STRENGTHENING NATIONAL CAPACITY IN NATURE PROTECTION – PREPARATION FOR NATURA 2000 NETWORK

INITIAL ASSESSMENT OF PROTECTED AREAS IN ALBANIA USING THE MANAGEMENT EFFECTIVENESS TRACKING TOOL

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Acronyms and Abbreviations

European Commission	EC
IUCN Regional Office for Eastern Europe and Central Asia	IUCN ECARO
Monument of Nature	MN
IUCN World Commission on Protected Areas	IUCN WCPA
Managed Nature Reserve	MNR
Management Effectiveness Tracking Tool	METT
Ministry of Environment of Albania	MoE
National Agency for Protected Areas	NAPA
National Park	NP
National Environment Agency	NEA
Protected Area Management Effectiveness Framework	PAME Framework
Protected Landscape	PL
Rapid Assessment and Prioritization of Protected Area Management	RAPPAM
Regional Administration for Protected Areas	RAPA
Resource Protection Area	RPA
Strict Nature Reserve	SNR
World Commission on Protected Areas of IUCN	WCPA

Acknowledgements

Executive summary

This report has been prepared under the EU funded project "Strengthening national capacity in nature protection – preparation for Natura 2000 network." The overall objective of the Project is to halt biodiversity loss through improved management of protected areas in Albania. Albania has made significant progress in expanding the network of protected areas from 5.2% of the country's territory in 2005 to 16% in 2014. The main objective of this report is to assess the current state of protected areas constituting the Protected Areas Network in Albania with respect to technical aspects, institutional setup, legal gaps, human resources and equipment in view of the recent development in protected areas management in Albania. The assessment is based on data gathered using the Management Effectiveness Tracking Tool (METT). The findings presented here are intended to provide supporting information for the detailed planning of project activities as well as to support NAPA in improving management effectiveness of protected areas.

The latest edition of the map of the Albanian Protected Areas Network published by the Ministry of Environment represents 56 protected areas in six national categories. The National Agency for Protected Areas is the responsible institution for management of protected areas in Albania and the day-to-day management of protected areas is delegated to 12 Regional Administrations for Protected Areas as part of NAPA. In cooperation with NAPA, protected area managers from the 12 RAPA offices participated in a two-day workshop to assess protected areas they manage using the METT. More METT assessments were completed in the aftermath of the workshop with the total number of protected areas assessed reaching 51.

The results of the assessment show that wildfires are the most common threat to protected areas in Albania, whereas logging and wood harvesting is the most serious threat that causes degradation of their natural values in protected areas. In general, the threats related to the use of biological resources in protected areas are present in the vast majority of the protected areas in Albania. The data collected through the Assessment Forms reveal that the highest percentage of poor effectiveness is observed with respect to collection of fees (86.3%), availability of budget (80.4%), security of budget (74.5%), management of budget (78.4%), availability of equipment (68.6%) and maintenance of equipment (62.7%). The highest percentage of excellent scores was reported on the legal status of protected areas (100%) and condition of values (41.2%).

The analysis of the average scores by the IUCN PAME Framework elements clearly shows that the poor scores prevail in all of the six elements, except for the Context. If disaggregated by management category, these results show that national parks received better average scores than other protected areas categories on all of the six IUCN PAME Framework elements. This may be due to the fact that this category has received significant attention by both national authorities and international donors thus far: half of the existing management plans have been developed for the national parks in the country. The scoring of Assessment Form questions done by protected areas' managers seem to show significant differences in the approach. Therefore, it is to a certain extent difficult to draw conclusions across the 51 protected areas assessed under this project. Nonetheless, there are trends that can be observed across the sample. For instance, results showed that the vast majority of the protected areas received less than 50% of the maximum possible scores on Planning (84.3% of the sites), Input (88.2% of the sites), Process (92.2% of the sites), and Output

(86.3% of the sites). Despite the poor results on these important elements, assessors' evaluation of Outcomes is somewhat better and only 57.3% of the protect areas received less than 50% of the maximum possible scores on this element.

Assessors made several recommendations for improvement of the legal framework and also stressed the need to strengthen the enforcement of the existing regulations. Their comments in the Assessment forms clearly indicate that the insufficient level of knowledge and skills, as well as the lack of basic infrastructure and equipment are the major impediments to improving the management effectiveness of the protected areas in Albania. While the lack of financial resources is linked to many such impediments, the income generated by some protected areas (e.g. from entrance fees, permits for the use of resources, etc.) is being collected by the government without any repayment to the protected areas which generate the income.

The analysis in this report shows that the comparison between protected areas is difficult when the assessment is conducted by different people. This is related to the fact that the METT is a qualitative assessment methodology based on 'expert judgement' which is prone to errors and cognitive biases. This seems to be the case in particular with respect to the assessment of threats to the protected areas assessed under the project, despite the effort of the project team to promote the use of quantitative data. Therefore the results presented in this report need to be interpreted with caution, especially with respect to the comparison of the overall scores for the sites.

1. Introduction

There are 799 protected areas in Albania covering about 16% (4,600 km^2) of its territory (see Table 1). The vast majority of protected areas in Albania have been designated in the category nature monument (750) and are mostly quite small in size. The category national park contributes most significantly in terms of coverage (46.1%), whereas the marine protected areas are largely underrepresented and currently account only for 2.9% (13,261 *ha*) of the surface of the national protected area system. A map of the Protected Areas Network produced by the Ministry of Environment (MoE 2014) represents only 56 protected areas in all of the six national management categories (see Figure 1); detailed information on these protected areas is presented in Annex I.

Table 1 Overview of protected areas in Albania by national management category

No.	National protected area category	Protected areas (#)	Area (*ha*)	% of country's territory
I	Strict Nature Reserve	2	4,800	0,17
II	National Park	15	210,501.4	7,32
III	Nature Monument	750	3,610.74	0,13
IV	Nature Managed Reserve	23	127,309.48	4,43
V	Protected Landscape	5	99,501.3	3,46
VI	Multiple Use Area	4	11,115	0,39
	Total	**799**	**456.837,92**	**15,89**

Since February 2015, the newly established National Agency for Protected Areas is the responsible institution for the management of protected areas in Albania. Its main objectives are as follows:

- Protect, conserve, and develop natural resources and biodiversity through the management of a network of protected areas of national and international importance;

- Gather and disseminate information related to protected areas;

- Promote environmental education and public awareness for the protected areas in Albania; and

- Support sustainable economic activities inside the protected areas.

The Agency has a Directorate General, based in Tirana, and 12 Regional Administrations for Protected Areas. The Directorate General has two units: Management Directorate and Directorate for Financing and Services. The Management Directorate has three sub-units: Management Section, Control Section and Project Unit. Each RAPA is headed by a Regional Director and has two sections: Management and Administration Section and Monitoring Section. Currently there are 20 employees at NAPA, whereas the 12 RAPA have 204 employees, 108 of whom are rangers.
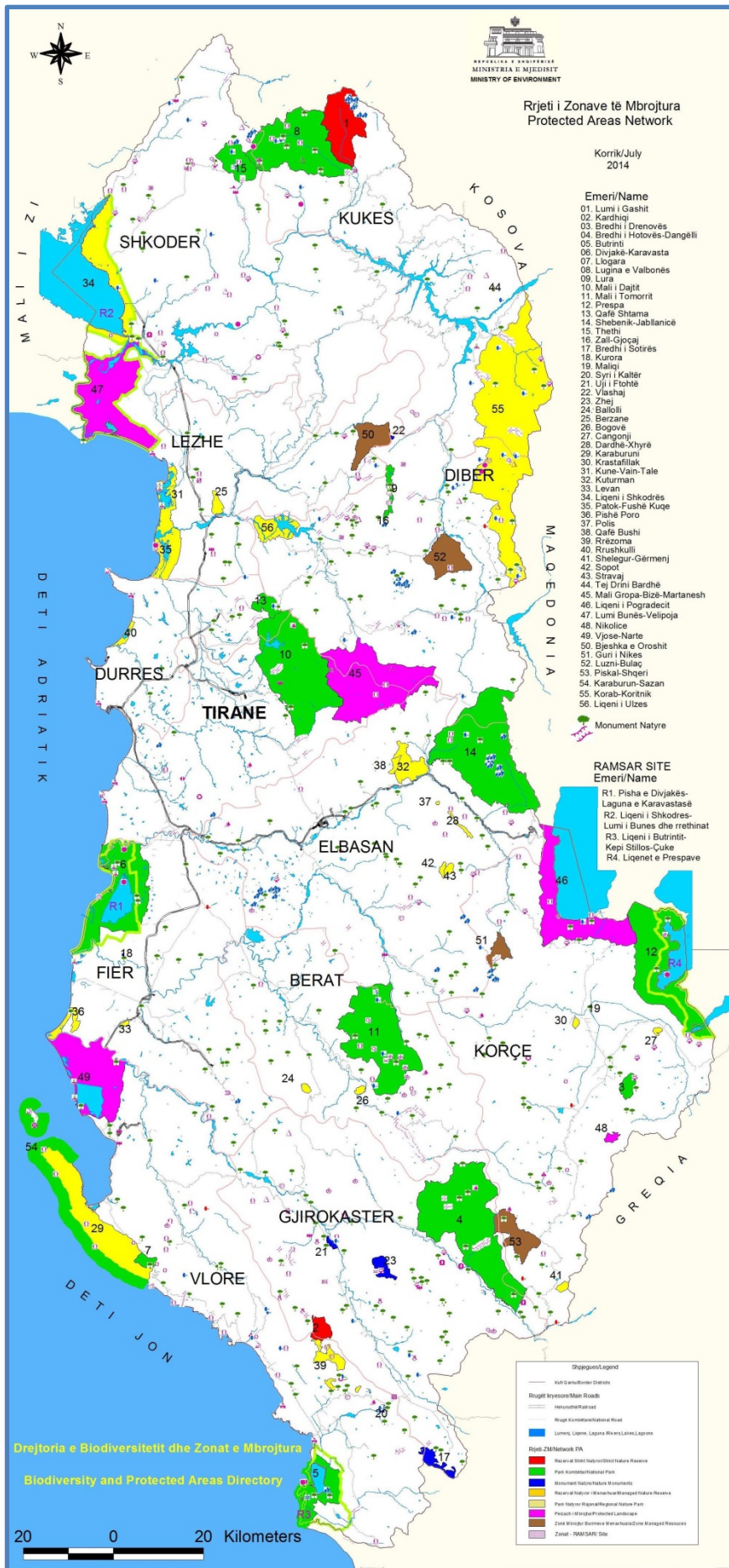
Figure 1 Protected Areas in Albania

(*Source*: *Ministry of Environment, 2014*)

1.1. Objectives and scope of the assessment

This report has been prepared by the IUCN Regional Office for Eastern Europe and Central Asia (IUCN ECARO) under the project "Strengthening national capacity in nature protection – preparation for Natura 2000 network," financed by the European Union. The overall objective of the Project is to halt biodiversity loss through improved management of protected areas in Albania. Two specific objectives have been identified for the attainment of the overall objective:

– Implementation of at least five existing management plans for selected protected areas in Albania;

– Preparation of a preliminary list of Natura 2000 sites for the country in view of their future submission to the EC by the Albanian authorities.

The initial assessment of protected areas in Albania is one of the two activities related to the "Assessment of the state of protected areas and the national protected area system" and is based on data gathered using the Management Effectiveness Tracking Tool (METT). The main objective of this analysis is to assess the current state of all protected areas in Albania with respect to technical aspects, institutional setup, legal gaps, human resources and equipment.

In consultation with NAPA, the scope of the assessment was limited to 53 of the 56 protected areas presented on the map of the Protected Areas Network published by the Albanian Ministry of Environment in 2014.

1.2. Approach and methodology

This study follows the IUCN Framework for Evaluating Protected Area Management Effectiveness (IUCN PAME Framework). It was developed by the IUCN World Commission on Protected Areas and was presented in the sixth publication of the Best Practice Protected Area Guidelines Series – one of the six flagship knowledge products of IUCN (Hockings *et al.* 2000, Hockings *et al.* 2006). The IUCN PAME Framework has been used to design a number of methodologies, some of which are rapid, questionnaire-based assessments (RAPPAM[1], METT) to more extensive assessments based on field monitoring.

The IUCN PAME Framework is based on the principle that good protected area management should follow a cyclical process with six stages or elements, as shown in Figure 2. The cycle begins with understanding the **context** of the protected area, including its values, the threats that it faces and opportunities available, its stakeholders, and the management and political environment. It progresses through **planning**: establishing a vision, goals, objectives and strategies to conserve values and reduce threats. In the third phase, inputs are allocated (staff, money and equipment) to work towards the objectives. The implementation stage is managed according to accepted **processes** and eventually produces **outputs** (goods and services), usually set out in the management plan. The assessment of outcomes is a critical component of the IUCN PAME Framework and includes impacts on biodiversity, society and economy. Outcomes concern the achievement of the

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[1] RAPPAM stands for Rapid Assessment and Prioritization of Protected Area Management (Ervin, 2003)

long-term objectives for a protected area, such as maintaining stable populations of target species or preservation of cultural values.
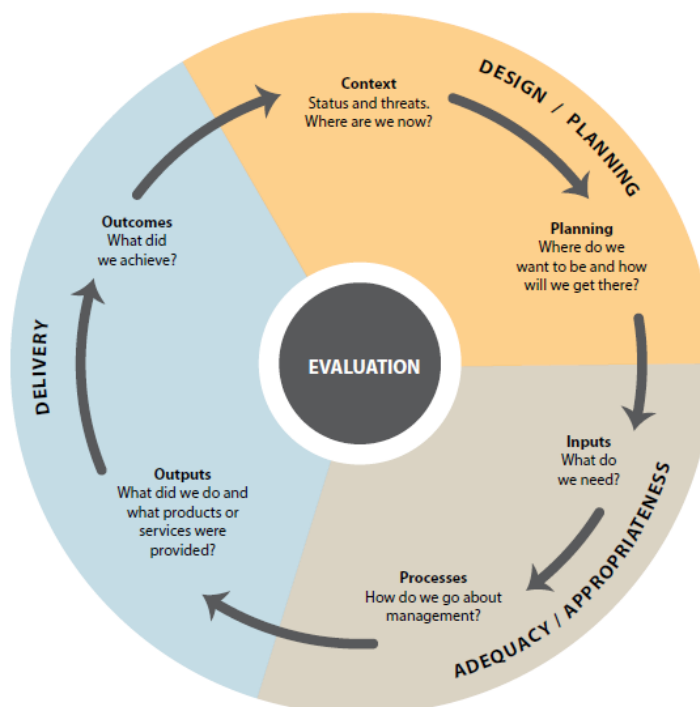
Figure 1   IUCN Framework for Evaluating Protected Area Management Effectiveness

The assessment was conducted using the Management Effectiveness Tracking Tool (METT) developed by WWF and the World Bank (Stolton *et al.* 2007). The METT is a rapid qualitative assessment tool based on a scorecard questionnaire. The scorecard includes all six elements of the IUCN PAME Framework, but places an emphasis on context, planning, inputs and process.

The METT has two main sections: datasheets and an assessment form. The datasheets comprise two separate sections: Data sheet 1 records details of the assessment and some basic information about the site, such as name, size and location etc.; Data sheet 2 provides a generic list of threats which protected areas can face. To help the assessors make an objective assessment, the project team provided a supplementary table with a list of the types of data and units which may be useful in the assessment of most of the 52 generic threats (see the tables in Annex II).

The assessment form comprises 30 questions presented in a table with three columns: score, comments/explanations and next steps. The assessment is made by assigning a simple score ranging between 0 (poor) to 3 (excellent) to each question, thus linking each of the scores to one of four possible choices available to the assessors. Four of the questions are supplemented by a set of three additional statements that give the opportunity to score more points. An overview of the questions and their association with the six IUCN PAME Framework elements and the maximum number of points that can be assigned to the elements is given in Table 2.

The METT provides a mechanism for monitoring progress towards more effective management over time in sites that will not afford to develop a more detailed monitoring

system in years to come. The METT was designed primarily to track progress over time in single sites, rather than to compare sites. It can also reveal trends, strengths, and weaknesses in individual or groups of protected areas. For instance, in the Philippines, the Marine Protected Area Management Effectiveness Assessment Tool (MEAT) was used to understand the state of marine protected areas in the country and to determine interventions that could be recommended to further enhance their effective management (Dizon *et al.* 2013). Similarly, the METT was used to develop baseline information on management effectiveness in Zambia against which progress can be measured (Mwima 2007).

Table 2   Grouping of the questions in the assessment form in the six IUCN PAME Framework elements and the maximum number of points that can be assigned to each element

IUCN PAME element	Question #	Total # Questions	% of the Total # Questions	Maximum Score	% Total Score
Context	1	1	3.3%	3	2,9
Planning	2, 4, 5, 7, 8, 21, 26	7	23.3%	27	26,5
Inputs	3, 9, 13, 14, 15, 16, 18, 29	8	26.7%	24	23,5
Process	6, 10, 11, 12, 17, 19, 20, 22, 23, 24, 28	11	36.7%	36	35,3
Outputs	27	1	3.3%	3	2,9
Outcomes	25, 30	2	6.7%	9	8,8
Total	**30**	**30**	**100%**	**102**	**100**

The assessment of the protected areas in Albania in the frame of the project "Strengthening national capacity in nature protection – preparation for Natura 2000 network" was conducted by the newly appointed RAPA managers with some contribution from protected area managers working at the NAPA Directorate General in Tirana (*hereinafter*: "the assessors"). The directors and the General Secretaries on Management or Monitoring Specialists at the twelve RAPA offices first attended a one-day training workshop, held in Tirana on 26 June, 2015. Most of the participants also attended the second workshop held in the Dajti National Park on 8-9 July (the participants list is presented in Annex III). During the second workshop the participants, with support from the project team, used the METT to assess some of the protected areas in their jurisdiction. More METT assessments were completed in the following two weeks with the total number reaching 51. However, the actual number of protected areas assessed was 50 due to the fact that the Korab-Koritnik MNR was assessed separately by the managers at the RAPA offices in Diber and Kukes who share the management responsibility over this protected area. The full list of the 50 protected areas assessed using the METT is presented in the tables in Annex IV. The assessors also provided the data sheets (1 and 2) for three additional protected areas: Dardhe-Xhyre and Polis MNR in the region of Elbasan and the Kardhiq SR in the region of Gjirokaster. In summary, the assessors completed 54 Data sheet 1 and 2 (corresponding to 53 protected areas) and 51 assessment forms (corresponding to 50 protected areas). For matter of simplicity we refer to 54 (in the analysis of threats) and 51 protected areas (in the analysis of assessment forms).

2.   Analysis of the results

2.1.   Protected areas threats

Data sheet 2 of the METT provides a generic list of threats to protected areas. The list has been adapted from the Conservation Measures Partnership Taxonomy of Direct Threats. The scheme is based on two levels of classification. The first level consists of 12 categories that may have from 3 to 7 categories of threats at the second level; there are 52 threats in total at the second level of classification. The assessors were asked to assign a level of significance to all threats, choosing from four options: high, medium, low, and N/A (not applicable or not present). Threats of high-level significance are those that are seriously degrading the values of the protected area; medium level are those threats having some negative impact, and those characterised as low level are threats that are present but not seriously impacting values. The option N/A applies where the threat is not applicable or not present in the protected area.

For the purpose of this analysis, the categories of significance were quantified by assigning a simple score ranging between 0 (not applicable) to 3 (high), as shown in Table 3. The points assigned to the threats in the assessments of all 54 protected areas were summed up and the results were used to rank them, as shown in Figure 3. This analysis shows that the assessors identify Fire and fire suppression (code 7.1) as the most serious threat, followed by Logging and wood harvesting (5.3). A closer look at the data reveals that Fire and fire suppression was identified in 51 out of 54 protected areas assessed (total points: 89). In 12 protected areas it has been estimated to be of high significance (high, 3 points), in 16 cases to be of medium significance (medium, 2 points), and in 21 protected areas to be of low significance (low, 1 point). This threat was not relevant in 2 protected areas and in 3 cases data were missing. As for the threat presented by Logging and wood harvesting (total points 84), it has been estimated to be of high significance in 14 protected areas, in 12 cases to be of medium significance, and to be of low significance in 18 protected areas; this threat was reported as irrelevant to 10 protected areas.

Table 3   Quantification of the level of significance of the generic threats presented in the Data Sheet 2 of the METT

Threat Level	Score (points)
Not applicable	0
Low	1
Medium	2
High	3

The discussion above indicates that it may be useful to have a closer look at the levels of threat for each of the 52 categories. This was achieved by calculating the percentage (%) of cases (protected areas) for which each of the threats was identified at any of the three levels. For instance, in 25.9% of protected areas Logging and wood harvesting (threat code 5.3) was reported as a high-level threat, whereas Fire and fire suppression (threat code 7.1) has been identified as a high-level threat in 22.2% of protected areas. The results from the analysis of protected areas facing a high-level threat are presented in Figure 4. Similarly, the results for the medium and low level of threats are presented in figures 7 and 8. The detailed results of this analysis are presented in Annex V.
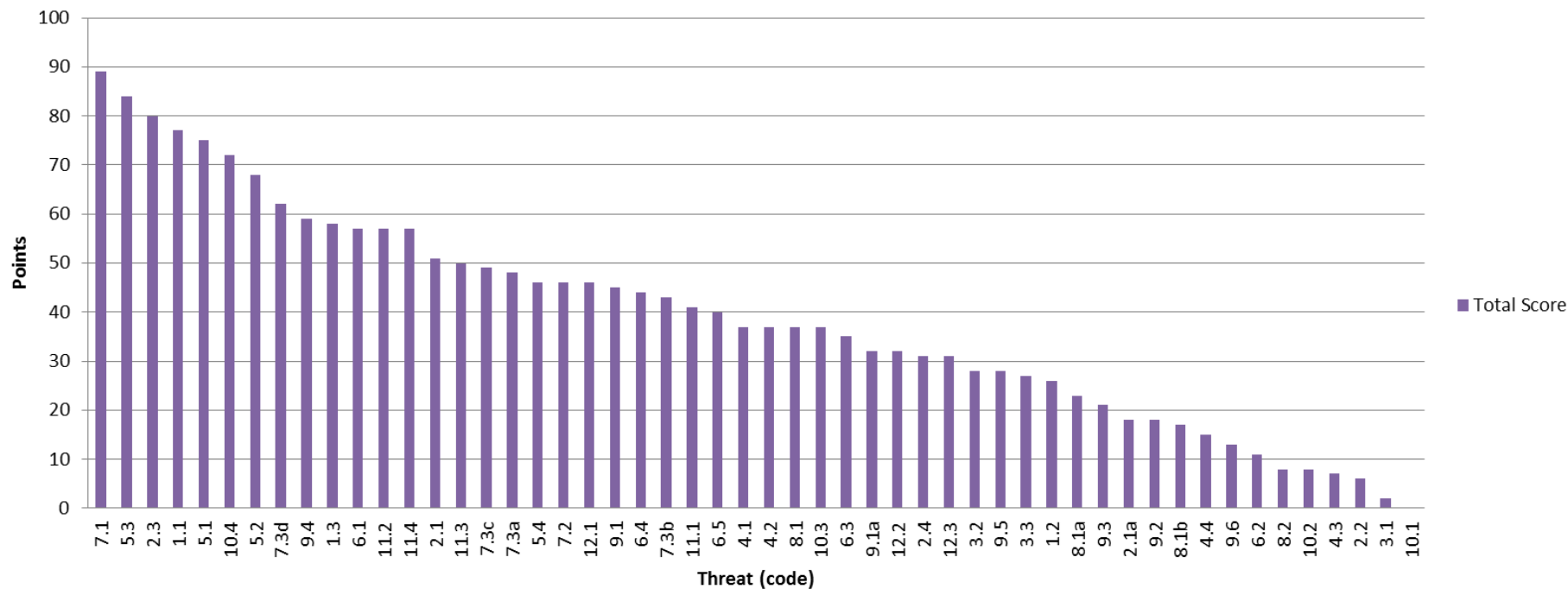
Figure 2   Ranking of the threats by the total number of points assigned in the assessment of 54 protected areas
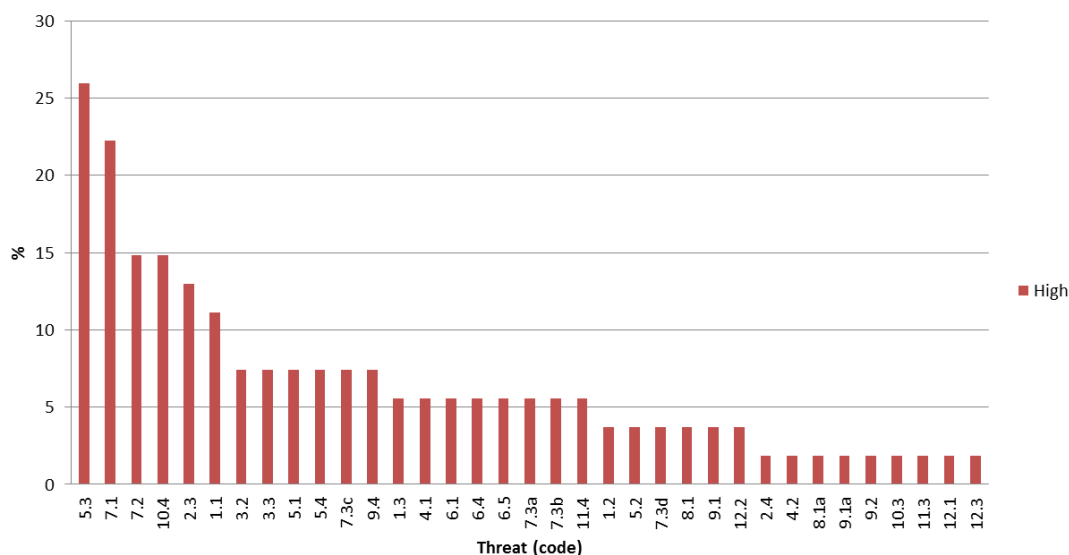
Figure 3   Ranking of the threats expressed as % of protected areas in which they have been identified as a high-level threat (*n=54*)

Looking at the distribution of the threats between the different management categories, it can be concluded that Managed Nature Reserve (MNR) is the most severely threatened category by both fire and logging and wood harvesting (see figures 4 and 5).
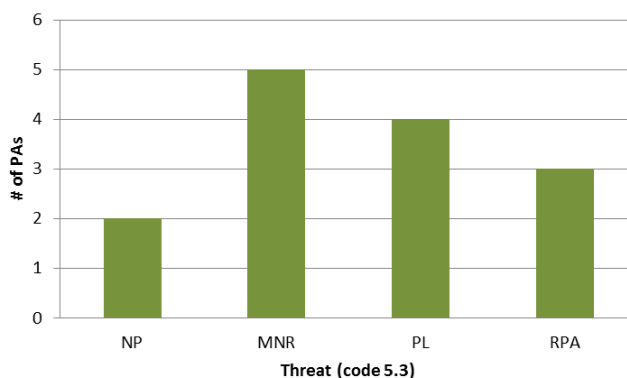
Figure 4   Distribution of high-level threats from Logging and wood harvesting (code 5.3) among the management categories of protected areas
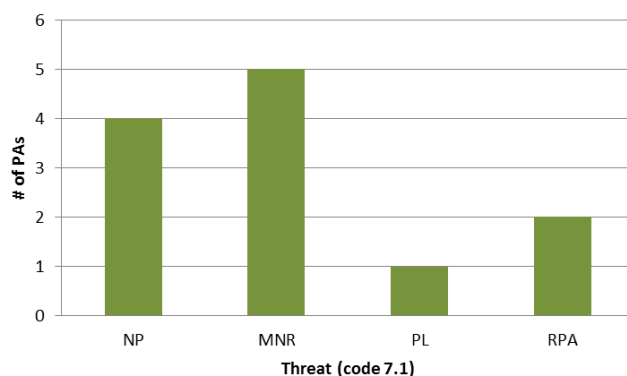
Figure 5   Distribution of high-level threats from Fire and fire suppression (code 7.1) among the management categories of protected areas
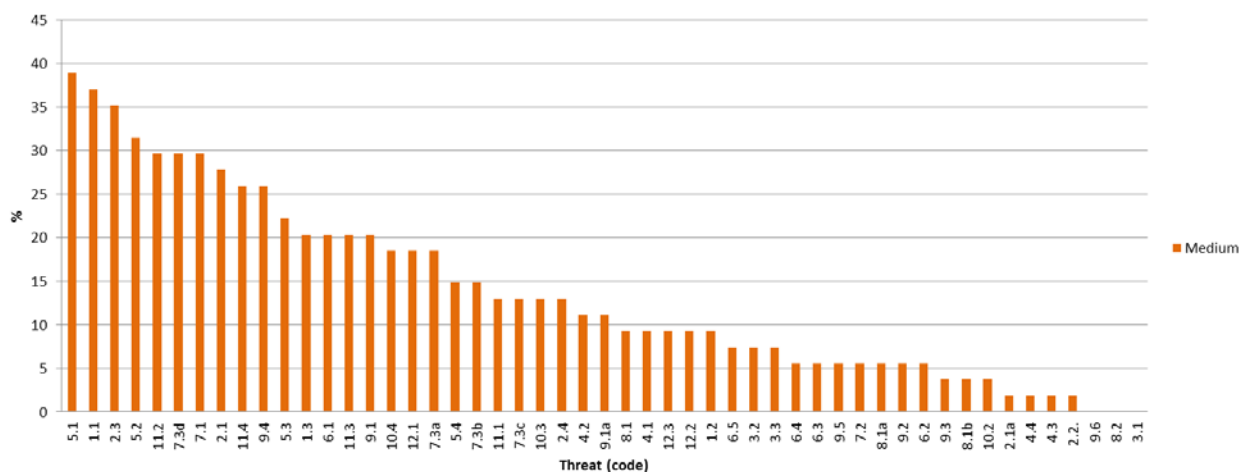
Figure 6   Ranking of threats expressed as % of protected areas in which they have been identified as a medium-level threat (*n=54*)
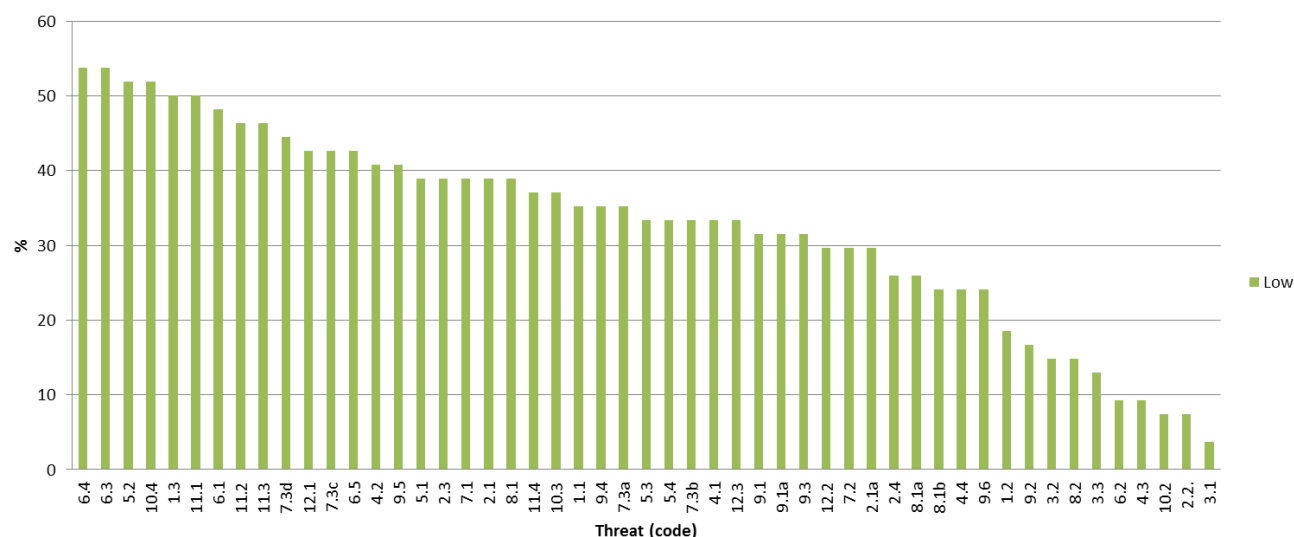
Figure 7   Ranking of threats expressed as % of protected areas in which they have been identified as a low-level threat (*n=54*)

2.1.1.   Residential and commercial development

The category "Residential and commercial development within a protected area" includes threats from human settlements or other non-agricultural land uses with a substantial footprint. There are three threats in this category: Housing and settlement (code 1.1); Commercial and industrial areas (code 1.2) and Tourism and recreation infrastructure (code 1.3).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 9. Housing and settlement is often recognized as a threat and in 20 protected areas (37%) it is estimated to be a medium-level threat. This is the second highest percentage for medium-level threats, as shown in Figure 7. It is interesting to note that Tourism and recreation

infrastructure development have been identified as a threat in 27 protected areas (50%), though at a low level. On the other hand, the threat from Commercial and industrial areas is not relevant to the vast majority of protected areas in Albania, although it has been estimated as a high-level threat for the Pishe Poro MNR in the region of Fier and the Pogradec Terrestrial/Aquatic Territory PL in the region of Korca.
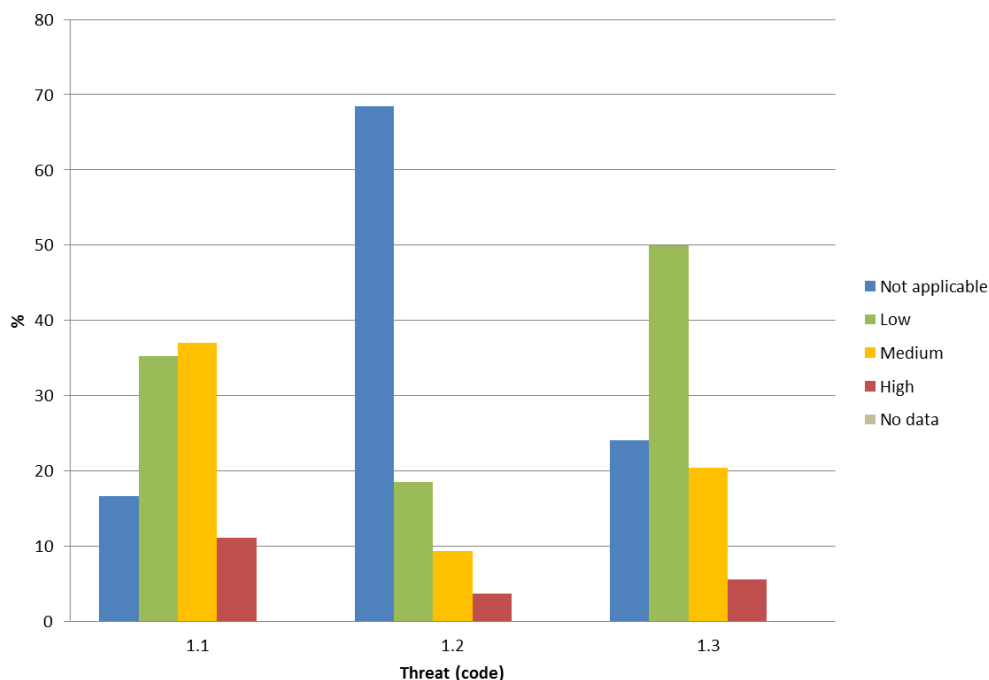
Figure 8   Significance of the threats in the category "Residential and commercial development within a protected area" (a % of the total number of protected areas)

2.1.2.   Agriculture and aquaculture

The category "Agriculture and aquaculture within a protected area" includes threats from farming and grazing as a result of agricultural expansion and intensification, including silviculture, mariculture and aquaculture. There are five threats in this category: Annual and perennial non-timber crop cultivation (code 2.1); Drug cultivation (code 2.1a); Wood and pulp plantations (code 2.2); Livestock farming and grazing (code 2.3); and Marine and freshwater aquaculture (code 2.4).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 10. Annual and perennial non-timber crop cultivation presents a threat to 36 protected areas (66.7%), although at low and medium levels. Wood and pulp plantations threaten only 5 protected areas and it is of medium level only in Pishe Poro MNR in the region of Fier. On the other hand, Livestock farming and grazing is relevant to 47 protected areas (87%). The high level of threat from Livestock farming and grazing has been reported for Zall Gjocaj NP, Dardhe-Xhyre MNR in the region of Elbasan, Levan MNR in the region of Fier, Krastafillak MNR and the Piskal-Shqeri PL in the region of Korce, as well as in Bjeshka e Oroshit RPA in the region of Lezhe. In the case of the Korab-Koritnik MNR, the managers from the Diber RAPA office estimated the level of threat as being high, whereas those at the Kukes RAPA

office estimated it as being medium. Freshwater aquaculture presents a high level of threat only in Zall Gjocaj NP in the region of Diber.
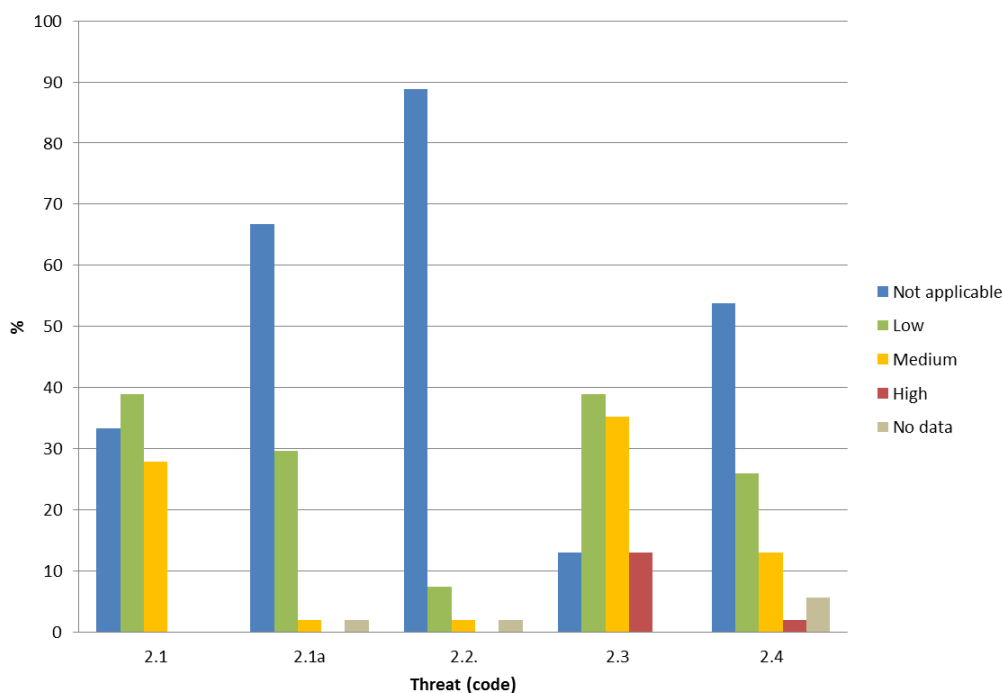
Figure 9 Significance of the threats in the category "Agriculture and aquaculture within a protected area" (a % of the total number of protected areas)

2.1.3. Energy production and mining

The category "Energy production and mining within a protected area" includes threats from production of non-biological resources. There are three threats in this category: Oil and gas drilling (code 3.1); Mining and quarrying (code 3.2); and Energy generation, including from hydropower dams (code 3.3).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 11. The overall picture is that the threats from Energy production and mining are not relevant to the vast majority of protected areas in Albania. Low level of threats form Oil and gas operations were reported for Pishe Poro Managed Nature Reserve in the region of Fier. A high level of threats from Mining and quarrying were reported for Luzni-Bulac RPA in the region of Diber, Shebenik-Jabllanice NP in the region of Elbasan, Pishe Poro MNR, and the Pogradec Terrestrial/Aquatic Territory PL in the region of Korca. High level of threats from Energy generation (including hydropower dams) were reported for Shebenik-Jabllanice NP, Kuturman MNR in the region of Elbasan, Bredhi Hotoves-Dangelli NP in the region of Gjirokaster and Korab-Koritnik MNR. In the latter case it is interesting to note that managers at the Diber RAPA office do not recognize this threat as relevant, whereas the managers at the Kukes RAPA office have identified it as a high-level threat.
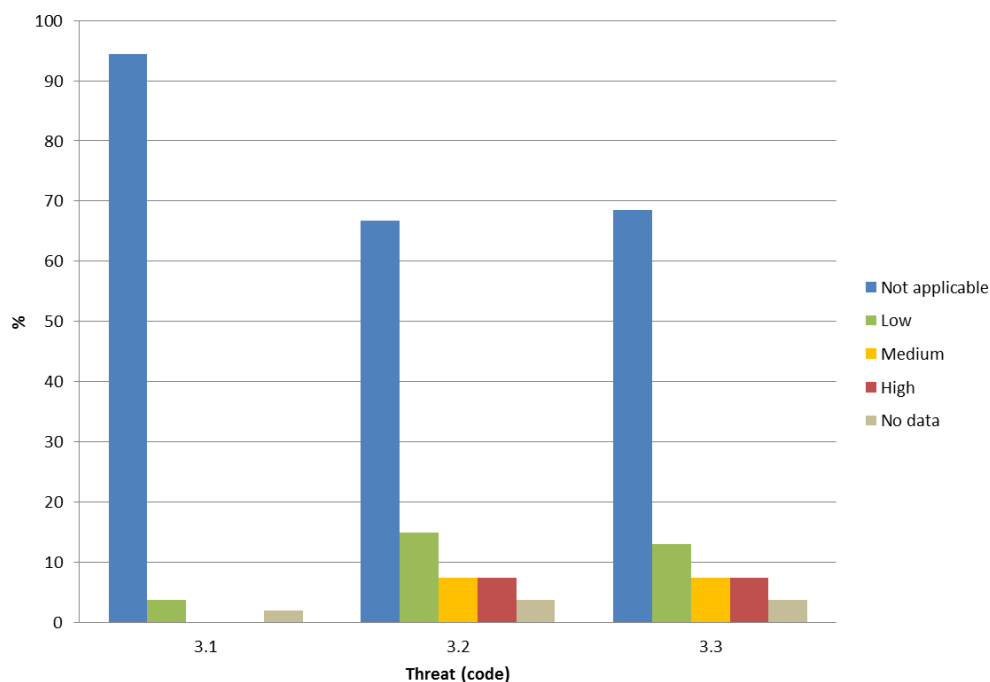
Figure 10 Significance of the threats in the category "Energy production and mining within a protected area" (a % of the total number of protected areas)

2.1.4.   Transportation and service corridors

The category "Transportation and service corridors within a protected area" includes threats from long, narrow transport corridors and the vehicles that use them, including associated wildlife mortality. There are four threats in this category: Roads and railroads (including road-killed animals; code 4.1); Utility and service lines (e.g. electricity cables, telephone lines; code 3.2); Shipping lanes and canals (code 4.3), and Flight paths (code 4.4).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 12. A high-level of threat from Roads and railroads was reported on Lura and Zall Gjocaj NP in the region of Diber and the Pishe Poro MNR in the region of Fier. A high-level threat from Utility and service lines was reported only for the Lake Ulez MNR in the region of Diber. The threats from Shipping lanes and canals were reported as applicable only to 6 protected areas, with the Zall Gjocaj NP being the only case where this threat has been estimated at the medium level. The threats from Flight paths were reported as relevant in 13 protected areas, with the Zall Gjocaj NP representing the only case where this threat has been estimated at the medium level.

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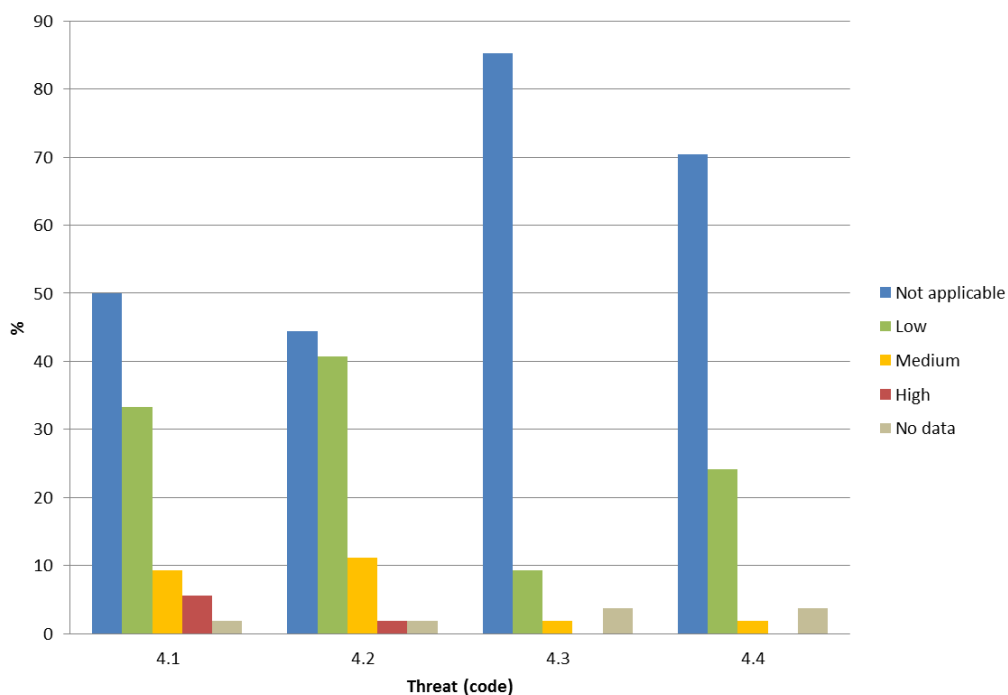
Figure 11   Significance of the threats in the category "Transportation and service corridors within a protected area" (a % of the total number of protected areas)

2.1.5.   Biological resource use and harm

The category "Biological resource use and harm within a protected area" includes threats from consumptive use of 'wild' biological resources including both deliberate and unintentional harvesting effects, as well as persecution or control of specific species, including hunting and killing of animals. There are four threats in this category: Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict; code 5.1); Gathering terrestrial plants or plant products (non-timber; code 5.2); Logging and wood harvesting (code 5.3), and Fishing, killing and harvesting aquatic resources (code 5.4).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 13. This category is relevant to the vast majority of the protected areas in Albania. It should be noted that the top high-level threat and two of the top five medium-level threats belong to this category (see figures 3 and 6 above).

Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict; code 5.1) is reported as the most important medium-level threat (see Figure 7). It is also one of the most widespread threats, relevant to 46 protected areas (85%). It is interesting to note that the threat from gathering terrestrial plants or plant products was reported as being of a high level only in Lura and Zall Gjocaj national parks in the region of Diber. At the same time, this threat is widespread and of relevance to 47 protected areas (87%) in Albania. As mentioned previously, in 25.9% of protected areas, Logging and wood collection (threat code 5.3) represents a high-level threat. Fishing, killing and harvesting aquatic resources has been identified as a threat in 32 of the protected areas

(59%); high levels of this threat were reported for the Lura and Zall Gjocaj national parks and the Lake Ulez MNR in the region of Diber, as well as the Levan MNR in the region of Fier.
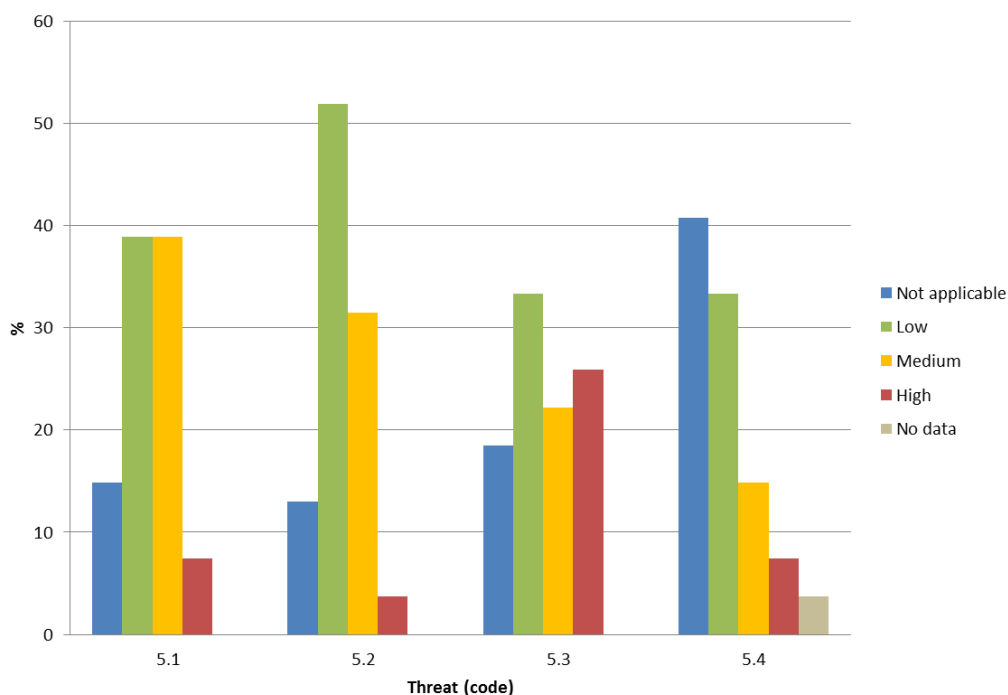
Figure 12   Significance of the threats in the category "Biological resource use and harm within a protected area" (a % of the total number of protected areas)

2.1.6.   Human intrusions and disturbance

The category "Human intrusions and disturbance within a protected area" includes threats from human activities that alter, destroy or disturb habitats and species associated with non-consumptive uses of biological resources. There are five threats in this category: Recreational activities and tourism (code 6.1); War, civil unrest and military exercises (code 6.2); Research, education and other work-related activities in protected areas (code 6.3); Activities of protected area managers (e.g. construction or vehicle use, artificial watering points and dams; code 6.4); and Deliberate vandalism, destructive activities or threats to protected area staff and visitors (code 6.5).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 14. With the exception of threats from War, civil unrest and military exercises this category is relevant to most of the protected areas in Albania. Threats from Recreational activities and tourism were reported for 31 protected areas in Albania (76%). A high level of threat was reported only for Lake Ulez MNR, Levan Managed NR and Buna River-Velipoje PL in the region of Shkoder. The threat level in the Butrint NP was reported as medium. It is interesting to note that the threats from Research, education and other work-related activities in protected areas (code 6.3) and Activities of protected area managers (code 6.4) are the most prevalent of all low-level threats, reported in 29 (53.7%) protected areas in Albania (see Figure 8). Moreover, the threats from Activities of protected area managers were reported as being high in Levan in Pishe Poro MNR and the Germenj-Shelegur MNR in the region of Korca. Deliberate vandalism, destructive activities or threats to protected area

staff and visitors is a problem in 31 protected areas (57%) and a high level of threat was reported for Levan and Pishe Poro managed nature reserves and the Guri i Nikes PRA in the region of Korce.
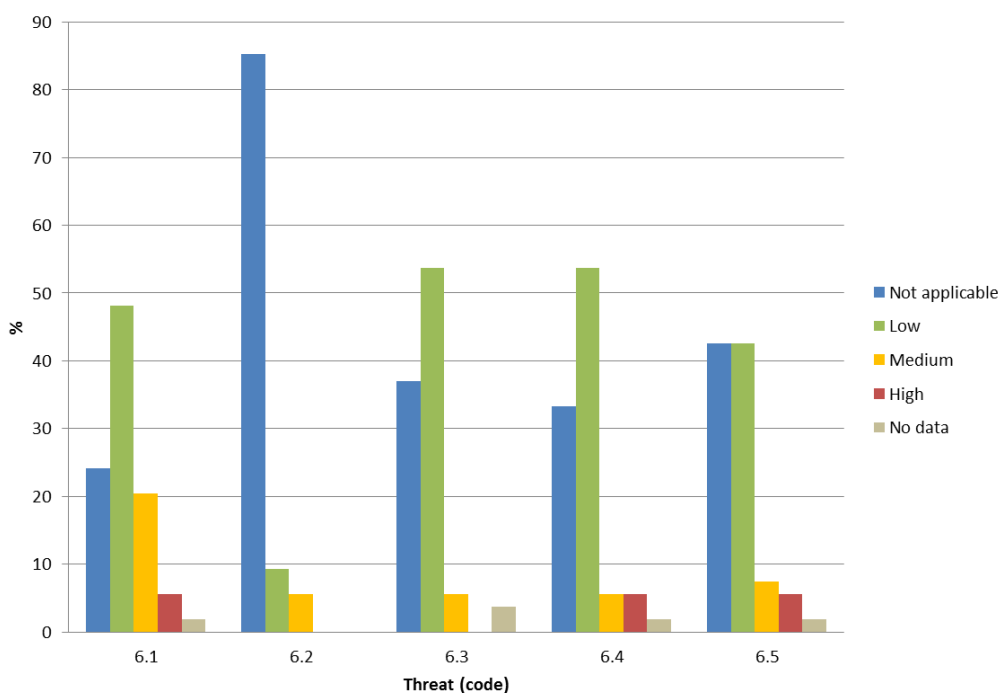

Figure 13   Significance of the threats in the category "Human intrusions and disturbance within a protected area" (a % of the total number of protected areas)

2.1.7.   Natural system modification

The category "Natural system modification" includes threats from other actions that convert or degrade habitat or change the way the ecosystem functions. There are six threats in this category: Fire and fire suppression (including arson; code 7.1); Dams, hydrological modification and water management/use (code 7.2); Increased fragmentation within protected area (code 7.3a); Isolation from other natural habitats (e.g. deforestation, dams without effective aquatic wildlife passages; code 7.3b); Other 'edge effects' on park values (7.3.c) and Loss of keystone species (e.g. top predators, pollinators, etc.; code 7.3d).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 15. This threat category is relevant to most of the protected areas in Albania. Fire and fire suppression (code 7.1) has been identified as a high-level threat in 12 protected areas (22.2%) and ranks second among high-level threats, after Logging and wood harvesting. It is relevant to 52 protected areas (96.3%) in Albania. Dams, hydrological modification and water management/use (code 7.2) were also reported as a threat in quite a large number of protected areas (30 or 55.5%) and in 15 protected areas (27.7%) is considered to be a high-level one. It is also important to note that Loss of keystone species (code 7.3d) was reported to be relevant to 35 protected areas (64.8%) in Albania.
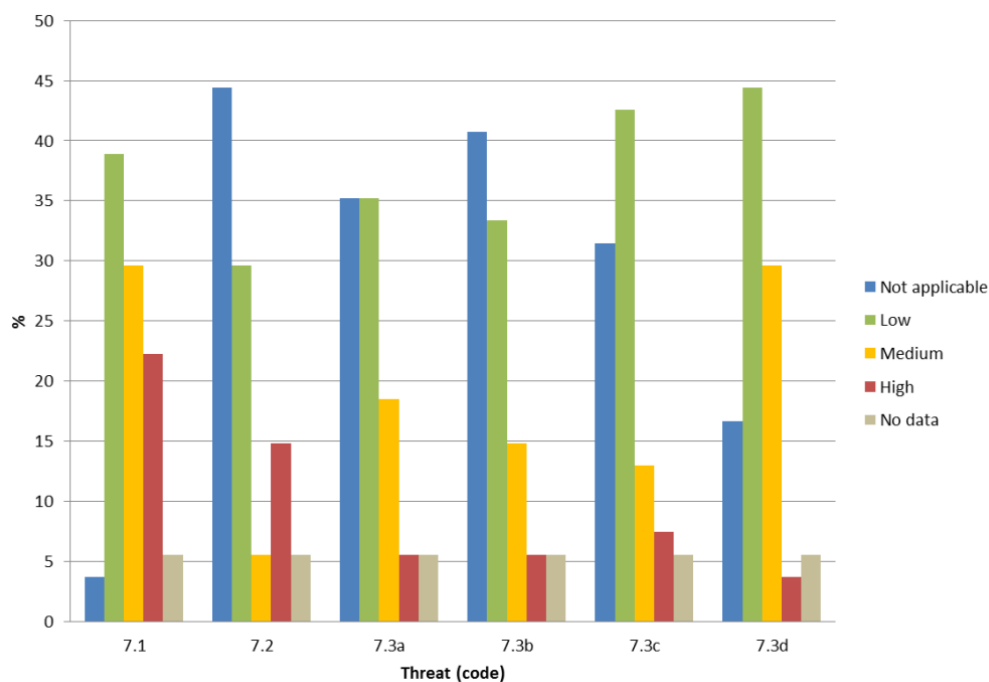
Figure 14 Significance of the threats in the category "Natural system modification" (a % of the total number of protected areas)

2.1.8. Invasive and other problematic species and genes

The category "Invasive and other problematic species and genes" includes threats from terrestrial and aquatic non-native and native plants, animals, pathogens/microbes or genetic materials that have or are predicted to have harmful effects on biodiversity following introduction, spread and/or increase. There are four threats in this category: Invasive non-native/alien plants (e.g. weeds; code 8.1); Invasive non-native/alien animals (code 8.1a); Pathogens (non-native or native but creating new/increased problems; code 8.1.b), and Introduced genetic material (e.g. genetically modified organisms; code 8.2).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 16. This threat category is not very relevant to most protected areas that were assessed, except for Invasive non-native/alien plants (threat code 8.1) that is relevant to 28 protected areas (51.8%). High-level threats from Invasive non-native/alien plants were reported for the managed resource reserves Polis and Levan in the region of Elbasan and Fier, respectively. High-level threats from Invasive non-native/alien animals (code 8.1a) were reported only for Lake Shkodra MNR in the Shkodra region. No high-level threats were reported for Pathogens (non-native or native but creating new/increased problems; code 8.1.b) and Introduced genetic material (e.g. genetically modified; code 8.2).
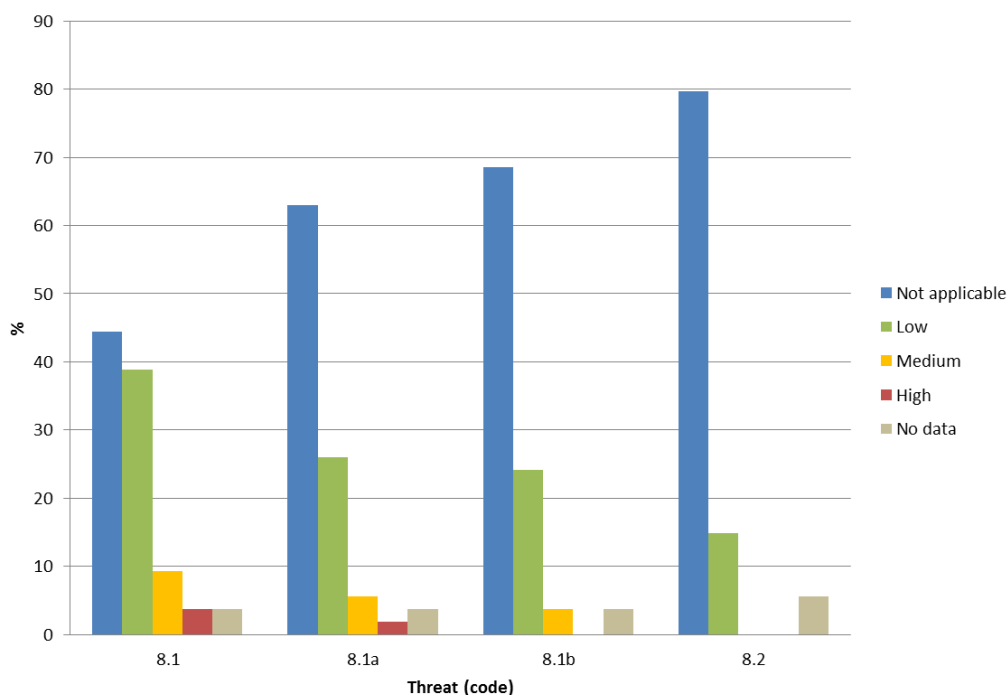
Figure 15   Significance of the threats in the category "Invasive and other problematic species and genes" (a % of the total number of protected areas)

2.1.9.   Pollution entering or generated within protected area

The category "Pollution entering or generated within protected area" includes threats from introduction of exotic and/or excess materials or energy from point and non-point sources. There are seven threats in this category: Household sewage and urban waste water (code 9.1); Sewage and waste water from protected area facilities (e.g. toilets, hotels, etc.; code 9.1a); Industrial, mining and military effluents and discharges (e.g. poor water quality discharge from dams, unnatural temperatures, de-oxygenated, other pollution; code 9.2); Agricultural and forestry effluents (e.g. excess fertilizers or pesticides; code 9.3); Garbage and solid waste (code 9.4); Air-borne pollutants (code 9.5); and Excess energy (e.g. heat pollution, lights, etc.; code 9.5).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 17. This threat category is not very relevant to the protected areas that were assessed, except for the threat Sewage and waste water from protected area facilities (code 9.1) that was relevant to 30 protected areas (55.5%) and identified as a high-level threat only in Levant MNR in the Fier region and Prespa NP in the Korca region. High-level threats from Industrial, mining and military effluents and discharges (code 9.2) were reported only for the Levan MNR. Among other sources of pollution, Garbage and solid waste (code 9.4) were reported as a high-level threat in four protected areas: Prespa and Lura national parks, Levan MNR and the Pogradec Terrestrial/Aquatic Territory PL in the region of Korca. Overall, threats from Garbage and solid waste were reported as being relevant to 37 protected areas (68.5%).

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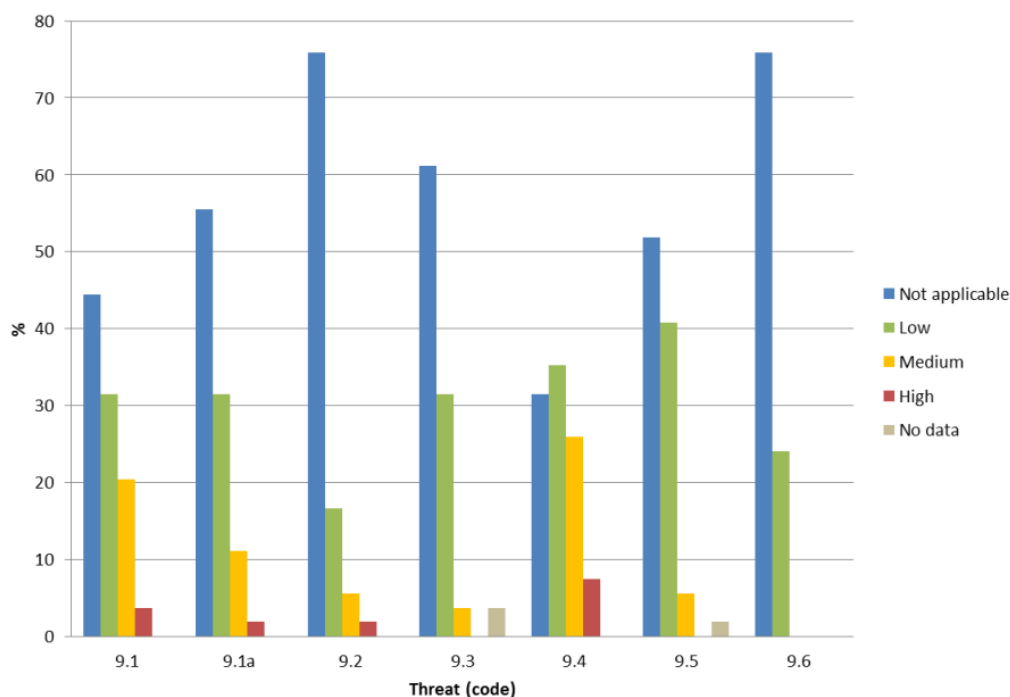
Figure 16 Significance of the threats in the category "Pollution entering or generated within protected area" (a % of the total number of protected areas)

2.1.10. Geological events

The category "Geological events" may be part of natural disturbance regimes in many ecosystems. But they can be a threat if a species or habitat is damaged and has lost its resilience and is vulnerable to disturbance. There are four threats in this category: Volcanoes (code 10.1); Earthquakes/Tsunamis (code 10.2); Avalanches/Landslides (code 10.3); and Erosion and siltation/deposition (e.g. shoreline or riverbed changes; code 10.4).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 18. This threat category is not very relevant to most of the protected areas that were assessed, except for Erosion and siltation/deposition (code 10.4), which was identified as relevant to 47 protected areas (87%). Among the latter there are 8 protected areas where Erosion and siltation/deposition was reported as highly significant: Lura, Divjake Karavasta and Thethi national parks; Polis, Levan, Pishe Poro and Patok-Fushekuqe-Ishem managed nature reserves and Buna River-Velipoje PL. Avalanches/Landslides were reported as a high-level threat only for Luzni-Bulac RPA in the region of Diber.
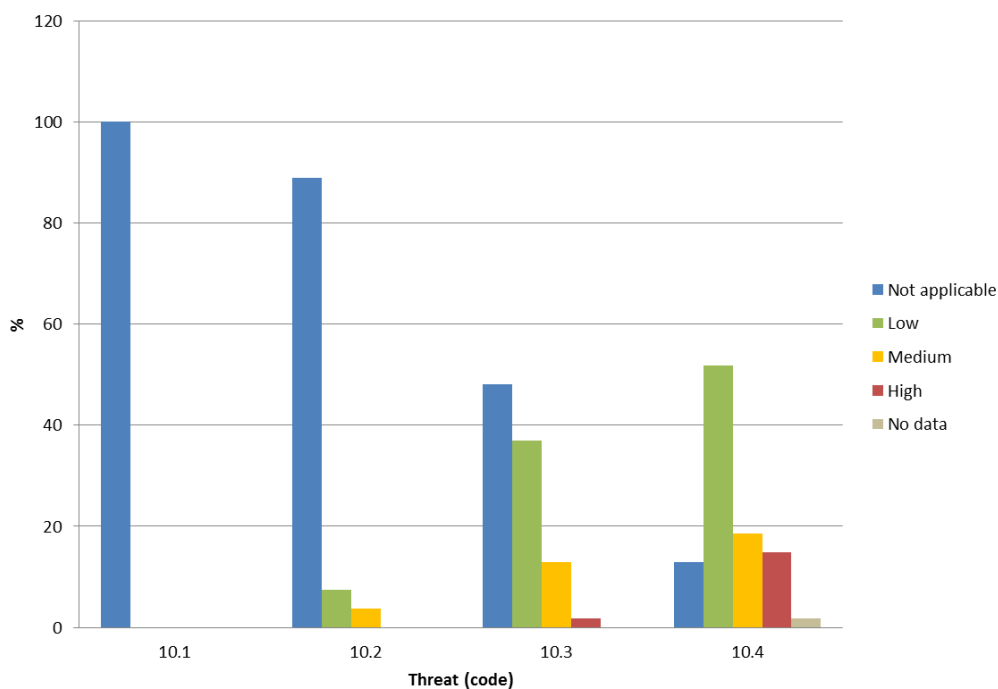
Figure 17   Significance of the threats in the category "Geological events" (a % of the total number of protected areas)

2.1.11.   Climate change and severe weather

The category "Climate change and severe weather" includes threats from long-term climatic changes which may be linked to global warming and other severe climatic/weather events outside of the natural range of variation. There are four threats in this category: Habitat shifting and alteration (code 11.1); Droughts (code 11.2); Temperature extremes (code 11.3); Storms and flooding (code 11.4).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 19. This threat category is relevant to the majority of protected areas that were assessed. In this category Droughts were recognized as the most relevant threat in 43 protected areas (79.6%), though only on low and medium levels. High-level threats were reported for Temperature extremes (Thethi NP) and Storms and flooding (Thethi NP, Lake Shkodra MNR and Buna River-Velipoje PL).

2.1.12. Specific cultural and social threats

The category "Specific cultural and social threats" includes three threats: Loss of cultural links, traditional knowledge and/or management practices (code 12.1); Natural deterioration of important cultural site values (code 12.2); and Destruction of cultural heritage buildings, gardens, sites, etc. (code 12.3).

The distribution of the results (as a % of the total number of protected areas assessed) on the levels of significance for the threats in this category are presented in Figure 20. Loss of cultural links, traditional knowledge and/or management practices was reported as relevant to 34 protected areas (63%), including Dardhe-Xhyre MNR where the reported level was high. Natural deterioration of important cultural site values was reported as

relevant to 25 protected areas (46.3%), with Polis and Dardhe-Xhyre MNRs being highly threatened. Destruction of cultural heritage buildings, gardens, sites, etc. was deemed relevant to 25 protected areas (46.3%), with Buna River-Velipoje PL experiencing a high level of this threat.
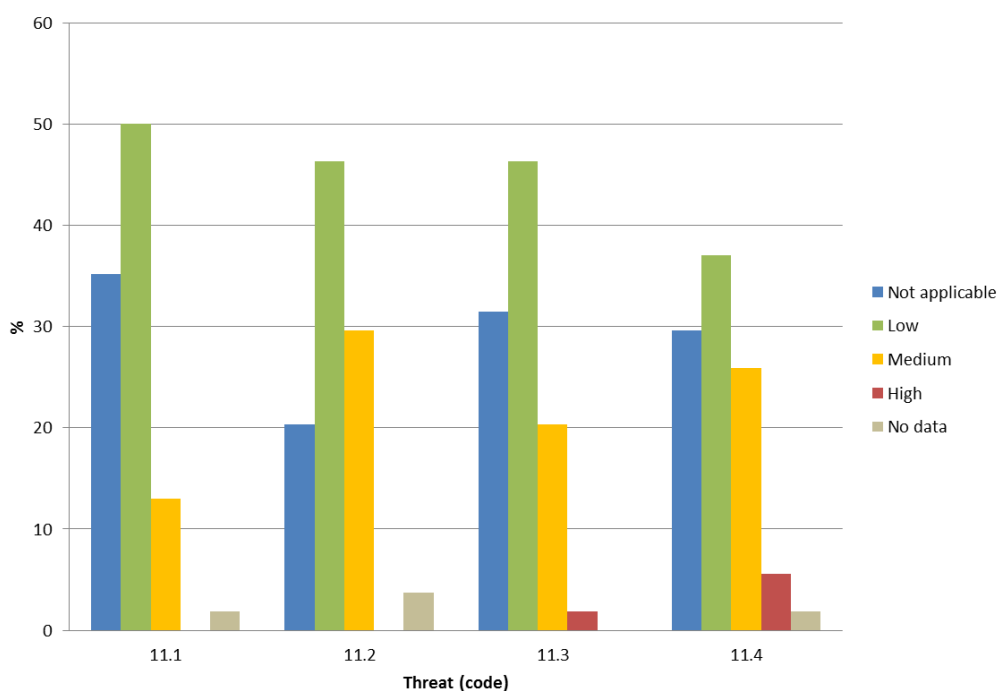
Figure 18   Significance of the threats in the category "Climate change and severe weather" (% of the total number of protected areas)
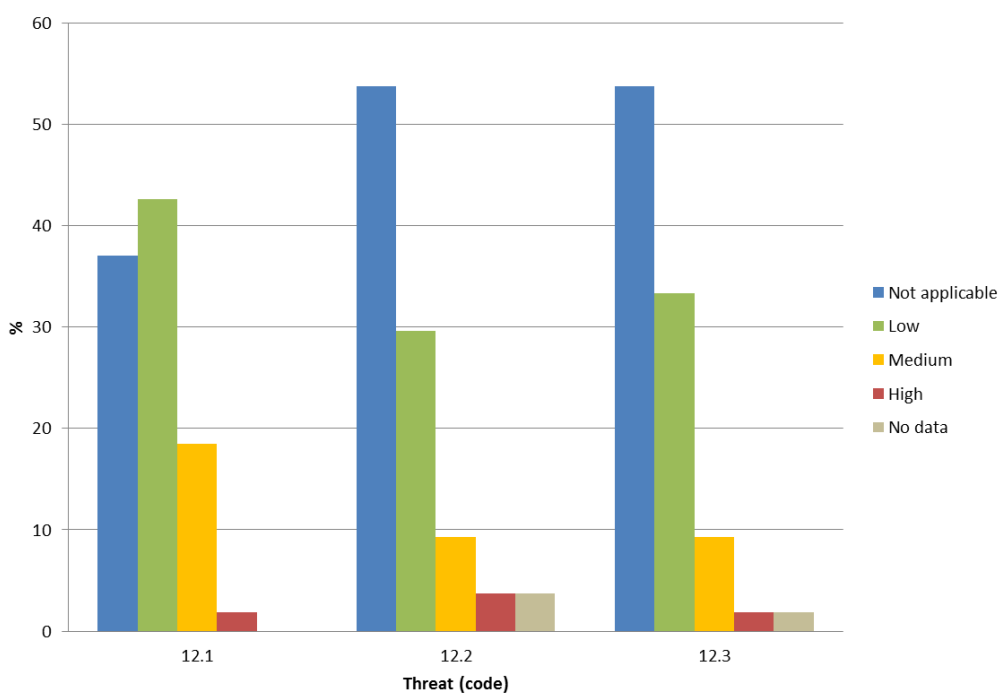
Figure 19   Significance of the second-level threat categories of "Specific cultural and social threats" (% of the total number of protected areas)

2.2. Analysis of Assessment Form results

In their "Guidance Notes for using the Tracking Tool," the authors of the METT acknowledge that the whole concept of 'scoring' progress is fraught with difficulties and possibilities for distortion. The current system assumes, for example, that all the questions cover issues of equal weight, whereas in reality this is not necessarily the case. Scores would offer a better assessment of effectiveness if they were calculated as a percentage of each of the six elements of the IUCN PAME Framework (i.e. context, planning, inputs, process, outputs and assessments). Bearing this in mind, the analysis presented in this section focuses mostly on the six elements of the IUCN PAME Framework. On the other hand, as presented in Section 1.1 (Objectives and scope of the assessment), this report aims to help assess the current state of all protected areas in Albania, with a special emphasis on technical aspects, institutional setup, legal gaps, human resources, equipment, etc. To this end, the most relevant questions, including the comments from the respondents, were analysed in detail in the sections below related to each of the six elements of the IUCN PAME Framework.

As mentioned in Section 1.2 (Approach and Methodology), the assessment is made by assigning a simple score ranging between 0 (poor) to 3 (excellent) to each question, thus linking each score to one of four possible choices available to the assessors. It is important to recall that four of the questions are supplemented by a set of three additional statements that makes it possible to score more points. Since there are no alternatives for the supplementary questions which elaborate on key themes in the main questions, there could be only two values for each of them: zero points were assigned to the instances where the supplementary questions were omitted and one point was assigned to the cases where they were selected. For the purpose of this analysis, the data on individual protected areas were aggregated in two ways. First, for all protected areas the scores (number of points) were summed up for each of the six elements of the IUCN PAME Framework and also represented as a percentage of the maximum possible score for the relevant element (see Example 1 below). The results are presented in the tables in Annex IV, where the protected areas are listed by their management category. The data were also aggregated for all 34 questions in the Assessment Form by counting the number of times each of the alternative answers was chosen, and by representing them as a percentage of the total number of answers (that is 51; see Example 2). The detailed results of this analysis are presented in Annex VI.

To aid the visualisation of the results, the protected areas were grouped into one of the four effectiveness categories indicated by the following colour scheme:

0%<25%	Category 1		Ineffective
25%<50%	Category 2		
50%<75%	Category 3		
>75%	Category 4		Highly effective
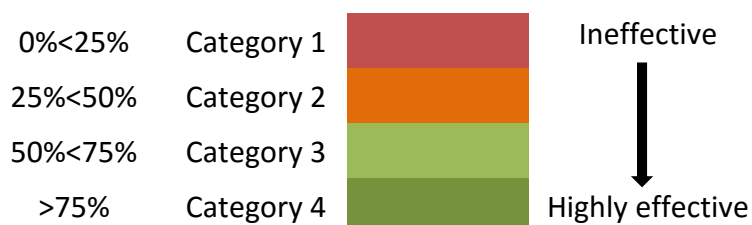
Example 1: "Outcomes"

The sum of the points related to questions 25 and 30, expressed as a percentage of the maximum points for the IUCN PAME Framework element "Outcomes" (9 points), is higher than 75% in 7 out of 51 protected areas (13.7%). The management in these protected areas in terms of outcomes is considered to be of Category 4 (highly effective).
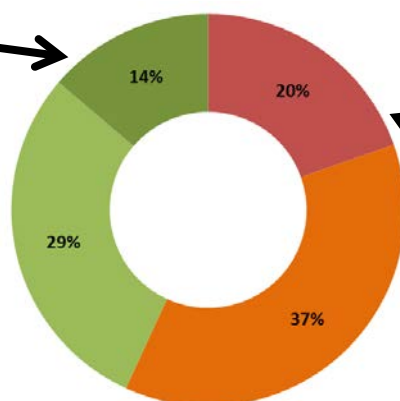
The sum of the points related to questions 25 and 30, expressed as a percentage of the maximum points for IUCN PAME Framework element "Outcomes" (9 points), is lower than 25% in 10 out of 51 protected areas (19.6%). The management in these protected areas in terms of outcomes is considered to be of Category 1 (ineffective).

Example 2: "Outcomes"

For 16 out of 51 protected areas (31.4%), for question N° 25 the assessors selected the answer "*The protected area does not deliver any economic benefits to local communities,*" which corresponds to 0 points (ineffective).

For 6 out of 51 protected areas (11.8%), for question N° 25 the assessors selected the answer "*There is a major flow of economic benefits to local communities from activities associated with the protected area,*" which corresponds to 3 points (highly effective).
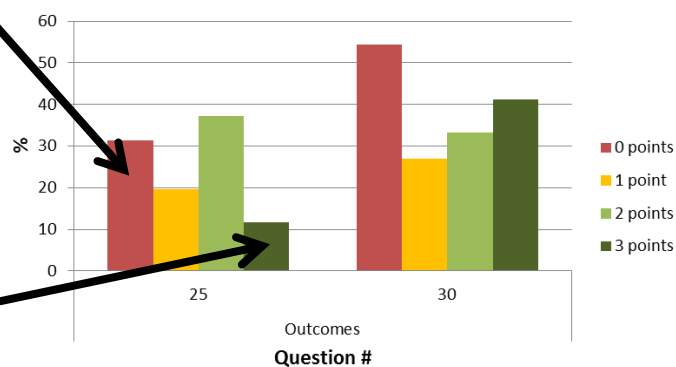
It is useful to present some general observations before the results are discussed in detail in the following sections. The highest percentage of poor answers (Score 0) was given to question 29: "Fees" (see Figure 21). This implies that in 44 protected areas (86.3%) there is no collection of fees. Poor results are reported also for question N° 15 ("Current budget," 80.4%), question N° 16 ("Security of budget," 74.5%), question N° 17 ("Management of budget," 78.4%), question N° 18 ("Equipment," 68.6%) and question N° 19 ("Maintenance of equipment," 62.7%). The highest percentage of excellent scores was reported on question N° 1 ("Legal status," 100%). The second highest percentage of excellent scores was reported for question N° 30 ("Condition of values," 41.2%).

The analysis of the average scores by IUCN PAME Framework element clearly shows that poor scores prevail in all of the six elements but the first one – "Context" – which is related only to question N° 1 ("Legal status"). The results are shown in Figure 22.
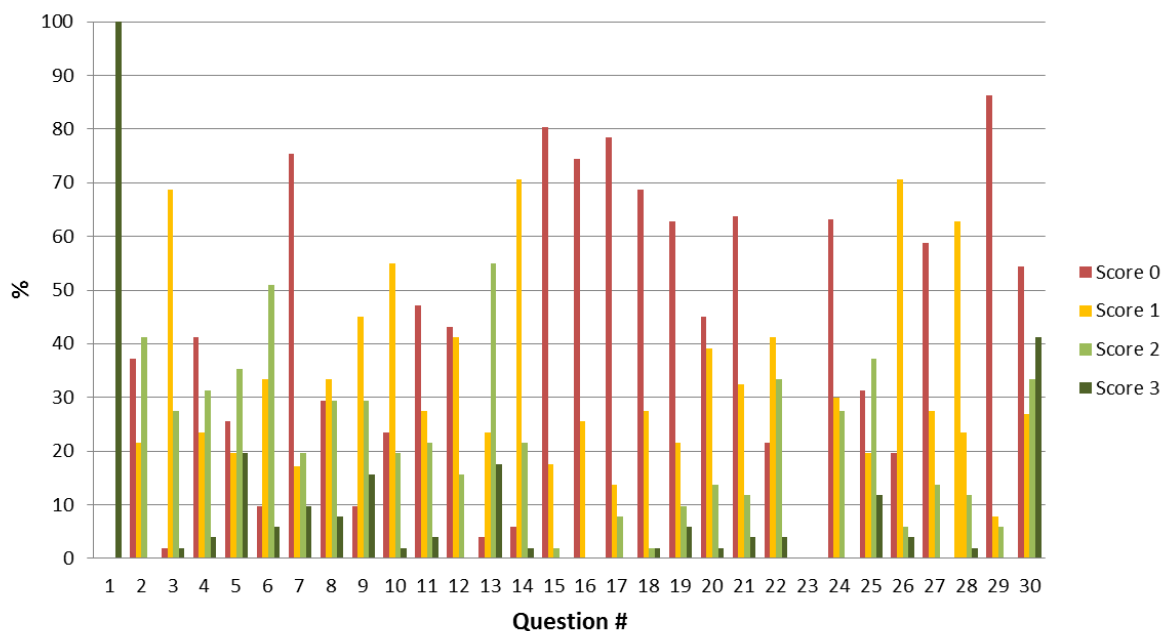
Figure 20   Number of scores per question (% of the maximum scores)
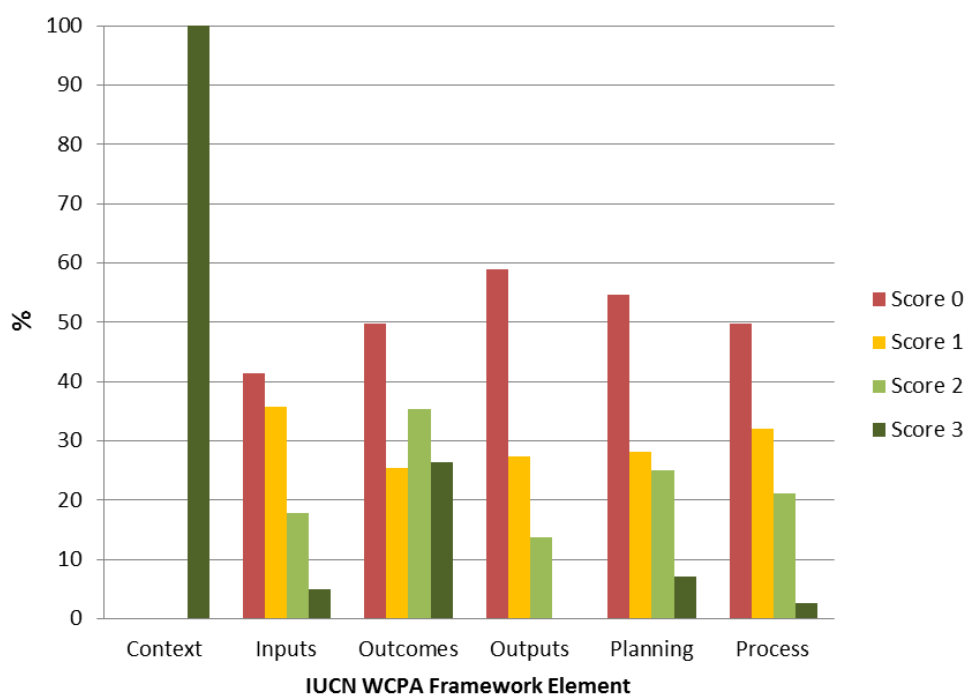
Figure 21   Distribution of scores per IUCN PAME Framework element (% of the maximum scores)

The results of this analysis can be disaggregated by a management category, as shown in Figure 23. According to this analysis, national parks show better average results on all six IUCN PAME Framework elements than other management categories. A similar analysis by which the data are disaggregated by region show that the region of Durres has better average results on all six IUCN PAME Framework elements than other regions in Albania (see Figure 24).
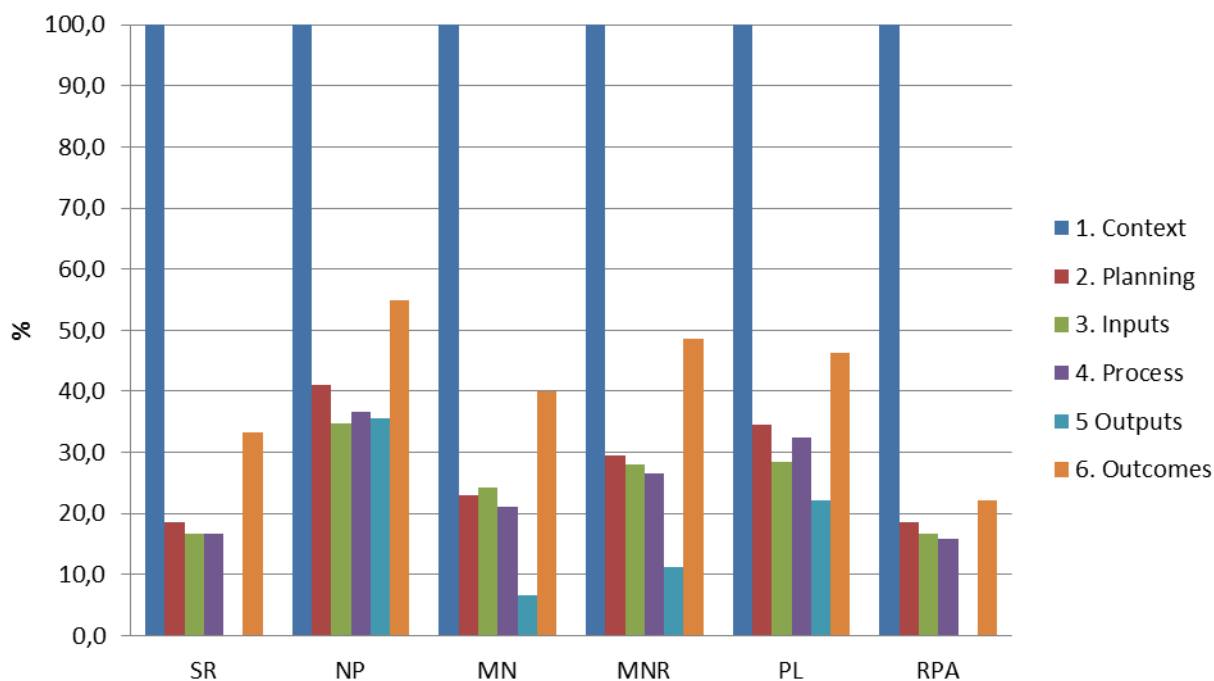
Figure 22 Distribution of scores per IUCN PAME Framework element disaggregated by management category (% of the maximum scores)
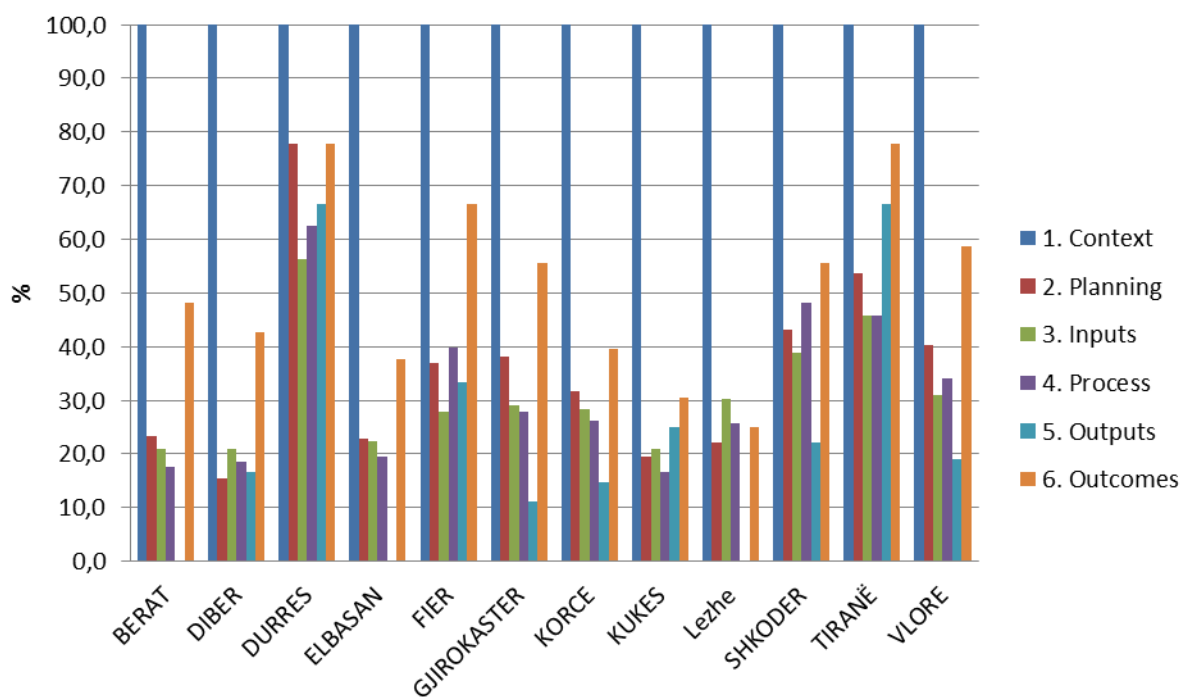
Figure 23 Distribution of scores per IUCN PAME Framework element disaggregated by region (% of the maximum scores)

2.2.1. Context
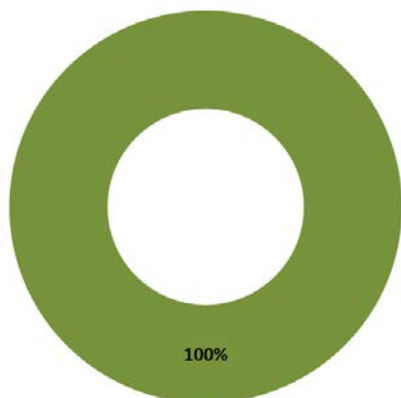
Figure 24 Effectiveness categories of "Context"

"Context" is the first element in the IUCN PAME Framework that provides the relevant background information needed for the planning and management. Most of the information in the METT on this element is provided in Data sheet 2. In the Assessment Form this element is represented only by the first question: "Legal status." All assessed protected areas were legally established.

In their comments to the question, managers of Dajti Mountain NP noted that its new borders have not been mapped although the park was enlarged in 2006. Assessors also noted that the area of the Stravaj Managed Nature Reserve needs to be increased from 400 *ha* to 1200 *ha*.

2.2.2. Planning

"Planning" is the second element in the IUCN PAME Framework and concerns design features of a protected area – the physical, legal and institutional. As shown in Figure 26, the assessors reported weak effectiveness for 43 protect areas (84.3%) in terms of "Planning" (having less than 50% of the maximum possible scores). About half of the protected areas (25; 49%) lack management plans and only 5 protected areas (9.8%) are implementing the existing management plans. Poor results were also reported concerning planning for land and water (question N° 21). More than half of the assessed protected areas are considered to have an appropriate design in terms of size and shape (question N° 5). The majority of protected area (30; 58.8%) lack regulations, or in case they exist, their enforcement is considered to be weak. The assessors mentioned, among other things, the following issues in need of regulation: ban on hunting in protected areas, ban on introduction of allochthonous species, and need of regulations to control land use.
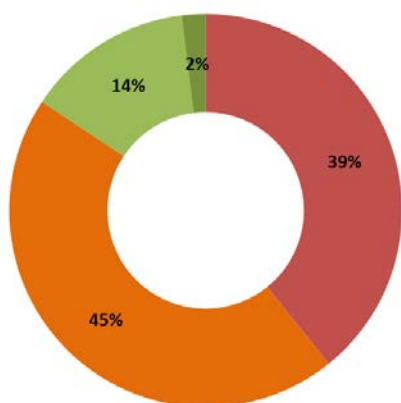
Figure 25 Effectiveness categories of "Planning"
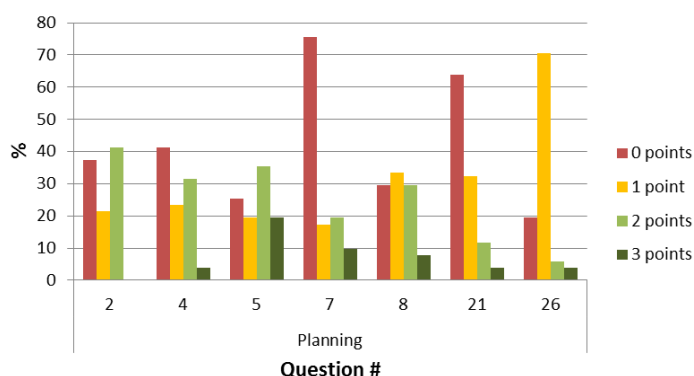
Figure 26 Scores assigned to the questions on "Planning" (% of the maximum scores)

There is a strong positive correlation (r=0,93) between management effectiveness in terms of "Planning" and the total score of a protected area, which is statistically significant ($\alpha=3,87^{-23}$).

2.2.3.   Inputs

"Inputs" is the third element in the IUCN PAME Framework that concerns the linkage between the level of resources available and management effectiveness. As can be seen from Figure 28, the assessors reported weak effectiveness for 44 protect areas (88.2%) in terms of "Inputs" (having less than 50% of the maximum possible scores).
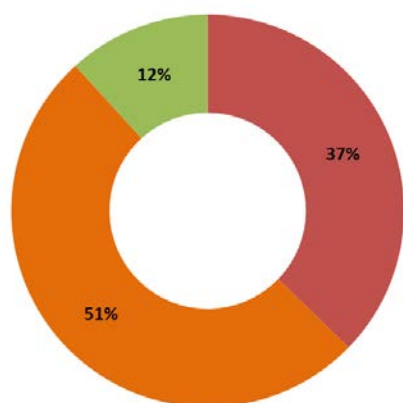
Figure 27   Effectiveness categories of "Inputs"
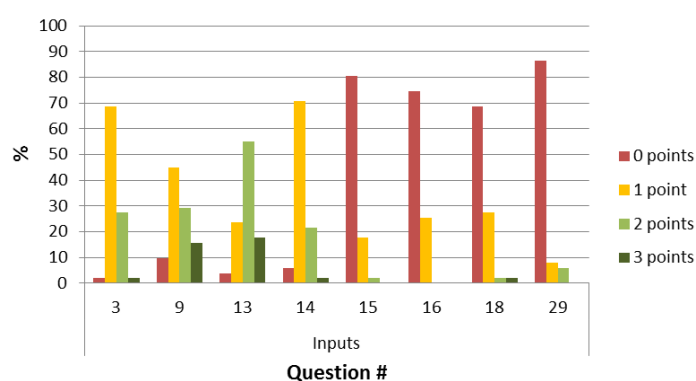
Figure 28   Scores assigned to the questions on "Inputs" (% of the maximum scores)

As can be seen from Figure 29, poor results are notably reported with respect to the available budget (80.4%), security of budget (74.5%), availability of equipment (68.6%) and collection of fees (86.3%). It is interesting to note that the highest percentage of excellent scores was reported on question N° 13 ("Staff numbers," 17.6%); the second highest percentage of excellent scores was reported for question N° 9 ("Resource inventory," 15.7%). The assessors mentioned, among other things, the following issues in connection to the required inputs: low level of professionalism and the need for tailored training of staff to address their specific tasks. In some cases there is a lack of basic facilities and equipment, such as telephone lines, internet and printers. The assessors also mentioned that the income generated by some protected areas (e.g. from entrance fees, permits for resource use and other use) is transferred to the government and should be returned to the respective protected areas.

There is a strong positive correlation (r=0,867) between management effectiveness in terms of "Inputs" and the total score of a protected area, which is statistically significant ($\alpha=2.03^{-16}$).

2.2.4.   Process

"Process" in the IUCN PAME Framework concerns the implementation of management actions according to accepted processes. As can be seen from Figure 30, the assessors reported weak effectiveness for 47 protect areas (92.2%) in terms of "Process" (having less than 50% of the maximum possible scores).
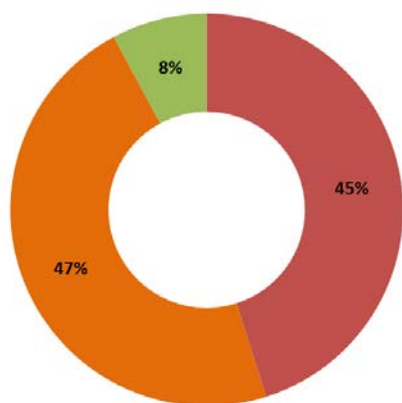
Figure 29 Effectiveness categories of "Process"
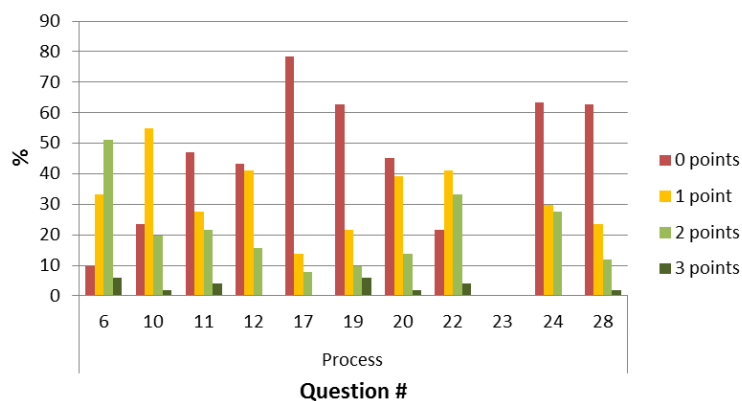
Figure 30 Scores assigned to the questions on "Process" (% of the maximum scores)

As can be seen from Figure 31, poor results are notably reported with respect to management of budget (78.4%), maintenance of equipment (62.7%), education and awareness (48.1%), involvement of local communities (63.2%) and cooperation with commercial tourism operators (62.7%). The highest percentage of excellent scores is observed with respect to maintenance of equipment (5.9%; national parks Prespa, Thethi and Karaburun Sazan), and demarcation of the boundary of some protected areas (5.9%; Lake Ulez and Rrushkull MNR and Buna River- Velipoje PL). With respect to the physical protection, the assessors often commented that the existing level and methods of control of activities in the protected areas are largely inadequate due to lack of staff (rangers), equipment, skills (e.g. patrolling methods), lack of physical infrastructure (no ranger posts or stations in the protected area), difficulty of access, among other elements. Most of the assessors reported that there is no budget for their regular operations and that equipment is lacking.

As mentioned in Section 2.1.6 (Human intrusions and disturbance), the threats from Research, education and other work-related activities in protected areas (threat code 6.3) was widespread, though at a low level (reported in 29 or 53.7% of protected areas). In their comments to question N° 11, the assessors noted, among other things, that experts conducting research and scientific studies do not inform and engage protected area staff and that they are not addressing their management priorities and needs. In other protected areas, research has not been conducted for long periods of time and there is a lack of basic information needed for their effective management.

There is a strong positive correlation (r=0.96) between management effectiveness in terms of "Process" and the total score of a protected area, which is statistically significant ($\alpha=4.05^{-28}$).

2.2.5.   Outputs

"Outputs" in the IUCN PAME Framework refers to goods and services which are usually outlined in management plans and work plans. In the Assessment Form this element is directly addressed only by question N° 27 concerning visitor facilities. As can be seen from Figure 32, the assessors reported weak effectiveness for 44 protected areas (86.3%) in terms of "Outputs" (having less than 50% of the maximum possible scores). The highest scores (3) were reported for the following protected areas: national parks Valbona Valley, Karaburun-Sazan, Prespa, Qafshtame, and Dajti Mountain; Rrushkull MNR and the Mali me Gropa-Bize-Martanesh PL.

Figure 31   Distribution of scores on "Outputs"

There is a strong positive correlation (r=0.609) between management effectiveness in terms of "Outputs" and the total score of a protected area, which is statistically significant ($\alpha=2.08^{-6}$).

2.2.6.   Outcomes

"Outcomes" in the IUCN PAME Framework concerns biodiversity, social, cultural and economic outcomes of protected area management. As can be seen from Figure 33, assessors reported weak effectiveness for 29 protected areas (57.3%) in terms of "Outcomes" (having less than 50% of the maximum possible scores). Yet, according to the data, this element in the IUCN PAME Framework appears to be the strongest of all. For instance, the condition of natural and cultural values was reported as being excellent in 21 protected areas which account for 41.2% of all protected areas. Apart from question 1 ("Legal status") this is the highest mark of all questions.
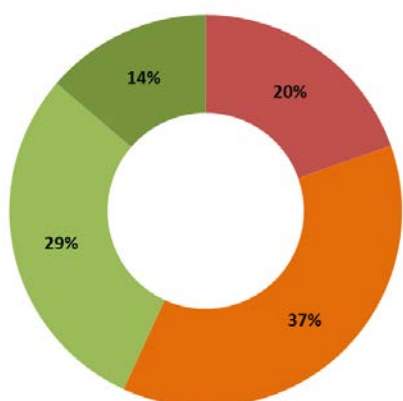
Figure 32   Distribution of scores on "Outcomes"
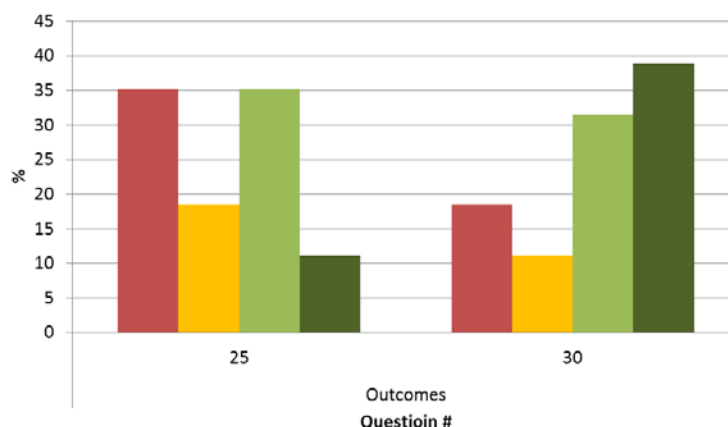
Figure 33   Scores assigned to the questions on "Outcomes"

The scores on the economic benefits the protected areas provide to local communities are also quite high. The highest scores were reported for the following protected areas: Bredhi i Drenoves NP, managed nature reserves Korab-Koritnik and Lake Ulez, the Luzni Bulac RPA and the protected landscapes of Buna River-Velipoje and Vjose-Narte. For instance, in the case of the Bredhi i Drenoves NP the assessors reported significant benefits, including firewood, grazing of domestic animals and non-timber forest products (e.g. medicinal plants).

There is a strong positive correlation (r=0.74) between management effectiveness in terms of "Outcomes" and the total score of a protected area, which is statistically significant ($\alpha=3.4^{-10}$).

3. Conclusions and recommendations

Wildfires have been identified as the most common threat to protected areas in Albania, followed by erosion/siltation, livestock farming and grazing, and collection of plants and animals (including hunting). Logging and wood harvesting, however, has been recognized as the most serious threat that causes degradation of natural values in 14 protected areas, followed by wildfires, erosion/siltation, hydrological modification and water management and livestock farming and grazing. The threat category "Biological resource use and harm within a protected area" is relevant to the vast majority of the protected areas. The most frequent high-level threat (Logging and wood harvesting) and two of the top five most frequent medium-level threats belong to this category (collection of plants and animals, including hunting). It is also worth noting that the activities conducted by protected area managers and researchers are the most prevalent of all low-level threats, according to the METT results.

Assessors reported that in the Korca region, 6 out of 9 protected areas face significant threats from logging and wood harvesting; in the Diber region 4 out of 8 protected areas face significant threats from wildfires. These examples reveal some tendencies among the evaluators in their scoring of threats. Protected area managers at the Diber RAPA office have identified the highest number of high-level threats (in total 36), followed by RAPA offices for the regions of Korce (22) and Fier (22). On the other hand, managers at the RAPA offices for the regions of Berat, Durres, and Vlore did not report any high-level threats. There seem to be significant differences among protected area managers in Albania on how they perceive and understand the various threats, and also about how they assess the level of significance or impact on the key natural values in the protected areas. These examples suggest that the comparison between protected areas is difficult when assessment is conducted by different people. This is related to the fact that most management effectiveness evaluations are based on 'expert judgement' which is prone to errors and cognitive biases. It should be emphasized that qualitative assessment tools, such as METT, are prone to what has been termed as 'framing effects,' whereby people have variable interpretations of what they are being asked to assess. This seems to be the case here, despite the effort to promote the use of quantitative data, such as those in Annex II.

There are also examples of an obvious discrepancy between the level of threats reported on a protected area and the overall score in the Assessment Form. For instance, the managers reported 12 high-level threats to Zall Gjocaj NP while giving it the highest overall score (76). This brings in focus the limitations in the interpretation of the scores assigned to the questions in the Assessment Form. As the authors of the METT write in their guidance on how to use the tool, all questions in the assessment questionnaire have equal weight, but in practice, this is not the case because some questions are more crucial to effectiveness than others. They therefore suggest that the assessors or reviewers need to be cautious about how they are going to interpret the overall scores obtained from the tool. They also suggest that the scores will provide a better assessment of effectiveness if calculated as a percentage for each of the six elements of the IUCN PAME Framework.

The analysis of the average scores by IUCN PAME Framework elements clearly shows that poor scores prevail in all six elements but Context. If disaggregated by management category these results also indicate that national parks show better average results than other management categories on all six IUCN PAME Framework elements. This may reflect

the fact that this category has received the highest attention by both national authorities and international donors thus far; half of the existing management plans (officially approved or not) have been developed for the national parks in Albania. If disaggregated by region, it is evident that the protected areas in the region of Durres have better average results on all of the six IUCN PAME Framework elements than those in other regions in Albania. This is the case despite the fact that there is no single management plan developed for the protected areas in this administrative region in Albania. This example also implies that there are important differences among the protected area managers in how they assign scores to the questions in the Assessment Form. Therefore, even if management effectiveness is calculated for each of the six IUCN PAME Frameworks separately, it is still difficult to draw conclusions across the 51 protected areas assessed under this project. Nonetheless, there are trends that can be observed across the sample. For instance, the vast majority of the protected areas received less than 50% of the maximum possible scores on Planning (84.3%), Input (88.2%), Process (92.2%), and Output (86.3%). Despite the poor results on these important elements, the assessors' evaluation of Outcomes is relatively better as only 57.3% of the protect areas have received less than 50% of the maximum possible scores on this element. The highest percentage of poor answers (Score 0) is observed with respect to collection of fees (86.3%), availability of budget (80.4%), security of budget (74.5%), management of budget (78.4%), availability of equipment (68.6%) and maintenance of equipment (62.7%). The highest percentage of excellent scores (Score 3) was reported on the legal status of protected areas (100%) and condition of values (41.2%).

In the comment/explanation column of the Assessment Form the assessors mentioned the need of new regulation on hunting, introduction of allochthonous species, and land use in protected areas and stressed the difficulties in the enforcement of the existing regulations. With respect to the inputs needed for an effective management of protected areas, the assessors emphasized the insufficient levels of knowledge and skills, and the lack of professional training tailored to address the specific needs of the managers and the problems they face in the protected areas in their jurisdiction. Many protected areas lack basic management infrastructure, such as facilities, vehicles, monitoring equipment, telephone lines, access to the internet, computers, and basic office equipment. This certainly affects the physical protection of the protected areas, which is mainly inadequate and ineffective.

Despite the significant gaps in terms of inputs, the income generated by some protected areas (e.g. from entrance fees, permits for resource use and other use) is transferred to the government without any repayment to the protected areas which generate the income. Another issue the assessors often mentioned concerns the collaboration with experts conducting research and scientific studies. Protected area managers complained that they are often not informed about or involved in research activities, and that researchers do not address their management priorities and needs. In some protected areas, research has not been conducted for a long time and the managers lack basic information needed for their effective management.

The METT should not be the sole basis for monitoring of management effectiveness due to its limited focus on evaluation of outcomes. It is thus recommended that the findings presented in this report are used as a quick assessment of strengths and weaknesses of the protected areas network in Albania. On the other hand, the tool can still be effectively used to track progress over time in individual sites until a detailed monitoring system is

established in Albania. The regular use of the METT will offer protected area managers opportunities to reflect on ongoing challenges and also improve communication and cooperation with stakeholders.

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Annexes

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Annex I: Protected Areas Network in Albania

Annex II: Quantification of protected areas threats: supplement to Data sheet 2

Annex III: Participants of the METT workshop, July 8-9, Hotel Dajti Tower, Dajti National Park

Annex IV: Scores given to protected areas aggregated by the six IUCN PAME Framework elements

Annex V: Analysis of the level of significance of threats to protected areas

Annex VI: Analysis of the scores on the questions in the Assessment Form

Protected Areas Network in Albania

No on Fig. 1	Region	Name of the Protected Area	Designated in	Area (*ha*)	National Protected Area Category
1	Kukës	Gashi River	1996	3.000	I
2	Gjirokastër	Kardhiq	1996	1.800	I
3	Korça	Bredhi i Drenoves	1966	1.380	II
4	Gjirokastër	Bredhi Hotoves-Dangelli	2008	34.361,1	II
5	Vlorë	Butrinti	2013	9.424,4	II
6	Fier	Divjake-Karavasta	2005	22.230,2	II
7	Vlorë	Llogara	1966	1.010	II
8	Kukës	Valbona Valley	1996	8.000	II
9	Dibër	Lura	1966	1.280	II
10	Tiranë	Dajti Mountain	2006	29.216,9	II
11	Berat	Tomorri Mountain	2012	24.723,1	II
12	Korça	Prespa	1999	27.750	II
13	Durrës	Qafe Shtame	1996	2.000	II
14	Elbasan	Shebenik-Jabllanice	2008	33.927,7	II
15	Shkodër	Thethi	1966	2.630	II
16	Dibër	Zall Gjocaj	1996	140	II
17	Gjirokastër	Bredhi i Sotires	1996	1.740	III
18	Fier	Kurora	1996	77,92	III
19	Korça	Maliqi	2002	44,64	IV
20	Vlorë	Syri Kalter	1996	180	III
21	Gjirokastër	Uji i Ftohte	2002	32,82	III
22	Dibër	Vlashaj	1996	50	III
23	Gjirokastër	Zhej	1996	1.500	III
24	Berat	Balloll	1977	330	IV
25	Lezhë	Berzane	1977	880	IV
26	Berat	Bogovë	1977	330	IV
27	Korça	Cangonj	1977	250	IV
28	Elbasan	Dardhe-Xhyre	1996	300	IV
29	Vlorë	Karaburuni	1977	20.000	IV
30	Korça	Krastafillak	1977	250	IV
31	Lezhë	Kune-Vain-Tale	1977	4.393,21	IV
32	Elbasan	Kuturman	1977	3.600	IV
33	Fier	Levan (Kurora)	1977	200	IV
34	Shkodër	Lake Shkodra	2005	26.535	IV
35	Lezhë	Patok-Fushekuqe-Ishem	2010	5.000,7	IV
36	Fier	Pishe Poro	1977	1.700	IV
37	Elbasan	Polis	1996	45	IV
38	Elbasan	Qafe Bushi	1977	500	IV

39	Vlorë	Rrezoma	1996	1.400	IV
40	Durrës	Rrushkull	1995	564,73	IV
41	Korça	Shelegur-Germenj	1996	430	IV
42	Elbasan	Sopot	1996	400	IV
43	Elbasan	Stravaj	1996	400	IV
44	Kukës	Tej Drini i Bardhe	1996	30	III
45	Tiranë	Mali me Gropa-Bize-Martanesh	2007	23.503,3	V
46	Korça	Liqeni i Pogradecit	1999	27.323	V
47	Shkodër	Buna River-Velipoje	2005	23.027	V
48	Korça	Nikolice	1996	510	V
49	Vlorë	Vjose-Narte	2004	19.738	V
50	Lezhë	Bjeshka e Oroshit	1996	4.745	VI
51	Korça	Guri i Nikes	1996	2.200	VI
52	Dibër	Luzni-Bulac	1996	4.170	VI
53	Korça	Piskal-Shqeri	1996	5.400	V
54	Vlorë	Karaburun-Sazan	2010	12.428	II
55	Dibër/ Kukës	Korab - Koritnik	2011	55.550,2	IV
56	Dibër	Ulez Lake	2013	4.206	IV

Quantification of protected areas threats: supplement to Data sheet 2

1. Residential and commercial development within a protected area

Pressure	Supporting data	Unit
1. Housing and settlement	Land use data (settlement), trend	% (settlement area/total area
2. Commercial and industrial areas	Land use data (commercial or industrial if available), trend	%
3. Tourism and recreation infrastructure	Cadastre data (tourist infrastructure), trend	Number

2. Agriculture and aquaculture within a protected area

Pressure	Supporting data	Unit
2.1 Annual and perennial non-timber crop cultivation	Data from Regional Agriculture Directorate	% (cultivated area/total area)
2.1a Drug cultivation	Data from Regional Agriculture Directorate	%
2.2 Wood and pulp plantations	Data from Regional Agriculture Directorate	%
2.3 Livestock farming and grazing	Data from Regional Agriculture Directorate, Directorate of Forests	% (pasture area/total area), Animal unit trend
2.4 Marine and freshwater aquaculture	Data from Regional Agriculture Directorate	Number & area

3. Energy production and mining within a protected area

Pressure	Supporting data	Unit
3.2 Mining and quarrying	Ministry of Environment/NEA (Licensing), Directorate of Forests (area)	Number/area
3.3 Energy generation, including from hydropower dams	Ministry of Environment/NEA (Licensing)	Number, frequency

4. Transportation and service corridors within a protected area

Pressure	Supporting data	Unit
4.1 Roads and railroads (include road-killed animals)	Road network layer (GIS), density, trends/plans	Km/ha by typology
4.2 Utility and service lines (e.g. electricity cables, telephone lines,)	OST and Telekom data if available	Km/ha
4.3 Shipping lanes and canals	Ministry of Transportation	Km/ha
4.4 Flight paths	Ministry of Transportation	Number of flights/day

5. Biological resource use and harm within a protected area

Pressure	Supporting data	Unit
5.1 Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict)	Environment inspectorate statistics, monitoring	Number of cases, number of traps,
5.2 Gathering terrestrial plants or plant products (non-timber)	Directorate of forests (contracts, statistics)	Number of licenses, quantity,

		typology
5.3 Logging and wood harvesting	Directorate of forests (contracts, statistics)	Volume and area affected
5.4 Fishing, killing and harvesting aquatic resources	Ministry of Agriculture (Fishery)	Quantity, number of fishermen

6. Human intrusions and disturbance within a protected area

Pressure	Supporting data	Unit
6.1 Recreational activities and tourism	Tourism data (Ministry of Tourism), trend	Number of tourist, number of activities
6.2 War, civil unrest and military exercises	Land use (Military zones), type of activity	% area
6.3 Research, education and other work-related activities in protected areas	Monitoring, reports	Number of activities
6.4 Activities of protected area managers (e.g. construction or vehicle use, artificial watering points and dams)	Reports	Number and type of activities
6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors	Monitoring, reports	Number of events

7. Natural system modifications

Pressure	Supporting data	Unit
7.1 Fire and fire suppression (including arson)	Directorate of Forests reports	Number and area affected
7.2 Dams, hydrological modification and water management/use	Ministry of Environment	Number and type of permissions/licenses, area
7.3a Increased fragmentation within protected area	Existing studies, monitoring	Fragmentation index
7.3b Isolation from other natural habitat (e.g. deforestation, dams without effective aquatic wildlife passages)	Existing studies, monitoring	Isolation index
7.3c Other 'edge effects' on park values	Existing studies, monitoring	Index
7.3d Loss of keystone species (e.g. top predators, pollinators etc.)	Existing studies, monitoring	Species richness

8. Invasive and other problematic species and genes

Pressure	Supporting data	Unit
8.1 Invasive non-native/alien plants (weeds)	Existing studies	Area, number, type
8.1a Invasive non-native/alien animals	Existing studies	Number types
8.1b Pathogens (non-native or native but creating new/increased problems)	Existing studies	Number of infections
8.2 Introduced genetic material (e.g. genetically modified organisms)	Existing studies	

9. Pollution entering or generated within protected area

Pressure	Supporting data	Unit
9.1 Household sewage and urban waste water	Municipality data (are houses connected to a system)	Presence/absence, Typology,
9.1a Sewage and waste water from protected area facilities (e.g. toilets, hotels etc.)	Are facilities connected to a sewage system?	Presence/absence, Typology,
9.2 Industrial, mining and military effluents and discharges (e.g. poor water quality discharge from dams, e.g. unnatural temperatures, de-oxygenated, other pollution)	Monitoring	Number and type of discharges
9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)	Directorate of Agriculture (Data on fertilizers or pesticide use), chemical analysis	Quantity/area, presence of pollutants
9.4 Garbage and solid waste	Is there a system for collecting, where are they deposited	Number of dumping sites
9.5 Air-borne pollutants	Existing studies	
9.6 Excess energy (e.g. heat pollution, lights etc.)	Existing studies	

10. Geological events

Pressure	Supporting data	Unit
10.1 Volcanoes	N/A	
10.2 Earthquakes/Tsunamis	N/A	
10.3 Avalanches/ Landslides	Reports, monitoring	Number and severity of events
10.4 Erosion and siltation/ deposition (e.g. shoreline or riverbed changes)	Existing studies/monitoring	Area affected, trend

11. Climate change and severe weather

Pressure	Supporting data	Unit
11.1 Habitat shifting and alteration	Existing studies	
11.2 Droughts	Existing studies	
11.3 Temperature extremes	Institute of Meteorology	Temperature data
11.4 Storms and flooding	Ministry of agriculture, Civil Emergency	Number, area affected, severity

12. Specific cultural and social threats

Pressure	Supporting data	Unit
12.1 Loss of cultural links, traditional knowledge and/or management practices	Socio economic study	
12.2 Natural deterioration of important cultural site values	Monitoring	Number, quality
12.3 Destruction of cultural heritage buildings, gardens, sites etc.	Monitoring (statistics of events)	Number

Participants of the METT workshop, July 8-9, Hotel Dajti Tower, Dajti National Park

Name and Surname	Title	Unit
Anila Sina	Chief of Management Section	RAPA, Berat
Fatos Nako	Director, RAPA	RAPA, Berat
Bekim Qosja	Director	RAPA, Diber
Abdulla Hasanaj	Chief of Management Section	RAPA, Durres
Naim Herri	Director	RAPA, Durres
Fatmir Brazhda	Director	RAPA, Elbasan
Enea Zenuni	Chief of Management Section	RAPA, Fier
Edmond Krisafi	Chief of Management Section	RAPA, Gjirokaster
Gligor Gjeci (Dushi)	Director	RAPA, Gjirokaster
Mihallaq Qirjo	Director	RAPA, Korça
Vasil Male	Chief of Management Section	RAPA, Korça
Besnik Hallaci	Director	RAPA, Kukës
Blerant Lushaj	Management expert	RAPA, Kukës
Pjeter Toni	Director	RAPA, Lezhë
Tonin Ndreka	Management expert	RAPA, Lezhë
Agim Dardha	Director	RAPA, Shkoder
Tonin Macaj	Management expert	RAPA, Shkoder
Ervin Jaupaj	Chief of Management Section	RAPA, Tirana
Abdul Cucaj	Chief of Management Section	RAPA, Vlore
Lorela Lazaj	Director	RAPA, Vlore
Zamir Dedej	General Director	NAPA
Ardiana Petri	Director of Management, Monitoring and Projects	NAPA
Sulejman Xhepa	Chief of Management Section	NAPA

Scores given to each protected area aggregated by the six IUCN PAME Framework elements (strict reserves, national parks, monuments of nature)

Protected Area Name	Context		Planning		Inputs		Process		Outputs		Outcomes		Total Score
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.
Strict Reserve (avg)	**1,5**	**100,0**	**2,5**	**9,3**	**2**	**8,3**	**3**	**8,3**	**0**	**0,0**	**1,5**	**16,7**	
Lumi i Gashit	3	100,0	5	18,5	4	16,7	6	16,7	0	0,0	3	33,3	21
National Park (avg)	**3**	**100,0**	**11,1**	**41,0**	**8,3**	**34,7**	**13,2**	**36,7**	**1.1**	**35,6**	**4.9**	**54,8**	
Mali i Tomorrit	3	100,0	10	37,0	4	16,7	11	30,6	0	0,0	6	66,7	34
Lura	3	100,0	2	7,4	4	16,7	6	16,7	1	33,3	1	11,1	17
Zall Gjocaj	3	100,0	1	3,7	4	16,7	3	8,3	1	33,3	0	0,0	12
Qafshtame	3	100,0	16	59,3	13	54,2	22	61,1	2	66,7	6	66,7	62
Shebenik-Jabllanice	3	100,0	10	37,0	6	25,0	8	22,2	0	0,0	4	44,4	31
Divjake-Karavasta	3	100,0	11	40,7	8	33,3	14	38,9	1	33,3	6	66,7	43
Bredhi Hotoves-Dangelli	3	100,0	14	51,9	8	33,3	9	25,0	1	33,3	7	77,8	42
Bredhi I Drenoves	3	100,0	10	37,0	7	29,2	10	27,8	0	0,0	7	77,8	37
Prespa	3	100,0	19	70,4	15	62,5	22	61,1	2	66,7	5	55,6	66
Valbona Valley	3	100,0	5	18,5	6	25,0	10	27,8	2	66,7	3	33,3	29
Thethi	3	100,0	10	37,0	10	41,7	20	55,6	1	33,3	6	66,7	50
Dajti Mountain	3	100,0	17	63,0	12	50,0	16	44,4	2	66,7	7	77,8	57
Butrinti	3	100,0	17	63,0	13	54,2	19	52,8	1	33,3	6	66,7	59
Karaburun-Sazan	3	100,0	10	37,0	8	33,3	12	33,3	2	66,7	4	44,4	39
Llogara	3	100,0	14	51,9	7	29,2	16	44,4	0	0,0	6	66,7	46
Natural Monument (avg)	**3**	**100,0**	**6,2**	**23,0**	**5,8**	**24,2**	**7,6**	**21,1**	**0,2**	**6,7**	**3,6**	**40,0**	
Vlashaj	3	100,0	3	11,1	5	20,8	4	11,1	0	0,0	2	22,2	17
Bredhi I Sotires	3	100,0	7	25,9	5	20,8	9	25,0	0	0,0	4	44,4	28
Zhej	3	100,0	10	37,0	8	33,3	12	33,3	0	0,0	4	44,4	37
Tej Drini i Bardhe	3	100,0	6	22,2	4	16,7	4	11,1	0	0,0	3	33,3	20
Syri Kalter	3	100,0	5	18,5	7	29,2	9	25,0	1	33,3	5	55,6	30

Scores given to each protected area aggregated by the six IUCN PAME Framework elements (managed nature reserves, protected landscapes and resource protection areas)

Protected Area Name	Context		Planning		Inputs		Process		Outputs		Outcomes		Total Score
	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.	%	Pts.
Managed Nature Reserve (avg)	**2,7**	**91,3**	**7,3**	**26,9**	**6,1**	**25,5**	**8,7**	**24,2**	**0,3**	**10,1**	**4**	**44,4**	
Balloll	3	100,0	5	18,5	6	25,0	4	11,1	0	0,0	4	44,4	22
Bogovë	3	100,0	4	14,8	5	20,8	4	11,1	0	0,0	3	33,3	19
Korab - Koritnik	3	100,0	6	22,2	7	29,2	6	16,7	0	0,0	8	88,9	30
Lake Ulez*	3	100,0	11	40,7	6	25,0	15	41,7	1	33,3	8	88,9	44
Rrushkull	3	100,0	26	96,3	14	58,3	23	63,9	2	66,7	8	88,9	76
Kuturman	3	100,0	4	14,8	6	25,0	6	16,7	0	0,0	5	55,6	24
Qafe Bushi	3	100,0	9	33,3	5	20,8	8	22,2	0	0,0	2	22,2	27
Sopot	3	100,0	5	18,5	5	20,8	5	13,9	0	0,0	4	44,4	22
Stravaj	3	100,0	3	11,1	5	20,8	8	22,2	0	0,0	2	22,2	21
Levan	3	100,0	9	33,3	6	25,0	14	38,9	1	33,3	6	66,7	39
Pishe Poro	3	100,0	10	37,0	6	25,0	15	41,7	1	33,3	6	66,7	41
Cangonj	3	100,0	8	29,6	7	29,2	8	22,2	0	0,0	5	55,6	31
Germenj-Shelegur	3	100,0	10	37,0	7	29,2	9	25,0	0	0,0	3	33,3	32
Krastafillak	3	100,0	2	7,4	8	33,3	6	16,7	1	33,3	3	33,3	23
Korab-Koritnik	3	100,0	5	18,5	6	25,0	4	11,1	1	33,3	2	22,2	21
Berzane	3	100,0	7	25,9	12	50,0	16	44,4	0	0,0	4	44,4	42
Patok-Fushekuqe-Ishem	3	100,0	6	22,2	5	20,8	7	19,4	0	0,0	2	22,2	23
Kune-Vain-Tale	3	100,0	9	33,3	7	29,2	11	30,6	0	0,0	3	33,3	33
Lake Shkodra	3	100,0	13	48,1	8	33,3	13	36,1	0	0,0	4	44,4	41
Karaburun	3	100,0	12	44,4	5	20,8	13	36,1	0	0,0	6	66,7	39
Rrezoma	3	100,0	3	11,1	5	20,8	5	13,9	0	0,0	4	44,4	20
Protected Landscape (avg)	**3**	**100,0**	**9,3**	**34,6**	**6,8**	**28,5**	**11,7**	**32,4**	**0,7**	**22,2**	**4,2**	**46,3**	
Liqeni I Pogradecit	3	100,0	7	25,9	5	20,8	10	27,8	1	33,3	3	33,3	29
Nikolice	3	100,0	3	11,1	6	25,0	6	16,7	0	0,0	1	11,1	19
Piskal-Shqeri	3	100,0	7	25,9	3	12,5	6	16,7	0	0,0	3	33,3	22
Buna River-Velipoje	3	100,0	12	44,4	10	41,7	19	52,8	1	33,3	5	55,6	50
Mali me Gropa-Bize-Martanesh	3	100,0	12	44,4	10	41,7	17	47,2	2	66,7	7	77,8	51
Vjose-Narte	3	100,0	15	55,6	7	29,2	12	33,3	0	0,0	6	66,7	43
Protected Resource Area (avg)	**3**	**100,0**	**5**	**18,5**	**4**	**16,7**	**5,7**	**15,7**	**0**	**0,0**	**2**	**22,2**	
Luzni-Bulac	3	100,0	2	7,4	4	16,7	6	16,7	0	0,0	4	44,4	19
Guri I Nikes	3	100,0	11	40,7	3	12,5	8	22,2	0	0,0	2	22,2	27
Bjeshka e Oroshit	3	100,0	2	7,4	5	20,8	3	8,3	0	0,0	0	0,0	13

Analysis of the level of significance of threats to protected areas

Threat Name	Not applicable		Low		Medium		High		No data	
	#	%	#	%	#	%	#	%	#	%
1. Residential and commercial development within a protected area										
1.1. Housing and settlement	9,0	16,7	19,0	35,2	20,0	37,0	6,0	11,1		0,0
1.2. Commercial and industrial areas	37,0	68,5	10,0	18,5	5,0	9,3	2,0	3,7		0,0
1.3. Tourism and recreation infrastructure	13,0	24,1	27,0	50,0	11,0	20,4	3,0	5,6		0,0
2. Agriculture and aquaculture within a protected area										
2.1 Annual and perennial non-timber crop cultivation	18,0	33,3	21,0	38,9	15,0	27,8		0,0		0,0
2.1a Drug cultivation	36,0	66,7	16,0	29,6	1,0	1,9		0,0	1,0	1,9
2.2 Wood and pulp plantations	48,0	88,9	4,0	7,4	1,0	1,9		0,0	1,0	1,9
2.3 Livestock farming and grazing	7,0	13,0	21,0	38,9	19,0	35,2	7,0	13,0		0,0
2.4 Marine and freshwater aquaculture	29,0	53,7	14,0	25,9	7,0	13,0	1,0	1,9	3,0	5,6
3. Energy production and mining within a protected area										
3.1 Oil and gas drilling	51,0	94,4	2,0	3,7		0,0		0,0	1,0	1,9
3.2 Mining and quarrying	36,0	66,7	8,0	14,8	4,0	7,4	4,0	7,4	2,0	3,7
3.3 Energy generation, including from hydropower dams	37,0	68,5	7,0	13,0	4,0	7,4	4,0	7,4	2,0	3,7
4. Transportation and service corridors within a protected area										
4.1 Roads and railroads (include road-killed animals)	27,0	50,0	18,0	33,3	5,0	9,3	3,0	5,6	1,0	1,9
4.2 Utility and service lines (e.g. electricity cables, telephone lines,)	24,0	44,4	22,0	40,7	6,0	11,1	1,0	1,9	1,0	1,9
4.3 Shipping lanes and canals	46,0	85,2	5,0	9,3	1,0	1,9		0,0	2,0	3,7
4.4 Flight paths	38,0	70,4	13,0	24,1	1,0	1,9		0,0	2,0	3,7
5. Biological resource use and harm within a protected area										
5.1 Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict)	8,0	14,8	21,0	38,9	21,0	38,9	4,0	7,4		0,0

Threat Name	Not applicable		Low		Medium		High		No data	
	#	%	#	%	#	%	#	%	#	%
5.2 Gathering terrestrial plants or plant products (non-timber)	7,0	13,0	28,0	51,9	17,0	31,5	2,0	3,7		0,0
5.3 Logging and wood harvesting	10,0	18,5	18,0	33,3	12,0	22,2	14,0	25,9		0,0
5.4 Fishing, killing and harvesting aquatic resources	22,0	40,7	18,0	33,3	8,0	14,8	4,0	7,4	2,0	3,7
6. Human intrusions and disturbance within a protected area										
6.1 Recreational activities and tourism	13,0	24,1	26,0	48,1	11,0	20,4	3,0	5,6	1,0	1,9
6.2 War, civil unrest and military exercises	46,0	85,2	5,0	9,3	3,0	5,6		0,0		0,0
6.3 Research, education and other work-related activities in protected areas	20,0	37,0	29,0	53,7	3,0	5,6		0,0	2,0	3,7
6.4 Activities of protected area managers (e.g. construction or vehicle use, artificial watering points and dams)	18,0	33,3	29,0	53,7	3,0	5,6	3,0	5,6	1,0	1,9
6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors	23,0	42,6	23,0	42,6	4,0	7,4	3,0	5,6	1,0	1,9
7. Natural system modifications										
7.1 Fire and fire suppression (including arson)	2,0	3,7	21,0	38,9	16,0	29,6	12,0	22,2	3,0	5,6
7.2 Dams, hydrological modification and water management/use	24,0	44,4	16,0	29,6	3,0	5,6	8,0	14,8	3,0	5,6
7.3a Increased fragmentation within protected area	19,0	35,2	19,0	35,2	10,0	18,5	3,0	5,6	3,0	5,6
7.3b Isolation from other natural habitat (e.g. deforestation, dams without effective aquatic wildlife passages)	22,0	40,7	18,0	33,3	8,0	14,8	3,0	5,6	3,0	5,6
7.3c Other 'edge effects' on park values	17,0	31,5	23,0	42,6	7,0	13,0	4,0	7,4	3,0	5,6
7.3d Loss of keystone species (e.g. top predators, pollinators, etc.)	9,0	16,7	24,0	44,4	16,0	29,6	2,0	3,7	3,0	5,6
8. Invasive and other problematic species and genes										
8.1 Invasive non-native/alien plants (e.g. weeds)	24,0	44,4	21,0	38,9	5,0	9,3	2,0	3,7	2,0	3,7
8.1a Invasive non-native/alien animals	34,0	63,0	14,0	25,9	3,0	5,6	1,0	1,9	2,0	3,7

Threat Name	Not applicable		Low		Medium		High		No data	
	#	%	#	%	#	%	#	%	#	%
8.1b Pathogens (non-native or native but creating new/increased problems)	37,0	68,5	13,0	24,1	2,0	3,7		0,0	2,0	3,7
8.2 Introduced genetic material (e.g. genetically modified organisms)	43,0	79,6	8,0	14,8		0,0		0,0	3,0	5,6
9. Pollution entering or generated within protected area										
9.1 Household sewage and urban waste water	24,0	44,4	17,0	31,5	11,0	20,4	2,0	3,7		0,0
9.1a Sewage and waste water from protected area facilities (e.g. toilets, hotels, etc.)	30,0	55,6	17,0	31,5	6,0	11,1	1,0	1,9		0,0
9.2 Industrial, mining and military effluents and discharges (e.g. poor water quality discharge from dams, e.g. unnatural temperatures, de-oxygenated, other pollution)	41,0	75,9	9,0	16,7	3,0	5,6	1,0	1,9		0,0
9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)	33,0	61,1	17,0	31,5	2,0	3,7		0,0	2,0	3,7
9.4 Garbage and solid waste	17,0	31,5	19,0	35,2	14,0	25,9	4,0	7,4		0,0
9.5 Air-borne pollutants	28,0	51,9	22,0	40,7	3,0	5,6		0,0	1,0	1,9
9.6 Excess energy (e.g. heat pollution, lights, etc.)	41,0	75,9	13,0	24,1		0,0		0,0		0,0
10. Geological events										
10.1 Volcanoes	54,0	100,0		0,0		0,0		0,0		0,0
10.2 Earthquakes/Tsunamis	48,0	88,9	4,0	7,4	2,0	3,7		0,0		0,0
10.3 Avalanches/Landslides	26,0	48,1	20,0	37,0	7,0	13,0	1,0	1,9		0,0
10.4 Erosion and siltation/deposition (e.g. shoreline or riverbed changes)	7,0	13,0	28,0	51,9	10,0	18,5	8,0	14,8	1,0	1,9
11. Climate change and severe weather										
11.1 Habitat shifting and alteration	19,0	35,2	27,0	50,0	7,0	13,0		0,0	1,0	1,9
11.2 Droughts	11,0	20,4	25,0	46,3	16,0	29,6		0,0	2,0	3,7
11.3 Temperature extremes	17,0	31,5	25,0	46,3	11,0	20,4	1,0	1,9		0,0

Threat Name	Not applicable		Low		Medium		High		No data	
	#	%	#	%	#	%	#	%	#	%
11.4 Storms and flooding	16,0	29,6	20,0	37,0	14,0	25,9	3,0	5,6	1,0	1,9
12. Specific cultural and social threats										
12.1 Loss of cultural links, traditional knowledge and/or management practices	20,0	37,0	23,0	42,6	10,0	18,5	1,0	1,9		0,0
12.2 Natural deterioration of important cultural site values	29,0	53,7	16,0	29,6	5,0	9,3	2,0	3,7	2,0	3,7
12.3 Destruction of cultural heritage buildings, gardens, sites, etc.	29,0	53,7	18,0	33,3	5,0	9,3	1,0	1,9	1,0	1,9

Analysis of the scores on the questions in the Assessment Form

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1. Legal status: Does the protected area have legal status (or in the case of private reserves is covered by a covenant or similar)?
Context

Code	# of As	% of As	Description
0	0	0,0	The protected area is not gazetted/covenanted
1	0	0,0	There is agreement that the protected area should be gazetted/covenanted but the process has not yet begun
2	0	0,0	The protected area is in the process of being gazetted/covenanted but the process is still incomplete (includes sites designated under international conventions, such as Ramsar, or local/traditional law such as community conserved areas, which do not yet have national legal status or covenant)
3	51	100,0	The protected area has been formally gazetted/covenanted

2. Protected area regulations: Are appropriate regulations in place to control land use and activities (e.g. hunting)?
Planning

Code	# of As	% of As	Description
0	19	37,3	There are no regulations for controlling land use and activities in the protected area
1	11	21,6	Some regulations for controlling land use and activities in the protected area exist but there are major weaknesses
2	21	41,2	Regulations for controlling land use and activities in the protected area exist but there are some weaknesses or gaps
3	0	0,0	Regulations for controlling inappropriate land use and activities in the protected area exist and provide an excellent basis for management

3. Law enforcement: Can staff (i.e. those with responsibility for managing the site) enforce protected area rules well enough?
Inputs

Code	# of As	% of As	Description
0	1	2,0	The staff have no effective capacity/resources to enforce protected area legislation and regulations
1	35	68,6	There are major deficiencies in staff capacity/resources to enforce protected area legislation and regulations (e.g. lack of skills, no patrol budget, lack of institutional support)

2	14	27,5	The staff have acceptable capacity/resources to enforce protected area legislation and regulations but some deficiencies remain
3	1	2,0	The staff have excellent capacity/resources to enforce protected area legislation and regulations

4. Protected area objectives: Is management undertaken according to agreed objectives?
Planning

Code	# of As	% of As	Description
0	21	41,2	No firm objectives have been agreed for the protected area
1	12	23,5	The protected area has agreed objectives, but is not managed according to these objectives
2	16	31,4	The protected area has agreed objectives, but is only partially managed according to these objectives
3	2	3,9	The protected area has agreed objectives and is managed to meet these objectives

5. Protected area design: Is the protected area the right size and shape to protect species, habitats, ecological processes and water catchments of key conservation concern?
Planning

Code	# of As	% of As	Description
0	13	25,5	Inadequacies in protected area design mean achieving the major objectives of the protected area is very difficult
1	10	19,6	Inadequacies in protected area design mean that achievement of major objectives is difficult but some mitigating actions are being taken (e.g. agreements with adjacent land owners for wildlife corridors or introduction of appropriate catchment management)
2	18	35,3	Protected area design is not significantly constraining achievement of objectives, but could be improved (e.g. with respect to larger scale ecological processes)
3	10	19,6	Protected area design helps achievement of objectives; it is appropriate for species and habitat conservation; and maintains ecological processes such as surface and groundwater flows at a catchment scale, natural disturbance patterns etc.

6. Protected area boundary demarcation: Is the boundary known and demarcated?
Process

Code	# of As	% of As	Description

Code	# of As	% of As	Description
0	5	9,8	The boundary of the protected area is not known by the management authority or local residents/neighbouring land users
1	17	33,3	The boundary of the protected area is known by the management authority but is not known by local residents/neighbouring land users
2	26	51,0	The boundary of the protected area is known by both the management authority and local residents/neighbouring land users but is not appropriately demarcated
3	3	5,9	The boundary of the protected area is known by the management authority and local residents/neighbouring land users and is appropriately demarcated

7. Management plan: Is there a management plan and is it being implemented?
Planning

Code	# of As	% of As	Description
0	25	49,0	There is no management plan for the protected area
1	11	21,6	A management plan is being prepared or has been prepared but is not being implemented
2	10	19,6	A management plan exists but it is only being partially implemented because of funding constraints or other problems
3	5	9,8	A management plan exists and is being implemented

7a. Planning process: The planning process allows adequate opportunity for key stakeholders to influence the management plan
Planning

Code	# of As	% of As	Description
0	39	76,5	
1	12	23,5	The planning process allows adequate opportunity for key stakeholders to influence the management plan

7b. Planning process: There is an established schedule and process for periodic review and updating of the management plan
Planning

Code	# of As	% of As	Description
0	46	90,2	
1	5	9,8	There is an established schedule and process for periodic review and updating of the management plan

7c. Planning process: The results of monitoring, research and evaluation are routinely incorporated into planning
Planning

Code	# of As	% of As	Description
0	44	86,3	
1	7	13,7	The results of monitoring, research and evaluation are routinely incorporated into planning

8. Regular work plan: Is there a regular work plan and is it being implemented
Planning/Outputs

Code	# of As	% of As	Description
0	15	29,4	No regular work plan exists
1	17	33,3	A regular work plan exists but few of the activities are implemented
2	15	29,4	A regular work plan exists and many activities are implemented
3	4	7,8	A regular work plan exists and all activities are implemented

9. Resource inventory: Do you have enough information to manage the area?
Inputs

Code	# of As	% of As	Description
0	5	9,8	There is little or no information available on the critical habitats, species and cultural values of the protected area
1	23	45,1	Information on the critical habitats, species, ecological processes and cultural values of the protected area is not sufficient to support planning and decision making
2	15	29,4	Information on the critical habitats, species, ecological processes and cultural values of the protected area is sufficient for most key areas of planning and decision making
3	8	15,7	Information on the critical habitats, species, ecological processes and cultural values of the protected area is sufficient to support all areas of planning and decision making

10. Protection systems: Are systems in place to control access/resource use in the protected area?
Process/Outcome

Code	# of As	% of As	Description

Code	# of As	% of As	Description
0	12	23,5	Protection systems (patrols, permits etc) do not exist or are not effective in controlling access/resource use
1	28	54,9	Protection systems are only partially effective in controlling access/resource use
2	10	19,6	Protection systems are moderately effective in controlling access/resource use
3	1	2,0	Protection systems are largely or wholly effective in controlling access/ resource use

11. Research: Is there a programme of management oriented survey and research work?
Process

Code	# of As	% of As	Description
0	24	47,1	There is no survey or research work taking place in the protected area
1	14	27,5	There is a small amount of survey and research work but it is not directed towards the needs of protected area management
2	11	21,6	There is considerable survey and research work but it is not directed towards the needs of protected area management
3	2	3,9	There is a comprehensive, integrated programme of survey and research work, which is relevant to management needs

12. Resource management: Is active resource management being undertaken?
Process

Code	# of As	% of As	Description
0	22	43,1	Active resource management is not being undertaken
1	21	41,2	Very few of the requirements for active management of critical habitats, species, ecological processes and cultural values are being implemented
2	8	15,7	Many of the requirements for active management of critical habitats, species, ecological processes and, cultural values are being implemented but some key issues are not being addressed
3	0	0,0	Requirements for active management of critical habitats, species, ecological processes and, cultural values are being substantially or fully implemented

13. Staff numbers: Are there enough people employed to manage the protected area?
Inputs

Code	# of As	% of As	Description

0	2	3,9	There are no staff
1	12	23,5	Staff numbers are inadequate for critical management activities
2	28	54,9	Staff numbers are below optimum level for critical management activities
3	9	17,6	Staff numbers are adequate for the management needs of the protected area

14. Staff training: Are staff adequately trained to fulfil management objectives?
Inputs/Process

Code	# of As	% of As	Description
0	3	5,9	Staff lack the skills needed for protected area management
1	36	70,6	Staff training and skills are low relative to the needs of the protected area
2	11	21,6	Staff training and skills are adequate, but could be further improved to fully achieve the objectives of management
3	1	2,0	Staff training and skills are aligned with the management needs of the protected area

15. Current budget: Is the current budget sufficient?
Inputs

Code	# of As	% of As	Description
0	41	80,4	There is no budget for management of the protected area
1	9	17,6	The available budget is inadequate for basic management needs and presents a serious constraint to the capacity to manage
2	1	2,0	The available budget is acceptable but could be further improved to fully achieve effective management
3	0	0,0	The available budget is sufficient and meets the full management needs of the protected area

16. Security of budget: Is the budget secure?
Inputs

Code	# of As	% of As	Description
0	38	74,5	There is no secure budget for the protected area and management is wholly reliant on outside or highly variable funding
1	13	25,5	There is very little secure budget and the protected area could not function adequately without outside funding

2	0	0,0	There is a reasonably secure core budget for regular operation of the protected area but many innovations and initiatives are reliant on outside funding
3	0	0,0	There is a secure budget for the protected area and its management needs

17. Management of budget: Is the budget managed to meet critical management needs?
Process

Code	# of As	% of As	Description
0	40	78,4	Budget management is very poor and significantly undermines effectiveness (e.g. late release of budget in financial year)
1	7	13,7	Budget management is poor and constrains effectiveness
2	4	7,8	Budget management is adequate but could be improved
3	0	0,0	Budget management is excellent and meets management needs

18. Equipment: Is equipment sufficient for management needs?
Inputs

Code	# of As	% of As	Description
0	35	68,6	There are little or no equipment and facilities for management needs
1	14	27,5	There are some equipment and facilities but these are inadequate for most management needs
2	1	2,0	There are equipment and facilities, but still some gaps that constrain management
3	1	2,0	There are adequate equipment and facilities

19. Maintenance of equipment: Is equipment adequately maintained?
Process

Code	# of As	% of As	Description
0	32	62,7	There is little or no maintenance of equipment and facilities
1	11	21,6	There is some ad hoc maintenance of equipment and facilities
2	5	9,8	There is basic maintenance of equipment and facilities
3	3	5,9	Equipment and facilities are well maintained

20. Education and awareness: Is there a planned education programme linked to the objectives and needs?
Process

Code	# of As	% of As	Description
0	23	45,1	There is no education and awareness programme
1	20	39,2	There is a limited and ad hoc education and awareness programme
2	7	13,7	There is an education and awareness programme but it only partly meets needs and could be improved
3	1	2,0	There is an appropriate and fully implemented education and awareness programme

21. Planning for land and water use: Does land and water use planning recognise the protected area and aid the achievement of objectives?
Planning

Code	# of As	% of As	Description
0	14	27,5	Adjacent land and water use planning does not take into account the needs of the protected area and activities/policies are detrimental to the survival of the area
1	29	56,9	Adjacent land and water use planning does not takes into account the long term needs of the protected area, but activities are not detrimental the area
2	6	11,8	Adjacent land and water use planning partially takes into account the long term needs of the protected area
3	2	3,9	Adjacent land and water use planning fully takes into account the long term needs of the protected area

21a: Land and water planning for habitat conservation: Planning and management in the catchment or landscape containing the protected area incorporates provision for adequate environmental conditions (e.g. volume, quality and timing of water flow, air pollution levels etc) to sustain relevant habitats; *Planning*

Code	# of As	% of As	Description
0	37	72,5	
1	14	27,5	Planning and management in the catchment or landscape containing the protected area incorporates provision for adequate environmental conditions (e.g. volume, quality and timing of water flow, air pollution levels etc) to sustain relevant habitats.

21b: Land and water planning for connectivity: Management of corridors linking the protected area provides for wildlife passage to key habitats outside the protected area (e.g. to allow migratory fish to travel between freshwater spawning sites and the sea, or to allow animal migration); *Planning*

Code	# of As	% of As	Description
0	37	72,5	
1	14	27,5	Management of corridors linking the protected area provides for wildlife passage to key habitats outside the protected area (e.g. to allow migratory fish to travel between freshwater spawning sites and the sea, or to allow animal migration)

21c: Land and water planning for ecosystem services& species conservation: Planning addresses ecosystem-specific needs and/or the needs of particular species of concern at an ecosystem scale (e.g. volume, quality and timing of freshwater flow to sustain particular species, fire management to maintain savannah habitats etc.); *Planning*

Code	# of As	% of As	Description
0	42	82,4	
1	9	17,6	Planning addresses ecosystem-specific needs and/or the needs of particular species of concern at an ecosystem scale (e.g. volume, quality and timing of freshwater flow to sustain particular species, fire management to maintain savannah habitats etc.)

22. State and commercial neighbours: Is there co-operation with adjacent land and water users?
Process

Code	# of As	% of As	Description
0	11	21,6	There is no contact between managers and neighbouring official or corporate land and water users
1	21	41,2	There is contact between managers and neighbouring official or corporate land and water users but little or no cooperation
2	17	33,3	There is contact between managers and neighbouring official or corporate land and water users, but only some co-operation
3	2	3,9	There is regular contact between managers and neighbouring official or corporate land and water users, and substantial co-operation on management

23. Indigenous people: Do indigenous and traditional peoples resident or regularly using the protected area have input to management decisions?
   Process

Code	# of As	% of As	Description
0	8	15,7	Indigenous and traditional peoples have no input into decisions relating to the management of the protected area
1	25	49,0	Indigenous and traditional peoples have some input into discussions relating to management but no direct role in management
2	17	33,3	Indigenous and traditional peoples directly contribute to some relevant decisions relating to management but their involvement could be improved
3			Indigenous and traditional peoples directly participate in all relevant decisions relating to management, e.g. co-management

24. Local communities: Do local communities resident or near the protected area have input to management decisions?
   Process

Code	# of As	% of As	Description
0	11	21,6	Local communities have no input into decisions relating to the management of the protected area
1	26	51,0	Local communities have some input into discussions relating to management but no direct role in management
2	14	27,5	Local communities directly contribute to some relevant decisions relating to management but their involvement could be improved
3	0	0,0	Local communities directly participate in all relevant decisions relating to management, e.g. co-management

24a. Impact on communities: There is open communication and trust between local and/or indigenous people, stakeholders and protected area managers
   Process

Code	# of As	% of As	Description
0	31	60,8	
1	20	39,2	There is open communication and trust between local and/or indigenous people, stakeholders and protected area managers

24b. Impact on communities: Programmes to enhance community welfare, while conserving protected area resources, are being implemented
  Process

Code	# of As	% of As	Description
0	44	86,3	
1	7	13,7	Programmes to enhance community welfare, while conserving protected area resources, are being implemented

24c. Impact on communities: Local and/or indigenous people actively support the protected area
  Process

Code	# of As	% of As	Description
0	43	84,3	
1	8	15,7	Local and/or indigenous people actively support the protected area

25. Economic benefit: Is the protected area providing economic benefits to local communities, e.g. income, employment, payment for environmental services?
Outcomes

Code	# of As	% of As	Description
0	16	31,4	The protected area does not deliver any economic benefits to local communities
1	10	19,6	Potential economic benefits are recognised and plans to realise these are being developed
2	19	37,3	There is some flow of economic benefits to local communities
3	6	11,8	There is a major flow of economic benefits to local communities from activities associated with the protected area

26. Monitoring and evaluation: Are management activities monitored against performance?
  Planning/Process

Code	# of As	% of As	Description
0	10	19,6	There is no monitoring and evaluation in the protected area
1	36	70,6	There is some ad hoc monitoring and evaluation, but no overall strategy and/or no regular collection of results
2	3	5,9	There is an agreed and implemented monitoring and evaluation system but results do not feed back into management

3	2	3,9	A good monitoring and evaluation system exists, is well implemented and used in adaptive management

27. Visitor facilities: Are visitor facilities adequate?
Outputs

Code	# of As	% of As	Description
0	30	58,8	There are no visitor facilities and services despite an identified need
1	14	27,5	Visitor facilities and services are inappropriate for current levels of visitation
2	7	13,7	Visitor facilities and services are adequate for current levels of visitation but could be improved
3	0	0,0	Visitor facilities and services are excellent for current levels of visitation

28. Commercial tourism operators: Do commercial tour operators contribute to protected area management?
Process

Code	# of As	% of As	Description
0	32	62,7	There is little or no contact between managers and tourism operators using the protected area
1	12	23,5	There is contact between managers and tourism operators but this is largely confined to administrative or regulatory matters
2	6	11,8	There is limited co-operation between managers and tourism operators to enhance visitor experiences and maintain protected area values
3	1	2,0	There is good co-operation between managers and tourism operators to enhance visitor experiences, and maintain protected area values

29. Fees: If fees (i.e. entry fees or fines) are applied, do they help protected area management?
Inputs/Process

Code	# of As	% of As	Description
0	44	86,3	Although fees are theoretically applied, they are not collected
1	4	7,8	Fees are collected, but make no contribution to the protected area or its environs
2	3	5,9	Fees are collected, and make some contribution to the protected area and its environs
3	0	0,0	Fees are collected and make a substantial contribution to the protected area and its environs

30. Condition of values: What is the condition of the important values of the protected area as compared to when it was first designated?
Outcomes

Code	# of As	% of As	Description
0	7	13,7	Many important biodiversity, ecological or cultural values are being severely degraded
1	6	11,8	Some biodiversity, ecological or cultural values are being severely degraded
2	17	33,3	Some biodiversity, ecological and cultural values are being partially degraded but the most important values have not been significantly impacted
3	21	41,2	Biodiversity, ecological and cultural values are predominantly intact

30a: Condition of values: The assessment of the condition of values is based on research and/or monitoring
Outcomes

Code	# of As	% of As	Description
0	31	60,8	
1	20	39,2	The assessment of the condition of values is based on research and/or monitoring

30b: Condition of values: Specific management programmes are being implemented to address threats to biodiversity, ecological and cultural values
Outcomes

Code	# of As	% of As	Description
0	47	92,2	
1	4	7,8	Specific management programmes are being implemented to address threats to biodiversity, ecological and cultural values

30c: Condition of values: Activities to maintain key biodiversity, ecological and cultural values are a routine part of park management
Outcomes

Code	# of As	% of As	Description
0	26	51,0	
1	25	49,0	Activities to maintain key biodiversity, ecological and cultural values are a routine part of park management

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