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## “Conservation and Sustainable Management of Turkey’s Steppe Ecosystems Project”

GCP/TUR/061/GFF

# GUIDELINES FOR PROTECTED AREA MANAGEMENT PLANNING



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January, 2021

# Guidelines for Protected Area Management Planning

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# TABLE OF CONTENTS

<b>LIST OF ABBREVIATIONS</b>	<b>VI</b>
<b>LIST OF FIGURES</b>	<b>VII</b>
<b>LIST OF TABLES</b>	<b>VII</b>
<b>LIST OF BOXES</b>	<b>VIII</b>
<b>EXECUTIVE SUMMARY</b>	<b>IX</b>
<b>INTRODUCTION</b>	<b>xiii</b>
<b>CHAPTER 1. OVERVIEW OF NATURE CONSERVATION AND PROTECTED AREAS: THE CURRENT SITUATION IN THE WORLD AND IN TURKEY</b>	<b>1</b>
1.1. Protected Areas: Definition and development	3
1.2. Protected areas in Turkey	8
<b>CHAPTER 2. REVIEW OF MANAGEMENT PLANNING OF PROTECTED AREAS</b>	<b>13</b>
2.1. Management planning in Turkey	15
2.2. Management planning: definitions, standards, principles and recommendations	18
2.2.1. Principles and goals of management planning	22
2.2.2. Basic recommendations for the management planning of protected areas	18
<b>CHAPTER 3. THE PLANNING PROCESS</b>	<b>33</b>
3.1. Overview	35
3.2. Steps for management planning	38
3.2.1. Step 1: Pre-planning phase	39
3.2.2. Step 2: Kick-off and inception	40
3.2.3. Step 3: Data collection in the field	41
3.2.4. Step 4: Evaluation of the information	43
3.2.5. Step 5: Problem analysis (identifying constraints, opportunities and threats)	45
3.2.6. Step 6: Developing management vision and objectives	47
3.2.7. Step 7: Planning of programmes and activities	49
3.2.8. Step 8: Zoning	52
3.2.9. Step 9: Preparation of the draft management plan	57
3.2.10. Step 10: Public consultation process	59
3.2.11. Step 11: Preparation of the final plan	60
3.2.12. Step 12: Approval of the plan	61
3.2.13. Step 13: Stepwise implementation of activities	61
3.2.14. Step 14: Monitoring and review	62
3.2.15. Step 15: Decision to review and update the management plan	62

<b>4. REFERENCES</b>	<b>63</b>
<b>5. ANNEXES</b>	<b>69</b>
<b>Annex 1.</b> Proposed list of specialists for planning teams	71
<b>Annex 2.</b> Scope of the baseline surveys	77
<b>Annex 3.</b> DPSIR analysis	82
<b>Annex 4.</b> Format for a protected area management plan	87

## LIST OF ABBREVIATIONS

CBD	Convention On Biological Diversity
CEPA	Capacity Building, Education, Participation And Awareness
CSO	Civil Society Organization
DMP	Development And Management Plan
DPSIR	Driving Forces- Pressures- State- Impact- Response
EU	European Union
FAO	Food And Agriculture Organization Of The United Nations
GDF	General Directorate Of Forestry
GDNCNP	General Directorate Of Nature Conservation And National Parks
IUCN	International Union On Conservation Of Nature
LTDP	Long Term Development Plan
MAB	Man And The Biosphere Programme (Unesco)
MAF	Ministry Of Agriculture And Forestry
MEU	Ministry Of Environment And Urbanization
NGO	Non-governmental organization
OUV	Outstanding Universal Value
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific And Cultural Organization
WCMC	World Conservation Monitoring Centre
WCPA	World Commission On Protected Areas
WDPA	World Database On Protected Areas
WMP	Wetland Management Plan

## LIST OF FIGURES

Figure 1. Overview of the seven guidelines and their interrelations	xv
Figure 2. Distribution of protected areas according to their conservation status (MAF, 2018)	12
Figure 3. Distribution of special protected areas in Turkey	12
Figure 4. Protected area management planning process	16
Figure 5. Typical planning hierarchy for protected areas	20
Figure 6. Planning hierarchy in Turkey	21
Figure 7. Planning and consideration of international designations	24
Figure 8. Consideration 1: Development of basic map(s)	27
Figure 9. Consideration 2: Planning based on habitats	28
Figure 10. Existing planning process for protected areas	36
Figure 11. Consistent participatory planning process	37
Figure 12. Interactions between the framework and components of the DPSIR assessment approach	45
Figure 13. Interrelations of the DPSIR components	85

## LIST OF TABLES

Table 1. Definitions of terms used to describe protected areas, (Dudley, 2008)	5
Table 2. IUCN protected areas categories and definitions	7
Table 3. List of protected areas in Turkey ( <i>DKMPGM Data Base, UBEP 2018-2028</i> )	11
Table 4. Action plan template	50
Table 5. Checklist form for a protected area plan content	60

## LIST OF BOXES

Box 1. Checklist for data collection	42
Box 2. Classification and evaluation of threats for conservation areas	46
Box 3. What is a powerful vision in protected area management planning?	48
Box 4. Zoning according to the technical specifications for a long-term development plan	53
Box 5. Zoning approach for wetlands (Regulation on Wetlands Conservation)	53
Box 6. Significant criteria for designing zones	54
Box 7. Zone types for IUCN I-IV Conservation Area Categories	55
Box 8. Zone types for IUCN V-VI Conservation Area Categories	56
Box 9. Implementation plan template	57
Box 10. Example of a governance model	58

# EXECUTIVE SUMMARY

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Management planning guidelines represent the second major step in the process for planning protected areas, following implementation of the Establishment Guidelines. This publication was developed as a part of the Conservation and Sustainable Management of Turkey's Steppe Ecosystem Project. It is the one of seven sets of guidelines designed for the development of recommendations and strategies for the management of the country's natural assets.

This guidelines are based on international and national standards and are divided into 15 steps for successful management. A fundamental pre-condition for any form of management planning is clear definition of the overall management objectives to be achieved. These management objectives are linked to the IUCN protected area categories, which form the basis for the guidelines. Important recommendations for successful management include the creation of thematic preparatory maps on topography, habitats, borders and zones, and habitat-based planning.

The guidelines provide basic recommendations for the integration of global trends and requirements connected with nature conservation and protected areas into the protected area management process. A central element of this process is the management plan, which sets out the management approach and goals, together with a framework for decision-making to be applied in the protected area over a given period of time. The management plan is usually valid for a period of 10 years but may include a mid-term review. Changes can only be made to the plan on the basis of ecological or natural reasons.



## Purpose of the guidelines

The guidelines were developed based on experiences with participatory management planning at the international level, the IUCN planning guidelines, and best practices and lessons learned from protected areas in Turkey.

The aim of the guidelines is to support national park managers, planners, technical staff and other interested parties in Turkey in the development of participatory management plans for protected areas, based on technical specifications drawn up by the General Directorate for Nature Conservation and National Parks.

The guidelines should serve as a flexible instrument that can be constantly reviewed, revised and updated in the light of updated information, experiences and changing priorities.

The main aims of the guidelines are to strengthen the management structure of protected areas; to fulfil the commitments of international conventions; to integrate developments, trends and changes at the global level into the planning process; to facilitate the collaborative management of protected areas in cooperation with relevant stakeholders; and to share responsibility for the participation of stakeholders in the management of protected areas.

The guidelines open with an Introduction which summarizes the interconnections between the seven sets of guidelines prepared within the framework of the Conservation and Sustainable Management of Turkey's Steppe Ecosystem Project, aimed at the conservation and sustainable management of Turkey's natural assets.



Chapter 1 discusses the definition of protected areas, development at the global level and the current situation in Turkey. Chapter 2 presents the approach and process of management planning in Turkey together with general principles, objectives, and basic recommendations on management planning. Chapter 3 outlines in detail the 15 steps to follow in the process of management planning, and basic issues to take into account at each step as well as the outputs to be achieved by those responsible. The steps range from the preliminary stage to monitoring and evaluation and even revision. A set of annexes at the end of the publication provides additional information for direct managers and planners during the planning process. In particular, they list experts whose participation is essential for the planning process and planning team, areas of expertise and work issues, and the scope of inventory projects that represent the cornerstone of a management plan, with consideration of different thematic topics. Finally, the guidelines include an example of a planning format for a protected area.

# INTRODUCTION

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Within the framework of the project “**Conservation and Sustainable Management of Turkey’s Steppe Ecosystems**”, seven sets of guidelines have been developed to provide standards and recommendations for the sustainable management and conservation of the country’s natural assets. The present document is second set in the series: The Guidelines for Management Planning of Protected Areas. The full list of guidelines is as follows:

- **The Guidelines for Establishing Protected Areas outline the standards for the establishment process, from site proposal to final establishment of the site (including ministerial and presidential approval).**
- **The Guidelines for Protected Area Management Planning outline the standards and methods for the management planning of established protected areas.**
- **The Guidelines for Biodiversity Monitoring outline the standards and methods for the development of monitoring systems at the protected area level.**
- **The Guidelines for Engaging Stakeholders in Managing Protected Areas outline the standards and recommended practices for engaging stakeholders in the participatory planning and management of protected areas.**
- **The Guidelines for Assessing the Effectiveness of Protected Areas outline the standards and methods for assessing the effectiveness and efficiency of protected area management.**
- **The Guidelines for Grazing Management Planning outline the standards and methods for transitioning Turkey’s grazing management practices to align with globally defined ecological sustainability.**
- **The Guidelines for Grazing and Livestock Monitoring outline the standards and methods for monitoring animal performance and the impact of livestock on the ecosystem.**

All the guidelines refer to both national and international standards and are closely linked, as shown in Figure 1.

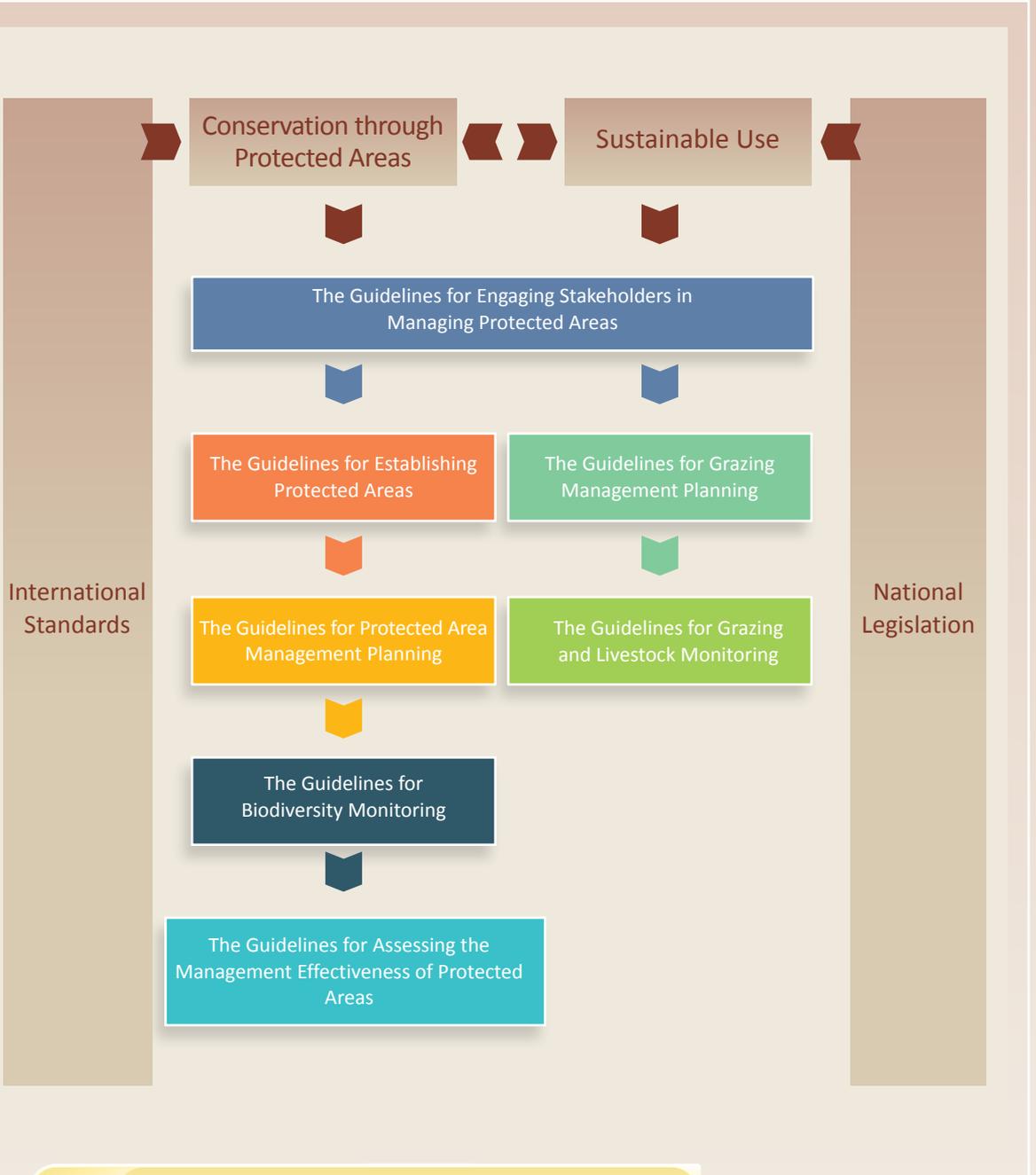


Figure 1: Overview of the seven guidelines and their interrelations





# CHAPTER 1

## OVERVIEW OF NATURE CONSERVATION AND PROTECTED AREAS; THE CURRENT SITUATION IN THE WORLD AND IN TURKEY





# 1. OVERVIEW OF NATURE CONSERVATION AND PROTECTED AREAS: THE CURRENT SITUATION IN THE WORLD AND IN TURKEY



## 1.1.

### Protected areas: Definition and development

Protected areas are critical for maintaining a healthy environment for people and nature. They are essential for biodiversity conservation and vital to the cultures and livelihoods of local people who live in and around them. They also provide clean air and water, bring benefits to many kinds of interest groups through tourism, and provide protection from climate change and natural disasters (UNEP-WCMC and IUCN, 2016).

Over the last 20 years, there has been a dramatic increase in the number and extent of protected areas established globally, symptomatic of a growing recognition of the value of protection to safeguard nature and cultural resources and mitigate human impacts on biodiversity. It is also important to recognize the political commitments made by governments at many levels that have driven these achievements. The Strategic Plan for Biodiversity 2011–2020 with its 20 Aichi Biodiversity Targets and the 2030 Agenda for Sustainable Development are two of the most important commitments reached over the past decade (UNEP-WCMC and IUCN, 2016; UNEP-WCMC, IUCN and NGS, 2018).



In addition to international commitments, protected areas play an important role in fulfilling national policies and legislative commitments. They enable countries not only to meet their political commitments both at a national and global level, but also to understand their contribution to conserving biodiversity and securing ecosystem goods and services as a means to achieving sustainable development.

Depending on the conservation category, protected areas have a wide range of management objectives and are governed by many different stakeholders. To avoid confusion among conservation categories, IUCN has defined a common term for protected areas and listed protected area management categories as an important global standard for the planning, establishment and management of protected areas. Today, the IUCN protected area management categories function as a global framework recognized by the Convention on Biological Diversity (CBD) to categorize the diversity of protected area management types (Dudley, 2008).

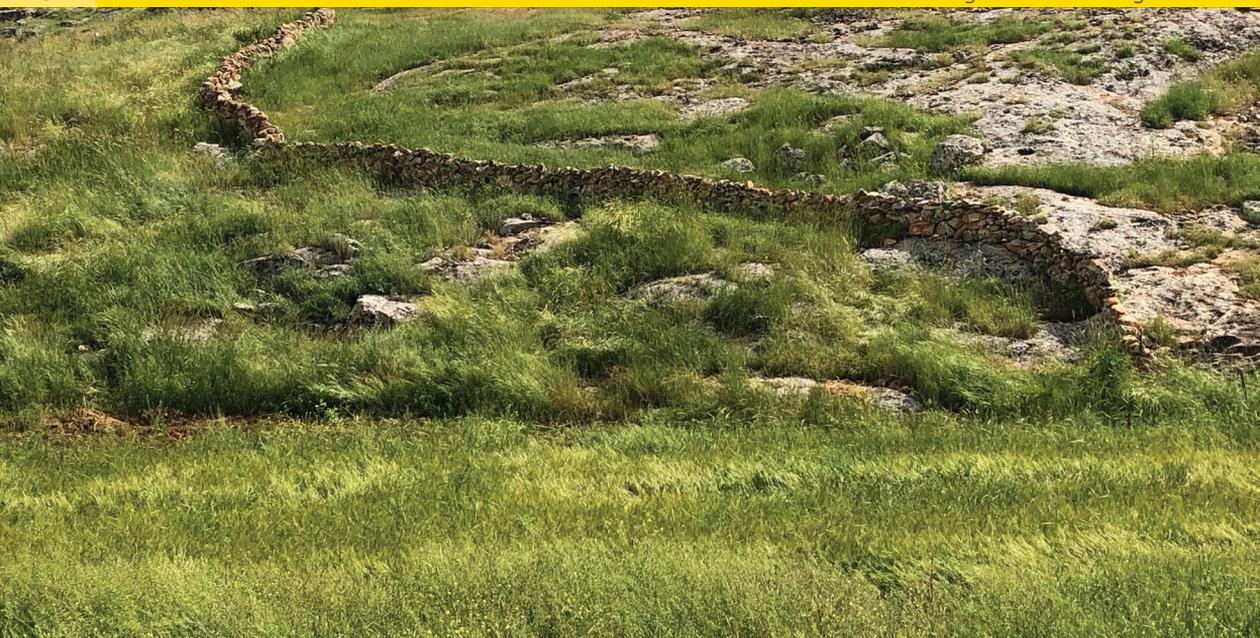
These categories are recognized as a global standard for defining and recording protected areas by international bodies, including the United Nations, as well as many national governments and, as such, are increasingly being incorporated into government legislation. For example, the CBD Programme of Work on Protected Areas, “recognizes the value of a single international classification system for protected areas and the benefit of providing information that is comparable across countries and regions and therefore welcomes the ongoing efforts of the IUCN World Commission on Protected Areas to refine the IUCN system of categories” ([www.cbd.int](http://www.cbd.int)).

The IUCN definition of a protected area is: “A clearly defined geographical space, recognized, dedicated, and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural assets. ([www.iucn.org](http://www.iucn.org)).

In applying the categories system, the first step is to determine whether the site meets this definition; the second is to decide on the most suitable category. Each word and/or phrase of this definition has a wider meaning, as shown in Table 1.

Table 1. Definitions of terms used to describe protected areas

Terms	Explanation
<b>clearly defined geographical space</b>	includes land, inland water, marine and coastal areas, or a combination of two or more of the aforementioned. <b>“Space”</b> has three dimensions: the airspace above a protected area which may be protected from low-flying aircraft; a certain water depth in marine protected areas which may be protected, or an area where the seabed is protected but the water above is not. Conversely, sub-surface areas are sometimes not protected (e.g. are open to mining). <b>“Clearly defined”</b> implies a spatially defined area with agreed and demarcated boundaries. These boundaries can sometimes be defined by physical features that move over time (e.g. riverbanks) or as a result of management measures (e.g. agreed no-take zones).
<b>recognized</b>	implies that protection may include a range of governance types that are declared both by individuals and the state, and that such sites should be recognized in some way, notably by listing them on the World Database on Protected Areas (WDPA).
<b>dedicated</b>	implies a specific, binding commitment to long-term conservation, for example, through: <ul style="list-style-type: none"> <li>· international conventions and agreements</li> <li>· national, provincial and local law</li> <li>· customary law</li> <li>· NGO covenants</li> <li>· private trusts and company policies</li> <li>· certification schemes.</li> </ul>
<b>managed</b>	assumes some active steps to conserve the natural (and possibly other) assets for which the protected area was established. <b>“Managed”</b> can include a decision to leave the area untouched if this approach represents the best conservation strategy.
<b>legal or other effective means</b>	implies that protected areas must either be gazetted (i.e. recognized under statutory civil law), recognized through an international convention or agreement, or otherwise managed through other effective but non-gazetted means, such as recognized traditional rules under which community conserved areas operate, or the policies of established non-governmental organizations.
<b>...to achieve</b>	implies some level of effectiveness. This new element was not present in the 1994 definition but was strongly requested by many protected area managers and others. Although the category will still be determined by objectives, management effectiveness will progressively be recorded in the World Database on Protected Areas and over time will become an important contributory criterion in the identification and recognition of protected areas.
<b>long term</b>	means that protected areas should be managed in perpetuity and not as a part of a short-term or temporary management strategy.
<b>conservation</b>	In the context of this definition, <b>“conservation”</b> refers to the in-situ maintenance of ecosystems and natural and semi-natural habitats, and of viable populations of species in their natural surroundings, as well as, in the case of domesticated or cultivated species, the surroundings in which they have developed their distinctive properties.



Phrase	Explanation
<b>Nature</b>	In this context, “ <b>nature</b> ” refers to biodiversity at the genetic, species and ecosystem level, and often to geodiversity, landforms and broader natural assets.
<b>associated ecosystem services</b>	In this context, the term “ <b>associated ecosystem services</b> ” relates to natural provisioning services such as food and water; regulating services such as the regulation of floods, droughts, land degradation and diseases; supporting services such as soil formation and nutrient cycles; and cultural services such as recreational, spiritual, religious and other immaterial benefits.
<b>cultural values</b>	The term “ <b>cultural values</b> ” refers to cultural assets that do not interfere with conservation outcomes (all cultural assets in a protected area should meet this criterion). In particular, it refers to; <ul style="list-style-type: none"> <li>* those that contribute to conservation outcomes (e.g. traditional management practices on which key species have become reliant) and</li> <li>* those that themselves are threatened.</li> </ul>

Source: Dudley, Shadie and Stolton, 2013



The category system of IUCN functions as a guiding tool to locate the appropriate management for each type of protected area worldwide. In other words, the fundamental pre-condition for any management planning is a clear definition of overall management objectives to be achieved. IUCN has elaborated and published recommendations for planning and management of these categories. The proposed six categories, described below with definitions, differ in terms of the degree of naturalness and human use of the landscape (Table 2). A detailed description of each IUCN category can be found in The Guidelines for Establishing Protected Areas.

Table 2: IUCN protected areas categories and definitions

Protected areas categories	Definition
Category 1a: Strict nature reserve	are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.
Category 1b: Wilderness area	are usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.
Category II: National park	large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.
Category III: Natural monument or feature	set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.
Category IV: Habitat/species management area	aim to protect particular species or habitats and management reflects this priority. Many Category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.
Category V: Protected landscape/seascape	A protected area where the interaction of people and nature over time has produced an area of distinct character with significant, ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
Category VI: Protected area with sustainable use of natural resources	protected areas conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area

Source: <https://www.iucn.org/theme/protected-areas/about/protected-area-categories>

While each of the protected area categories has a different range of management objectives, all the categories should have one feature in common: a thorough management plan process designed to ensure that the optimum outcomes are achieved.

## 1.2. Protected areas in Turkey

Protected areas are reserved for the conservation of biological diversity and natural and cultural resources and managed under related legislation for terrestrial and/or marine areas. Along with the protection of biological and cultural diversity, the special status and importance of these areas encompasses functions such as: the protection of watersheds, soils and coasts; the provision of socio-cultural contributions through the sustainable use of existing natural products; support for tourism, recreation and educational activities; and efforts to ensure food safety. At the same time, many protected areas are habitats for local people who enrich these areas with their traditional cultures. Generally, these areas bring many benefits in terms of the protection of ecosystem services and support for standards of living for people and economies. For these reasons, it is vital to effectively safeguard the assets of protected areas for current and future generations. Plans for protected areas are a basic tool to ensure the conservation and management of protected areas.

As of 2018, around 15.4 percent of the world's land area is now located within protected areas. However, many of these areas remain "paper parks" without management or where management is not sufficiently effective to preserve the value of the area, to cope with threats, or to achieve management objectives (UNEP-WCMC, IUCN and NGS, 2018).

Turkey has designated approximately 6.7 million hectares of land as protected areas. This corresponds to 6.69 percent of the total area of the country (GDNCNP, Corporate Report on Nature Conservation 2019). The country has defined 18 different protection categories, ranging from national parks to seed stands.

Efforts to promote the conservation of natural areas in Turkey have been carried out within the scope of the Abrogated Forest Law No. 3166, adopted in 1937, and the Abrogated Terrestrial Hunting Law No. 3167. Until 1983, these actions were defined, planned and managed mostly in areas designated as forests by units of the Ministry of Forestry and Agriculture (GDNCNP Report, 2017).

Forest Law No. 6831, adopted in 1956, was the first law to mention the concept of a national park in Turkey. Article 25 of the Forest Law states that rare and unique landscapes shall be designated as national parks and managed by the General Directorate of Forestry. It also allowed the creation of recreational areas for public use and outdoor activities. In 1956, the Belgrad Forest Recreational Area was declared the first recreation area, then in 1958, Yozgat Çamlığı

National Park was declared the first national park under this law. In the same year, Belgrad Deer Breeding Station was established as the first **station** for wildlife under Terrestrial Hunting Law No. 3167. The General Directorate of Forestry was responsible for projects relating to national parks, hunting wildlife and recreation areas until 1976 (Yenilmez Arpa *et al.*, 2017).

By 1983, the following regulations had established key concepts of protected areas:

- The terms **Forest Reserve**, **Gene Conservation Forest** and **National Park** were defined under Forest Law No. 6831.
- The term **Wildlife Development Area** was defined under Terrestrial Hunting Law No. 3167.

After 1983, the following legislative acts entered to force, in order to be able to identify, protect, plan and manage ecosystems and habitats where non-forest immovable items are located, and fulfil the obligations of international and regional conventions to which Turkey is a party:

- Law on the Protection of Cultural and Natural Assets No. 2863
- Environmental Law No. 2872
- National Parks Law No. 2873
- Special Environmental Protection Areas Decree No. 383

In addition to the concepts mentioned above, a new set of concepts were established under the following regulations (GDNCNP, Corporate Report on Nature Conservation 2019):

- The terms **Natural Park**, **Natural Reserve** and **Natural Monument** were defined under National Parks Law No. 2873.
- The terms **Natural Site**, **Historical Site**, **Archaeological Site** and **Urban Site** were defined under the Law on the Protection of Cultural and Natural Assets No. 2863.
- The term **Wetlands of National and Local Importance** was defined under Environment Law No. 2872.
- The term **Special Environmental Protection Areas** was defined under Decree No. 383.



Efforts towards the conservation of biodiversity continued in a systematic manner, especially after the 1990s with the emergence of concepts such as **Important Bird Areas, Important Plant Areas, Important Turtle Nesting Areas** and **Key Biodiversity Areas**. Over the last 10 years, the General Directorate of Nature Conservation and National Parks (GDNCNP), the General Directorate of Forestry (GDF), civil society organizations (CSOs) and universities, with some support from the private sector, have conducted protected area projects in different regions and different ecosystems. In addition, the Ministry of Environment and Urbanization is responsible for Special Environmental Protected Areas, within the framework established by the Barcelona Convention. Historical and cultural assets are being managed and conserved by the Ministry of Culture and Tourism (Yenilmez Arpa *et al.*, 2017).

Table 3 provides a list of protected areas in Turkey by type. The statistical data related to protected areas managed by the Ministry of Agriculture and Forestry (MAF) have been provided by the GDNCNP, the Department of Wildlife, the Department of National Parks, the Department of Sensitive Areas, the GDF, the Forest Tree Breeding and Seed Research Institute, and the Department of Non-Wood Forest Products and Services (GDNCNP, 2019). The statistical data related to protected areas managed by the Ministry of Environment and Urbanization are taken from the General Directorate of Conservation of Natural Assets (<https://tvk.csb.gov.tr>, 2019).

Table 3. List of protected areas in Turkey

<b>Protected areas managed by the Ministry of Agriculture and Forestry (MAF)</b>	<b>Number</b>	<b>Area (ha)</b>
1. National parks	44	880,019.79
2. Natural parks	248	107,230.09
3. Natural reserves	30	46,726.71
4. Natural monuments	114	9,389.58
5. Wildlife development areas	84	1,162,788.47
6. Wetlands:		
Wetlands of national importance	59	869,697
Wetlands of local importance	13	14,513
Ramsar sites	14	184,487
7. Forest Reserves	55	251,519
8. Gene conservation forests (in-situ)	328	43,813.90
9. Seed stands (in-situ)	315	41,558.60
10. Seed orchards (ex-situ)	183	1,423.40
11. Urban forests	136	10,263.00
12. Biosphere reserve areas	1	25,258
<b>Protected areas managed by the Ministry of Environment and Urbanization (MEU)</b>	<b>Number</b>	<b>Area (ha)</b>
13. Special Protected Areas	18	2,582,968.00
14. Natural Sites (1st Degree Natural Sites, 2nd Degree Natural Sites, 3rd Degree Natural Sites)	2,554	1,768,948.00
15. Natural Assets (monumental trees, caves)	–	–
Monumental trees	8,411	
Caves	148	
<b>Natural and Cultural Conservation projects by the Ministry of Culture and Tourism</b>		
16. Cultural heritage sites	16	
17. Natural heritage sites	-	
18. Mixed heritage sites	2	

Note: Information on protected areas was updated on June 2020.

Source: NBAP 2019. NBAP 2018-2028,

(<https://www.says.gov.tr/istatistik>, <https://www.ogm.gov.tr>; <https://kvmgm.ktb.gov.tr/dunya-miras-listesi.html> )

Figures 2 and 3 present the national distribution of protected areas and special protected areas.



Figure 2. Distribution of protected areas according to their conservation status (Ministry of Agriculture and Forestry, June 2020) Source: MAF (2020)

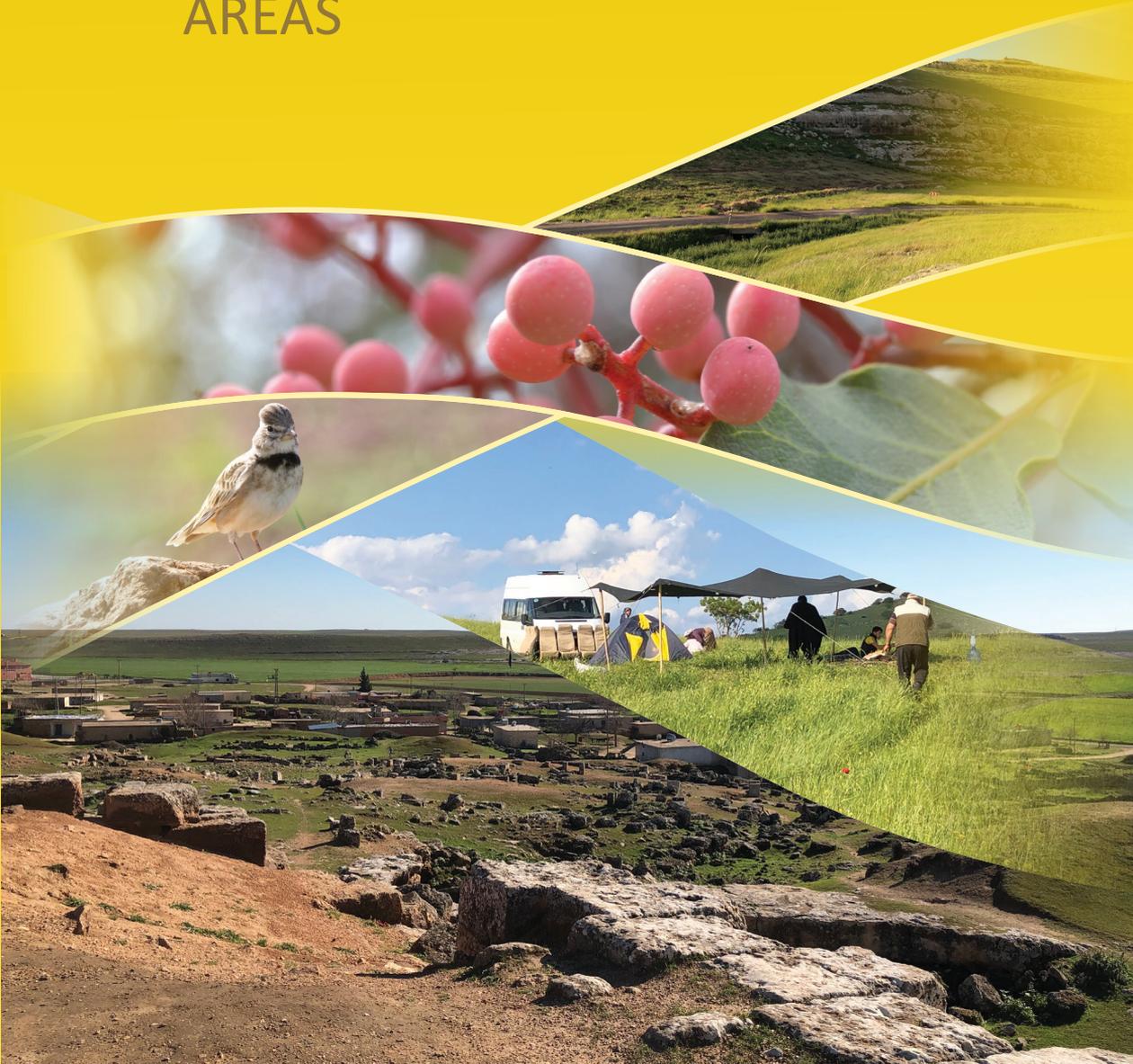


Figure 3. Distribution of special protected areas in Turkey (Ministry Environment and Urbanization, June 2020) Source: MEU (2020).

# CHAPTER 2

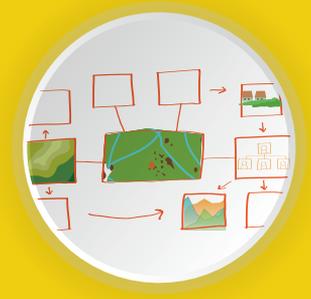
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## REVIEW OF MANAGEMENT PLANNING OF PROTECTED AREAS





## 2. REVIEW OF MANAGEMENT PLANNING OF PROTECTED



### 2.1. Management planning in Turkey

Protected areas are classified on the basis of national legislation or international conventions. The status, administrative and management dimensions of protected areas in Turkey, defined on the basis of national laws or international conventions, are discussed in Chapter 1. This chapter reviews the situation with respect to planning in protected areas within the scope of National Park Law No. 2873, Terrestrial Hunting Law No. 4915, the Regulation on Wetland Conservation and the Ramsar Convention.

A variety of planning formats are used for different types of protected areas: the Long Term Development Plan (LTDP) for national parks; the Development Plan (DP) for natural parks; the Management Plan (MP) for natural reserves; the Development and Management Plan (DMP) for wildlife development areas; and the Wetland Management Plan (WMP) for wetlands, which includes a detailed survey report with a Strategic and Spatial Plan covering 7–10 years. These protected area plans define the official zoning system for the areas and the type of activities allowed or prohibited in each zone, with a focus on conservation and physical developments. Together, they function as key instruments for spatial planning in each of the protected categories in Turkey.

The National Parks Department, the Wildlife Management Department and Sensitive Area Management Department are responsible for conducting planning processes for the above-mentioned protected areas under the General Directorate of Nature Conservation and National Parks (GDNCNP). Although the various protected area categories seems similar with respect to content, planning process and approach, there are distinctive differences, for instance, relating to the planning period, governance mode and zoning system. For example, while wetland management plans contain buffer zones around the protected area, there are no buffer zones designated for national parks, natural parks, natural reserves and wildlife development areas. Additionally, there are differences in the governance approach between wetlands and other categories. While wetlands are operated and monitored by local and national wetland commissions, there are no operational and monitoring units for other protected areas.

The current management planning stages for protected areas in Turkey are summarized below and include five steps (Figure 4).

The following 15 stages encompass the preparation of protected area management plans in Turkey.



Figure 4. Protected area management planning process

**1. Pre-planning stage.** This stage defines what the process will achieve, how it will be carried out, timing considerations and who will be involved in the process. It begins with a legal and administrative process to determine the team profile, work plan and workflow, the form of the planning team/ consultancy team, and whether the plan will be prepared by a company and/ or outside team, after which the tender is announced. Once a decision is made, the awarded company and/ or expert group takes an active part in the process. Ministry staff based in Ankara and at the site itself participate in the following stages to observe and coordinate the process effectively and in a timely manner. The pre-planning stage is omitted for the planning of wildlife development sites.

**2. Inception stage and first stakeholder information meeting.** An initial consultation meeting is held to inform key stakeholders about the management planning process, what it involves, and to seek their support and assistance.

**3. Data collection.** The aim of this stage is to provide a clear, concise baseline description of the protected area. It includes a literature review and efforts to obtain existing information and data prior to the field studies and field investigations. Tables, maps, charts and graphs are used to provide comprehensive information for the plan. All necessary data concerning the general landscape, ecological, social and cultural aspects, among others, are assessed during this stage. In the case of ecological surveys, the team gathers data covering at least three vegetation periods (e.g. spring, autumn and summer). The data collection forms and tables are included in the Technical Specifications of the tender to allow for common understanding of data collection formats and structures.

**4. Evaluation of data.** The evaluation section of the plan assesses the significance of the information provided in the previous stages, with a view to identifying parts of the protected area that may require attention and intervention through the management plan.

**5. Problem analysis.** The aim of this stage is to identify issues requiring management involvement (e.g. restrictions, threats and problems). The planning/ consultancy team works with key stakeholders and the Ministry team to uncover problems and analyse threats affecting the protected area. One tool used to identify such problems is a SWOT (strengths, weaknesses, opportunities, threats) analysis.

**6. Second meeting.** This meeting is used to develop the management vision and objectives and discuss the first draft of the plan. This step should be omitted for the planning of a Wildlife Development Area.

**7. Strategic planning.** This stage involves the development of the long-term vision and management targets and strategies.

**8. Developing strategic decisions for the plan and zonation.** This stage, which consists of the establishment of management zones (and associated regulations) for the protected area, is one of the most important components of the plan. Zonation refers to a graphic and written description of what can and cannot occur in different physical sectors of the area.

**9. Identification of sub-plans and programmes.** Building on the evaluation, the vision statement and the zonation, this stage defines a set of management programmes, each of which addresses a major theme and has a goal to be achieved.

**10. Identification of the plan provisions**

**11. Establishment of the Action Plan/ Activity Plan, Monitoring and Evaluation Plan, and Governance Structure**

**12. Finalization of the Draft Plan and submission to the relevant administration.**

**13. External consultation and review.** This stage involves the submission of the Draft Plan to the key institutions and government agencies to obtain their comments (the relevant institutions are described in legislation). For wildlife development areas, the opinions of related institutions should be collected before starting the planning process. The organization of a stakeholder meeting together combined with the opinions of institutions allows for stakeholders to be informed and facilitates the mutual flow of information.

**14. Revision of the management plan** in line with the comments obtained and finalization of the document.

**15. Approval of the plan** (publication and dissemination).



## 2.2. Management planning: Definitions, standards, principles and recommendations

In general terms, planning is the process of working out a socio-economic programme for a specific period of time with defined objectives to be achieved by governments, the private sector, governmental agencies, enterprises, and so on. It determines the current situation and future progress and targets for relevant sectors based on the nature of the work and highlights decisions to be applied in advance (www.ebilge.com, 2008).

Planning consists of actions predicted to change the current course of events (Lockwood, Worboys and Kothari, 2006). Planning is thus the anticipation of future action (Patzak and Rattay, 2014). In the context of protected areas, planning means considering future activities in the areas of visitors, infrastructure and organization, written down in a coherent form with the addition of maps.

Protected areas are important tools for protecting biodiversity as well as natural, cultural, historical and archaeological peculiarities, and intangible assets. Management plans for protected areas are an important vehicle to achieve the conditions identified as the initial objectives of the establishment of protected areas.

Planning for conservation areas involves establishing which course of action to take to manage and use sustainably resourced assets and the biodiversity of conservation areas, determining the optimal means to implement this action, identifying a budget and partners, and defining rules and methods to follow for sustainable use and management (Griffin, 2002).

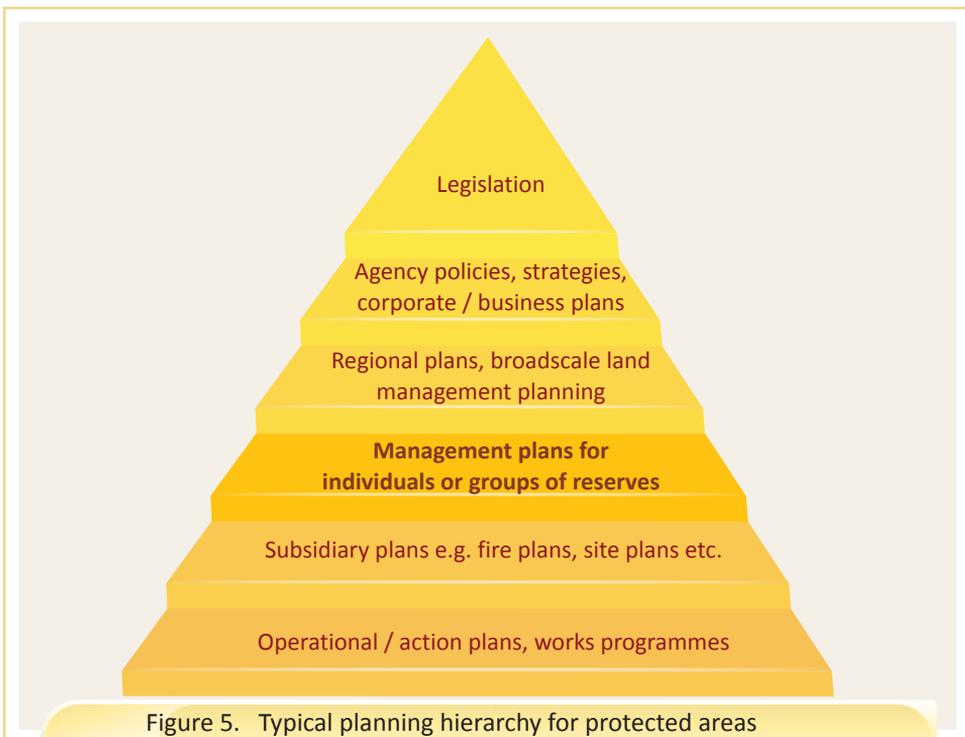
Management planning for protected areas refers to the regulation of interactive relations between the existing ecosystem and people's usage of conservation areas in order to reach the desired state, or maintain the current state.

- A management plan is a guideline: it defines the current state of a protected area, determines how it should look in the future (over 5 to 10 years), and establishes a roadmap to reach that point.
- A management plan is also a mentality: it requires excellent knowledge of the area including all physical, biological and socio-economic, specificities.
- Management planning for protected areas also brings together all interest groups and planners for co-management of the area. This process helps to promote strong coordination, collaboration and communication. It encourages all parties to participate actively in management and take responsibility, and contributes to balancing cross-sectoral policies. It also helps reach resolutions in cases of misunderstanding, and clarifies whether management of the area is efficient or not.
- A management plan is an analytical, clear document with clear priorities related to protected area management. It is practical and easy to apply and contains understandable maps, information and graphs. It is also a flexible and dynamic document (Erdem, 2007) that sets out the overall management approach and goals, together with a framework for decision making, to apply in the protected area over a given period of time. Plans may be more or less prescriptive, depending on the purpose for which they are to be used and the legal requirements to be met. The process of planning, the management objectives for the plan, and the standards to apply will usually be established in legislation or otherwise set down for protected area planners (Middleton and Thomas, 2003).
- Management plans have several specific purposes:
  - To provide a baseline description of the site.
  - To identify the management policies and objectives and the actions necessary to achieve them.
  - To anticipate any conflicts and suggest the best means for resolving them.
  - To ensure implementation of and integration with national and international policies and strategies.
  - To guarantee continuity of effective management during staff and other changes.
  - To obtain resources and to allocate them efficiently and effectively.
  - To act as a tool for communication and education.
  - To provide a professionally presented argument for support and funding (Appleton, 2009).

Management planning must, of course be participatory, according to current standards. It must be possible to integrate the elements of the management plan into the framework conditions in a finely tuned way. However, before explaining the processes of management planning, it is important to be clear about why conservation agencies undertake management planning. What is its purpose? And what are the expected outcomes?

The basic objective of preparing of a management plan is to establish a set of policies, treaties, strategies, business plans and legal requirements to guide the management of a protected area, and to ensure that the area is properly managed through established principles, rules and management tools. The management plan interprets and integrates all the basic characteristic elements of a natural area in relation to the aforementioned matters. The planning involved in the development of protected areas is a quite complex task. Particular structures and processes are needed in order to support managers in dealing with this complexity (Getzner and Jungmeier, 2012)

Planning usually takes the form of a hierarchy with stages feeding into and completing each other. A typical planning hierarchy for a protected area is shown in Figure 5. The management plan of a protected area is situated in the middle of the hierarchy. It benefits from regulations, policies, and wider national and regional area management plans, but also functions as a baseline for subsequent sub-plans and programmes as well as operational plans.





The planning hierarchy in Turkey looks quite similar and is shown in Figure 6. The Constitution sits at the top of the hierarchy with legislation just beneath, followed by Development Plans at the national level. Regional and sub-regional plans and environmental plans are next, with management plans for protected areas placed just below. At present, although protected area management plans are developed separately from other plans and take into account specific legislation and sanctions, they still benefit and are affected by national and regional plans, projects and work, and may affect in turn them. Integration and compliance with national, regional and local plans seems to be mandatory during projects (Yenilmez Arpa, 2005).



Figure 6. Planning hierarchy in Turkey

### 2.2.1. Principles and goals of management planning

Some guiding principles should be considered throughout the planning process. The basic principles are given below:

- **Management plans should be functional.** It is crucial that management plans provide a sound, operational basis for the management of the protected area. They need to clearly define strategic and operational goals and link them to concrete measures. A large number of management plans are rather descriptive, illustrating the current status but not providing a basis for action.
- **Management planning processes should contribute to the development of institutional capacity.** Planning processes offer excellent training opportunities and options for building and improving capacities by involving a maximum number of staff in the planning process. Staff will identify more strongly with the management plan objectives if they are involved in shaping them. Experiences show that planning processes allow for detecting staff strengths but also help to identify gaps (in capacities and/or knowledge). Thus, capacity building recommendations can be derived from good planning processes.
- **Management plans should meet national regulations and international requirements.** In addition to national standards, each management plan needs to meet international standards and obligations. More information on how to harmonize the management of multi-internationally designated areas can be found in Schaaf and Clamote Rodrigues (2016). This includes – if applicable for a specific site – the following:

  - ▶ **Ramsar Convention.** According to Art. 3.1. of the Convention, the contracting parties are required to formulate and implement their planning to promote the conservation of the wetlands included in the list, as well as promote the wise use of all the wetlands in their territory. According to Resolution 5.7 and Resolution VIII.14, all Ramsar sites need management plans, including a monitoring programme. Management planning for Ramsar Sites thus needs to take into consideration potential indicators for monitoring and to consider the results and objectives of the respective Ramsar Strategic Plan (currently the 4th Ramsar Strategic Plan for 2016–2024), which calls for effective conservation and efforts to enable the participation of local communities.

Additionally, the Ramsar Convention's Programme on communication, capacity building, education, participation and awareness (CEPA), adopted through Resolution XII.9 at COP12 in 2015, and its related action plan (currently the CEPA Action Plan for the Secretariat 2016–2018 triennium), needs to be taken into consideration. This action plan usually includes contributions by, or selected tasks and objectives for individual sites.

The Ramsar Sites Management Toolkit is designed to support managers of Ramsar Sites. The documents include a handbook and planning guide for managers, which can be downloaded from [www.ramsar.org/resources/ramsar-sites-management-toolkit](http://www.ramsar.org/resources/ramsar-sites-management-toolkit).

**Emerald Sites.** The network of Emerald Sites ensures the long-term survival of species and habitats mentioned in the Berne Convention. A key monitoring mechanism is the case file system, where possible breaches of the Convention are reported and summarized in biennial reports. The results of these reports should be considered in any management planning process. The “Draft Guidelines on Managing the Emerald Sites, including Climate Change Adaptation and Mitigation” (latest version: 3, 2015) provide standards for consideration for Emerald Sites. In order to fulfil its obligations under the Convention, in particular with regard to habitat protection, the European Union (EU) established the Habitats Directive in 1992 and subsequently the Natura 2000 network. Natura 2000 sites are therefore considered as the contribution of EU Member States to the Emerald Network. In non-EU states such as Turkey, the country must set up Emerald Sites independently.

**UNESCO World Heritage sites.** All UNESCO World Heritage sites are required to comply with the “Operational Guidelines for the Implementation of the World Heritage Convention”. In the specific case of the World Heritage site entitled the “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”, this includes, in particular, the requirement to include zonation (a map and description of the core and buffer zone) and an analysis of threats to the site’s outstanding universal value. Additionally, standards for buffer zone management and connectivity are currently being elaborated and need to be considered for this specific serial property in the future (from 2019 onwards). Management planning also needs to consider the most recent “State of Conservation Report” by IUCN and – if a serial property – the overall dimension of the world heritage.

**UNESCO biosphere reserves.** Biosphere reserves are required to meet the criteria of the MAB Seville Strategy and the statutory framework of the World Network of Biosphere Reserves (1995), and also need to consider related strategies such as the Lima Action Plan (2015). The latter plan underpins the role of biosphere reserves in the implementation of the Sustainable Development Goals (SDGs) and proposes concrete actions which should be considered in planning processes. In the case of biosphere reserves, stakeholder participation is considered crucial.

UNESCO is currently building a website summarizing the technical guidelines for biosphere reserves, which can provide valuable recommendations on the planning process (<https://en.unesco.org/op-wnbr>).

Other international conservation approaches to be considered in planning processes include the UNESCO Global Geopark Network, the EU Diploma, the Barcelona Convention, the Aichi Targets, the European Landscape Convention and Combating Climate Change.

In addition to national standards, each management plan needs to meet international standards and obligations. If the area in question is a multi-designated site, all current categories must be taken into account through the planning process, and the plan should incorporate the respective conservation and management approaches (Figure 7).

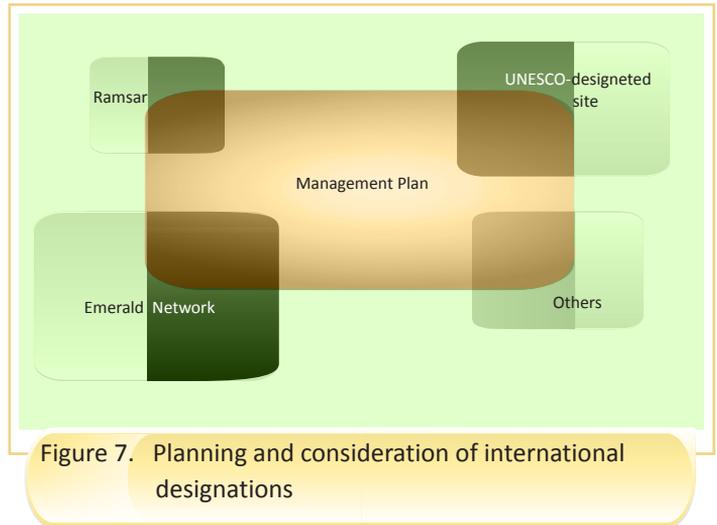


Figure 7. Planning and consideration of international designations

- **Scientifically and technically sound.** Management plans need to be consistent, in particular with respect to the links between vision, objectives, measures and indicators. The management plan and the process of creation need to be transparent and be based on (scientific) knowledge and a thorough analysis. Management planning should consider, furthermore, international standards such as the IUCN Best Practice Guidelines (e.g. Management Guidelines No. 25 for IUCN Category 1b, protected areas, and Management Guidelines No. 21: Guidelines for applying protected area management categories).

- **Maximum involvement of protected area staff.** The staff of protected areas should be involved as much as possible to help ensure their identification with the process and results but also to guarantee transparency regarding contributions and responsibility. A management plan needs to be lived, implemented and communicated by its staff. The principle of planning should strive for maximum involvement in all steps depending on the individually available competences.

- **Participation of local stakeholders and local people.** The principles of participatory planning should be a guiding principle throughout the entire planning process. Participative planning processes take a lot of resources and time, but usually come up with better results, since existing knowledge is integrated into the solution and different perspectives are considered (Jungmeier and Prots, 2017). This is particularly relevant for biosphere reserves but should be considered as a general rule to promote increased local acceptance. The level of involvement can range from gathering information from local communities to consultation or even decision-making or governance. Detailed information was published by IUCN in 2013 (Borrini-Feyerabend *et al.*, 2013).

The process for the development of management plans should also incorporate specific characteristics. As noted by Thomas and Middleton (2003), management planning should be:

- **Official.** The plan and the planning process should be formally adopted by the protected area authority and ideally endorsed by stakeholder groups.
- **Commitment-driven.** Managers and staff should understand the benefits a plan would bring and be committed to the planning process.
- **Process-oriented.** Management planning should be seen as a process not just a product. The final output must be better management, not just another document.
- **Developed with those who will implement it.** Plans should not just be delivered by consultants or experts from headquarters. Those managing or using the area should be closely involved in developing the plan.
- **The right size.** Plans do not have to be long to be good; the size should reflect the size and complexity of the area.
- **Accessible.** The plan should be a clear enough for those using it to understand, use and consult on a day-to-day basis.
- **Appropriate.** The plan should introduce new ideas and proven good practice from elsewhere, but if it is seen as too radical or complicated, it may not be accepted.
- **Adaptive.** Protected areas are unpredictable, and a rigid plan will soon be out of date. The plan should not be so inflexible that it cannot respond to changing circumstances. However, any adaptations must be of an ecological and natural nature and the changes must be well argued.
- **Realistic.** The plan should define and strive for an ideal protected area but should recognize and deal with the reality of current circumstances.
- **Sustainable.** The plan should include components that plan for its own sustainability as well as that of the protected area.





### 2.2.2. Basic recommendations for the management planning of protected areas

The task of management planning relates to the conservation and safeguarding of species, habitats, landscapes and ecosystems. In addition, management planning may involve a number of other tasks and objectives (e.g. preserving ecosystem goods and services and associated cultural features other than biodiversity).

The most relevant goods and services provided by protected areas include: raw materials, water purification, air quality regulation, erosion prevention, mitigation of extreme events, pollination, biological control, carbon sequestration, soil formation, primary production, nutrient cycling, and food, genetic, medicinal and ornamental resources. Protected areas are also increasingly perceived as optimum testing fields for monitoring global change, as well as useful and cost-effective means for climate change adaptation and mitigation. From this perspective, the “environmental targets” of protected areas are quite ambitious (Secretariat of the Convention on Biological Diversity, 2008).

Protected areas are also entrusted with a large number of other social and economic roles, which can multiply management objectives significantly. These roles include scientific research, recreation and tourism, inspiration for art and culture, spiritual and cognitive development, aesthetic enjoyment, preservation of traditional cultures and practices, improving social welfare, enhancing environmental education and awareness, promoting peace and security, facilitating people’s participation and governance, and boosting economic development at multiple scales. Protected areas in the twenty-first century must also fulfil many other functions. All these goals and roles of protected areas should be reflected in management plans. While the general framework and planning stages will be kept for management planning, the proposals and requirements listed below can be integrated into the management planning stages.

### 2.2.2.1. Development of basic maps and planning based on habitats

In order to place the entire planning management process in a technical context, it is necessary to include two considerations.

**Consideration 1 is the necessity for basic thematic maps of a protected area – of which the habitat map is the main one – in order to be able to make statements about the area.**

An appropriate technical environment allows for presenting existing data, continuously and consistently integrating new data, and analysing the different sets of data during and after the planning process. Upcoming technologies have given rise to new opportunities with regard to management planning (e.g. high-resolution remote sensing, mobile GIS and databases, new mobile devices and tools for working with big data). In the recent system, the habitat map is the central information, because there is a data layers net in it. Each layer is assigned to a habitat, and all other data are attached to the respective polygon. The data are stored on different databases on the same server and are available to all. For the sake of simplicity, the data can be transferred immediately to the database using mobile devices (Figure 8).

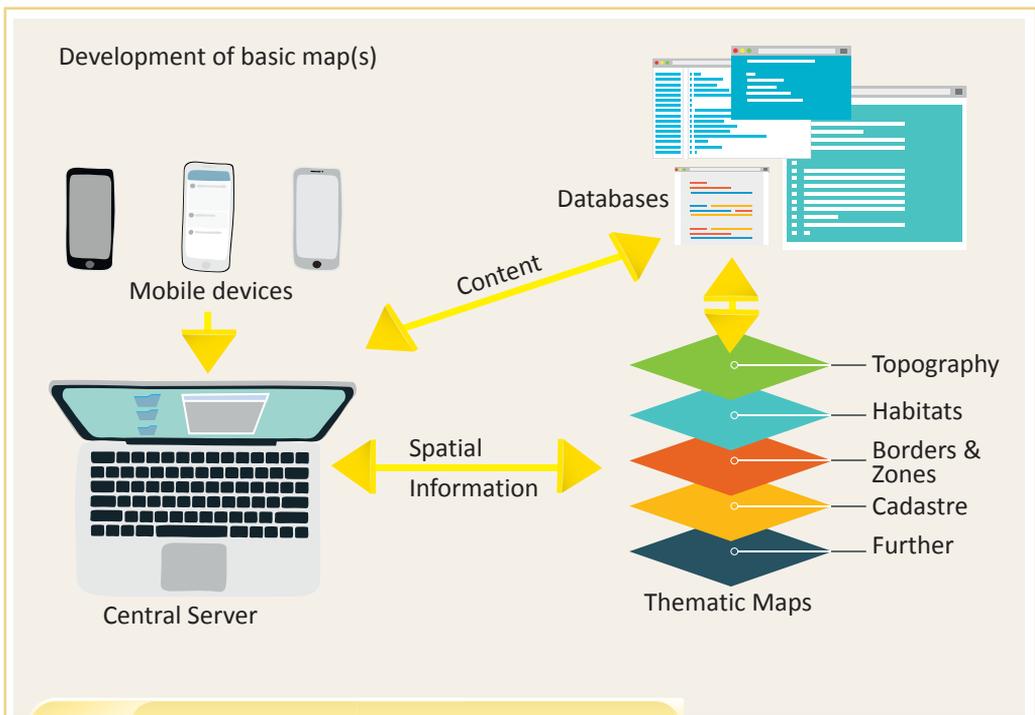


Figure 8. Consideration 1: Development of basic map(s)

**Consideration 2 emphasizes the importance of basing all management planning on habitats.**

The habitat is the only appropriate unit or entity for planning in protected areas. It represents the key attributes for planning in and for a protected area. Each habitat has its specific vegetation, animal and plant species, and type of land use, all of which influence management planning. Through habitat-based planning, each protected good can be assigned to one or more habitats (and thus their vegetation and land use), which in turn is key to tailoring objectives and measures. The advantage of this method is that measures can be implemented related to the habitat. In order to protect an animal or plant species, it is necessary to protect its habitat. Additionally, when surveying animal and plant species, this method permits a stratified approach, as it is not important where exactly a plant species occurs, but only in which habitat it occurs.

All planned activities and measures can also be linked to habitats. In order to achieve a clear picture of the status quo, goals and activities, maps should be limited to management-relevant information only (key species and land uses, see Figure 9).



Figure 9. Consideration 2: Planning based on habitats

Note: The planning unit “habitat” represents all information relevant for the implementation of activities.



#### 2.2.2.2. Integration of global trends and requirements into the planning process

**Management plans are the main and most important tool for natural areas, as they set biodiversity and conservation targets along with indicators and evaluation criteria.** Protected areas sustain both people and nature. The protection, conservation, sustainable use and restoration of biodiversity and ecosystem services in protected areas supports effective natural resource management with environmental and livelihood considerations. This is because these areas provide multi-functional support for ecological, economic, social and cultural conservation opportunities. For these reasons, it is useful to integrate global trends, developments, changes and requirements into protected area plans. For instance, management plans for a protected area should include scenarios for climate change and consequent impacts. They should also support the conservation and management of agricultural biological diversity and the in-situ conservation of wild relatives of cultivated species. Management plans should be able to provide landscape restoration measures for land degradation and changes observed as a result of shifting environmental and social conditions. Some of the main tasks that can be integrated into planning during the management planning process are summarized below.



- **Supporting food systems and food security.** Biodiversity is one of the Earth's most important resources for food and agriculture. Crops, livestock, aquatic organisms, forest trees, microorganisms and invertebrates – thousands of species and their genetic variability – make up the web of biodiversity upon which the world's food production depends. Genetic resources are the raw materials that farmers, breeders and researchers have relied upon for centuries to improve food production and enhance the adaptability of production systems to new conditions, including **social and environmental changes** (FAO, 2014). The benefits of protected areas extend far beyond their immediate environs. Protected areas present a number of assets regarding the conservation of genetic resources for food and agriculture. These areas serve as natural gardens, safeguarding and cultivating biodiversity, including the wild plant relatives of crops. The biodiversity of terrestrial and aquatic ecosystems has provided food, including fish, plants, seeds, honey, fruits, mushrooms and insects, as important components of the diets of local inhabitants for thousands of years. Protected areas also provide ecosystem services, such as pollination and pest control, with mountain areas playing a special role through their contribution to clean water and decreased disaster risks. Protected areas are a key global and national tool to protect, *inter alia*, genetic resources for food and agriculture, protecting their habitats, their traditional production systems (where these exist within protected areas) and the natural evolutionary processes in which these species live (FAO, 2014). For these reasons, the management plans for protected areas should include strong conservation of genetic resources, conservation and sustainable use of crop wild relatives and wild food plants, seeds for a sustainable future, plant genetic resources for food, and agriculture for food safety and security.
- **Mitigation of the effects and impacts of climate change.** Management plans are the main and most important tool for natural areas, because they set biodiversity and conservation targets along with indicators and evaluation criteria. However, while other drivers of climate change (e.g. changes in land use, invasive species or pollution) are well identified and targeted in management plans, the direct attention shown to climate change is scant and often non-existent because the impacts of global change are posing additional pressures on the conservation of biodiversity. Regional impacts of climate change can also provoke severe effects on faraway zones regardless of their degree of protection or management effectiveness. Examples include acid rain on land and changes in rainy and dry seasons. Although a protected area may be legally designated, well-planned and efficiently managed, its resources may be degraded due to external effects (Taylor and Figgis, 2007). Thus, the management plan should reflect and provide solutions and strategies to manage

and monitor these effects. Almost all natural and semi-natural ecosystems, including areas designated as protected areas, capture and store carbon by sequestering carbon dioxide from the atmosphere through photosynthesis. Protected areas reduce the impact of climate change on local communities and provide ecosystem support services. With protection, this ecosystem-based adaptation helps to maintain ecosystem integrity, buffer the local climate, and reduce risks of and impacts from extreme events such as storms, floods, droughts and sea-level rise (Hopkins *et al.*, 2015). For these reasons, the criteria and strategies for climate change mitigation can be defined and compiled into a roadmap to consider climate change in all phases of the planning process. Protected area management plans can provide assistance for impact assessments as well as the identification of suitable adaptation strategies and measures to address the effects of climate change.

- **Management of invasive species.** Invasive alien species are one of the most important direct drivers of biodiversity loss and ecosystem service changes. Art. 8(h) of the Convention on Biological Diversity (CBD) calls for parties “as far as possible and as appropriate, (to) prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats, or species”. Protected areas preserve hotspots of biological diversity and ensure the maintenance of ecosystem services that are crucial to human livelihoods, as the impact of biological invasions can be particularly severe in these contexts, affecting species and human communities. Protected area management plans can thus address invasive species through roles and management objectives.
- **Increasing the management effectiveness of the protected area through buffer zones and ecological corridors.** Protected areas exchange matter, energy and information with their surroundings. These exchanges are vital to the ecological processes underpinning biodiversity and other ecosystem goods and services. Shifts in the nature, extent, direction and intensity of these interactions may also, however, result in significant alterations to the structure and function of ecosystems, even where optimum protected area management is in place. Protected area cannot therefore be managed in isolation from their surroundings. As a result, almost as much attention should be paid to planning the surrounding as the inside of protected areas. “Ecological Corridors” connect protected areas with adjacent areas in a coordinated management regime, to allow migrating animals and ecological processes to fare better even when land use in neighbouring areas intensifies.





- **Supporting the balance of nature and humans through ecosystem services.** A focus on ecosystem services helps local and conservation authorities to: (i) build political support for conservation, (ii) make informed planning and management decisions, (iii) address conservation conflicts, (iv) build alliances and (v) raise funds for conservation. Economic assessments of protected areas can secure urgently required political backing for conservation. The broader ecosystem services perspective can be a powerful approach to inform management planning, bring different motivations for conservation to the same table, and shed light on who carries which burdens in consequence of access restrictions. Understanding and emphasizing the importance of the ecosystem services of a natural ecosystem can thus help create management partnerships in a protected area (TEEB Foundations, 2010).

- **Supporting landscape integrity and landscape restoration.** To sustain desirable levels of connectivity and foster biodiversity conservation in protected areas, the maintenance and restoration of smaller remnants in the landscape needs to be taken into account – and in highly fragmented landscapes this may be the only option available. In such conditions, landscape restoration is vital to support biodiversity conservation over time, and should be complemented by improved coverage of isolated semi-natural habitats in landscape management plans. In human-modified landscapes, the conservation focus thus needs to move beyond the protection of existing remnants, while addressing landscape constraints and interactions to support the persistence of biodiversity. Such an approach is consistent with Aichi Biodiversity Target 11, which calls for “effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures [...] integrated into the wider landscape and seascape”. The management plan can provide a definition of priority areas for increasing landscape connectivity through ecological restoration, and can emphasize the potential for increasing landscape connectivity, using this to define the boundaries of the area within which landscape-scale restoration is to be promoted, and to identify the main restoration activities to increase biodiversity conservation and landscape connectivity within the area. Ecosystem restoration is not a substitute for conservation, and should not be used to justify degradation or unsustainable use (Janishevski *et al.*, 2015).

# CHAPTER 3

## THE PLANNING PROCESS





## 3. THE PLANNING PROCESS



### 3.1. Overview

Management planning consists of four main categories which are considered to form an ongoing cycle: data gathering and inventory, evaluation, planning and implementation (Figure 10). In cases where ecological changes occur, the process begins again from the beginning. These four categories are assigned to 15 steps, which are listed below.





Figure 10. Existing planning process for protected areas

Source: Adapted from Middleton and Thomas (2003).

#### Data gathering and inventory

- Step 1: Pre-planning phase
- Step 2: Kick-off and inception
- Step 3: Data collection in the field

#### Evaluation

- Step 4: Evaluation of the information
- Step 5: Problem analysis (identifying constraints, opportunities and threats)

#### Planning

- Step 6: Developing management vision and objectives
- Step 7: Planning of programmes and activities
- Step 8: Zoning
- Step 9: Preparation of draft management plan (containing the plan of action, the administrative structure, budget and staff, system of monitoring and evaluation)
- Step 10: Public consultation process
- Step 11: Preparation of the final plan
- Step 12: Approval of the plan

#### Implementation

- Step 13: Stepwise implementation of activities
- Step 14: Monitoring and review
- Step 15: Decision to update the management plan

Particular attention must be paid to stakeholder engagement (see The Guidelines for Engaging Stakeholders in Managing Protected Areas). The present guidelines provide a brief overview explaining which stakeholders should be considered at which stages and to what extent (Figure 11).

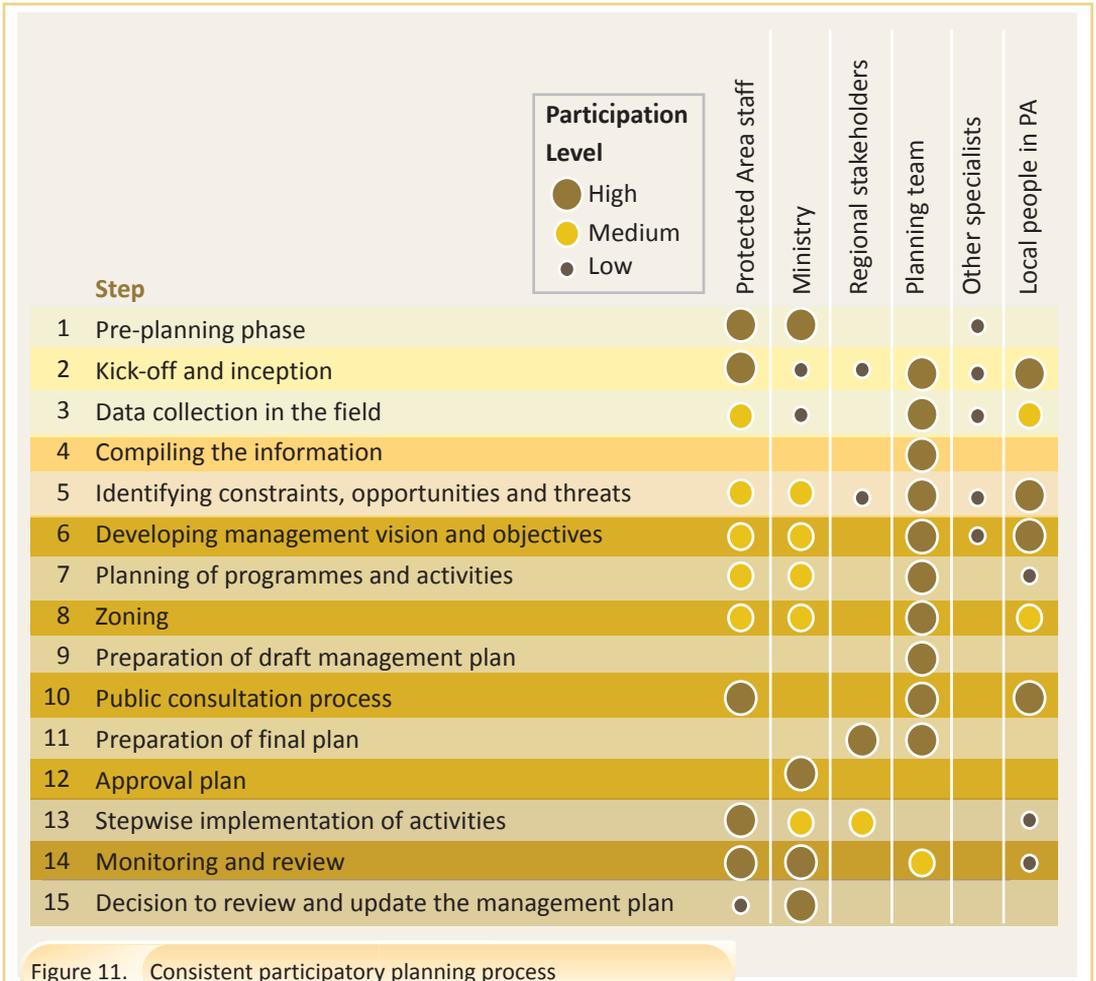


Figure 11. Consistent participatory planning process





### 3.2. Steps for management planning

This chapter presents the process, results and responsibilities as well as commentary on the 15 steps of management planning for a protected area. In describing the process and its steps of management planning, benefited that the *Guidelines for Management Planning of Protected Areas* prepared by Thomas and Middleton (2003) was updated and developed for the *Guidelines for Planning Wetlands* (Erdem, 2007) created by the General Directorate of Nature Conservation and National Parks together with the Avian Research Association<sup>1</sup>, as well as Protected Area Planning and Management-Biodiversity and Natural Resource Management Project Experience (2007). It also benefited from group meetings on planning with feedback from technical units of the General Directorate of Nature Conservation and National Parks (GDNCNP). During the planning process, it is recommended to take into account the innovative approach presented in the paragraph entitled “Basic recommendations towards integration of global trends and requirements connected with nature conservation and protected areas into the protected areas management process” of section 2.2.2, Basic Recommendations for the Management Planning of Protected Areas.

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<sup>1</sup>Currently The Nature Research Association (Turkey)

### 3.2.1. Step 1: Pre-planning phase

**Description:** This first step is the result of a decision to draw up a management plan, either because a new protected area has been created or because an existing management plan needs to be revised. Once the financial resources are made available, the institution prepares the technical specifications for hiring a planning team and put the project out to tender. The chosen planning team must be interdisciplinary and possess strong IT and GIS skills and knowledge. The team must also have a strong knowledge of ecology, socio-economics, ecotourism and culture, and, crucially, an experienced team leader. The planning team will adapt to the characteristics of the protected area. For example, if the management plan in question is for a wetland, the key experts will likely include be hydrogeologists, limnologists, biologists and ornithologists. If the proposed plan is for an archaeological site, the expert team will incorporate archaeologists, historical and cultural assets experts, and sociologists as key sources of expertise. A list of possible experts and general characteristics for a protected area planning process is given in **Annex 1**.

**Results:** If a tender is to be held, a contract will be established with a selected planning team. In the absence of a tender, the planning team will consist of central and field-based unit representatives of the institution.

**Responsibility:** Protected area administration together with the Ministry of Agriculture and Forestry (MAF).

**Remarks:** The better the specifications for the service provider, the stronger the management plan will be. However, the protected area itself will play a central role in steering and controlling the process. The “planning team” will consist of an interdisciplinary team of external experts if planning is carried out by purchasing services, or a team of existing specialists within the institution if planning is undertaken by the organization itself.

### 3.2.2. Step 2: Kick-off and inception

**Description:** The planning team organizes an initial workshop, develops a precise work plan, explores the territory, and obtains an overview of the corresponding literature, data and documents. A work plan is a detailed schedule specifying all steps, participants and dates for this project. A stakeholder analysis is also prepared, and a first series of workshops or meetings with relevant stakeholders and regional knowledge carriers allow for an initial overview of the social and economic situation in the area.

**Results:** The planning team is established and an operational plan is prepared.

**Responsibility:** Planning team with strong support from the protected area.

**Remarks:** Agreement on planning language at the first meeting between the planning team and those in charge of management units will contribute to fast and smooth progress throughout the process. It is important that both sides meet and evaluate the proposed method and approach together. Clearly defining any constraints and expectations together, and ensuring joint consultation on the technical contents of the plan and necessary visual materials such as maps and forms, will have a significant positive impact on the process. At this stage, it is recommended to organize a one-day technical meeting, and determine the precise strategy for stakeholder engagement. This strategy and the list of stakeholders should detail the level of participation as well as methods and approaches to be used. Detailed information on stakeholder engagement is provided in **The Guidelines for Engaging Stakeholders in Managing Protected Areas**.



### 3.2.3. Step 3: Data collection in the field

In this step, field data are collected and integrated into a satellite-based habitat map (which have been accepted and used by the relevant institution are used. These could be Corine, Eunis, Natura 2000, etc.) according to the operational plan in the working area. It is recommended to base inventory and surveys on a habitat map. The habitat map is based on satellite imagery (e.g. Sentinel) and provides a consistent, basic map. Investigations into biodiversity, land use and other relevant information are conducted using appropriate methods that provide a concise picture of the situation. All methods used should be documented in detail along with raw and final data. As methods change rapidly, the guidelines do not emphasize particular approaches. However, the methods themselves can be divided into different phases.

The first phase consists of gathering all available data from the literature, existing databases and geoinformation systems. The second phase comprises expert interviews to obtain more in-depth information. In the third phase, data are obtained from field studies. In some cases, combining existing data with a rapid field evaluation, then confirming these data with a quick field study will be sufficient; in other cases, a much more detailed field study may be necessary. The method used will be dictated to some extent by the objective of the study. Furthermore, the budget, time and certain natural events may also affect the process and choice of methodology. However, the basis for all data collection is the habitat map. All other data should be linked to the habitat polygon, which allows for a stratified sampling design.

Any method applied must be checked for suitability and accuracy. Moreover, it is important that data collection and storage function as a coherent package.

The qualification, scope and duration of data collection are directly dependent on the purpose, legal and administrative circumstances, and needs and values of the site, together with other political, social and environmental necessities. It is therefore not possible to provide a general framework here; instead, the details in question will be included in the technical specification document, which will explain the kinds of data to be collected, where they will be collected from, and by whom, the methods and tools to be used, and the length of time needed. Additionally, data collection may be affected by factors such as the purpose of planning, budgetary, time and administrative decisions, as well as ecological processes, environmental, social and climatic factors.

The basic survey and assessment process can cover the following aspects:

- General landscape values
- Biodiversity status
- Socio-economic and socio-cultural features

The titles and scope of the inventory studies to be carried out under these three main headings are presented in **Annex 2**. A checklist for data collection is given in Box 1.

**Box 1.** Checklist for data collection

- General landscape structure (geographical position, legal and administrative framework for management of the area, geological structure, topography and geomorphic structure, climate, hydrology and hydrogeological structure, climatic characteristics)
- Ecological resources and their status (ecosystems and their characteristics, types of habitat, biological structure including list of flora and fauna and their distribution)
- Cultural resources and their status (historical and archaeological characteristics, socio-cultural characteristics)
- Physical structures and elements (roads, settlements, pieces of art, etc.)
- Socio-economic elements and characteristics (important sources of income and livelihood)
- Current services and facilities in the conservation area and their general use, status and capacities (social infrastructure and equipment, technical infrastructure and equipment)
- Profile of visitors and their impact on the conservation area
- The state of land usage

**Results:** A complete overview of the raw data integrated into the protected area's system, and the results of the field study.

**Responsibility:** The planning team, the units responsible for management of the protected area, other main stakeholders, and experts in other areas of expertise, if needed.

**Remarks:** The central factor for this step is the season. Moreover, an annual cycle is mandatory for inventory studies. For the compilation of socio-cultural data, particular attention should be given to gender equality and access of different groups. Women especially should be taken into account during the process.

### 3.2.4. Step 4: Evaluation of the information

In this step, all information should be gathered, and data collected from previous projects, the literature review and field studies should be classified by topic, interlinked and converted into the appropriate format. The aim should be to define and understand why protected areas are important. On the basis of the information provided in the first step, where the current state of protected areas is described in general, this step values integrated with the protected area are defined, these values and characteristics are interconnected with each other, and problems and opportunities which become the basis for planning are determined, taking into account basic issues resulting from inventories. Distinguished and superior characteristics and values for the conservation area, which are the basic resource value for establishing conservation, include:

- Potential risks or impacts affecting the protected area or linked to outside developments,
- Sites of importance for people living inside or around the area (places of intangible value, recreation areas, etc.),
- Areas containing exclusive examples of fragile, unique resources that may be affected by human usage (e.g. fossilized and ancient trees in areas where antique objects are located, sites with unique and specific landscape elements, etc.), landscapes changed as a result of human impacts, areas showing the sustainable usage of natural resources,
- areas showing the impacts of socio-economic conditions,
- Areas marked by cultural impacts (artificial monuments, traditional lifestyles, historical and archaeological sites, local architectural peculiarities, etc.),
- Elements of biodiversity and their interrelationships in the ecosystem from an ecological perspective,
- Evaluation of species and habitats in accordance with local, regional, national and international criteria (sensitivity, scarcity, naturalness, size, rarity, etc.),
- Plant associations, distribution and relationships,
- Areas and points of importance from a biological perspective, and evaluation of their stability or variability and impact.

This includes an evaluation of the importance of protecting the area (reasons for area protection taking into account resource values, potential richness of species or other factors).

- Assessment of the area from legal and administrative points of view, including all regulations related to the protected area, the responsible regulatory bodies and their responsibilities and authority in the area.
- The administrative status of the area (evaluation from the angle of personnel, finance, equipment, research, etc.), taking into consideration the positive and negative impacts of legal and administrative status regarding resources management.

**Results:** A clean set of all planning relevant data.

**Responsibility:** Planning team.

**Remarks:** At this step, the use of forms, sheets and other data registration in data compilation may facilitate the data evaluation process. It is also important to support the evaluation results with maps, visuals, graphs and figures. It is crucial to employ a participatory approach during this step in close cooperation with all related stakeholders.



### 3.2.5. Step 5: Problem analysis (identifying constraints, opportunities and threats)

**Description:** This step is an evaluative, analytical one. It deals with identifying and analysing problems related to national and international framework conditions (e.g. legal obligations, policy and administrative constraints, international obligations, designations, categories referring to IUCN, etc.). This step also involves defining and detailing all possible impacts and threats to the basic characteristics of the area, both internal and external, whether legal, anthropogenic or other in nature.

This step can be carried out using a SWOT matrix and/ or DPSIR (drivers, pressures, state, impact and response) analysis to analyse data (Bell, 2012). DPSIR is a five-part evaluation system developed to identify and clarify environmental issues (Tavşan, 2008). It is also recommended as an assessment tool for protected areas. The relationship between each element is shown in Figure 12. Detailed information on DPSIR analysis is given in **Annex 3**.

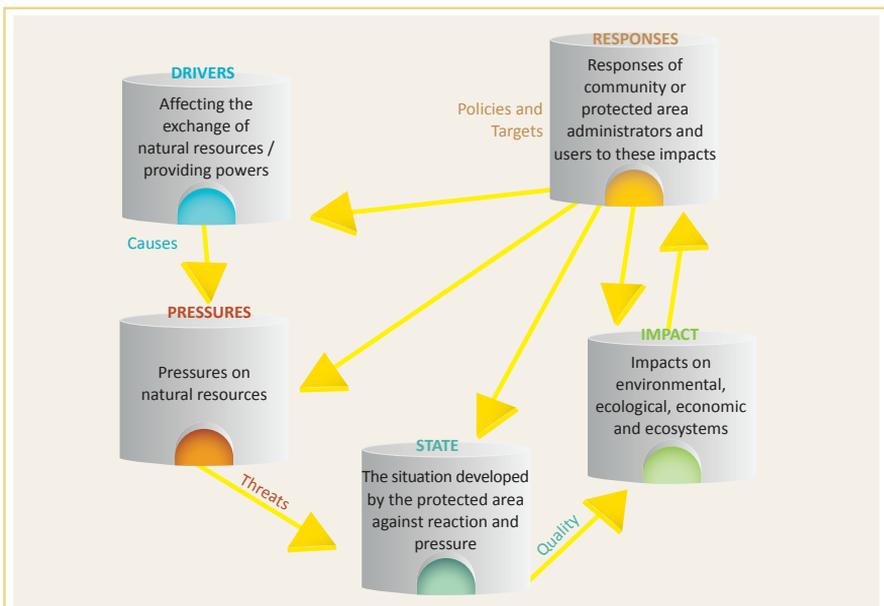


Figure 12. Interactions between the framework and components of the DPSIR assessment approach *Source: Adapted from Kristensen (2004).*

The main reasons for carrying out a threat/ issue analysis are: to define elements that threaten the resource values of the area, either now or in the future; to foresee and address problems related to conservation, management and implementation of the area management plan; and to clearly determine issues that need to be managed. In order to prioritize actions to address these issues, it is useful to classify these threats. Box 2 provides an approach for classifying and evaluating threats.

**Box 2.** Classification and evaluation of threats for conservation areas

**Numerical value**      **Threat category**

0	Not a threat
1	Threat is subject to control but insignificant. No need for special management action.
2	Medium-level threat. Special management actions are necessary.
3	Important threat. Requires immediate management measures.

Category of the threat*	Element of pressure	Assessment value (0, 1, 2, 3)		Source of the threat	Protection priorities
		Present	Future		
Biological resource use	Illegal hunting	1	1	Presence of traditional hunters; hunting tourism in the areas outside the protected area.	No need for a particular management measure. Continue regular information/awareness activities, strengthen the patrol system.
Biological resource use	Harvesting terrestrial plants and plant products	3	2	Plants and other resources (chestnut, wild fruits, mushrooms) are harvested without planning and overexploited.	Harvesting such products within a plan and preparation of a utilisation plan.
Human intervention and violation	Recreational activities	2	3	By now, the protected area is much more widely known and demand for recreation increases	Planning recreational spots and visitor management
Changes in the natural system	Dams, water management / water use	3	3	Outside the protected area however, there are power plant construction and projects that will pose threat to the protected area.	Planning and management for the protected area, including the buffer zone

\* Threat category has been given according to the IUCN/ Protection measures of current threats against Biological Diversity Partnership Classification. 1. Settlements and commercial activities, 2. Agriculture and fisheries, 3. Energy and mining, 4. Transportation and service corridors, 5. Biological resource use (for subsistence or trade), 6. Human intervention and violation, 7. Changes in the natural system, 8. Invasive species and other threatening species and genes, 9. Pollution, 10. Geological events, 11. Climate change.



**Results:** Clean and agreed-upon SWOT and/ or DPSIR analysis of the data.

**Responsibility:** Protected area management unit, with the support of the planning team units responsible for management of the conservation area.

**Remarks:** At this stage, it is highly recommended to employ statistical methods and tools. In addition, grouping the results of the issue analysis will contribute to the generation of problem-oriented solutions in subsequent stages. For example, sources of threats and pressures on protected areas may be grouped as follows: (i) threats/ pressures of a human or natural nature; (ii) internal or external threats/ pressures to the protected area; (iii) threats/ pressures related to demands of a socio-economic nature.

### 3.2.6. Step 6: Developing management vision and objectives

**Description:** A powerful vision and a clear picture of the future are essential elements of the management plan. This vision must be clear, concrete and practical, and should specifically describe the central tasks, contents and functions of the protected area. It must be based on analysis of the data and the ideas of relevant stakeholders, above all the protected area management and key stakeholders identified during the planning process. Particular attention should be paid to zonation, as the objectives will depend on the protected area category. Detailed information about what makes a powerful vision is given in Box 3.

### Box 3. What is a powerful vision in protected area management planning?

A vision is a desired situation to be achieved over the long term. It is an ideal that cannot be reached without making the necessary effort. It represents a combination of conditions with long-term objectives. A vision implies differentiated thought about possible futures including that which is desired. A goal or “vision” for a protected area describes the desired long-term condition of the protected area, and provides a clear, coherent direction for management of the area and a focus for the management plan.

The vision for the protected area (Aktan, 1997):

- should be challenging
- should be clear and understandable
- should be easy to remember
- should be prepared using a participatory approach
- should give importance to values
- should be visual
- should give an incentive for action
- should provide guidance
- should be easy to remember
- should comply with the values of the protected area (adapted from the “Nine Principles of Working out Vision Statements in Organizations” by Murgatroyd and Morgan ).

#### The vision for the protected area:

- describes the point or the desired situation in the future (from a long-term perspective)
- helps the protected area team develop a strategy related to the protected area
- shows continuity in the process of managing the park in a sustainable manner
- provides an opportunity for the active participation of many local and institutional stakeholders.

#### The vision statement should:

- be specific
- be time-bound
- be realistic
- be measurable
- reflect the purpose and values of the protected area.

As an example, the vision for Sultan Sazlığı National Park (Yenilmez Arpa, 2011) is as follows: “Restoration of the deteriorated ecological balance with the participation and support of all groups of interest in and establishment of Sultan Sazlığı National Park and Ramsar area as a facility and ensuring rational usage of natural resources.”

**Results:** Vision statement.

**Responsibility:** Planning team and units responsible for management of the conservation area.

**Remarks:** In order to ensure continuity of the management process, the vision covers a long-term period, and should be defined with the participation of key stakeholders, if possible. Special attention should be paid to the opinions of locals living inside the protected area. It is also highly recommended to gather the opinions of decision-makers.

### 3.2.7. Step 7: Planning of programmes and activities

This step defines issues to be managed and related sub-plans and programmes, as well as strategic goals for each sub-plan/programme. As issues to be managed were listed and grouped during the previous step, here each threat is grouped under a relevant programme. Sub-plans and programmes are listed in accordance with the resource values of the conservation areas and issues to be managed. Depending on the ecosystem integrity and values of the protected area, this might include: the management of forest-steppe-water resources, the management of ecosystem services, livestock and grazing management, visitor management, education and awareness-raising, tourism and recreation, and so on. Since the programmes will be determined according to the current situation and the results of analyses made in previous steps, each step needs to be worked out carefully. Again, at this stage necessary actions are defined, sorted and organized systematically for each programme in order to achieve the goals projected in the final vision. The individual activities required to achieve the objectives are systematically structured, ordered chronologically and in terms of priority, and described ready for implementation. Central activities include programmes and measures for the protection of biotopes and species, for coping with visitors and for dealing with land uses, in particular grazing, as well as communication and environmental education programmes. The process involves the creation of an action plan to define who is doing what, when, where and with whom, as well as organizational measures such as financing, job descriptions and central management procedures. The consistency of the vision, goals, activities and resources must be checked and revised using a log frame.

**Results:** A list of programmes, strategies to follow during the programme implementation process, and a systematic list and operational plan of actions.

**Responsibility:** Planning team and units responsible for management of the conservation area.

**Remarks:** Actions are grouped under sub-plans and programmes; however, all sub-plans and programmes should be compatible with each other, and each sub-plan/programme should support the others. In order to avoid unnecessary complexity, the number of sub-plans and programmes should be limited (e.g. a maximum of 6–8). A sample format is given in Table 4.

At this stage of protected area planning, it is especially recommended to take into account “Basic recommendations towards integration of global trends and requirements connected with nature conservation and protected areas into the protected areas management process” (from section 2.2.2 Basic Recommendations for Management Planning of Protected Areas).

Table 4. Action plan template

Number	Activity	Responsible Body	Implementation time	Required resources
<b>1</b>	<b>Provision of Management and Sustainability of the Natural and Cultural Resource Values of the Protected Area</b>			
<b>1.1</b>	Conducting basic inventory studies	PA Management Unit	XXXX	Finance and expertise
<b>1.2</b>	Preparation of sub-plan for non-timber forest products	PA Management Unit	XXXX	Finance and expertise
<b>1.3</b>	Periodic monitoring of water resources (capacity, physico-chemical features, state of pollution) and taking action when necessary.	PA Management Unit	XXXX	Finance and expertise



Number	Activity	Responsible Body	Implementation time	Required resources
<b>2</b>	<b>Development of Local Economy and Sustainable Tourism/ Eco-tourism</b>			
2.1	Preparation of visitor management plan and sustainable tourism development plan, implementation of the plan	PA Management Unit	XXXX	Finance and expertise Collaboration with local communities and collaboration with the relevant units of Ministry of Culture and Tourism
2.2	Organisation of trainings for field guides	PA Management Unit	XXXX	Finance, Collaboration with local communities and collaboration with the relevant units of Ministry of Culture and Tourism
2.3	Providing support to marketing of the ecological agriculture products, produced in and around the National Park, via a brand and corporate identity	PA Management Unit	XXXX	Expertise, Collaboration with local communities and NGO's, Collaboration with the Patent Institute and with other relevant departments
<b>3</b>	<b>Improvement of Training and Communication</b>			
3.1	Preparation of training and awareness raising program, and its implementation	PA Management Unit	XXXX	Finance, Expertise
3.2	Contacting national and local media organisations and promotion for the National Park	PA Management Unit	XXXX	Finance, Expertise, Collaboration with key stakeholders
3.3	Documentation center for the National Park, provision of web-based information sharing	PA Management Unit	XXXX	Finance, Expertise
<b>4</b>	<b>Ensuring and Strengthening Participatory and Collaboration-based PA Management</b>			
4.1	Preparation and realisation of an official protocol in order to delegate activities and services to several local administrations, universities and NGO's	General Directorate in charge of PA Management	XXXX	Administrative decision
4.2	Preparation of financial work plan	PA Management Unit	XXXX	Finance, Expertise
4.3	Strengthening the staff of the PA Management Unit in terms of expertise and number	General Directorate in charge of PA Management	XXXX	Administrative decision

### 3.2.8. Step 8: Zoning

**Zoning:** The establishment of management zones for the protected area is one of the most important components of the management plan. Zoning is one of the main strategic tools used for site management, and has a central place in any management plan. It includes a detailed, written definition of what can or cannot be done the different physical sectors of the area. Its purposes are to develop a common vision for the area among all stakeholders, to resolve conflicts concerning incompatible activities and to focus protection for critical sites. A set of regulations is normally developed for each zone, in order to define what is and is not permitted.

The terms underlying the zoning approach, defined in the technical specifications for planning applied to the planning of protected areas in Turkey, are defined in Box 4. The zoning approach for wetlands is given in Box 5. Important criteria to be considered while designing a protected area are listed in Box 6.



**Box 4.** Zoning according to the technical specifications for a long-term development plan

**Zoning:** Categorizing of a protected area according to its ecological integrity, naturalness and level of intervention, together with the creation of borders for conservation and utilization of the area.

**Strict protection zone:** The area where natural habitats must be protected in their natural state. These include the most important habitats, the most significant examples of biodiversity on a global scale, and/or areas that the state has committed to protect under conventions to which the country is a party.

**Sensitive use zone:** The area that encourages and protects continuity of values and resources from ancient times to the present in connection with traditional uses. As with the strict protection zone, conservation of species and their habitats is a priority for management. A low level of controlled human activity is permitted.

**Sustainable use zone:** The area is located between the strict protection zone and the controlled use for human activities zone, and is permitted to sustain income-generation activities in accordance with the proposed rules. In this zone, biodiversity and landscape conservation must be balanced with human needs and the protection of nature.

**Controlled use zone:** The area that encompasses settlements, tourism and recreational lands inside the protected area.

**Box 5.** Zoning approach for wetlands (Regulation on Wetlands Conservation)

**Conservation areas:** This refers to the areas established on the basis of importance of protection of habitats and species. They include absolute conservation areas, sensitive conservation areas, buffer zones, and controlled use and sustainable use areas.

**Absolute conservation area:** Areas within protected areas where water birds are densely and collectively hatching, living or wintering; important breeding regions of rare and endangered bird species; habitats on which species with at least a 'vulnerable' level of endangerment according to international criteria are dependent; and areas where endangered and extensively distributed natural plant species which require protection exist, and there is no human activity.



**Sensitive conservation areas:** These areas mirror the purpose of an absolute conservation area, if one exists. If not, protection of these areas aims to ensure the current condition of the wetland ecosystem. These areas have the potential for self-repair and have to be protected. They include habitats such as open water surfaces, lagoons, river mouths, saltwater, temporary and continuous fresh and salt water swamps, wet meadows, reeds and peatlands and dunes, sandy beaches, bushes, woodlands and flooded forests which ecologically support these ecosystems.

**Sustainable use zone:** These areas define a natural or semi-natural region with open water surfaces, lagoons, river mouths, salt pits, temporary and continuous fresh and salt water swamps, wet meadows, reeds and peatlands and dunes, sandy beaches, bushes, woods and flooded forests which ecologically support these ecosystems. People are allowed to carry out traditional economic activities such as fishing, reed farming, peat extraction, forestry, gathering, agriculture and animal husbandry in these habitats.

**Controlled use zone:** These areas are established prior to the determination of protected areas or are determined during the zoning of wetlands. They are essential for settlement and urban development, where human activities are dense and necessary measures are taken to minimize the negative effects of these activities on the wetland ecosystem.

**Buffer zone:** These areas are determined by the commission in order to protect a wetlands ecosystem according to the geographical situation, topographic characteristics, and current use of the land, taking into consideration the ecosystem characteristics of the area on the basis of scientific principles. The borders of the area do not exceed the water collection limit of the wetland or for flat areas where there is no natural topographic or geographical border line. If there is a sustainable use zone, then it is established from that border; otherwise it starts from the border of the sensitive protection zone



#### Box 6. Significant criteria for designing zones

- Conservation of the key resources and values of the protected area
- Sensitivity, rarity and endemism statues of the resources
- Habitat integrity and landscape diversity
- Suitable habitat size for species
- Traditional practices and socio-cultural values
- Property statues
- Legal, environmental and other restrictions and special conditions for the areas

The management zones for IUCN I-IV and V-VI Conservation Area Categories are described in Box 7 and Box 8.

**Box 7.** Zone types for IUCN I-IV Conservation Area Categories

**Zone with special and/ or unique assets:** These areas contain outstanding, special or unique assets, for example, important natural areas such as historical sites, wetlands, salty swamps, estuaries, or critical marine areas like nesting and breeding areas of species that need urgent protection. This category includes areas that were used by humans in the past but survived until the present day, or areas of importance due to unique sites of anthropological or cultural and spiritual value. Visits to these features are limited.

**Primitive/ wild zone:** These areas have restricted by the any kind of applications where there are no roads or infrastructure. Natural processes dominate here. In normal conditions, roads and some basic camps can be permitted but respect for nature is a priority, so the scope of any planned structures must be clearly defined. Sometimes these areas are called “core areas” because they have the best-preserved natural values.

**Zone of limited development:** In these areas, limited applications may be permitted on condition of avoiding damage to the special and unique values of the protected area. A key objective of this area is to permit certain activities of a recreational kind. Development should have the least possible negative impact on the area and serve only the basic users of defined area. Nature-based and primitive activities such as ecotourism are possible in these areas.

**Intensive development/ service zone:** Main roads, hotels, accommodation and shuttle services and facilities may be located in these areas. Such zones should not be established if there are special or unique values or ecosystems in the area. These areas are also not recommended for absolute protection zones and most areas with a stricter conservation policy. For more protected areas, it is recommended to establish this zone outside of the protected area borders.

**Zoning for areas with traditional use and lifestyles:** Most protected areas provide benefits for those who continuously live in and traditionally use them. Many protected areas around the world include zones reserved for this purpose. If appropriate, limited development for assisting traditional applications can be supported.



### Box 8. Zone types for IUCN V-VI Conservation Area Categories

Protected landscapes and multi-use areas are more likely to require construction. Zoning in Category V areas usually takes into account land use plans reflecting geographic-based policies for different parts of terrestrial and marine landscapes. Therefore, a part of the zone is designated for economic activities, while some parts may be reserved for conservation of natural values.

In the zoning process, critical factors for success include ensuring that the public is sufficiently informed and willing to participate, and acceptance of the results by all affected sides. Applications for development and legal regulation of area development should be kept in mind during zoning and area determination for this category. The kinds of activities and practices that will or will not be permitted should also be taken into account.

Zoning is the basic planning tool for Category VI. It defines limits and different examples of use, conservation areas and allowed activities. Zones and policies applied should be clearly stated in the management plan.

There is no one formula for identification and definition of management zones and preparation of a zoning plan. Planners and the planning team should conduct zoning by relating the category of the protected area to the management objectives.

**Results:** Zoning map and a list of actions to be taken in each zone.

**Responsibility:** Planning team and units responsible for management of the conservation area.

**Remarks:** There is a connection between usage of the area and the values offered by the ecosystem. This connection and set of relationships should be determined very clearly. Various computer-aided programmes can combine data together to ensure clear determination of zones relevant to the purpose of protection of the area and its objectives.



### 3.2.9. Step 9: Preparation of the draft management plan

By now, much of the base data for the plan has been defined and grouped. Protection and management programmes, objectives and a basic structure of zoning have been agreed upon, and the plan’s framework, including implementation actions, has been prepared. Preparation of parts related to implementation of the plan and the creation of the first draft are of crucial importance during this step. A draft of the operational plan prepared during the previous step should be completed with details. Names of each programme and sub-programme, actions, indicators of success and people in charge should be defined in detail. A template for such a an implementation is given in Box 9.

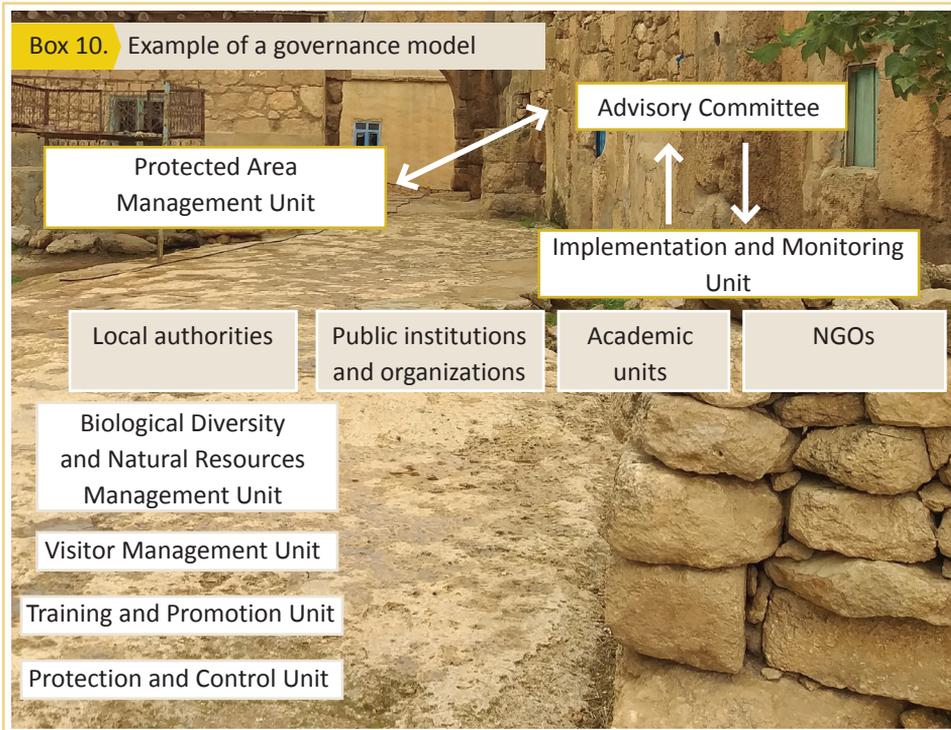
**Box 9.** Implementation plan template

Sub-program	Success Indicators	Priority (1-3)	Year 1	Year 2	Year 3	Year 4	Year 5	Party Responsible for implementation
Strategic objective	Provision of Management and Sustainability of the Natural and Cultural Resource Values of the Protected Area							
Activity 1	Basic inventory studies	1						PA Management Unit
Activity 2	Preparation of sub-plan for non-timber forest products	2						PA Management Unit
Activity 3	Periodic monitoring of water resources (capacity, physico-chemical features, state of pollution) and taking action when necessary.	2						PA Management Unit

Priority status can be assessed from 1 to 3 points (1 = primary; 2 = secondary, 3 = tertiary) and grouped accordingly.

Following completion of the implementation plan, the management-governance structure for implementation and financing of the plan, and the management of the area, are designed and defined.

The selection of experts to be involved in implementation of the plan and the budget for implementation of the activities are critical issues that will significantly affect the success of implementation. A sample of such governance is given in Box 10.



In addition to detailed facilities, personnel and financial plans, the budget also can be included in the management plan. Such details should be agreed upon in consultation with the management unit of the protected area. The implementation plan and programmes, governance model, and other elements that have to be managed, should be prepared together with related stakeholders. All collected data supported by maps, graphs and visuals must be added to the draft plan by the planning team. A proposed planning format can be found in **Annex 4**. Here, data are converted to the written format using a systematic approach.

**Results:** The draft management plan.

**Responsibility:** Planning team and units responsible for management of the conservation area.

**Remarks:** During this step, it is important to systematic and expediently transfer data to the management plan.

### 3.2.10. Step 10: Public consultation process

**Description:** This step incorporates feedback from institutions and organizations according to the protection category of the planned area and within the framework of the relevant legislation. In particular, the technical team that manages the planning process obtains the feedback and suggestions of stakeholders in the field through workshops, meetings, interviews and official correspondence. This feedback is incorporated into the plan in consultation with the relevant administration. Further information can be found in the **Guidelines for Engaging Stakeholders in Managing Protected Areas**.

**Results:** Systematic cataloguing of feedback and final draft management plan.

**Responsibility:** Planning team and units responsible for management of the conservation area.

**Remarks:** It is vital to obtain unforeseen information from relevant stakeholders at this stage and to clearly explain the absence of such information in the plan to stakeholders. It is also important to explain the handling of unaccounted information or feedback. Further information can again be found in the **Guidelines for Engaging Stakeholders in Managing Protected Areas**, prepared within the framework of the project.



### 3.2.11. Step 11: Preparation of the final plan

**Description:** In this step, all findings, feedback and results are merged, and one central document is finalized (text, graphics, maps), with all attachments and enclosures. Technical sections, and sections to be placed at the beginning and the end should be added, along with a foreword, introduction, acknowledgements, lists of figures and tables, list of maps, bibliography and appendices. An editorial and technical review is also carried out.

**Results:** Final plan and annexes (analogue and digital).

**Responsibility:** Planning team and the units responsible for management of the conservation area.

**Remarks:** It is important that primary data such as protocols, databases and lists are processed and handed over in a clean and consistent form (maps, shapefiles). To this end, a standardized acceptance protocol is necessary. A checklist to verify the scope of the plan is given in Table 5.

Table 5. Checklist form for a protected area plan content

#### Correctness of content

- Correctness/uniformity of proper names
- Uniformity of names (e.g. for species/vegetation types)
- Uniformity of technical terms

#### Editorial correctness

- Editorial completeness
- Correctness of cross-references, numbering and page numbers
- Completeness of literature citations
- Uniformity of literature citations
- Uniformity of numbers and number formats
- Correctness/uniformity of project parameters
- Uniformity of time
- Typos
- Uniform upper and lower-case letters
- Uniformity of punctuation
- Departments
- Uniformity of abbreviations
- Stylistic

#### Formal correctness/uniformity

- Uniformity of paragraph formats
- Flushness of two-column texts
- Page breaks



### 3.2.12. Step 12: Approval of the plan

**Description:** This procedural step involves the submission of the final plan for approval by the competent authority. The plan is then reviewed and officially approved by the MAF. The original copies remain with the MAF and the protected area. The plan is then published.

**Results:** Published (gazetted) management plan.

**Responsibility:** MAF.

**Remarks:** A simple version of the management plan for stakeholders is an important element of the process.

### 3.2.13. Step 13: Stepwise implementation of activities

**Description:** This step involves ongoing management, whereby the protected area team systematically implements, documents and performs activities ranging from law enforcement to dealing with stakeholders within operational nature conservation programmes. Further information on management effectiveness can be found in the **Guidelines for Assessing the Effectiveness of Protected Areas**. At this step, governance and management structures are central to success; therefore, it is important to set them up and formalize them clearly, including resources for management, staffing plan, equipment and infrastructure, operational plans, and work programmes and activity plans.

**Results:** Annual documentation of achieved results and evaluation of management efficiency. The **Guidelines for Assessing the Effectiveness of Protected Areas**, prepared as a part of this guidelines series, should be taken into account when evaluating management efficiency.

**Responsibility:** In order to implement activities, the implementation unit should prepare an annual work plan. This plan should contain a detailed budget and determine the staff in charge and the expected results.

### 3.2.14. Step 14: Monitoring and review

**Description:** Once the management plan has been prepared and approved, and the operational plans are in place to guide its implementation, field staff can put the plan into practice. With implementation underway, monitoring and review will provide a feedback loop. The purposes of this step are to identify whether the plan is being implemented effectively and the objectives are being met, to learn from observations of management impacts, and to adapt management actions accordingly. Where implementation runs into problems, monitoring and review can be used to re-deploy resources and undertake efforts to improve implementation. For further information, see the **Guidelines for Biodiversity Monitoring**.

Four separate types of monitoring need to be established:

- environment monitoring
- socio-economic and grazing monitoring
- biodiversity monitoring
- management effectiveness monitoring.

**Results:** Yearly monitoring report.

**Responsibility:** Management unit of the protected area.

**Remarks:** The step has strong links with the for **Guidelines for Biodiversity Monitoring**.

### 3.2.15. Step 15: Decision to review and update the management plan

**Description:** The final step in the planning process is to decide to either review or update the management plan. In many cases, the plan will be time-limited by legislation – typically for five, seven or ten years. The decision to undertake a revision needs to allow sufficient time to put the new plan in place before the expiration of the old one. Any process to review or update a management plan should start with an analysis of the existing one. According to international standards, a management plan is valid for 10 years, or less (e.g. in the case of wetlands), with the possibility of a mid-term review and evaluation. Revisions may also be made under certain conditions, such as changes in the natural environment.

**Results:** Re-starting of the process.

**Responsibility:** MAF.

# CHAPTER 4

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# CHAPTER 5

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## ANNEXES





## Annex 1. Proposed list of specialists for planning teams

Protected area planning can be carried out by a core team of experts and temporary experts involved in the team on an on-demand basis. Temporary experts are experts who support the core team in areas requiring special expertise. The **core team coordinates all work, compiles and finalizes reports from specialists, requests changes and recommendations, and generates the expected outputs.** The core team may be composed of the following members:

- Conservation area planning coordinator
- Biodiversity inventory and assessments coordinator
- Socio-economic and socio-cultural inventory and assessments coordinator of GIS-based applications.

Each member of the core team should possess the following qualifications:

- Experience in protected area and conservation planning, as well as extensive expertise and success in spatial planning.
- Comprehensive technical knowledge and detailed expertise in all work related to GIS, remote sensing and extensive data processing
- A record of managing complex and comprehensive projects,
- Experience in interdisciplinary research and collaboration and communication with stakeholders at different levels.
- International experience is considered an advantage.

The group should consist of experts able to provide all relevant data on specific issues. Detailed information about this group is given in the table below.

## Definition of specializations and specialization topics

Specialization	Basic work topics/thematic topics		Minimum experience	Degree
	Inventory	Planning		
Conservation area planning coordinator	Coordinating inventory and planning processes from start to finish as team leader		15 years	PhD or higher
Biodiversity inventory and assessments coordinator	Coordinating processes related to biodiversity, fieldwork, the work of the expert group in the field and their results, and compiling and evaluating reports		15 years	PhD or higher
Socio-economic and socio-cultural inventory and assessments coordinator	Coordinating processes related to socio-economic and socio-cultural issues and participatory processes, fieldwork, the work of the expert group in the field and their results, moderating meetings and compiling and evaluating reports		15 years	PhD or higher
Coordinator of GIS-based applications	Preparing data collected by experts in GIS format, creating databases and producing maps		15 years	Master's degree or higher
<b>Landscape properties inventory and evaluation experts</b>				
Landscape architect	Determining the typology of landscapes, and the structure of area usage; conducting an analysis of landscape characteristics	Identifying constraints and threats, developing management vision and objectives, conducting field studies to identify important landscape values for planning	7 years	Master's degree or higher
Soil expert	Mapping soils, systems of management, and use of soil and water	Mapping soils, systems of management and use of soil and water; conducting evaluations of area usage, state of relations	10 years	Master's degree or higher
Geologist	Determining the geology and the integration of geomorphology; conducting an inventory of climatic characteristics	Determining the geology and the integration of geomorphology; conducting an evaluation of climatic characteristics	5 years	Master's degree or higher
Hydrologist and/or hydrobiologist	Conducting an inventory of relationships between surface and groundwater and water resources with other landscape elements	Conducting evaluation of relationships between surface and groundwater and water resources with other landscape elements	10 years	Master's degree or higher

Specialization	Basic work topics/thematic topics		Minimum experience	Degree
	Inventory	Planning		
Archaeologist and/or historian	Conducting archaeological evaluations, historical evaluations, inventory of socio-cultural values	Conducting archaeological evaluations, historical evaluations, evaluations of socio-cultural values	10 years	Master's degree or higher
<b>Biodiversity inventory and assessment experts</b>				
Conservation biologist	Identifying constraints and threats; developing management vision and objectives, planning management activities within the scope of the thematic area	–	15 years	PhD or higher
Phytosociology ecologist (Vegetation Specialist)	Analysing biogeographical structures and characteristics, ecosystems and habitats, area unions; defining state of vegetation	Analysing ecological gaps and threats to biodiversity, determining relations between area unions and vegetation; analysing issues and threats and proposing solutions	10 years	PhD or higher
Flora experts	Establishing an inventory of flower plants, flower plants ethnobotany	Evaluating specific protected areas and protection categories, determining threats to species and identifying protection measures; evaluating cultivated species in relation to their wild relatives	7 years	Master's degree or higher
Flora experts Flowerless plants (cryptogam)	Conducting a general inventory of flowerless plants (especially bryophytes, lichen and fungus – basic information for literature and field studies)	Evaluating specific protected areas and protection categories, determining threats to species and identifying protection measures	7 years	Master's degree or higher
Large mammal expert	Establishing an inventory large mammals	Conducting area use and distribution analysis and evaluation, determining threats to species and protection measures	7 years	PhD or higher

Specialization	Basic work topics/thematic topics		Minimum experience	Degree
	Inventory	Planning		
Small mammal expert	Establishing an inventory of small mammals	Conducting area use and distribution analysis and evaluation, determining threats to species and protection measures	Minimum 5 years	PhD or higher
Fauna expert (Ornithologist)	Establishing a general inventory of birds	Conducting area use and distribution analysis and evaluation, determining threats to species and protection measures	Minimum 5 years	Master's degree or higher
Fauna expert (reptiles and amphibians)	Establishing a general inventory of reptiles and amphibians	Conducting area use and distribution analysis and evaluation, determining threats to species and protection measures	Minimum 5 years	Master's degree or higher
Fauna expert (Entomologist)	Establishing a general inventory of beetles	Conducting area use and distribution analysis and evaluation, determining threats to species and protection measures	Minimum 5 years	Master's degree or higher
Biologist/ Veterinarian	Conducting special studies on any specific wildlife species featured in the area (e.g. gazelle, wild sheep, etc.) to determine their state in protected areas	Conducting use and distribution analysis and evaluation, determining threats to species and protection measures	Minimum 3 years	–
<b>Socio-economic and socio-cultural inventory and evaluation experts</b>				
Sociologist (Gender specialist)	Determining socio-cultural structures and current state of stakeholders at the area level, identification of key stakeholders, definition of their roles and responsibilities	Identifying constraints and threats, developing management vision and objectives, conducting in-depth interviews with main stakeholders	Minimum 7 years	Master's degree or higher

Specialization	Basic work topics/thematic topics		Minimum experience	Degree
	Inventory	Planning		
Rural development specialist	Assessing production systems and forms, socio-economic structure, socio-economic surveys, bilateral interviews, participatory approaches, local knowledge, alternative/additional income sources	Identifying constraints and threats, developing management vision and objectives, conducting in-depth interviews with main stakeholders	Minimum 10 years	–
<b>Grazing, stockbreeding and land use state inventory and assessment specialists</b>				
Pasture specialist/ Agricultural engineer (Agricultural economist)	Identifying the current situation, management structure and key stakeholders related to grazing; evaluating animal products, and determining the current product marketing system and improvement opportunities, pasture biodiversity, inventory and analysis	Demonstrating the importance of the data obtained in terms of pasture biological diversity, first evaluation	Minimum 10 years	PhD or higher
Agricultural engineer/ Veterinarian (animal feeding)	Defining the current situation and management structure related to animal husbandry	Evaluating topics such as threats, problems, economic values and opportunities related to animal husbandry to improve the protection of indigenous breeds, etc.	Minimum 7 years	Master's degree or higher
<b>Others</b>				
GIS specialist	Providing maps for all inventories/ evaluation results	Mapping and comparing the studies to find interrelations	At least 5 years	
Translator	Preparing a short summary of the plan in English and Turkish		At least 5 years	
Designer	Preparing brochures, posters and information materials related to the plan and area		At least 5 years	



## Annex 2. Scope of the baseline surveys

Scope of the survey and assessment for general landscape values		
Landscape features	Surveys	Assessments
<b>Location and extent</b>	General introduction and overview, in particular, geographical position of the project pilot sites in the country, region and province	Formation process of the sites, basic information and assessment on topographical structure and landscape types.
<b>Soil</b>	Specification and type of soils, structure and characteristic features	Relation with biodiversity, relation with other landscape features such as geology, geomorphology and climate
<b>Geology/ Geomorphology</b>	Structure and general composition, most important geological features and current landforms/formations of the sites.	Assessment of the land formation process and relation with other landscape features
<b>Hydrology and hydromorphology</b>	Main characteristic structure of hydrology, hydrological diversity, natural functions and quality of water bodies, main watersheds, stream corridors classification, rainfall characteristics and distribution, water use and discharge practices	Indicators of human impacts (based on measures of the intensities of settlements, farmlands, roads and road-creek crossings) and hydrological diversity (based on the number and area of water bodies and the number and length of streams), assessment of human impact, future plans regarding water, major eco hydrologic threats, rationale of a sustainable management policy establishing management regions for sustainable water
<b>Climate</b>	Climate conditions, climate characteristics (temperature, rains, winds, etc.) climatic parameters	Climate and relationship with ecosystems, effects of climate on agricultural practices and lifestyle, comparing past and present climate change structure and effects of the changes on land use practices and biodiversity
<b>Land use structure</b>	Investigation of landownership, land-tenure and land use-rights (on site study) (current and proposed resource use patterns)	Assessing past and present land use and management structure, providing changes and reasons, effects of changes on landscape and population
<b>Historical and cultural heritage</b>	Investigation of past history and cultural heritage, traditional lifestyle and cultural values, archaeological and historical places and their main characteristic structures	Relationship with past and present culture and ongoing effects of past history

## Requirements for surveys and assessment of biodiversity

Biodiversity units	Surveys	Assessments
<b>Biogeographical structure and features</b>	<b>List of features</b>	<b>Main characteristics, features of the particular biogeographic structure</b>
Ecosystems and habitats	<p>List of main vegetation and habitat types and their general characteristics</p> <p>Distribution of the main ecosystems and habitat types</p> <p>Density of the main types</p> <p>Location of the main types</p>	<p>Land use/cover types</p> <p>Dominant species</p> <p>Main characteristics</p> <p>Other important species</p> <p>Total area (ha)</p> <p>EUNIS Habitat Code (proposed EUNIS code and Nature 2000 code if possible)</p> <p>Specification of habitats</p> <p>Land cover classification</p> <p>Ecological gap analysis (identification of areas most in need of connectivity for protecting species and ecosystems)</p> <p>Main threats on habitats and ecosystems</p>
Flora Vascular plants including fern plants	<p>List</p> <p>Distribution</p> <p>Density</p> <p>Location</p> <p>Conservation categories (IUCN, Bern, CITES, Red List Turkey)</p> <p>Phytogeography elements of taxa</p>	<p>Conservation and ecological importance, and resulting ecological and conservation values</p> <p>Characteristics, endemic, rare, threatened, flag, indicator, endangered, critic, umbrella</p> <p>Species that have economic and medicinal importance</p> <p>Detailed analysis of origin, history and economic potential of wild pistachio</p> <p>Main threats to flora and resulting categorization</p> <p>Key management suggestions</p>

Biodiversity units	Surveys	Assessments
<b>Biogeographical structure and features</b>	<b>List of features</b>	<b>Main characteristics, features of the particular biogeographic structure</b>
Fauna Mammals (large and small) Birds Reptiles Amphibians General information on insects	List Distribution Density Location Population size Conservation categories (IUCN, Bern, CITES, Red List Turkey)	Conservation and ecological importance and resulting ecological and conservation values Flag, indicator, endangered, umbrella etc. and species which have economic and medicinal importance Production opportunities of economically important species Comprehensive analysis of the conservation status and population of faunal species Description of interactions between domestic livestock and wildlife Identification of limitation factors for population development of important species Main threats to fauna and resulting categorization Key management suggestions
Agro-biodiversity Species Genetic resources Unique and local agricultural products Ethnobotanics values of project sites (local names and their utilization places and purpose)	List Distribution Density Location Population size Conservation categories (IUCN, Bern, CITES, Red List Turkey)	Conservation importance and conservation values important agricultural biodiversity resources (agro-biodiversity) Traditional agricultural practices Economic importance of agro-biodiversity values Conservation methods and approaches to sustain agricultural systems diversity and agricultural biodiversity (characterized as “genetic reserve conservation” and “on-farm conservation that need to be developed in the context of the wider ecosystem)
<b>Overall analysis and assessment of biodiversity threats (and/or conflicts) for habitats, species and land uses</b>		
<p>Identification of main causes of habitat degradation and biodiversity loss and ranking of their importance per site</p> <p>Assessment of current natural resource use and associated impacts on biodiversity</p> <p>Assessment of the effect of overstocking on vegetation and ecosystem</p> <p>Assessment of threats on key species of the site</p> <p>Identification of appropriate biological diversity indexes to assess the areas</p>		

## Requirements for surveys and assessment of socio-economic and socio-cultural features

	Surveys	Assessments
<b>Socio-cultural structure</b>	Basic information on socio-cultural values	Local cultures (local architecture, cultural events, traditional lifestyle, traditional handcrafts and local foods-cuisine, traditional knowledge-legends and traditional clothes, livelihoods relevant social profile )  Recent history evolution of soil and water management and utilization systems
<b>Socio-economic structure</b>	Local livelihood opportunities. major forms of income, demography	Recent evolution of production systems and forms (including archaic systems)
<b>Recreation and tourism</b>	Current status description including number of visitors, number of available rooms, major attractions, average stay	General approaches and opportunities in tourism and recreation, present situation and future perspectives on tourism in project sites at the province and regional level
<b>Stakeholder</b>	Description of current situation of site-level stakeholders	Description of stakeholder categories and characteristics (e.g. shepherds, nomadic livestock farmers, livestock owners, landowners, local authorities, administrations, traders, etc.).  Description of power relationships between these stakeholders  Description of land and cattle ownership and land access rights  Description of complementarities and conflicts between sedentary farmers and nomadic livestock farmers
	Definition of critical stakeholders and their roles and responsibilities	Identification of “project allies” and their possible concrete support for the project  Definition of the roles of stakeholders
<b>Alternative/ complementary income sources</b>	Identification of alternative/ complementary income sources and opportunities: comparison of the profitability of different activities  Specific documentation of agricultural, decorative or maybe spiritually relevant species that might have an origin in the areas	Assessment of stakeholders interest in resource use (grazing, farming, food collection, plant collection for feeding and for animals, bee-keeping, etc.)



## Annex 3. DPSIR analysis

DPSIR (drivers, pressures, state, impact and response model of intervention) analysis was first developed by the European Environment Agency (EEA) for environmental reporting in 1999 (Giupponi, 2002). The EEA designed this five-part evaluation system to clearly integrate environmental issues as part of development agendas and to identify environmental problems in need of resolution (Agyemang et al., 2007). DPSIR analysis identifies environmental problems by ascertaining the relationships between the various areas of human activities and the environment (Giupponi, 2002).

The use of DPSIR helps to identify the spatial and social factors underlying the environmental issues caused by humans, and the associated depletion of natural resources (Agyemang et al., 2007). Decision-making issues connected with the management of environmental and natural resources are usually complex. Such decisions require in-depth research and thus a high level of knowledge in environmental, economic and social disciplines. The paradox is that managers feel the need for a holistic ecosystem approach, while the majority in the scientific community focus on more narrow issues (Tavşan, 2008). However, the link between analysts and decision-makers on these issues is based not only on knowledge but also on goals and ways of thinking. The purpose of the DPSIR approach is to provide a communication tool for management and scientists by combining political and scientific tools (Vázquez and Mattei, 2003).

Each DPSIR indicator has its own meaning and method of implementation (Agyemang et al., 2007). If considered from a purely environmental perspective, *drivers* summarize forces causing environmental change; *pressures* describes environmental pressures; *state* defines the state of an environment; *impact* describes impacts on population, economy and the ecosystem; and *response* consists of the reactions of society to these impacts (Cunningham, 2000). Figure 13 shows the interrelations of these components, (Kristensen, 2004).

## 1. Drivers

A *compelling force* refers to the needs and demands of society (Kristensen, 2004). *Driving forces* include social, demographic and economic developments in society together with production and consumption at all levels (Shah, 2000). These social and economic factors and activities also result in growth in environmental pressures (Agyemang et al., 2007). The main basic drivers – and therefore the principle causes of environmental pressures – are population growth and changes in individuals' needs and activities (Shah, 2000; Vázquez and Mattei, 2003). Examples of first-order compelling factors for society include protection/asylum, food and water, while second-order challenges include transport, entertainment and culture. While the compelling factor for the industrial sector is to make profit and produce at low costs, a compelling factor for a state may be to keep the unemployment rate at a low level. In a macroeconomic context, processes of production and consumption are structured on the basis of economic sectors (agriculture, energy, industry, transportation, etc.) (Tavşan, 2008).

## 2. Pressure

Environmental pressure occurs as compelling factors provoke changes in production and consumption activities at all level. This pressure reveals itself in different ways. It may result from overuse of natural resources (soil, water, minerals, oil, etc.), changes in land use, or pollution of air, water and soil. Such pressures therefore provide information about use of natural resources and areas. Pressures caused by production and consumption activities may result in changes in the state of the environment (Kristensen, 2004; Shah, 2000; Vázquez and Mattei, 2003).

## 3. State

Pressures caused by compelling factors affect the state of the various environmental components related to them, such as air, water and soil (Kristensen, 2004). The state of these components is linked to environmental trends that determine the current situation, level and degree of deterioration (Agyemang et al., 2007). The state of the environment is thus a combination of physical, chemical and biological conditions (Kristensen, 2004). The state of these components provides information about the level, quality and quantity of the physical, chemical and biological conditions of a specific area at a specific time. This information provides an opportunity to compare the quality of environmental components such as air, water and soil, against the needs of human being and other species who rely upon them for survival and provision of resources (Tavşan, 2008).



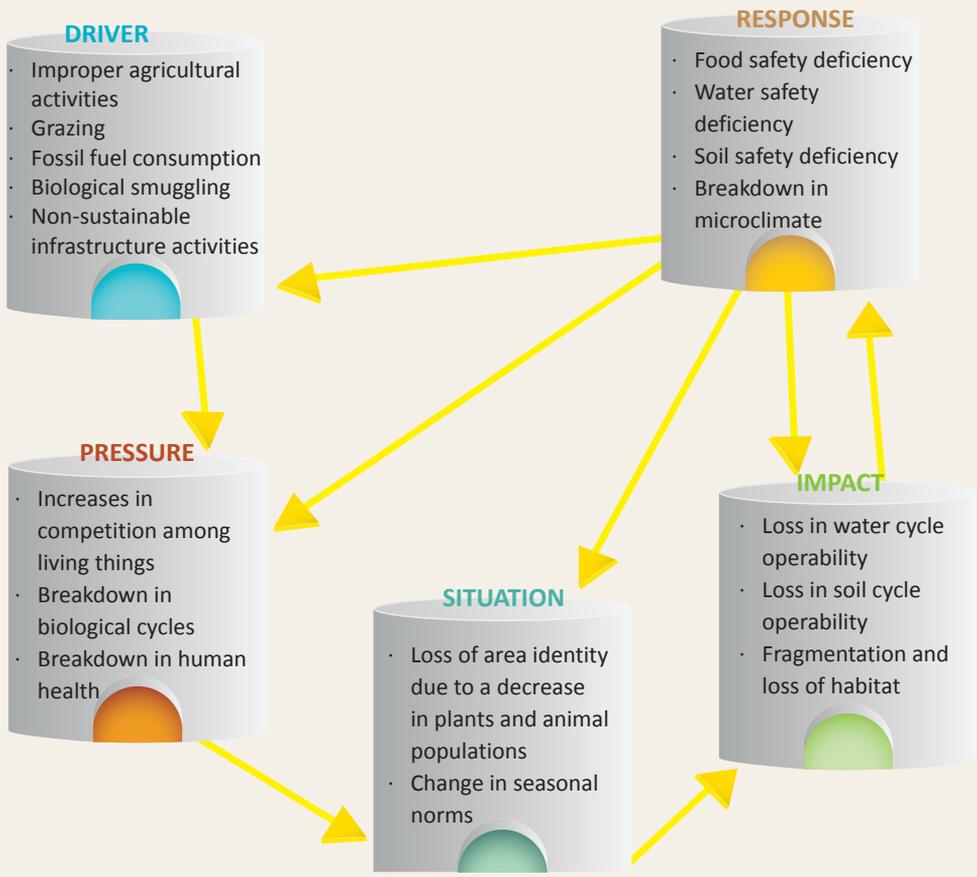
## 4. Impact

Impacts cause changes in the state of the environment with a resultant degree of damage (Shah, 2000; Vázquez and Mattei, 2003). Changes in the physical, chemical and biological states of the environment define the level of people's welfare. These include environmental (e.g. a decrease in biodiversity) and economic (e.g. economic losses) impacts on the functioning of ecosystems, human health, and the social and economic performance of society (Kristensen, 2004).

## 5. Response

The state, institutions, managers or members of the community may all take action to prevent, reduce, eliminate or adapt to adverse effects on the environment (Tavşan, 2008). Such actions represent a response to the result of undesirable environmental effects and consist of measures that can be taken by community members and managers to improve and develop the environment (Kristensen, 2004, Agyemang et al., 2007). Responses may be technical measures that influence pressures or the state of components (e.g. improvement activities that have a direct impact on the chemical or ecological state of the water body), measures to mitigate pressures (best management practices, such as the use of herbal filter strips), or political tools that target drivers (e.g. financial incentives, legal and administrative regulations, and creating conditions for education) (Rekolainen et al., 2003 ).

Other examples of responses could be changing and/or diverting trends related to the production and consumption of products, improving the control and monitoring of pollutants, and applying clean technologies (Tavşan, 2008).



Interrelations of the DPSIR components; Tek Tek Mountains National Park (Sanliurfa, Turkey) sample (Cetinkaya, 2020)



## Annex 4. Format for a protected area management plan

### FORMAT FOR A PROTECTED AREA MANAGEMENT PLAN (LONG-TERM DEVELOPMENT PLAN and OPERATIONAL PLAN)

#### PARTS A-E LONG-TERM DEVELOPMENT PLAN

##### PART A. Introduction

- Title page
- Foreword
- Official approval and endorsement
- Table of contents
- Acknowledgements
- Abbreviations used
- Definitions of basic terms
- Plan summary
- Project team

##### PART B. Site description

###### **B1 General information**

- B1.1 Location
- B1.2 Transportation
- B1.3 Legal and administrative framework for management
- B1.4 Demographic structure
- B1.5 Tenure, rights and management history
- B1.6 Management resources
- B1.7 Map, satellite and photographic coverage

###### **B2 Environmental information**

Provide brief factual summaries with maps and tables of the following:

- B2.1 Geology/lithology
- B2.2 Geomorphology/landforms
- B2.3 Earthquakes
- B2.4 Hydrology
- B2.5 Climate
- B2.6 Soils/substrates
- B2.7 Biogeography (Place the site in its biogeographical context)
- B2.8 Flora (Number of species, species of conservation concern, other important species)
- B2.9 Fauna (Number of species, species of conservation concern, other important species)
- B2.10 Ecosystems and habitats
- B2.11 Landscapes (visual characteristics)

###### **B3 Socio-economic and cultural information**

Provide brief summaries with maps and tables of the following:

- B3.1 History, archaeology and cultural features
- B3.2 Intangible cultural heritage
- B3.3 Local communities

## FORMAT FOR A PROTECTED AREA MANAGEMENT PLAN (LONG-TERM DEVELOPMENT PLAN and OPERATIONAL PLAN)

### PARTS A-E LONG-TERM DEVELOPMENT PLAN

B3.4 Land use and livelihoods

B3.5 Infrastructure and development

B3.6 Recreation and tourism

B3.7 Information, awareness and education

B3.8 Resource use

### PART C. Evaluation

C.1 Completed and ongoing projects for the project area

C.2 Stakeholder analysis

C.3 Problem analysis

C.4 SWOT analysis

C.5 Constraints

C.6 Values (benefits)

### PART D. Management strategy

#### D1 Long-term goal (vision) for the protected area

Provide a single statement that describes the long-term goal (or vision, mission, ideal, management objective, etc.) for the site.

#### D2 Policies and thematic areas

For each policy and/or thematic area, define a 10-year goal and provide a written statement describing and justifying the general policy for management.

#### D3 Objectives

Divide the programme into sub-programmes, each with a clear objective.

#### D4 Actions and Action Plan

Identify the action plans for management for the site. For each action, define:

- An indicator of achievement
- A priority
- A timetable for implementation
- Responsibility for implementation (responsible and supporting institutions) (see example below)
- Resources (personnel, equipment, etc.)
- The methodology for implementation of activities.

D4.1 Natural environment (species, habitats, ecosystems)

D4.2 Local communities (settlements, culture, livelihoods)

D4.3 Tourism and recreation (tourism-oriented promotion, tourism service infrastructure and effective visitor management)

D4.4 Economy and development (infrastructure, industry, business)

D4.5 Education, awareness and participation

D4.6 Governance, monitoring and evaluation (resource plan)

D4.7 Disaster, emergency state and risk management

## FORMAT FOR A PROTECTED AREA MANAGEMENT PLAN (LONG-TERM DEVELOPMENT PLAN and OPERATIONAL PLAN)

### PARTS A-E LONG-TERM DEVELOPMENT PLAN

#### Others as required for the site

#### D5 Zoning and spatial plan

Define the zones of the area. Provide zone maps, definitions, regulations and a list of permitted and restricted activities for each zone.

If necessary, divide the main zones into sub-zones.

### PART E Supporting Information (Annexes)

#### E1 Technical annexes and plans

Special detailed technical plans for certain activities within the protected area

- Forest Management Plan
- Grazing and Pasture Plan
- Tourism Development Plan
- Monitoring protocols and methods, etc.

#### E2 References and protected area bibliography

- References and bibliography
- Account of the development process for the management plan
- Official documentation
- Maps
- Species lists

#### E3 Supplementary information

- Account of the development process for the management plan
- Official documentation
- Maps
- Species lists





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# “Conservation and Sustainable Management of Turkey’s Steppe Ecosystems Project”

GCP/TUR/061/GFF



Sets of guidelines developed to provide standards and recommendations for the sustainable management and conservation of the country’s natural assets within the framework of the project:

