FYR of MACEDONIA

1.5.2. Forest functions (A5.2)

Contents of the maps:

The forest functions covering:
• Wood production (firewood, valuable timber, collection of non-wood products)
• Protection function (soil erosion, avalanches, rockfall and landslides)
• Biodiversity
• Water regulation and water supply

The main messages:

The forest functions are tools to identify and better address specific roles and values of forests in order to maintain or enhance their effectiveness and capacity. The forest functions are comparable with the principle of High Conservation Value Forests (HCV) under FSC.
Of the 8.124 ha of forest, only 230 ha have no dedicated function (3%) (refer to Figure 1 21)
Forest management practices have to consider not only the productive functions, but also the protection, biodi-versity, and water regulation functions.
The information is used for the guidance for forest development and spatial resistance, including natural risk prevention, which is relevant for settlement and traffic planning and for the National Park Management Plan.

Data sources, material and reliability:

The criteria for assessment are listed in Annex 2.3; Forest functions are set into relation to the HCV types in Table 1 11. Arneni, N.SH.T (2011), MAFRD-KFA (2009, 2010a and b)

Further suggestions for monitoring and/or improvement of data:

The data for public forest is of a high quality (see Arneni, N.SH.T, 2011, MAFRD-KFA, 2009, 2010a and b) and allows a reliable assessment of the functions. The areas with a biodiversity function may increase if more intense research finds further floristic and faunistic specialities.

Function	Ecosystem service / Specification	Example	Related HCV Type
Wood production	That portion of gross production extractable as raw material	Production of lumber, or fuel / fire wood	HCV 5 (fire wood)
Production of non-wood products	That portion of gross primary production extractable as raw materials or primary products.	Production of fish, game, crops, nuts, fruits by hunting, gathering, subsistence farming or fishing	HCV 5
Erosion control and sediment retention	Retention of soil within an ecosystem	Prevention of loss of soil by wind, runoff, or other removal processes, storage of silt in lakes and wetlands	HCV4
Hazard protection	Protection against avalanches, landslides and rock fall	Forest on slopes of 20 degrees and more provide good protection against avalanches	HCV4, HCV5
Biodiversity	Habitats for globally, regionally and locally important plant and animal species, species-rich habitats (or habitat complexes)	Nurseries, habitat for migratory species, regional habitats for locally harvested species, or over wintering grounds.	HCV1, HCV2, HCV3
Water regulation and water supply	Regulation of hydrological flows, Storage and retention of water	Provision of water for human consumption in good quality and quantity	HCV4
Cultural (not assessed in SDA)	Providing opportunities for non-commercial uses.	Aesthetic, artistic, educational, spiritual and scientific activities.	HCV6

Table 1 11: Classification of forest functions

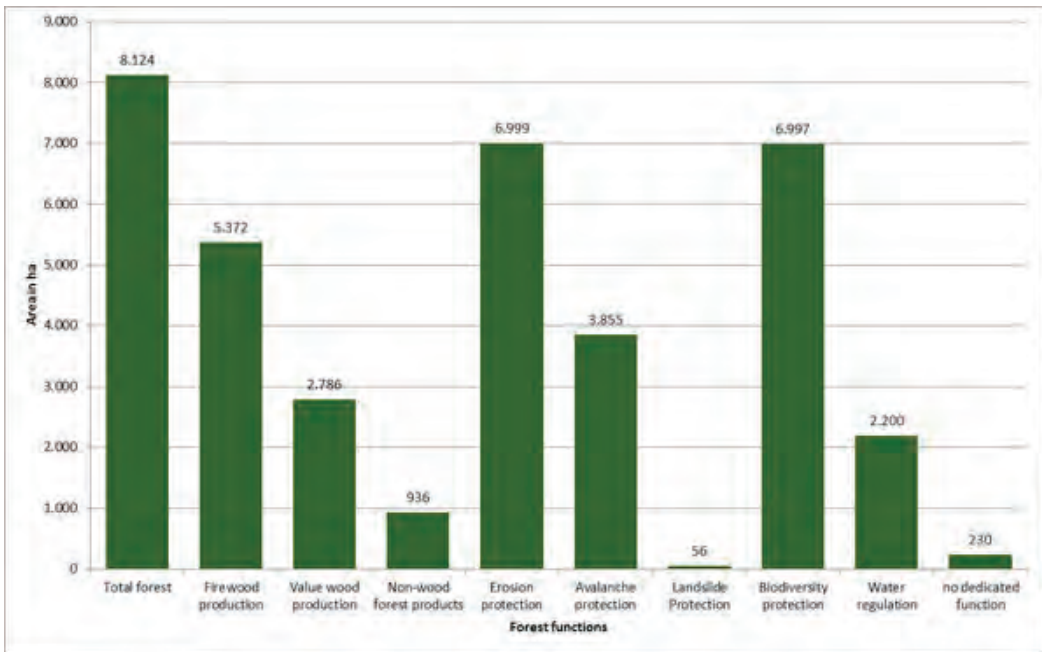
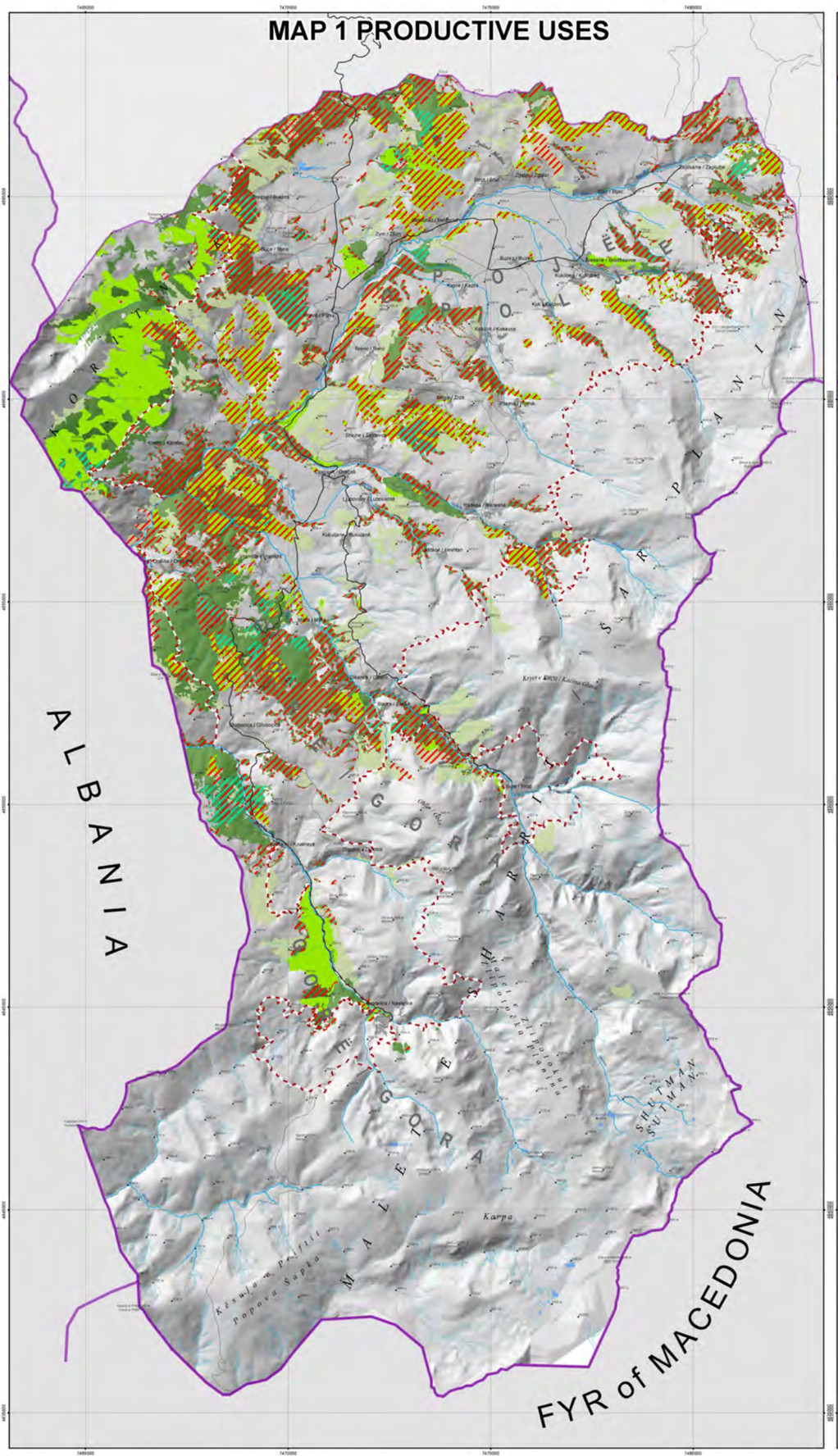
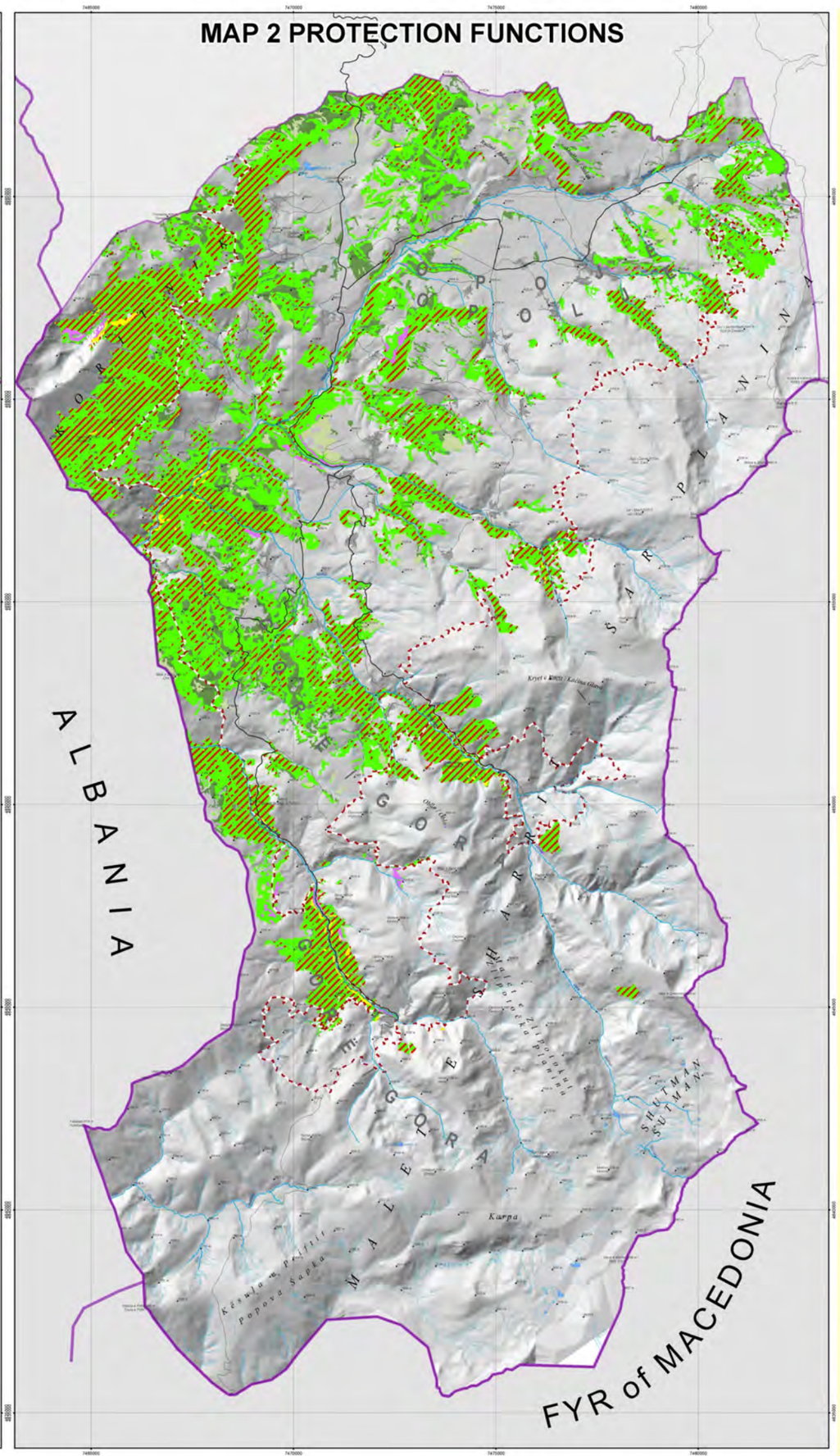


Figure 1 21: Forest area dedicated to the various forest functions (in ha)

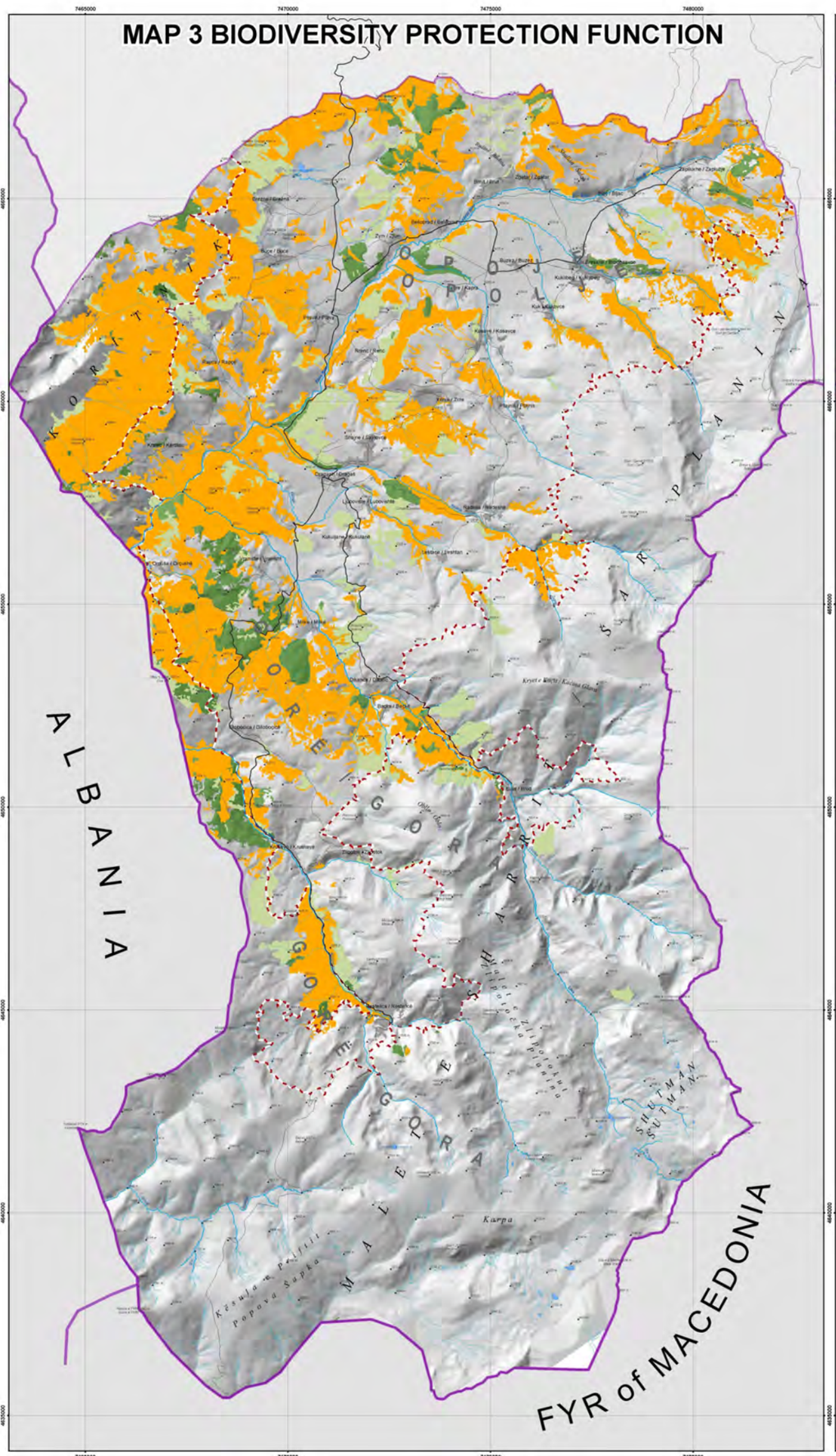
MAP 1 PRODUCTIVE USES



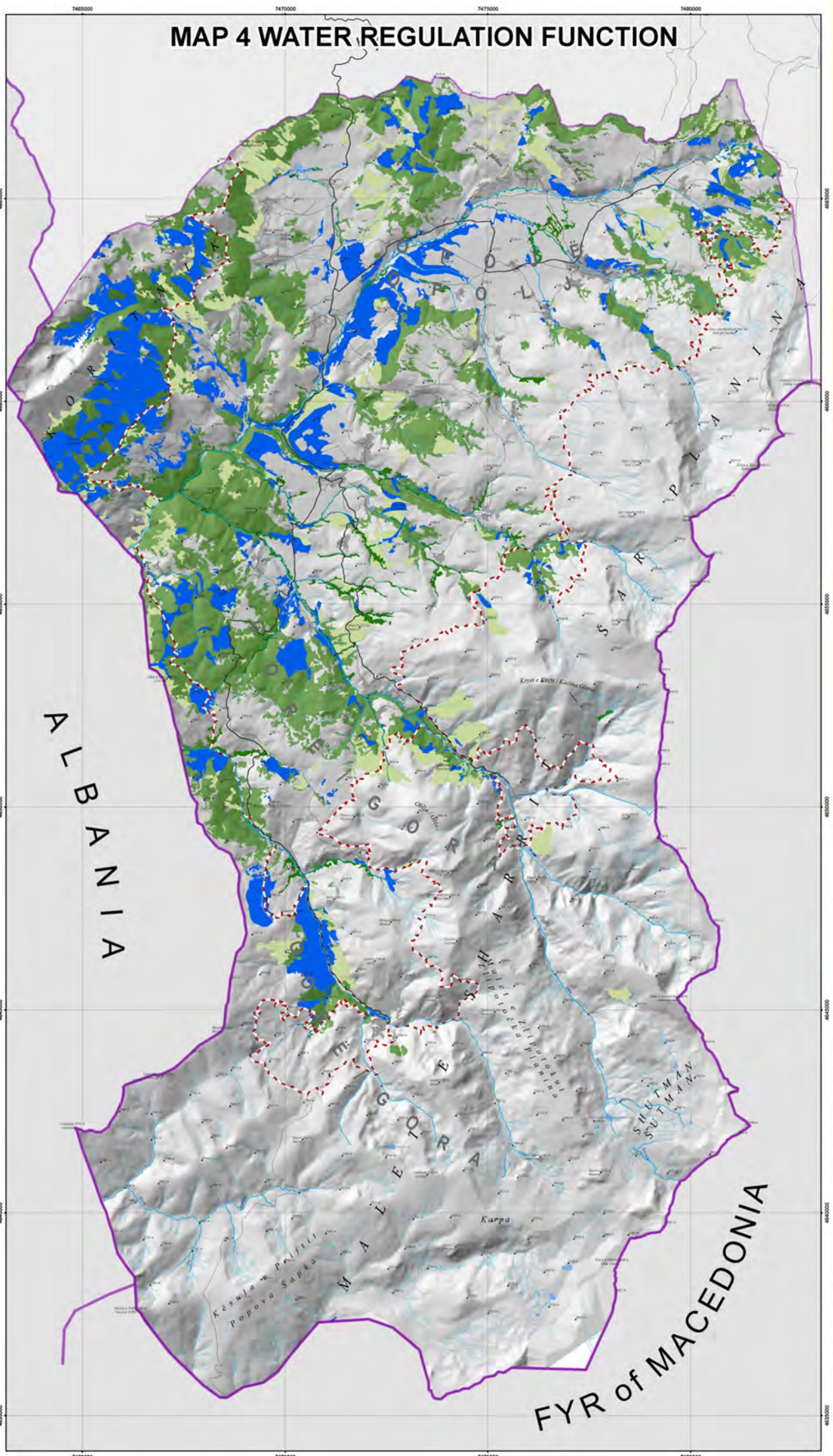
MAP 2 PROTECTION FUNCTIONS



MAP 3 BIODIVERSITY PROTECTION FUNCTION



MAP 4 WATER REGULATION FUNCTION



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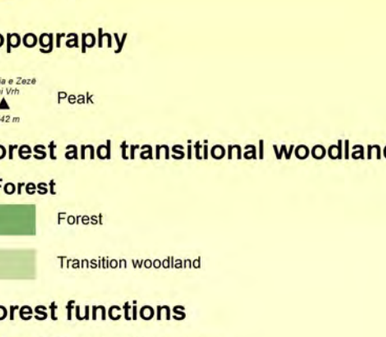


Legend

Borders
- National border
- Dragash border
- National Park "Sharri"

Settlements
- Build up area

Roads
- Regional road
- Local road

Water courses
- River
- Lake

Topography
- Maja e Zezë / Crni Vrh 1542 m — Peak

Forest and transitional woodlands

Forest
- Forest
- Transition woodland

Forest functions

Map 1 Productive uses
- Production of fire wood
- Collection of berries, fruits and mushrooms
- Production of valuable wood

Map 2 Protection function
- Protection against soil erosion
- Protection against avalanches
- Protection against rock falls
- Protection against landslides

Map 3 Biodiversity protection function
- Protection of biodiversity

Map 4 Water regulation function
- Water Regulation Function

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A 5.2: Assessment of agriculture and forest – forest functions

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Aerial Photo Interpretation by UNDP, application of avalanche risk model developed by UNDP

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

1.5.3. Productive capacity of soils (A5.3)

Contents:

Suitability of soils according to:
• Prolificacy II2 – III1 (best) to VII1 - VIII2 (major restrictions)
• Intensive pasture
• Extensive pasture

The main messages:

From 8 classes of prolificacy there is no class I, but class II, class III, class V, class VI, class VII, and class VIII (Elezi 2011 and "Suitability of soils and recommendations for agricultural use" Annex 2.6).
• Suitability with minor restriction: Prolificacy classes II and III. All the planned agricultural cultures can be cultivated in these soils, with little or high potential of mechanisation.
• Suitability with more expressed restrictions: Prolificacy class V (class IV is absent). All the planned agricultural cultures can be cultivated in these soils, but only little possibility of mechanisation.
• Suitability with many restrictions: Prolificacy class VI. Although these lands have extensive restrictions, they are traditionally used for production of cattle food (hay) and/or as extensive pastures.
• Suitability with extensive restrictions: Prolificacy classes VII and VIII. No cultivation is feasible and they are usually used as green grazing pastures.
Generally the crop productivity in the territory of the municipality is very extensive in almost all types/classes of soil. This is due to the limited fertility (productive capacity) and topography which puts considerable restrictions on agricultural productivity/ mechanisation. Additionally there is a low level of investment, low level of machinery, and non-market orientation (production mainly for the local needs).

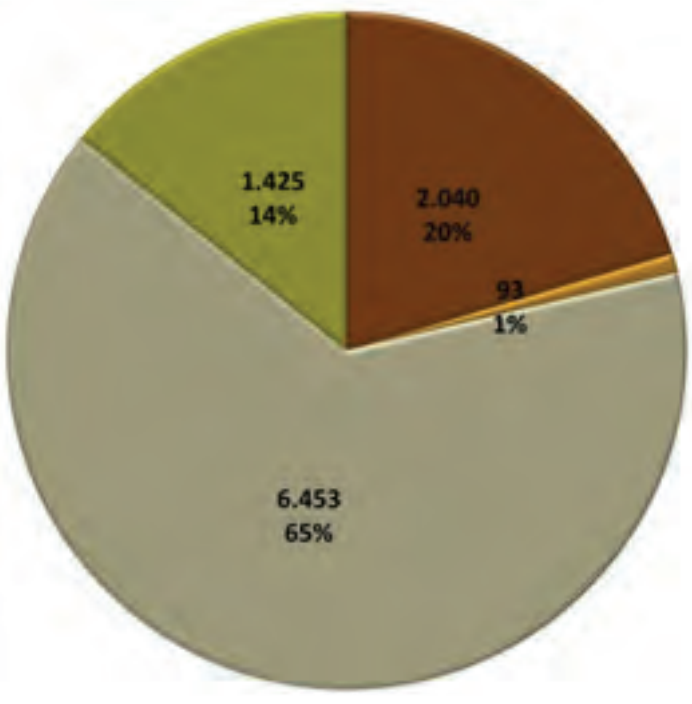


Figure 1 23: Suitability of soils (in ha)

According to the Municipality of Dragash/Dragaš-Agriculture De-partment (2011) the following agricultural land use is documented:

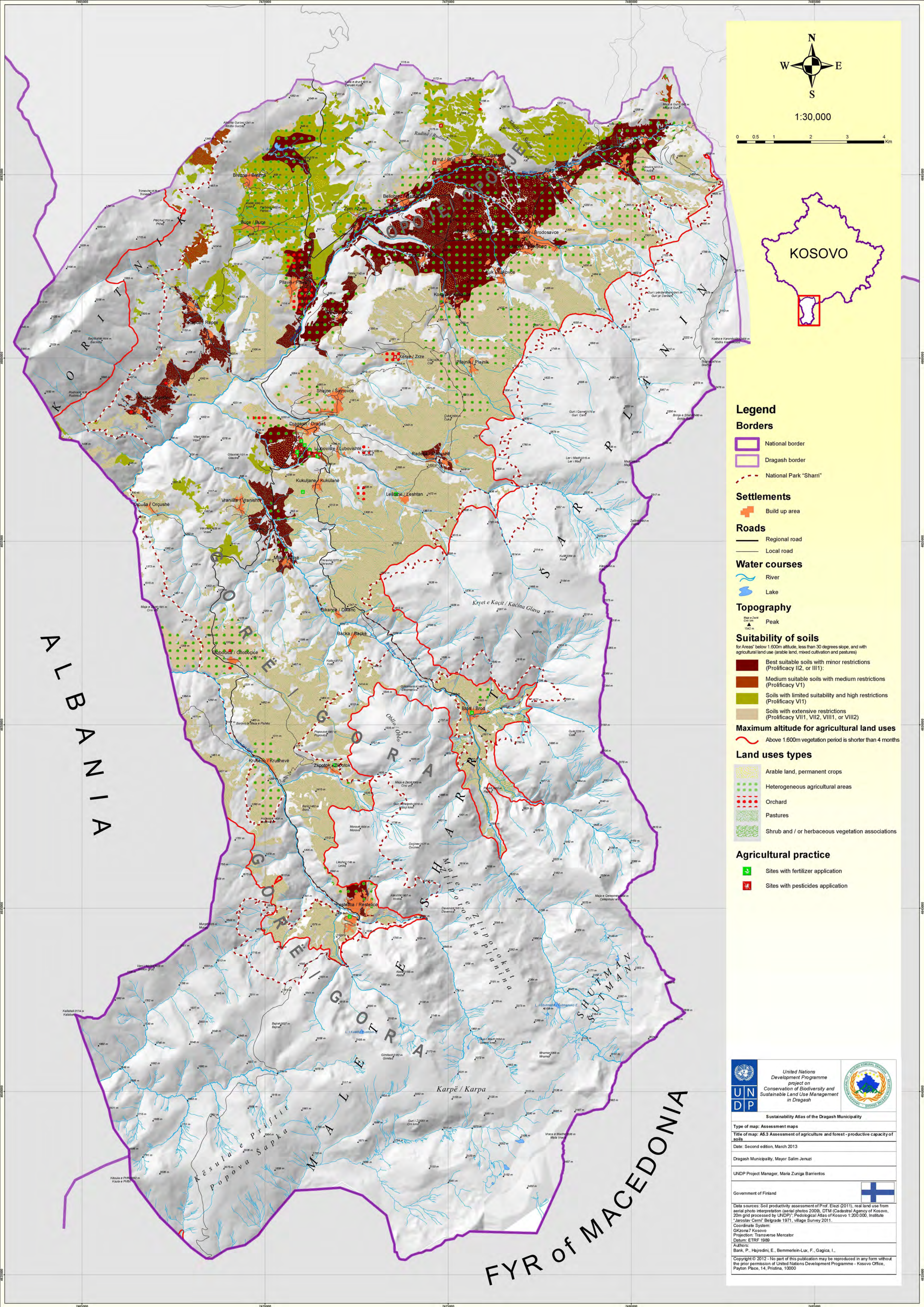
Arable field	Meadows	Pastures	Mountain pas-tures	Total
3.596,79	5.196,20	26.042,00	6.424,76	41.259,75
9%	13%	62%	16%	100%

Data sources, material and reliability:

Municipality of Dragash/Dragaš-Agriculture Department, 2011,
Elezi 2011,

Further suggestions for monitoring and/or improvement of data:

The sites with fertiliser and pesticide application are only rudimentary (incomplete community-based information).



1:30,000
KOSOVO
ALBANIA
FYR of MACEDONIA
KORITNIK
OPOJË / OPOLJE
ŠAR PLANINA
GORË / GORA
Legend
Borders
National border
Dragash border
National Park "Sharri"
Settlements
Build up area
Roads
Regional road
Local road
Water courses
River
Lake
Topography
Peak
Suitability of soils
for Areas" below 1.600m altitude, less than 30 degrees slope, and with agricultural land use (arable land, mixed cultivation and pastures)
Best suitable soils with minor restrictions (Prolificacy II2, or III1):
Medium suitable soils with medium restrictions (Prolificacy V1)
Soils with limited suitability and high restrictions (Prolificacy VI1)
Soils with extensive restrictions (Prolificacy VII1, VII2, VIII1, or VIII2)
Maximum altitude for agricultural land uses
Above 1.600m vegetation period is shorter than 4 months
Land uses types
Arable land, permanent crops
Heterogeneous agricultural areas
Orchard
Pastures
Shrub and / or herbaceous vegetation associations
Agricultural practice
Sites with fertilizer application
Sites with pesticides application
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Assessment maps
Title of map: A5.3 Assessment of agriculture and forest - productive capacity of soils
Date: Second edition, March 2013
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Soil productivity assessment of Prof. Elezi (2011), real land use from aerial photo interpretation (aerial photos 2009), DTM (Cadastral Agency of Kosovo, 20m grid processed by UNDP)"; Pedological Atlas of Kosovo 1:200.000, Institute "Jaroslav Cerni" Belgrade 1971, village Survey 2011.
Coordinate System: GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors: Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,
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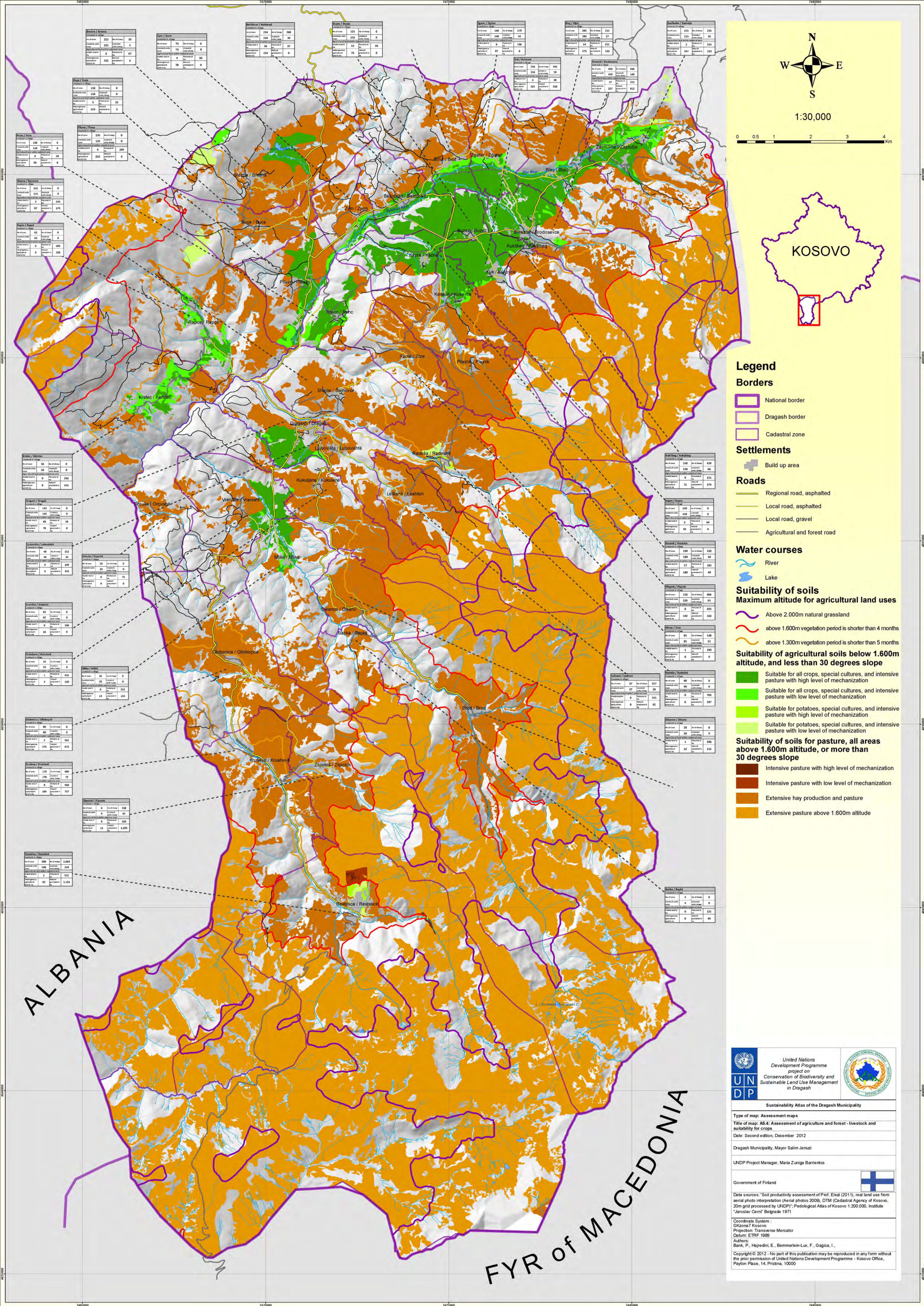

ALBANIA
FYR of MACEDONIA
KOSOVO
N
S
W
E
1:30,000
0 0.5 1 2 3 4 Km
Brezne / Brezna
Bellobrad / Belobrad
Zym / Zjum
Buçe / Buce
Brrut / Brut
Zgatar / Zgatar
Blaç / Bljac
Blac River
Zaplluxhe / Zaplužje
Buzez / Buzez
Bresanë / Brodosavce
Kuklibeg / Kukljibeg
Kapre / Kapra
Kuk / Kukovce
Kosavë / Kosavce
Pllavë / Plava
Rrenc / Renc
Rapca / Rapçe
Krstec / Kërstec
Xërxe / Zrze
Pllajnik / Plajnik
Shajne / Šajnovce
Dragash / Dragaš
Lubovište / Lubovishtë
Radeša / Radeshë
Kukuljane / Kukulanë
Leštane / Leshtan
Vranište / Vranisht
Orcuša / Orçushë
Mlike / Mlikë
Dikance / Dikanc
Backa / Baçkë
Brod river
Globocica / Gllobоçicë
Brod / Brod
Kruševo / Krushevë
Zlipotok / Zlipotok
Restelica / Restelicë
Lerva
L. Shutmanit / Šutmansko E.
Legend
Borders
National border
Dragash border
Cadastral zone
Settlements
Build up area
Roads
Regional road, asphalted
Local road, asphalted
Local road, gravel
Agricultural and forest road
Water courses
River
Lake
Suitability of soils
Maximum altitude for agricultural land uses
Above 2.000m natural grassland
above 1.600m vegetation period is shorter than 4 months
above 1.300m vegetation period is shorter than 5 months
Suitability of agricultural soils below 1.600m altitude, and less than 30 degrees slope
Suitable for all crops, special cultures, and intensive pasture with high level of mechanization
Suitable for all crops, special cultures, and intensive pasture with low level of mechanization
Suitable for potatoes, special cultures, and intensive pasture with high level of mechanization
Suitable for potatoes, special cultures, and intensive pasture with low level of mechanization
Suitability of soils for pasture, all areas above 1.600m altitude, or more than 30 degrees slope
Intensive pasture with high level of mechanization
Intensive pasture with low level of mechanization
Extensive hay production and pasture
Extensive pasture above 1.600m altitude
7465000
7470000
7475000
7480000
7485000
4665000
4660000
4655000
4650000
4645000
4640000
4635000

Brezne / Brezna

Livestock in village			
No of cows	225	No of sheep	30
Livestock units cows	225	Livestock units sheep	5
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	67
Heterogenous agricultural land in ha	315	Natural grassland in ha	6

Zym / Zjum

Livestock in village			
No of cows	73	No of sheep	0
Livestock units cows	73	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	4	Pastures in ha	66
Heterogenous agricultural land in ha	78	Natural grassland in ha	0

Bellobrad / Belobrad

Livestock in village			
No of cows	234	No of sheep	260
Livestock units cows	234	Livestock units sheep	39
Agricultural land within cadastral zone			
Arable land in ha	36	Pastures in ha	37
Heterogenous agricultural land in ha	133	Natural grassland in ha	0

Buzez / Buzez

Livestock in village			
No of cows	131	No of sheep	0
Livestock units cows	131	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	12	Pastures in ha	26
Heterogenous agricultural land in ha	75	Natural grassland in ha	0

Zgatar / Zgatar

Livestock in village			
No of cows	148	No of sheep	279
Livestock units cows	148	Livestock units sheep	42
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	106
Heterogenous agricultural land in ha	97	Natural grassland in ha	0

Blaç / Bljač

Livestock in village			
No of cows	285	No of sheep	115
Livestock units cows	285	Livestock units sheep	17
Agricultural land within cadastral zone			
Arable land in ha	14	Pastures in ha	211
Heterogenous agricultural land in ha	275	Natural grassland in ha	133

Zaplluxhe / Zaplužje

Livestock in village			
No of cows	215	No of sheep	235
Livestock units cows	215	Livestock units sheep	35
Agricultural land within cadastral zone			
Arable land in ha	2	Pastures in ha	224
Heterogenous agricultural land in ha	247	Natural grassland in ha	213

Kuk / Kukovce

Livestock in village			
No of cows	256	No of sheep	393
Livestock units cows	256	Livestock units sheep	59
Agricultural land within cadastral zone			
Arable land in ha	2	Pastures in ha	38
Heterogenous agricultural land in ha	261	Natural grassland in ha	238

Bresanë / Brodosavce

Livestock in village			
No of cows	430	No of sheep	936
Livestock units cows	430	Livestock units sheep	140
Agricultural land within cadastral zone			
Arable land in ha	37	Pastures in ha	212
Heterogenous agricultural land in ha	227	Natural grassland in ha	612

Buçe / Buče

Livestock in village			
No of cows	150	No of sheep	0
Livestock units cows	150	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	3	Pastures in ha	32
Heterogenous agricultural land in ha	143	Natural grassland in ha	3

Pllavë / Plava

Livestock in village			
No of cows	135	No of sheep	0
Livestock units cows	135	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	6	Pastures in ha	169
Heterogenous agricultural land in ha	233	Natural grassland in ha	0

Rrenc / Renc

Livestock in village			
No of cows	139	No of sheep	0
Livestock units cows	139	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	38
Heterogenous agricultural land in ha	99	Natural grassland in ha	0

Shajna / Šajnovce

Livestock in village			
No of cows	115	No of sheep	0
Livestock units cows	115	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	2	Pastures in ha	243
Heterogenous agricultural land in ha	87	Natural grassland in ha	173

Rapča / Rapçë

Livestock in village			
No of cows	63	No of sheep	0
Livestock units cows	63	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	389
Heterogenous agricultural land in ha	0	Natural grassland in ha	320

Krstec / Kërstec

Livestock in village			
No of cows	56	No of sheep	0
Livestock units cows	56	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	242
Heterogenous agricultural land in ha	0	Natural grassland in ha	141

Dragash / Dragaš

Livestock in village			
No of cows	143	No of sheep	0
Livestock units cows	143	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	69	Pastures in ha	29
Heterogenous agricultural land in ha	78	Natural grassland in ha	0

Ljubovište / Lubovishtë

Livestock in village			
No of cows	40	No of sheep	212
Livestock units cows	40	Livestock units sheep	32
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	199
Heterogenous agricultural land in ha	0	Natural grassland in ha	472

Orčuša / Orçushë

Livestock in village			
No of cows	10	No of sheep	0
Livestock units cows	10	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	71
Heterogenous agricultural land in ha	0	Natural grassland in ha	0

Vranište / Vranisht

Livestock in village			
No of cows	62	No of sheep	0
Livestock units cows	62	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	198
Heterogenous agricultural land in ha	16	Natural grassland in ha	0

Kukuljane / Kukulanë

Livestock in village			
No of cows	33	No of sheep	0
Livestock units cows	33	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	1	Pastures in ha	432
Heterogenous agricultural land in ha	3	Natural grassland in ha	158

Mlike / Mlikë

Livestock in village			
No of cows	35	No of sheep	0
Livestock units cows	35	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	251
Heterogenous agricultural land in ha	13	Natural grassland in ha	115

Globočica / Gllobоçicë

Livestock in village			
No of cows	80	No of sheep	0
Livestock units cows	80	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	2	Pastures in ha	261
Heterogenous agricultural land in ha	275	Natural grassland in ha	673

Kruševo / Krushevë

Livestock in village			
No of cows	170	No of sheep	480
Livestock units cows	170	Livestock units sheep	72
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	468
Heterogenous agricultural land in ha	104	Natural grassland in ha	737

Zlipotok / Zlipotok

Livestock in village			
No of cows	0	No of sheep	538
Livestock units cows	0	Livestock units sheep	81
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	526
Heterogenous agricultural land in ha	11	Natural grassland in ha	1.293

Restelica / Restelicë

Livestock in village			
No of cows	580	No of sheep	1.663
Livestock units cows	580	Livestock units sheep	249
Agricultural land within cadastral zone			
Arable land in ha	1	Pastures in ha	532
Heterogenous agricultural land in ha	83	Natural grassland in ha	5.181

Kuklibeg / Kukljibeg

Livestock in village			
No of cows	148	No of sheep	439
Livestock units cows	148	Livestock units sheep	66
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	151
Heterogenous agricultural land in ha	71	Natural grassland in ha	374

Kapre / Kapra

Livestock in village			
No of cows	148	No of sheep	0
Livestock units cows	148	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	64
Heterogenous agricultural land in ha	92	Natural grassland in ha	0

Kosavë / Kosavce

Livestock in village			
No of cows	190	No of sheep	332
Livestock units cows	190	Livestock units sheep	50
Agricultural land within cadastral zone			
Arable land in ha	17	Pastures in ha	181
Heterogenous agricultural land in ha	189	Natural grassland in ha	49

Pllajnik / Plajnik

Livestock in village			
No of cows	126	No of sheep	404
Livestock units cows	126	Livestock units sheep	61
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	203
Heterogenous agricultural land in ha	142	Natural grassland in ha	163

Xërxe / Zrze

Livestock in village			
No of cows	85	No of sheep	138
Livestock units cows	85	Livestock units sheep	21
Agricultural land within cadastral zone			
Arable land in ha	1	Pastures in ha	190
Heterogenous agricultural land in ha	8	Natural grassland in ha	0

Radeša / Radeshë

Livestock in village			
No of cows	90	No of sheep	0
Livestock units cows	90	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	703
Heterogenous agricultural land in ha	6	Natural grassland in ha	287

Leštane / Leshtan

Livestock in village			
No of cows	37	No of sheep	257
Livestock units cows	37	Livestock units sheep	39
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	315
Heterogenous agricultural land in ha	0	Natural grassland in ha	62

Dikance / Dikanc

Livestock in village			
No of cows	28	No of sheep	0
Livestock units cows	28	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	1	Pastures in ha	290
Heterogenous agricultural land in ha	12	Natural grassland in ha	112

Bačka / Baçkë

Livestock in village			
No of cows	4	No of sheep	0
Livestock units cows	4	Livestock units sheep	0
Agricultural land within cadastral zone			
Arable land in ha	0	Pastures in ha	121
Heterogenous agricultural land in ha	0	Natural grassland in ha	44

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A5.4: Assessment of agriculture and forest - livestock and suitability for crops

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: "Soil productivity assessment of Prof. Elezi (2011), real land use from aerial photo interpretation (Aerial photos 2009), DTM (Cadastral Agency of Kosovo, 20m grid processed by UNDP)"; Pedological Atlas of Kosovo 1:200.000, Institute "Jaroslav Cerni" Belgrade 1971

Coordinate System :
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

1.5.4. Livestock and suitability for crops (A5.4)

Contents:

The map highlights the areas
• suitable for crops (below 1300 m and less than 30° slope in 4 categories)
• suitable for pastures (below 1600 m - 3 categories)
• suitable for extensive pasture above 1600 m
• for each village: ha of arable land, ha of heterogeneous arable land, ha of pastures and ha of natural grassland (above 2.000 m altitude)
• for each village: the number of cows/livestock units, number of sheep/livestock units

The main messages:

The areas suitable for agriculture are all below 1300 m, with a vegetation period of longer than 5 months. The main cultivatable crops are corn, potatoes/seed potatoes, summer and winter cereals and berries/fruit trees. In annex 2.6, “Table 2 7: Classes of suitability and the level of utilisation for determined cultures, based on the cultivation manner and the level of machinery”, more details about recommended crops are listed.
Between 1300 m and 1600 m the vegetation period of 5 months allows only for intensive and extensive pastures.
Grassland higher than 1600 m is generally only suitable for extensive grazing in the late spring and summer months. Above 2.000 m the grasslands are natural.
The agricultural/livestock structure for each village is shown with a list indicating for 2001 the available agricultural area, number of livestock (also in livestock units where 1 sheep is calculated as 0,15 livestock units) (Dragash/Dragaš-Agriculture Department, 2011). Overall there are 74 farms with sheep and 74 active shepherds. 110 farms with more than 5 cows produce milk for the market. The following livestock numbers are documented:

For the grazing of the subalpine and alpine areas (Nardion grasslands and calcareous grasslands) the EU recommends a carrying capacity of 1.3 - 4.0 sheep (1.2 to 0,6 livestock units) for a 100-day grazing period (European Commission 2008a and b). The actual number of cattle and sheep indicates that (overall) the numbers do not surpass the carrying capacity of the grasslands. However, no exact data for the used grazing grounds are available for the SDA because the herds/flocks use not only the pastures of their own village but also graze in villages outside of Dragash/Dragaš.

Data sources, material and reliability:

Municipality of Dragash/Dragaš-Agriculture Department, 2011, Elezi 2011, European Commission 2008a and b

Cattle	Sheep	Goat	Horse	Total
6.450 (39,3%)	9.506 (57,92%)	34 (0,21%)	423 (2,58%)	16.413,00

1.6. Assessment of solid waste (A6)

Contents of the map:

Assessment of solid waste includes for each village:
• Waste collection: Number of inhabitants, annual waste collected, inclusion in the UNDP-supported waste collection system, and the accessibility in winter
• Uncontrolled waste dumping: Number of illegal dump sites and an estimated quantity in tonnes, number of dumpsites removed in 2012
• Active recycling business

The main messages:

Solid waste is one of the major concerns in the municipality. Non-professional waste disposal creates a series of problems: threats to hygiene; release of toxins through leaching of burning waste polluting air and water; harm to animals feeding on residuals and plastics/poisoned substances;, increased risk of fire ignition caused by broken glass, unattractive landscape.
The assessment reflects the deficits as well as the efforts and challenges in the waste sector.
About 97 illegal dumpsites (an estimated 1.065 t of garbage) have been identified, frequently along the roads and on river banks. The identification of construction waste disposal sites was not systematically undertaken, but adds to the problem of land pollution.
The waste collection system started to work in 2012. 22 villages were included in this system, and the rest will follow in 2013. However, accessibility is not assured in the winter months for 10 of the villages.
One official dumpsite northwest of Bellobrad/Belobrad is functioning. Recycling of plastics, paper and iron has started in Globočica/Gllogoçicë and Kosavë/Kosavce. 12 of the dumpsites were cleaned during activities in 2012.

Data sources, material and reliability:

Own research, information from the waste disposal company (“Ekregjioni”), interviews and workshops with representatives of the Municipality and villages. The figures of waste quantity and illegal dump sites are not exhaustive.

Further suggestions for monitoring and/or improvement of data:

Further completion of the locations and quantities of solid waste and construction waste to support the aim of the “Local plan of action on biodiversity in Dragash/Dragaš municipality 2011-2015” (Dragash/Dragaš Municipality 2010 – Aim 6 Prevention of land pollution)

Waste collection is carried out door-to-door and from bin containers, which are distributed at certain points in the villages. Waste transportation does not undergo any preliminary treatment, so the collected volume is emptied straight to landfill.

Village	Tons/year
1. Dragash/Dragaš town	341
2. Blaç/Bljać	44
3. Bellobrad/Belobrad	266
4. Kapre/Kapra	91
5. Zym/Zjum	138
6. Zaplluxhe/Zaplužje	301
7. Buzez	73
8. Bresanë/Brodosavce	672
9. Kuk/Kukovce	293
10. Kuklibeg	168
11. Kosavë/Kosavce	182
12. Brrut/Brut	184
13. Pllavë/Plava	236
14. Shajne/Šajnovce	233
15. Rrenc/Renc	172
16. Zgatar	163
17. Brezne/Brezna	400
19. Buçe/Buće	172
20. Rapça/Rapçë	263
21. Ljubovište/Lubovishtë	194
22. Restelica/Restelicë	820
TOTAL	5406

Table 1 12: Amount of collected waste in 2008 (tons)

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KOSOVO

Brezne / Brezna
Buce / Buce
Rapca / Rapçë
Pllavë / Plava
Zym / Zjum
Brrut / Brut
Bellobrad / Belobrad
Buzez / Buzez
Zgatar / Zgatar
Blaç / Bljac
Zapluxhe / Zaplužje
Bresanë / Brodosavce
Kuklibeg / Kukljibeg
Kuk / Kukovce
Kosavë / Kosavce
Kapre / Kapra
Rrenc / Renc
Xërxe / Zrze
Pllajnik / Plajnik
Shajne / Šajnovce
Dragash / Dragaš
Ljubovishtë / Ljubovište
Radeša / Radeshë
Leštane / Leshtan
Kukuljane / Kukulane
Krstec / Kërstec
Orcuša / Orçushë
Vranishte / Vranisht
Mlike / Mlikë
Dikance / Dikanc
Backa / Baçkë
Globocica / Gllobocicë
Kruševo / Krushevë
Zhpotok / Zhipotok
Restelica / Restelicë
Brod / Brod
Lepa

approx.50 tons
approx.15 tons
approx.100 tons
approx.15 tons
approx.15 tons
approx.15 tons
approx.5 tons
approx.20 tons
approx.25 tons
approx.15 tons
approx.5 tons
approx.15 tons
approx.50 tons
approx.15 tons
approx.10 tons
approx.125 tons
approx.5 tons
approx.10 tons
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approx.15 tons
approx.10 tons
approx.25 tons
approx.10 tons
approx.30 tons
approx. tons

ALBANIA

FYR of MACEDONIA

Legend

Borders
- National border
- Dragash border
- Cadastral zone

Roads
- Regional road, asphated
- Local road, asphalted
- Local road, gravel
- Local road, type of pavement unknown

Settlements
- Build up area

Water courses
- River
- Lake

Status of waste collection in the villages
- Included in system
- Inclusion 2012
- Inclusion 2013

Amount of collected waste in t/a
- 1-99 t
- 100 - 199 t
- 200 - 399 t
- >=400 t

Dump sites
- Official dump sites
- Temporary waste collection centre
- Illegal dump site
- Illegal dump site easy to remove
- Illegal dump site difficult to remove
- Illegal dump site very difficult to remove
- Illegal dump site removed 2012

Recycling initiatives or businesses
- Private recycling business

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A6: Assessment of solid waste

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village working groups, village survey 2011, field observations by UNDP team, Municipality of Dragash.

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

4650000 4645000 4640000 4635000

1.7. Assessment of cultural heritage and tourist potential (A7)

Contents of the map:

Existing and potential tourist attractions
• Cultural heritage (archaeological and architectural sites, and cultural landscapes)
• Natural sites (such as caverns, springs, waterfalls etc.)
• Tourism infrastructure (such as hotels, restaurants, bus stops and post offices)
• Hiking and mountain biking trails and camping facilities

The main messages:

The map shows relevant information on tourism which is required for the integrated development of a sustainable tourism concept. With the hiking trail concept (Wassel 2011) a first step has been made to support tourism development (mountain bike trails, hiking trails and camping).
Apart from the hiking possibilities, three focal areas for potential tourism development based on existing infra-structure are indicated: one as a corridor from Brod to Restelica / Restelicë, one in the upper mountains of Zaplluxhe / Zaplužje (planned skiing area) and the Blaç/Belobrad River area from Zaplluxhe / Zaplužje to Brezne / Brezna.
A recent inventory of cultural heritage across Kosovo (Ministry of Culture, Youth and Sports, see UNDP (2012c)). includes a list of 12 sites, monuments and artefacts that are currently under temporary national protection, including the three monuments that had been formerly protected under Yugoslav law (Table 1 14). According to an evaluation scheme (see Table 1 13) four villages are classified with very high, seven with high and 19 with medium cultural heritage value.
Dragash/Dragaš currently has limited facilities to support visitors, despite its local potential as an area for skiing and outdoor activities. With only 3 hotels (one of them in Zaplluxhe/Zaplužje is not functional at the moment) and informal bed & breakfast possibilities, there is a significant deficit for tourist development.
Winter sport facilities are marginally available only in Brod (Arxhena Hotel and Ski lift).
Regular public transport services are limited to the connection from Prizren to Dragash/Dragaš and Zapllux-he/Zaplužje, and do not include the main centres and entrance points of the Sharr/ Šar Mountain National Park in Dragash/Dragaš.

Data sources, material and reliability:

Wassel (2011): Hiking and Nature Tourism Guide
UNDP (2012c): Cultural and Heritage Assets in Dragash/Dragaš Municipality.
UNDP (2011): Dragash/Dragaš Project: Village questionnaire and Visioning Workshop for the Municipal Devel-opment Plan September 2011

Further suggestions for monitoring and/or improvement of data:

The list of available restaurants and other, smaller locations with available food as well as the hotels/bed and breakfast availability is incomplete.
Interesting scenic roads and exceptional viewpoints have to be mapped during the elaboration of a tourist strategy and improved offer of the Municipality and the improvement of the facilities of the “Sharri National Park”.

Number of heritage objects

number of protected assets	1	2	3	4
0	medium	medium	high	very high
1	high	high	very high	very high
2	X	very high	very high	very high

Table 1 13: Valuation matrix for cultural heritage

Village	Type of heritage	Name
National protection		
Brrut / Brut	Archaeological	Brrut-hisar
Zlipotok / Zlipotok	Archaeological	Hisarisht
Bresanë / Brodosavce	Architectural	Mosque of Kuklibeut
Temporary national protection		
Shajne / Šajnovce	Architectural	Mill
Kapre / Kapra	Architectural	Kapre Mosque
Zlipotok / Zlipotok	Architectural	Site of former Mosque
Kapre / Kapra	Architectural	Sallatash
Bellobrad / Belobrad	Architectural	Water/fulling mill
Buzez / Buzez	Architectural	Namazxhah
Dragash / Dragaš	Architectural	Turbe
Mlike / Mlikë	Architectural	Mosque
Restelica / Restelicë	Architectural	Tomb of Selim Deda (turbe)

Tabela1-14: Zonat kryesore të trashëgimisë kulturore në komunën e Dragashit

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KOSOVO

Legend

Borders
- National border
- Dragash border
- National Park “Sharri”

Settlements
- Build up area

Water courses
- River
- Lake

Topography
- Peak

Roads
- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel
- Agricultural paths and roads
- Forest paths and roads
- Foot paths

Cultural heritage
- Archaeological heritage under full national protection
- Archaeological heritage under temporary national protection
- Archaeological heritage, no protection status
- Architectural heritageunder full national protection
- Architectural heritage under temporary national protection
- Architectural heritage, no protection status
- Cultural landscape under full national protection
- Cultural landscape, no protection status
- Village with very high value of cultural heritage
- Village with high value of cultural heritage
- Village with medium value of cultural heritage

Areas with potential for tourism development
- Areas with potential for tourism development based on already existing uses, infrastructures and plans

Natural sites
- Cavern
- Spring
- Waterfall
- Big old tree
- Natural heritage

Hiking
- Mountain bike trails
- Hiking trail
- Camping

Tourism infrastructure
- Hotel
- Restaurant
- Post office
- Bus stop
- Regular bus lines

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A7: Assessment of cultural heritage and tourism potential

Date: Second Edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village survey 2011, field observations by UNDP team, Municipality

Coordinate System :
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Whitacker C., Bemmerlein-Lux, F., Gagica, I.,

1.8. Assessment of health, medical services, and civil protection (A8)

Contents of the map:

For each village data has been compiled for the installation for healthcare facilities, ambulance centres [5] , pharmacies and ambulance services, and the catchment areas for the medical facilities.
An assessment table for each village shows (in green) if the available staff is in compliance with national standards, or (in red) if it is below the national standard. (see table on the left).
The services provided in 2011, as well as the inhabitants served, are also indicated.

QKMF Dragash / Dragaš			
Staff			
General Physicians	3	Nurses	13
Specialised Physicians	5	Midwifes	4
Dentists	2	Other medical staff	10
Services provided in 2011			
General medical services	16,695	Specialised medical services	23,501
Inhabitants served			
AMF Function	4,397	QMF Function	6,908
		QKMF Function	33,997

The main messages:

This structure of the health service distribution remains a weakness. Dragash/Dragaš municipality has one Main Centre for Family Medicine (in Dragash/Dragaš town, providing 24 hour assistance), five Centres for Family Medicine and eight Health Clinics.
The national criteria to establish and staff a Centre of Family Medicine or a Health Clinic are as follows:
- 1 Health Clinic per 6000 inhabitants (QKMF)
- 1 Family Medical Centre per 10.000 inhabitants (QMF)
- 1 Main Medical Centre per 100.000 inhabitants (AMF)
- 1 Doctor and 2 nurses per 2000 inhabitants

Overall it can be stated: The number of nurses (matrons and nurses combined - 36) exceeds the minimum requirements per number of the population in Dragash/Dragaš, but for number of doctors, dentists, gynaecologists, or midwives staffing does not meet the minimum standard. In Restelica/Restelicë, with a population of 4.698, there is no Family Medical Centre (QMF) available, so inhabitants have to travel to Kruševo/Krushevë. Due to budget constraints not all of the villages have a health centre. Nevertheless a zoning exercise has been carried out to verify provision of services (see
Table 1 16).

Data sources, material and reliability:

Dragash/Dragaš, Director of Health, May 2012

Field	Number of employees in Dragash/ Dragaš	National staff requirement: 1 per number inhabitants	Minimum staff requirement for Dragash/Dragaš (population 34000)
Doctor (1 ear, nose& throat doctor; 9 without specialisation)	14	2000	17
Matron	5	(combined with figure for nurses)	
Nurse	31	1000	34
Paediatrician	1		
Gynaecologist	0	10.000	3
Midwife	0	5000	7
Radiologist	1		
Dental technician	4	5000	7
Laboratory technician	6		
Pharmacist	4		
TOTAL	66		

Table 1 15: Staffing pattern and deficits for medical services

[5] Ambulance centre is used in correlation to the Albanian word 'ambulant' describing a building that provides basic healthcare

Village	Type of health centre	Catchment villages
Dragash / Dragaš	Main Medical Centre	Shajne / Šajnovce
		Rrenc / Renc
		Xërxe / Zrze
		Pllajnik / Plajnik
		Ljubovište / Lubovishtë
		Kukuljane / Kukulanë
Vranište/Vranisht	Ambulance Centre [6]	Mlike / Mlikë
		Orčuša / Orçushë
Radešha/Radeshë	Ambulance Centre	Leštane / Leshtan
Bresanë/Brodosavce	Family Medical Centre	Kuklibeg / Kukljibeg
Kuk/Kukovce	Ambulance Centre	-
Kosavë/Kosavce	Ambulance Centre	Buzez / Buzez
Blaç/Bljać	Ambulance Centre	Zaplluxhe / Zaplužje
		Zgatar / Zgatar
Bellobrad/Belobrad	Family Medical Centre	Kapre / Kapra
		Brrut / Brut
		Zym / Zjum
Llopushnik/Lopušnik (Brezne)	Family Medical Centre	Buçe / Buće
		Brezne / Brezna
		Pllavë / Plava
Rapča/Rapçë	Family Medical Centre	Krstec / Kërstec
Brod	Ambulance Centre	Dikance / Dikanc
		Bačka / Bačkë
Kruševo/Krushevë	Family Medical Centre	Zlipotok / Zlipotok
Globočica/Gllboçicë	Ambulance Centre	-
Restelica/Restelicë	Ambulance Centre	-

Table 1 16: Catchment for medical services

[6] Ambulance centre is used in correlation to the Albanian word ‘ambulant’ describing a building that provides basic healthcare

QMF Brezne / Brezna (Lopushnik)			
Staff			
General Physicians	1	Nurses	1
Specialised Physicians	0	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2011			
General medical services	245	Specialised medical services	39
Inhabitants served			
AMF Function	3,635	QMF Function	3,635

QMF Bellobrad / Belobrad			
Staff			
General Physicians	1	Nurses	1
Specialised Physicians	0	Midwifes	0
Dentists	0	Other medical staff	1
Services provided in 2011			
General medical services	784	Specialised medical services	444
Inhabitants served			
AMF Function	3,149	QMF Function	3,149

QMF Bresanë / Brodosavce			
Staff			
General Physicians	2	Nurses	8
Specialised Physicians	1	Midwifes	0
Dentists	2	Other medical staff	2
Services provided in 2013			
General medical services	4,318	Specialised medical services	7,678
Inhabitants served			
AMF Function	3,691	QMF Function	10,187

AMF Blaç / Bljać			
Staff			
General Physicians	0	Nurses	1
Specialised Physicians	0	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2016			
General medical services	237	Specialised medical services	0
Inhabitants served			
AMF Function	3,613	QMF Function	0

QMF Rapča / Rapçë			
Staff			
General Physicians	1	Nurses	1
Specialised Physicians	0	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2011			
General medical services	1,511	Specialised medical services	418
Inhabitants served			
AMF Function	1,273	QMF Function	1,273

QKMF Dragash / Dragaš			
Staff			
General Physicians	3	Nurses	13
Specialised Physicians	5	Midwifes	4
Dentists	2	Other medical staff	10
Services provided in 2011			
General medical services	16,695	Specialised medical services	23,501
Inhabitants served			
AMF Function	4,397	QMF Function	6,908
		QKMF Function	33,997

AMF Vranište / Vranisht			
Staff			
General Physicians	0	Nurses	1
Specialised Physicians	0	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2011			
General medical services	211	Specialised medical services	0
Inhabitants served			
AMF Function	504	QMF Function	0

AMF Globočica / Gllboçicë			
Staff			
General Physicians	0	Nurses	0
Specialised Physicians	0	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2011			
General medical services	0	Specialised medical services	0
Inhabitants served			
AMF Function	960	QMF Function	0

QMF Kruševo / Krushevë			
Staff			
General Physicians	1	Nurses	2
Specialised Physicians	0	Midwifes	0
Dentists	1	Other medical staff	2
Services provided in 2011			
General medical services	407	Specialised medical services	170
Inhabitants served			
AMF Function	1,467	QMF Function	7,125

AMF Restelica / Restelicë			
Staff			
General Physicians	0	Nurses	1
Specialised Physicians	1	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2011			
General medical services	625	Specialised medical services	0
Inhabitants served			
AMF Function	4,698	QMF Function	0

AMF Kuk / Kukovce			
Staff			
General Physicians	0	Nurses	0
Specialised Physicians	0	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2014			
General medical services	325	Specialised medical services	0
Inhabitants served			
AMF Function	1,658	QMF Function	0

AMF Kosavë / Kosavce			
Staff			
General Physicians	0	Nurses	1
Specialised Physicians	0	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2015			
General medical services	391	Specialised medical services	317
Inhabitants served			
AMF Function	1,225	QMF Function	0

AMF Radeša / Radeshë			
Staff			
General Physicians	0	Nurses	0
Specialised Physicians	0	Midwifes	1
Dentists	0	Other medical staff	0
Services provided in 2011			
General medical services	71	Specialised medical services	0
Inhabitants served			
AMF Function	2,007	QMF Function	0

AMF Brod / Brod			
Staff			
General Physicians	0	Nurses	1
Specialised Physicians	1	Midwifes	0
Dentists	0	Other medical staff	0
Services provided in 2012			
General medical services	310	Specialised medical services	95
Inhabitants served			
AMF Function	1,720	QMF Function	1,720

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KOSOVO

Legend

Borders

- National border
- Dragash border
- Cadastral zone

Settlements

- Build up area

Roads

- Regional road, asphalted
- Local road, asphalted
- Local road, gravel
- Local road, type of pavement unknown

Water courses

- River
- Lake

Topography

- Peak

Health care

- Main medical centre
- Family medical centre
- Ambulance
- Pharmacy in Dragash / Dragaš
- Ambulance cars based in Dragash / Dragaš

Hinterland of medical facilities

Hinterland of centers providing medical ambulance function

- Hinterland of family medical center in Bellobrad / Belobrad
- Hinterland of ambulance in Blaç / Bljać
- Hinterland of family medical center in Breznë / Brezna
- Hinterland of family medical center in Brod / Brod
- Hinterland of family medical center in Bresanë / Brodosavce
- Hinterland of main medical center in Dragash / Dragaš
- Hinterland of ambulance in Globočica / Gllboçicë
- Hinterland of ambulance in Kosavë / Kosavce
- Hinterland of family medical center in Kruševo / Krushevë
- Hinterland of ambulance in Kuk / Kukovce
- Hinterland of ambulance in Radeša / Radeshë
- Hinterland of family medical center in Rapča / Rapçë
- Hinterland of ambulance in Restelica / Restelicë
- Hinterland of ambulance in Vranište / Vranisht

Hinterland of family medical centres

- Connection of ambulances to family medical centers

Civil protection

- Police station
- 17 fire fighters and equipment based in Dragash / Dragaš

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A8: Assessment of health, medical services and civil protection

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village working groups, village survey 2011, field observations by UNDP team, Municipality

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

FYR of MACEDONIA

1.9. Assessment of education (A9)

Contents of the map:

For reach village, the number of pupils (male and female), their age classes for the Kosovo System (K) and Serbian System (S), teachers, classrooms and size are included in an assessment table (see left figure as example).
For each village the table shows green if the national standards are met accurately; in red if it is below or above the standard; and in yellow if the number is critical.
Category of schools according to the Municipality is “Central School (1-(8)9 class)”, “Satellite School (1-(4)5 class)” and “High School (secondary school)”.
Coherence: The urban settlements were classified according to their functions in the municipality - centre settlement, sub-centre village, village and remote village (please refer to Figure 1 30). A “Centre” should have every category of school, a “sub-centre” at least a central school, and ”villages” and “remote villages” should have at least a satellite school.

Llapushnik / Lopusnik			banorë / stanovnici
Shkolla / Škola	Shaban Shabani	Sistemi i Kosovës/Sistem Kosova	Central
Nr i banorëve të shërbyer nga shkolla qendrore/Br stanovnika usluženih od centralne škole			5.528
Grupmoshat, numri i nxënësve dhe i mësuesve / Starosne grupe, broj učenika i učitelja			
Nr i grupeve parashkollore/ Br predškolskih grupa	0	Nr i fëmijëve parashkollor/ Br predškolske dece	0
K 1-5		Nr i nxënësve / Br učenika	226
K 6-9	x	Nr i nxënësve meshkuj / Br učenika muško	125
K 10-13		Nr i nxënësve femra / Broj učenika ženski	101
S 1-4		Nr i mësuesve / Br učitelja	0
S 1-8		Nr i klasave / Br učionica	7
S 9-12		Total m² i klasave / Ukupno m² učionica	830
Vlerësimi i raportit infrastrukturë dhe nxënës-mësues / Procena odnosa infrastrukture i učenici-učitelj			
Gjendja e përgjithshme e ndërtesës / Opšte stanje zgrade	Mirë / Dobro	m² për nxënës / m² po učeniku	0,0
Klasë për një grupmoshë / Učionica po starosnoj grupi	0,8	m² për nxënës / m² po učeniku	3,7
Koherenca me kuptim funksional të vendbanimit / Koherentnost sa funkcionalnim smislom naselja			PO / DA

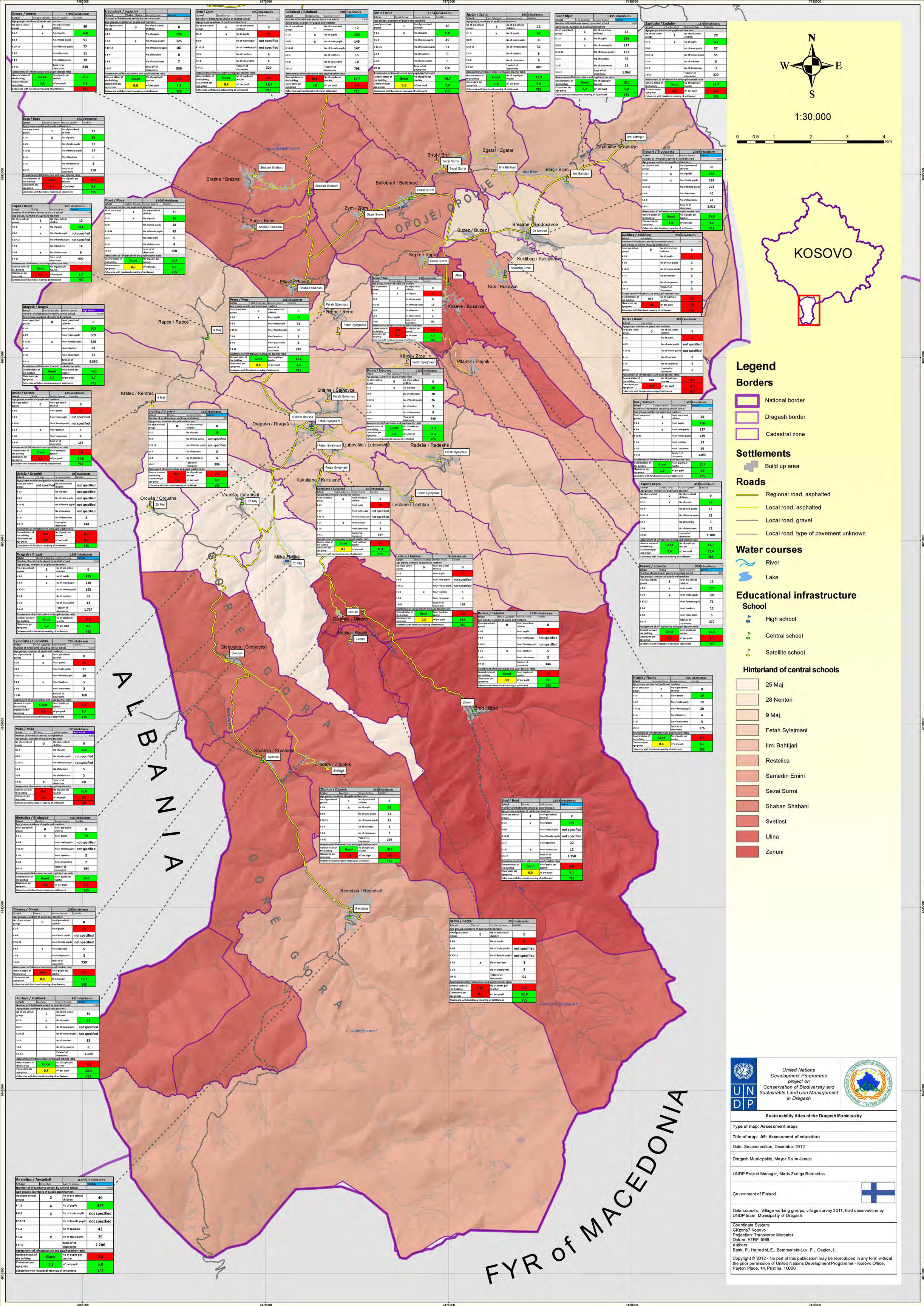
The main messages:

Number of schools in Dragash/Dragaš municipality: 39 - 27 are funded by Kosovo institutions, 9 are funded by Serbian institutions, and 3 receive partial funding from both Kosovo and Serbia.
Coherence: Only in Brezne/Brezna and Mlike/ Mlikë is there a mismatch between the category of school and the spatial function of the village.
Staff working in the field of education: Almost 500, employed by the municipality.
Teacher/students ratio: National requirements indicate a minimum of 10 and maximum of 35 students per teacher. There are 7 villages with a higher student to teacher ratio (over 20). 2 villages in Opojë/Opolje have a very low student to teacher ratio of less than 10 pupils (Xërxe/Zrze and Zym/Zjum) and 10 of the Gora/Gorë villages (Bačka/Baçkë, Krstec/Kërstec, Kruševo/ Krushevë, Kukuljane/Kukulanë, Leštan/Leshtane, Ljubovište/ Lubovishtë, Radeša/Radeshë, Rapča/Rapçë, Restelica/ Restelicë, Vranište/Vranisht). 70% of villages (8 out of 12) with low ratios are in territories that are experiencing a net decrease in population that is not reflected a reduction in staff numbers. 2 villages are stable in their populations yet have a low student / teacher ratio.
Floor space: National standards require 2.5m^2 floor area per pupil. All the schools in Dragash/Dragaš exceed this requirement.
Status of building: 8 of the schools (in the villages of Bačka/ Baçkë, Bellobrad/Belobrad, Dikance/Dikanc, Orčuša /Orçushë, Mlike/Mlikë, Xërxe/Zrze and Vranište/Vranisht) were judged as having poor conditions in UNDP field surveys (building structure (walls, floors, windows, doors) and of the furniture (desks, chairs, blackboards).
Number of classrooms per age group (if there are 0 to 0,5 classroom per age group a deficit can be stated; a small deficit if there are 0,6 – 0,9 classrooms; and no deficit if there is more than 1 classroom per age group.

Data sources, material and reliability:

Republic of Kosovo (2008): Law Nr. 03/L-040 on Local Self-Government, Republic of Kosovo (2011): Law on Pre-University Education No.04/L–032, personal information Director of Education 2012.

[7] Serbian system from 1-4 or 8, Albanian system 1-5 or 9



ALBANIA
FYR of MACEDONIA
OPOJË / OPOJE
GORË / GORA
KOSOVO
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1:30,000
0 0.5 1 2 3 4 Km
Brezne / Brezna
Brrut / Brut
Zgatar / Zgatar
Zapluxhe / Zaplužje
Bellobrad / Belobrad
Blaç / Bljac
Zym / Zjum
Buçe / Buce
Buzez / Buzez
Bresanë / Brodosavce
Kapre / Kapra
Kuklibeg / Kukljibeg
Kuk / Kukovce
Pllavë / Plava
Kosavë / Kosavce
Rrenc / Renc
Rapca / Rapçë
Xërxe / Zrze
Pllajnik / Plajnik
Shajne / Šajnovce
Krstec / Kërstec
Dragash / Dragaš
Ljubovište / Lubovishte
Radeša / Radeshë
Kukuljane / Kukulanë
Orcuša / Orçushë
Vranište / Vranisht
Leštane / Leshtan
Mlike / Mlikë
Dikance / Dikanc
Backa / Baçkë
Globocica / Gllobociçe
Brod / Brod
Kruševo / Krushevë
Zlipotok / Zlipotok
Restelica / Restelicë
Shaban Shabani
Sezai Surroi
Ilmi Bahtijari
28 Nentori
Samedin Emini
Ulina
Fetah Sylejmani
9 Maj
25 Maj
Ruzhdi Berisha
Zenuni
Svetlost
Restelica
Blac River
Belobrad River
Restelica river
Legend
Borders
National border
Dragash border
Cadastral zone
Settlements
Build up area
Roads
Regional road, asphalted
Local road, asphalted
Local road, gravel
Local road, type of pavement unknown
Water courses
River
Lake
Educational infrastructure
School
High school
Central school
Satellite school
Hinterland of central schools
25 Maj
28 Nentori
9 Maj
Fetah Sylejmani
Ilmi Bahtijari
Restelica
Samedin Emini
Sezai Surroi
Shaban Shabani
Svetlost
Ulina
Zenuni
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Assessment maps
Title of map: A9: Assessment of education
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Village working groups, village survey 2011, field observations by UNDP team, Municipality of Dragash
Coordinate System: GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors: Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,
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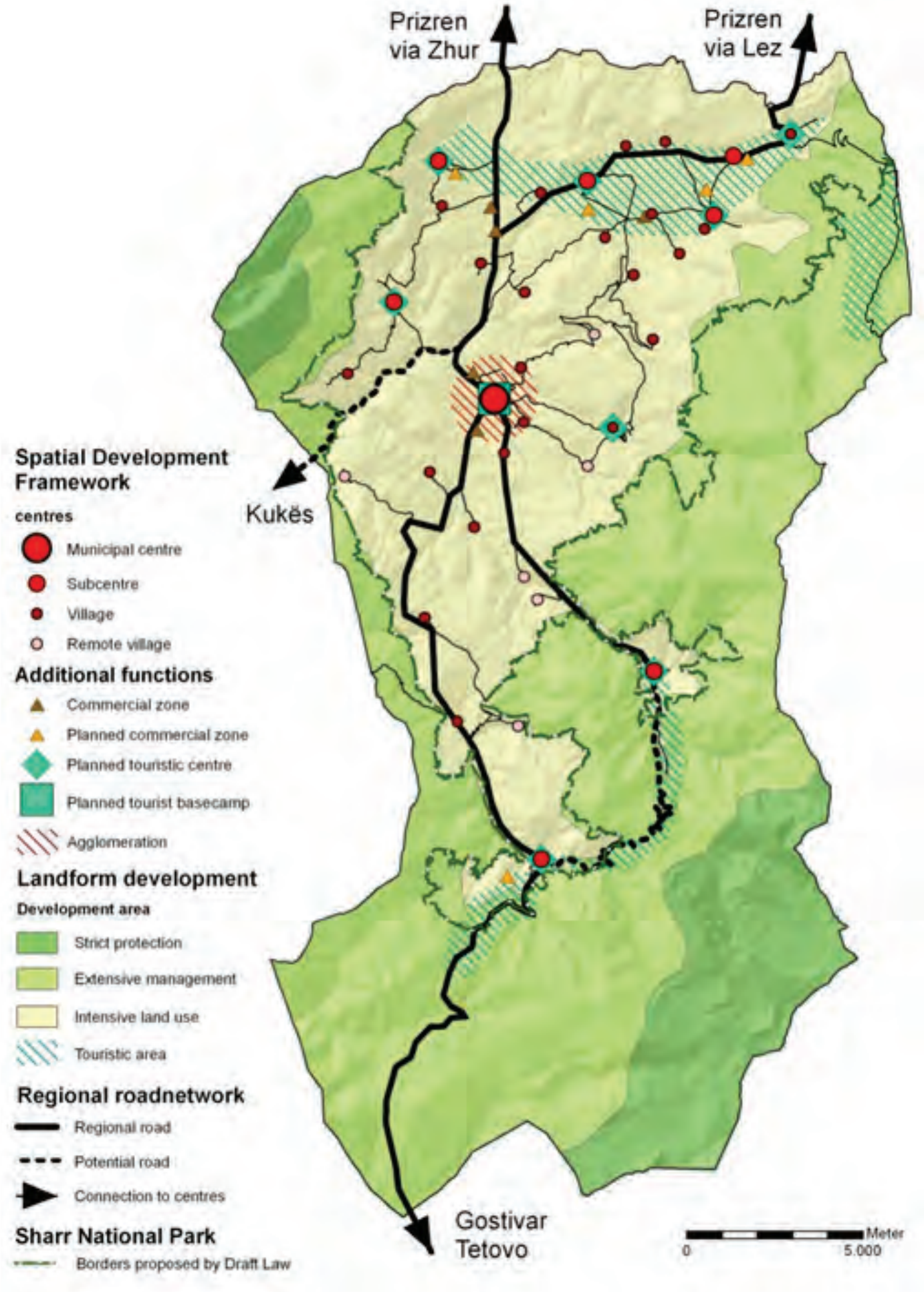
1.10. Assessment of economy, infrastructure, and energy (A10)

The settlement functions reflected are based on two inputs:

1. The classification according to their resident population, and
2. Their existing and potential function for the municipality.
(See Table 1 17)

Classification according to their resident population:
The four primary centres are Dragash/Dragaš, Brezne/Brezna, Restelica/Restelicë and Bresanë/Brodosavce. They contain a high number of amenities, between 53 and 71 shops.
The twelve secondary settlements with populations between 1000 and 3500 are Bellobrad/Belobrad, Blaç/Bljać, Brod/Brod, Brrut/Brut, Buçe/Buće, Kosavë/Kosavce, Kuk/Kukovce, Kuklibeg/Kukljibeg, Pllajnik/Pllajnik, Shajne/Šajnovce, Zaplluxhe/Zaplužje, and Zgatar/Zgatar. They are characterised by a number of small to medium sized businesses, with villages containing between 4 and 30 enterprises.
Twenty are tertiary centres, with a population of less than 1000 inhabitants. Many of these villages are undergoing population declines, with the village appearing ‘abandoned’ for most of the year. There are significant problems with communication networks and infrastructure, especially in solid waste management. Six of these villages are also classified as ‘Remote Villages’, with declining population and remote locations that makes access more difficult.

Figure 1 30: Settlement functions



Classification according to the existing and potential function "Centre Concept":

Table 1 17: Function of urbanised areas in terms of the "centre" concept according to their existing infrastructure and their development needs (function of the settlement)

Name of settlement	Classification according to size	Functional classification (centre concept)	Area
Dragash / Dragaš	Secondary settlement	Centre	MIX
Bellobrad / Belobrad	Secondary settlement	Sub-centre	OPOJA
Blaç / Bljać	Secondary settlement	Sub-centre	OPOJA
Brezne / Brezna	Primary centre	Sub-centre	OPOJA
Brod / Brod	Secondary settlement	Sub-centre	GORA
Bresanë / Brodosavce	Primary centre	Sub-centre	OPOJA
Rapča / Rapçë	Secondary settlement	Sub-centre	GORA
Restelica / Restelicë	Primary centre	Sub-centre	GORA
Brrut / Brut	Secondary settlement	Village	OPOJA
Buçe / Buće	Tertiary centre	Village	OPOJA
Buzez / Buzez	Tertiary centre	Village	OPOJA
Globočica / Gllboçicë	Secondary settlement	Village	GORA
Kapre / Kapra	Tertiary centre	Village	OPOJA
Kosavë / Kosavce	Secondary settlement	Village	OPOJA
Krstec / Kërstec	Tertiary centre	Village	GORA
Kruševo / Krushevë	Secondary settlement	Village	GORA
Kuk / Kukovce	Secondary settlement	Village	OPOJA
Kuklibeg / Kukljibeg	Secondary settlement	Village	OPOJA
Kukuljane / Kukulanë	Tertiary centre	Village	GORA
Ljubovište / Lubovishtë	Tertiary centre	Village	GORA
Mlike / Mlikë	Tertiary centre	Village	GORA
Pllavë / Plava	Secondary settlement	Village	OPOJA
Pllajnik / Plajnik	Tertiary centre	Village	OPOJA
Radeša / Radeshë	Tertiary centre	Village	GORA
Rrenc / Renc	Tertiary centre	Village	OPOJA
Shajne / Šajnovce	Secondary settlement	Village	OPOJA
Vranište / Vranisht	Tertiary centre	Village	GORA
Zaplluxhe / Zaplužje	Secondary settlement	Village	OPOJA
Zgatar / Zgatar	Secondary settlement	Village	OPOJA
Zym / Zjum	Tertiary centre	Village	OPOJA
Bačka / Baçkë	Remote village	Remote village	GORA
Dikance / Dikanc	Remote village	Remote village	GORA
Leštane / Leshtane	Remote village	Remote village	GORA
Orčuša / Orçushë	Remote village	Remote village	GORA
Xërxe / Zrze	Remote village	Remote village	OPOJA
Zlipotok / Zlipotok	Remote village	Remote village	GORA

1.10.1. Roads and transportation (A10.1)

Contents of the map:

Existing transport network
• Regional and local roads (and road cover)
• Agricultural and forest roads
• Major foot-paths
Bottlenecks in existing road network (narrow village routes)
Proposed (municipal) road construction / improvement projects
• SDA assessment for suitability of realisation (recommended, recommended for feasibility and cost assessment, not recommended)
Border stations to Albania and FYR Macedonia
Public transportation
• Bus lines and private pickups (with area of reach)

The main messages:

Roads:
The natural restrictions to path connections across the mountains have always been a reason for Dra-gash/Dragaš's remoteness.
There are about 570km of roads and trails within Dragash/ Dragaš municipality, of which approximately half (278km) are accessible to ordinary vehicles. These vary greatly in quality.

Currently only Orčuša/Orçushë and Pllajnik/Plajnik have no access by a paved road. Some roads between villages and within the villages themselves are often still unpaved. Dragash/ Dragaš municipality is connected to the rest of Kosovo by one paved road, which is directly connected to the new highway between Albania and Prishtinë/Priština, and one gravel road close to Zaplluxhe/Zaplužje. A gravel road from Restelica/ Restelicë leads to the borders in the south, connecting Dragash/ Dragaš to the Gorna Reka region in FYR Macedonia at the Lukovo Pole mountain pass (1500m). Other footpaths and agricultural trails stretch across informal border crossings into FYR Macedonia and Albania.
Table 1 18 list the road projects shown in map A10.1 including important details and results of preliminary assessment.

Project	Name	Type	Altitude	Length	Added value	Costs	Conflict National Park	Conflict Biodiversity	Final Assessment	Recommendation	Priority
B1	Prizren-Dragash	improve	920-1020	11.844	1	3	1	3	2	realise	X
B3	Zaplluxhe-Prizren	improve	1170-1250	2.524	2	2	1	3	2	realise	X
C2	Krushevo-Albania	improve	1140-1405	3.226	1	2	3	3	2	realise	X
A1	Radesha-Leshtan	improve	1050-1100	449	4	2	1	1	2	realise	
A2	Ljub-REG	improve	1144-1150	1.948	4	1	1	1	2	realise	
A4	Bypass_Zgatar	improve	1280-1360	2.497	3	2	1	2	2	realise	
B2	Dragash-Brod	new / improve	950-1120	3.174	2	3	2	3	2	realise	
C1	Orcusha-Albania	improve	1020-1380	12.420	2	2	2	3	2	realise	
C3	Restelica-FYRM	improve	1440-1900	16.705	1	4	4	5	3	check	X
A3	Gora	new	1380-1480	6.978	2	3	3	4	3	check	
B5	Brod-Restelica	new / improve	1400-1920	12.463	2	4	4	5	3	check	
B4	Bypass_Restelica	new	800-850	5.136	3	4	3	4	3	check	
B4t	Tunnel_Restelica	new / improve	1350-1400	950	3	5	2	2	3	check	
C7	Plava-River	new	1200-1520	11.080	2	3	3	4	3	check	
C4	Brod-FYRM	new / improve	1160-2470	11.650	4	4	5	5	4	dismiss	
C5	Zaplluxhe-FYRM	new / improve	1420-2200	12.744	4	3	4	4	4	dismiss	
C6	Albania-FYRM	new	1400-1940	21.055	5	5	5	5	5	dismiss	

1	very high	very low	very high
2	high	low	high
3	moderate	moderate	moderate
4	low	high	low
5	very low	very high	very low

Table 1-18: Road projects proposed and assessed

Public/private transport:

The majority of transport occurs with cars (including shared 'taxis'). Between 8 and 13 of the villages have no private transportation service offered in the village. There are 7 private bus companies running bus lines. In the more mountainous villages private vehicles are the main mode of transport. There is no bus from Prizren to the Gora/Gorë region or from Opojë/ Opolje to Gora/Gorë. Transportation to some Gora/Gorë villages is provided only for students during the academic year.

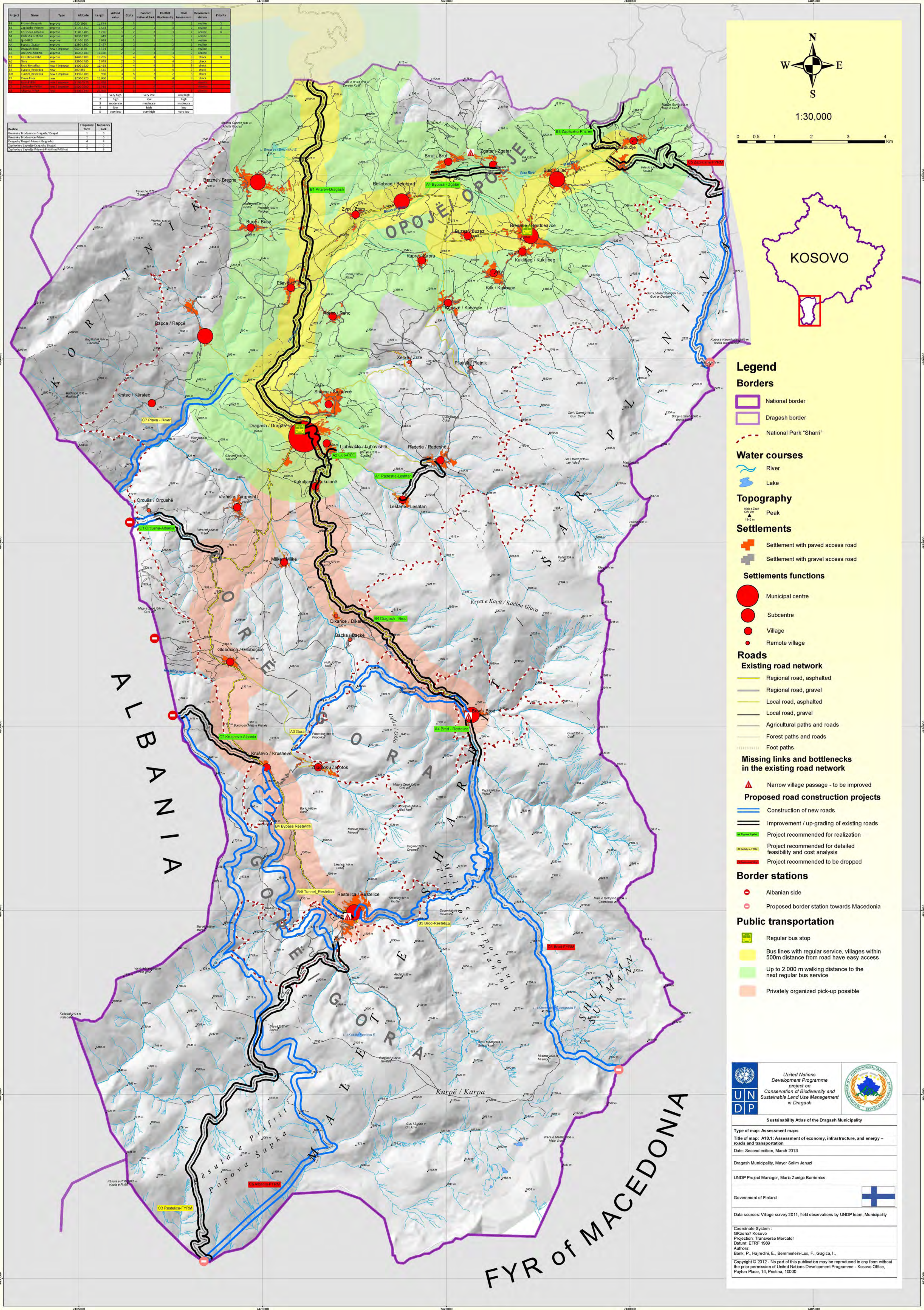
Transborder connections:

• Kruševo/Krushevë has a functioning gravel road to Albania, but the border is closed to vehicles;
• Orčuša/Orçushë lacks only several hundred metres of road to connect to Albania
• A road through the Mavrovo National Park in FYR Macedonia links into the southern territory of Resteli-ca/Restelicë, only accessible by jeep in the snow free period.
• From Zaplluxhë/Zaplužje, two roads connect to Zupa valley of and an old road/trail toward Tetovo in FYR Macedonia is partly upgraded, but still only practicable by jeep and in the snow free season.

Albania: As of early 2012 there have been three newly constructed border stations on the Albanian side: west of Orčuša/Orçushë (only to a footpath on the Kosovo side), northwest of Globočica/Gllboçicë (small pedestrian border station), and northwest of Kruševo/Krushevë (vehicle border station).
FYR Macedonia: There are only two cross-border connections 1) south of Restelica/Restelicë to the Gorna Reka region and 2) southeast of Zaplluxhe/Zaplužje to FYR Macedonia in at the Skarpë/Skarpa Mountain at an altitude of 2474m (without great importance).
The opening of the borders and the construction of new cross-border roads is likely to create major potential for economic development in Dragash/Dragaš. However, the environmental impact is likely to be considerable in these sensitive mountain ecosystems.

Data sources, material and reliability:

UNDP Field survey, June 2012
Information from the Municipality 2012
The information is reliable



Project	Name	Type	Altitude	Length	Added value	Costs	Conflict National Park	Conflict Biodiversity	Final Assessment	Recommendation	Priority
B1	Prizren-Dragash	improve	920-1020	11.844	1	3	1	3	2	realise	X
B3	Zapluxhe-Prizren	improve	1170-1250	2.524	2	2	1	3	2	realise	X
C2	Krushevo-Albania	improve	1140-1405	3.226	1	2	3	3	2	realise	X
A1	Radesha-Leshtan	improve	1050-1100	449	4	2	1	1	2	realise	
A2	Ljub-REG	improve	1144-1150	1.948	4	1	1	1	2	realise	
A4	Bypass_Zgatar	improve	1280-1360	2.497	3	2	1	2	2	realise	
B2	Dragash-Brod	new / improve	950-1120	3.174	2	3	2	3	2	realise	
C1	Orcusha-Albania	improve	1020-1380	12.420	2	2	2	3	2	realise	
C3	Restelica-FYRM	improve	1440-1900	16.705	1	4	4	5	3	check	X
A3	Gora	new	1380-1480	6.978	2	3	3	4	3	check	
B5	Brod-Restelica	new / improve	1400-1920	12.463	2	4	4	5	3	check	
B4	Bypass_Restelica	new	800-850	5.136	3	4	3	4	3	check	
B4t	Tunnel_Restelica	new / improve	1350-1400	950	3	5	2	2	3	check	
C7	Plava-River	new	1200-1520	11.090	2	3	3	4	3	check	
C4	Brod-FYRM	new / improve	[illegible]	[illegible]	4	4	5	5	4	dismiss	
C5	Zapluxhe-FYRM	new / improve	1420-2300	[illegible]	4	5	4	4	4	dismiss	
C6	Albania-FYRM	new	1400-1940	[illegible]	5	5	5	5	5	dismiss	

1	very high	very low	very high
2	high	low	high
3	moderate	moderate	moderate
4	low	high	low
5	very low	very high	very low

Busline	Frequency forth	frequency back
Bresanë / Brodosavce-Dragash / Dragaš	1	0
Bresanë / Brodosavce-Prizren	2	0
Dragash / Dragaš-Prizren(-Belgrade)	4	4
Zaplluxhe / Zaplužje-Dragash / Dragaš	2	0
Zaplluxhe / Zaplužje-Prizren(-Prishtina/Priština)	7	9

Legend

Borders

- National border
- Dragash border
- National Park "Sharri"

Water courses

- River
- Lake

Topography

- Peak (Maja e Zezë / Crni Vrh 1542 m)

Settlements

- Settlement with paved access road
- Settlement with gravel access road

Settlements functions

- Municipal centre
- Subcentre
- Village
- Remote village

Roads

Existing road network

- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel
- Agricultural paths and roads
- Forest paths and roads
- Foot paths

Missing links and bottlenecks in the existing road network

- Narrow village passage - to be improved

Proposed road construction projects

- Construction of new roads
- Improvement / up-grading of existing roads
- A4 Bypass Zgatar — Project recommended for realization
- C3 Restelica - FYRM — Project recommended for detailed feasibility and cost analysis
- Project recommended to be dropped

Border stations

- Albanian side
- Proposed border station towards Macedonia

Public transportation

- Regular bus stop
- Bus lines with regular service, villages within 500m distance from road have easy access
- Up to 2.000 m walking distance to the next regular bus service
- Privately organized pick-up possible

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

UNDP

KUVENDI KOMUNAL DRAGASH · SKUPSTINA OPŠTINE DRAGAŠ · DRAGASH MUNICIPALITY

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A10.1: Assessment of economy, infrastructure, and energy – roads and transportation

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village survey 2011, field observations by UNDP team, Municipality

Coordinate System : GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

1.10.2. Energy (A10.2)

Contents of the map:

Electricity supply and consumption
• Distribution lines and Transformers
• Small Hydropower Plant (SHPP)
• Energy consumption per village in 2010 (in kW, ratio of monthly energy consumption, time of maximum consumption)

The main messages:

Dragash/Dragaš municipality is supplied with energy from the Kosovo power plants A and B (located in Obiliq/Obilić municipality near Prishtinë/Priština), through a distance conductor of 35KV running from Prizren. It has 3 branches (one south, one northwest and one northeast branch). The distribution network of Dra-gash/Dragaš municipality is managed and maintained by the "Distribucioni Prizren-Dragash Working Unit". The Dragash//Dragaš Working Unit is located near the base transmitter, and manages the following infrastructure :
1. Base transformer station in Dragash/Dragaš
TS 35/10 KV with two energy transformers/transmitters with installing power Sn = 8 MVA + 4 MVA = 12 MVA, and with Dikanca Hydro power with Sn = 2.5 MVA. The total installing power is Sn = 14.5 MVA.
2. High tension networks 10 KV with an aerial network 10 KV length L = 86 Km, with Al – Fe conductor and a ground cable network 10 KV of length L = 1 Km
3. Low tension network 04 KV with an aerial network of length L = 140 Km, with conductor Al – Fe, a ground cable network 04 KV of length 0.5 Km and an aerial network with plat cable 04 KV of length L = 2.43 Km
4. Transformer stations TS 10/04 KV to locations in Dragash town and villages.
In total are 88 Energy transmitters with an installing power Sn = 20.02 MVA. Of these:
a) TS 10/04 KV Pyramid (timber), 6 Energy transmitters
b) TS 10/04 KV towers, 11 Energy transmitters
c) TS 10/04 KV armour - plates, 7 Energy transmitters
d) TS 10/04 KV Steel Column, 64 Energy transmitters
5. 70 local transformer stations TS 10/04 KV that are property of KEK . Of these 18 are private transformer stations of TS 10/04 KV (not owned by KEK, the national electricity provider)
6.Currently one small hydro power plant (Dikance/Dikanc hydropower) is being operated along Brod River close to the village of Bačka/Baçkë. This power plant is owned by the Kosovo Energy Corporation (KEK), but was concessioned to the Frigo Food company in 2009. Rehabilitation of the hydropower facilities is finished, which has replaced equipment and increased productive capacity to 2600 KW.

There appears to be significant problems with the electricity supply (31 of the 36 villages recording problems). 18 of the villages indicate specific problems with low voltage (50% of the settlements). The national network suffers from high technical losses in outdated systems and insufficient production to meet peak demands. Shutdowns and lack of back-up capacity also contribute to the frequent power losses. Furthermore, voltage drops to less than 150 V (instead of 230V) result in extra costs for commercial and private users who have to purchase voltage stabilisers and UPS (Uninterrupted Power Supply Units) in order to operate modern electric appliances such as (digital) TV sets, computers and energy saving lamps.

Monthly electricity consumption

The ratio of the monthly electricity consumption between highest and lowest consumption is an indicator of population fluctuation. 24 villages have a maximum consumption in summer and in 10 of the villages the spread is larger than 2 (see Table 2 8). If the ratio is lower than 2 a normal spread is assumed. If the ratio is larger than 2 this indicates a significantly uneven distribution of electricity consumption. For instance, in Bačka / Baçkë (an extreme case), the consumption in summer is 72 times the consumption in winter. This means that in summer the population is larger (with families returning for holidays abroad for some months, accompanied by weddings and festivals for large crowds).

It is significant that those villages with a normal consumption spread (lower than 2) are mostly the economic sub-centres (see Figure 1 34 in the next chapter) where there is a larger amount of productive energy use.

Data sources, material and reliability:

KEK (2012)
Dragash Spatial Plan, MESP/UNMIK 2006
UNDP (2011): UNDP Village Survey Results
Pireci (2012): Energy Assessment Report for the Municipality of Dragash,

Further suggestions for monitoring and/or improvement of data:

6 more SHPP along the Brod and Restelica/Restelicë rivers are under approval processes. Relevant and sigificant information of the planning documents of these SHPPs were not provided by the competent authorities (including any spatial or technical information related to these projects). Hence their environmental impacts cannot be assessed.

[8] Dragash Spatial Plan, MESP/UNMIK 2006
[9] UNDP Village Survey Results

N
W E
S

1:30,000

0 0.5 1 2 3 4 Km

KOSOVO

Legend

Borders

- National border
- Dragash border
- National Park "Sharri"

Water courses

- River
- Lake

Topography

- Peak

Roads

- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel

Electricity supply and distribution

- Incoming transmission line from Zhur, 35kV
- Distrubution lines, 10KV

Transformers

- <100 kVA
- 100 - 200 kVA
- 201 - 400 kVA
- 401 - 1000 kVA
- Transformer used by a company
- Transformer used by a facility (electricity, water supply)
- Transformer for distribution in a village

Electricity generation

- Small Hydropower Plant under operation

Electricity consumption

Total electricity consumption per village in kWh in the year 2010

- < 100,000 kWh
- 100,000 - 500,000 kWh
- 500,000- 1,000,000 kWh
- 1,000,000 - 2,000,000 kWh
- ≥ 2,000,000 kWh
- Ratio of monthly electricity consumption between highest and lowest consumption less or equal to 2
- Ratio of monthly electricity consumption between highest and lowest consumption between 2 and 10
- Ratio of monthly electricity consumption between highest and lowest consumption higher than 10
- Time on maximum consumption spring
- Time on maximum consumption summer
- Time on maximum consumption winter

Renewable electricity generation potential

- Areas selected for study on wind energy potential

The competent authorities did not provide any spatial information related to Small Hydro Power projects currently discussed within Dragash / Dragaš Municipality

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A10.2: Economy, infrastructure and energy – electricity

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village survey 2011, field observations by UNDP team, Municipality, KEK, baseline survey by UNDP

Coordinate System :
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

1.10.3. Businesses (A10.3)

Contents of the map:

The map shows some of the main economic features of the municipality and classifies the settlements according to their existing role for the local economy:
- Provisions with basic supply (shown by indication the lack of it)
- Enterprises of specific interest
- Enterprises with own power transformer
- Commercial zones
- Collection and production areas for non –wood forest products
- Livestock sector (quantities)
- Public transport

The main messages:

- The business and economic centre is Dragash/Dragaš town (with 228 businesses registered out of the municipal total of 848; see Figure 1 33 and Table 1 19). The town also has the only 2 commercial zones (one in Zym / Zjum is planned).
- Bresanë/Brodosavce and Restelica/Restelicë are the two business sub-centres (88 and 95 businesses respectively).

There are fewer than 50 businesses in the remaining 34 villages, with 13 villages possessing fewer than ten businesses.
The Opojë/Opolje region is the most economically developed area and has frequent public transport connection, while the Gora/Gorë region has much lower density of businesses and only privately organised pick up services.
The largest business sector in Dragash/Dragaš is trade and distribution. The majority of trading occurs through local shops: groceries, construction yards, warehouses and petrol stations. A very small number of other commodities are provided, selling paint, jewellery, leather, textiles and tools. Two pharmacies are located in Dragash/Dragaš town and one in Bellobrad/Belobrad.
In terms of manufacturing only six businesses are registered, mostly with just one employee processing raw materials (such as wood). Its large contribution to the employment market comes from the REMATEKS textile factory in Dragash/Dragaš town, which provides 380 jobs mostly in the production of synthetic fabrics.
Livestock is by far the most active area for SMEs in Dragash/Dragaš, engaging 96 people in 30 enterprises. However, the processing of agricultural products is almost absent (with the notable exception of the Meka butchery employing 40 persons in Pllavë/Plava).
Another significant part of the job market is that generated by hospitality and catering enterprises; this generally relates to cafes, bars and restaurants which exist in the majority of villages. The largest employer within the hospitality and catering sector is Dragash/Dragaš town, with 35 registered businesses, followed by Restelica/Restelicë with 23.

Data sources, material and reliability:

Municipality of Dragash / Dragaš: Directorate of Finance, Economy and Development, and Directorate of Agriculture, Tourism, Rural Development and Inspection
UNDP (2011): Dragash Project: Village questionnaire; UNDP (2012d): Draft Report: LED Assessment mission report, Agostinucci, A., January 2012; UNDP (2012e): Results of SME Survey

Further suggestions for monitoring and/or improvement of data:

About 10% of the registered businesses could not be identified in a field check or did not exist. This may be because they may have shut down since registration or changed their location or organisation.
The collection and production areas for non –wood forest products are not complete and require revision.
The map is a first estimation of the existing economic situation in 2012.

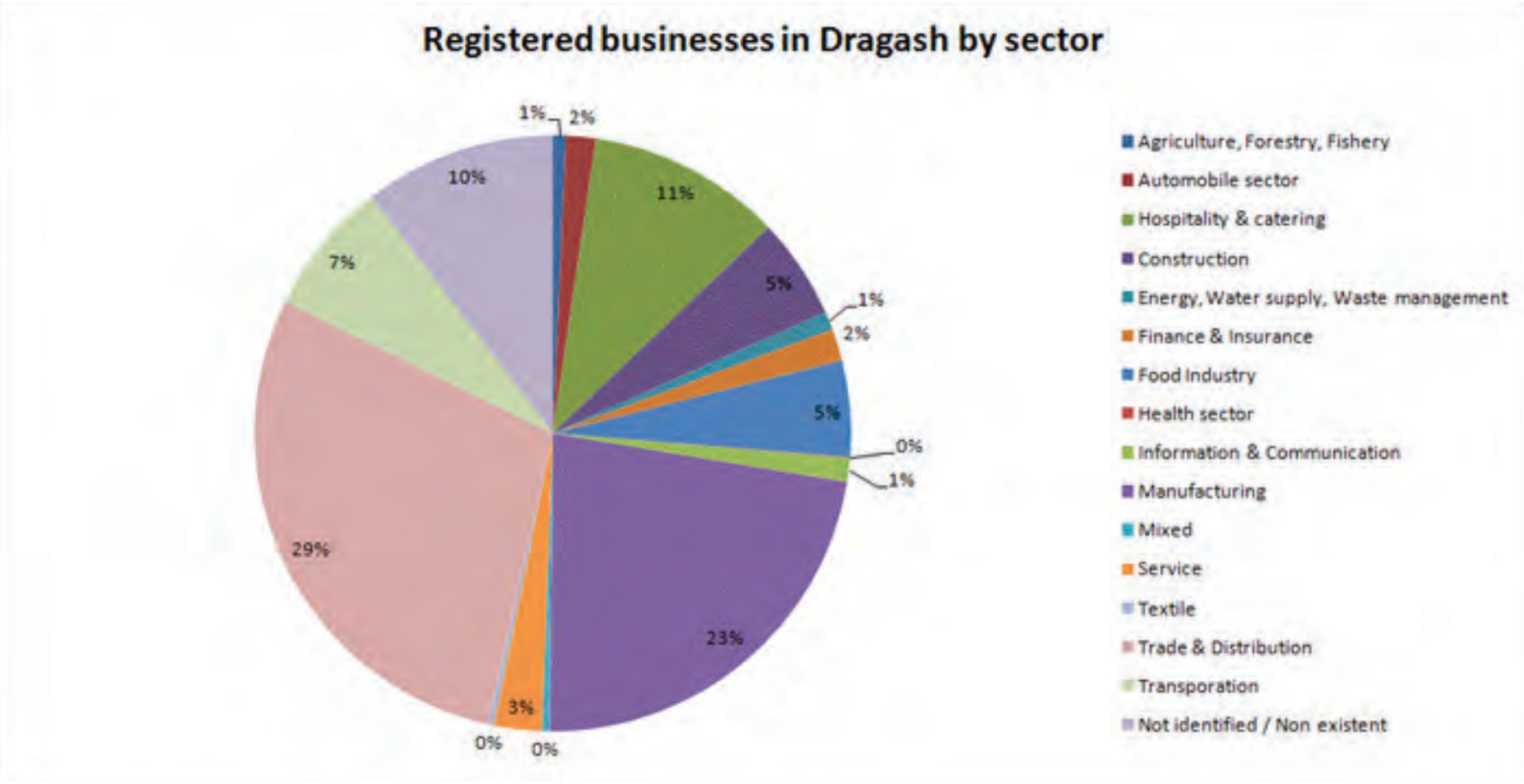


Figure 1-33: Registered businesses in Dragash/Dragaš by sector

VILLAGE	Number of Businesses	Number of Employees (excl. owner)	Number of employed (incl. 1 owner)
Bačka / Baçkë	2	0	2
Bellobrad / Belobrad	26	13	39
Blaç / Bljać	20	10	30
Bresanë / Brodosavce	88	28	116
Brezne / Brezna	29	8	37
Brod / Brod	30	2	32
Brrut / Brut	18	4	22
Buçe / Buće	9	2	11
Buzez / Buzez	12	18	30
Dikance / Dikanc	2	0	2
Dragash / Dragaš	228	603	831
Globočica / Gllboçicë	22	7	29
Kapre / Kapra	6	6	12
Kosavë / Kosavce	6	0	6
Krstec / Kërstec	5	0	5
Kruševo / Krushevë	24	3	27
Kuk / Kukovce	25	17	42
Kuklibeg / Kukljibeg	9	6	15
Kukuljane / Kukulanë	8	0	8
Leštane / Leshtan	5	0	5
Ljubovište / Lubovishtë	17	1	18
Mlike / Mlikë	4	0	4
Orčuša / Orçushë	3	0	3
Pllajnik / Plajnik	4	0	4
Pllavë / Plava	25	50	75
Radeša / Radeshë	16	0	16
Rapča / Rapçë	20	4	24
Restelica / Restelicë	95	12	107
Rrenc / Renc	5	0	5
Shajne / Šajnovce	23	0	23
Vranište / Vranisht	15	3	18
Xërxe / Zrze	3	0	3
Zaplluxhe / Zaplužje	17	6	23
Zgatar / Zgatar	10	9	19
Zlipotok / Zlipotok	8	0	8
Zym / Zjum	8	4	12
TOTAL	848	816	1664

Table 1-19: Number of registered businesses and employees by village, Dragash/Dragaš

KOSOVO

N
W E
S

1:30,000

0 0.5 1 2 3 4 Km

Zgatar / Zgatar

OPOJË / OPOJE

ALBANIA

FYR of MACEDONIA

Legend

Borders

- National border
- Dragash border
- Cadastral zone
- National Park "Sharri"

Water courses

- River
- Lake

Topography

- Peak

Settlements

- Build up area

Roads

- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel

Settlements, their functional meaning and role for local economy

- Remote village
- Village
- Sub-center
- Municipal center
- Marginal role for local economy, less than 10 registered enterprises
- 10 to 50 registered enterprises
- Economic sub-center, 50-100 registered enterprises
- Economic center, more than 100 registered enterprises

Provision with basic supplies

- Neither post, nor mobile bank service in village
- No mobile bank service in village
- No post service in village
- No grocery shop in village
- Business in village limited to grocery shop and coffee/bar/restaurant

Enterprises of specific interest

- One or more enterprises related to agriculture and forestry located in village
- One or more enterprises related to tourism located in village
- One or more enterprises producing non-wood forest products located in village
- One or more production enterprises located in village (Dairy products, meat products, mill, wool production, wood processing, metal processing, handicrafts)

Energy supply for important enterprises

- Enterprises with own power transformer

Commercial zones

- Commercial area

Collection and production areas for non-wood forest products

- Mushroom collection
- Medical herb collection
- Wild fruit collection
- Beehive

Livestock sector

- Less than 40 cows, not significant
- 40-100 cows, minor importance
- 100-250 cows, medium importance
- More than 250 cows, high importance
- Less than 40 sheep, not significant
- 40-150 sheep, minor importance
- 150-500 sheep, medium importance
- More than 500 sheep, high importance

Public transportation

- Regular bus stop
- Bus lines with regular service, villages within 500m distance from road have easy access
- Up to 2.000 m walking distance to the next regular bus service
- Privately organized pick-up possible

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Assessment maps

Title of map: A10.3 Assessment of economy, infrastructure, and energy – business

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village survey 2011, field observations by UNDP team, Municipality

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

2. Annex

2.1. Assessment for water quality

Family biotic index	Water quality	Degree of organic pollution
0.00-3.75	Excellent	Organic pollution unlikely
3.76-4.25	Very good	Possible slight organic pollution
4.26-5.00	Good	Some organic pollution probable
5.01-5.75	Fair	Fairly substantial pollution likely
5.76-6.50	Fairly poor	Substantial pollution likely
6.51-7.25	Poor	Very substantial pollution likely
7.26-10.00	Very poor	Severe organic pollution likely

Table 2 1: Water quality based on family biotic index values (Hilsenhoff, 1988)

Habitat parameter	Optimal	Suboptimal	Marginal	Poor
Bottom substrate	More than 60% of bottom is gravel, cobble, and boulders, Even mix of size classes	30 – 60 % of bottom is cobble or boulder. Substrate may be dominated by one size class.	10 – 30 % of substrata are large materials. Silt or sand accounts for 70 – 90 of bottom.	Substrate dominated by silt and sand. Gravel cobble and larger size < 10 %.
Habitat complexity	A variety of types (logs, branches, boulder, aquatic vegetation, undercut banks) and size of material form a diverse habitat.	Structural types or size of material is less than optimum but adequate cover still provided	Habitat dominated by only one or two structural components. Amount of cower is limited.	Monotonous habitat with little diversity. Silt and sand dominate and reduce habitat diversity and complexity
Pool quality	25% of the pools are as wide as or wider than the mean stream width and are > 1 m deep.	< 5 % of the pools are >1m deep and wider than mean stream width. Majority of pools are < mean width and < 1m deep.	< 1% of the pools are > 1 m deep and wider than stream width. Pools present may be very deep or very shallow. Variety of pools or quality is fair	Majority of pools are small and shallow. Pools may be absent.
Bank stability	Little evidence of past bank failure and little potential for future mass wasting into channel.	Infrequent or very small slides - mostly healed over. Low future potential.	Mass wasting moderate in frequency and size. Raw spots eroded during high flows.	Frequent or large slides. Banks unstable and contributing sediment to stream.
Bank protection	Over 80 % of stream banks surface are covered by vegetation, boulders, bedrock, or other stable materials.	50 – 80 % of the stream-banks covered with vegetation, cobble, or large material.	25 – 50 % of the stream-bank is covered by vegetation.	< 25 % of the stream-bank is covered by vegetation or stable materials.
Canopy	Vegetation of various heights provides a mix of shad and filtered light to water surface.	Discontinuous vegetation provides areas of shade alternating with areas of full exposure. Or filtered shade occurs < 6 h / day.	Shading is complete and dense. Or filtered shade occurs < 3 h / day.	Water surface is exposed to full sun nearly all day long.

Table 2 2: The physical habitat assessment explanation table

Code	Sampling site	Water quality 2011 (wet season)	Water quality 2012 (dry season)
D01	Zaplluxhë	Excellent	Excellent
D02	Zaplluxhë	Excellent	No water at all
D03	Zapluxhë	Excellent	No water at all
D06	Bresanë up	Excellent	Excellent
D10	Kuk	Excellent	Excellent
D13	Pllajnik	Excellent	Excellent
D15	Plavë up	Excellent	No water at all
D20	Brod Camp	Excellent	Excellent
D21	Brod Up	Excellent	Excellent
D22	Brod II	Excellent	Excellent
D25	Mlika up	Excellent	Excellent
D33	Restelica Up	Excellent	Excellent
D38	Zli Potok Up	Excellent	Excellent
D39	Zli Potok Down	Excellent	Excellent
D43	Krstec	Excellent	No water at all
D17	Rrenc Up	Very good	Excellent
D18	Rrence	Very good	Very good
D23	Brod Down	Very good	Very good
D26	Mlika Down	Very good	Excellent
D27	Mlika (River Brod)	Very good	Excellent
D28	Rapçë up	Very good	No water at all
D30	Radesha Up	Very good	Excellent
D37	Glloboçica Up	Very good	Fair
D41	Orçusha Up	Very good	No water at all
D24	Dikanca	Good	Good
D29	Rapçë down	Good	Fairly poor
D35	Krushevë Up	Good	Fairly poor
D36	Krushevë Down	Good	Fairly poor
D40	Zli Potokë Middle	Good	Insignificant amount of standing water
D42	Orçushë Middle	Fair	No water at all
D32	Dragash	Fairly poor	Poor
D11	Buzez	Poor	No water at all
D12	Brezne	Poor	Insignificant amount of standing water
D14	Kosavë	Poor	Poor
D16	Plavë (Meka factory)	Poor	Insignificant amount of standing water
D31	Radesha	Poor	Very poor
D34	Restelica Down	Poor	Poor
D44	Wool factory Up	Poor	Poor
D04	Zaplluxhë	Very poor	Very poor
D05	Blaç	Very poor	Very poor
D07	Bresanë down	Very poor	Very poor
D08	Bellobrad	Very poor	Very poor
D09	Bellobradë	Very poor	Very poor
D19	Rrencë (River Plava)	Very poor	Poor
D45	Wool factory	Very poor	Very poor

Table 2 3: Water assessment per investigated points

No.	Village	WWA_code	Place of sampling	Microbiological results compared with standards	Chemical results compared with standards
1	Bačka / Bačkë	101	Reservoir	Compliant	Compliant
2	Bellobrad / Belobrad	201	Reservoir I (M.Baxha)	Not compliant	Not compliant
		202	Reservoir II (AV.Qav)	Compliant	Compliant
		203	Reservoir III (H.Sadik)	Not compliant	Compliant
		204	Reservoir IV (H.Rifaj)	Not compliant	Not compliant
		205	Reservoir V (I.Mujaj)	Not compliant	Not compliant
		206	Reservoir VI (Baz.Kry)	Not compliant	Not compliant
		207	Reservoir VII (Shkolla)	Not compliant	Not compliant
		208	Reservoir VIII (A.Qav)	Compliant	Not compliant
		209	Reservoir IX (S.Qafl)	Compliant	Compliant
		210	Reservoir X (F.Qafle)	Compliant	Compliant
		211	Reservoir XI (I.Riza)	Compliant	Not compliant
		212	Reservoir XII (S.Riza)	Not compliant	Compliant
3	Blaç / Bljać	301	Reservoir I	Compliant	Compliant
		302	Reservoir II	Compliant	Compliant
4	Brezne / Brezna	401	Reservoir	Compliant	Compliant
5	Brod / Brod	501	Reservoir	Compliant	Compliant
6	Bresanë / Brodosavce	601	Reservoir	Compliant	Compliant
7	Brrut / Brut	701	Reservoir	Not compliant	Compliant
8	Buçe / Buće	801	Reservoir	Compliant	Compliant
9	Buzez / Buzez	901	Reservoir	Compliant	Compliant
10	Dikance / Dikanc	1001	Reservoir	Compliant	Compliant
11	Dragash / Dragaš	1101		Not compliant	Compliant
12	Globočica / Gllboçicë	1201	Reservoir "Mlacice"	Compliant	Compliant
		1202	Reservoir "Barbulla"	Compliant	Compliant
13	Kapre / Kapra	1301	Reservoir	Compliant	Compliant
14	Kosavë / Kosavce	1401	Reservoir "Kalenderve"	Compliant	Compliant
		1402	Reservoir "Besenve"	Not compliant	Compliant
		1403	Reservoir "Tertineve"	Not compliant	Compliant
		1404	Reservoir "Kolloneve"	Not compliant	Compliant
15	Krstec / Kërstec	1501	Reservoir	Compliant	Compliant
16	Kruševo / Krushevë	1601	Reservoir "Zloipokci"	Compliant	Compliant
		1602	Reservoir "Izvori Stari"	Compliant	Compliant
17	Kuk / Kukovce	1701	Reservoir	Compliant	Compliant
18	Kuklibeg / Kukljibeg	1801	Reservoir	Not compliant	Compliant
19	Kukuljane / Kukulanë	1901	Reservoir	Not compliant	Compliant
20	Leštane / Leshtan	2001	Reservoir	Not compliant	Compliant
21	Ljubovište / Lubovishtë	2101	Reservoir "Bajrovski"	Compliant	Compliant
		2102	Reservoir "Vranicec"	Compliant	Compliant
		2103	Reservoir "Graqishte"	Compliant	Compliant
22	Mlike / Mlikë	2201	Reservoir "Studenac1	Compliant	Compliant
		2202	Reservoir "Studenac2	Compliant	Compliant
23	Orčuša / Orçushë	2301	Reservoir "Bela voda"	Compliant	Compliant
		2302	Reservoir "Stara qes-ma"	Compliant	Compliant
24	Pllajnik / Plajnik	2401	Reservoir	Compliant	Compliant
25	Pllavë / Plava	2501	Reservoir	Compliant	Compliant
26	Radeša / Radeshë	2601	Reservoir	Compliant	Compliant
27	Rapča / Rapçë	2701	Reservoir	Compliant	Compliant
28	Restelica / Restelicë	2802	Reservoir "Golemi izvori"	Compliant	Compliant
		2803	Reservoir "feratov Kaj 1"	Compliant	Compliant
		2804	Reservoir "Starcev k"	Compliant	Compliant
		2805	Reservoir "Golem kam"	Compliant	Compliant
		2801	Reservoir "Feratov Kaj 2	Compliant	Compliant

29	Rrenc / Renc	2901	Reservoir	Compliant	Compliant
30	Shajne / Šajnovce	3001	Reservoir I	Compliant	Compliant
		3002	Reservoir II	Compliant	Compliant
31	Vranište / Vranisht	3101	Reservoir "Ceshtak"	Compliant	Compliant
32	Xërxe / Zrze	3201	Reservoir	Compliant	Compliant
33	Zaplluxhe / Zaplužje	3301	Reservoir "Tumcin"	Compliant	Compliant
		3302	Reservoir "Renak"	Compliant	Compliant
		3303	Reservoir "Te xha-mia"	Compliant	Compliant
34	Zgatar / Zgatar	3401	Reservoir	Compliant	Compliant
35	Zlipotok / Zlipotok	3501	Reservoir "Staro Selo"	Compliant	Compliant
		3502	Reservoir "Oblo"	Compliant	Compliant
		3503	Reservoir "Tuarnik"	Compliant	Not compliant
36	Zym / Zjum	3601	Reservoir	Compliant	Compliant

Table 2-4: Results of the Water Quality in the reservoirs of the 35 villages of Dragash municipality (UNDP, 2012b)

					Dragash			Plavë			Plajnik			Brod		
Nr.	Param-eter	Norms	Simbo	Unit	1	2	3	4	5	6	7	8	9	10	11	12
1	Time of sampling		h		9:40	9:55	10:10	10:55	11:00	11:15	13:00	13:20	13:32	14:20	15:10	15:35
2	Water tempera-ture	8 do 12	Tu	°c	15.7	16.3	16.5	17.6	18.9	17.8	16.2	16.1	15.9	17.4	18.0	17.3
3	Electric coductiity	1500	PE	µS/cm	171	118	163	242	759	256	85	120	123	168	199	204
4	PH value	5.5 do 9.0	pH	0-14	7.23	7.06	7.29	7.65	6.87	7.42	7.37	6.96	6.89	7.84	7.85	7.87
5	Total sus-pened subtanes	35 do 300	MTS	mg/L	14.3	18.8	8.0	2.0	12	3.1	3.3	31	23.2	<0.1	14.8	20.0
6	Chemical Oxygen Damand	25 do 250	SHKO	mg/L	3.0	24.2	11.8	6.0	109	21.6	3.4	38.5	37.5	<0.1	18.2	24.8
7	Bio-chemical Oxygen Demand	125 do 700	SHBO5	mg/L	1.2	5.4	10.1	0.3	95	18	1.8	8.5	8.4	<0.1	4.0	5.4
8	Total dissolved solids	500	MTT	mg/L	86	60	82	121	380	128	42	60	62	84	100	102
9	Nitrite ions	0.2 do 10	NO2	mg/L	0.396	0.221	0.315	0.06	0.468	0.391	0.04	0.581	0.048	0.028	0.039	0.080
10	Nitrate ions	30 do 50	NO3	mg/L	0.4	5.0	2.6	8.2	0.5	6.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
11	Ammonia ions	0.2 do 10	NH4	mg/L	2.286	1.529	2.259	<0.01	2.980	1.089	<0.01	2.229	0.094	<0.01	0.318	0.431
12	Phos-phor total	1.0 do 10.0	Ptot	mg/L	0.421	0.325	0.355	0.132	1.18	0.250	0.025	0.48	0.24	0.039	0.075	0.193

Table 2-5: Results of the chemical water quality analysis (Kosovo Hydro-meteorological Institute 2012)

					Shajne			Restelica			Blaq			Bresanë		
Nr	Parameter	Norms	Simbo	Unit	13	14	15	16	17	18	19	20	21	22	23	24
1	Time of sampling		h		16:15	16:35	16:45	15:13	16:08	16:23	14 :20	14:32	14:50	15:13	16:08	16:23
2	Water tempera-ture	8 do 12	Tu	°c	16	19.2	16.6	15,6	18,5	17	15.6	17.7	17.6	15,6	18,5	17
3	Electric conduc-tivity	1500	PE	µS/cm	131	358	238	119	262	190	243	395	281	119	262	190
4	PH value	5.5 do 9.0	pH	0-14	7.57	7.3	7.43	7,78	8,21	7,97	7.41	7.61	7.48	7,78	8,21	7,97
5	Total sus-pended substanc-es	35 do 300	MTS	mg/L	<0.1	600	41.2	<0.1	41	29,4	10.9	42	11.4	<0.1	41	29,4
6	Chemical Oxygen Demand	25 do 250	SHKO	mg/L	<0.1	910	10.5	<0.1	78	44,5	7.0	125	42.5	<0.1	78	44,5
7	Bio-chemical Oxygen Demand	125 do 700	SHBO5	mg/L	<0.1	316	18.4	<0.1	37	15,2	2.3	47.5	21.4	<0.1	37	15,2
8	Total dis-solved solids	500	MTT	mg/L	65	180	120	60	131	95	121	197	140	60	131	95
9	Nitrite ions	0.2 do 10	NO2	mg/L	0.018	0.227	0.061	<0.02	0,27	0,197	0.07	0.589	0.454	<0.02	0,27	0,197
10	Nitrate ions	30 do 50	NO3	mg/L	4.9	<0.1	3.9	<0.1	<0.1	<0.1	4.4	<0.1	0.3	<0.1	<0.1	<0.1
11	Ammonia ions	0.2 do 10	NH4	mg/L	<0.1	4.663	0.316	<0.01	7,264	0,944	2.825	5.261	4.830	<0.01	7,264	0,944
12	Phosphor total	1.0 do 10.0	Ptot	mg/L	0.135	0.151	0.138	0,038	0,526	0,078	0.242	0.757	0.317	0,038	0,526	0,078

2.2. Model for erosion risk

Model applied soil erosion risk model

The Soil Erosion Risk Model (SER) applied for the assessment of erosion risk was used in EULUP 2011. Single items have been adapted to Dragash/Dragaš's conditions.

SER=SES*0,6+CLC*0,4

The following components are included in this model:

Soil erosion sensitivity (SES) model

SES=SC*0,85+RFC*0,15

1. Importance (weighting) of factors

Factor	Importance
Soil and slope properties (SC)	0.85
Average rainfall (RFC)	0.15

2. Soil -slope relation: Soil erosion potential as dependant on soil properties and based on bear ground assumption. Calculate score for soil properties.

Soil texture	Slope classes in degrees				
	<3	3.1 - 7.0	7.1 - 11.0	11.1 -15.0	>15
Gravel (s)	0	10	20	50	100
Clay (g)	0	20	35	60	100
Loam (i)	0	25	45	70	100
Sandy loam (pi)	5	30	50	80	100
Sand (p)	10	35	60	100	100

Relation of soil texture and soil type

Gravel (s)	
Clay (g)	CL-Clay Loam SiC-Silty Clay SiCL-Silty Clay Loam C-Clay
Loam (i)	Si-Silt SiL-Silt Loam L-Loam SL-Sandy Loam SCL-Sandy Clay Loam
Sandy loam (pi)	SL-Sandy Loam SC-Sandy Clay LS-Loamy Sand
Sand (p)	S-Sand

Look-up table of soil types and texture

LEG_NR	NAME	TEXTURE
27	Alluvial-deluvial loamy soil	pi
150	Bare rock	s
122	Brown leached soil on schists (phyllite, micaschist etc.)	pi
62	Brownized ranker on schists (phyllite etc.)	pi
45	Brownized rendzina on compact limestone	i
25	Leached deluvium	pi
10	Lithosol on compact limestone	i
9	Lithosol on neutral rocks (sienite, trachyte, diorite, andesite etc.)	i
12	Lithosol on schists (gneiss, micaschist, phyllite, agriloschists etc.)	i
17	Loamy alluvium	i
23	Loamy deluvium	i
33	Mineral-marsh loamy gley soil	i
38	Peat soil of eutrophic bog peat	g
94	Reddish-brown leached soil on reddish sediments	pi
15	Sandy alluvium	p
120	Shallow brown soil on schists (phyllite, micaschist etc.)	i
121	Shallow brown soil on schists (phyllite, micaschist etc.)	i
59	Typical ranker on neutral rocks (andesite etc.)	pi
61	Typical ranker on schists (phyllite etc.)	pi
44	Typical rendzina on compact limestone	i

3. Rainfall table.

RFC	Rainfall class (mm)	Factor Score (RFC)
	500-700	20
	701-1000	60
	1001-1500	80
	>1500	100

Inclusion of land use covers (Corine)

For soil erosion risk assessment, the land cover, as an indicator of anthropogenic activity, is added. Each CLC class is assessed for its ability to stabilise or increase erosion. Assumption is made at hypothetical 6-7 degrees slope for Kosovo conditions.

100 = high risk	
0 = no risk	
Importance weighting (W)	
Soil Erosion Sensitivity (SES)	0,6
CORINE Land Cover (CLC)	0,4
Total	1

Dragash	CLC Grid Code	Score for CLC
Continuous urban fabric	1.1.1.	0
Discontinuous urban fabric	1.1.2.	60
Industrial or commercial units	1.2.1.	60
Road and rail networks and associated land	1.2.2.	90
Mineral extraction sites	1.3.1.	100
Dump sites	1.3.2.	90
Illegal dump sites	1.3.3.	90
Sport and leisure facilities	1.4.2.	40
Cultural Heritage	1.5.	0
Non-irrigated arable land	2.1.1.	80
Permanently irrigated land	2.1.2.	70
Fruit trees and berry plantations	2.2.2.	40
Pastures intensive without hedges	2.3.1.	20
Pastures intensive with hedges	2.3.2.	10
Pastures extensive without shrubs	2.3.3.	10
Pastures extensive with shrubs/trees	2.3.4.	10
Annual crops associated with permanent crops	2.4.1.	50
Complex cultivation – no hedges	2.4.2.	50
Complex cultivation – with hedges/trees	2.4.5.	40
Agriculture / natural vegetation Mix	2.4.3.	30
Broad-leaved forest	3.1.1.	20
Coniferous forest	3.1.2.	20
Mixed forest	3.1.3.	20
Coniferous forest - Planted	3.1.4.	40
Woodland patches	3.1.5.	20
Natural grassland (>1700m)	3.2.1.	10
Heathland Vegetation (incl. Moors)	3.2.2.	10
Transitional woodland/shrub	3.2.4.	20
Coppice Forest	3.2.5.	40
Bare rock, scree, cliffs, rocks, and outcrops.	3.3.2.	0
Sparsely vegetated areas	3.3.3.	70
Inland marshes/waterlogged areas	4.1. 1.	10
Peatland	4.1.2.	0
Riparian woodland	4.1.3.	40
Water courses	5.1. 1.	0
Water bodies	5.1.2.	0
Springs	5.1.3.	0

2.3. Model for avalanche risk analysis

There are several factors determining grade of risk for avalanches at a specific location; these are:
1. Steepness
2. Wind direction in combination with ridges and depressions
3. Exposition
4. Length of the slope and diversity of landforms
5. Vegetation, particularly Forest / non Forest

Steepness

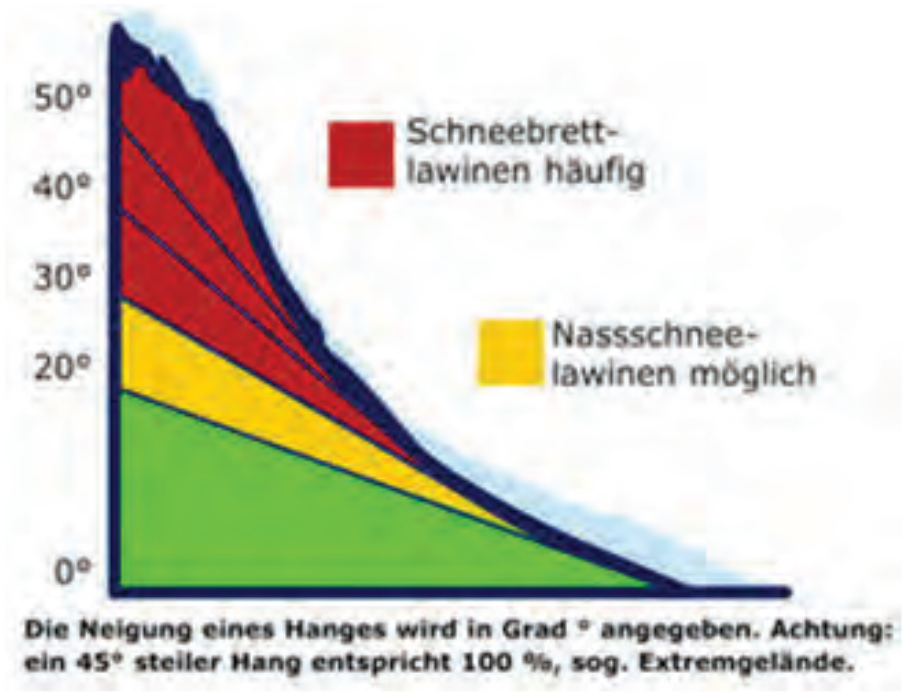


Figura 2-1: Correlation between steepness and avalanche risk

Figure 2 1 shows the correlation between steepness of slope and avalanche risk:
• Red colour indicates high risk of snow slab avalanches on slopes with more than 30 degrees
• Yellow colour indicates medium risk of wet snow avalanches on slopes between 20 – 30 degrees
• Green colour indicates no risk on slopes with less than 20 degrees; however these can be affected by avalanches originating from steep slopes above.
Steepness of terrain in Dragash/Dragaš Municipality was derived from the Digital Terrain Model (DTM).

Wind direction in combination with ridges and depressions

Wind is sometimes called “the architect of avalanches”. This is because wind
• Accumulates masses of snow leeward of ridges or in depressions
• Can build cornices at top of ridges
These accumulations cause an increased risk of avalanches.
Based on the DTM ridges can be identified.
Wind data is not available for Dragash/Dragaš.

Exposition

According to statistical data, the frequency of avalanche is significantly higher on E to WNW exposed slopes.
Respective analysis was undertaken on basis of the DTM.

Slope length

Uniformly steep slopes with a length of more than 50m increase the avalanche risk. Conversely, short slopes reduce risk.
Avalanche risk is also reduced if the terrain has a high diversity of landforms and structures which stabilise the snow cover.

10 Source: http://www.powderguide.com/de/mountain-knowledge/basics/article/mountain-knowledge/

2.4. Model for landslide risk

Driving factors

The following driving factors are relevant for landslide risk:
1. Slope:
• slopes with more than 20 degrees are sensitive to landslide (mud, debris, earth)
• slopes with loose material are only stable below a gradient of 35 degrees
• rockfall etc. occurs on slopes greater than 45 degrees
- slope can be analysed in Dragash/Dragaš

2. Rainfall: Landslides are frequently induced by heavy rainfall
- No data on single rainfall events are available for Dragash/ Dragaš
3. Soil: colluvial soils tend to increase landslide sensitivity
4. Bedrock with clay layers or sensitive to temperature-induced erosion is sensitive to landslide
5. Closed Vegetation cover stablises the slope against landslide

Analysis

Step	Data	Analysis
1	Slope	Class 1: 20 degree <= slope < 35 degree Class 2: 35 degree <= slope < 45 degree Class 3: 45 <= slope
2	Geology (replaces soil)	Risk: Quaternary sediments
	Landuse	Risk: debris and gravel along temporary creeks Risk: sparsely vegetated areas Risk: Rock
	Landuse	Vegetation cover reducing risk

	Quarternary sediments	Sparsely vegetated areas / rock	Rock	Sparsely vegetated areas	Zona me vegjetacion të rrallë
Slope	Sparsely vegetated areas	Closed vegetation	creek		
20 – 35 degree	high	low	very high	moderate	moderate
35 – 45 degree	very high	moderate	very high	high	high
> 45 degree	very high	moderate	very high	very high	very high

Rockfall risk

Driving factors
The following driving factors are relevant for landslide risk:
• Slopes with more than 45 degrees are sensitive for rock fall
• Rock type: rockfall risk depends on rock type; geological bedrock types existing in Dragash/Dragaš have been classified according to their stability; rockfall risk has been classified into 3 categories: unlikely, likely and very likely

2.5. Assessment criteria for the forest functions

Funksioni	Specifikacioni
Wood production	High value wood = all forests on thick soils, and coppice forests with stands Firewood = all coppice forests including transitional woodland being classified as forest plus information of firewood collection from Village Questionnaire
Production of non wood products	Information from Village Survey
Erosion control and sediment retention	Soil erosion risk (including transitional woodland): Score for soil properties Soil-Slope Properties > = 70 Avalanche Risk (including transitional woodland): Slope >= 20 degrees Landslide risk (including transitional woodland): Quarternary sediments and slope > 20 degrees Rockfall risk (including transitional woodland): Rockall risk of geology (likely or very likely) and slope > 45 degrees
Biodiverziteti	All coppice forests, Vegetation units assessed as having high protection value (EU Habitat directive, endemic or rare species or ecosystems) For fauna: forest having more the 1 layer, Originating from Seedlings, and being older than 50 a
Water Regulation and Water Supply	Forest management classes: Units on thick soils Geology units classified as likely or very likely to provide for groundwater resources Plus Riparian wetlands (= Riparian Forests)

2.6. Suitability of soils and recommendations for agricultural use

(Adapted from Elezi Xhevdet (2011): Classification of soil properties in agricultural areas of Dragash-suitability map for agriculture - UNDP Report)
The methodology for classification of agricultural land in Dragash/Dragaš Municipality into the classes of prolificacy is based on an assessment of the following factors: soil texture, geological origin of the soil, the 7 (seven) levels of its development, as well as an assessment of the landscape and the climate (Pedological Map of Kosovo, 1974). The classification of agricultural land into classes of prolificacy in the Republic of Kosovo is regulated through the Law on Agricultural Land No. 02/L-26. Such classification, due to a lack of methodology pursuant to FAO criteria, was based on classification of lands into cadastral classes based on the Law on Cadastre.
The Pedological Map of Kosovo was prepared according to the same methodology of classification/systematics of agricultural land as the one used in Croatia and Bosnia and Herzegovina. These two countries have since developed methodologies for classification into classes of prolificacy (Croatia, 2010) and land utilisation type (Bosnia and Herzegovina, 2004) based on criteria determined by FAO (Guidelines for soil description, 1990 and Land Utilization Type, 1984).

1. Map with the soil classification

Pedological classes/types of soil in the municipality of Dragash/ Dragaš were classified into 8 classes of prolificacy (I-VIII). These classes were then grouped into 4 categories according to their suitability for agricultural productivity: Suitability with minor restrictions =II and III; Suitability with more expressed restrictions =V; Suitability with many restrictions VI and Suitability with extensive restrictions = VII and VIII.

2. Recommended types of agricultural use

Based on FAO methodology, on the experiences from Bosnia and Herzegovina regarding determination of land utilisation types (LUT), as well as through using the Ortophoto map to identify current land use in the municipality of Dragash/Dragaš, some basic criteria for the classification of land has been determined according to classes of suitability and the level (%) of its restriction for agricultural productivity.

The following table presents the soil classes and suitability for cultures:

Suitability classes	High level of machinery	Low level of machinery
II	OZ, SU, IP	OZ, SU, IP
III	OZ, SU, IP	OZ, SU, IP
V	-	OZ, SU, IP
VI	-	OP

AR = arable land (cereals-winter and summer)
SC = special crops (fruits-berries, potatoes for seed and consumption)
IP = intensive pasture
EP = extensive pasture

References:

FAO (1984): Land Utilization Type
FAO (1990): Guidelines for soil description,

The basic criteria that were used for classification of land and determination of the level of its suitability for agricultural productivity are as following:
• topography, respectively the level of terrain inclination (%),
• characteristics/features of soil:
o depth of soil profile,
o physical features: content of texture elements,
o characteristics of soil fertility: value of pH and the content of humus.
The classes of suitability of land for these groups of agricultural cultures have been determined according to the following criteria:

AR = arable land (cereals-winter and summer)
SC = special crops (fruits-berries, potatoes for seed and consume)
IP = intensive pasture
EP = extensive pasture

The following classes of suitability have been determined as a result of classification:
• Suitability with minor restrictions (10-40%): Prolificacy classes II and III. All the planned agricultural cul-tures can be cultivated in these soils, with little or high potential of mechanisation.
• Suitability with more expressed restrictions (40-60%): Prolificacy class V (class IV is absent). All the planned agricultural cultures can be cultivated in these soils, but only with little possibility of mechanisation.
• Suitability with many restrictions (60-80%): Prolificacy class VI. Although these lands have extensive restrictions, they are traditionally used for production of cattle food (hay) and/or as extensive pastures.
• Suitability with extensive restrictions (> 80%): Prolificacy classes VII and VIII. No cultivation is feasible and they are usually used as green grassing pastures.
The classification results have been presented in separate tables (Annex 2) for each culture based on the utilisation manner (intensive, extensive) and the level of machinery that may be used.

FAO (2004): Ucesce u razvoju nacina koristenja zemljista na opcinskom nivou u Bosni I Hercergovini, Tip Iskoristavanja zemljista (LUT)
Pedologic Map of Kosovo (1974)
Pravilnik o mjerilima za utvrdivanje osobito vrijednog obradivog (P1) I vrijednog obradivog (P2) poljop-rivrednog zamljista (2010): Ministarstvo poljoprivrede, Ribarstva I Ruralnog Razvoja, Republika Hrvatska.
The Law on Agricultural Land No. 02/L-26 (2006): Assembly of Kosovo

Municipality	Type of soil	Prolificacy class	Class based on UNDP research
Dragash	Mineral-marsh clayish soil	III1	Suitability with minor restrictions
Dragash	Peat soil of eutrophic bog peat	III1	
Dragash	Alluvial-diluvial loamy soil	III1	
Dragash	Leached diluvium	III1	
Dragash	Loamy diluvium	III1	
Dragash	Loamy alluvium	II2	
Dragash	Sandy alluvium	III1	
Dragash	Brownized rendzina on compact limestone	V1	Suitability with more expressed restric-tions
Dragash	Typical rendzina on compact limestone	V1	
Dragash	Reddish-brown leached soil on reddish sediments	VI1	Suitability with many restrictions
Dragash	Brown leached soil on schists	VI1	
Dragash	Lithosol on neutral rocks (sienit, trachyte, etc.)	VI2	
Dragash	Brownized ranker on schists	VII2	Suitability with extensive restrictions
Dragash	Typical ranker on schists	VII2	
Dragash	Typical ranker on neutral rocks	VII1	
Dragash	Bare rock	VIII2	
Dragash	Shallow brown soil on schists	VII1	
Dragash	Shallow brown soil on compact rock	VII1	
Dragash	Lithosol on schists	VIII1	
Dragash	Lithosol on compact limestone	VIII2	

Table 2-6: Pedological types of soil in the Municipality of Dragash/Dragaš based on the classes of prolificacy and groups of suitability for plant production

Table 2-7: Classes of suitability and the level of utilisation for determined cultures, based on the culti-vation manner and the level of machinery

Agricultural crops: Winter grains - Level of machinery: High

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restric-tions	Suitability with more ex-pressed restrictions	Suitability with many restric-tions	Suitability with extensive restrictions
Topography, inclination (%)	90-60%	60-40%	40-20%	>20%
Physical traits, texture class	0-15	15-30	35-45	>45
Depth of the profile (cm)	I, PGI, MI, MGI, GI, PI, PI	-	-	-
Soil reaction (pH)	>100; 100-80; 80-60	60-30	30-20	<20
Humus content (%)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3

Agricultural crops: Winter grains - Level of machinery: Low

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restric-tions	Suitability with more ex-pressed restrictions	Suitability with many restric-tions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	I, PGI, MI, MGI, GI, PI, PI	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Potato seeds - Level of machinery: high

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	l, PGl, Ml, MGl, Gl, Pl, Pl	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Summer grains - Level of machinery: Low

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	l, PGl, Ml, MGl, Gl, Pl, Pl	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Potato seeds - Level of machinery: high

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	l, PGl, Ml, MGl, Gl, Pl, Pl	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Potato for consumption - Level of machinery: high

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	l, PGl, Ml, MGl, Gl, Pl, Pl	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Potato for consumption - Level of machinery: low

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	l, PGl, Ml, MGl, Gl, Pl, Pl	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Berry fruits - Level of machinery: high

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	I, PGI, MI, MGI, GI, PI, PI	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Berry fruits - Level of machinery: low

Suitability class and utilization level (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	I, PGI, MI, MGI, GI, PI, PI	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Meadows and pastures - Production level: intensive

Klasa e përshtatshmërisë dhe niveli i shfrytëzimit (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	I, PGI, MI, MGI, GI, PI, PI	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Agricultural crops: Meadows and pastures - Production level: extensive

Klasa e përshtatshmërisë dhe niveli i shfrytëzimit (%)				
Characteristics/ attributes of soil	Suitability with minor restrictions	Suitability with more expressed restrictions	Suitability with many restrictions	Suitability with extensive restrictions
	90-60%	60-40%	40-20%	>20%
Topography, inclination (%)	0-15	15-30	35-45	>45
Physical traits, texture class	I, PGI, MI, MGI, GI, PI, PI	-	-	-
Depth of the profile (cm)	>100; 100-80; 80-60	60-30	30-20	<20
Soil reaction (pH)	5.5-6.5; 6.5-7.0; 7.0-7.2;7.2-7.5	5.5-4.5	4.5-3.0	<3
Humus content (%)	>4; 4-3	3-2	2-1	<1

Legjenda:

Si-Silt
SiL-Silt Loam
SiCL-Silty Clay Loam
SiC-Silty Clay
L-Loam
CL-Clay Loam
C-Clay

II2, III1, III2
V1, V2
VI1, VI2
VII1, VII2, VIII1, VIII2

SL-Sandy Loam
SCL-Sandy Clay Loam
SL-Sandy Loam
SC-Sandy Clay
LS-Loamy Sand
S-Sand

2.7. Electricity consumption spread

Table 2 8: Max/min energy consumption for 2010 in Dragash/Dragaš municipality (data: based on official data form KEK 2012)

Village	Ratio	Sezoni me konsum maksimal	Sezoni me konsum minimal
max/min consumption	Season with maximum consumption	Season with minimum consumption	Summer
Bresanë / Brodosavce	1,22	Winter	Spring
Zaplluxhe / Zaplužje	1,28	Spring	Spring
Rrenc / Renc	1,29	Winter	Winter
Blaç / Bljać	1,31	Winter	Winter
Kruševo / Krushevë	1,34	Summer	Winter
Brezne / Brezna	1,34	Winter	Spring
Kuklibeg / Kukljibeg	1,36	Winter	Spring
Pllavë / Plava	1,40	Summer	Autumn
Zgatar / Zgatar	1,40	Spring	Winter
Buzez / Buzez	1,41	Summer	Autumn
Dragash / Dragaš	1,43	Summer	Autumn
Kapre / Kapra	1,46	Summer	Spring
Restelica / Restelicë	1,46	Summer	Winter
Zlipotok / Zlipotok	1,51	Summer	Winter
Buçe / Buće	1,51	Summer	Winter
Krstec / Kërstec	1,55	Summer	Winter
Brrut / Brut	1,59	Spring	Spring
Bellobrad / Belobrad	1,66	Summer	Spring
Kosavë / Kosavce	1,67	Winter	Spring
Globočica / Gllboçicë	1,67	Summer	Spring
Pllajnik / Plajnik	1,72	Summer	Winter
Brod / Brod	1,74	Summer	Spring
Rapča / Rapçë	1,74	Summer	Winter
Shajne / Šajnovce	1,79	Summer	Winter
Xërxe / Zrze	2,03	Spring	Summer
Radeša / Radeshë	2,50	Summer	Winter
Ljubovište / Lubovishtë	2,66	Summer	Winter
Vranište / Vranisht	3,06	Summer	Spring
Kukuljane / Kukulanë	3,12	Summer	Autumn
Dikance / Dikanc	5,33	Summer	Winter
Leštane / Leshtan	6,42	Summer	Winter
Orčuša / Orçushë	8,55	Summer	Spring
Mlike / Mlikë	8,93	Summer	Winter
Bačka / Baçkë	71,42	Summer	Winter
Zym / Zjum	No data		

United Nations Development Programme
Conservation of Biodiversity and Sustainable Land Use Management in Dragash/Dragaš

EMBASSY OF FINLAND
PRISTINA

Volume IV: Guidance for Development

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1. Guidance Maps

Maps for Step 3: Zones indicating the most appropriate development objectives; this may be expressed in terms of rehabilitation zones; protection zones; specific development zones; conflict zones. They are summarised as development objectives zones

G	Guidance maps
Guidance maps referring to natural resources – preconditions for the MDP	
G1-1	Nature conservation
G1-2	Zoning of Sharr/Šar Mountain National Park
G2-1	Forest
G2-2	Agriculture
G3	Water and sanitation
Guidance maps part of the MDP – integral part of the MDP	
G4	Settlements
G5	Roads and traffic
G6	Education
G7	Heath
G8	Tourism
IG	Integrated guidance maps
IG1	Spatial resistance
IG2	Functional structure

Table 1-1: List of Guidance Maps

1.1. Objectives and principles for sustainable municipal development

The Sustainability Atlas is the basis for guidance and a comprehensive framework for sus-tainable development of the Municipality. It has the principle objective to harmonise the various demands from society, the regional economy and the administration with the environmental and ecological spatial conditions. This is presented as a well-organised spatial development concept. The guiding development objectives of sustainable regional development of the Municipality outlined in this atlas are:
1. Contribute towards balanced and fair improvement of living conditions for the population of the Municipality as a whole and for the more vulnerable sections of the population in particular;
2. Protect, develop and – where necessary – rehabilitate the natural basis for existence, in particular water, air, soil, flora and fauna, in an integrated and comprehensive manner
3. Contribute towards balanced economic and social development of the whole Municipality
4. Guide the development of the administration in the Municipality, in particular for the set-tlements and villages
5. Reserve necessary areas and sites for further development, including for agriculture, settlements and infrastructure, touristic resources and cultural heritage, in a balanced way
6. Preserve and develop distinct parts of the Municipality that is outstanding in terms of its natural beauty and social heritage, such as unique landscapes and biodiversity

1.2. Guiding development principles for Dragash / Dragaš

a) A decentralised settlement pattern with a structure of hierarchical development centres and inter-connecting corridors for the whole Municipality will be strengthened. Future set-tlement development should be concentrated primarily in such centres. This will support the balanced development of the whole region and the creation of self-sustaining centres.
b) Ecologically fragile or sensitive areas should be preserved and developed in such a manner that they are not adversely affected by any development activity: Their develop-ment should also be guided by their recreational and tourist functions to adjoining settle-ments, or for the region as a whole. This includes areas subject to natural risks, such as flooding, erosion etc, which are to be kept free from uses eventually adversely affected by such risks.
c) The principle structure of the zone primarily under agricultural use (cropland and range-land) and forest zones should be preserved and developed. The functional importance of larger zones for water management, soil protection, for flora and fauna has to be ensured and, if necessary, rehabilitated. Their use should be in harmony with their natural func-tions and services.
d) The agricultural base of the Municipality has to be ensured and developed. This refers in particular to prime agricultural lands. Predominantly agricultural areas should be devel-oped with a view to improve their economic self-sustainability. This has to be supported by improvements in rural infrastructure and by strengthening the functions of rural devel-opment centres.
e) The functions of designated development centres have to be strengthened by provision of necessary services and utilities. This also includes the provision of sufficient sites re-quired for their development.
f) Infrastructure has to be developed in accordance with existing and envisioned socio-economic development, and with the settlement structure. Infrastructural development needs of the surrounding municipalities are to be considered. Road

connections and bor-der stations to Albania and FYR Macedonia are essential to overcome Dragash / Dragaš's "dead-end" location.
g) Industrial development should take place only at suitable sites and under the necessary precautions that its operation does not adversely affect sensitive environmental resources or uses in its vicinity, and contributes towards balanced development of the Municipality.
h) Sites and areas with mineral resources of regional importance have to be secured in a way that their future use is possible when required.

i) Areas struggling with significantly lower living conditions and socio-economic prospects should be earmarked for development on a priority basis by appropriate development schemes, including creation of employment opportunities, infrastructure development and/or improving educational facilities etc.

1.3. Consequences for the Municipal Development Plan (MDP)

The general guiding principles and the spatial-structural development principles are material-ised and detailed in a Municipal Development Plan. The contents of the spatial dimension of the plan should include:
1. The desired spatial structure by designation and delineation of:
- Spatial categories, in particular:
Urban / village areas
Predominantly rural areas
Areas with development challenges
Prime agricultural areas
Areas with prominent environmental or ecological functions
Areas with relevant touristic resources
- Development centres and central places
- Development axes and corridors

2. The intended development objectives for each of the spatial categories including pro-grammes, plans, projects and measures for their implementation:
- Upgrading and rehabilitation of urban/village areas
- Development and upgrading of development centres including facilities needing instal-lation in order to create fully functioning development centres
- Development of infrastructure needed to support the intended municipal development including local, regional and international roads.
- Development objectives for larger open spaces including measures needed to secure and develop their natural functions such as land use regulations

3. All spatial categories, zones, plans, projects or measures of other sector authorities if of spatial importance for regional development, and in particular:
- All designated protection zones such as the National Park, Sanctuaries, Wetlands, protected landscapes etc.
- All designated forest areas
- All erosion risk zones
- All water resources and their uses
- All monuments of natural, archaeological, cultural or scientific significance
- All designated disposal sites for domestic or industrial wastes

1.4. Nature conservation (G1.1)

Contents of the guidance map:

Areas that are classified according to the Law of Nature Protection may be:
• Strict reserve *,
• Special Area of Conservation and Special Protected Areas (SAC-SPA)
• Nature Monuments
• Protected Landscape
Zones that require rehabilitation (or a mix of development and rehabilitation)
Zones that are available for further development

The main messages:

The existing status (rarity) of forests, rangelands and wetlands is recorded to an extent that allows a first definition of areas requiring protection in order to preserve their ecological functions and services according to the Law of Nature Protection (i.e. strict nature reserve, special areas – SPAs and SAC, nature monuments and protected landscapes). In addition, the faunistic resources form part of the information which supports the extension of the National Park and the future definition of different kinds of protected areas and species according to the Law of Nature Protection. Ecological corridors play an important role to allow free movement of species from one site to another and constitute part of the existing ecological network.

Protection categories: The area meets the requirements of the to the Law of Nature Conservation for:	% of the Municipality and size in ha		Comment Needs scientific investigation and management plan before a formal declaration as protected area
Strict reserve	0,02 %	9,12 ha	“strict reserve” according
Special protected area / special area of conservation	31,95 %	13.924,40 ha	Focus of these areas is in Sharr/Šar Mountain National Park” (Zone 1 and Zone 2) and the riparian forests.
Nature Monument	3,06 %	1.332,56 ha	Mainly wetlands and special objects
Protected landscape	40,10 %	17.474,48 ha	Large parts of the mountainous areas with pastures and forests (incl. coppice forests)
Protected landscape and requirement of rehabilitation	8,57 %	3.733,34 ha	Mainly areas of coppice forests/eroded areas

Table 1-2: % and size of the different guidance areas of nature conservation

Development and regeneration	% of the Municipality and size in ha		Comment
Rehabilitation required	0,02 %	10,17 ha	
Development and rehabilitation	0,18 %	77,86 ha	Mainly areas of planted forests/eroded areas
Development	15,16 %	6.607,10 ha	Mainly areas of present agricultural use

Table 1-3: % and size of the different guidance areas of nature rehabilitation and development

It is important to note that most of Dragash/Dragaš’s landscape is a result of a centuries-old land-use practices that are also the origin of a lot of the existing biodiversity and the attractive landscapes. Changing the land-use pattern interferes with biodiversity.
The distribution pattern of biodiversity hotspots clearly shows that most of the outstanding ecological areas are within Sharr/Šar Mountain National Park.

Criteria used for guidance map:

The evaluated area includes all land use types (CORINE units) except settlements, industrial and business areas (unit no. 1). The decision criteria are as shown in Table 1 4. These criteria do not include faunistic data such as for chamois, bear and lynx, because their habitats are already included in the classified protected vegetation zones.

Criteria (for CORINE units see Annex 3.1)	Strict reserve #)	SAC-SPA #)	Nature monumen t#)	Protected landscape #)	Rehabilitation	Development
Habitat directive (HD) - Annex 1* no management and HD-Annex II & Kosovo Red Species List with 50 m buffer						
HD-Annex 1* management required (a)						
HD-Annex 1 no management						
HD-Annex 1 management (b) and Natural grassland CORINE: 2.3.1 – 2.3.4 and 3.2.1 (above 2050 m)						
Waterfall, natural springs (not developed springs), natural lake (20m buffer)						
Wetlands (CORINE: 4.1.1, 4.1.2, 4.1.3) Inland marshes, peat bogs, Riparian wetland						
Geological-, paleontological-, mineralogical structure (like – cave (only one available), chasm, cliff walls)						
Natural water courses (20 m Buffer) includes Aquatic insect hot spot						
3.3.3 Sparsely vegetated areas 3.3.2 Bare rock						
Pastures Highland/Mountain/ alpine 2.3.1 - 2.3.4 and 3.2.1 above 1600 m						
Moors and heathland Vegetation CORINE: 3.2.2 and transitional woodland/shrub CORINE: 3.2.4						
Forest has a biodiversity function (more than 1 layer and natural seedlings, no coppice forest)						
Forest older than 35 years (incl. mixed forests)						
Woodland patches CORINE: 3.1.5						

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ALBANIA

FYR of MACEDONIA

OPOJE

KORITNIK

GORE

GORA

PLANINA

SHUTMAN

Brrut / Brut
Zgatar / Zgatar
Blaç / Bljač
Zapluxhe / Zaplužje
Bellobrad / Belobrad
Zym / Zjum
Bukë / Buče
Brezne / Brezna
Buzez / Buzez
Kapre / Kapra
Kuklibeg / Kuklibeg
Pllavë / Plavaj
Rrenc / Renc
Kuk / Kukovce
Kosavë / Kosavce
Rapca / Rapče
Xërxe / Zrze
Pllajnik / Plajnik
Shajne / Sajnovce
Dragash / Dragaš
Ljubovishtë / Ljubovište
Radeša / Radeše
Kukuljane / Kukuljane
Leshtan / Leshtan
Orcushë / Orčuša
Mlikë / Mlike
Dikancë / Dikance
Backa / Bačke
Globocica / Globočice
Brod / Brod
Kruševë / Kruševo
Zlipotok / Zlipotok
Restelica / Restelica
Karpë / Karpa

Legend

Borders
- National border
- Dragash border
- National Park “Sharri”

Water courses
- River
- Lake

Topography
- Peak

Settlements
- Build up area

Roads
- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel
- Agricultural paths and roads
- Forest paths and roads
- Foot paths

Guidance for biodiversity protection and management

Protection
- Fulfills requirements for a Strict Reserve
- Plant species listed either in Annex II of EU-Flora-Fauna-Habitat-Directive or recommended for Kosovo Red List
- Fulfills requirements for a Special Protected Area or a Special Area of Conservation
- Fulfills requirements for a nature monument
- Caves, fulfill requirements for a nature monument
- Natural springs, fulfill requirements for a nature monument
- Fulfills requirements for a Protected Landscape
- Fulfills requirements for a Protected Landscape and requires rehabilitation

Rehabilitation
- Requires rehabilitation
- Development require rehabilitation

Development
- Development area

Protection of migration routes of mammals
- Protect and develop migration routes of big mammals (brown bear, chamois, lynx)

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: G1.1: Guidance for nature conservation

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Base and assessment maps on biodiversity

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Bemmerlein-Lux, F., Hajredini, E., Gagica, I.,

Agriculture / natural vegetation Mix, Complex cultivation – with hedges/trees, Complex cultivation – with hedges (CO-RINE: 2.4.3, 2.4.4, 2.4.5)						
Coppice forest (CORINE: 3.2.5) depending on its condition –Development of adequate and professional management practices)						
Mineral extraction sites, Dump sites CORINE:1.3.1, 1.3.2						
Other forests (CORINE: 3.1.1, 3.1.3, 3.1.2) and Coniferous forest – Planted (CORINE: 3.1.4)						
Pastures Highland/Mountain/ 2.3.1 to 2.3.4 below 1600m						
Other Agricultural/pasture land (CORINE: 2.1.1, 2.1.2, 2.2.2, 2.4.1, 2.4.2)						
#) = according to The Law of Nature Protection No.03/L–233						

Due to the high diversity of land uses and landscape structures, the territory of Dragash / Dragaš Municipality provides for a high diversity of habitats for numerous groups and species of animal. Besides the open grasslands, high forests, coppice forests, all types of wetlands, and rocky and gravel areas are of high importance.

Data sources and material:

The following Assessment Maps provided the basic data for the Development Guidance:
• A1.1 and A1.2 Assessment of biodiversity
• A3 Assessment of water resources - regeneration, threats, and quality
• A4.1 - A4.3 Assessment of natural hazards
• A5.1 and A5.2 Assessment of forest and agriculture - condition of forest and forest functions
• A6 Assessment of solid waste
• A7 Assessment of cultural heritage and tourist potential

The findings of the preliminary identification of Natura 2000 Sites in Kosovo have been confirmed and considerable details are added (Mustafa et al. 2009).

Further suggestions for improvement of data:

There are no systematic scientific studies available on the fauna, flora and vegetation of Dragash / Dragaš. However, data from NGOs, village residents, scattered information from literature and random inspections by various national and international specialists provide a good basis for an overview on the local fauna. A lot more research is needed to obtain a more precise picture of the biodiversity of the area.

1.5. Zoning of Sharr/Šar Mountain National Park (G1.2)

Contents of the guidance map:

• Suggestion for the Zoning of Sharr/Šar Mountain National Park – in Dragash/Dragaš Municipality
• Road projects affecting the National Park

The main messages:

Zone 1: : Protected Zone – “Corezone”: Extraordinary natural characteristics and areas of habitat types which are endangered in global, European and national level with:

a) High density of rare, typical, endemic (Kosovo and Balkan) vegetation types (high density of Strict Na-ture Reserves acc. to “Article 10 - Law No.03/L –233 – of Nature Protection”)
b) High density of rare and protected plants (acc. to Natura 2000 – Annexes; IUCN-Red list of threatened species; and experts assessments)
c) High density of wetlands (water courses and lakes, bogs and peat-land, marshes/waterlogged areas and springs)
d) Exceptional rocks, cliffs and gorges
e) High importance for migratory routs for wild goats, bears and lynx
f) Part of the network of protected areas/national parks in Albania and FYR Macedonia
Zone 1 enjoys the character of strict protection and covers with 5.009,47 ha (20,69 %) of Sharr/Šar Mountain National Park.

Zone 2: Active Management Zone - ”Traditional Use Zone”: Areas with ecosystems, landscape values and other natural values with the possibility of an active ecosystem and landscape management with:

a) Existence of wetlands (water courses and lakes, bogs and peat-land, marshes/waterlogged areas and springs)
b) Areas of exceptional biological diversity or well-conserved areas of international importance and areas that significantly contribute to the conservation of biological and landscape diversity in Kosovo
c) Occurrence of rare, typical, endemic (Kosovo and Balkan) vegetation
d) Occurrence of rare and protected plants (acc. to Natura 2000 – Annexes; IUCN-Red list of threatened species; and experts assessments)
Zone 2 enjoys the character of a “Special area of conservation” according to Art. 12 Law of Nature Protection. Permitted interventions, works and activities which sustain and improve conditions that are important for conservation of its features, and because of which it has been declared a special area, may be undertaken. Any restrictions have to be clearly specified in a management plan.
Zone 2 covers an area of18.558,42 ha (76,67 %) of Sharr/Šar Mountain National Park.

[1] Based on a discussion with the National Park Directorate the 10th October, Prizren

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KOSOVO

Legend

Borders
- National border
- Dragash border
- National Park “Sharri”

Water courses
- River
- Lake

Topography
- Peak

Settlements
- Build up area

Roads
- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel
- Agricultural paths and roads
- Forest paths and roads
- Foot paths

Guidance for zonation of Sharr Mountain National Park in Dragash/Dragaš Municipality

Zone 1 (as per law): With extraordinary natural characteristics, with rare types of endangered species of plants and animals and other wild natural habitats. This zone enjoys the character of strict protection.

Zone 2 (as per law): Characterized by ecosystems, landscape values and other natural values in which the activities which are not in contradiction with the purpose of protection are exercised.

Zone 3 (as per law): Parts foreseen for construction of leisure, recreational, and tourism objects and for the needs of the inhabitants of the territory of National Park, limited and selective use of natural goods.

Buffer zone (as per law): Buffer of 50 meters from the boundary of National Park serves for the prevention of dangerous effects on the park.

Road projects affecting Sharr Mountain National Park

Zonation based on the analysis under the Sustainability Atlas, recommendations of the National Park Directorate and projects proposed by the Municipal Development Plan.

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: G1.2: Zoning of National Park “Sharri”

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Base, assessment and guidance maps on biodiversity, forest, agriculture and land use

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Bemmerlein-Lux, F., Hajredini, E., Gagica, I.,

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Zona 3: Sustainable Use Zone - “Recreation Area”: is declared in the parts of the National Park territory foreseen for restricted construction of leisure, recreational, and tourism sites, and for the needs of the inhabitants of the National Park. It includes 1) proximity to settlements and more intensive, existing interaction of human activities and 2) existing installations with relevance for tourism.
Restrictions should be clearly specified in a management plan. The restrictions should include prohibition to remove soil cover (for example for outdoor recreational areas) prohibition to discharge untreated waste waters directly to rivers, and prohibition to burn waste, amongst other restrictions. Existing infrastructure shall be upgraded to meet standards established in this law and management plans.
It covers with 638,53 ha (2,64 %) of Sharr/Šar Mountain National Park
Buffer zone - surface area of 100 metres from the boundary of National Park serving to prevent negative ef-fects on the park.

Criteria used for guidance map:

According to its regulations, IUCN would accept up to 25% of the NP to be dedicated as Zone 3 for development (i.e. 75% has to be zones 1 or 2). Traditional land use (animal husbandry), which is essential for the sustainable management of grasslands, would not fall under this category.
The suggested areas for Zone 1 to 3 are based on the following criteria:
1. Zone 1 with preferential habitats according to EU habitat directive classification (see Annex 3.2) and/or high density of rare habitats and plants (according to EU habitat directive and draft Kosovo Plant Red Species list)
2. Traditional land use (grazing) areas
3. Existing or planned infrastructure within the suggested border of the National Park
4. Road plans as suggested in the Municipal Development Plan (see also section 1.10) are shown in the guidance map, but not considered in the Zonation Concept. These projects have to be discussed, assessed and considered during the final formulations of the Spatial Plan and the Management Plan for the National Park.
The zones are a compromise between the existing, traditional land uses of the local population and strict protection of areas that are negatively influenced by the traditional uses. A park and its management have to consider traditional land uses, especially if those land uses are constitutive of biodiversity.
Economic (and touristic) development requires international road connection to Albania and FYR Macedonia, a connection between Brod and Restelica/Restelicë (scenic road), as well as a bypass for Restelica/Restelicë.
These future plans are to be considered in the Management and Spatial plan of the National Park.
The roads will be located as planned and the NP Management and Spatial Plan will consider these and decide on the spatial zoning category required by law for such road projects. A buffer of 10-20 m on both sides of the road are considered to be influenced by the road and its construction.

Data sources, material and reliability:

- Republic of Kosovo (December 2012): Law on the National Park “Sharri”
- Republic of Kosovo (2010): The Law of Nature Protection No.03/L–233

Further suggestions for improvement of data:

In agreement with the National Park Directorate, Zone 3 should be divided in 2 subzones: (3a) with a principal permission for construction, if the objectives of construction are not against the objective of the National Park, and (3b) a no-construction zone.

1.6. Forest (G2.1)

Contents of the guidance map:

- Zones that should not have any forest use and should be protected forests (mainly forests with very difficult access and the ecotone at treeline and Riverine forests required for water course protection and stability)
- Zones that could undertake forest management according to Forest Stewardship Council Criteria
- Zones which need rehabilitation and management plans to increase productivity and simultaneously maintain and improve their ecological stewardship functions (water retention and geo-risk reduction)
- Zones that can be developed with special consideration of the ecological stewardship functions (water retention and geo-risk reduction)
- Zones that can be developed without restriction

The main messages:

Maintain and extend the existing forest area and improve their management to increase the production and supply of firewood, particularly through more productive and more sustainable use of existing coppice forest resources.

Categories:	% of forest in the municipal territory and size in ha		Comment
Forest area of the municipality	%	ha	
Protected *) – no management	11,59 %	1.176,87 ha	No management – the area should have biodiversity and/or riverbank protection function
Protect *) - management according to Forest Stewardship Council Criteria	27,26 %	2.768,70 ha	The management is economically and also ecologically required but has to follow the FSC standards of Kosovo.
Rehabilitate with management plans	18,33 %	1.861,82 ha	The management plans have to be adapted to objectives that focus on conservation (especially water retention and geo-risk reduction) and wood production
Develop maintaining the forest functions	32,67 %	3.317,58 ha	Any development should focus especially on the maintenance of ecological stewardship functions (see Assessment Map A 5.2)
Developed without restriction	10,14 %	1.029,83 ha	
	% of the municipal territory and size in ha		
Areas with high geo-risk close to settlements	1,22 %	530,48 ha	In these areas afforestation should be considered with priority – feasibility studies are required
Areas with high geo-risk more than 500m form settlements	5,21 %	2.269,22 ha	In these areas afforestation should be considered – feasibility studies are required

Table 1-5: % and size of the different guidance areas for forest

**) The term "protected" zone does not mean that the areas are protected by law, but that they fulfil the criteria to be protected. It is a political decision and the result of a balancing of the further planning process as to which areas will be protected through the application of a formal legal process.*

In the medium term, afforestation is a realistic option to increase the forest area with native broadleaved trees (conifers cannot be used for firewood with common heating techniques because of resin content),). There is a considerable potential for afforestation of suitable abandoned land with low agricultural productivity.

New forests in steeper areas would contribute to protection against avalanches, erosion and landslides.

In general, newly established forests will expand the productive resources for non-wood forest products such as mushrooms.

The risk from the burning of forests has to be taken seriously and there is a need to improve the early warning, fire control and fire fighting procedures and measures. Bad management practices of burning pasture areas and the remnants of harvests on farmland increases the risk of wild fires especially during drier periods of the year.

Decision guidelines:

The following Assessment Maps provide the basic data for the Development Guidance:

- A4.1 to A4.3 Assessment of natural hazards
- A5.1 and A5.2 Assessment of agriculture and forest- condition of forest and forest functions

(*) - only considering EU Habitat-Directive Annex 1 stands without coppice forest

Explanation - CORINE

1 Artificial surface

3.1 Forests

3.2.4 Transitional woodland/shrub

3.2.5 Transitional woodland/shrub

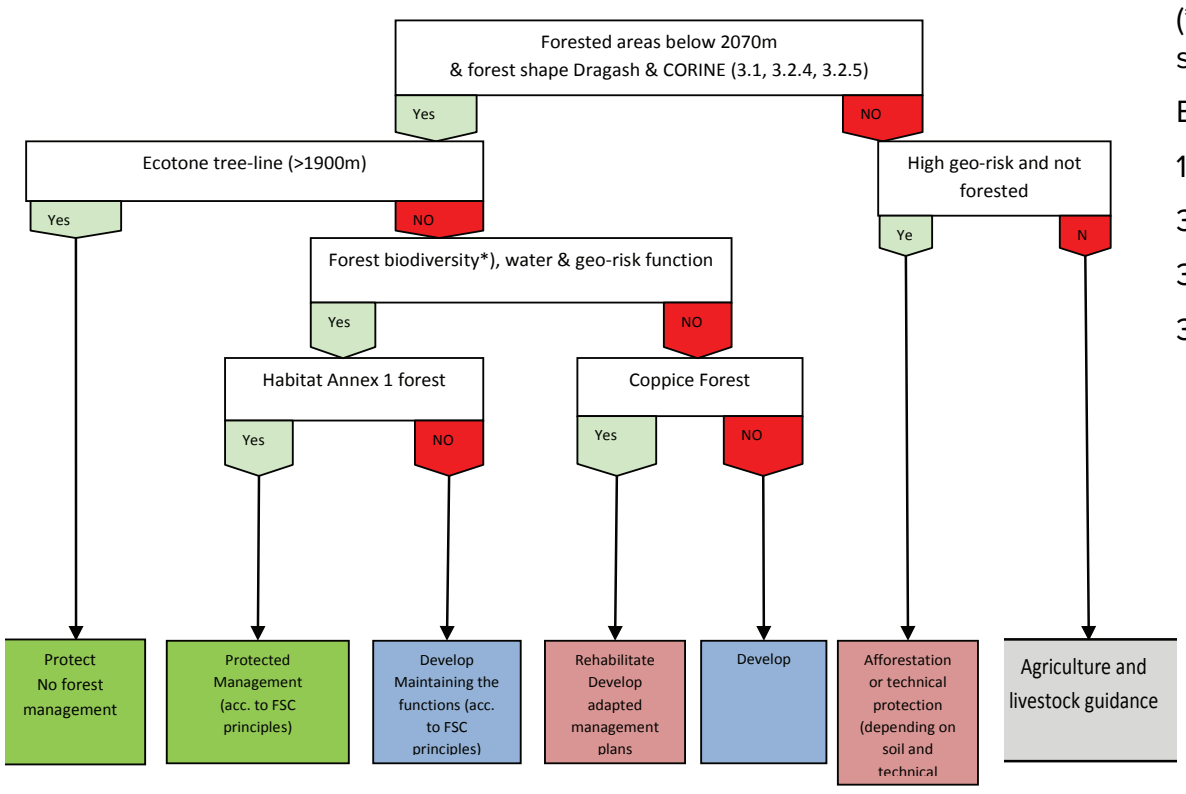

Figure 1-3: Decision criteria for the guidance of forest development

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KOSOVO

Legend

Borders

- National border
- Dragash border
- National Park “Sharri”

Water courses

- River
- Lake

Topography

- Peak

Settlements

- Build up area

Roads

- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel
- Agricultural paths and roads
- Forest paths and roads
- Foot paths

Guidance for forestry

Protection

- Protect - no forest management
- Protect - management according to Forest Stewardship Council

Rehabilitation

- Rehabilitate - develop adapted management plans

Development

- Develop - maintaining the functions
- Develop

Non forested areas with high georisks (avalanche, landslide, or soil erosion)

- Areas with high georisk in a distance below 500m from the next settlement; afforestation or technical protection measures with priority.
- Areas with high georisk in a distance of more than 500m from the next settlement; afforestation or technical protection measures.

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: G2.1: Guidance for forestry

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Base and assessment maps on forestry

Coordinate System :
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

1.7. Agriculture (G2.2)

Contents of the guidance map:

Areas without forest, which are
• suitable for agriculture, special cultures and intensive pastures – development possible (better soils and below 1300m)
• suitable for intensive pasture, including hay production – development possible (between 1300 and 1600m)
• suitable for extensive pasture, including hay production – development possible (between 1300 and 1600m)
• suitable for extensive management of pastures – protected for pasture (above 1600m)
• not fit for any pasture and pasture management (only sparse vegetation or cliffs)

The main messages:

Most of the Dragash/Dragaš's landscape is the result of centuries' old land-use practices that are also the origin of the existing biodiversity and the attractive landscape. Changing the land-use pattern will interfere with biodiversity. In general (and while some exceptions may occur due to specific local climatic conditions), agriculture is only competitive up to an altitude of 1300m. Intensive pasture and fruit trees are suitable up to 1600m; generally, areas above this are only optimal for extensive pasture when the climatic conditions are suitable (vegetation period).
It is necessary to improve the performance of the agriculture and livestock systems of the Municipality, mainly in terms of employment and income for the population, through the improvement and environmentally-compatible use of local resources, their organisation into value chains, and the upgrading of capacities of competitiveness whilst maintaining a sustainable environment, and social and gender equity in the long term.
In order to foster the development of agricultural productivity in Dragash/Dragaš it is important to closely consider the potentials and limitations of the environmental conditions and their opportunities.

Agricultural area of the municipality	%	ha	
Develop of agriculture below 1300m	7,24 %	3.157,15 ha	These areas have normally better soils and are suitable for agriculture, special cultures and intensive pastures
Develop of pasture systems between 1300 and 1600m	37,60 %	16.384,57 ha	Suitable for extensive or intensive pasture, including hay production, intensive agriculture is economically not competitive
Develop of extensive pastures management	11,88 %	5.178,76 ha	Large areas above 1600m with different soil characterisations but restricted vegetation period only suitable for pasture (and in some favourable cases for hay production – summer pasture area including hay production – development possible (between 1300 and 1600m)
Protect through management of extensive pasture,	7,38 %	3.217,65 ha	Wetlands and moor areas along highland creeks and rivulets only for extensive (and controlled) pasture
Protect area – no pasture	5,06 %	2.203,98 ha	Not fit for any pasture and pasture management (only sparse vegetation or cliffs) – erosion risk through pasture
% of the municipal territory and size in ha			
Areas with high geo-risk close to settlements	1,22 %	1,22 %	In these areas afforestation should be considered with priority – feasibility studies are required
Areas with high geo-risk more than 500m form settlements	5,21 %	5,21 %	In these areas afforestation should be considered – feasibility studies are required

Table 1-6: Percentage and size of the different guidance areas for agriculture

**) The term "protected" does not mean that the areas are or should be protected by law, but that they fulfil the criteria to continue with the same management to conserve their functionality.*

Decision guidelines:

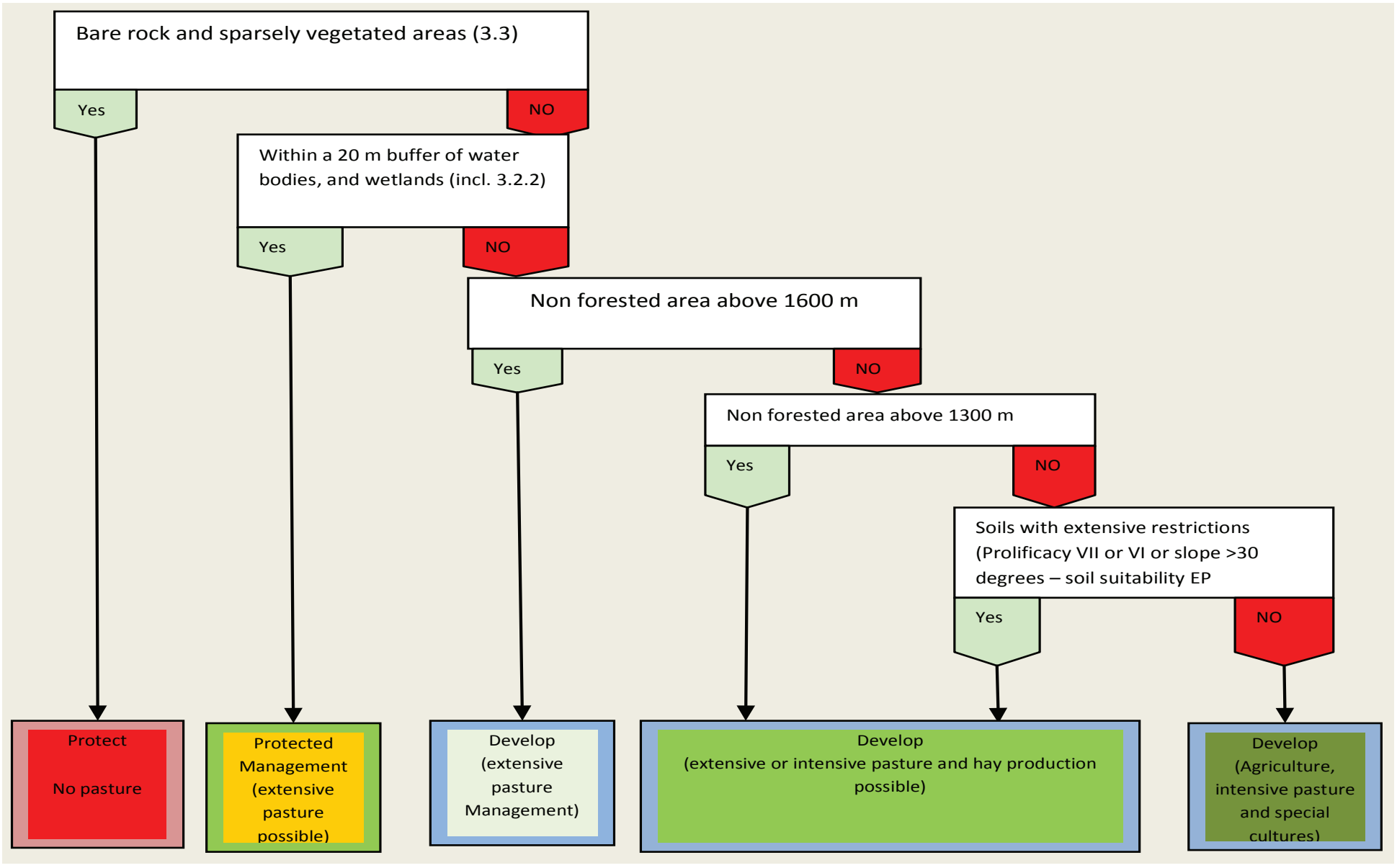

Figure 1-5: Decision criteria for the guidance of agricultural development

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KOSOVO

Legend

Borders

- National border
- Dragash border
- National Park “Sharri”

Water courses

- River
- Lake

Topography

- Peak

Settlements

- Build up area

Roads

- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel

Guidance for agriculture

- Protect, no pasture
- Protected management (extensive pasture possible)
- Develop (extensive pasture management)
- Develop (extensive or intensive pasture and hay production possible)
- Develop (agriculture, intensive pasture, and special cultures)

Non forested areas with high georisks (avalanche, landslide, or soil erosion)

- Areas with high georisk in a distance below 500m from the next settlement; afforestation or technical protection measures with priority
- Areas with high georisk in a distance of more than 500m from the next settlement; afforestation or technical protection measures

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: G2.2: Guidance for agriculture

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Base and assessment maps on soil, agriculture and land use

Coordinate System :
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

ALBANIA

FYR of MACEDONIA

1.8. Water / Sanitation (G3)

Contents of the guidance map:

- Land uses and spatial protection of water resources
- Drinking water reservoirs to be rehabilitated
- Priorities for pollution reduction trough waste water treatment

The main messages:

The protection of water sources depends not only on prevention of pollution, which is caused mainly by untreated waste water discharge, but also on the proper management of the water sources.
For the availability of good quality water in sufficient quantity that will satisfy the demand of each community (quality and yield of water sources, sanitary protection areas) it is necessary to
- Protect, rehabilitate and manage the main catchment areas with respect to water resources. These are in the mountains east of Radeša / Radeshë, Bresanë / Brodosavce and Blaç / Bljać.
The risk of erosion in these areas has to be controlled because extraction points for river water or from wetlands are influenced by the conditions in these catchment areas.
- Protect (and, if required, manage) a buffer zone around all wells used for drinking water
- Manage and rehabilitate those buffer zones along water courses that are in areas susceptible to erosion (erosion control measures, proper waste management, prevention of pollution)

Prioritisation of villages relating to improvement of waste water management system (centralised or decentral-ised):
- Highest priority:

1) All villages hosting companies generating high loaded organic waste water (diary, meat factory, wool factory)
2) Villages with critical pollution downstream of the village (based on UNDP Survey 2011 / 2012)
3) Brezne / Brezna, which was highlighted in the waste water report from the Kosovo Health Agency 2012
- All other villages have a normal priority
- Villages included in the waste water system currently established in Opojë/Opolje, (Kosavë / Kosavce, Kuk / Kukovce) do not require further attention

Immediate action to reduce pollution hazards
- All illegal dumpsites to be removed
- All uncontrolled discharge of waste water to be stopped

Actions to protect drinking water supply
- Rehabilitate drinking water reservoirs that are not compliant with either micro-biological or chemical standards (Survey 2012)

Decision guidelines:

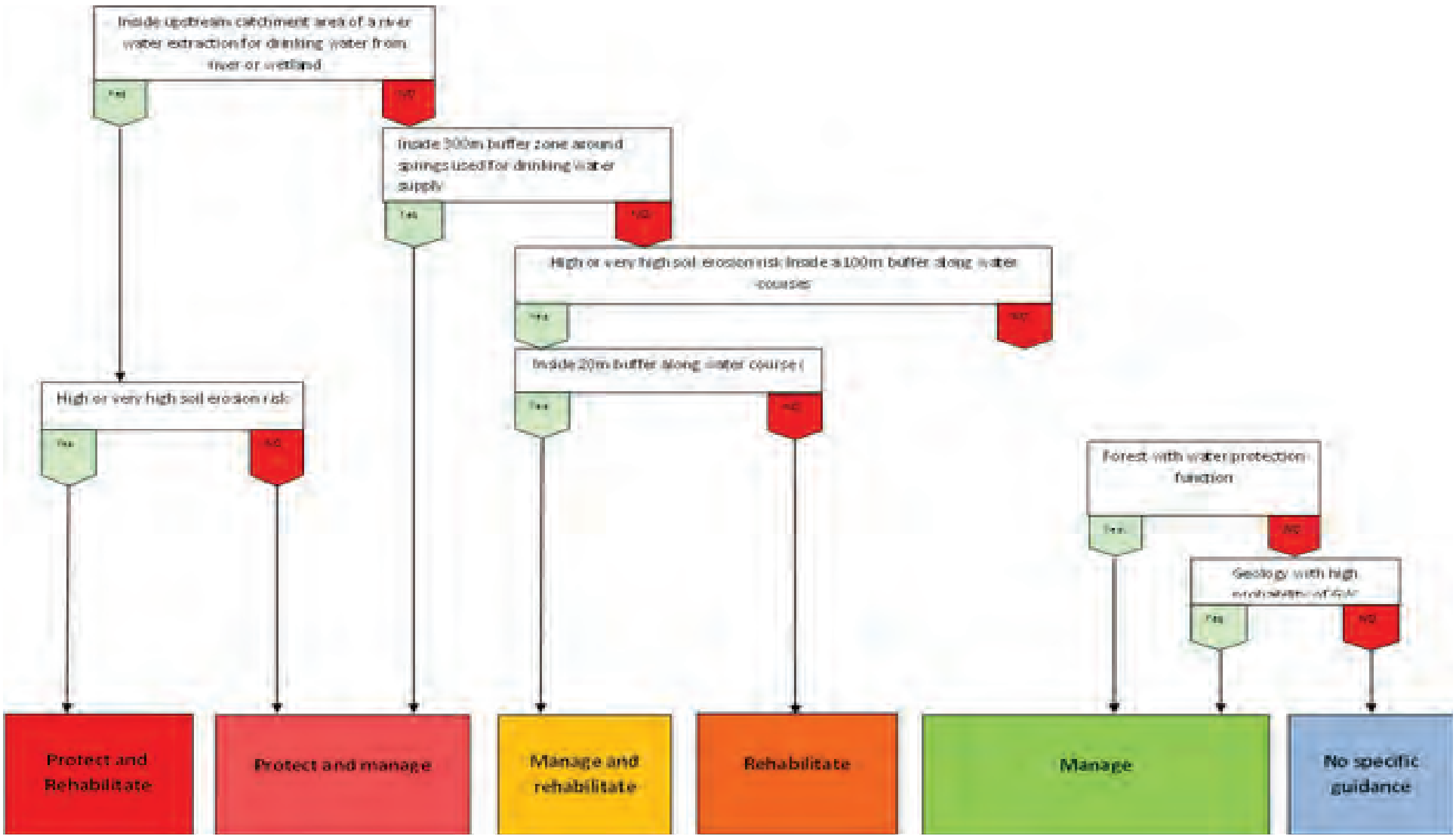
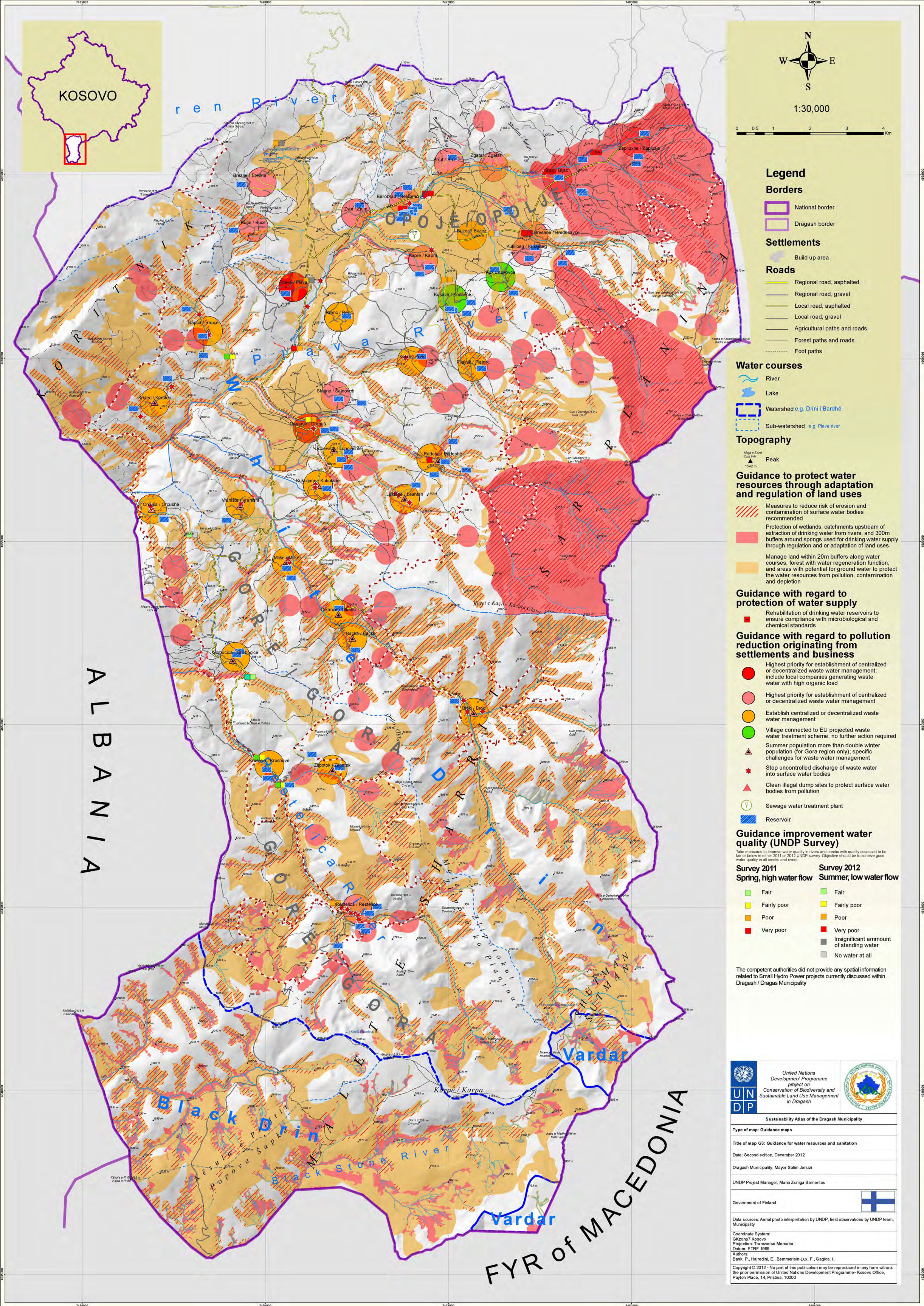


Figure 1-7: Decision criteria for the guidance of water and sanitation


KOSOVO
ALBANIA
FYR of MACEDONIA
OPOJË / OPOLJE
KORITNIK
ŠAR PLANINA
GORË / GORA
Plava River
White Drin
Black Drin
Black Stone River
Restelica River
Vardar
N
W
E
S
1:30,000
0 0.5 1 2 3 4 Km
Legend
Borders
National border
Dragash border
Settlements
Build up area
Roads
Regional road, asphalted
Regional road, gravel
Local road, asphalted
Local road, gravel
Agricultural paths and roads
Forest paths and roads
Foot paths
Water courses
River
Lake
Watershed e.g. Drini i Bardhë
Sub-watershed e.g. Plava river
Topography
Peak
Guidance to protect water resources through adaptation and regulation of land uses
Measures to reduce risk of erosion and contamination of surface water bodies recommended
Protection of wetlands, catchments upstream of extraction of drinking water from rivers, and 300m buffers around springs used for drinking water supply through regulation and or adaptation of land uses
Manage land within 20m buffers along water courses, forest with water regeneration function, and areas with potential for ground water to protect the water resources from pollution, contamination and depletion
Guidance with regard to protection of water supply
Rehabilitation of drinking water reservoirs to ensure compliance with microbiological and chemical standards
Guidance with regard to pollution reduction originating from settlements and business
Highest priority for establishment of centralized or decentralized waste water management; include local companies generating waste water with high organic load
Highest priority for establishment of centralized or decentralized waste water management
Establish centralized or decentralized waste water management
Village connected to EU projected waste water treatment scheme, no further action required
Summer population more than double winter population (for Gora region only); specific challenges for waste water management
Stop uncontrolled discharge of waste water into surface water bodies
Clean illegal dump sites to protect surface water bodies from pollution
Sewage water treatment plant
Reservoir
Guidance improvement water quality (UNDP Survey)
Take measures to improve water quality in rivers and creeks with quality assessed to be fair or below in either 2011 or 2012 UNDP survey. Objective should be to achieve good water quality in all creeks and rivers.
Survey 2011
Spring, high water flow
Fair
Fairly poor
Poor
Very poor
Survey 2012
Summer, low water flow
Fair
Fairly poor
Poor
Very poor
Insignificant ammount of standing water
No water at all
The competent authorities did not provide any spatial information related to Small Hydro Power projects currently discussed within Dragash / Dragas Municipality
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
Sustainability Atlas of the Dragash Municipality
Type of map: Guidance maps
Title of map G3: Guidance for water resources and sanitation
Date: Second edition, December 2012
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Aerial photo interpretation by UNDP, field observations by UNDP team, Municipality
Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors:
Bank, P., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,
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1.9. Settlements (G4)

Contents of the guidance map:

- Guiding settlement development
- Proposed extension of regional and local road network
- Suggestions for public transport
- Risk reduction by afforestation
- Improvement of supply, service and civil protection
- Plot projects

The main messages:

Further development of settlements should take place in a well-regulated way. The spatial development of settlements is summarised as:
- Public space in the centres (settlement core area in the village where there should be some public space for traditional/ common gathering – this area should be designed to provide amenity values)
- Public buildings and facilities
- Development/construction zone for new housing construction/ settlement expansion. Construction out-side this zone should not be allowed
- Commercial zone (area for enterprises, trade and business. Small shops may be outside this zone, but noisy businesses (e.g. factory, garage) should be located in this zone)
- Green belt (devoid of construction; preservation of environment/green space) to ensure not only friendly living conditions but also as a structural preparation and attraction for tourism.

Touristic centres: one main centre is required in Dragash/Dragaš town with 8 sub-centres located mainly at the villages bordering Sharr/Šar Mountain National Park.

Dragash/Dragaš town is the municipal centre and shall have the largest amount of space for the development of all kinds of settlement, in particular to improve its function as the commercial and social centre. The villages Shajne / Šajnovce and Ljubovište / Lubovishtë may serve as a suburb and provide residential areas near Dragash/Dragaš town. The sub-centres shall also develop commercial areas, if their geographical situation offers opportunities for this.
In the Municipal Centre, sub-centres and villages, construction areas for private housing shall be provided. Their size correlates with demand, which can be determined by the development of the population and size of living space per capita. The size of construction zones, dedicated for a period of 10 years, should account for 10 to 30% of the existing size of the villages.
Public transport system is to be improved and solutions for a regular system in the Gora/Gorë region will result in a better economic and social integration of the whole population.
An important perspective is the future connection to FYR Macedonia and also to Albania: cross border public transport will integrate the region more.
The improvement of the settlements and their service function also requires:
- A waste collection system and the possibility for storage of solid waste in winter when transport to landfills is not possible.
- Upgrading of ambulance centers , and provision of proper pharmaceutical services in sub-centres
- Local firefighting (and other disaster risk management preparations)
- Areas of high geo-risk have to be evaluated thoroughly and afforestation/erosion and avalanche control systems installed.

Decision guidelines:

The main purposes of this guidance are to direct the spatial development of settlements in a sustainable way, to avoid environmental pollution and natural hazards, to facilitate access to technical infrastructure and to preserve the historical structure of the villages.
According to topography, soil, scenery and other criteria, different areas are more or less suitable for settlement development. Relevant information is contained within the Assessment Maps: A1.1 and A1.2 Assessment of biodiversity, A4.1 - A4.3 Assessment of natural hazards, A5.3 Assessment of forest and agriculture – productive capacity of soils and A7 Assessment of cultural heritage and tourist potential
The “Spatial Resistance Map” (see IG1 - section 2.1) is an important tool that indicates which places are not suited for development, including construction. This means the avoidance of settlement development in areas with a high spatial resistance: slopes of more than 15%, zones with vegetation associations of high biodiversity value, agricultural land of category I-II, areas with increased risks of natural hazards, and forests which fulfil important functions.
The merging of villages should be avoided, if villages are disconnected by natural elements. These areas that are to be kept devoid of construction are declared as green belts.

[2]Additional detailed information is given for every village and Dragash/Dragaš town in A3 maps (G4.1 – G4.35) at a scale of 1:5,000 in the MDP.
[3]Ambulance centre is used in correlation to the Albanian word ‘ambulant’ describing a building that provides basic healthcare

KOSOVO

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1:30,000

0 0.5 1 2 3 4 Km

Legend

Borders

- National border
- Dragash border
- National Park "Sharri"

Water courses

- River
- Lake
- Spring

Topography

- Peak

Settlements

- Build up area

Settlement development

- Improve public space in the centers of settlement
- Development zone for public buildings / facilities
- Expansion zone for housing
- Development zone for business and industries
- Development of green belts in direct neighborhood of settlements
- Existing business and industry area
- Development of a business and industry area
- Develop touristic main center
- Develop touristic center

Roads

Existing road network

- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel
- Agricultural paths and roads
- Forest paths and roads
- Foot paths
- Proposed extension of regional and local road network
- Improve parking facilities
- Install border station in connection with realisation of road project

Public transportation

- Guide and support improvment of regular bus services
- Guide and support improvement of private pick-up system or establish regular minibus services
- Potential routes for extension of public transport system after realization of road projects (Restelica – FYROM and Zaplluxhe-Prizren direct
- Improve existing regular bus stop
- Establish regular bus stops in subcentres

Afforestation of areas with high georisk in a distance below 500m from the next settlement

- Areas with high georisk in a distance below 500m from the next settlement; afforestation or technical protection measures with priority; Symbol red background with tree symbols

Pioneer projects for open space development

- Green market

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

UNDP

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: G4: Guidance for settlement development

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village survey 2011, field observations by UNDP team, Municipality

Coordinate System :
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank, P., Voit, M., Hajredini, E., Bemmerlein-Lux, F., Gagica, I.,

ALBANIA

FYR of MACEDONIA

1.10. Roads and traffic (G5)

Contents of the guidance map:

- Suggested improvements to the existing road network
- Guidance for road construction projects
- Required border stations
- Public transportation
- Road maintenance

The main messages:

Further improvement of the road network and of public transport is key to overcoming the geographical remote-ness of Dragash/ Dragaš as a whole and of its villages. It will improve livelihood opportunities, support the local economy by offering better access to markets, and promote tourism. Improved maintenance of roads will ensure that investments will be long lasting.
Road projects for improvement and for new construction are discussed in the Municipality. Additionally, there is a need of road bypasses for Restelica/Restelicë, Brrut/Brut and Zgatar. To give a comprehensible recommendation about the practicability and to prioritise the road projects, they were evaluated based on their position in the road network, their cost level, their environmental impact and their separation effects within the National Park (see below, decision guidelines).
Of highest priority is the improvement of the roads from Prizren-Dragash/Dragaš and Zaplluxhe / Zaplužje -Prizren as well as the link form Kruševo/Krushevë-Albania. Of highest importance for detailed study is the international link from Restelica/Restelicë-FYR Macedonia. Each of these high priority roads will decrease the relative isolation of the Municipality and support economic and touristic development.
Additionally, the improvement of public transport or support to private transport solutions is also in line with reducing Dragash/ Dragaš's isolation.
A connection between Brod and Restelica/Restelicë, as well as a bypass to Restelica/Restelicë, could significantly contribute to access to peripheral areas of the National Park (scenic road) and the strengthening of the Gora/Gorë region.

Decision guidelines:

The following Assessment Maps provide the basic data for this Development Guidance:
- A1.1 and A1.2 Assessment of biodiversity
- A3 Assessment of water resources - regeneration, threats, and quality
- A4.1 - A4.3 Assessment of natural hazards
- A10.1 Assessment of economy, infrastructure and energy – roads and transportation

The assessment of "Added Value" defines the significance of the road project for overall improvement of the existing road network. It is based on the position of the project in the existing road network, its geographical relation to existing settlements, its altitude range and the access to existing roads, especially connections abroad. The assessment uses a scale of 1 to 5, with 1 being the best.
The cost of a project depends on its construction type (improvement of existing road or new construction), its configuration (road, bridge or tunnel) and its length. The assessment differentiates between very low costs (1), low, middle, high and very high costs (5).
The assessment of the environmental impact of the road projects contains an analysis of the sensitivity of the environment and the level of damage that would be caused by the road construction. Areas of high environmental sensitivity are Vegetation Associations of High Importance , some Vegetation Types , Habitats of mammals protected according to the European Habitat Directive and areas for Regeneration of Water Resources . The level of damage caused by the road construction depends on the construction type (improvement of existing road or new construction) and the length of the road project. According to the actual level of planning, which has not been detailed up to now, it is not possible to estimate the environmental impact in detail. The assessment uses a five-point-scale, with 1 being the best (very low impact).
The assessment of the criterion "National Park" is based on the construction type and length of the road projects within the National Park. Projects which do not affect the area of Sharr/ Šar Mountain National Park are awarded the best rating (1).
The assessment of the other projects examines every single project without consideration for the accumulative impact by other projects. Later in the planning process, when it has been decided which projects will be implemented a detailed assessment will be necessary which also takes into account the correlating impacts of all implemented projects together.

Further requirements:

Detailed feasibility studies and Environmental Impact Assessments of the road projects.

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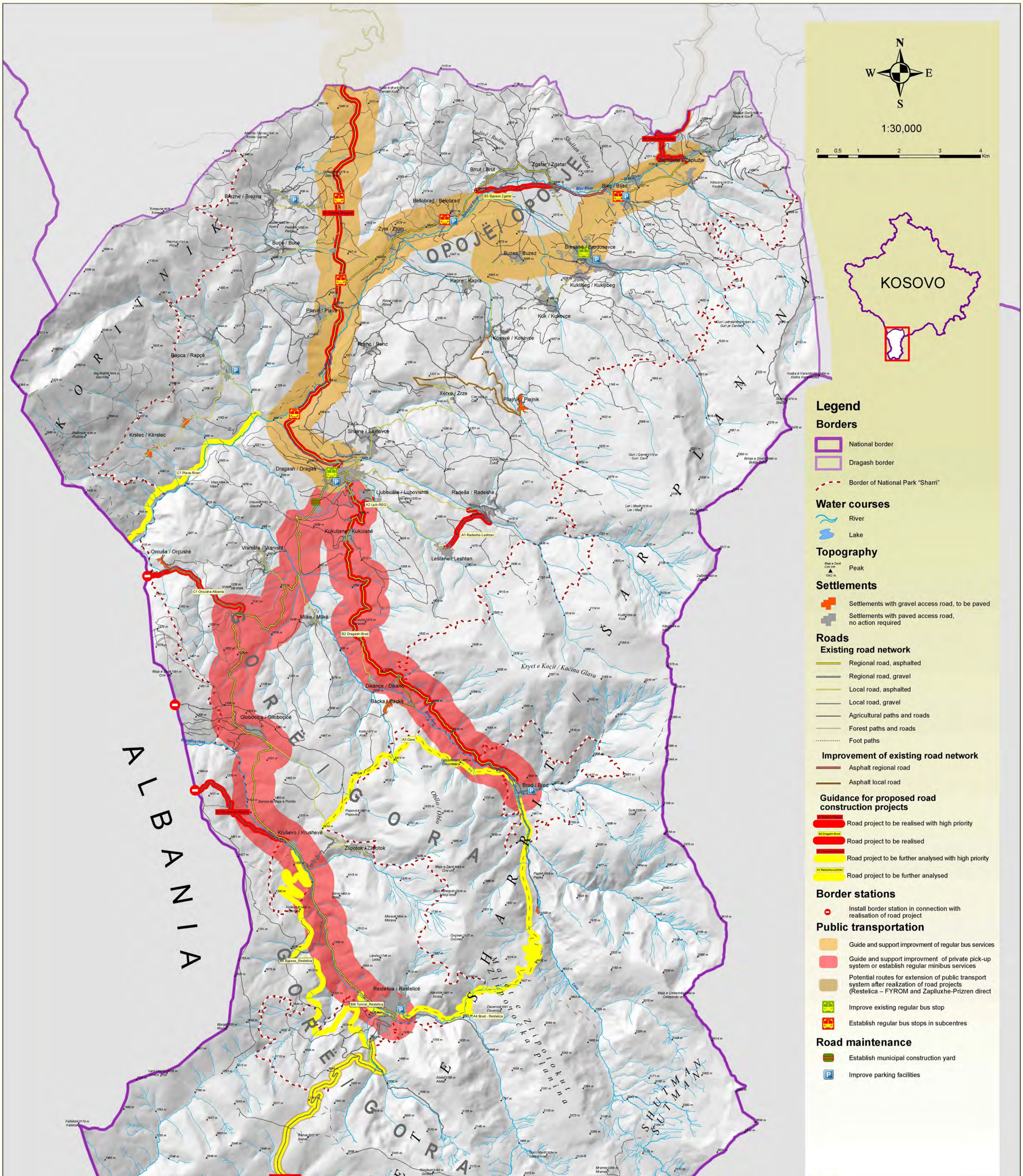
[4] Associations listed in EU Flora-Fauna-Habitat Directive, Annex I, endemic in Kosovo or the Balkans, or glacial or tertiary Relic, or rare.
[5] Broad-leaved Forest, Shrub and/or herbaceous Vegetation Associations, Open Spaces with little or no Vegetation and Wetlands.
[6] Depending on geology and soil.

Project	Name	Type	Length	Added value	Costs	Conflict National Park	Conflict Biodiver-sity	Weighted evaluation sum	Final As-sessment	Recom-mendation	Priority
B1	Prizren-Dragash	improve	11.844	1	3	1	3	9	1,8	implement	high
B3	Zaplluxhe-Prizren	improve	2.524	2	2	1	3	10	2,0		high
C2	Krushevo-Albania	improve	3.226	1	2	3	3	10	2,0		high
A1	Radeshë-Leshtan	improve	449	4	2	1	1	12	2,4		
A2	Ljub-REG	improve	1.948	4	1	1	1	11	2,2		
A4	Bypass Zgatar	improve	2.497	3	2	1	2	11	2,2		
B2	Dragash-Brod	new / im-prove	3.174	2	3	2	3	12	2,4		
C1	Orçushë-Albania	improve	12.420	2	2	2	3	11	2,2		
	Resteliçë-iRJM										
C3	Restelica-FYRM	improve	16.705	1	4	4	5	15	3,0	check	high
A3	Gora	new	6.978	2	3	3	4	14	2,8		
B5	Brod-Rest-elica	new / im-prove	12.463	2	4	4	5	17	3,4		
B4	Bypass Restelica	new	5.136	3	4	3	4	17	3,4		
B4t	Tunnel Restelica	new / im-prove	950	3	5	2	2	15	3,0		
C7	Pllava-River	new	11.090	2	3	3	4	14	2,8		

Table 1-7: Relevant road projects and their evaluation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KOSOVO
ALBANIA
FYR of MACEDONIA
KORITNIK
OPOJË / OPOJE
GORË / GORA
SHARR / ŠAR PLANINA
GORË / GORA
MALET E GOTRA
SHUTMAN / ŠUTMAN
Dragash / Dragaš
Brod / Brod
Restelica / Restelicë
Kruševo / Krushevë
Globočica / Globoçicë
Zgatar / Zgatar
Blaç / Bljac
Zaplluxhe / Zaplužje
Bellobrad / Belobrad
Brezne / Brezna
Bresanë / Brodosavce
Kuklibeg / Kukljibeg
Kuk / Kukovce
Kosavë / Kosavce
Pllavë / Plava
Rrenc / Renc
Rapca / Rapçë
Krstec / Kërstec
Shajne / Šajnovce
Ljubovište / Lubovishtë
Radeša / Radeshë
Leštane / Leshtan
Kukuljane / Kukulanë
Orcuša / Orçushë
Vranište / Vranisht
Mlike / Mlikë
Dikance / Dikanc
Backa / Baçkë
Zlipotok / Zlipotok
Zym / Zjum
Buçe / Buçe
Buzez / Buzez
Kapre / Kapra
Xërxe / Zrze
Pllajnik / Plajnik
Brrut / Brut
B5 Bypass Zgatar
A1 Radesha-Leshtan
A2 Ljub-REG
B2 Dragash-Brod
C1 Orcusha-Albania
C7 Plava-River
A3 Gora
B4 Bypass_Restelica
B4t Tunnel_Restelica
A4 Brod - Restelica
Karpë / Karpa
Kësula e Priftit
Popova Šapka
Kryet e Kaçit / Kaćina Glava
Legend
Borders
National border
Dragash border
Border of National Park "Sharri"
Water courses
River
Lake
Topography
Peak
Settlements
Settlements with gravel access road, to be paved
Settlements with paved access road, no action required
Roads
Existing road network
Regional road, asphalted
Regional road, gravel
Local road, asphalted
Local road, gravel
Agricultural paths and roads
Forest paths and roads
Foot paths
Improvement of existing road network
Asphalt regional road
Asphalt local road
Guidance for proposed road construction projects
Road project to be realised with high priority
Road project to be realised
Road project to be further analysed with high priority
Road project to be further analysed
Border stations
Install border station in connection with realisation of road project
Public transportation
Guide and support improvment of regular bus services
Guide and support improvment of private pick-up system or establish regular minibus services
Potential routes for extension of public transport system after realization of road projects (Restelica – FYROM and Zaplluxhe-Prizren direct
Improve existing regular bus stop
Establish regular bus stops in subcentres
Road maintenance
Establish municipal construction yard
Improve parking facilities

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: G5: Guidance on roads and transportation

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village survey 2011, field observations by UNDP team, Municipality

Coordinate System :
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Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank. P., Voit M., Hajredini E., Bemmerlein-Lux F., Gagica I.

1.11. Education (G6)

Contents of the guidance map:

• Location and type of existing schools (high-, central or satellite school)
• The catchment areas of the schools
• Guidance for changing school offers

The main messages:

The specific settlement structure of Dragash/Dragaš with its 36 small and dispersed villages is one reason that makes it difficult to provide effective educational facilities for everybody. The assessment of the existing situation showed overcapacities in primary education in remote villages experiencing a loss of population, while capacities in the pre-primary and secondary sector are missing.
• The educational system needs to be adapted to changing demands. There shall be an efficient and diversified school system in Dragash/Dragaš based upon the principle of "Education at the nearest point". The principle of "Education at the nearest point" cannot be followed without some exceptions. Dragash/Dragaš has a low density of small settlements. Therefore an efficient spatial distribution and effective transport to school (including in winter) requires central and satellite school (including secondary and vocational education) and the reduction of overcapacities in the primary education.
• The secondary level and the pre-school level of education shall be extended; however in Krstec / Kërstec, Leštane / Leshtan, Kukuljane / Kukulanë and Bačka / Bačkë (remote villages) an existing oversupply of teachers can be reduced.
• The high schools in Dragash/Dragaš and Mlike / Mlikë should be extended by satellite high schools in Dragash/Dragaš and Brod / Brod and Restelica / Restelicë. The spatial distribution of primary and secondary schools (high school) and/or transport to school shall enable every child in the municipality easy access to school. Girls attending secondary school and continuing education shall be a normal occurrence.
• Further education in a vocational school in Dragash/Dragaš town is suggested for the whole municipality, to increases the educational level and further development. Job training, especially for women and the unemployed, in the main economic development fields (agriculture, forestry, herb collection, food processing, cultural heritage and tourism) will broaden Dragash/Dragaš's opportunities and strengthen its position in the Sharr/Šar region.
Several school buildings are in bad condition and need upgrading.
One important factor that prevents a rational use of existing resources is the existing parallel system. The MDP strategy therefore proposes a unification of both systems in the long-term.

Decision guidelines:

The following Assessment Map provides the basic data for the Development Guidance:
• A9 Assessment of education

1.12. Health (G7)

Contents of the guidance map:

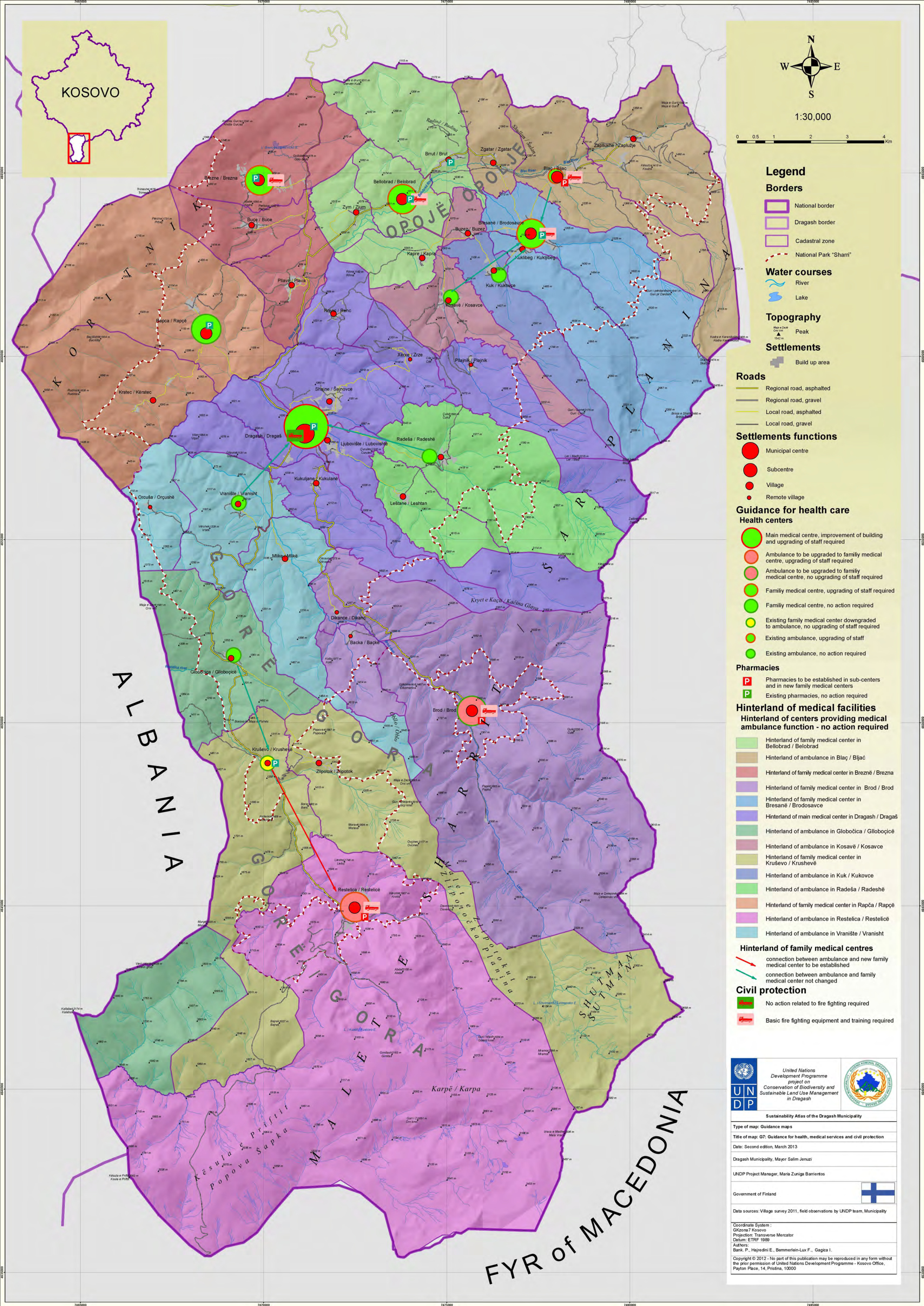
• Guidance for healthcare – upgrading of health centres in terms of building/infrastructure, staffing and institutional functions
• Existing and required pharmacies
• Catchment areas of the medical facilities for each village
• Required improvement of civil protection/fire-fighters.

The main messages:

The specific settlement structure of Dragash/Dragaš with its 36 small and dispersed villages requires specific adaption of the national health standard. The healthcare units (Main Family Medical Centre in Dragash/Dragaš, Family Medical Centres in sub-centres and Health Clinics/ambulances in certain villages) are the institutional basis of the healthcare system. Family Medical Centres ought to be located in every sub-centre, because of their size and function as sub-centres.
• Improvement in medical infrastructure of the Gora/Gorë region through upgrading health clinics to family medical centres in Brod / Brod and Restelica / Restelicë – with a simultaneous downgrading of the existing family centre to a health clinic in Kruševo / Krushevë. (The presence of a Family Medical Centre in Kruševo/Krushevë is illogical considering that there are 4,689 inhabitants in Restelica/Restelicë and 857 in Kruševo/Krushevë.)
• Improvement of the existing family medical centres in the Opojë/Opolje region in terms of staffing and building
The number of specialists in Dragash/Dragaš does not reach the national standard - so even if the total number of doctors per inhabitant is attained, an improvement in staffing is still required. The medical staff, technical equipment and physical equipment of the healthcare units should match national standards in all facilities. There have to be more specialists, especially gynaecologists/midwives, made accessible for invalids and pregnant women.
Improvements in patient transport equipment is necessary within the Municipality as well as to Prizren, where specialist therapies are available. Even if the national standard is reached, and the ambulance service is im-proved, a great distance still remains between remote villages and medical centres/health clinics. To cover this distance there are doctors who work part-time in several villages. A mobile medical service, equipped with a doctor and a nurse, as well as basic facilities, is necessary to visit immobile patients and remote villages.
Basic equipment and installations for fire-fighting is needed in Restelica / Restelicë, Brod / Brod, Bresanë / Brodosavce, Brezne / Brezna, Bellobrad / Belobrad, Blaç / Bljać.

Decision guidelines:

The following Assessment Map provides the basic data for the Development Guidance:
• A8 Assessment of health, medical services and civil protection



KOSOVO
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0 0.5 1 2 3 4 Km
Legend
Borders
National border
Dragash border
Cadastral zone
National Park "Sharri"
Water courses
River
Lake
Topography
Maja e Zezë Crni Vrh 1542 m
Peak
Settlements
Build up area
Roads
Regional road, asphalted
Regional road, gravel
Local road, asphalted
Local road, gravel
Settlements functions
Municipal centre
Subcentre
Village
Remote village
Guidance for health care
Health centers
Main medical centre, improvement of building and upgrading of staff required
Ambulance to be upgraded to familiy medical centre, upgrading of staff required
Ambulance to be upgraded to familiy medical centre, no upgrading of staff required
Familiy medical centre, upgrading of staff required
Familiy medical centre, no action required
Existing family medical center downgraded to ambulance, no upgrading of staff required
Existing ambulance, upgrading of staff
Existing ambulance, no action required
Pharmacies
Pharmacies to be established in sub-centers and in new family medical centers
Existing pharmacies, no action required
Hinterland of medical facilities
Hinterland of centers providing medical ambulance function - no action required
Hinterland of family medical center in Bellobrad / Belobrad
Hinterland of ambulance in Blaç / Bljać
Hinterland of family medical center in Breznë / Brezna
Hinterland of family medical center in Brod / Brod
Hinterland of family medical center in Bresanë / Brodosavce
Hinterland of main medical center in Dragash / Dragaš
Hinterland of ambulance in Globočica / Glloboçicë
Hinterland of ambulance in Kosavë / Kosavce
Hinterland of family medical center in Kruševo / Krushevë
Hinterland of ambulance in Kuk / Kukovce
Hinterland of ambulance in Radeša / Radeshë
Hinterland of family medical center in Rapča / Rapçë
Hinterland of ambulance in Restelica / Restelicë
Hinterland of ambulance in Vranište / Vranisht
Hinterland of family medical centres
connection between ambulance and new family medical center to be established
connection between ambulance and family medical center not changed
Civil protection
No action related to fire fighting required
Basic fire fighting equipment and training required
United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash
U N D P
Sustainability Atlas of the Dragash Municipality
Type of map: Guidance maps
Title of map: G7: Guidance for health, medical services and civil protection
Date: Second edition, March 2013
Dragash Municipality, Mayor Salim Jenuzi
UNDP Project Manager, Maria Zuniga Barrientos
Government of Finland
Data sources: Village survey 2011, field observations by UNDP team, Municipality
Coordinate System :
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989
Authors:
Bank. P., Hajredini E., Bemmerlein-Lux F., Gagica I.
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SHARR / ŠAR
SHUTMAN / ŠUTMAN
MALET E ZLIPOTOKUT / ZLIPOTOČKA PLANINA
Kësula e Priftit / Popova Šapka
Karpë / Karpa
Kryet e Kaçit / Kaćina Glava
Rudinë / Rudina
Shullan / Šulan
Oblo / Oblo
Brezne / Brezna
Buçe / Buce
Pllavë / Plava
Rapca / Rapçë
Krstec / Kërstec
Brrut / Brut
Bellobrad / Belobrad
Zym / Zjum
Kapre / Kapra
Buzez / Buzez
Zgatar / Zgatar
Zaplluxhe / Zaplužje
Blaç / Bljac
Bresanë / Brodosavce
Kuklibeg / Kukljibeg
Kuk / Kukovce
Kosavë / Kosavce
Rrenc / Renc
Xërxe / Zrze
Pllajnik / Plajnik
Shajne / Šajnovce
Dragash / Dragaš
Ljubovište / Lubovishtë
Radeša / Radeshë
Kukuljane / Kukulanë
Leštane / Leshtan
Orcuša / Orçushë
Vranište / Vranisht
Mlike / Mlikë
Dikance / Dikanc
Backa / Baçke
Globočica / Glloboçicë
Brod / Brod
Kruševo / Krushevë
Zlipotok / Zlipotok
Restelica / Restelicë
Blac River
Belobrad River
Plava River
Brod river
Restelica river
Leva

N
W E
S

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KOSOVO

Legend

Borders
- National border
- Dragash border
- Cadastral zone

Settlements
- Build up area
- Municipal centre
- Subcentre
- Village
- Remote village

Roads
- Regional road, asphalted
- Local road, asphalted
- Local road, gravel
- Local road, type of pavement unknown

Water courses
- River
- Lake

Educational infrastructure
School
- High school
- Central school
- Satellite school

Hinterland of central schools
- 25 Maj
- 28 Nentori
- 9 Maj
- Fetah Sylejmani
- Ilmi Bahtijari
- Restelica
- Samedin Emini
- Sezai Surroi
- Shaban Shabani
- Svetlost
- Ulina
- Zenuni

Guidance
- Establish satellite high school classes
- Close, if safe transport to next school can be arranged
- School building in bad condition, physical improvement
- School building in bad condition, physical improvement with priority
- Establish Vocational High School at Dragash / Dragas and offer professional training courses for adults / job seekers
- Motivate, encourage and support exchange activities between Opoja and Gora regions

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: G6: Guidance for education

Date: Second edition, December 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village working groups, village survey 2011, field observations by UNDP team, Municipality of Dragash

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank. P., Hajredini E., Bemmerlein-Lux F., Gagica I.

OPOJË/ OPOLJE

GORË/ GORA

ALBANIA

FYR of MACEDONIA

Brezne / Brezna
Buce / Buce
Bellobrad / Belobrad
Brrut / Brut
Zgatar / Zgatar
Zym / Zum
Blaç / Bljac
Zapluxhe / Zaplužje
Bresanë / Brodosavce
Buzez / Buzez
Kapre / Kapra
Kuklibeg / Kuklijbeg
Kuk / Kukovce
Pllavë / Plava
Kosavë / Kosavce
Rapca / Rapçë
Rrenc / Renc
Xërxe / Zrze
Pllajnik / Plajnik
Krstec / Kërstec
Shajne / Šajnovce
Dragash / Dragaš
Ljubovište / Lubovishtë
Radeša / Radeshë
Kukuljane / Kukulanë
Leštane / Leshtan
Orcuša / Orcushë
Vranište / Vranisht
Mlike / Mlikë
Dikance / Dikanc
Bačka / Backë
Globocica / Gllobocicë
Brod / Brod
Kruševo / Krushevë
Zlipotok / Zlipotok
Restelica / Restelicë

Pllava River
Belobrad River
Blac River
Restelica river
Lepa

1.13. Tourism (G8)

Contents of the guidance map:

- Tourism development - tourist development focal areas
- Cultural heritage
- Hiking trails
- Public transport
- Sharr/Šar Mountain National Park and suggested zoning

The main messages:

Dragash/Dragaš is starting from zero in terms of tourism planning and policy, has limited infrastructure, and a lack of brand awareness not only internationally, but also within Kosovo itself. “Place-based authenticity” is an essential component of tourism planning. The National Park should also be seen as a significant actor in the tourism sector in the area and, due to the profile of the park, specifically in nature-based tourism. It is also necessary to coordinate activities with park officials and according to National Park zoning rules and the management strategy. Compared to both the domestic and regional tourism market, Dragash/Dragaš’s 3 main unique aspects are:
1. Natural Beauty (mountains, biodiversity)
2. Culture and Heritage (Gora/Gorë and Opojë/Opolje culture, way of life)
3. Hospitality and cuisine (locally produced food; village hospitality)

Based on these factors it is recommended that Dragash/Dragaš focus its tourism strategy and development on the link between nature and rural culture:
- Installation of touristic centres: one Main Centre is needed in Dragash/Dragaš town and 8 sub centres are mainly at the villages bordering the Sharr/Šar Mountain National Park
- A touristic corridor from Brod / Brod to Restelica / Restelicë (hiking, cross country skiing, scenic viewing, eating/drinking)
- A “South Gate to the National Park” with accommodation, eating, cross country skiing, viewing and the connection to FYR Macedonia
- Ski resort in Zaplluxhe / Zaplužje
- A “North Gate to the National Park” in the Opojë/Opolje region with focus on biking, hiking, recreation

Decision guidelines:

The following Assessment Maps provide the basic data for the Development Guidance:
- A1.1 and A1.2 Assessment of biodiversity
- A3 Assessment of water resources - regeneration, threats, and quality
- A6 Assessment of solid waste
- A7 Assessment of cultural heritage and tourist potential
- A10.1 Assessment of economy, infrastructure and energy – roads and transportation

KOSOVO

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OPOJE / OPOJE

Opoja Region: Recreation, hiking, bicycling, eat and drink

Zapluxhe ski resort

Tourism corridor Brod-Restelica: hiking, skiing, scenic viewing, accommodation, eat and drink

South Gate to National Park Sharri: Hiking, skiing, scenic viewing, National Park Visitor Center

ALBANIA

FYR of MACEDONIA

Legend

Borders
- National border
- Dragash border

Settlements
- Build up area

Water courses
- River
- Lake

Topography
- Peak

Tourism development
- Potential locations for touristic activities (Hotels, restaurants, camp ground, mountain huts, recreational areas, horse riding, show cases of agricultural production)
- Areas with desired touristic function
- Skiing area: Consider avalanche and erosion risk during planning and operation
- Develop touristic main center
- Develop touristic center

Information Centers and Museums suggested
- Tourist Information Center
- National Park Visitors and Information Center
- Ethnological Museum

Cultural heritage
- Villages with high or very high cultural heritage values, priority villages for development measures
- Remote village with high cultural heritage values, project for outdoor museum
- Renovate architectural heritage objects and use as touristic facilities when possible
- Emergency conservation works of cultural heritage objects under national protection
- Protection of archaeological sites
- Emergency conservation works of cultural heritage objects under national protection

Roads
- Regional road, asphalted
- Regional road, gravel
- Local road, asphalted
- Local road, gravel
- Agricultural paths and roads
- Forest paths and roads
- Foot paths
- Proposed extension of regional and local road network
- Improve parking facilities
- Install border station in connection with realisation of road project

Hiking
- Mountain bike trail: Signposting, regulation, management and supervision inside National Park Sharri
- Hiking trail: Signposting, regulation, management and supervision inside National Park Sharri
- Camp site: Signposting, regulation, management and supervision inside National Park Sharri

NP "Sharri" proposed zonation
- National Park "Sharri"
- Proposed zone 1, strictly protected
- Proposed zone 2, activities not contradicting the purpose of protection may be undertaken, regulation through Spatial Plan and National Park Directorate
- Proposed zone 3, parts foreseen for construction of leisure, recreational, and tourism objects and for the needs of the inhabitants of the territory of National Park, limited and selective use of natural goods

Public transportation
- Guide and support improvment of regular bus services
- Guide and support improvment of private pick-up system or establish regular minibus services
- Potential routes for extension of public transport system after realization of road projects (Restelica – FYROM and Zapluxhe-Prizren direct
- Improve existing regular bus stop
- Establish regular bus stops in subcentres

Zonation based on the analysis under the Sustainability Atlas, recommendations of the National Park Directorate and projects proposed by the Municipal Development Plan.

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: G8: Tourism

Date: Second edition, March 2013

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Village survey 2011, field observations by UNDP team, Municipality

Coordinate System:
GKzona7 Kosovo
Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Bank. P., Hajredini E., Whitacker C.; Bemmerlein-Lux F., Gagica I.

2. Integrated Development Guidance

Maps for Step 4 are the consolidated development guidance. They integrate major findings of the guidance maps and are the strategic basis for the Municipal Development Plan (MDP).

2.1. Spatial resistance against growth and development of settlements (IG1)

Contents of the guidance map:

• Areas with very high, high, medium and low spatial resistance

The main messages:

36,77 % of the municipality has very high spatial resistance. These areas are the mountains, sub-alpine and alpine regions with high risk of avalanches, rock falls, landslides, high importance for biodiversity. A large part of Sharr/Šar Mountain National Park has areas with very high resistance.
46,66 % of the municipality has high spatial resistance. These areas are characterised by steep slopes, risk of soil erosion, significant ecosystem services of forest areas, and agricultural land with high prolificacy of soils. Major parts of Sharr/Šar Mountain National Park are areas with high resistance.
3,75 % of the municipality has medium spatial resistance. These areas are characterised by medium steep slopes, moderate risk of soil erosion, and agricultural land with medium prolificacy of soils. Most of the area with medium spatial resistance is in the Opojë/Opolje region.

12,88 % of the municipality has low spatial resistance with large areas in the Opojë/Opolje and some in the Gora/Gorë region, and is the preferential area for any development of settlements. This assures lower environmental risk.

Decision guidelines:

The following Assessment Maps provide the basic data for the Development Guidance:
• A1.1 and A1.2 Assessment of biodiversity
• A3 Assessment of water resources - regeneration, threats, and quality
• A6 Assessment of solid waste
• A7 Assessment of cultural heritage and tourist potential
• A10.1 Assessment of economy, infrastructure and energy – roads and transportation

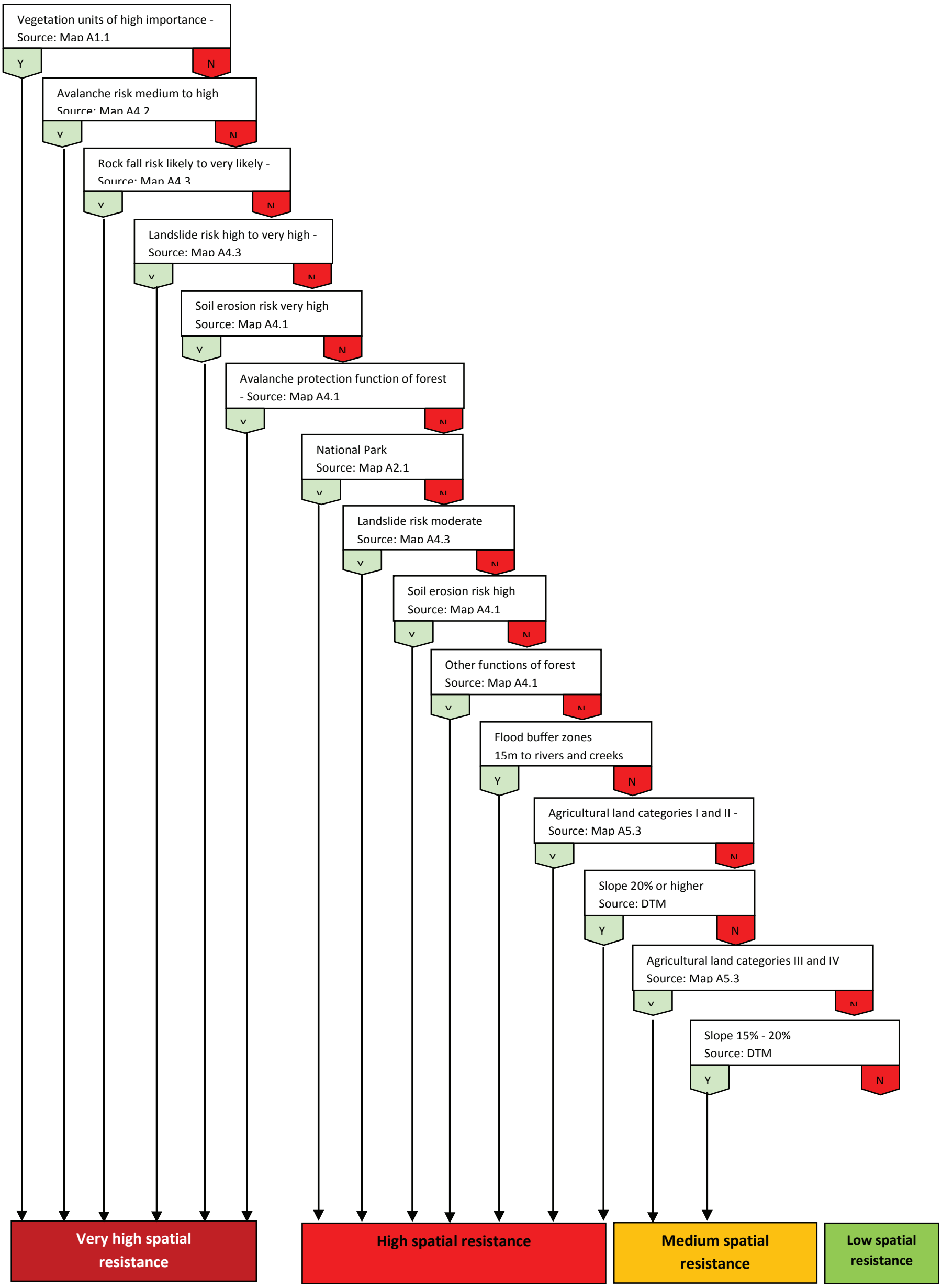

Figure 2-1: Decision criteria for overall spatial resistance

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KOSOVO

Legend

Borders

- National border
- Dragash border

Roads

- Regional road
- Local road
- Forest road

Settlements

- Build up area

Water courses

- River
- Lake

Topography

- Peak

Spatial resistance against growth and development of settlements

(Based on slope and natural hazards, biodiversity status and potential, land use, forest functions, soil prolificacy and delineation of Sharr Mountain National Park)

- Very high spatial resistance determined through risk of avalanches, rock falls, landslides, risk of soil erosion, high importance for biodiversity resources, and avalanche protection function of forest
- High spatial resistance determined through steep slopes, risk of soil erosion, moderate risk of land slides, buffer zone against flooding, other forest functions than avalanche protection, agricultural land with high prolificacy of soils, and territory of Sharr Mountain National Park.
- Medium spatial resistance determined through medium steep slopes, moderate risk of soil erosion, and agricultural land with medium prolificacy of soils
- Low spatial resistance determined through lack of criteria above

United Nations Development Programme project on Conservation of Biodiversity and Sustainable Land Use Management in Dragash

Sustainability Atlas of the Dragash Municipality

Type of map: Guidance maps

Title of map: IG1: Spatial resistance

Date: First edition, July 2012

Dragash Municipality, Mayor Salim Jenuzi

UNDP Project Manager, Maria Zuniga Barrientos

Government of Finland

Data sources: Base maps, assessment maps, analysis by UNDP

Coordinate System:
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Projection: Transverse Mercator
Datum: ETRF 1989

Authors:
Gagica, I., Hajredini, E., Bank, P., Bemmerlein-Lux, F.,

ALBANIA

FYR of MACEDONIA

3. Annex

3.1. CORINE land use types

Note: Numbers are the official CORINE numbers, any additional unit was given the next free number in the CORINE system (new additions of the UNDP project).

Settlements and artificial surfaces		
Urban fabric		
1.1.1	Continuous urban fabric	Most of the land is covered by. Buildings, roads and artificially surfaced area cover almost all the ground. Non-linear areas of vegetation and bare soil are exceptional.
1.1.2.	Discontinuous urban fabric	Most of the land is covered by structures. Buildings, roads and artificially surfaced areas associated with vegetated areas and bare soil, which occupy discontinuous but significant surfaces.
1.2.	Industrial, commercial and transport	
1.2.1.	Industrial or commercial units	Artificially surfaced areas (with concrete, asphalt, tamacadam, or stabilised, e.g. beaten earth) devoid of vegetation, occupy most of the area in question, which also contains buildings and/or vegetated areas.
1.2.2.	Road and rail networks and associated land	Motorways, railways, including associated installations (stations, platforms, embankments). Minimum width to include: 100m.
1.3.	Mine, dump and construction sites	
1.3.1.	Mineral extraction sites	Areas with open-pit extraction of industrial minerals (sandpits, quarries) or other minerals (opencast mines). Includes flooded gravel pits, except for river-bed extraction.
1.3.2.	Dump sites	Landfill or mine dump sites, industrial or public.
1.4.	Artificial, non-agricultural vegetated areas	
1.4.2.	Sport and leisure facilities	Camping grounds, sports grounds, leisure parks, golf courses, racecourses, etc. Includes formal parks not surrounded by urban zones
1.5	Cultural Heritage	Single buildings/complexes of cultural importance (Mosques, Churches, cemeteries, monuments, castles etc.) Mark exceptional “View Points” (landscape) with symbol (incl. direction of view) ▲
2.	Agricultural areas	
2.1.	Arable land - Cultivated areas regularly ploughed and generally under a rotation system.	
2.1.1.	Non-irrigated arable land	Cereals, legumes, fodder crops, root crops and fallow land. Includes flower and tree (nurseries) cultivation and vegetables, whether open field, under plastic or glass (includes market gardening). Includes aromatic, medicinal and culinary plants. Excludes permanent pastures
2.1.2.	Permanently irrigated land	Crops irrigated permanently and periodically, using a permanent infrastructure (irrigation channels, drainage network). Most of these crops could not be cultivated without an artificial water supply. Does not include sporadically irrigated land
2.2.	Permanent crops - Crops not under rotation system - which provides repeated harvests and occupy the land for a long period before it is ploughed and replanted: mainly plantations of woody crops. Excludes pastures, grazing lands and forests	

2.2.2.	Fruit trees and berry plantations	Parcels planted with fruit trees or shrubs: single or mixed fruit species, fruit trees associated with permanently grassed surfaces. Includes chestnut and walnut groves
2.3.	Pastures	
2.3.1.	Pastures intensive without trees and shrubs	Dense, predominantly graminoid grass cover, of floral composition, mainly used for grazing and harvesting, often manured - hedges <10%
2.3.2.	Pastures intensive with trees and shrubs	Dense, predominantly graminoid grass cover, of floral composition, mainly used for grazing and harvesting, often manured - areas with hedges (>10%)(countryside with small pastures and many hedges)
2.3.3	Pastures extensive without trees and shrubs	Predominantly graminoid grass cover, extensive grazing, no harvest and fertilisation, <10% woody species
2.3.4	Pastures extensive with trees and shrubs	Predominantly graminoid grass cover, extensive grazing, no harvest and fertilisation, >10% woody species (esp. Juniper)
2.4.	Heterogeneous agricultural areas	
2.4.1.	Annual crops associated with permanent crops	Non-permanent crops (arable lands or pasture) associated with permanent crops on the same parcel
2.4.2.	Complex cultivation – no hedges	Juxtaposition of small parcels of diverse annual crops, pasture and/or permanent crops, hedges (< 10% cover)
2.4.3.	Agriculture / natural vegetation Mix	Land principally occupied by agriculture, with significant areas of natural vegetation Areas principally occupied by agriculture, interspersed with significant natural areas
2.4.4	Complex cultivation – with hedges/trees	Juxtaposition of small parcels of diverse annual crops, pasture and/or permanent crops with hedges (> 10% cover)
2.4.5.	Complex cultivation – with hedges	Juxtaposition of small parcels of diverse annual crops, pasture and/or permanent crops with hedges (> 10% cover)
3.	Forests and (semi)-natural areas	
3.1.	Forests - Assumed tree level is 1700m	
3.1.1.	Broad-leaved forest	Vegetation formation composed principally of trees, including shrub and bush understory, where broad-leaved species predominate
3.1.2.	Coniferous forest	Vegetation formation composed principally of trees, including shrub and bush understory, where coniferous species predominate
3.1.3.	Mixed forest	Vegetation formation composed principally of trees, including shrub and bush understory, where broad-leaved and coniferous species co-dominate
3.1.4.	Coniferous forest - Planted	
3.1.5	Woodland patches	Small patches of forest in open land, limited size so that non forest climate inside
3.2.	Shrub and/or herbaceous vegetation associations	
3.2.1.	Natural grassland (>2000m)	Normally grassland above tree line (1700) - Low productivity grassland. Often situated in areas of rough uneven ground. Frequently includes rocky areas, briars, and heathland
3.2.2.	Heathland Vegetation (incl. Moors)	Heathland (and Moors) vegetation with low and closed cover, dominated by bushes, shrubs and herbaceous plants (heath, briars, broom, gorse, laburnum, etc.)
3.2.4	Transitional woodland/shrub	Bushy or herbaceous vegetation with scattered trees. Can represent either woodland degradation or forest regeneration/colonisation Includes old pastoral land with more than 70% of bushes/trees (often Juni-pers)
3.2.5.	Coppice Forest	Different types (incl. coppice-with-standards)

3.3.	Open spaces with little or no vegetation	
3.3.2.	Bare rock, scree, cliffs, rocks and outcrops.	Areas with more than 50% bare rocks and scree material
3.3.3.	Sparsely vegetated areas	Includes steppes, tundra and badlands. Scattered high-attitude vegetation – non-vegetated area 80-95%
4.	Wetlands	
4.1.	Inland wetlands - Non-forested areas either partially seasonally or permanently waterlogged. The water may be stagnant or circulating	
4.1. 1.	Inland marshes/waterlogged areas	Low-lying land usually flooded or waterlogged in winter, and more or less saturated by water all year round (including complexes with more than 50%waterlogged areas – areas around springs)
4.1.2.	Peatland	Peatland consisting mainly of decomposed moss and vegetable matter. May or may not be exploited
4.1.3.	Riparian woodland	Joining rivers, creeks and waterlogged forest/ bushland
5.	Water bodies	
5.1.	Inland waters	
5.1. 1.	Water courses	Natural or artificial water-courses serving as water drainage channels. Includes canals. Minimum width to include: 10 m (polygon), otherwise line
5.1.2.	Water bodies	Natural or artificial stretches of water (lakes etc.)
5.1.3.	Springs	Point objects

EU (1985): CORINE land cover - Coordination of Information on the Environment (Official Journal L 176, 6.7.1985). http://www.eea.europa.eu/publications/COR0

3.2. Remarks for preferential habitats (a)

Preferential Habitats		
(EU 2007)	(a) – Management required for sustenance	Restrictions/conditions for management
6230 * Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and sub-mountain areas, in Continental Europe)	Controlled, extensive pasture required	
6120 * Xeric sand calcareous grasslands	Controlled, extensive pasture required	
91E0* Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	Professional management – forest management and maintenance of the waterside required	
6210 * important orchid sites of semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia)	Controlled, extensive pasture required	
6110 * Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi		Controlled, extensive pasture possible
91AA *Eastern white oak woods		FSC based forest management possible
4070 * Bushes with Pinus mugo and Rhododendron hirsutum (Mugo-Rhododendretum hirsuti)		Controlled collection of non.-forest products can be allowed
9180 * Tilio-Acerion forests of slopes, screes and ravines		FSC based forest management possible

3.3. Remarks for non-preferential habitats (b)

Non-preferential habitats (EU 2007)	(b) – Management required for sustenance	Kufizimet/ kushtet për menaxhim
No wildfires/ fire control	Restrictions/conditions for management	Mund të lejohet grumbullim i kontrolluar i produkteve jo pyjore
5130 Juniperus communis formations on heaths or calcareous grasslands	Controlled, extensive pasture required	Controlled collection of non.-forest products can be allowed
6150 Siliceous alpine and boreal grasslands	Controlled, extensive pasture required	Controlled collection of non.-forest products can be allowed
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	Controlled, extensive pasture required	
62D0 Oro-Moesian acidophilous grasslands	Controlled, extensive pasture required	
6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	Pasture / harvesting required	
6520 Mountain hay meadows	Pasture / harvesting required	
4060 Alpine and Boreal heaths		Controlled, extensive pasture possible
Controlled collection of non.-forest products can be allowed		Mund të lejohet grumbullim i kontrolluar i produkteve jo pyjore
5110 Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)		Controlled collection of non.-forest products can be allowed
6170 Alpine and subalpine calcareous grasslands		Controlled, extensive pasture possible
Extensive pasture possible		Është e mundur kullosa e gjerë
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels		Controlled collection of non.-forest products can be allowed
7140 Transition mires and quaking bogs		
7230 Alkaline fens		
8210 Calcareous rocky slopes with chasmophytic vegetation		
8230 Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii		

91BA Moesian silver fir forests		FSC based forest management possible
91K0 Illyrian Fagus sylvatica forests (Aremonio-Fagion)		FSC based forest management possible
91W0 Moesian beech forests		FSC based forest management possible
9250 Quercus trojana woods		FSC based forest management possible
9270 Hellenic beech forests with Abies borisii-regis		FSC based forest management possible
9280 Quercus frainetto woods		FSC based forest management possible
9410 Acidophilous Picea forests of the montane to alpine levels (Vaccinio-Piceetea)		FSC based forest management possible
95A0 High oro-Mediterranean pine forests	No wildfires/ fire control	FSC based forest management possible
9410 Pyjet kodrinore në nivele alpine Acidophil-ousPicea (Vaccinio-Piceetea)		Menaxhim i mundshëm pyjor i bazuar në FSC
95A0 Pyjet e larta oro-Mesdhetare me pisha	Nuk ka zjarre / kontroll zjarri	Menaxhim i mundshëm pyjor i bazuar në FSC

3.4. Protection categories of the Law

Citation from: Republic of Kosovo (2010): The Law of Nature Protection No.03/L–233

Strict nature reserve (Article 10)	Strict nature reserve is an area of the land and/ or water, which is unchanged or least-varied and it's dedicated exclusively for conservation of nature resource, scientific investigation of biological diversity, monitoring of nature state, as well education if does not inflict any dangerousness of freely development of nature processes.	In the strict nature reserve its prohibited performance of economic and other activities.
National Park (Article 11)	National park is a large area of the land and/or water, with extraordinary and diversified natural values, including one or more of natural ecosystems conserved or least-changed and especially dedicated for conservation of nature authentic values.	In the national park shall be permitted operations and activities with which it's not risked the original nature. 4. In the national park are prohibited economical uses of nature goods. 5. In the national park shall be permitted tourist - hotelier and recreation activities which are with assignment of visits, education, health needs - touristy and recreation, extensive traditional agriculture, fishery, if they don't present any dangerousness of the species existence and natural - balance in accordance with this Law and management plan
Special area of conservation (SAC) and Special Protected Areas– (SPAs) (Article 12)	Special area of conservation is a wide area of the land and/or water, with special im-portance because it's unique, rare or repre-sentative or is a habitat of wild species and especially is important for science. Special area could be: floristic, mycological, forestall and of other vegetation, zoological, -ornithological, ichtiological, geological, paleontological, hydrogeological, hydrological etc	In the special area are prohibited interventions, works and activities, which could destroy characteristics because of which it is declared as special area: collecting and destroying plants, disturbance, catching and killing animals, introducing of new biological species, melioration interventions, different forms of economic or and other uses. In the special area shall be permitted interventions, works and activities, which ones sustain and improve conditions that are important for conservation of the features, because of which it's declared as a special area. Visiting and touring of a special area could be prohibited or limited by protection measures.
Nature Park (Article 13)	Nature park presents large natural area or partly artificial of the land and/or water, with ecological features of national and international importance with emphasized values of landscapes diversity, - educational, cultural - historical and tourist – recreational value.	In the nature park shall be permitted economic and other activities that do not risk the role and important characteristics of the nature park.

Nature monument (Article 14)	A nature monument is the individual unchanged segment or a group of segments of living or non-living nature distinguished by ecological, scientific, aesthetic or educational value. Nature monument may be: geological - paleontological, mineralogical, hydrologic, geologic structure, sediment, geomorphologic - cave, chasm, cliff walls, hydrologic – water sources, water flow, waterfall, lake, botanic - rare exemplars or important for vegetative world of one locality, small botanic or zoological locality, important for its scientific values.	In the nature monument or in his locality which is component part of protected area, shall not be permitted activities that endanger characteristics and its values.
Protected landscape (Article 15)	Protected landscape is natural or factitious nature area with high landscape and biological diversity values, or cultural - historical, or landscape with unique conservation characteristics for certain region that is dedicated for relaxing and recreation.	In the protected landscape are forbidden interventions and activities that destroy characteristics for which ones it is declared protected.

United Nations Development Programme
Conservation of Biodiversity and Sustainable Land Use Management in Dragash/Dragaš

EMBASSY OF FINLAND
PRISTINA

Volume V: Data

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March 2013

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1. Data for Volume II: Baseline

1.1. Data stored in Excel-files

Map	Excel Files	Content
B1: Overview of the Municipality of Dragash	01 Topography_Dragash.xlsc	Data and Figures for SDA, additional figures for selected villages
B2: Population and Infrastructure	Dragash_Village_DB.xls	Collection of all information related to villages (GIS Database)
B3: Geology and Minerals	03 Geology_Dragash.xlsc	Data and Figures for SDA
B4: Soils	04 Soils_Dragash.xlsc	Data and Figures for SDA
B5: Climate	05 Climate_Dragash.xlsc	Data and Figures for SDA
B6: Water Resources	06 Water_Resources_Dragash.xlsc	Data and Figures for SDA
	Analysis 06 Water_Resources_Dragash.xlsc	GIS output for production of figures and tables for SDA
	Dragash_Water_DB.xls	Collection of all information related to Water Resources (GIS Database)
	WSS_DB.xls	Collection of all information related to Water Supply and Sanitation (GIS Database)
B7: Land Use	07 Land_Use_Dragash.xlsc	Data and Figures for SDA
	Analysis 07 Land_Use_Dragash.xlsc	GIS output for production of figures and tables for SDA
	Corine_LUT.xls	List of relevant Corine types and details for building of GIS Legends
	Landusebalance.xlsc	Balances of land use related to various topics, e.g. river basins, villages, National Park
B8: Biodiversity – Flora and Vegetation	Biodiversity_List.xls	Collection of all information related to Biodiversity issues (GIS Database)
B9: Biodiversity - Fauna	Biodiversity_List.xls	Collection of all information related to Biodiversity issues (GIS Database)

Table 1-1: List of Excel Files relevant for Base Maps

1.2. Map B2: Population and Infrastructure

Data are stored in the file Dragash_Village_DB.xls

ID	Village	1921[1]	1948	1953	1961	1971	1981	1991	2011	2010[2]	2022[3]	Klasifi-kacija[4]	Trend since 1981
1	Bačka / Bąçkë	167	222	249	259	311	381	215	52		54	<1.000	DECR
2	Bellobrad / Belo-brad	232	415	345	385	568	808	998	948	1.100	2.171	<1.000	INCR
3	Blaç / Bljać	360	474	503	594	797	1.123	1.415	1,455		2.623	1.000 - 3.5000	INCR
4	Brezne / Brezna	590	908	871	946	1.410	1.971	2.465	1,990	2.300	5.005	1.000 - 3.5000	STABLE
5	Brod / Brod	1.863	2.248	2.229	1.604	1.485	1.685	1.741	1,544		1.464	1.000 - 3.5000	STABLE
6	Bresanë / Brodos-avce	844	1.219	1.229	1.353	1.861	2.498	2.999	2,839		5.490	1.000 - 3.5000	INCR
7	Brrut / Brut	450	596	584	575	798	1.097	1.319	1,164	1.200	2.196	1.000 - 3.5000	STABLE
8	Buçe / Buće	269	398	400	437	574	766	913	645		1.226	<1.000	DECR
9	Buzez / Buzez	74	102	102	127	191	240	366	320		463	<1.000	INCR
10	Dikance / Dikanc	162	318	320	349	392	282	257	124		162	<1.000	DECR
11	Dragash / Dragaš	172	408	480	612	694	1.114	1.532	1,098	3.000	2.310	1.000 - 3.5000	STABLE
12	Globočica / Gllo-boçicë	391	648	683	757	813	1.002	968	960		768	<1.000	STABLE
13	Kapre / Kapra	154	214	255	265	354	496	582	452	800	613	<1.000	STABLE
14	Kosavë / Kosavce	300	488	486	525	720	912	1.033	905		1.464	<1.000	STABLE
15	Krstec / Kërstec	299	465	440	475	562	798	837	420	950	332	<1.000	DECR
16	Kruševo / Krushevë	126	281	319	377	513	645	738	857		762	<1.000	INCR
17	Kuk / Kukovce	433	640	655	669	985	1.335	1.619	1,658		3.111	1.000 - 3.5000	INCR
18	Kuklibeg / Kukljibeg	234	408	383	409	516	658	916	852		1.342	<1.000	INCR
19	Kukuljane / Kuku-lanë	361	543	551	482	605	777	621	235	1.200	353	<1.000	DECR
20	Leštane / Leshtan		537	493	513	658	758	679	783	1.100	240	<1.000	STABLE
21	Ljubovište / Lubov-ishtë	211	344	352	384	541	690	799	773	1.200	439	<1.000	INCR
22	Mlike / Mlikë	260	461	428	428	455	506	335	92	1.200	139	<1.000	DECR
23	Orčuša / Orçushë		415	370	396	431	427	221	60		69	<1.000	DECR
24	Pllavë / Plava		462	449	493	690	972	1.125	1,000	1.400	512	1.000 - 3.5000	STABLE
25	Pllajnik / Plajnik		322	321	365	485	549	576	405		1.464	<1.000	DECR
26	Radeša / Radeshë	440	753	794	837	884	1.279	1.226	1,224		1.162	1.000 - 3.5000	STABLE
27	Rapča / Rapçë	622	889	877	885	1.125	1.647	1.781	853	2.200	1.053	<1.000	DECR
28	Restelica / Restelicë	745	1.393	1.471	1.772	2.576	3.476	4.274	4,698		5.124	1.000 - 3.5000	INCR
29	Rrenc / Renc	127	188	177	202	292	473	685	581	900	854	<1.000	INCR
30	Shajne / Šajnovce	440	626	639	705	921	1.253	1.415	1,069		2.379	1.000 - 3.5000	DECR
31	Vranište / Vranisht		755	771	815	884	926	731	352	2.000	362	<1.000	DECR
32	Xërxe / Zrze	90	215	202	205	269	335	373	236	600	305	<1.000	DECR
33	Zaplluxhe / Zaplužje	470	667	663	666	967	1.275	1.504	1,273		2.745	1.000 - 3.5000	STABLE
34	Zgatar / Zgatar	435	435	401	415	640	818	985	885	1.150	1.708	<1.000	STABLE
35	Zlipotok / Zlipotok		486	488	532	568	625	619	610		393	<1.000	STABLE
36	Zym / Zjum	139	197	167	215	315	457	573	585		585	<1.000	INCR
	Dragash / Dragaš Municipality	11.460	20.140	20.147	21.028	26.850	35.054	39.435	33.997		51.442		CONST

Table 1-2: Map B1: Population Data

ID	Village	1921[5]	1948	1953	1961	1971	1981	1991	2011
1	Bačka / Bačkë	36	46	45	52	51	63	35	17
2	Bellobrad / Belobrad	40	54	50	45	50	87	106	161
3	Blaç / Bljać	54	68	67	71	93	110	154	218
4	Brezne / Brezna	108	132	145	155	175	219	289	345
5	Brod / Brod	335	397	418	326	288	287	316	382
6	Bresanë / Brodosavce	158	174	182	195	205	244	322	414
7	Brrut / Brut	70	85	84	75	86	99	143	167
8	Buçe / Buće	38	64	64	74	82	92	119	108
9	Buzez / Buzez	11	13	13	16	22	22	37	57
10	Dikance / Dikanc	40	61	63	67	66	56	47	43
11	Dragash / Dragaš	35	83	119	143	153	224	385	236
12	Globočica / Gllboçicë	90	125	127	133	146	159	163	227
13	Kapre / Kapra	19	25	28	26	36	57	63	69
14	Kosavë / Kosavce	42	85	83	84	97	122	136	130
15	Krstec / Kërstec	65	52	59	61	66	84	111	127
16	Kruševo / Krushevë	28	47	46	58	84	104	120	159
17	Kuk / Kukovce	63	73	83	79	97	131	195	233
18	Kuklibeg / Kukljibeg	37	55	56	48	58	71	101	77
19	Kukuljane / Kukulanë	67	94	94	85	97	120	98	135
20	Leštane / Leshtan		90	95	95	110	121	111	181
21	Ljubovište / Lubovishtë	44	54	60	60	76	107	118	182
22	Mlike / Mlikë	54	74	85	91	99	103	70	46
23	Orčuša / Orçushë		75	76	81	80	69	38	20
24	Pllavë / Plava		70	72	67	85	98	125	156
25	Pllajnik / Plajnik	32	45	44	43	50	52	61	51
26	Radeša / Radeshë	67	105	116	117	143	181	185	253
27	Rapča / Rapçë	120	141	149	156	189	253	292	252
28	Restelica / Restelicë	173	257	268	289	396	502	701	788
29	Rrenc / Renc	22	26	25	23	29	40	73	93
30	Shajne / Šajnovce	74	100	99	93	100	146	159	198
31	Vranište / Vranisht		127	138	142	161	168	133	93
32	Xërxe / Zrze	17	21	30	29	31	42	45	37
33	Zaplluxhe / Zaplužje	76	84	86	82	97	123	175	197
34	Zgatar / Zgatar	42	57	56	65	72	76	100	139
35	Zlipotok / Zlipotok		95	93	84	106	105	109	132
36	Zym / Zjum	24	30	27	32	35	43	58	92
	Dragash / Dragaš		3184	3345	3342	3811	4580	5493	6215
	Municipality								

Table 1-3: Map B1: Number of Households

[1] 1921 – 2011: source: UN Habitat Database, data from Kosovo Statistical Agency, 2011 Census
[2] 2010: source: Water Supply Plan from Municipality and Hidroplan Pristina
[3] 2022: Projection from UNDP Population Projections, 2012 (to be reviewed)
[4] Based on population data from census 2011
[5] 1921 – 2011: source: UN Habitat Database, data from Kosovo Statistical Agency, 2011 Census

1.3. Map B3: Geology

Classes of Rocks	Area in ha
Magmatites	3.522
Metamorphic Rocks	21.856
Sandstones and Quartzites	2.765
Limestones	6.598
Quartenary Sediments	8.806
Total	43.546

Table 1 4: Map B3: Classes of Rocks

1.4. Map B4: Soils

Soil Class	Area in ha
Bare Rocks	663
Lithosols	4.110
Rankers	27.514
Rendzinas	3.878
Brown Soils	5.756
Flood Plain Soils	3.010
Gleys	77
Organic Soils	14
Total	45.022

Table 1 5: Map B4: Classes of Soils

1.5. Map B5: Climate

	J	F	M	A	M	J	J	A	S	O	N	D	an-nualy
precipi-tation in mm	46	50	43	75	78	101	54	43	82	77	83	75	807
tempera-ture in Degrees C	1,4	-0,3	2,9	7,3	12,0	15,5	17,8	18,2	14,1	9,0	4,4	0,6	8,6

Table 1 6: Map B5: Climate Data for Dragash/Dragaš)

Average precipitation in mm 1950-2008 / Temperature 1960-1984

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[6] Source of Data: Osnovna Geološko Karta SFRJ 1:100,000 – Geološki Institut, Beograd (1970-1984)
[7] Source of Data: Pedološke Karta Socijalisticke Autonomne Pokrajine - Kosovo - 1 : 50,000, Beograd 1974, Institut za vodoprivredu “Jaroslav Ćerni”
[8] Source of Data: Prof.Dr.Sci. Sylë Tahirsylaj MMPH-IHMK, Prishtina (2011)

1.6. Map B7: Land Use

Note: Numbers are the official CORINE numbers, any additional unit has the next free number in the Corine system and is marked Dragash – new additions

1	Settlements and artificial surfaces	
1.1 Urban fabric		
1.1.1	Continuous urban fabric	Most of the land is covered by. Buildings, roads and artificially surfaced area cover almost all the ground. Non-linear areas of vegetation and bare soil are exceptional.
1.1.2.	Discontinuous urban fabric	Most of the land is covered by structures. Buildings, roads and artificially surfaced areas associated with vegetated areas and bare soil, which occupy discontinuous but significant surfaces.
1.2. Industrial, commercial and transport		
1.2.1.	Industrial or commercial units	Artificially surfaced areas (with concrete, asphalt, tamacadam, or stabilised, e.g. beaten earth) devoid of vegetation, occupy most of the area in question, which also contains buildings and/or vegetated areas.
1.2.2.	Road and rail networks and associated land	Motorways, railways, including associated installations (stations, platforms, embankments). Minimum width to include: 100m.
1.3. Mine, dump and construction sites		
1.3.1.	Mineral extraction sites	Areas with open-pit extraction of industrial minerals (sandpits, quarries) or other minerals (opencast mines). Includes flooded gravel pits, except for river-bed extraction.
1.3.2.	Dump sites	Landfill or mine dump sites, industrial or public.
1.4. Artificial, non-agricultural vegetated areas		
1.4.2.	Sport and leisure facilities	Camping grounds, sports grounds, leisure parks, golf courses, racecourses, etc. Includes formal parks not surrounded by urban zones
1.5	Cultural Heritage	Single buildings/complexes of cultural importance (Mosques, Churches, cemeteries, monuments, castles etc.) Mark exceptional “View Points” (landscape) with symbol (incl. direction of view) ▲
2. Agricultural areas		
2.1 Arable land - Cultivated areas regularly ploughed and generally under a rotation system.		
2.1.1.	Non-irrigated arable land	Cereals, legumes, fodder crops, root crops and fallow land. Includes flower and tree (nurseries) cultivation and vegetables, whether open field, under plastic or glass (includes market gardening). Includes aromatic, medicinal and culinary plants. Excludes permanent pastures
2.1.2.	Permanently irrigated land	Crops irrigated permanently and periodically, using a permanent infrastructure (irrigation channels, drainage network). Most of these crops could not be cultivated without an artificial water supply. Does not include sporadically irrigated land
2.2. Permanent crops - Crops not under rotation system - which provides repeated harvests and occupy the land for a long period before it is ploughed and replanted: mainly plantations of woody crops. Excludes pastures, grazing lands and forests		
2.2.2.	Fruit trees and berry plantations	Parcels planted with fruit trees or shrubs: single or mixed fruit species, fruit trees associated with permanently grassed surfaces. Includes chestnut and walnut groves
2.3. Pastures		
2.3.1.	Pastures intensive without trees and shrubs	Dense, predominantly graminoid grass cover, of floral composition, mainly used for grazing and harvesting, often manured - hedges <10%
2.3.2.	Pastures intensive with trees and shrubs	Dense, predominantly graminoid grass cover, of floral composition, mainly used for grazing and harvesting, often manured - areas with hedges (>10%)(countryside with small pastures and many hedges)
2.3.3	Pastures extensive without trees and shrubs	Predominantly graminoid grass cover, extensive grazing, no harvest and fertilisation, <10% woody species
2.3.4	Pastures extensive with trees and shrubs	Predominantly graminoid grass cover, extensive grazing, no harvest and fertilisation, >10% woody species (esp. Juniper)

2.4. Heterogeneous agricultural areas		
2.4.1.	Annual crops associated with permanent crops	Non-permanent crops (arable lands or pasture) associated with permanent crops on the same parcel
2.4.2.	Complex cultivation – no hedges	Juxtaposition of small parcels of diverse annual crops, pasture and/or permanent crops, hedges (< 10% cover)
2.4.3.	Agriculture / natural vegetation Mix	Land principally occupied by agriculture, with significant areas of natural vegetation Areas principally occupied by agriculture, interspersed with significant natural areas
2.4.4	Complex cultivation – with hedges/trees	Juxtaposition of small parcels of diverse annual crops, pasture and/or permanent crops with hedges (> 10% cover)
2.4.5.	Complex cultivation – with hedges	Juxtaposition of small parcels of diverse annual crops, pasture and/or permanent crops with hedges (> 10% cover)
3. Forests and (semi)-natural areas		
3.1. Forests - Assumed tree level is 1700m		
3.1.1.	Broad-leaved forest	Vegetation formation composed principally of trees, including shrub and bush understories, where broad-leaved species predominate
3.1.2.	Coniferous forest	Vegetation formation composed principally of trees, including shrub and bush understories, where coniferous species predominate
3.1.3.	Mixed forest	Vegetation formation composed principally of trees, including shrub and bush understories, where broad-leaved and coniferous species co-dominate
3.1.4.	Coniferous forest - Planted	
3.1.5	Woodland patches	Small patches of forest in open land, limited size so that non forest climate inside
3.2. Shrub and/or herbaceous vegetation associations		
3.2.1.	Natural grassland (>2000m)	Normally grassland above tree line (1700) - Low productivity grassland. Often situated in areas of rough uneven ground. Frequently includes rocky areas, briars, and heathland
3.2.2.	Heathland Vegetation (incl. Moors)	Heathland (and Moors) vegetation with low and closed cover, dominated by bushes, shrubs and herbaceous plants (heath, briars, broom, gorse, laburnum, etc.)
3.2.4.	Transitional woodland/shrub	Bushy or herbaceous vegetation with scattered trees. Can represent either woodland degradation or forest regeneration/colonisation Includes old pastoral land with more than 70% of bushes/trees (often Junipers)
3.2.5.	Coppice Forest	Different types (incl. coppice-with-standards)
3.3. Open spaces with little or no vegetation		
3.3.2.	Bare rock, scree, cliffs, rocks and outcrops.	Areas with more than 50% bare rocks and scree material
3.3.3.	Sparsely vegetated areas	Includes steppes, tundra and badlands. Scattered high-attitude vegetation – non-vegetated area 80-95%
4. Wetlands		
4.1. Inland wetlands - Non-forested areas either partially seasonally or permanently waterlogged. The water may be stagnant or circulating		
4.1. 1.	Inland marshes/waterlogged areas	Low-lying land usually flooded or waterlogged in winter, and more or less saturated by water all year round (including complexes with more than 50%waterlogged areas – areas around springs)
4.1.2.	Peatland	Peatland consisting mainly of decomposed moss and vegetable matter. May or may not be exploited
4.1.3.	Riparian woodland	Joining rivers, creeks and waterlogged forest/bushland
5. Water bodies		
5.1 Inland waters		
5.1. 1.	Water courses	Natural or artificial water-courses serving as water drainage channels. Includes canals. Minimum width to include: 10 m (polygon), otherwise line
5.1.2.	Water bodies	Natural or artificial stretches of water (lakes etc.)
5.1.3.	Springs	Point objects

Table 1-7: CORINE Land Use Codes

1.7. Map B8: Biodiversity Flora and Vegetation

1.7.1. Species Lists of Sample Points

Species	AM01	AM02	AM03	AM04	AM05	AM06	AM07	AM08	AM09	AM10	AM11	AM12	AM13	AM14	AM15
Acer pseudo-platanus		X	X												
Anthox-anthum odoratum				X	X	X	X								
Carduus acan-thoides				X	X	X	X								
Cheno-podium bonus-henricus				X	X	X	X								
Cirsium palustre		X	X	X	X	X	X								
Cyno-surus cristatus				X	X	X	X								
Daphne mezere-um								X	X						
Des-champsia caespi-tosa				X	X	X	X								
Epilobium dodonaei				X	X	X	X								
Epilobium hirsutum				X	X	X	X								
Gentiana asclepia-dea	X	X	X												
Hera-cleum sphondy-lium agg.	X	X	X												
Juniperus nana								X	X						
Linum ca-tharticum	X	X	X												
Lonicera spec.	X	X	X												
Luzula cf albida								X	X						
Mentha longifolia				X	X	X	X								
Nardus stricta				X	X	X	X	X	X					X	X
Orchi-daceae	X	X	X												
Parnassia palustris	X	X	X												
Polysti-chum lonchitis				X	X	X	X								
Rhamnus fallax	X	X	X												

Rosa agrestis	X	X	X												
Rosa canina agg.	X	X	X												
Rosa cf montana	X	X	X												
Rosa cor-ymbifera	X	X	X												
Rosa glauca	X	X	X												
Rubus idaeus	X	X	X												
Rumex scutatus		X	X												
Salix caprea	X	X	X												
Sambu-cus rac-emosa	X	X	X												
Satureja acinos				X	X	X	X								
Selaginel-la selagi-noides	X	X	X												
Stellaria graminea								X	X						
Trifolium spadi-ceum				X	X	X	X								
Urtica dioica				X	X	X	X								
Vac-cinium gaultheri-oides										X	X	X	X	X	X
Vaccini-um myr-tilloides								X	X						
Veratrum album		X	X												
Total No of Spe-cies per Sample	16	20	20	14	14	14	14	6	6	1	1	1	1	2	2

Table 1-8: Plant Samples AM01 - AM15 Dr. A. Milbradt

Species	AM16	AM17	AM18	AM19	AM20	AM21	AM22	AM23	AM24	AM25	AM26	AM27	AM28	AM29	AM30
Acer heldreichii													X		
Achillea millefolium											X				
Aconitum napellus	X														
Agrimonia eupatoria											X				
Amelanchier ovalis			X											X	X
Anthoxanthum odoratum														X	X
Anthyllis vulneraria															X
Asperula cf glauca											X				
Avenella flexuosa															X
Bellis perennis			X												
Betula pendula											X				
Briza media															X
Calamintha clinopodium															X
Campanula cf rotundifolia	X														
Carex flava							X	X							
Carex rostrata							X	X	X						
Carlina acanthifolia											X				
Cirsium arvense					X										
Cirsium eriophorum						X									
Cirsium palustre						X									
Comarum palustre									X						
Corylus avellana											X	X			
Cotoneaster integerrimus															X
Cotoneaster tomentosus												X			
Crataegus monogyna											X				
Daucus carota											X	X			
Deschampsia caespitosa							X	X							X
Dianthus spec.															X
Dryopteris filix-mas										X					
Eriophorum latifolium							X	X	X						
Fumana procumbens											X				

Galium verum											2		X		
Genista sagittalis													X	X	X
Gentiana spec.						X									
Geum montanum							X	X							
Helleborus cf odorus											X				
Hieracium pilosella											X				X
Hypericum maculatum															X
Jasione spec.													X		
Juncus articulatus							X	X							
Juncus spec.						X									
Juniperus communis											X				
Juniperus nana															X
Lembotropis nigricans															X
Lemna minor									X						
Linum catharticum															X
Luzula cf albida	X														X
Mentha longifolia															X
Nardus stricta	X														
Prunus spinosa											X	X			
Pyrus pyraster															X
Rosa agrestis											X		X		
Rosa canina agg.													X		
Rosa cf mollis					X										
Rosa cf montana				X											
Rosa cf villosa					X										
Rosa corymbifera													X		
Rosa dumetorum					X										
Rosa glauca			X												
Rosa micrantha														X	X
Rosa mollis											X			X	X
Rosa subcollina					X										
Rosa vosagiaca										X					
Rubus idaeus															X
Rumex alpinus							X	X							
Salix fragilis													X		
Scirpus sylvaticus															X

Table 1-9: Plant Samples AM[16] – AM[30] Dr. A. Milbradt

Species	AM31	AM32	AM33	AM34	AM35	AM36	AM37	AM38	AM39	AM40	AM41	AM42	AM43	AM44	
Abies alba subsp. borisii-regis											X				
Achillea millefolium	X	X	X												
Agrimonia eupatoria	X	X	X												
Anthoxanthum odoratum					X	X									
Asperula cf glauca	X	X	X												
Betula pendula	X	X	X								X				
Briza media					X	X									
Carex flava					X	X									
Carex rostrata					X	X	X								
Carex vesicaria					X	X									
Carlina acanthifolia	X	X	X												
Carpinus betulus			X												
Cerinthe minor			X												
Comarum palustre							X								
Corylus avellana	X	X	X												
Crataegus monogyna	X	X	X												
Cynosurus cristatus					X	X									
Daucus carota	X	X	X												
Deschampsia caespitosa					X	X									
Echium vulgare			X												
Eriophorum latifolium					X	X	X								
Eryngium amethystinum											X				
Fagus sylvatica			X												

Filipendula ulmaria					X	X								
Fumana procumbens	X	X	X											
Galium verum	2	X	X											
Genista spec.								X						
Helleborus cf odorus	X	X	X											
Hieracium pilosella	X	X	X											
Juniperus communis	X	X	X								X			
Lathyrus pratensis					X	X								
Lemna minor							X							
Linaria vulgaris										X				
Linum catharticum					X	X								
Medicago falcata									X					
Nardus stricta					X	X		X						
Orchis cf mascula						X								
Parnassia palustris					X	X								
Poa trivialis					2	2								
Potentilla erecta					X	X								
Prunus spinosa	X	X	X											
Pteridium aquilinum									X					
Rosa agrestis	X	X	X											
Rosa canina agg.												X		
Rosa mollis	X	X	X						X	X				
Rosa pendulina				X										
Rosa subcanina									X					
Sanguisorba officinalis					X	X								
Sorbus aria														X
Sorbus cf graeca														X
Triglochin palustris													X	
Urtica dioica	X	X	X											
Verbena officinalis	X	X	X											
Viburnum lantana			X											
Viola cf hirta	X	X	X											
Total No of Species per Sample	20	19	24	1	17	18	4	2	4	2	4	1	1	2

Tabela 10: Plant Samples AM[31] – AM[44] Dr. A. Milbradt

Species	AM46	AM47	AM48	AM49	AM51	AM52	AM53	AM54	AM55	AM56	AM57	AM59	AM60
Antennaria dioica										X			
Artemisia spec.					X								
Asplenium tricho-manes										X			
Avenella flexuosa											X		
Briza media	X												
Carex flava	X												
Carex rostrata												X	
Carex vesicaria												X	
Chlorophyceae													X
Cnidium silaifolium									X				
Comarum palustre												X	
Dryas octopetala											X		
Equisetum cf palustre	X												
Eriophorum latifolium	X	X											
Filipendula ulmaria		X											
Gentiana asclepiadea		X											
Gentiana ciliata					X								
Geum montanum											X		
Juncus inflexus		X											
Juncus trifidus											X		
Mentha longifolia	X												
Nardus stricta				X		X	X	X			X		
Parnassia palustris	X	X		X									
Rosa glauca					X								
Rosa pendulina			X										
Sempervivum spec.										X			
Vaccinium gaultheri-oides									X				
Vaccinium myrtillus				X									
Total No of Species per Sample	6	5	1	3	4	1	1	1	2	3	5	3	1

Tabela 11: Plant Samples AM[46] – AM[60] Dr. A. Milbradt

Species	AM61	AM62	AM63	AM64	AM65	AM66	AM67	AM68	AM69	AM70	AM71	AM72	AM73	AM74	AM75
Alchemilla spec				X											
Anthyllis vulneraria								X	X	X					
Arceuthobium oxycedri					X										
Arctostaphylos uva-ursi								X	X	X		X		X	
Astragalus spec												X			
Campanula persicifolia							X								
Carex cf caryophyllea											X				
Carex nigra	X														
Centaurea triumfettii									X	X					
Cirsium candelabrum					X										
Coronilla sp.					X										
Coronilla varia							X								
Corylus avellana					X										
Dryas octopetala								X	X	X	X	X	X		
Drypis spinosa											X				
Empetrum nigrum														X	
Epilobium angustifolium							X								
Eriophorum latifolium				X											
Eupatorium cannabinum							X								
Fagus sylvatica					X										
Gentiana asclepiadea				X											
Juniperus communis					X										
Juniperus nana											X				
Juniperus oxycedrus					X										
Lilium albanicum											X				
Lilium cf chalcedonicum											X				
Mycelis muralis							X								
Ostrya carpinifolia					X										
Parnassia palustris			X	X											
Pinguicula balcanica	X														
Pinus peuce						X		X	X	X		X	X		
Polystichum lonchitis			X												

Pteridium aquilinum					X	X									
Quercus cerris					X										
Ranunculus thora								X	X	X	X	X			
Rosa arvensis					X										
Rosa pendulina															X
Rubus corylifolii							X								
Salix cf repens		X													
Salix spec.	X	X		X											
Saxifraga spec								X	X	X					
Sedum spec								X	X	X					
Selaginella selaginoides				X											
Senecio fuchsii							X								
Thymus vulgaris					X										
Trifolium spadiceum			X												
Urtica dioica							X								
Vaccinium gaultherioides													X	X	
Vaccinium myrtillus													X		
Total No of Species per Sample	3	2	3	6	12	2	8	7	8	8	7	5	4	3	1

Tabela 12: Plant Samples AM[61] – AM[75] Dr. A. Milbradt

Species	AM76	AM77	AM78	AM79	AM80	AM81	AM82	AM83	AM84	AM85	AM86	AM87	AM88	AM89	AM90
Alchemilla spec					X										
Alnus glutinosa								X							
Asplenium septentrionale												X			
Astrantia major								X							
Avenella flexuosa							X								
Briza media					X										
Caltha palustris					X										
Campanula glomerata						X									
Carex hirta					X										
Carex rostrata					X										
Cirsium palustre					X										
Crepis cf paludosa								X							
Cynosurus cristatus					X			X							
Deschampsia caespitosa					X										
Dryopteris filix-mas				X				X							
Epilobium hirsutum								X							
Eriophorum latifolium					X			X							
Eupatorium cannabinum		X													
Euphorbia cyparissias									X						
Fagus sylvatica									X						
Filipendula ulmaria						X		X							
Fragaria vesca									X						
Galium odoratum								X							
Galium palustre								X							
Geum montanum						X									
Holcus lanatus					X										
Hypericum maculatum						X									
Juncus effusus					X										
Juncus trifidus										X					
Luzula cf albida							X								
Mentha longifolia								X							
Myosotis cf palustris					X			X							

Nardus stricta							X				X				
Parnassia palustris					X										
Plantago holosteum													X		
Polypodium vulgare											X				
Polystichum lonchitis										X					
Potentilla erecta					X										
Prenanthes purpurea									X						
Prunella vulgaris								X							
Pulicaria cf dysenterica														X	
Rosa corymbifera								X							
Rosa mollis			X												
Rosa pendulina	X											X			
Salix spec.						X									
Sambucus ebulus									X						
Sanguisorba officinalis						X									
Schoenoplectus lacustris															X
Scirpus sylvaticus								X							
Sempervivum spec.										X					
Silene vulgaris						X									
Solanum nigrum agg.									X						
Thalictrum cf aquilegifolium						X									
Vaccinium gaultherioides											X	X			
Vaccinium myrtillus									X		X	X			
Total No of Species per Sample	1	1	1	1	14	8	3	15	7	3	4	4	1	1	1

Tabela 1-13: Plant Samples AM[76] – AM[90] Dr. A. Milbradt

Species	BX01	BX02	BX03	BX04	BX05	BX06	BX07	BX08	BX09	BX10	BX11	BX12	BX13	BX14	BX15
Achil-lea atrata														X	
Achil-lea holos-ericea														X	
Arabis bry-oides												X			
Dryas octo-petala		X												X	
Gen-tiana lutea										X					
Genti-anella bulga-rica														X	
Linaria pelopo-nesiaca				X	X				X						
Narthe-cium scardi-cum	X														
Poten-tilla spe-ciosa								X							
Rham-nus orbicu-latus											X				
Saxi-fraga scard-ica			X			X							X	X	
Viola grise-bachi-na							X								X

Table 1 14: Plant Samples BX01 – BX15 Prof. Dr. M. Behxhet

Species	BX16	BX17	BX18	BX19	BX20	BX21	BX22	BX23	BX24	BX25	BX26	BX27	BX28	BX29	BX30
Achillea chryso-coma										X					
Achillea holoseri-cea										X					
Bupleurum karglii												X			
Draba ko-rabensis									X						
Drypis spinosa				X											X
Gentiana lutea			X												
Hieracium waldsteinii										X					
Linaria pelopone-siaca						X									
Pinus hel-dreichii		X													
Potentilla monteneg-rina										X					
Rhamnus orbiculatus								X							
Saxifraga scardica					X										
Spergularia vellesia subspecies graminea														X	
Thymus balcanus											X				
Valeriana bertisceae													X		
Valeriana pancicii	X														
Veronica sature-joides							X								
Total No of Species per Sample	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1

Table 1-15: Plant Samples BX^{16} – BX^{30} Prof. Dr. M. Behxhet

Species	BX31	BX32	BX33	BX34	BX35	BX36	BX37	BX38	BX39	BX40	BX41	BX42	BX43	BX44	BX45
Achillea canescens		X													
Dianthus integer			X												
Draba scardica					X										
Erysimum pectinatum									X						
Festuca koritnicen-sis						X						X			
Linaria pelopone-siaca								X							
Minuartia baldaccii				X											
Pinus hel-dreichii							X				X				
Rhamnus orbiculatus										X					
Senecio scopolii															X
Thlaspi bellidifo-lium														X	
Thlaspi microphyl-lum													X		
Valeriana pancicii	X														

Table 1-16: Plant Samples BX[31] – BX[45] Prof. Dr. M. Behxhet

Species	BX46	BX47	BX48	BX49	BX50	BX51	BX52	BX53	BX54	BX55	BX56	BX57	BX58	BX59	BX60
Abies alba subsp. borisii-regis															X
Achillea holoseri-cea										X					
Dioscorea balcanica												X			
Drypis spinosa											X				
Hieracium waldsteinii			X												
Pinus hel-dreichii								X					X	X	
Rhamnus orbicula-tus	X														
Scrophu-laria aesti-valis						X									
Senecio scopolii					X		X		X						
Veronica sature-joides		X		X											

Table 1-17: Plant Samples BX[46] – BX[60] Prof. Dr. M. Behxhet

Species	BX61	BX62	BX63	BX64	BX65	BX66	BX67	BX68	BX69	BX70	BX71	BX72	BX73	BX74	BX75
Achillea korabensis										X					
Crepis macedonica													X		
Crocus scardicus						X									
Dioscorea balcanica	X														
Geranium subcaulescens								X							
Laserpitium zernyi											X				
Lilium albanicum				X											
Lilium martagon				X											
Potentilla calabra							X								
Silene lerchenfeldiana		X													
Silene parnassica subsp. parnassica															X
Silene pusilla ssp candavica														X	
Silene sendtneri			X												
Silene waldsteinii		X													
Triglochin palustris									X	X		X			
Vaccinium vitis-idea					X										

Table 1-18: Plant Samples BX^{61} – BX^{75} Prof. Dr. M. Behxhet

Species	BX76	BX77	BX78	BX79	BX80	BX81	BX82	BX83	BX84	BX85	BX86	BX87	BX88	BX89	BX90
Colchicum macedonicum			X												
Crocus scardicus							X				X				
Dianthus scardicus								X							
Dryas octopetala										X					
Narthecium scardicum														X	
Primula halleri						X									
Ranunculus demissus var. Graecus Boiss												X			
Ranunculus montenegrinus													X		
Silene pusilla					X										
Thymus albanus									X						
Thymus doerfleri															X
Tozzia alpina				X											
Tozzia alpina subsp. carpatica	X	X													

Table 1-19: Plant Samples BX[76] – BX[90] Prof. Dr. M. Behxhet

Species	BX100	BX91	BX92	BX93	BX94	BX95	BX96	BX97	BX98	BX99
Dianthus scardicus								X		
Dryas octopetala			X							
Drypis spinosa						X			X	
Gentiana lutea	X									X
Ranunculus montenegrinus							X			
Thalictrum alpinum				X						
Tozzia alpina		X			X					

Table 1-20: Plant Samples BX[91] – BX[100] Prof. Dr. M. Behxhet

Species	FM01	FM02	FM03	FM04	FM05	FM06	FM07	FM08	FM09	FM10	FM11	FM12	FM13	FM14	FM15	FM16
Abies alba subsp. borisii-regis	X															
Acer pseudo-platanus	X															
Achillea chry-socoma		X	X		X											X
Achillea mille-folium															X	
Adenostyles alliariae				X												
Alchemilla hybrida											X					
Althaea mos-chata						X										
Anthemis montana				X												X
Armeria alpina			X	X	X		X									X
Armeria cane-scens																X
Artemisia lobelia														X		
Asperula do-erfleri					X											
Asplenium trichomanes	X															
Barbarea bal-cana						X										
Bellis perennis		X														
Botrychium lunaria			X		X											
Briza media						X										
Calamintha acinos		X														
Calamintha grandiflora	X															
Calamintha nepeta														X		
Campanula albanica				X			X									
Campanula alpina				X			X									
Campanula foliosa				X			X									
Campanula rapunculus	X															
Carex laevis						X										
Carpinus betulus	X															
Centaurea triumfettii										X						
Cerastium alpinum				X												
Cerastium dinaricum										X						
Cerastium grandiflorum								X					2			
Cerinthe minor		X														
Ceterach of-ficinarum	X															
Chenopodium bonus-henri-cus									X							

Cicerbita pancicii									X							
Cirsium appendiculatum						X		X								
Cirsium orphanidis														X		
Clematis vitalba														X		
Coronilla sp														X		
Coronilla vaginalis										X						
Corylus avellana														X		
Crepis baldaci subsp. albanica				X			X									
Dactylis glomerata	X															
Daphne cneorum			X							X						X
Dentaria bulbifera	X															
Deschampsia flexuosa						X										
Dianthus deltoides								X					2			
Dianthus integer										X						
Dianthus superbus						X					X					
Dryas octopetala										X						
Edreianthus graminifolia					X					X						
Empetrum nigrum				X			X									
Erigeron alpinus				X												
Eriophorum angustifolium											X					
Erophila verna						X										
Euphorbia amygdaloides	X															
Euphrasia rostkoviana								X					2			
Fagus sylvatica subsp. moesiaca	X													X		
Festuca koritnicensis			X													
Festuca paniculata			X												X	
Festuca pratensis		X														
Gentiana lutea				X			X					X				
Gentiana punctata				X			X									
Gentianella bulgarica				X				X				X	2			
Gentianella bulgarica var. albanica							X									
Geranium subcaulescens				X			X	X				X	2		X	
Geum montanum											X					

Geum rivale											X					
Geum urbanum		X														
Helianthemum alpestre			X													X
Helianthemum canum			X		X					X						
Hieracium gymnocephalum										X						
Hieracium pilosella								X					2			
Hieracium sp														X		
Hieracium wettsteini														X		
Hypericum perforatum		X														
Jovibarba heuffelii			X		X											2
Juncus trifidus				X												
Juniperus communis														X		
Juniperus nana			2							X						X
Kobresia myosuroides (Vill.) Fiori												X				
Lamium galeobdolon				X			X									2
Leucanthemum vulgare	X	2														
Lilium albanicum			X	X			X			X		X				X
Lilium martagon	X															
Lonicera xylosteum	X															
Lotus corniculatus		X														
Luzula forsteri								X					X			
Melampyrum pratense	X															
Melica uniflora	X															
Mentha longifolia						X										
Minuartia baldaccii					X											
Minuartia verna					X					X						
Myosotis alpestris			X													X
Myosotis sylvatica						X										
Nardus stricta															X	
Nigritella nigra			X													X
Parnassia palustris											X					
Pedicularis brachyodonta			X	X												
Pedicularis verticillata			X	X												

Phleum alpestre										X						
Pinus heldreichii		X														
Pirola secunda	X															
Plantago media	X															
Poa alpina										X						
Poa violaceae															X	
Polygonum alpinum																X
Polypodium vulgare	X															
Potentilla arenaria										X						
Potentilla calabra				X			X									X
Potentilla crantzii				X												
Potentilla doerfleri				X			X					X				
Potentilla recta		X														
Prenanthes purpurea	X															
Primula halleri				X												
Primula veris							X	X					X			
Pulsatilla narcissiflora										X						
Ranunculus oreophillus										X						
Ranunculus psilostachys		X														
Ranunculus thora										X						
Rosa pendulina	X															X
Rumex alpinus									X							
Salix caprea	X															
Salix reticulata					X											
Sanguisorba officinalis											X					
Saussurea alpina												X				
Saxifraga marginata					X											
Saxifraga paniculata				X	X											
Saxifraga scardica					X											
Saxifraga sempervivum					X											
Saxifraga tridactylides				X												
Scabiosa leucophylla								X								
Scrophularia bosniaca																X
Sedum acre														X		
Sempervivum macedonicum				X			X									
Senecio bosniaca			X													
Senecio carpathicus				X												

Senecio glaberrima				X			X									
Senecio rupestris									X							X
Silene lerchenfeldiana																X
Solidago virgaurea	X															
Sorbus aucuparia	X															
Stachys alpina		X	X			X		X					X			X
Stachys recta														X		
Telekia speciosa	X															
Teucrium chamaedrys														X		
Thlaspi bellidifolium					X											
Thymus albanus										X						
Thymus doerfleri										X						
Thymus sp														X		
Trifolium alpestre								X					X			
Trifolium badium				X							X					X
Trifolium velenovskyi	X															X
Urtica dioica									X							
Veratrum album						X					X					
Verbascum sp.															X	
Veronica beccabunga						X										
Viola aetolica									X						X	
Viola gracilis									X							
Viola orphanidis									X							
Total No of Species per Sample	26	14	18	29	15	13	17	12	8	20	9	7	16	14	7	23

Tabela 2-1: Plant Samples FM[01] – FM[16] Prof. Dr. F. Millaku

Species	FM17	FM18	FM19	FM20	FM21	FM22	FM23	FM24	FM25	FM26	FM27	FM28	FM29	FM30	FM31	FM32
Achillea atrata													X			
Achillea chrysocoma			X													
Achillea lingulata											X					
Achillea millefolium		X												X		
Aconitum napellus									X		X					
Aconitum vulparia									X							
Ajuga pyramidalis											X					
Alchemilla hybrida											X					
Allium ursinum												X				
Androsace villosa													X			
Anemone nemorosa											X					
Anemone ranunculoides											X					
Angelica archangelica									X							
Antennaria dioica											X					
Anthyllis aurea							X									X
Anthyllis vulneraria		X									X					
Arabis alpina								X					X			
Arctostaphylos uva-ursi								X			X					
Armeria alpina			X													
Armeria canescens													X			
Asperula aristata													X			
Asperula doerfleri			X													
Asphodelus albus									X							
Aster alpinus	X		X													
Atropa belladonna														X		
Aubretia croatica				X												
Barbarea balcana													X			
Barbarea bracteosa													X			
Betula pendula									X							
Bruckenthalia spiculifolia					X						X					
Bunium alpinum							X									
Bupleurum veronense		X														
Calamagrostis varia												X				

Caltha palustris											X					
Campanula alpina													X			
Campanula foliosa													X			
Campanula persicifolia											X					
Campanula scheuchzeri											X					
Carduus acanthoides		X														
Carex atrata													X			
Carex caryophyllea													X		X	
Carex laevis															X	
Carlina acaulis									X	X	X					
Centaurea montana											X					
Centaurea nervosa						X					X		X			
Centaurea splendens											X					
Cerastium alpinum													X			
Cerastium decalvans													X			
Cirsium appendiculatum					X						X					
Crocus scardicus						X					X	X	X			
Crocus veluchensis											X	X				
Daphne mezereum												X				
Dianthus integer			X													
Dianthus superbus					X						X					
Dianthus sylvestris			X								X					
Digitalis grandiflora									X							
Dryas octopetala			X													
Empetrum nigrum													X			
Epilobium angustifolium									X							
Eriophorum latifolium												X				
Fragaria vesca														X		
Fumana procumbens		X														
Galium constrictum			X													
Galium verum		X														
Gentiana asclepiadea									X		X					
Gentiana dinarica							X									
Gentiana lutea	X															

Gentiana punctata													X			
Gentiana verna											X					
Geranium robertianum														X		
Geranium subcaules-cens						X										
Geum coc-cineum					X						X					
Geum monta-num						X										
Geum rivale													X			
Gladiolus palustris												X				
Globularia cordifolia			X													
Helianthe-mum canum	X															
Hieracium vil-losum			X													
Homogyne alpina													X			
Huperzia selago															X	
Hypericum alpinum											X		X			
Hypericum perforatum		X								X						
Hypericum richeri											X		X			
Jasione or-biculata											X					
Jovibarba heuffelii			X								X					
Juncus trifidus						X						X				
Juniperus communis		X								X						
Juniperus nana						X										
Leucanthe-mum vulgare									X		X					
Lilium albani-cum												X				
Linum capi-tatum											X					
Matricaria caucasica													X			
Medicago prostrate		X														
Meum atha-manticum													X			
Minuartia baldaccii	X		X													
Minuartia verna													X			
Myosotis syl-vatica											X					
Narthecium scardicum												X				
Onobrychis scardica	X															
Ononis spi-nosa		X														

Oxytropis halleri							X									
Parnassia palustris													X			
Petasites albus									X							
Pimpinella alpina													X			
Pimpinella saxifraga													X			
Pinguicula balcanica															X	
Plantago atrata											X					
Polygonum alpinum						X							X			
Polygonum bistorta											X					
Polygonum viviparum					X	X										
Potentilla alba						X										
Potentilla apenina	X															
Potentilla argentea											X					
Potentilla aurea						X							X			
Potentilla caulescens													X			
Potentilla crantzii						X										
Potentilla speciosa	X															
Potentilla ternata													X			
Primula elatior											X			X		
Primula veris										X	X			X		
Ptilotrichum rupestre	X															
Ranunculus crenatus													X			
Ranunculus thora	X															
Rhamnus frangula									X							
Rosa canina		X														
Rubus caesius														X		
Rubus idaeus										X	X					
Salix caprea											X					
Salix reticulata	X															
Satureja montana		X														
Saxifraga aizoides												X	X			
Saxifraga paniculata												X	X			
Saxifraga rotundifolia												X				
Saxifraga scardica	X		X													
Saxifraga sempervivum	X															

Saxifraga trichocalycina				X												
Scabiosa columbaria											X					
Scleranthus annuus											X					
Sedum acre		X														
Sempervivum macedonicum						X							X			
Senecio bosniaca			X													
Senecio carpathicus						X					X					
Senecio fuchsii											X					
Senecio subalpinus					X											
Sesleria nitida			X													
Sorbus aria									X							
Stachys alopecurus											X					
Stachys alpina											X					
Teucrium chamaedrys		X												X		
Teucrium montanum														X		
Thlaspi bellidifolium	X															
Thlaspi microphyllum	X															
Thymus albanus													X			
Thymus doerfleri	X															
Thymus sp										X						
Thymus vulgaris		X														
Trifolium badium													X			
Trifolium velenovskyi											X					
Trifolium wettsteinii							X									
Tussilago farfara									X		X					
Urtica dioica										X						
Vaccinium myrtillus						X				X	X					
Vaccinium uliginosum													X			
Valeriana pancicii	X															

Veratrum album					X					X						
Verbascum thapsus					X											
Veronica aphylla				X												
Veronica saturejoides				X												
Viola aetolica												X				
Viola orphanidis											X	X				
Viola sylvestris												X				
Viscum album														X		
Total No of Species per Sample	16	15	15	4	8	14	5	2	14	9	49	16	38	10	4	1

Table 1-12: Plant Samples FM[17] – FM[32] Prof. Dr. F. Millaku

1.7.2. Overall List of Plant Species (alphabetical order)

Species	Family	Albanian name	Serbian name	English name	Distribution in Kosovo	Endemism	Rareness (incl. Local Red Lists)	Habitat Directive	Bern	IUCN lista e kuqe e bimëve
Abies alba	Pinaceae	Bredhi i bardhë		Silver Fir	Dragash					LC-Least concern
Abies alba subsp. borisii-regis	Pinaceae	Bredhi i maqe-donisë	Makedonska Jela	Bulgarian Fir	Sharr Mountain (Restelica)	Tertiary relic	Suggested Kosovo's Red Plant List			
Abies bal-samea	Pinaceae	Bredhi balsam		Balsam Fir	Dragash					LC-Least concern
Acer hel-dreichii	Sapindace-ae	Panja malore	Planinski Javor	Heldreich's Maple	Dragash	Balkan en-demic	Suggested Kosovo's Red Plant List			
Acer pseu-do-platanus	Sapindace-ae	Panja e malit	Javor mlečak	Sycamore maple	Dragash					
Achillea ageratifolia	Asteraceae			Sweet Yarow	Dragash					
Achillea alexandri-regis	Asteraceae	Barpezmi i mbretit Alek-sandër	Hajdučica Kralja Aleksan-dra	King's Alexander Yarrow	Sharr Mountains (Oshlak)	Kosovo endemic				
Achillea atrata	Asteraceae	Barpezmi		Black yar-row	Koritnik					
Achillea canescens	Asteraceae	Barpezmi i bardhë			Koritnik	Balkan en-demic	Suggested Kosovo's Red Plant List			
Achillea chrysocoma	Asteraceae	Barpezmi bal-ukeartë		Golden Yar-row	Koritnik	Balkan en-demic	Suggested Kosovo's Red Plant List			
Achillea crithmifolia	Asteraceae				Dragash					
Achillea ho-losericea	Asteraceae	Barpezmi i gjithëmëndaf-shtë			Dragash, Koritnik	Balkan en-demic	Suggested Kosovo's Red Plant List			
Achillea korabensis	Asteraceae	Barpezmi i Korabit		Korab yar-roa	Dragash (Brod)					
Achillea ho-losericea	Asteraceae	Barpezmi i gjithëmëndaf-shtë			Dragaš, Koritnik	Balkan en-demski	Predložena Kosovska Crvena Lista Bilja			
Achillea korabensis	Asteraceae	Barpezmi i Korabit		Korab yarroa	Dragaš (Brod)					
Achillea lingulata	Asterace-ae	Barpezmi gjuhëzore			Dragash					
Achillea millefolium	Asterace-ae	Barpezmi mijëfletësh	Stolisnik-haj-ducka trava	Yarrow	Dragash					
Achillea tenuifolia	Asterace-ae				Dragash					
Aconitum divergens	Ranuncu-laceae				Dragash					
Aconitum napellus	Ranuncu-laceae	Akoniti		Monks-hood	Dragash		No infor-mation			
Aconitum vulparia	Ranuncula-caeae	Akoniti i dhel-prës		Wolfsbane	Dragash					
Adeno-styles alliariae	Asterace-ae	Bar hudhra			Dragash					

Agrimonia eupatoria	Rosaceae	Rodhëza		Common agrimony	Dragash					
Ajuga pyramidalis	Lamiaceae	Ajuga piramidale			Dragash					
Alchemilla hybrida	Rosaceae	Alkemila hibride			Dragash					
Alchemilla spec	Rosaceae		Virak	Lady's mantle	Dragash					
Allium ursinum	Aliaceae	Hudhra e ariut	Sremuš	Wild garlic	Dragash					
Alnus glutinosa	Betulaceae	Verri i zi	Crna jova	Black alder	From Brezna to Dragash along Plava River					LC-Least concern
Althaea moschata	Malvaceae	Mullanjadhja erëmyshku			Dragash					
Amelanchier ovalis	Rosaceae	Sqapthi		Snowy Mespilus	Dragash					
Amphoricarpus autariatus	Asteraceae	Amforikarpi	Krčagovina ilirska		Sharr Mountains	Balkan endemic	Endangered			
Androsace villosa	Primulaceae	Pratishi			Dragash					
Anemone nemorosa	Ranunculaceae	Fillikatja e pyllit	Šumska breberina	Thimbleweed	Dragash					
Anemone ranunculoides	Ranunculaceae	Fillikatja zhabinore			Dragash					
Angelica archangelica	Apiaceae	Angjelika angjelika		Norwegian angelica	Dragash					
Antennaria dioica	Asteraceae	Antenaria dioike	Smilje	Mountain Everlasting	Dragash					
Anthemis montana	Asteraceae	Syviçja malore			Dragash					
Anthoxanthum odoratum	Poaceae	Antoksanti erëmirë		Sweet vernal grass	Dragash		No information			
Anthyllis aurea	Fabaceae	Antili i praruar			Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Anthyllis vitelina	Fabaceae				Sharr Mountains	Balkan endemic	Suggested Kosovo's Red Plant List			
Anthyllis vulneraria	Fabaceae	Antili shërues		Kidney vetch	Dragash		No information			
Arabis alpina	Brassicaceae	Arabësi alpin			Dragash	Glacial relic				
Arabis bryoides	Brassicaceae	Arabësi brioid			Koritnik		Suggested Kosovo's Red Plant List			
Arceuthobium oxycedri	Loranthaceae	Velli		Dwarf mistletoe	Koritnik		Rare			
Arctium lappa	Asteraceae	Rrodhja	Repuh	Lappa Burdock	Dragash					
Arctostaphylos uva-ursi	Ericaceae	Armeria e zbardhur		Pinemat manzanita	Dragash					

Armeria alpina	Plumbaginaceae	Armeria alpine			Dragash					
Armeria canescens	Plumbaginaceae	Armeria e zbardhur			Dragash		Suggested Kosovo's Red Plant List			
Artemisia absinthium	Asteraceae	Pelini		Green ginger -Wormwood	Dragash					LC-Least concern
Artemisia lobelia	Asteraceae	Pelini eriant			Dragash		Suggested Kosovo's Red Plant List			
Artemisia spec.erian-tha	Asteraceae	Pelini	Pelin	Wormwood	Dragash			Annex V		
Artemisia vulgaris	Asteraceae	Pelini i zakon-shëm	Obićni pelin	Mugwort	Sharr Moun-tains					
Asperula aristata	Rubiaceae	Njëgjira e halë-zuar			Dragash					
Asperula cf glauca	Rubiaceae	Njëgjira			Dragash					
Asperula doerfleri	Rubiaceae	Njëgjira e Dor-flerit		Doerfler woodruff	Dragash	Balkan en-demic	Endangered			
Asphodelus albus	Xan-thorhoeace-ae	Badhra e bardhë		Asphodelus albus	Dragash					
Asplenium septentrion-ale	Aspleni-aceae	Fierguri veror		Forked spleenwort	Dragash					
Asplenium trichomanes	Aspleni-aceae	Fierguri me qime			Dragash					
Aster alpinus	Asteraceae	Asteri alpin	Zvjezdan	Alpine aster	Dragash	Glacial relic	Suggested Kosovo's Red Plant List			
Astragalus spec	Fabaceae	Arithja		Goat's-thorn	Dragash		No informa-tion			
Astrantia major	Apiaceae	Astrancia e madhe		Great Mas-terwort	Dragash					
Athyrium filix-femina	Athyriaceae	Atiri fier femër		Lady Fern	Dragash					
Atropa bel-ladonna	Solanaceae	Helmarina	Velebilje	Belladonna	Dragash					
Aubretia croatica	Brassicaceae	Aubretia kroate	Hrvatska Tarčuka	Aubretia	Dragash					
Avenella flexuosa	Poaceae	Avenella e ep-shme		Wavy Hair-grass	Dragash		No informa-tion			
Barbarea balcana	Brassicaceae	Barbarea ballka-nase		Balkna Win-ter cress	Dragash	Balkan en-demic	Suggested Kosovo's Red Plant List	None		LC-Least concern
Barbarea bracteosa	Brassicaceae	Barbarea me brakte		Winter cress	Dragash					
Barbarea longirostris	Brassicaceae	Barbarea sqepgjatë			Sharr Moun-tains	Balkan en-demic	Suggested Kosovo's Red Plant List			
Bellis peren-nis	Asteraceae	Luleshqerra shumëvjeçare	Krasuljka, Bela rada	Common Daisy	Dragash		No informa-tion			
Betula pen-dula	Betulaceae	Mështekna	Breza	Birch	Sharr Mountains-Coppice forest					
Betula ver-rucosa	Betulaceae	Mështekna e bardhë		Silver birch	Dragash					
Blysmus compressus	Cyperaceae	Blismi i përm-bledhur		Flat-sedge	Dragash					
Bornmuel-lera dieckii	Brassicaceae	Bornmilera e Dieckit			Sharr Moun-tains	Balkan en-demic	Suggested Kosovo's Red Plant List			
Botrychium lunaria	Botrychi-aceae	Fieri si Hënë		Common moonwort	Dragash					
Bruckenthal-ia spiculifolia	Ericaceae	Brkentali gjethekallizë		Spike Heath	Dragash		Rare			
Bryonia dioica	Cucurbita-ceae	Briona dioike		White bryony	Dragash	South East Europe				

Bunium alpinum	Apiaceae	Buni alpin			Dragash		Suggested Kosovo's Red Plant List			
Bupleurum falcatum	Apiaceae			Chinese Thoroughwax	Sharr Mountains					
Bupleurum karglii	Apiaceae	Brinjëkau i Karglit			Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Bupleurum veronense	Apiaceae				Dragash					
Calamagrostis varia	Poaceae	Kallmi i egër i ndryshëm			Dragash					
Calamintha acinos	Lamiaceae	Kalaminta acin		Basil Thyme	Dragash		No information			
Calamintha alpina	Lamiaceae			Alpine calamint	Dragash					
Calamintha alpina	Lamiaceae	Lulekambana gjethemadhe		Alpine calamint	Dragash					
Calamintha clinopodium	Lamiaceae	Kalaminta		Hedge Basil	Dragash		No information			
Calamintha grandiflora	Lamiaceae	Lulekambana gjethemadhe			Dragash		No information			
Calamintha nepeta	Lamiaceae	Kalaminta nepetë		Lesser Calamint	Dragash					
Caltha palustris	Ranunculaceae	Lëpushtra e kënetës		Kingcup	Dragash		Rare			
Campanula albanica	Campanulaceae	Lulekambana shqiptare		Albanian Bellflower	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Campanula alpina	Campanulaceae	Lulekambana alpine		Alpine Bellflower	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Campanula cf rotundifolia	Campanulaceae	Lulekambana gjetherrumbullake		Harebell	Dragash					
Campanula foliosa	Campanulaceae	Lulekambana gjetheshumë			Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Campanula glomerata	Campanulaceae	Lulekambana lëmshore		Clustered Bellflower	Dragash					
Campanula persicifolia	Campanulaceae	Lulekambana gjethepjeshke		Peach-leaved Bellflower	Dragash					
Campanula rapunculus	Campanulaceae	Lulekambana si fitemë			Dragash					
Campanula scheuchzeri	Campanulaceae	Lulekambana skeukzeri		Scheuchyeri Bellflower	Dragash					
Capsella bursa pastoris	Brassicaceae	Strajca e bariut	Rusomaća	Shepherd purse	Sharr Mountains					
Cardamine bulbifera	Brassicaceae	Kardamini me qepujkë			Dragash		No information			
Carduus acanthoides	Asteraceae	Freshkulli si gjemb		Welted thistle	Dragash					
Carduus acanthoides	Asteraceae	Freshkulli si gjemb		Welted thistle	Dragash					
Carex atrata	Cyperaceae	Presja alpine	Alpski šaš	Black alpine sedge	Dragash					
Carex caryophyllea	Cyperaceae	Presja karafilore			Dragash					
Carex cf flacca	Cyperaceae	Presja e rimtë	Plavi šaš	Blue sedge	Dragash					
Carex flava	Cyperaceae	Presja e verdhë	Žuti šaš	Yellow sedge	Dragash	Tertiary relic				
Carex hirta	Cyperaceae	Presja kreshtake	Srebrena šaš	Silver sedge	Dragash					
Carex laevis	Cyperaceae	Presja e lëpirë		Sedge	Dragash					
Carex nigra	Cyperaceae	Presja e zezë	Crni šaš	Black sedge	Dragash (Shutman)		Rare			
Carex rostrata	Cyperaceae	Presja sqepore		Bottle sedge	Dragash (Restelica)					

Carlina acanthifolia	Asteraceae	Ushonjëza gjethedashtër		Thistle	Dragash					
Carlina acaulis	Asteraceae	Ushojza pa kërcell	Vilino sito	Silver thistle	Dragash					
Carpinus betulus	Betulaceae	Shkoza e bardhë	Grab	European Hornbeam	Dragash					
Carpinus orientalis	Betulaceae	Shkoza e zezë	Beligrab	Oriental hornbeam	Dragash					
Centarium erythrea	Gentianaceae	Bari i ethesë	Kantarion crveni	Centaury	Sharr Mountains					
Centaurea jacea jacea	Asteraceae	Kokoçeli i rënë		Brown Knapweed	Dragash					
Centaurea montana	Asteraceae	Kokoçeli malor	Šumska zečina	Mountain Cornflowe	Dragash					
Centaurea nervosa	Asteraceae	Kokoçeli		Knapweed	Dragash					
Centaurea splendens	Asteraceae	Kokoçeli			Dragash					
Centaurea triumfettii	Asteraceae	Kokoçeli i Triumfetit	Pustenasta zečina	Squarrose Knapweed	Dragash					
Cerastium alpinum	Caryophyllaceae	Cerasti alpin	Alpski rožac	Alpine chickweed	Dragash	Glacial relic				
Cerastium decalvans	Caryophyllaceae	Cerasti qimërënë			Dragash		Suggested Kosovo's Red Plant List			
Cerastium dinaricum	Caryophyllaceae	Cerasti dinarik	Dinarski rožac	Mouse-ear chickweed	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List	Annex II		VU-Vulnerable
Cerastium grandiflorum	Caryophyllaceae	Cerasti lulemadh	Rožac		Dragash		No information			
Cerastium neoscardicum	Caryophyllaceae	Cerasti i sharrit	Šarski rožac	Sar Mouse Ear	Sharr Mountains	Kosovo endemic				
Cerinthe minor	Boraginaceae	Cerinthi vogëlush		Little honeywort	Dragash		Rare			
Ceterach officinarum	Aspleniaceae	Fierguri i rëndomtë		Rustyback	Dragash		No information			
Chenopodium bonus-henricus	Chenopodiaceae	Minuari pjerrëza	Brašnjava loboda	Good King Henry	Dragash					
Cicerbita pancicii	Asteraceae	Cicerbita e Pançiçit			Dragash		Suggested Kosovo's Red Plant List			
Cichorium intybus	Asteraceae	Cikore	Vodopija	Chicory	Sharr Mountains					
Cirsium appendiculatum	Asteraceae	Grivori me shtojcë			Dragash	Balkan endemic				
Cirsium arvense	Asteraceae	Grivori i arave		Creeping thistle	Dragash					
Cirsium eriophorum	Asteraceae	Grivori leshatak		Woolly thistle	Dragash area widespread					
Cirsium orphanidis	Asteraceae	Grivori jetim			Dragash					
Cirsium palustre	Asteraceae	Grivori kënetor		Marsh thistle	Dragash					
Cirsium vulgare	Asteraceae	Grivori i rëndomtë		Common thistle	Dragash					
Clematis vitalba	Ranunculacea	Kulpra		Traveller's Joy	Dragash					
Cnidium silaifolium	Apiaceae	Vratiku gjethesilaj			Dragash		Rare			
Colchicum autumnale	Liliaceae	Xhërrolloku vjeshtor	Balućak-Mrazovac	Meadow saffron	Sharr Mountains					
Colchicum macedonicum	Liliaceae	Xhërrokulli maqedon	Makedonski Balućak-Mrazovac	Macedonian saffron	Sharr Mountains (Vrace, Mramor)	Balkan endemic	Endangered			

Comarum palustre	Rosaceae	Komari i kën-etave		Swamp cinquefoil	Dragash					
Cornus mas	Cornaceae	Thana	Dren	European Cornel	Sharr Mountains					
Cornus sanguinea	Cornaceae	Thanukla		Common Dogwood	Dragash					
Coronilla	Fabaceae	Milëza		Coronilla spider	Dragash		No information			
Coronilla sp	Fabaceae	Milëza			Dragash					
Coronilla vaginalis	Fabaceae	Milëza me myll			Dragash		Suggested Kosovo's Red Plant List			
Coronilla varia	Fabaceae	Milëza e ndryshme		Crown Vetch	Dragash		No information			
Corylus avellana	Betulaceae	Lajthia	Lešnik	Common Hazel	Dragash					LC-Least concern
Cotoneaster integerrimus	Rosaceae	Borbulli i padhëmbëz		Common Cotoneaste	Dragash		Rare			
Cotoneaster tomentosus	Rosaceae	Borbulli		Hairy Cotoneaster	Dragash (Xerxe)		Rare			
Crataegus monogyna	Rosaceae	Murrizi njëbërthamësh	Bjeli glog	Hawthorn	Dragash area-woodland patches					
Crepis baldaci subsp. albanica	Asteraceae	Shmanga shqiptare	Baldaci Čekinjuša	Baldaci hawksbeard	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Crepis cf paludosa	Asteraceae	Shmanga e moçaleve	Čekinjuša mocvare	Marsh hawksbeard	Dragash					
Crepis macedonica	Asteraceae	Shmanga maqedonase	Makedonska Čekinjuša	Macedonian hawksbeard	Sharr (Brod, Lugina e Levrekes, Gradski kamen)	Balkan endemic	Suggested Kosovo's Red Plant List			
Crocus scardicus	Iridaceae	Krokusi i Sharrit	Šarplaninski šafran	Scardus crocus	Dragash (Sutman)	Kosovo endemic	Suggested Kosovo's Red Plant List			
Crocus veluchensis	Iridaceae	Krokusi i Velukentit			Dragash					
Cynosurus cristatus	Poaceae	Bishtqeni kreshtak		Crested Dog's-tail	Dragash		No information			
Dactylis glomerata	Poaceae	Telishi		Cock's-foot	Dragash		No information			
Daphne cneorum	Thymelaeaceae	Xerxelja kneore	Jeremičak crveni	Red Daphne	Dragash		Suggested Kosovo's Red Plant List			
Daphne mezereum	Thymelaeaceae	Jargavan/xerxelja e malit	Obični likovac	February Daphne	Dragash					
Datura stramonium	Solanaceae			Devil's trumpet	Dragash					
Daucus carota	Apiaceae	Karrota	Mrkva	Wild carrot	Dragash					
Deschampsia caespitosa	Poaceae	Deshampsia tufore	Travnjačka busika	Tussock grass	Dragash		No information			
Deschampsia flexuosa	Poaceae	Deshampsia e epshme		Wavy Hair-grass	Dragash					
Dianthus deltoides	Caryophyllaceae	Karafili deltoid		Maiden Pink	Dragash		No information			
Dianthus integer	Caryophyllaceae	Karafili shkëmbinjësh	Cjeloviti karanfil	Whole Pink	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Dianthus scardicus	Caryophyllaceae	Karafili i Sharrit	Šarplaninski karanfil	Sharr pink	Sharr Mountains	Balkan endemic	Suggested Kosovo's Red Plant List			
Dianthus spec.	Caryophyllaceae	Karafil		Pink	Dragash					
Dianthus superbus	Caryophyllaceae	Karafili vjollcë	Ibrišim karanfil	Purple Pink	Dragash		Suggested Kosovo's Red Plant List			
Dianthus sylvestris	Caryophyllaceae	Karafili pyjor	Šumski karanfil	Mountain Pink	Sharr Mountains					
Digitalis ambigua	Scrophulariaceae			Yellow Foxglove	Dragash					

Digitalis grandiflora	Plantaginaceae	Karafili lulemadh		Big-flowered Foxglove	Dragash					
Digitalis lanata	Plantaginaceae	Luletogëza leshatake	Besniće	Wolly foxglove	Sharr Mountains	Balkan endemic				
Dioscorea balcanica	Dioscoreaceae	Dioskorea ballkanase		Balcan Dioscore	Koritnik	Balkan endemic	Suggested Kosovo's Red Plant List			
Draba korabensis	Brassicaceae	Draba e Korabit		Korab's whitlow	Dragash, Koritnik	Balkan endemic	Suggested Kosovo's Red Plant List			
Draba scardica	Brassicaceae	Draba e Sharrit		Scardica whitlow	Dragash, Koritnik	Balkan endemic	Suggested Kosovo's Red Plant List			
Dryas octopetala	Rosaceae	Driada tetëpalash	Osmerolatični drijas	White dryas	Sharr Mountains	Glacial relic	Rare			
Dryopteris filix-mas	Aspidiaceae	Fier mashkull	Šumski paprat	Male fern	Dragash					
Drypis spinosa	Caryophyllaceae	Dripis			Sharr mountains	Balkan endemic				
Echium vulgare	Boraginaceae	Ushqerëza e rëndomtë		Viper's Bugloss	Dragash					
Edreianthus graminifolia	Campanulaceae	Edrianti gjethebari		Bellflower	Dragash		No information			
Eleocharis acicularis	Cyperaceae			Needle spikerush	Dragash					
Empetrum nigrum	Empetraceae	Empetri i zi		Black crowberry	Dragash		Rare			
Epilobium angustifolium	Onagraceae	Epilobi gjethengushtë		Fireweed, willowherb	Dragash					
Epilobium dodonaei	Onagraceae	Epilobi i Dodonës		Marsh Willowherb	Dragash		Rare			
Epilobium hirsutum	Onagraceae	Epilobi qimeashpër		Hairy willowherb	Dragash					
Equisetum arvense	Equisataceae	Rrushqyqja e epshme	Rastavić	Common Horsetail	Dragash					
Erigeron alpinus	Asteraceae	Erigeroni alpin		Alpine Fleabane	Dragash					
Eriophorum angustifolium	Cyperaceae	Eriofori ghethengushtë		Common Cottongrass	Dragash		No information			
Eriophorum latifolium	Cyperaceae	Eriofori ghethegjerë	Širokolisnka suhoperka	Cotton Grass	Dragash					
Erophila verna	Brassicaceae	Erofila pranverore			Dragash					
Eryngium amethystinum	Apiaceae	Gjembardhi		Amethyst Sea Holly	Dragash (Zlipotok)					
Erysimum pectinatum	Brassicaceae				Dragash, Koritnik	Balkan endemic	Suggested Kosovo's Red Plant List			
Euonymus europaea	Celastraceae	Fshikakuqi Evropian		European spindle	Sharr Mountains					
Eupatorium cannabinum	Asteraceae	Eupatori kërpor		Hemp-agrimony	Dragash					
Euphorbia amygdaloides	Euphorbiaceae	Qumështorja si bajame	Mlećika šumska	Wood spurge	Dragash					
Euphorbia cyparissias	Euphorbiaceae	Qumështorja si selvi	Mlećika obićna	Cypress Spurge	Dragash					
Euphorbia myrsinites	Euphorbiaceae	Qumështorja mërsinë		Creeping Spurge	Dragash, Koritnik		Rare			
Euphrasia rostkoviana	Orobanchaceae	Eufrazia e Rostkovit		Eyebright	Dragash		No information			
Fagus sylvatica	Fagaceae	Ahu	Evropska bukva	Beech	Dragash		No information			
Fagus sylvatica subsp. moesiaca	Fagaceae	Ahu	Mejziska bukva	Beech	Dragash		No information			
Festuca koritnicensis	Poaceae	Bishtëpelëza e Koritnikut	Vlasulja Koritnika	Koritnik fescue	Dragash, Koritnik	Balkan endemic	Suggested Kosovo's Red Plant List			

Festuca ovina agg.	Poaceae	Bishtëpelëza delesh	Vlasulja ovce	Sheep fescue	Dragash		No information			
Festuca paniculata	Poaceae	Bishtëpelëza e melthuar	Metličasta vlasulja	Golden fescue	Dragash					
Festuca pratensis	Poaceae	Bishtëpelëza e livadheve	Vlasulja livade	Meadow fescue	Dragash		No information			
Filipendula ulmaria	Rosaceae	Shtalbës i egër		Meadowsweet	Dragash					
Fragaria vesca	Rosaceae	Luleshtrydhe	Divlja Jagoda	Wild strawberries	Dragash					
Fraxinus ornus	Oleaceae	Frashëri	Crni jasen	Ash	Dragash					
Fumana procumbens	Cistaceae	Fumana e përkulur		Fumana	Dragash					
Galium constrictum	Rubiaceae	Ngjitësja e ngushtë		Bedstraw	Dragash					
Galium odoratum	Rubiaceae	Ngjitësja erëmirë		Sweet woodruff	Dragash					
Galium palustre	Rubiaceae	Ngjitësja e kënetës		Marshbedstraw	Dragash					
Galium verum	Rubiaceae	Ngjitësja e vërtetë	Ivanjsko cveće	Yellow bedstraw	Dragash					
Genista sagittalis	Fabaceae	Gjineshtra shigjetake		Winged broom	Dragash		No information			
Genista spec.	Fabaceae	Gjineshtra		Broom	Dragash		No information			
Gentiana asclepiadea	Gentianaceae	Gentiana e Asklepit	Asklepov lincura	Willow Gentian	Dragash		No information			
Gentiana ciliata	Gentianaceae	Gentiana qerpikore		Fringed gentian	Dragash		No information			
Gentiana cruciata	Gentianaceae	Gentiana e kryqëzuar		Cross gentian	Dragash		No information			
Gentiana dinarica	Gentianaceae	Gentiana dinarike	Dinarska sirištara	Dinaric Gentian	Dragash		Suggested Kosovo's Red Plant List			
Gentiana lutea	Gentianacea	Sanëza e verdhë	Srčanik	Yellow Gentian	Dragash, Koritnik		Suggested Kosovo's Red Plant List	Annex V		
Gentiana punctata	Gentianacea	Gentiana pika pika		Spotted Gentian	Dragash		Suggested Kosovo's Red Plant List			
Gentiana utriculosa	Gentianaceae	Gentiana si kacekth			Sharr Mountains					
Gentiana verna	Gentianaceae	Gentiani pranveror		Spring Gentian	Dragash					
Gentianella bulgarica	Gentianaceae	Gencianëza bullgare		Dwarf bulgarian gentian	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Gentianella bulgarica var. albanica	Gentianaceae	Gentianca bullgarike		Dwarf bulgarian gentian	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Geranium macrorrhizum	Geraniaceae	Kamaroshja rrënjëmadhe		Bigroot cranesbill	Sharr Mountains					
Geranium reflexum	Geraniaceae	Kamaroshja e përthyer		Cranesbill	Sharr Mounains		Suggested Kosovo's Red Plant List			
Geranium robertianum	Geraniaceae	Kamaroshja e Robertit		Herb Robert	Dragash					
Geranium subcaulescens	Geraniaceae			Dwarf Cranesbill	Sharr Mountain (Guri i Zi, Vraca)	Balkan endemic	Suggested Kosovo's Red Plant List			
Geum bulgaricum	Rosaceae	Mëlaka bullgare		Bulgarian Avens	Sharr Mountains	Balkan endemic	Suggested Kosovo's Red Plant List		Annex I strictly protected	LC-Least concern
Geum coccineum	Rosaceae	Mëlaka e kuqe		Scarlet Avens	Dragash					

Geum montanum	Rosaceae	Mëlaka malore		Alpine Avens	Dragash					
Geum montanum	Rosaceae	Mëlaka malore		Alpine Avens	Dragash		No information			
Geum reptans	Rosaceae	Mëlaka e qytetit	Zećja stopa	Creeping Avens	Dragash					
Geum rivale	Rosaceae	Gladiola kënetore	Močvarna gladiola	Water Avens	Dragash	Ballkan endemik				
Geum urbanum	Rosaceae	Turëza gjethezemër		Wood Avens	Dragash		No information			
Gladiolus palustris	Iridaceae			Marsh gladiolus	Dragash			Annex II		DD-Data Deficient
Globularia cordifolia	Globulariaceae	Heliantemi alpin		Leather Leaf Powder Puff	Dragash		No information			
Gymnocarpium cf	Polypodiaceae	Heliantemi thinjak			Dragash		No information			
Helianthemum alpestre	Asteraceae	Heliantemi thinjak		Alpine Rock rose	Dragash					
Helianthemum canum	Asteraceae	Shpendra		Hoary rock-rose	Dragash					
Helianthemum canum	Asteraceae			Hoary rock-rose	Dragash					
Helleborus cf odorus	Ranunculaceae	Këmashna kokëlakuriqe		Hellebore sweet	Malet e Sharrit					
Heracleum sphondylium agg.	Apiaceae	Këmashna ma pak lesh		Common Hogweed	Dragash					
Hieracium gymnocephalum	Asteraceae	Këmashna e Sharrit			Dragash		Suggested Kosovo's Red Plant List			
Hieracium pilosella	Asteraceae	Këmashna		Mouse-ear Hawkweed	Dragash					
Hieracium scardicolum	Asteraceae	Këmashna leshtore		Sarr hawkweed	Dragash					
Hieracium sp	Asteraceae	Këmashnae Valdshtajnit		Hawkweed	Sharr Mountain (Guri i Zi, Vraca)	Kosovë endemik				
Hieracium villosum	Asteraceae	Këmashna e Vetshtajnit		Shaggy hawkeed	Dragash					
Hieracium waldsteinii	Asteraceae	Belisha leshatake		Waldstein hawkweed	Dragash		Suggested Kosovo's Red Plant Listt			
Hieracium wettsteini	Asteraceae	Homogjini alpin			Koritnik					
Holcus lanatus	Poaceae			Velvet Grass	Dragash		No information			
Homogyne alpina	Asteraceae			Alpine colts-foot	Dragash					
Hypericum alpinum	Hypericaceae	Koko		Alpine St John's wort	Malet e Sharrit					
Hypericum maculatum	Hypericaceae	Lule balsami	Kantaria	Imperforate St John's-wort	Dragash		No information			
Hypericum perforatum	Hypericaceae	Lulja e balsamit e Rikerit		St John's wort	Dragash					
Hypericum perforatum	Hypericaceae	Jasioni rethor		St.Johns wort	Dragash					
Hypericum richeri	Hypericaceae	Jasioni			Malet e Sharrit					
Jasione orbiculata	Campanulaceae				Dragash					
Jasione spec.	Campanulaceae	Kulmaku i nyjtuar		Sheep's-bit	Dragash			Annex II	Annex I strictly protected	
Jovibarba heuffelii	Crassulaceae	Kulmaku i përhapur		Hen and chicks	Dragash					
Juncus articulatus	Juncaceae	Kulmaku infleks		Jointleaf Rush	Dragash		No information			

Juncus effusus	Juncaceae	Kulmaku i çarë tresh		Soft Rush	Dragash		No information			LC-Least concern
Juncus inflexus	Juncaceae	Kulmaku	Sit	Hard rush	Dragash		No information			LC-Least concern
Juncus trifidus	Juncaceae	Dëllinja e zezë	Smreka, Kleka	Highland rush	Dragash		No information			
Juncus triglumis	Juncaceae	Dëllinja e rrëgjuar	Kleka	Yosemite dwarf rush	Dragash		Suggested Kosovo's Red Plant List			
Juniperus communis	Cupressaceae	Dëllinja e kuqe		Juniper	Sharr Mountains					LC-Least concern
Juniperus nana	Cupressaceae			Small juniper	Dragash					
Juniperus oxycedrus	Cupressaceae	Hithëbutëza Galeobdolon		Pryckly Juniper	Dragash					LC-Least concern
Kobresia myosuroides (Vill.) Fiori	Cyperaceae	Lazerpici			Dragash					
Lamium galeobdolon	Lamiaceae	Vingjra e livadhit		Yellow archangel	Dragash					
Laserpitium zernyi	Apiaceae	Lembotropi ziosh		Bastard Lovage	Dragash					
Lathyrus pratensis	Fabaceae	Lemna vogëlushe		Meadow vetchling	Dragash (Brod)		No information			
Lembotropis nigricans	Fabaceae	Lulebardha e rëndomtë			Dragash					
Lemna minor	Lemnaceae	Zambaku shqiptar		Common Duckweed	Dragash		No information			LC-Least concern
Leucanthemum vulgare	Asteraceae	Zambaku i Kalkedonisë		Oxeye daisy	Dragash					
Lilium albanicum	Liliaceae	Zambaku martagon	šumski ljiljan	Albanian lily	Dragash		Suggested Kosovo's Red Plant List			
Lilium cf chalcedonicum	Liliaceae	Linaria alpina		Chalcedonian Lily	Koritnik, Restelicë	Balkan endemic				
Lilium martagon	Liliaceae	Linaria peloponeze		Turk's cap lily	Koritnik	Balkan endemic				
Linaria alpina	Plantaginacea	Liri kaptinor		Alpine toadflax	Restelicë		Suggested Kosovo's Red Plant List			
Linaria peloponesiaca	Scrophylariaceae	Liri dlirues		Peloponesiac Toadflax	Sharr Mountains		Threatened			
Linum capitatum	Linaceae	Lulja e majit drufortë			Dragash, Koritnik	Balkan endemic				
Linum catharticum	Linaceae	Thuapula	Zvezdan	Fairy Flax	Dragash					
Lonicera xylosteum	Caprifoliaceae	Luzula		Fly honeysuckle	Dragash widespread		No information			
Lotus corniculatus	Fabaceae	Luzula e Forsterit		Bird's-foot Trefoil	Dragash		No information			
Luzula cf albida	Juncaceae	Molla e egër	Divlja jabuka	Wood rush	Dragash		No information			
Luzula forsteri	Juncaceae	Mëllaga e egër	Divlji sljez	Sourthern woodrush	Dragash		No information			
Malus sylvestris	Rosaceae			Wild apple	Dragash					
Malva sylvestris	Rosaceae	Kamomili	Kamomil	Mallow	Dragash		Suggested Kosovo's Red Plant List			
Matricaria caucasica	Asteraceae	Kamomili lëkundës			Dragash		Suggested Kosovo's Red Plant List			
Matricaria chammomilla	Asteraceae	Jonxha kosore		German chamomile	Dragash					
Matricaria recutita	Asteraceae	Jonxha e shtrirë		German chamomile	Sharr Mountains					
Medicago falcata	Fabaceae	Jonxha	Lucerka	Yellow-flowered alfalfa.	Dragash		No information			
Medicago prostrate	Fabaceae	Grurëziu i livadheve			Dragash					

Medicago sativa	Fabaceae	Bjelisha a arës		Alfalfa	Dragash					
Melampyrum pratense	Scrophylariaceae	Bjelisha qerpikore		Common Cow-wheat	Malet e Sharrit		No information			
Melica cf nutans	Poaceae	Bjelisha njëlulëshe		Mountain melic	Dragash		No information			
Melica ciliata	Poaceae	Meliloti mjekësor	Ždraljika	Hairy melic	Dragash		No information			
Melica uniflora	Poaceae	Mendra gjethegjatë			Dragash		No information			
Melilotus officinalis	Fabaceae	Nëngjiku	Metvica	Yellow melilot	Dragash					
Mentha longifolia	Lamiaceae	Vratiku		Horse mint	Dragash		No information			
Mentha piperita	Lamiaceae	Bishtmiu shqiptar		Peppermint	Dragash					
Meum athamanticum	Apiaceae	Minuarcia e Baldaçit		Spignel	Dragash					
Micromeria albanica	Lamiaceae	Minuarcia pranverore			Dragash		Suggested Kosovo's Red Plant List			
Minuartia baldaccii	Caryophyllaceae	Miceli i murit			Gorge of Prizren river	Kosovë endemic	Suggested Kosovo's Red Plant List			
Minuartia verna	Caryophyllaceae	Lulemiza alpine	Alpska potoćnica	Spring sandwort	Dragash, Koritnik	Balkan endemic				
Mycelis muralis	Asteraceae	Lulemiza	Potoćnica	Wall letuce	Dragash					
Myosotis alpestris	Boraginaceae	Lulemiza pyjore	Šumska potoćnica	Alpine Forget-me-not	Dragash		Suggested Kosovo's Red Plant List			
Myosotis cf palustris	Boraginaceae	Xhufka	Trava tvrdače	Common Forget-me-not	Dragash					
Myosotis sylvatica	Boraginaceae	Narteci i Sharrit	Šarplaninski kostolom	Forest foreget-me-not	Dragash					
Nardus stricta	Poaceae	Nigritela e zezë	Crni vranjak	Matgrass	Dragash		No information			
Narthecium scardicum	Liliaceae	Esparseta e Sharrit			Dragash		Suggested Kosovo's Red Plant List			
Nigritella nigra	Orchidaceae	Kalmuthi gjembor	Zecji trn	Black Vanilla Orchid	Vraca, Gjinibeg	Balkan endemic				
Onobrychis scardica	Fabaceae	Salepi vjollcë	Muški Kaćun		Dragash		Suggested Kosovo's Red Plant List			
Ononis spinosa	Fabaceae	Salepi luleçlirët	Kaćunak veliki	Spiny restharrow	Dragash	Balkan endemic				
Orchis cf mascula	Orchidaceae	Salepi	Kaćun	Early purple orchid	Dragash					
Orchis laxiflora	Orchidaceae	Salepi morio	Mali Kaćun	Loose-Flowered Orchid	Dragash					
Orchis militaris	Orchidaceae	Salepi ngjyre vjollcë	Kaćunak purpurni	Military orchid	Dragash					
Orchis morio	Orchidaceae	Rigoni	Vranilova trava	Green-winged Orchid	Dragash					
Orchis purpurea	Orchidaceae	Mëllëza	Crni grab	Purple orchid	Dragash					
Origanum vulgare	Lamiaceae	Oksitropi i Halerit		Oregano	Dragash					
Ostrya carpinifolia	Corylaceae	Parnasia		Hop Hornbeam	Malet e Sharrit					
Oxytropis halleri	Fabaceae	Pedikularia dhëmbëshkurtër	Kratkozubi bičasti ušljivac	Yellow oxytropis	Dragash		Suggested Kosovo's Red Plant List			
Parnassia palustris	Saxifragaceae	Pedikularia qerthullake	Ušljivac	Marsh Grass-of-Parnassus	Dragash					
Pedicularis brachyodonta	Orobanchaceae	Llapoi i bardhë		Fern-leaf	Dragash		Suggested Kosovo's Red Plant List			

Pedicularis verticillata	Orobanchaceae	Llapoi hibrid		Whorled lousewort	Dragash					
Petasites albus	Asteraceae	Fleumi	Planinski lisićji rep	White Butterbur	Dragash					
Petasites hybridus	Asteraceae	Pimpinela alpine		Common Butterbur	Dragash					
Phleum alpestre	Poaceae	Pimpinela iriqëz		Alpine Catstail	Malet e Sharrit		No information			
Pimpinella alpina	Apiaceae	Pinguikula ballkanase		Alpine burnet	Dragash					
Pimpinella saxifraga	Apiaceae	Rrobulli	Munika	Burnet Saxifrage	Dragash					
Pinguicula balcanica	Lentibulariaceae	Dredhaku	Bor krivulj	Butterworts	Dragash		Suggested Kosovo's Red Plant List			
Pinus heldreichii	Pinaceae	Pisha e zeze	Crni bor	Bosnian Pine	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Pinus mugo	Pinaceae	Arneni	Molika	Mountain pine	Dragash Koritnik	Balkan endemic	E rrallë			
Pinus nigra	Pinaceae	Pirola dytësore		European Black Pine	Dragash					
Pinus peuce	Pinaceae	Gjethe i nxirrë		Macedonian Pine	Dragash		Suggested Kosovo's Red Plant List			NT-Near threatened
Pirola secunda	Ericaceae	Gjethe ranor		One-sided Pyrola	Sharr Mountains	Balkan endemic	S'ka informata			
Plantago atrata	Plantaginaceae	Gjethe heshtore	Bokvica muška		Dragash					
Plantago holosteum	Plantaginaceae	Gjethe e ndërmjemë		Plantain	Dragash		E rrallë			
Plantago lanceolata	Plantaginaceae	Flokësa alpine			Dragash (Zlipotok)					
Ribwort plantain	Plantaginaceae	Flokësa e rëndomtë	Alpska vlasnjaća		Sharr Mountains		No information			
Plantago media	Poaceae	Flokësa purpere	Vlasnjaća	Hoary plantain	Dragash		No information			
Poa alpina	Poaceae	Nejca alpine	Ružićasta vlasnjaća	Alpine Meadow-grass	Dragash		No information			
Poa trivialis	Poaceae	Nejca dylëfytshe		Rough blue-grass	Dragash					
Poa violaceae	Polygonacea			Purple meadow-grass	Dragash		Suggested Kosovo's Red Plant List			
Polygonum alpinum	Polygonacea	Fieri i murit i rëndomtë		Alpine knotweed	Dragash					
Polygonum bistorta	Polygonaceae	Polistiku heshtak		Common Bistort	Dragash					
Polygonum viviparum	Polypodiaceae	Plepi		Alpine bistort	Dragash		No information			
Polypodium vulgare	Aspidiaceae	Zorrëca e bardhë		Common polypody	Dragash		Rare			
Polystichum lonchitis	Salicaceae	Zorrëca e Apenineve		Northern holly fern	Dragash					
Populus tremula	Rosaceae			Common Aspen	Dragash					
Potentilla alba	Rosaceae	Zorrëca e argjentë		White Cinquefoil	Dragash					
Potentilla apenina	Rosaceae	Zorrëca e praruar		Apenine cinquefoils	Dragash		No information			
Potentilla arenaria	Rosaceae	Zorrëca Kalabreze			Dragash					
Potentilla argentea	Rosaceae			Hoary Cinquefoil	Dragash		Suggested Kosovo's Red Plant List			
Potentilla aurea	Rosaceae	Zorrëca e Krantzit			Dragash		Suggested Kosovo's Red Plant List			
Potentilla calabra	Rosaceae	Zorrëca e Dorflerit		Calabrise cinquefoil	Sharr Mountains	Balkan endemic				
Potentilla caulescens	Rosaceae	Zorrëca e ngritur			Dragash					

Potentilla crantzii	Rosaceae	Zorrëca malazeze		Alpine Cinquefoil	Dragash		Suggested Kosovo's Red Plant List			
Potentilla doerfleri	Rosaceae	Zorrëca e drejt		Doerfler Cinqueifols	Malet e Sharrit	Kosovo endemic				
Potentilla erecta	Rosaceae	Zorrëca e bukur		Common Tormentil	Dragash		Suggested Kosovo's Red Plant List			
Potentilla montenegrina	Rosaceae			Montenegro Cinquefoils	Dragash	Balkan endemic	No information			
Potentilla recta	Rosaceae	Prebnanti purpur		Rough-fruited Cinquefoil	Dragash		Suggested Kosovo's Red Plant List			
Potentilla speciosa	Rosaceae	Aguliçe Elatior			Dragash	Balkan endemic				
Potentilla ternata	Asteraceae	Aguliçe e Hallerit		Cinqueifoil	Dragash					
Prenanthes purpurea	Primulaceae	Aguliçe e vogël	Hallerov jaglac	Granite pink	Dragash					
Primula elatior	Primulaceae	Aguliçe	Mali jaglac		Dragash		Suggested Kosovo's Red Plant List			
Primula halleri	Primulaceae	Aguliçe e vërtetë		Haller's Primrose	Malet e Sharrit (Shutman, Vraca)					
Primula minima	Primulaceae	Prunella e rëndomtë	Jaglac	Little primrose	Malet e Sharrit	Tertiary relic				
Primula officinalis	Primulaceae	Kulumbria		Cowslip	Malet e Sharrit		No information			
Primula veris	Lamiaceae	Fier shqiponja	Crni trn	Cowslip	Dragash		No information			
Prunella vulgaris	Rosaceae	Ptilotriku		Heart-of-the-earth	Dragash					
Prunus spinosa	Dennstaedtiaceae	Plenëra dizanterike		Blackthorn	Dragash					
Pteridium aquilinum	Brassicaceae			Common bracken	Malet e Sharrit		Suggested Kosovo's Red Plant List			
Ptilotrichum rupestre	Asteraceae	Dardhukëla			Dragash	Tertiary relic				
Pulicaria cf dysenterica	Ranunculaceae	Qarri		Common Fleabane	Dragash		No information			
Pulsatilla narcissiflora	Rosaceae	Shpardhi	Cer		Dragash					
Pyrus pyraster	Fagaceae	Dushku malor	Sladun	European Wild Pear	Dragash		No information			
Quercus cerris	Fagaceae	Dushku trojan i dukagjinit	Šumski Hrast	Turkey Oak	Dragash					
Quercus frainetto	Fagaceae	Ramonda e Mbretëreshës Natali	Dukađinski hrast	Italian oak	Dragash					
Quercus montana	Fagaceae	Ramonda e serbisë	Ramonda Kraljice Natalije	Montain oak	Dragash		Suggested Kosovo's Red Plant List			
Quercus trojana	Gesneriacea	Zhabina ura-ura	Srbska ramonda	Trojana oak	Koritnik	Tertiary relic	Rare			
Ramonda nathaliae	Gesneriacea	Zhabina e ulët		Ramonda of Queen Nataly	Malet e Sharrit	Balkan endemic	Rare			
Ramonda serbica	Ranunculaceae	Zhabinorja e pakrahasueshme		Serbian phoenix flower	Malet e Sharrit	Balkan endemic	Suggested Kosovo's Red Plant List	Annex IV	Annex I strictly protected	
Ranunculus crenatus	Ranunculaceae	Zhabinorja malazeze		Crenate Buttercup	Dragash		E rrallë			
Ranunculus demissus var. Graecus Boiss	Ranunculaceae	Zhabina maledashëse			Malet e Sharrit (Vraca e vogel)		Suggested Kosovo's Red Plant List			
Ranunculus incomparabilis	Ranunculacaeae				Malet e Sharrit	Balkan endemic				
Ranunculus montenegrinus	Ranunculacaeae	Zhabina tora		Montenegro's buttercup	Malet e Sharrit (Rudoke)	South East Europe	No information			

Ranunculus oreophillus	Ranuncula-caeae	Pjerrëza			Dragash		No informa-tion			
Ranunculus psilostachys	Ranuncu-laceae	Pjerrëza zogëlore		Boterbloem	Dragash		No informa-tion			
Ranunculus thora	Rhamnaceae	Pjerrëza rre-thore	Frangula	Thora but-tercup	Dragash		Suggested Kosovo's Red Plant List			
Rhamnus fallax	Rhamnaceae	Rododendroni i ndryshkur		Buckthorn	Dragash (Brod Gorge)					
Rhamnus frangula	Rhamnaceae	Sallgëmi	Rđasti rodo-dendron	Alder Buck-thorn	Dragash					
Rhamnus orbiculatus	Ericaceae	Trëndafili fush-arak	Bagrem	Buckthorn	Koritnik	Balkan en-demic	Endangered			
Rhododen-dron ferrug-ineum	Fabaceae	Trëndafili i arës	Ruža	Rusty-leaved alpenrose	Sharr Mountains	Balkan en-demic	Suggested Kosovo's Red Plant List			
Robinia pseudoaca-cia	Rosaceae	Trëndafili i egër	Ruža	Black Locust	Sharr Mountains					
Rosa agres-tis	Rosaceae	Trëndafili i malit	Šipurak	Small-leaved Sweet-briar	Dragash		Rare			
Rosa arven-sis	Rosaceae	Trëndafili leshe-tak	Šumska Ruža	Field rose	Dragash		Rare			
Rosa canina agg.	Rosaceae	Trëndafili	Jabukova Ruža	Dog rose	Dragash					
Rosa cf mon-tana	Rosaceae	Trëndafili i rimtë	Ruža	Mountain rose	Dragash		Rare			
Rosa cf vil-losa	Rosaceae	Trëndafili lulevogël	Ruža	Apple rose	Dragash					
Rosa dumen-torum	Rosaceae	Trëndafili but-losh	Ruža	Corymb rose	Dragash					
Rosa glauca	Rosaceae	Trëndafili varës	Ruža	Redleaf rose	Dragash					
Rosa micran-tha	Rosaceae	Trëndafili	Alpska Ruža	Smallleaf rose	Dragash					
Rosa mollis	Rosaceae	Trëndafili	Ruža	Soft Downy-rose	Dragash					
Rosa pen-dulina	Rosaceae	Trëndafili vosa-giak	Ruža	Alpine rose	Dragash		Rare			
Rosa sub-canina	Rosaceae	Mjedra e kaltër	Ruža		Dragash					
Rosa subcol-lina	Rosaceae				Dragash		Rare			
Rosa vosagi-aca	Rosaceae			Vogesen-Rose	Dragash					
Rubus cae-sius	Rosaceae	Mjedra	Obićna kapina	European dewberry	Dragash					
Dragaš	Rosaceae	Mjedra e shkëmbit	Malina		Dragash					
Rubus coryli-folii	Rosaceae	Lëpjeta	Kupina ka-menjarka		Dragash					
Rubus fructi-cosus	Rosaceae	Lëpjeta alpine	Mala kiselica	Blackberry	Dragash					
Rubus idaeus	Polygonace-ae	Lëpjeta thar-tushë	Planinsko zelje	Wild Rasp-berry	Dragash					
Rubus saxa-tilis	Polygonacea	Shelgu i bardhë	Kiselica	Stone Bram-ble	Dragash		No informa-tion			
Rumex ace-tosella	Polygonace-ae	Shelgu i egër	Bela Vrba	Sheep's sor-rel	Dragash		No informa-tion			
Rumex alpi-nus	Salicaceae	Shelgu zvar-ranik		Alpine Dock	Dragash					
Rumex scutatus	Betulaceae			Buckler sorrel	Dragash					
Salix alba	Salicaceae	Shelgu		White willow	Dragash		Rare			
Salix caprea	Salicaceae	Shelgu i thyeshëm		Goat Willow	Dragash					
Salix cf re-pens	Salicaceae	Shelgu i rrjetë-zuar		Creeping wil-low	Dragash					
Salix cinerea	Salicaceae	Shelgu		Gray willow	Dragash					

Salix eleagnos	Salicaceae	Sherbela		Rosemary willow	Dragash		Suggested Kosovo's Red Plant List			
Salix fragilis	Salicaceae	Qingla	Kadulja	Crack Willow	Dragash	Relik glacial				
Salix reticulata	Lamiaceae	Shtogu i zi	Zova	Netted willow	Dragash					
Salix spec.	Caprifoliaceae	Shtogu i kuq	Bazga	Willow Gentian	Sharr Mountains					
Salvia officinalis	Caprifoliaceae	Lulekomishti i vogël	Crvena zova	Common sage	Dragash					
Sambucus ebulus	Caprifoliaceae	Lulekomishti mjekësor	Mala krvara	Elderberry	Sharr Mountains	Ballkan endemik				
Sambucus nigra	Rosaceae	Trumza	Ljekovita krvara	Black Elder	Dragash					
Sambucus racemosa	Rosaceae	Shtërmeni		Red Elderberry	Dragash					
Sanguisorba minor	Lamiaceae	Sausarea alpine		Salad burnet	Dragash		No information			
Sanguisorba officinalis	Lamiaceae	Iriqëza si thonjëz		Great Burnet	Dragash		Suggested Kosovo's Red Plant List			
Satureja acinos	Lamiaceae	Iriqëza brioide		Savorie	Dragash		Suggested Kosovo's Red Plant List			
Satureja montana	Lamiaceae	Iriqëza e Grisebakut		Winter savory	Dragash (Vraca)	Relik glacial				
Saussurea alpina	Saxifragaceae	Iriqëza anëtore		Common Saw-wort	Dragash					
Saxifraga aizoides	Saxifragaceae	Iriqëza melthore		Yellow Saxifrage	Dragash	Relik glacial				
Saxifraga bryoides	Saxifragaceae	Iriqëza gjetherrumbullake		Briod saxifrage	Dragash	Ballkan endemik				
Saxifraga grisebachii	Saxifragaceae	Iriqëza e Sharrit		Grisebach saxifrage	Dragash					
Saxifraga marginata	Saxifragaceae	Iriqëza përherëblertë	Šarplaninska kamenika		Dragash					
Saxifraga paniculata	Saxifragaceae	Iriqëza		White Mountain saxifrage	Dragash		Threatened			
Saxifraga rotundifolia	Saxifragaceae	Iriqëza e Tajgetit	Kamenika		Dragash, Koritnik	Kosovë endemik	Suggested Kosovo's Red Plant List			
Saxifraga scardica	Saxifragaceae			Scardica saxifrage	Dragash	Ballkan endemik				
Saxifraga sempervivum	Saxifragaceae	Iriqëza tregishtëshe		Liveforever saxifrage	Dragash		Suggested Kosovo's Red Plant List			
Saxifraga spec	Saxifragaceae	Barzgjebi pëllumbor		Saxifrage	Dragash	Ballkan endemik				
Saxifraga taygetea	Saxifragaceae	Barzgjebes ura-ura		Tayget saxifrage	Dragash					
Saxifraga trichocalycina	Dipsacaceae	Bari i zgjebës			Dragash					
Saxifraga tridactylides	Dipsacaceae	Kryekuqi			Dragash					
Scabiosa columbaria	Dipsacaceae	Shqirra pyjore			Gorge of Prizren river	Ballkan endemik	No information			
Scabiosa crenata	Cyperaceae				Dragash					
Scabiosa leucophylla	Cyperaceae	Skrofularja e verës			Dragash					
Schoenoplectus lacustris	Caryophyllaceae	Sarushta boshnjake		Bulrush	Dragash					
Scirpus sylvaticus	Scrophulariaceae	Rrushqyqja e athët		Wood Clubrush	Dragash					
Scleranthus annuus	Scrophulariaceae	Rrushqyqja e epshme		German knotweed	Dragash, Koritnik	Ballkan endemik	Suggested Kosovo's Red Plant List			

Scrophularia aestivalis	Crassulaceae	Rrushqyqja		Autumn figwort	Dragash					
Scrophularia bosniaca	Crassulaceae	Selaginela si selginela		Bosnian figwort	Dragash		Rare			
Sedum acre	Crassulaceae	Burgulli maqedon			Sharr Mountains (Luboten)	Balkan endemic				
Sedum flexuosum	Selaginellaceae	Burgulli			Dragash					
Sedum spec	Crassulaceae	Pulithi i Bosnës		Stonecrops	Dragash	Glacial relic	Suggested Kosovo's Red Plant List			
Selaginella selaginoides	Crassulaceae	Pulithi karpatik		Club spikemoss	Dragash	Balkan endemic				
Sempervivum macedonicum	Asteraceae	Pulithi			Dragash					
Sempervivum spec.	Asteraceae	Pulithi		Houseleeks	Dragash					
Senecio bosniaca	Asteraceae	Pulithi			Dragash					
Senecio carpathicus	Asteraceae	Pulithi i Skopolit			Dragash		Suggested Kosovo's Red Plant List			
Senecio fuchsii	Asteraceae	Pulithi aubalpin			Dragash		No information			
Senecio glaberrima	Asteraceae	Pulithi i Wagnerit			Dragash					
Senecio rupestris	Asteraceae	Pirrëgjakësja pranverore			Dragash, Koritnik		Suggested Kosovo's Red Plant List			
Senecio scopolii	Asteraceae	Pirrëgjakësja			Dragash		Endangered			
Senecio subalpinus	Poaceae	Sideriti malor			Sharr Mountains	Balkan endemic				
Senecio wagneri	Poaceae	Sideri i i Sharrit			Dragash, Koritnik					
Sesleria autumnalis	Lamiaceae	Klokëza		Autumn moor grass	Dragash					
Sesleria nitida	Lamiaceae	Klokëza		Gray Moor Grass	Sharr Mountains					
Sideritis montana	Caryophyllaceae	Klokëza parnasiake		Shepherd's tea	Sharr Mountains	Balkan endemic	Suggested Kosovo's Red Plant List			
Sideritis scardica	Caryophyllaceae	Klokëza e vockël		Scardicum Mountain tea	Guri i zi	Tertiary relic	Suggested Kosovo's Red Plant List			
Silene lerchenfeldiana	Caryophyllaceae	Klokëza e vockël kandavike	Mala pušina		Brod		Suggested Kosovo's Red Plant List			
Silene multicaulis	Caryophyllaceae	Klokëza e Sendtnerit	Mala pušina candavica		Brod		Lista e kuqe e bimëve e Kosovës			
Silene parnassica subsp. parnassica	Caryophyllaceae	Klokëza e rëndomtë			Sharr Mountains (Brod, Dushkaj)		Suggested Kosovo's Red Plant List			
Silene pusilla	Caryophyllaceae	Klokëza e Valdshtajnit	Pušina		Dragash		Suggested Kosovo's Red Plant List			
Silene pusilla ssp candavica	Caryophyllaceae	Patatja/idhnakthi i zi	Valdstajn pušina		Guri i zi					
Silene sendtneri	Caryophyllaceae	Pratishi		Catchfly Sendtneri	Dragash					

Silene vulgaris	Solanaceae	Solidago shufërartë		Bladder Campion	Restelicë	Tertiary relic				
Silene waldsteinii	Primulaceae	Vodhviçe		Catchfly Waldsteine	Dragash					
Solanum nigrum agg.	Asteraceae	Vodha e egër	Mukinja	European Black Nightshade	Sharr Mountains	Tertiary relic				
Soldanella dimoniei	Rosaceae	Vodha greke	Jarebika		Dragash					
Solidago virgaurea	Rosaceae	Spergularia	Pusina	European goldenrod	Dragash					
Sorbus aria	Rosaceae	Sarusha si pungacë		Common Whitebeam	Dragash		Rare			
Sorbus aucuparia	Caryophyllaceae	Sarusha alpine		European mountain ash	Dragash		Rare			
Sorbus cf graeca	Lamiaceae	Sarusha e drejtë		Pannonian Mountain Ash	Dragash, Koritnik	Balkan endemic				
Spergularia vellesia subspecies graminea	Lamiaceae	Sarusha e Sharrit			Dragash		Lista e kuqe e bimëve e Kosovës			
Stachys alopecurus	Lamiaceae	Karajpeli			Dragash					
Stachys alpina	Lamiaceae	Luleshurdha		Limestone Woundwort	Dragash					
Stachys recta	Asteraceae	Tisi	Maslačak		Sharr Mountains					
Stachys scardica	Asteraceae	Telekia	Tisa	Sharr Woundwort	Dragash					
Tanacetum vulgare	Pinaceae	Arrësi dushkëvogël	Telekia	Common tansy	Sharr Mountains		Threatened			
Taraxacum officinale	Asteraceae	Arrësi malor	Vrednik	Dandelion	Dragash	Tertiary relic				
Taxus baccata	Lamiaceae	Taliktri alpin	Trava iva	European Yew	Dragash	Balkan endemic				
Telekia speciosa	Lamiaceae	Taliktri ujor		Telekia	Dragash		No information			
Teucrium chamaedrys	Ranunculaceae			Common germander	Dragash		Suggested Kosovo's Red Plant List			
Teucrium montanum	Ranunculaceae	Armira e Pirinejeve		Mountain Germander	Sharr Mountains (Dzinibeg , Rudoka)	Kosovo endemic				
Thalictrum alpinum	Ranunculaceae	Tlaspi gjethebukur		Alpine Meadow-rue	Dragash					
Thalictrum cf aquilegifolium	Santalaceae	Tlaspi gjethevogël	Čestika	Greater Meadow Rue	Dragash					
Thalictrum minus	Brassicaceae	Tuja perendimore	Mala Čestika	Meadow rue	Dragash		Suggested Kosovo's Red Plant List			
Thesium cf pyrenaicum	Brassicaceae	Listra shqiptare		Pyrenean Bastard-toadflax	Dragash, Koritnik	Balkan endemic	Suggested Kosovo's Red Plant List			
Thlaspi bellidifolium	Cupressaceae	Krasta ballkanase		Penny-cress	Dragash, Koritnik	Balkan endemic				LC-Least concern
Thlaspi microphyllum	Lamiaceae	Listra e Dorflerit		Little leave Penny-cress	Dragash		Suggested Kosovo's Red Plant List			
Thuja occidentalis	Lamiaceae	Listra e Rohlenes		Northern Whitecedar	Dragash, Koritnik	Balkan endemic	Suggested Kosovo's Red Plant List			
Thymus albanus	Lamiaceae	Krasta		Albanian thyme	Dragash		Suggested Kosovo's Red Plant List			
Thymus balcanus	Lamiaceae	Listra e zakonshme	Majćina dušica	Balkan thyme	Dragash, Koritnik	Kosovo endemic	Rare threatened			

Thymus doerfleri	Lamiaceae	Krasta e zakonshme		Dorfler thyme	Sharr Mountains	Kosovo endemic				
Thymus rochlenae	Lamiaceae	Biliri gjethëvogël	Čubra		Dragash					
Thymus serpyllum	Lamiaceae	Tocia alpine	Lipa	Wild Thyme	Dragash		No information			
Thymus sp	Malvaceae	Tocia karpatike		Thyme	Dragash					
Thymus vulgaris	Scrophulariaceae	Tërfili i malit		Mother of thyme	Dragash		Suggested Kosovo's Red Plant List			
Tilia cordata	Orobanchaceae	Tërfili i murrmë	Sumska detelina	Lime, Linden	Dragash		Suggested Kosovo's Red Plant List			
Tozzia alpina	Fabaceae	Tërfili i kaftë	Podbel	Alpine tozia	Gjinibeg		No information			
Tozzia alpina subsp. carpatica	Fabaceae	Tërfili i Velenovksit	Kafena detelina	Alpine tozzia	Dragash			Annex II		
Trifolium alpestre	Fabaceae	Tërfili i Vetshtajnit	Velenovski detelina	Mountain clover	Dragash		No information			
Trifolium badium	Fabaceae	Triglohini kënetor	Vetstajn detelina	Badium clover	Dragash		Suggested Kosovo's Red Plant List			
Trifolium spadiceum	Fabaceae	Thundër mushka	Močvarna brula	Brown clover	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Trifolium velenovskyi	Juncaginaceae	Hithra	Konjski lopuh	Velenovsky clover	Dragash	Balkan endemic	Suggested Kosovo's Red Plant List			
Trifolium wettsteinii	Asteraceae	Boronica	Kopriva	Wetstein clover	Dragash (Brod, Ludasa, L. Kuca)					
Triglochin palustris	Urticaceae	Boronica e zakonshme	Borovnica	Marsh Arrowgrass	Dragash					
Tussilago farfara	Ericaceae	Boronica e zezë	Borovnica	Coltsfoot	Dragash					
Urtica dioica	Ericaceae	Boronica e ligatinave	Crna borovnica	Common nettle	Dragash					
Vaccinium gaultherioides	Ericaceae	Rrush-Mjedër	Moćvarna borovnica	Northern Bilberry	Dragash					
Vaccinium myrtilloides	Ericaceae	Haraqina e Bertiskut	Brusnica	Common bilberry	Dragash					
Vaccinium myrtillus	Ericaceae	Haraqina mjekësore		Wild bilberry	Dragash					
Vaccinium uliginosum	Valerianaceae	Haraqina e Pancicit	Valerijan	Bog bilberry	Restelicë		Suggested Kosovo's Red Plant List			
Vaccinium vitis-idea	Valerianaceae	Shtara	Pančićev odoljen	Cowberry	Dragash, Koritnik	Kosovë endemik				
Valeriana bertisceae	Valerianaceae	Shtara e zezë	Bela Ćemerika	Bertisce Valerian	Dragash		Suggested Kosovo's Red Plant List			
Valeriana officinalis	Melanthiaceae	Bari i peshkut i Sharrit	Crna Ćemerika	Valerian	Dragash, Koritnik	Balkan endemic				
Valeriana pancicii	Melanthiaceae	Bari i peshkut		Pancici Valerian	Dragash					
Veratrum album	Scrophulariaceae	Bari i peshkut tapsus		White hellebore	Dragash		Threatened			
Veratrum nigrum	Scrophulariaceae	Veronika pagjethe	Lopuh	Black False Hellebore	Dragash	Kosovo endemic				
Verbascum scardicolum	Scrophulariaceae	Veronika bekabungë		Scardicum mullein	Dragash					
Verbascum sp.	Scrophylariaceae	Veronika bekabungë		Mullein	Dragash					
Verbascum thapsus	Scrophylariaceae	Veronika si shtërmen		Common mullein	Dragash	Glacial relic				
Veronica aphylla	Scrophylariaceae	Butina e butë			Dragash					
Veronica beccabunga	Scrophylariaceae		Udika	European speedwell	Dragash		Suggested Kosovo's Red Plant List			
Veronica officinalis	Caprifoliaceae	Manushaqja e Etolisë		Common Speedwell	Dragash, Koritnik	Balkan endemic	Rare			

Veronica saturejoides	Caprifoli-aceae	Vjollca kreshtake	Etolska ljubićica	Savory Leafed Speedwell	Dragash					
Viburnum lantana	Violaceae	Manushaqja e hajthme		Wayfaring Tree	Dragash		Suggested Kosovo's Red Plant List			
Viburnum opulus	Violaceae	Vjollca e Grise-bakut		Guelder Rose	Dragash					
Viola ae-tolica	Violaceae	Manushaqja e Orfanidhit	Grisebah ljubićica	Etolic violet	Dragash		Suggested Kosovo's Red Plant List			
Viola cf hirta	Violaceae	Manushaqja e argjendë		Hairy violet	Dragash, Koritnik	Kosovo endemic	Suggested Kosovo's Red Plant List			
Viola gracilis	Violaceae	Manushaqe trengjyrëshe	Šumska ljubićica	Gracious violet	Dragash	Balkan en-demic	Suggested Kosovo's Red Plant List			
Viola grise-bachina	Violaceae	Veshtulla	Divlja maćuhica	Grisebach violet	Dragash					
Viola orpha-nidis	Violaceae	Violaceae	Imela		Sharr Mountains					
Viola sylves-tris	Santalaceae	Santalaceae			Dragash	Balkan en-demic				
Viola tricolor	Violaceae	Manushaqe trengjyrëshe	Divlja maćuhica	Wild pansy	Dragash					
Viscum album	Santalaceae	Veshtulla	Imela	Common Mistletoe	Dragaš					

1.7.3. List of Plant Communities

Plant Community	Geobotanical distribution	Rareness	EU Habitat Directive
Wetland Vegetation			
Caricetum rostratae salicetosum			
Caricetum rostratae-vesicariae			
Caricetum nigrae		Rare	
Carici-Narthecietum scardici	Tertiary relic		
Vaccinion with V.gaultherioides			Annex I
Eutrophic Vegetation			
Senecio-Rumicetum alpini			
Shrubland			
Arctostaphylo-Juniperetum nanae			Annex I
Vaccinio-Empetretum hermaphroditi		Rare	
Coryletum avellanae	Euroasia		
Alpine lawns and rock vegetation			
Juncetum trifidi			
Drypetum spinosae	Balkan endemic	Rare	Annex I
Saxifrageto-Potentilletum apenninae	Tertiary relic		Annex I
Saxifrageto-Rumicetum nivalis			
Natural graslands			
Carici-Seslerietum latifoliae			
Deltoideo-Nardetum			
Nardetum strictae	Euroasia		Annex I
Diantho-scardici-Festucetum			
Amerio-Festucetum variae	Europe		
Extensive pastures			
Xerobromion			Annex I
Echinario-Convovuletum althaeoides	Mediterranean		
Edraiantho-Elynetum	Mediterranean		
Gentiano-Dryadetum octopetalae			Annex I
Gladiolo-Sanguisorbetum officinalae			

Helianthemo-Globularietum bellidifoliae			
Coniferous forest			
Abietum albae koritniensis	Europe	Rare	Annex I
Abietum borisii-regis	South East Europe	Rare	Annex I
Pinetum heldrechii typicum	Balkan endemic	Rare	
Mixed forest			
Fago-Pinetum heldrechii			
Riparian forest			
Alnetum glutinosae	Europe		Annex I
Birch forest			
Betuletum verrucosae koritniensis		Rare	
Oak forest			
Lembotropo-Quercetum cerris			
Quercetum trojanae dukagjini	South East Europe	Rare	Annex I
Beech forest			
Fagetum moesiaca montanum			
Ostryo-Fagetum			
Seslerio autumnalis-Fagetum			
Hornbeam forest			
Colurno-Ostryetum carpinifolia			
Dioscoreo-Carpinetum orientalis	Balkan endemic	Rare	

Table 1-24: List of Plant Communities

1.8. Map B9: Biodiversity Fauna

1.8.1. Mammals known in Dragash/Dragaš

Species	Albanian name	Serbian name	English name	Status in Kosovo
Lynx lynx	Rrëqebulli	Ris	Lynx	Rare threatened
Ursus arctos	Ariu i murmë	Medved	Brown bear	Protected by law
Capreolus capreolus	Kaprolli	Srna	Roe deer	Protected by Hunting law
Rupicapra rupicapra	Dhia e egër	Divokoza	Chamois	Protected by Hunting law

Table 1 -25: List of Mammals known in Dragash/Dragaš)

1.8.2. List of Vertebrates (except Birds) observed Dragash/Dragaš

Species	Alb Name	Serb Name	Engl. Name	Habitat Directive	IUCN Red List	Status in Kosovo																
Amphibia																						
Bombina variegata	Bretkoca barkverdhë	Žutotrbi mukac	Yellow-bellied toad	Annex IV	LC-Least concern	Retka	X	X			X					X						
Hyla arborea	Bretkoca e drunjve-gargaliqi	Gatalinka	Tree frog	Annex IV	LC-Least concern	0						X	X									X
Rana dalmatina	Bretkoca e pyllit	Šumska žaba	Agile frog	Annex IV	LC-Least concern	0						X	X									X
Rana graeca	Bretkoca greke	Grcka žaba	Greek frog	Annex IV	None	0						X	X									X
Salamandra salamandra	Salamandrizi e verdhë	Šareni dažd evnjak	Fire salamander	0	0	0						X	X									X
Mammalia																						
Lynx lynx	Rrëqebulli	Ris	Lynx	Annex II	MU-Malo ugrožene	Retka u pretnji		X														
Sciurius vulgaris	Ketri	Veverica	Red squirrel	0	MU-Malo ugrožene	0										X						
Ursus arctos	Ariu i murmë	Medved	Brown bear	Annex II	MU-Malo ugrožene	Zako nom zašti čena										X	X	X	X	X		
Reptilia																						
Anguis fragilis	Kokëzogëza	Slepić	Slow-worm	0	0	0									X							
Lacerta muralis	Hardhuca e mureve	Zidni gušter	Wall lizard	Annex IV	LC-Least concern	0				X		X	X									X

Lacerta viridis	Hardhuca e gjelbër	Zelembac	Green lizard	Annex IV	0	0						X	X										X
Natrix natrix	Gjarpri i barit, bollujca, bollujësa	Belouška	Water snake	Annex IV	Critically endangered	0						X			X								X
Testudo hermanni	Breshka e pyllit	Šumska kornjaca	Hemann's tortoise	Annex II, IV	NT-Near threatened	0						X		X									X
Vipera ammodytes	Neperka	Poskok	Viper snake	Annex II, IV	LC-Least concern	0						X		X									X
Vipera spec.	Nepërka	Zmija poskok	Vipera snake	0	0	0				X													

Table 1-26: List of Vertebrates (except Birds) observed in Dragash/Dragaš)

1.8.3. Birds known in Dragash/Dragaš

Species	Alb Name	Serb Name	Engl. Name	Bird	IUCN	Status na Kosovu	L1-Brezna	L2-Hajdučka česma	L3-Dikance	L3-Dikance	L4-Koritnik	L5-Brod	L6-Šutman	L7-Restelica	L8-Limth	L9-Plajnik	L10-Radeša	L11-Brodosavce	AM02	AM10	AM21	AM50	AM60
Accipiter brevipes	Gjeraqina kembshkurter	Kratkoprsti kobac	Levant Sparrowhawk	Annex I	0	0	X	X	X		X	X	X	X	X	X	X	X					
Accipiter gentiles	Gjeraqina	Jastreb	Goshawk	Annex I	0	0	X	X			X	X	X	X	X	X	X	X					
Accipiter nisus	Gjeraqina e shkurtes	Kobac	Sparrowhawk	0	0	0	X								X	X							
Acrocephalus arundinaceus	Qafkëlori i madh i moqalit	Veliki trstenjak	Great Reed Warbler	0	0	0	X	X								X		X					
Acrocephalus palustris	Qafkëlori i moqalit	Trstenjak mlakar	Marsh Warbler	0	0	0	X																
Acrocephalus scirpaceus	Qafkëlori i kallamit	Trstenjak crvrkutić	Reed Warbler	0	0	0		X				X						X					
Aegithalos caudatus	Trishtili bishtgjatë	Dugorepa Senica	Long -tailed tit	0	0	0	X											X					
Alauda arvensis	Lauresha	Poljska ševa	Skylark	0	0	0	X								X			X					
Alcedo atthis	Bilbili i ujit	Vodomar	Kingfisher	0	LC-Least concern	0	X																
Alectoris graeca	0	Kamenjarka	Rock patridge	Annex II	LC-Least concern	0																X	
Anas platyrhynchos	Rosë e egër	Gluvara	Mallard	Annex II, III	0	0	X																
Anthus campestris	Pipiti i kuqërremë	Stepska trepteljka	Tawny Pipit	Annex I	0	0	X					X											

Anthus pratensis	Pipiti i livadhit	Livadska trepteljka	Meadow Pipit	0	0	0	X						X									
Anthus spinoletta	Pipiti i ujit	Planinska trepteljka	Water Pipit	0	0	0	X					X										
Anthus trivialis	Pipiti i lisit	Šumska trepteljka	Tree Pipit	0	0	0	X							X								
Apus apus	Dejka	Crna čiopa	Swift	0	0	Rare										X						
Aquila chrysaetos	Shqiponja e artë	Suri Orao	Golden Eagle	Annex I	LC-Least concern	Rare					X	X	X		X	X						
Aquila heliaca	Shqiponja perandorake	Krstaš	Imperial Eagle	Annex I	VU-Vulnerable	Rare					X		X		X	X						
Ardea cinerea	Çapka e përhim	Siva čaplja	Grey Heron	0	0	0	X															
Asio flammeus	Huti vesh shkurtër	Ritska sova	Short-eared Owl	Annex I	0	0								X								
Asio otus	Huti vesh gjatë	Utina	Long-eared owl	0	0	0						X	X									
Athene noctua	Huti i vogël	Kukumavka	Little Owl	0	0	0						X	X									
Bonasa bonasia	Pula me çafkë	Leštarka	Hazel Grouse	Annex I, II	0	0		X														
Bubo bubo	Huti shqiponjë	Buljina	Eagle Owl	Annex I	LC-Least concern	0								X								
Buteo buteo	Huta	Mišar	Common Buzzard	0	LC-Least concern	0	X							X								
Buteo rufinus	Huta bisht bardh	Riđi mišar	Long-legged Buzzard	0	0	Rare	X							X								
Calandrella brachydactyla	Lauresha këmbshkurtër	Mala ševa	Short-toed Lark	0	0	0											X					
Caprimulgus europaeus	Cingërrimi i natës	Leganj	Nightjar	Annex I	0	Rare								X			X					
Carduelis cannabina	Kërpngrënësi	Konopljarka	Linnet	0	0	Rare	X						X	X				X				
Carduelis carduelis	Gardalina	Češljugar	Goldfinch	0	0	0	X	X	X		X	X	X	X	X	X	X	X				
Carduelis chloris	Verduni	Zelentarka	Greenfinch	0	0	0	X	X	X		X	X	X		X	X	X	X				
Carduelis spinus	Cerla dimërake	Čižak	Siskin	0	0	0							X	X		X						

Cercotrichas galactotes	Bishtkuqi i shkurrës	Dugorepa grmuša	Rufous Bush Robin	0	0	0	X							X								
Anthus spinoletta	Pipiti i ujit	Planinska trepteljka	Water Pipit	0	0	0	X					X										
Anthus trivialis	Pipiti i lisit	Šumska trepteljka	Tree Pipit	0	0	0	X							X								
Apus apus	Dejka	Crna čiopa	Swift	0	0	I rrallë											X					
Aquila chrysaetos	Shqiponja e artë	Suri Orao	Golden Eagle	Shtojca I	BV-Brengë e vogël	I rrallë					X	X	X		X	X						
Aquila heliaca	Shqiponja perandorake	Krstaš	Imperial Eagle	Shtojca I	VU-Vulnerable	I rrallë					X		X		X	X						
Ardea cinerea	Çapka e përhim	Siva čaplja	Grey Heron	0	0	0	X															
Asio flammeus	Huti vesh shkurtër	Ritska sova	Short-eared Owl	Shtojca I	0	0								X								
Asio otus	Huti vesh gjatë	Utina	Long-eared owl	0	0	0						X	X									
Athene noctua	Huti i vogël	Kukumavka	Little Owl	0	0	0						X	X									
Bonasa bonasia	Pula me çafkë	Leštarka	Hazel Grouse	Shtojca I, II	0	0		X														
Bubo bubo	Huti shqiponjë	Buljina	Eagle Owl	Shtojca I	BV-Brengë e vogël	0									X							
Buteo buteo	Huta	Mišar	Common Buzzard	0	BV-Brengë e vogël	0	X								X							
Buteo rufinus	Huta bisht bardh	Riđi mišar	Long-legged Buzzard	0	0	I rrallë	X								X							
Calandrella brachydactyla	Lauresha këmb-shkurtër	Mala ševa	Short-toed Lark	0	0	0												X				
Caprimulgus europaeus	Cingërrimi i natës	Leganj	Nightjar	Shtojca I	0	I rrallë									X			X				
Carduelis cannabina	Kërpngrënësi	Konopljarka	Linnet	0	0	I rrallë	X						X	X				X				
Carduelis carduelis	Gardalina	Češljugar	Goldfinch	0	0	0	X	X	X		X	X	X	X	X	X	X	X				
Carduelis chloris	Verduni	Zelentarka	Greenfinch	0	0	0	X	X	X		X	X	X		X	X	X	X				
Carduelis spinus	Cerla dimërake	Čižak	Siskin	0	0	0							X	X		X						

Cercotrichas galactotes	Bishtkuqi i shkurrës	Dugorepa grmuša	Rufous Bush Robin	0	0	0								X				X			
Certhia brachydactyla	Rrotullues gisht-shkurtër	Dugokljuni puzić	Short-toed Treecreeper	0	0	0							X	X	X						
Certhia familiaris	Piku rrotullues	Kratkokljuni puzić	Treecreeper	0	0	0							X	X	2						
Cinclus cinclus	Zhytësi	Vodenkos	Dipper	0	0	Rare			X			X						X	X		
Circus cyaneus	Shqipja e fushes	Poljska eja	Hen Harrier	Annex I	0	0	X									X		X			
Coccothraustes coccothraustes	Sqeptrashi	Batokljun	Hawfinch	0	0	Rare								X			X	X			
Columba livia	Kumria e shkëmbit	Divlji golub	Rock Dove	Annex II	0	0		X				X									
Columba oenas	Kumri e shtyllës	Golub dupljaš	Stock Dove	Annex II	0	0							X			X					
Columba palumbus	Pëllumbi i pyllit	Golub grivnaš	Wood Pigeon	Annex I, II, III	0	0	X								X						
Corvus corax	Korbi i zi	Gavran	Raven	0	0	0	X	X	X		X	X	X	X		X	X	X		X	
Corvus corone cornix	Korbi	Vrana	Crow	Annex II	0	0	X	X	X		X	X	X	X	X	X	X	X			
Corvus frugilegus	Korbi sqepbardhë	Gačac	Rook	Annex II	0	0												X			
Corvus monedula	Gala	Čavka	Jackdaw	Annex II	0	0	X	X	X		X		X	X	X	X	X	X			
Coturnix coturnix	Shkurtë	Prepelica	Quail	Annex II	0	Rare	X											X			
Crex crex	Mbreti i shkurtës	Prdavac	Corncrake	Annex I	LC-Least concern	Rare	X											X			
Cuculus canorus	Qyqja	Obična kukavica	Cuckoo	0	0	0	X		X		X	X	X	X	X	X		X			
Delichon urbica	Babili shtëpiak	Gradska lasta	House Martin	0	0	0	X	X	X		X	X	X	X	X	X	X	X			
Dendrocopos leucotos	Qukapiku shpinë bardhë	Planinski detlić	White Backed Woodpecker	Annex I	0	0	X					X					X				
Dendrocopos major	Qukapiku pika pika	Veliki detlić	Great Spotted-Woodpecker	Annex I	0	0	X					X					X				
Dendrocopos minor	Qukapiku pika laserik	Mali detlić	Lesser Spotted Woodpecker	0	0	0	X					X					X				
Dryocapus martious	Qukapiku i zi	Crna žuna	Black Woodpecker	Annex II	0	Rare	X					X					X				
Emberiza cia	Cerla e malit	Strnadica kamenjarka	Rock Bunting	0	0	Rare						X				X					
Emberiza cirlus	Cerla gush-ëgjelbër	Crnogrla strdanica	Cirl Bunting	0	0	0	3								X	X					
Emberiza citrinella	Cerla verdhashe	Strnadica žutovoljka	Yellowhammer	0	0	0	X								X			X			

Eremophila alpestris	Laureshae brigjeve	Planinska ušata ševa	Horned Lark	0	0	0			X					X						
Erithacus rubecula	Gushëkuqi	Crvendač	Robin	0	0	0			2		X	X	X	X	X	X	X	X			
Falco columbarius	Skifteri i vogël	Mali soko	Merlin	Annex I	LC-Least concern	0	X	X	X		X	X	X	X	X	X	X	X			
Falco naumanni	Skifteri kthetra verdh	Belonokta vetruška	Lesser Kestrel	Annex I	VU-Vulnerable	0					X			X	2						
Falco peregrinus	Fajkoi krahethat	Sivi soko	Peregrin Falcon	Annex I	LC-Least concern	0	X									X	X				
Falco tinnunculus	Skifteri kthetra zi	Vetruška	Common kestrel	0	LC-Least concern	0	X	X	X		X	X		X	X	X	X	X		X	
Ficedula albicollis	Mizakapësi qafëbardhë	Belovrata muharica	Collared flycatcher	Annex I	0	0									X		X	X			
Ficedula hypoleuca	Mizakapësi i zi	Crnovrata muharica	Pied flycatcher	0	0	0	X							X							
Ficedula parva	Mizakapësi gjinjkuqë	Mala muharica	Red breasted flycatcher	Annex I	0	0	X											X			
Ficedula semitorqua	Mizakapësi krahëvizuar	Muharica	Semi-collard flycatcher	Annex I	0	0									X		X	X			
Fringilla coelebs	Zboraksi	Zeba	Chafinch	0	0	0	X	X	X		X	X	X	X	X	X	X	X			
Fringilla montfringilla	Zboraksi i malit	Severna zeba	Brambling	0	0	0									X	X		X			
Galerida cristata	Lauresha me napkë	Ćubasta ševa	Crested Lark	0	0	0								X	X						
Galinula chloropus	Pulëza e ujit	Barska kokica	Moorhen	0	0	Rare	X														

Hirunda rustica	Dallëndyshja koqekut	Seoska lasta	Barn Swallow	0	0	0	X							X								
Hirundo daurica	Dallëndyshja shpinë kuqe	Daurska lasta	Red-rumped Swallow	0	0	0											X	X				
Jynx torquilla	Qukapiku sqepshkurtër	Vijoglava	Eurasian Wryneck	0	LC-Least concern	Rare	X							X		X						
Lanius collurio	Larashi kurrizkuq	Rusi svrać	Red backed Shrike	Annex I	0	0	X	X	X		X	X	X	X	X	X	X	X				
Lanius excubitor	Larashi i madh i përhimtë	Veliki svraćak	Great grey Shrike	0	0	0	X								X							
Lanius minor	Larashi i vogël ballzi	Sivi svraćak	Lesser Grey Shrike	Annex I	LC-Least concern	0	X							X				X				
Lanius senator	Larashi kokëkuq	Crvenoglavi svrać	Woodchat Shrike	0	0	Rare								X								
Loxia curvirostra	Sqepkryqi	Krstokljun	Common Crossbill	0	0	Rare					X											
Lullula arborea	Lauresha e pyllit	Šumska ševa	Woodlark	Annex I	0	0									X	X						
Luscinia luscinia	Bilbili mëllenjë	Veliki slavuj	Thrush nightingale	0	0	0	X								X			X				
Luscinia megarhynchos	Bilbili	Mali slavuj	Nightingale	0	0	0	X							X	X			X				
Luscinia svecica	Gushëkaltëri	Modrovoljka	Blue-throat	Annex I	LC-Least concern	0									X	X						
Melanocorypha calandra	Lauresha melankolike	Velika ševa	Calandra Lark	Annex I	0	0												X				
Merops apiaster	Bletë ngrënësi	Pčelarica	Bee-eater	0	0	0									X			X				
Miliaria calandra	Cerla e zakonshme	Velika strnadica	Corn Bunting	0	0	0	X								X	X		X				
Monticola saxatilis	Mëllenja e gurit	Kos kamenjar	Rock Thrush	0	0	0						X		X	X							
Montfringilla nivalis	Parosi i dëborës	Planinski vrabac	Snow-finch	0	LC-Least concern	Rare								X	X		X					
Monticola solitarius	Tusha blu	Modrokos	Blue Rock Thrush	0	0	0						X				X						
Motacilla alba	Bisht lëkundësi laraman	Bela pliska	White/ Pied Wagtail	0	LC-Least concern	0	X															
Motacilla cinerea	Bisht lëkundësi i përhimtë	Potočna pliska	Grey Wagtail	0	0	0	X															
Motacilla flava	Bisht lëkundësi verdhë	Žuta pliska	Yellow Wagtail	0	0	0	X															

Muscicapa striata	Mizakapësi i përhimtë	Siva muharica	Spotted flucatcher	0	0	0	X							X	X							
Nucifraga	Boçëthyesi	0	Nutcracker	0	0	Rare					X				X							
Nucifraga caryocatactes	Grifsha	Lešnjikara	Jay	0	0	0	X	X	X		X	X	X	X	X	X	X	X				
Nycticorax nycticorax	Çapka natës	Gak	Night Heron	Annex I	LC-Least concern	Rare	X															
Oenanthe hispanica	Murgëza vesh zi	Sredozemna beloguza	Blackeard Wheatear	0	0	0	X															
Oenanthe oenanthe	Murgëz	Obićna beloguza	Wheatear	0	LC-Least concern	0	X							X							X	
Orioulus orioulus	Bengu	Vuga	Golden Oriol	0	0	0						X		X				X				
Otus scops	Huti i fushës	Ćuk	Scops Owl	0	0	0	X															
Panurus biarmicus	Trishtili me mustaqe	Brkata senica	Bearded reedling tit	0	0	0	X	X														
Parus ater	Trishtili i zi	Jelova senica	Coal tit	Annex I	0	0	X			X	X	X	X	X	X	X	X	X				
Parus caeruleus	Trishtili i kaltër	Plava senica	Blue tit	0	0	0	X	X			X	X		X	X	X	X	X				
Parus cristatus	Trishtili me çafkë	Ćubasta senica	Crested tit	0	0	0	X											X				
Parus lugubris	Trishtili i madh i murmë	Senica šljivarka	Sombre tit	0	0	0	X										X					
Parus major	Trishtili i madh	Velika senica	Great tit	0	0	0	X	X	X		X	X	X	X	X	X	X	X				
Parus montanus	Trishtili i maleve (shelgut)	Planinska siva senica	Willow Tit	0	0	0									X	X						
Parus palustris	Trishtili i vogël i murmë	Močvarna senica	Marsh tit	0	0	0									2							
Passer domesticus	Harabeli i shtëpisë	Vrabac pokućar	Passer domesticus	0	0	0		X	X		X	X	X	X	X	X	X	X				
Passer montanus	Harabeli i maleve	Polski vrabac	Tree Sparrow	0	0	0		X	X		X	X	X	X	X	X	X	X				
Perdix perdix	Thëllëza e fushës	Jarebica	Grey Partridge	Annex II, III	LC-Least concern	Rare	X											X				

Phasianus colchicus	Fazan	Fazan	Pheasant	0	0	Rare	X										X				
Philoscopus collybita	Çikë	Obićni zviždak	Chiff-chaff	0	0	0		X							X		X				
Philoscopus sibilatrix	Qafkëlori i zabelit	Šumski zviždak	Wood Warbler	0	0	0	X								X		X				
Philoscopus trochilus	Qafkëlori i shelgut	Brezov zviždak	Willow Warbler	0	0	0			X			X									
Phoenicurus ochrorus	Gjokskuq i zi	Crna cr-venrepka	Black redstart	0	0	0								X			X				
Phoenicurus phoenicurus	Gjoks kuqi	Obićna cr-venrepka	Redstart	0	0	0									X						
Pica pica	Laraska bishtgjatë	Svraka	Magpie	Annex II	0	0	X	X	X		X	X	X	X	X	X	X	X				
Picus viridis	Qukapiku i gjelbër	Zelena žuna	Green Wood-pecker	0	LC-Least concern	0						X					X					
Prunella col-laris	Harabeli i Alpeve	Planinski popič	Alpine Accentor	0	0	0						X			X							
Prunella modularis	Harabeli-Dunok	Obični popić	Dunnock	0	0	0											X					
Pyrrhocorax graculus	Sterqoka e malit	Žutokljuna galica	Alpine Cough	0	0	0						X			X							
Pyrrhocorax pyrrhocorax	Sterqoka sqepkuqe	Crve-nokljuna galica	Chough	An-nex I	0	0						X										
Pyrrhula pyrrhula	Kuqalashi çafkëzi	Zimovka	Bullfinch	An-nex I	LC-Least concern	0		X							X							
Rallus aquaticus	Gjeli i ujit	Barski petlovan	Water Rail	Annex II	0	Rare	X															
Regulus ignicapillus	Kurorë zjarri	Vatroglavi kraljić	Firecrest	0	0	0	X	X				X					X					
Regulus regulus	Mbretëthi	Kraljić	Gold-crest	0	0	0	X	X									X					
Riparia riparia	Babili i rërës	Bregunica	Sand Martin	0	0	0	X										X					
Saxicola rubetra	Gjineshtra ulëruese	Obićna travarka	Whin-chat	0	0	0		X														
Saxicola torquata	Llafazani i gurit	Crnoglava travarka	Stone-chat	0	0	0										X	X					
Serinus serinus	Zog bari sqep-shkurtë	Žutarica	Serin	0	0	0								X	X			X				
Sitta euro-paea	Zvarritësi i zakon-shëm	Brgljez	Nuthach	0	0	Rare								X			X	X				
Sitta neu-mayer	Zvarritësi i shkrepave	Brgljez lonćar	Rock nuthatch	0	0	Rare						X			X	X						
Sreptopelia decaocto	Kumri me qafore	Gugutka	Collard Dove	Annex II	0	0	X									X	X	X				
Streptopelia turtur	Tur-tullesha	Grlica	Turtle Dove	Annex II	0	0	X								X			X				
Strix aluco	Huti i kuqrremtë	Šumska sova	Tawny Owl	0	0	0									X							
Sturnus vulgaris	Cerloi i zi pikalosh	Čvorak	Starling	0	0	0	X								X			X				

Sylvia atricapilla	Rradak ziu	Crnokapa grmuša	Black cap	0	0	0	X	X	X		X	X	X	X	X	X	X	X					
Sylvia borin	Qafkëlori i kopshtit	Siva grmuša	Garden Warbler	0	0	0						X					X	X					
Sylvia communis	Gushëbardhi	Obična grmuša	White-throat	0	0	0	X																
Sylvia curruca	Gushëbardhi i vogël	Grmuša čavrljanke	Lesser White-throat	0	0	0	X											X					
Sylvia nisoria	Qafkëlori i mbylltë	Pirgasta grmuša	Barred Warbler	Annex I	0	0									X	X							
Sylvia ortensis	Qafkëlori i orfeut	Velika grmuša	Orphean Warbler	0	0	0	X							X	X								
Tachybaptus ruficollis	Kredharaku i vogël	Mali gnjurac	Little Grebe	0	0	0	X																
Tetrao tetrix	Pule e egër	Ruševac	Black Grouse	Annex I, III	0	Rare					X					X							
Tichodroma muraria	Zvarritësi krahëkuq	Puzgavac	Wall-creeper	0	LC-Least concern	Rare					X	X		X		X							
Tringa totanus	Qurylyku sqepkuq	Crvenonogi sprudnik	Common Redshank	Annex II	0	Rare																	X
Troglodytes troglodytes	Trumcaku	Carić	Wren	Annex I	LC-Least concern	0							X	X	X								
Turdus merula	Mëllënja	Obićni kos	Black-bird	Annex II	0	0	X	X	X		X	X	X	X	X	X	X	X					
Turdus philomelos	Mëllenja këngëtare	Drozd pevać	Song Thrush	Annex II	0	0	X	X	X		X	X	X	X	X	X	X	X					
Turdus pilaris	Turtulla	Drozd borovnjak	Fieldfare	Annex II	0	0										X							
Turdus torquatus	Mëllënja qafore	Kos ogrlićar	Ring Ouzel	0	0	Rare					X			X	X								
Turdus viscivorus	0	Drozd imelaš	Mistle Thrush	Annex II	0	0		X	X		X	X	X	X	X	X	X	X					
Tyto alba	Huti koqekut	Kukuvija	Barn Owl	0	LC-Least concern	0												X					
Upupa epops	Papëza	Pupavac	Hoopoe	0	LC-Least concern	Rare	X											X					
Total No of Species per Sample	85	32	26	1	33	49	33	54	73	49	40	72	1	2	1	1	1						

Table 1-27: List of Birds observed in Dragash/Dragaš)

1.8.4. Butterflies known in Dragash/Dragaš

Species	Alb Name	Serb Name	Engl. Name	Habitat Directive	IIUCN Red List	Status in Kosovo	B1	B2	B3	B4	B5	B6	B7	B8
Apatura ilia	0	Mali prelivac	Lesser Purple Emperor	0	VU-Vulnerable	0				X				
Apatura iris	0	Modri prelivac	Purple Emperor	0	EN-Endangered	0				X				
Argynnis pandora	0	Pandorina sedefica	Cardinal	0	EN-Endangered	0				X				
Aricia anteros	0	Alpijski plavac	Blue Argus	0	EN-Endangered	0	X				X	X		
Brenthis ino	0	Inova sedefica	Lesser Marbled Fritillary	0	EN-Endangered	0					X			
Brintesia circe	0	Šumski vratar	Great Banded Grayling	0	0	0								X
Cupido minimus	0	Maleni plavac	Little Blue	0	VU-Vulnerable	0	X				X	X		
Erebia gorge	0	Zagasita erebija	Silky Ringlet	0	EN-Endangered	0					X	X		
Erebia ottomana	Flutura otomane	Turska erebija	Ottoman Brassy Ringlet	0	0	0				X	X			
Erebia rhodopensis	Flutura rodopense	Rodopska erebija	Nicholl's Ringlet	0	EN-Endangered	0					X			
Euchloe ausonia	0	Cipkasti belac	Eastern Dappled White	0	EN-Endangered	0			X					
Euphydryas aurinia	0	Mocvarna sedefnica	Marsh Fritillary	Annex II	VU-Vulnerable	0			X					
Herse convolvuli	0	0	Convolvulus Hawkmoth	0	0	0				X				
Iolana iolas	0	Pucavac	Iolas Blue	0	EN-Endangered	0			X					
Limenitis populi	0	Veliki topolnjak	Poplar Admiral	0	EN-Endangered	0					X	X		
Lycaena dispar	Flutura ngjyrëbakër	Veliki dukat	Large Copper	Annex II, IV	VU-Vulnerable	0			X					
Macroglossum stellatarum	0	0	Hummingbird Hawkmoth	0	0	0					X			
Macrothylacia rubi	0	0	Fox moth	0	0	0						X		
Maculinea alcon	0	Mali pegavac	Alcon Blue	0	VU-Vulnerable	0							X	
Maculinea arion	0	Veliki pegavac	Large Blue	Annex II, IV	VU-Vulnerable	0					X			
Nymphalis antiopa	0	Kraljev plašt	Camberwell Beaty	0	EN-Endangered	0			X	X				

Papilio machaon	Flutura bajrake	Lastin repak	Swal-lowtail	0	EN-Endan-gered	0			X		X			
	Apollo flutura	Apollo	Apolon	Annex IV	VU-Vul-nerable	0				X				
Parnassius apollo	0	0	0	0	0	0					X			
Parnassius mnemos-yne	0	0	Buff-tip	0	0	0				X	X			
Phalera bucephala	Flutura e lakrës	Veliki ku-pusar	Large White	0	VU-Vul-nerable	0				X				
Pieris brassicae	0	Blistavi plavac	Rever-din's Blue	0	VU-Vul-nerable	0	X		X					
Plebeius argyrogno-mon	0	Plan-inski plavac	False Eros Blue	Annex II, IV	0	Rare	X							
Polyommatus eroides	0	0	Baton blue	0	EN-Endan-gered	0			X					
Pseudophilotes baton	0	Za-gasiti plavac	Bavius Blue	Annex IV	EN-Endan-gered	0				X				
Pseudophilotes bavius	Hesperida alpine	Alpijska hes-perida	Alpine Griz-zled Skipper	0	EN-Endan-gered	0				X				
Pyrgus andromedae	0	Lipicina hes-perida	Yellow-banded Skipper	0	VU-Vul-nerable	0			X					
Pyrgus sidae	Flutura e sall-gamit	Mali repkar	Sloe Hair-streak	0	VU-Vul-nerable	0	X							
Satyrium acacie	0	Šumski repkar	White-letter Hair-streak	0	EN-Endan-gered	0				X				
Satyrium w-album	0	Veliki satir	Great Sooty Satyr	0	VU-Vul-nerable	0					X	X		
Satyrus ferula	0	Sre-brna hes-perida	Persian Skipper	0	0	Rare			X					
Spialia phlomidis	0	Brezov dukat	Brown Hair-streak	0	VU-Vul-nerable	0					X			
Thecla betulae	Flutura e bo-ronicës	Boro vnicar	Cran-berry Blue	0	0	Rare				X	X			
Vacciniina optilete	Flutura provok-uese	Admiral	Red Admiral	0	0	0					X			
Vanessa atalanta	Flutura me ilikë	Uskr šnji leptir	South-ern Fes-toon	Annex IV	VU-Vul-nerable	0		X						
Zerynthia polyxena	5	1	10	13	16	6	1	1						

Tabela 28: Lista e fluturave të vërejtura në Dragash

2. Data for Volume III: Assessment

2.1. Excerpts from "Forest Stewardship Standard for the Republic of Kosovo

Definition of High Conservation Value Forest (HCVF) in Kosovo and additional explanation of Principle 9:

Every forest has some environmental and social value. The values it contains may include rare species, recreational sites or resources harvested by local residents. Where these values are considered to be of outstanding significance or critical importance, the forest can be defined as a High Conservation Value Forest (HCVF).

Although the Forest Stewardship Council provides the generic definition of HCVs, it is not easy to in-terpret this global definition in different forest types, locations and in different social circumstances and therefore, each country defines their own types of forests having some exceptional values that need special protection.

The HCV concept was originally developed by the Forest Stewardship Council (FSC) to help define forest areas of outstanding and critical importance - High Conservation Value Forests (HCVF). HCVF guidelines appeared in 1999 in Principle 9 of the FSC's Principles and Criteria of Forest Stewardship, which form the basis for all FSC forest management standards and certification. Under Principle 9, forest managers are required to identify any High Conservation Values that occur within their individual forest management units, to manage them in order to maintain or enhance the values identified, and to monitor the success of this management.

The key to using the HCV approach is the identification of the High Conservation Values (HCVsj, which cover the range of conservation priorities shared by a wide range of stakeholder groups, and include social values as well as ecological values. It is these values that are important and need to be protected. A High Conservation Value area is simply the area where these values are found, or, more precisely, the area that needs to be appropriately managed in order to maintain or enhance the identified values. Identifying the areas where these values occur is therefore the essential first step in developing appropriate management for them.

Based on the definition originally developed by the Forest Stewardship Council for certification of forest ecosystems, there six main types of HCV areas:

• HCV1. Areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia);

• HCV2. Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance;

• HCV3. Areas that are in or contain rare, threatened or endangered ecosystems;

• HCV4. Areas that provide basic ecosystem services in critical situations (e.g. watershed pro-tection, erosion control);

• HCVS. Areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).

• HCV6. Areas critical to local communities' traditional cultural identity (areas of cultural, ecolog-ical, economic or religious significance identified in cooperation with such local communities);

The HCV process usually comprises three key steps:

• Identification of the HCVs based on an analysis of existing information and the collection of additional information where necessary to fill gaps.

• Management of the HCV area in order to maintain or enhance the identified values; Identifying an HCV area and its management regime involves:

• Establishment of an appropriate monitoring regime to ensure that the management prac-tices are effective in their aim of maintaining or enhancing the HCVs.

The assessment process should be knowledge-based, using all relevant scientific data and local knowledge. It must ensure that relevant stakeholders are consulted and their views or the information they provide is incorporated into the process and it should be open and transparent including peer reviews of findings and public reporting of outcomes.

The usual way of undertaking these tasks is to develop the set of national criteria in document called HCVF Toolkit. This document is used a basis for actual identification and other steps in HCVF process.

It is usually a lengthy process and, unfortunately, the project scope does not allow the time and exper-tise needed for all the steps necessary for this process. Therefore, SDG recommends that in further development HCV forests this initial definitions and methodology should be consulted. SDG for Kosovo will support any future initiative to assess HCVF and will promote this idea with different stakeholders.

FSC Principle 6: Environmental Impact

Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

C6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, in-tensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considera-tions as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

Indicator 6.1.1

The forest manager shall complete environmental impact assessment of its management activities appropriate to the scale of operations and with regards to landscape, fragility of eco¬systems.

Verifiers:

1. Assessment of environmental impacts

2. Forest management plan

SDG Notes:

SLIMF (small or low intensity managed forest): The forest manager shall complete overall environmental impact assessment of its management activities once in a five year period.

Indicator 6.1.2

The enterprise shall complete and document an assessment of the environmental impacts of any pro-cessing facilities within the FMU under assessment

Verifiers:

1. Assessment of environmental impacts of on-site facilities

2. Forest management plan

SDG Notes:

SLIMF: The forest manager shall complete overall environmental impact assessment of its management activities once in a five year period.

Indicator 6.1.3

The forest manager shall complete environmental impact assessment prior to commencement of site-disturbing operations.

Verifiers:

1. Discussion with the forest manager

2. Internal instructions

3. Written evidence (environmental impact assessment, tendering documentation)

SDG Notes:

SLIMF: Forest manager shall ensure that any forest operation is compared to the overall environmental impact assessment from 6.1.1.

Indicator 6.1.4

The results of the environmental impact assessment, also at a landscape level, shall be incorporated into management plans and tendering documentation before conducting the operations.

Verifiers:

1. Discussion with the forest manager

2. Internal instructions

3. Written evidence (environmental impact assessment, tendering documentation)

SDG Notes:

SLIMF: Forest manager shall ensure that any forest operation is compared to the overall environmental impact assessment from 6.1.1.

Treguesi 6.2.1

Menaxheri i pyjeve do të ketë lista dhe harta të përditësuara lidhur me praninë e specieve të rralla, të kërcënuara dhe të rrezikuara dhe habitateve të tyre në zonën e menaxhimit.

Mjetet e verifikimit:

1. Bisedimet me menaxherin e pyllit

2. Konsultimet me ekspertët e bilogjisë

3. Dëshmitë me shkrim (inventaret, hartat, studimet shkencore)

4. Vizitat në terren

SDG shënim:

PMIVU: Manaxheri i pyllit duhet të ketë njohuri të përgjithshme mbi speciet e rralla, të kërcënuara dhe të rrezikuara duke përdorur ekspertizën dhe informacionet më të mira në dispozicion.

C6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be con-trolled.

Indicator 6.2.1

The forest manager shall have up to date list and maps on the presence of rare, threatened and en-dangered species and their habitats in the area of the management.

Verifiers:

1. Discussion with the forest manager

2. Consultation with biology experts

3. Written evidence (inventories, maps, scientific studies)

4. Field visit

SDG Notes:

SLIMF: Forest manager should have overall knowledge on rare, threatened and endangered species using the best available expertise and information.

Indicator 6.2.2

The management plans and other relevant policies and procedures of the organisation shall clearly identify actions that are taken to maintain or enhance the presence of rare, threatened or endangered species within area of management

Verifiers:

1. Discussion with the forest manager

2. Forest management plan, game management plan

3. Field visit

4. Protection programmes

SDG Notes

SLIMF: No guard service necessary

Indicator 6.2.3

Areas of special regional importance for biodiversity are identified on maps, and protected from harvesting and other site disturbance.

Verifiers:

1. Maps

2. Consultation with local biologists

3. Field visit

Indicator 6.2.4

At least 10% of the forest area is designated as a conservation zone, identified on maps, and managed with biodiversity as a major objective. At least 5% of the area of the FMU under assessment shall be managed so as to retain it as or restore it to the condition of natural forest appropriate to the locale of the FMU. This area shall be included in the identified conservation zone

Verifiers:

1. Maps

2. Field visit

SDG Notes:

SLIMF: Not applicable

Indicator 6.2.5

The forest manager shall prevent and monitor unauthorised hunting or gathering of non-timber forest products in accordance with the legal regulations.

Verifiers:

1. Discussion with the forest manager

2. Written evidence (documented procedure, official books of

forest guards, contacts with police, other data on unauthorised activities)

C6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, includ-ing:

a) Forest regeneration and succession.

b) Genetic, species, and ecosystem diversity.

c) Natural cycles that affect the productivity of the forest ecosystem.

Indicator 6.3.1

The forest manager shall apply a forest management and silviculture system that is based on natural composition of tree species to encourage and take advantage of natural regeneration.

Verifiers:

1. Discussion with the forest manager

2. Forest management plan

3. Records on forest regeneration

4. Field visit

Indicator 6.3.2

Old, non-commercial trees; trees with special ecological value; standing dead trees; and dead fallen wood shall be systematically retained within the area of the FMU.

Verifiers:

1. Discussion with the forest manager

2. Written evidence (forest management plan, policies)

3. 3.Field visit

Indicator 6.3.3

Small scale sites of high ecological value (e.g. nesting sites, small wetlands, ponds, small open areas, etc) shall be systematically retained and protected (e.g. through appropriate buffer zones) throughout the production area of the FMU.

Verifiers:

1. Discussion with the forest manager

2. Forest management plans,

3. Field visit

C6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

Indicator 6.4.1

The FMU shall have been surveyed to identify any areas representative of ecosystems in their natural state, and all such areas shall be identified on maps.

Verifiers:

1. Forest management plans and maps

2. Field visit

Indicator 6.4.2

The conservation zones designated by the forest enterprise (see Criterion 6.2) shall include repre-sentative areas of any examples of ecosystems in their natural state as identified in 6.4.1.

Verifiers:

1. Forest management plans and maps

2. Field visit

Indicator 6.4.3

Management prescriptions shall be specified in the enterprise's forest management plan and other documents in order to protect the representative examples of ecosystems within conservation zones in their natural state and in the long term

Verifiers:

1. Forest management plans and maps

2. Field visit

Indicator 6.4.4

Reference sites of the representative ecosystems within conservation zones, shall be identified and clearly marked on maps, and are monitored at least once a decade to identify and evaluate long term changes. The enterprise analyses and utilizes the results of the monitoring to evaluate management of the conservation zones.

Verifiers:

1. Forest management plans and maps

2. Field visit

3. Monitoring results

C6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and pro-tect water resources.

Indicator 6.5.1

The organisation shall have written guidelines sufficient to: control erosion; minimise forest damage during harvesting, road construction, and other mechanic disturbances; Protect water resources both within and outside the FMU.

Verifiers:

1. Discussion with the forest manager

2. Discussion with private contractors

3. Written guidelines

Indicator 6.5.2

The guidelines shall include, at a minimum, specific provisions to prevent erosion by identifying areas which are susceptible to erosion

Verifiers:

1. Discussion with the forest manager

2. Written guidelines

Indicator 6.5.3

Forest manager shall use forest machinery, technology and operations that minimize adverse impact on the soil, water and standing trees

Verifiers:

1. Discussion with the forest manager

2. Written evidence (tendering documentation)

3. Field visit

Indicator 6.5.4

The forest manager shall build, maintain and use the forest transportation infrastructure to avoid erosion and disturbance to natural drainage patterns.

Verifiers:

1. Discussion with the forest manager

2. Written evidence (forest management plan, written guidelines, road construction plans, maps)

3. Field visit

Indicator 6.5.5

The guidelines shall include, at a minimum specific provisions to protect water courses by specifying wetland, water source and streamside protection zones

Verifiers:

1. Discussion with the forest manager

2. Written evidence (forest management plan, written guidelines, maps)

3. Discussion with other stakeholders

4. Field visit

C6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.

Indicator 6.6.1

The forest manager shall control pests, diseases and weeds primarily by using silvicultural measures and mechanical or other non-chemical methods. Chemical agents can be employed only when there are no alternative methods or the efficiency of non-chemical methods is low.

Verifiers:

1. Discussion with the forest manager

2. Guidelines for pest, disease and weed control

3. Written evidence (Reports on pests and diseases, marking data on trees to be cut for sanitary reasons, sanitary felling carried out)

4. Field visit

Indicator 6.6.2

If pesticides are used, the organisation shall make sure that it is not included into up-to-date copy of FSC's list of 'highly hazardous' pesticides and on the list of World Health Organization (pesticides Type 1A and 1B).

Verifiers:

1. Discussion with the forest manager

2. Written evidence (records, reports)

3. Field visit

Indicator 6.6.3

There shall be no storage or use of any pesticide included on FSC's list of 'highly hazardous' pesticides within the FMU, unless the enterprise is subject to a current FSC pesticide derogation for the pesticide concerned.

Verifiers:

1. Discussion with the forest manager

2. Written evidence (records, reports)

3. Field visit

Indicator 6.6.4

If pesticides are used, all staff and contractors involved with their use shall have up to date training in handling, application and storage procedures, and all workers shall have been provided with and use proper safety equipment.

Verifiers:

1. Written evidence (certificates of equipment, training programme, records on actions taken)

2. Discussion with the employees

3. Field visit

C6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.

Indicator 6.7.1

The forest manager shall ensure that non-organic waste, containers, garbage, chemicals and other polluting substances are not disposed of in the forest or on forest land.

Verifiers:

1. Discussion with the forest manager

2. Written instructions

3. Field visit

Indicator 6.7.2

There shall be a documented procedure, supported by appropriate training and materials, for controlling and cleaning up chemicals, fuel and oil in the case of accidental spillage.

Verifiers:

1. Discussion with the forest manager Written evidence (records on removals)

2. Field visit

3. Contracts with private contractors

C6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.

Indicator 6.8.1

The forest manager shall avoid the employment of biological control agents. If biological control agents are used, the organisation shall demonstrate that such use is in strict compliance with national laws and internationally accepted scientific protocols and the impacts of such use shall be closely monitored

Verifiers:

1. Discussion with the forest manager 2.Written procedures and instructions 3. Field visit

Indicator 6.8.2

The forest manager shall not use genetically modified organisms.

Verifiers:

1. Discussion with the forest manager

2. Written procedures and instructions

C6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.

Indicator 6.9.1

The forest manager shall avoid introducing exotic species (plants and animals) to forest ecosystems,

Verifiers:

1. Discussion with the forest manager

2. Records on seedling/planting material used

3. Field visit

Indicator 6.9.2

If (s)he introduces exotic species (plants and animals) to forest ecosystems, the forest manager shall comply with the following indicators for the use of exotic species

Verifiers:

1. See indicators 6.9.3, 6.9.4, 6.9.5 and 6.9.6

Indicator 6.9.3

Exotic species shall not be newly introduced into the FMU or onto new sites within the FMU unless there is convincing evidence available that the species will not become invasive or have other adverse ecological impacts at the local level.

Verifiers:

1. Scientific studies

2. Discussion with the forest manager

Indicator 6.9.4

Prior to introduction of exotic species, the forest manager shall undertake the environmental impact assessment to ensure that introduced species will not become invasive species in Kosovo forests.

Verifiers:

1. Environmental impact assessment

Indicator 6.9.5

The forest manager shall carefully control and monitor already introduced exotic species to avoid neg-ative environmental impacts. If negative impacts occur, forest manager shall take measures to minimise the negative impact.

Verifiers:

1. Monitoring results

2. Records on monitoring results and elimination activities carried out

3. Field visit

Indicator 6.9.6

In all cases, if an exotic species is newly introduced within the FMU, the enterprise shall document and implement regular monitoring within and outside the FMU to identify any evidence of invasiveness or other adverse ecological impacts.

Verifiers:

1. Written instructions and procedures

C6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in cir-cumstances where conversion:

a) entails a very limited portion of the forest management unit; and

b) does not occur on high conservation value forest areas; and

c) will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.

Indicator 6.10.1

The organisation shall clearly identify any parts of the FMU that are scheduled for conversion from natural or semi-natural forest to plantation or non-forest use.

Verifiers:

1. Official public interest decision

Indicator 6.10.2

The forest manager is allowed to convert forests to plantations only if the area entails a very limited portion of the forest management unit and enables long term conservation benefits across the forest management unit (e.g. regeneration of degrade forest stands)

Verifiers:

1. Discussion with the forest manager

2. Written evidence (forest management plan, conversion plans, maps)

3. Field visit

Indicator 6.10.3

The forest manager is not allowed to convert high conservation value forests to plantations or non-forest land

Verifiers:

1. Discussion with the forest manager

2. Field visit

FSC Principle 9: Maintenance of high conservation value forests

Management activities in high conservation value forests shall maintain or enhance the attributes, which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

C9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.

Indicator 9.1.1

The forest manager shall, identify and map forests and forest land with attributes of High Conservation Value Forests (HCVF).

These forest have the following attributes:

• HCV1. Areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia) .

• HCV2. Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.

• HCV3. Areas that are in or contain rare, threatened or endangered ecosystems.

• HCV4. Areas that provide basic ecosystem services in critical situations (e.g. watershed pro-tection, erosion control).

• HCVS. Areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).

• HCV6. Areas critical to local communities' traditional cultural identity (areas of cultural, ecolog-ical, economic or religious significance identified in cooperation with such local communities).

Verifiers:

1. Discussion with the forest manager

2. Written evidence (maps, identification data)

3. Consultation with stakeholders

4. Field visit

C9.2 The consultative portion of the certification process must

place emphasis on the identified conservation attributes, and options for the maintenance thereof.

Indicator 9.2.1

The forest manager shall consult stakeholders during the identification of HCVFs and on the decision on the appropriate management of HCVF. Results from the consultative process shall be documented.
Verifiers:
1. Discussion with the forest manager
2. Consultation with stakeholders
3. Written evidence
C9.3 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.

Indicator 9.3.1.

The forest manager shall develop appropriate management measures for HCVF, which respect the precautionary approach and ensure maintenance and/or enhancement of the applicable conservation attributes. These measures shall be a part of the forest management plan.
Verifiers:
1. Discussion with the forest manager
2. Written evidence (the list of management measures in HCVF)
3. The forest management plan
4. Field visit
Indicator 9.3.2.
The forest manager incorporates management measures for HCVF into the summary of the forest management plan that is publicly available.
Verifiers:
1. Summary of the forest management plan
C9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures em-ployed to maintain or enhance the applicable conservation attributes.

Indicator 9.4.1.

The forest manager shall have and implement an annual monitoring programme including assessment of effectiveness of the measures employed in HCVF.
Verifiers:
1. Discussion with the forest manager
2. The monitoring programme and assessment of the management measures in HCVF
3. Field visit

3. Annexes

3.1. List of Laws, Rules, Regulations

Subject/Area	Title	No
01 Agriculture and rural development	The Law on Agriculture and Rural Development	2009/03-L-98
01 Agriculture and rural development	Law on Agriculture Land	2005/02/L-26
01 Agriculture and rural development	Law on Animal Welfare	2005/02-L10
01 Agriculture and rural development	Law on Apiculture	2007/02/L-111
01 Agriculture and rural development	Law on Fishery and Aquaculture	2006/02-L85
01 Agriculture and rural development	Law on Food	03/L-016
01 Agriculture and rural development	Law on Hunting	2005/02/L-53
01 Agriculture and rural development	Law on Pesticides	2003/20
01 Agriculture and rural development	The Law on Plant Protection	2006/02-L95
01 Agriculture and Rural development	Law on Farmers Cooperatives	
01 Agriculture and Rural development	Law on Livestock	
01 Agriculture and Rural development	Law on Organic Farming	
02 Environment, Nature Protection, Heritage	Law on Chemicals	02/L-116
02 Environment, Nature Protection, Heritage	Law on Cultural Heritage	02/L88
02 Environment, Nature Protection, Heritage	The Law on Environmental Protection	2009/ 03/L-025
02 Environment, Nature Protection, Heritage	The Law on Nature Conservation	2005/02-L18
02 Environment, Nature Protection, Heritage	The Law on Nature Protection	2010/03-L-233
02 Environment, Nature Protection, Heritage	Law on National Park “Mountain Sharri” 28 March 1986	
02 Environment, Nature Protection, Heritage	Draft Law Sharr National Park 290411ENG	
03 Forest	The Law on Kosovo Forest	2003/003
04 Infrastructure and Services	The Law on Energy	2010/03-L-184
04 Infrastructure and Services	Draft Law on Energy Efficiency	2010/03/206
04 Infrastructure and Services	Law on Tourism and touristic services	2010/03/L-168
04 Infrastructure and Services	The waste Law	2005/02-L30
04 Infrastructure and Services	The Law on Waters	2004/24
04 Infrastructure and Services	Law on Mines and Minerals	
05 SMEs	Law on Support to SMEs	
07 Spatial Planning	Law on Environmental strategic assessment	03/L-015
07 Spatial Planning	The Law on Environ. Impact Assessment	2010/03-L-214
07 Spatial Planning	The Law on Spatial Planning	2003/14
Air protection	Law on Air Protection from Pollution	2010/L-160

Source: Official website of Kosovo’s Assembly http://www.assembly-kosova.org/

3.2. Habitat Types

3. FRESHWATER HABITATS

31. Standing water

3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)

3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoeto-Nanojuncetea

3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.

3150 Natural eutrophic lakes with Magnopota mionor Hydrocharition– type vegetation

3160 Natural dystrophic lakes and ponds

3170 * Mediterranean temporary ponds

3180 * Turloughs

3190 Lakes of gypsum karst

31A0 * Transylvanian hot-spring lotus beds

32. Running water - sections of water courses with natural or semi-natural dy-namics (minor, average and major beds) where the water quality shows no significant deterioration

3220 Alpine rivers and the herbaceous vegetation along their banks

3230 Alpine rivers and their ligneous vegetation with Myricaria germanica

3240 Alpine rivers and their ligneous vegetation with Salix elaeagnos

3250 Constantly flowing Mediterranean rivers with Glaucium flavum

3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation

3270 Rivers with muddy banks with Chenopodion rubric p.p. and Bidentionp. p. vegeta-tion

3280 Constantly flowing Mediterranean rivers with Paspalo-Agrostidion species and hanging curtains of Salix and Populus alba

3290 Intermittently flowing Mediterranean rivers of the Paspalo-Agrostidion

4. TEMPERATE HEATH AND SCRUB

4020 * Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix

4030 European dry heaths

4040 * Dry Atlantic coastal heaths with Erica vagans

4060 Alpine and Boreal heaths

4070 * Bushes with Pinus mugo and Rhododendron hirsutum (Mugo-Rhododendretum hirsuti)

4080 Sub-Arctic Salix spp. Scrub

4090 Endemic oro-Mediterranean heaths with gorse

40A0 * Subcontinentalperi-Pannonic scrub

5. SCLEROPHYLLOUS SCRUB (MATORRAL)

51. Sub-Mediterranean and temperate scrub

5110 Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)

5120 Mountain Cytisus purgans formations

5130 Juniperus communis formations on heaths or calcareous grasslands

5140 * Cistus palhinhae formations on maritime wet heaths

6. NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS

61. Natural grasslands

6110 * Rupicolous calcareous or basophilic grasslands of the Alysso-Sedionalbi

6120 * Xeric sand calcareous grasslands

6130 Calaminarian grasslands of the Violetalia calaminariae

6150 Siliceous alpine and boreal grasslands

6170 Alpine and subalpine calcareous grasslands

62. Semi-natural dry grasslands and scrubland facies

6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)

6220 * Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea

6230 * Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and sub-mountain areas in Continental Europe)

6240 * Sub-Pannonic steppic grasslands

62A0 Eastern sub-Mediterranean dry grasslands (Scorzoneratalia villosae)

63. Sclerophillous grazed forests (dehesas)

6310 Dehesas with evergreen Quercus spp.

64. Semi-natural tall-herb humid meadows

6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeru-leae)

6420 Mediterranean tall humid grasslands of the Molinio-Holoschoenion

6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels

6440 Alluvial meadows of river valleys of the Cnidiondubii

6460 Peat grasslands of Troodos

65. Mesophile grasslands

6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)

6520 Mountain hay meadows

6530 * Fennoscandian wooded meadows

7. RAISED BOGS AND MIRES AND FENS

71. Sphagnum acid bogs

7110 * Active raised bogs

7120 Degraded raised bogs still capable of natural regeneration

7130 Blanket bogs (* if active bog)

7140 Transition mires and quaking bogs

7150 Depressions on peat substrates of the Rhynchosporion

72. Calcareous fens

7210 * Calcareous fens with Cladium mariscus and species of the Caricionda vallianae

7220 * Petrifying springs with tufa formation (Cratoneurion)

7230 Alkaline fens

7240 * Alpine pioneer formations of the Caricion bicoloris-atrofuscae

8. ROCKY HABITATS AND CAVES

81. Scree

8110 Siliceous scree of the mountain to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)

8120 Calcareous and calc-shist screes of the mountain to alpine levels (Thlaspiete a rotundifolii)

8140 Eastern Mediterranen screes – (Drypetum spinosa in Dragash)

8150 Medio-European upland siliceous screes

8160 * Medio-European calcareous scree of hill and mountain levels

82. Rocky slopes with chasmophytic vegetation

8210 Calcareous rocky slopes with chasmophytic vegetation (in Dragas Saxifrageto-Potentilletum apennina)

8220 Siliceous rocky slopes with chasmophytic vegetation

8230 Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedoal-bi-Veronicion dillenii

8240 * Limestone pavements

83. Other rocky habitats

8310 Caves not open to the public

8320 Fields of lava and natural excavations

9. FORESTS

(Sub)natural woodland vegetation comprising native species forming forests of tall trees, with typical undergrowth, and meeting the following criteria: rare or residual, and/or hosting species of Community interest

90. Forests of Boreal Europe

9020 * Fennoscandian hemiboreal natural old broad-leaved deciduous forests (Quer-cus, Tilia, Acer, Fraxinus or Ulmus) rich in epiphytes

9030 * Natural forests of primary succession stages of land upheaval coast

9050 Fennoscandian herb-rich forests with Picea abies

9060 Coniferous forests on, or connected to, glacio-fluvial eskers

9070 Fennoscandian wooded pastures

9080 * Fennoscandian deciduous swamp woods

91. Forests of Temperate Europe

9110 Luzulo-Fagetum beech forests (Kosovo not in Dragash)

9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrub layer (Quercion robori-petraeae or Ilici-Fagenion)

9130 Asperulo-Fagetum beech forests

9140 Medio-European subalpine beech woods with Acer and Rumex arifolius

9150 Medio-European limestone beech forests of the Cephalanthero-Fagion

9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli

9170 Galio-Carpinetum oak-hornbeam forests

9180 * Tilio-Acerion forests of slopes, screes and ravines

9190 Old acidophilous oak woods with Quercus robur on sandy plains

91B0 Thermophilous Fraxinus angustifolia woods

91C0 * Caledonian forest

91D0 * Bog woodland

91E0 * Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicionalbae) (Alnetum glutinosae in Dragash/Dragaš)

91F0 Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ulmenion minoris)

91G0 * Pannonic woods with Quercus petraea and Carpinus betulus

91H0 * Pannonian woods with Quercus pubescens

91I0 * Euro-Siberian steppic woods with Quercus spp.

91K0 Illyrian Fagus sylvatica forests (Aremonio-Fagion)

91L0 Illyrian oak-hornbeam forests (Erythronio-carpinion)

91M0 Pannonian-Balkanic turkey oak -sessile oak forests

91N0 * Pannonic inland sand dune thicket (Junipero-Populetum albae)

91P0 Holy Cross fir forest (Abietetum polonicum)

91Q0 Western Carpathian calcicolous Pinus sylvestris forests

91R0 Dinaric dolomite Scots pine forests (Genisto januensis-Pinetum)

91U0 Sarmatic steppe pine forest
91V0 Dacian Beech forests (Symphyto-Fagion)
91W0 Moesian beech forests (Fagus sylvatica and Fagus moesiaca)
91Y0 Dacian oak & hornbeam forests (Carpinus betulus)
91AA *Eastern white oak woods (Quercion frainetto)
91BA Moesian silver fir forests (Fagion moesiaca)
92. Mediterranean deciduous forests
9210 * Apennine beech forests with Taxus and Ilex
9220 * Apennine beech forests with Abies alba and beech forests with Abies nebrodensis
9250 Quercus trojana woods
9260 Castanea sativa woods (in Kosovo not in Dragash/Dragaš)
9270 Hellenic beech forests with Abies borisii-regis
9290 Cupressus forests (Acero-Cupression)
92A0 Salix alba and Populus alba galleries
92B0 Riparian formations on intermittent Mediterranean water courses with Rhododen-dron ponticum, Salix and others
92C0 Platanus orientalis and Liquidambar orientalis woods (Platanion orientalis)
92D0 Southern riparian galleries and thickets (Nerio-Tamaricetea and Securinegion tinctoriae)
93. Mediterranean sclerophyllous forests
9340 Quercus ilex and Quercus rotundifolia forests
9350 Quercus macrolepis forests
9390 * Scrub and low forest vegetation with Quercus alnifolia
93A0 Woodlands with Quercus infectoria (Anagyro foetidae-Quercetum infectoriae)
94. Temperate mountainous coniferous forests
9410 Acidophilous Picea forests of the mountain to alpine levels (Vaccinio-Piceetea)
9420 Alpine Larix decidua and/or Pinus cembra forests
9430 Subalpine and montane Pinus uncinata forests (* if on gypsum or limestone)
95. Mediterranean and Macaronesian mountainous coniferous forests
9520 Abies pinsapo forests
9530 * (Sub-) Mediterranean pine forests with endemic black pines (with Abies borisii regis)
9540 Mediterranean pine forests with endemic Mesogean pines
9560 * Endemic forests with Juniperus spp.
9570 * Tetraclinis articulata forests
9580 * Mediterranean Taxus baccata woods
9590 * Cedrus brevifolia forests (Cedrosetum brevifoliae)

3.3. Water Quality Assessment

Code	Sampling site	Latitude	Longitude	Altitude	FBI	Water quality	Bottom substrate	Bottom stability	Habitat complexity	Pool quality	Bank stability	Bank protection	Canopy	Channel alteration	Stream width	Stream depth	Stream flow	Discharge	Air	Temperatura e ujit	pH	O2	BOD
temperature	Water	V 42° 12'	L 20 °75´	1313 m	2,97	Shkëlqyesh ëm	Optimal	Optimal	Optimal	I varfër	Suboptimal	Optimal	Optimal	Jo	1.4 m	0.12m	0.45 m/s	0.0756 m^3/s	21°C	14°C	7,3	11,4	4,1
temperature	pH	O2	BOD	1217 m	2,83	Shkëlqyesh ëm	Suboptimal	Suboptimal	Suboptimal	I varfër	Suboptimal	Suboptimal	Optimal	Jo	0.95 m	0.09m	0.41 m/s	0.0350 m^3/s	21.5°C	13.5°C	7,72	10,2	4,4
D3	Zapluxhë	V 42° 12'	L 20 °72´	1115 m	1,88	Shkëlqyesh ëm	Optimal	Optimal	Optimal	I varfër	Suboptimal	Suboptimal	Optimal	Jo	0.96 m	0.09m	0.42 m/s	0.0362 m^3/s	21°C	13°C	7,62	11	4
D4	Zapluxhë	V 42° 12'	L 20 °74´	1142 m	7,29	Shumë i dobtë	Suboptimal	Optimal	Suboptimal	Margjinal	Suboptimal	Suboptimal	Optimal	Jo	2.6 m	0.20m	0.64 m/s	0.332 m^3/s	21°C	15°C	7,3	6,4	8,1
D5	Blaç	V 42° 12'	L 20 °74´	1096 m	8,59	Shumë i dobtë	Margjinal	Suboptimal	I varfër	Margjinal	Suboptimal	Suboptimal	Suboptimal	I mesëm	2.2 m	0.28m	0.42 m/s	0.258 m^3/s	22°C	14°C	7,36	5,1	8,9
D6	Bresanë mbi	V 42° 10'	L 20 °73´	1220 m	3,48	Shumë i dobtë	Optimal	Optimal	Optimal	Suboptimal	Optimal	Optimal	Optimal	Jo	3.3 m	0.20m	0.9 m/s	0.594 m^3/s	22°C	9°C	7,42	12,3	4,9
D7	Bresanë nën	V 42° 10'	L 20 °73´	1123 m	7,56	Shumë i dobtë	Suboptimal	Suboptimal	Margjinal	Margjinal	Optimal	Optimal	Suboptimal	Po	5.2 m	0.26m	1.25 m/s	1.69 m^3/s	21°C	11°C	7,5	6,3	3,7
D8	Bellobrad	V 42° 11'	L 20 °68´	1010 m	7,86	Shumë i dobtë	Suboptimal	Suboptimal	Suboptimal	Margjinal	Suboptimal	Margjinal	Suboptimal	Jo	5.9 m	0.31m	0.8 m/s	1.463 m^3/s	22°C	12°C	7,4	7,8	11,9
D9	Bellobradë	V 42° 11'	L 20 °69´	1003 m	8	Shumë i dobtë	Suboptimal	Suboptimal	Suboptimal	Margjinal	Suboptimal	Margjinal	Suboptimal	Jo	5.8 m	0.30m	0.78 m/s	1.357 m^3/s	22°C	10,5	7,4	5,1	9,1
D10	Kuk	V 42° 10'	L 20 °71´	1235 m	3,66	Shkëlqyesh ëm	Optimal	Optimal	Optimal	Margjinal	Optimal	Optimal	Optimal	Jo	2.4 m	0.10m	0.62 m/s	0.148 m^3/s	21.5°C	10.5°C	6,8	10,6	4,7
D11	Buzez	V 42° 11'	L 20 °71´	1131 m	6,77	I dobtë	Suboptimal	Suboptimal	Suboptimal	I varfër	Suboptimal	Optimal	Optimal	Jo	2.3 m	0.14m	0.6 m/s	0.193 m^3/s	20°C	11°C	6,8	9,4	10,6
D12	Brezne	V 42° 13'	L 20 °64´	0944 m	6,69	I dobtë	Margjinal	Suboptimal	Suboptimal	Suboptimal	Optimal	Optimal	Optimal	Jo	1m	0.24m	0.4 m/s	0.096 m^3/s	23°C	14°C	6,48	11	7,5
D13	Plajnik	V 42° 07'	L 20 °70´	1358 m	3,6	Shkëlqyeshëm	Optimal	Optimal	Optimal	Suboptimal	Optimal	Optimal	Optimal	Jo	2.75 m	0.10m	0.69 m/s	0.189 m^3/s	19.5°C	8.5°C	7,05	12,5	3,3
D14	Kosavë	V 42° 09'	L 20 °69´	1124 m	7,11	I dobtë	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Optimal	Suboptimal	Suboptimal	Jo	1.8 m	0.33m	0.9 m/s	0.5346 m^3/s	19°C	9°C	7,35	6,5	6,2
D15	Plavë mbi	V 42° 09'	L 20 °64´	1010 m	1,65	Shkëlqyeshëm	Suboptimal	Suboptimal	Suboptimal	I varfër	Suboptimal	Suboptimal	Optimal	Jo	1m	0.05m	0.3 m/s	0.015 m^3/s	22°C	15°C	7,1	13,1	3,4
D16	Plavë (fabrika Meka)	V 42° 09'	L 20 °65´	0973 m	6,98	I dobtë	I varfër	Margjinal	Suboptimal	I varfër	Suboptimal	Suboptimal	Suboptimal	Jo	0.5 m	0.08m	0.4 m/s	0.016 m^3/s	22°C	15°C	7,3	7,5	11,1
D17	Rrencmbi	V 42° 08'	L 20 °66´	1010 m	3,85	Shumë i dobtë	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Jo	0.65 m	0.08m	0.83 m/s	0.043 m^3/s	22°C	11°C	7,67	12,1	4,9
D18	Rrence	V 42° 08'	L 20 °64´	0922 m	4,09	Shumë i dobtë	Suboptimal	Optimal	Suboptimal	Optimal	Optimal	Optimal	Optimal	Jo	2.1 m	0.13m	0.5 m/s	0.136 m^3/s	21.5°C	10.5°C	7,3	10,3	5,1
D19	Rrencë (lumi Pllavë)	V 42° 08'	L 20 °64´	0916 m	7,79	Shumë i dobtë	Suboptimal	Suboptimal	Suboptimal	Margjinal	Suboptimal	Suboptimal	I varfër	Jo	6.3 m	0.24m	0.71 m/s	1.073 m^3/s	21°C	12°C	7,5	6,3	10
D20	Brod kamp	V 41° 92'	L 20 °73´	1972 m	3,39	Shkëlqyeshëm	Optimal	Optimal	Suboptimal	Suboptimal	Optimal	Optimal	Suboptimal	Jo									
D21	Brod mbi	V 41° 98'	L 20 °70´	1401 m	2,87	Shkëlqyeshëm	Optimal	Optimal	Suboptimal	Suboptimal	Optimal	Suboptimal	I varfër	Jo	6.2 m	0.35m	1.13 m/s	2.45 m^3/s	18°C	8.5°C	7,86	14,5	3,4
D22	Brod II	V 41° 99'	L 20 °71´	1415 m	3,35	Shkëlqyeshëm	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Optimal	Optimal	Suboptimal	Jo	3.2 m	0.15m	0.81 m/s	0.388 m^3/s	18°C	9°C	7,95	13,3	4,1
D23	Brod nën	V 41° 99'	L 20 °70´	1386 m	3,77	Shumë mirë	Optimal	Optimal	Suboptimal	Optimal	Optimal	Suboptimal	I varfër	Jo	9 m	0.32m	1.00 m/s	2.88 m^3/s	21°C	10°C	8,05	10,9	8,3

D24	Di-kanca	V 42° 01'	L 20 °67´	1137 m	4,59	I dobtë	Opti-mal	Opti-mal	Opti-mal	Opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	8 m	0.40m	1.25 m/s	4 m^3/s	21°C	10.5°C	7,75	10,3	8,9
D25	Mlika mbi	V 42° 02'	L 20 °64´	0977 m	3,52	Shkëlq yeshëm	Opti-mal	Opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	1.2 m	0.09m	0.47 m/s	0.050 m^3/s	19°C	12°C	7,5	12,4	5
D26	Mlika nën	V 42° 03'	L 20 °64´	0941 m	3,91	Shumë mirë	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Mar gjinal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	1.4m	0.08m	0.48 m/s	0.053 m^3/s	19°C	11°C	7,58	10,8	5,3
D27	Mlika (lumi Brod)	V 42° 03'	L 20 °64´	0940 m	3,96	Shumë mirë	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Opti-mal	Jo	7m	0.27m	0.83 m/s	1.568 m^3/s	19.5°C	10,5	7,6	10,2	7,1
D28	Rapçë mbi	V 42° 09'	L 20 °61´	1040 m	3,83	Shumë mirë	Opti-mal	Opti-mal	Sub-opti-mal	Mar gjinal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	2.5 m	0.20m	0.8 m/s	0.4 m^3/s	19°C	10°C	7,5	10,9	4,1
D29	Rapçë nën	V 42° 07'	L 20 °62´	0910 m	4,95	I dobtë	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Mar gjinal	Jo	1.7m	0.10m	0.58 m/s	0.0986 m^3/s	19°C	11°C	7,6	8,5	4,6
D30	Rade-sha mbi	V 42° 06'	L 20 °65´	1207 m	3,8	Shumë mirë	Opti-mal	Opti-mal	Sub-opti-mal	Mar gjinal	Opti-mal	Sub-opti-mal	Sub-opti-mal	Jo	4.1m	0.27m	0.79 m/s	0.874 m^3/s	21°C	8.5°C	7,1	14,2	3,8
D31	Rade-sha	V 42° 05'	L 20 °69´	1265 m	6,93	I dobtë	Opti-mal	Opti-mal	Sub-opti-mal	Mar gjinal	Opti-mal	Sub-opti-mal	Sub-opti-mal	Jo	4,2	0.275 m	0.8 m/s	0.924 m^3/s	21°C	9°C	7,06	10,3	10,3
D32	Dra-gash	V 42° 06'	L 20 °65´	1012 m	5,86	Mjaft i dobtë	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Opti-mal	Jo	3m	0.30m	0.89 m/s	0.801 m^3/s	22.5°C	12°C	6,9	10,1	5,2
D33	Res-telica mbi	V 42° 03'	L 20 °64´	1417 m	2,47	Shkëlqy eshëm	Opti-mal	Opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Opti-mal	Jo	6,9	0.23m	0.8 m/s	1.269 m3/s	17°C	8°C	7,89	13,7	3,1
D34	Res-telica nën	V 42° 03'	L 20 °64´	1212 m	6,63	I dobtë	Opti-mal	Opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	8,2	0.36m	1.12 m/s	3.306 m^3/s	18°C	9°C	8	6,8	9,9
D35	Kru-shevë mbi	V 41° 97'	L 20 °64´	1216 m	4,77	Mirë	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	8m	0.50m	1 m/s	4 m^3/s	19°C	11°C	8,26	11,2	8,1
D36	Kru-shevë nën	V 41° 98'	L 20 °63´	1150 m	4,76	Mirë	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	7,3	0.50m	0.94 m/s	3.431 m^3/s	19°C	11.5°C	7,84	9,4	7,3
D37	Gllo-boçi-ca mbi	V 42° 00'	L 20 °63´	1237 m	4,06	Shumë mirë	Mar gjinal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	3m	0.10m	0.8 m/s	0.24 m^3/s	20.5°C	12°C	7,68	9,1	7,4
D38	Zli Potok mbi	V 41° 97'	L 20 °66´	1348 m	3,53	Shkëlqy eshëm	Sub-opti-mal	Sub-opti-mal	Mar gjinal	Sub-opti-mal	Opti-mal	Opti-mal	Mar gjinal	Jo	1.5m	0.13m	0.66 m/s	0.128 m^3/s	20.5°C	14°C	7,85	11,8	5,9
D39	Zli Potok nën	V 41° 97'	L 20 °64´	1296 m	3,54	Shkëlqy eshëm	Opti-mal	Opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	2m	0.15m	0.64 m/s	0.192 m^3/s	19°C	12°C	8,26	10,1	4,2
D40	Zli Po-tokë mes	V 41° 99'	L 20 °64´	1367 m	4,27	Mirë	Sub-opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	I var-fër	Jo	1m	0.25m	0.5 m/s	0.125 m^3/s	20°C	15°C	6,96	11,3	6
D41	Or-çusha mbi	V 42° 03'	L 20 °61´	1107 m	3,99	Shumë mirë	Opti-mal	Opti-mal	Opti-mal	Mar gjinal	Opti-mal	Opti-mal	Mar gjinal	Jo	0.65 m	0.08m	0.4 m/s	0.0208 m^3/s	21°C	13°C	7,55	13,1	9
D42	Or-çushë mes	V 42° 03'	L 20 °61´	0968 m	5,31	Jo i keq	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Mar gjinal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	1m	0.07m	0.8 m/s	0.056 m^3/s	21°C	14°C	7,46	10,2	9,3
D43	Krstec	V 42° 08'	L 20 °61´	0955 m	3,04	Shkëlqy eshëm	Opti-mal	Opti-mal	Sub-opti-mal	Sub-opti-mal	Opti-mal	Opti-mal	Sub-opti-mal	Jo	0.7m	0.09m	0.7 m/s	0.0041 m^3/s	19°C	14°C	7,5	13,6	8,6
D44	Fab-rika e leshit mbi	V 42° 05'	L 20 °64´	0999 m	6,58	I dobtë	Sub-opti-mal	Sub-opti-mal	Margji nal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Jo	2.75 m	0.15m	0.71 m/s	0.292 m^3/s	22°C	15°C	7	6,2	12,1
D45	Fab-rika e leshit	V 42° 05'	L 20 °64´	0997 m	7,45	Shumë i dobtë	Sub-opti-mal	Sub-opti-mal	Margji nal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Jo	2.75 m	0.15m	0.71 m/s	0.292 m^3/s	22°C	15°C	5,2	5,1	14,9
D44	Wool fac-tory Up	N 42° 05'	E 20 °64´	0999 m	6,58	Poor	Sub-opti-mal	Sub-opti-mal	Mar-ginal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	No	2.75 m	0.15 m	0.71 m/s	0.292 m^3/s	22°C	15°C	7	6,2	12,1
D45	Wool fac-tory	N 42° 05'	E 20 °64´	0997 m	7,45	Very poor	Sub-opti-mal	Sub-opti-mal	Mar-ginal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	Sub-opti-mal	No	2.75 m	0.15 m	0.71 m/s	0.292 m^3/s	22°C	15°C	5,2	5,1	14,9
D45	Fab-rika vune	N 42° 05'	E 20 °64´	0997 m	7,45	Veo ma slab	Sub-opti-mal-na	Sub-opti-mal-na	Mar-gin-alna	Sub-opti-mal-ni	Sub-opti-malni	Sub-opti-malni	Sub-opti-malni	Ne ma	2.75 m	0.15 m	0.71 m/s	0.292 m^3/s	22 °C	15 °C	5,2	5,1	14,9