



CATALOGUE OF INDICATORS OF MANAGEMENT EFFECTIVENESS

-CIME_1-

1ST VERSION



ALPARC - THE ALPINE NETWORK OF PROTECTED AREAS

www.alparc.org

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The Task Force Protected Areas of the Permanent Secretariat of the Alpine Convention implements this action for the Alpine Network of Protected Areas - ALPARC.

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INTRODUCTION

1. Context and objectives

At present, the world's network of around 44,000 protected areas represents over 10 per cent of land on Earth and, as development continues to accelerate, it has become increasingly clear that protected areas can, and must, play a critical role in maintaining a balanced overall land use pattern and economic development (Cifuentes *et al.*, 2000).

The success of protected areas as a tool for conservation is based around the assumption that they are managed to protect the values that they contain. As each protected area has its own characteristics, effective management should be tailored to the particular demands of the site.

The Convention on Biological Diversity (CBD), UNESCO's World Heritage Convention and others have placed a priority on evaluation and are setting concrete targets for member states. So, increasingly, nations are agreeing to report on progress in conservation to their peers in institutions and are in consequence seeking information on status and trends in protected area management. Moreover, donor agencies, including The World Bank and the Global Environment Facility (GEF), are requiring that any protected areas they help to support must conduct assessments as a regular feature of the project cycle, this because people investing in protected areas have a right to know that these areas are being well managed. In conclusion the combination of internal and external demands, and the practical challenges of managing such large and diverse areas, has led to a rapid increase in interest in monitoring and assessment (Hockings *et al.*, 2006).

For these reasons an increasing number of supervisory bodies (ministries, territorial collectives, etc.) expect protected area managers to produce comprehensive evaluations of the utility and effectiveness of management measures. At the European Community level, the article 17 of the Directive 92/43/EEC provides for a monitoring and reporting activity in order to evaluate if the chosen actions are maintaining and/or restoring a favourable conservation status for habitat types and species of community interest. This monitoring mostly requests an indicator system. Some large organisations such as the International Union for Conservation of Nature (IUCN) and the World Wide Fund For Nature (WWF) are also addressing this issue.

In response to requests from some protected areas, in 2006 the Alpine Network of Protected Areas (ALPARC) launched an investigation into this subject, which was coordinated by the Task Force on Protected Areas of the Permanent Secretariat of the Alpine Convention. Besides the numerous working meetings for the preparation of the

project¹, three events were organised (further details in paragraph [“How was the catalogue created?”](#)):

1. In 2006: *“Indicators and effectiveness of the management of protected areas”* from 11th to 12th May in Dobbiaco/Toblach (Italy);
2. In 2007: *“Indicators and effectiveness of management in protected areas”*, from 10th to 11th May in Cogne (Italy);
3. In 2011: *“Indicators of management effectiveness”*, from 16th to 18th March in Marbach (Switzerland).

Following on from the success of the close collaboration with the Network of Swiss Parks and the Swiss Confederation, represented by the Federal Office for the Environment² (FOEN), ALPARC is now seeking to examine the question of evaluating management measures in protected areas with a view to establishing a cross-Alpine set of indicators.

The FOEN, in particular, is interested in creating a catalogue of management effectiveness indicators as a support tool for protected areas, for the cantonal authorities and for itself, which will be used to evaluate regional and national protected areas.

The purpose of this project is to provide a first common methodology, which has to be further developed, and to define a set of common indicators that assess the outcome of protected area management (CIME_1). The final result will be a dynamic and flexible catalogue of management effectiveness indicators for protected areas in the Alps.

2. Meeting protected area needs

The system of indicators has been determined by needs expressed by the managers themselves, whilst also taking into account the statutory evaluation and reporting requirements in each country. It will therefore serve as a practical tool, which is tailored to managers' needs and which will provide a better overview of management actions. The tool has been defined in partnership with local managers, who have been regularly invited to attend workshops.

The objective is to create a first version of the Catalogue of Indicators of Management Effectiveness (CIME_1) as a support tool, which should be tested and developed, and that will enable protected area management bodies to improve in the long term protected area performance and management systems.

¹ Steering group meetings: 1. 16/02/2010 in Lausanne (CH); 2. 4-5/03/2010 in Welschenrohr (CH); 3. 01/07/2010 in Bern (CH); 4. 09/10/2010 in Marbach (CH); 5. 17/03/2011 in Marbach (CH): final evaluation of the project.

² The Federal Office for the Environment (FOEN) is the Swiss office responsible for establishing and supporting national parks, regional nature parks, and nature discovery parks. Its aims are: to protect and promote exceptional habitats and outstanding landscapes, to encourage tourism and sustainable regional development, to help the public to experience the natural world and to facilitate environmental education.

3. What has been done

The creation of a first version of the Catalogue of Indicators of Management Effectiveness needed a lot of preparatory work. During the elaboration of the catalogue, three main steps were taken:

i. Definition of the objectives

As the aim of this catalogue is to verify the relevance of the management measures toward the different alpine protected area categories, thus it was necessary to have a clear and detailed definition of the objectives.

ii. Development of the methodology

The methodology, as described in the following chapter, has been developed through the collaboration between the Swiss Parks Network and ALPARC, on the basis of already existing work (scripts of the workshops in Dobbiaco and Cogne).

For this step, a steering group was formed, which was constituted by ALPARC, the Swiss Parks Network and the Federal Office for the Environment.

iii. Development of a system of indicators

The system of indicators has been developed from results of ALPARC workshops held in Dobbiaco (2006) and Cogne (2007). The list of indicators has been revised and simplified, in order to obtain a simple and pertinent tool. The list and the tables of indicators, then, have been completed and expanded by new reflections emerging from the workshop “Indicators of management effectiveness”, which was held in Marbach (Switzerland) from the 16th to 18th of March 2011. The whole work has been reviewed by the steering group and in cooperation with the participant protected areas. The final result is the realisation of this first version of the Catalogue of Indicators of Management Effectiveness.

4. Further steps

In the near future it will be necessary to find motivated pilot regions which will test the indicators. The aim is to verify how much they are representative and applicable. In this phase it is also very important to collect data in order to develop a complete protocol of the implementation of the indicators examined.

Another crucial step will be analysing the results of the pilot regions, in order to identify a group of standard indicators, which are valid for all of the alpine protected areas.

METHODOLOGY

1. Assessing effectiveness

The evaluation of management of a protected area involves interactive phases that are linked one to each other. In fact adaptive management is based on a circular process, which allows information from past actions to feed back into and improve the way management is conducted in future (Hockings *et al.*, 2006).

In this context, evaluation plays an important role, because it reviews the actions taken and assesses whether the objectives were reached or not, to reflect on design, appropriateness, adequacy and delivery of actions. As a consequence, evaluation also allows managers to allocate limited resources more strategically.

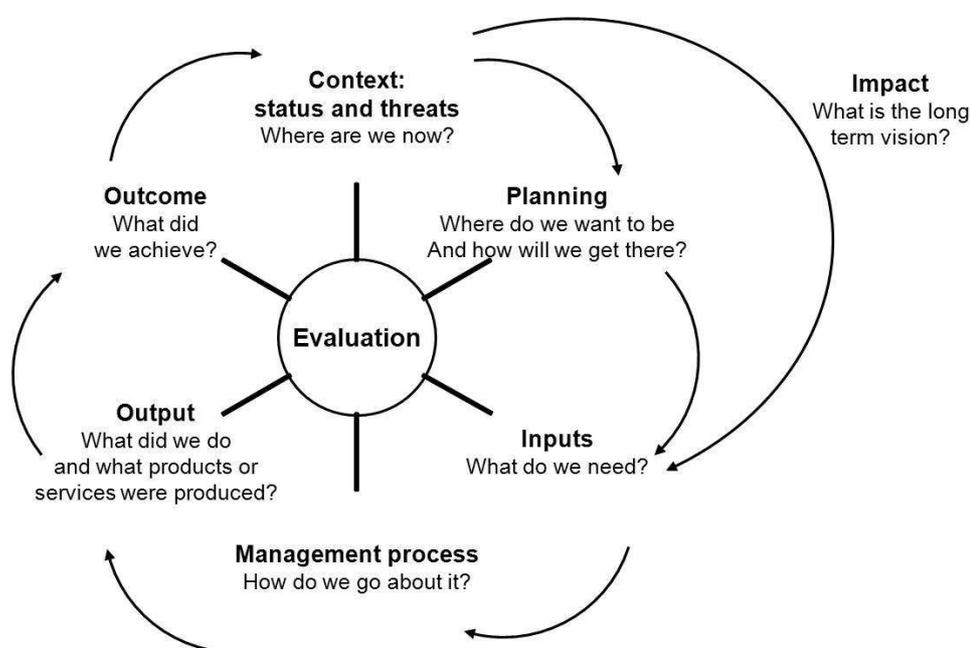


Figure 1: Elements and process of Protected Areas management based on the WCPA Framework of Management Effectiveness (Hockings *et al.*, 2000, 2006; modified by Plassmann, 2010)

The effectiveness evaluation in this catalogue is geared towards an outcome assessment, because it allows the practitioner to measure the real effects of management actions: whether the management is maintaining the core values for which the protected area was created and whether the objectives are being achieved. In other terms, the outcome-based evaluation highlights where objectives are unclear, lack specificity or are formulated more in terms of outputs than outcomes. Thus it provides a clear understanding of what management is aiming to accomplish, what specific values are to be conserved and to rephrase the objectives in an appropriate form, before the monitoring programme proceeds (Hockings *et al.*, 2000, 2006).

Outcome evaluation usually needs to estimate the current status of a value, the extent to which a threat has been reduced or the extent to which other objectives of management have been achieved, and the change in this status over the period of management being assessed.

The assessment of outcomes begins with the definition of objectives, which provide a basis for evaluation. Then appropriate indicators of achievement are defined and their data requirements are determined. The next step of evaluation is monitoring. In this phase monitoring projects are designed to collect the required data and, in consultation with managers, priority monitoring programmes are selected and implemented. The results have to be periodically assessed and reported on in order to develop an adaptive management strategy.

It is important to recall that although outcomes are the most important elements, they are often the most difficult and most expensive to measure, so, particularly for those areas with multiple objectives or limited resources, it is advisable to target the monitoring effort to high priority objectives, using a limited number of indicators. Moreover, the particular indicators chosen for monitoring should if possible provide at least some information on as wide a range of values as possible (Hockings *et al.*, 2006).

2. Which indicators will be used?

As it is not practical to measure directly all the attributes that relate to protected area management (either the condition of the environment itself or aspects of management action), a limited number of representative indicators need to be selected. The selection of priority issues - and hence indicators - for monitoring should be guided by the natural, cultural and social values of the area, which in turn can be guided by an assessment of the context within which the site or system is operating (Hockings *et al.*, 2000).

In order to establish a new shared evaluation tool, a number of common indicators is required. These indicators will be referred to as standard indicators. However, each protected area will be able to and will need to adapt the tool by creating indicators which are more specific to the situation of the protected area concerned.

Most of the indicators in this catalogue are designed to monitor the status of any value, so it is advisable at an early stage to decide:

- Which *attributes* will be considered;
- Which *indicators* of this attribute will be measured/assessed;
- Which *methods* will be used in measuring the indicator.

The selection of indicators is not a simple process. It is important that data collection programmes for the selected indicators can be sustained in terms of budgets and staff

skills, moreover simple indicators are generally preferable to complex ones (Hockings *et al.*, 2000). Therefore it is necessary to define general criteria for selecting indicators and validating their selection.

BOX 1: Criteria for selecting indicators

Indicators should:

- provide a representative picture of environmental conditions, pressures on the environment or society's responses;
- have an unambiguous, predictable and verifiable relationship to the attribute being assessed;
- have a threshold or reference value against which to compare it, so that users can assess the significance of the values associated with it;
- be sensitive to change in the attribute being assessed;
- integrate environmental effects over time and space (i.e. reflect enduring change rather than short-term or localised fluctuations in conditions);
- reflect changes and processes of significance to management (including biophysical, social, cultural, economic, political and managerial attributes);
- reflect changes at spatial and temporal scales of relevance to management;
- be theoretically well founded in technical and scientific terms;
- be simple to measure and interpret;
- be able to be collected, analysed and reported on in a timely fashion;
- be cost-effective in terms of data collection, analysis and interpretation;
- be based on international standards and international consensus in terms of validity;
- be adequately documented and of known quality;
- be updated at regular intervals in accordance with reliable procedures.

Sources: Hockings, M., Stolton, S. and Dudley, N. (2000). *Evaluating Effectiveness: A Framework for Assessing the Management of Protected Areas*. IUCN, Gland, Switzerland and Cambridge, UK. x + 121 pp; OECD - Organisation for Economic Co-operation and Development (2003). *Environmental indicators. Development, measurement and use. Reference paper*. OECD Publications, Paris. 37 pp.

3. How was the catalogue created?

This first version of the catalogue (CIME_1) is the final result of a series of different steps. In 2006 the Task Force Protected Areas, on request of different protected areas, created a working group on the theme "Indicators of management effectiveness". Still in the same year, the Dobbiaco workshop on "Indicators and management effectiveness of protected areas" has been held.

During this workshop it was clearly confirmed that protected areas of almost all categories do not only have the function of protecting nature, but also raising awareness among people and responding to local economy needs. For these reasons at least these three dimensions have to be considered during the evaluation process.

During the workshop participants identified the different requirements of the protected areas and the objectives that should be assessed. The following three aspects were also debated:

- Objectives → To what extent have the objectives been achieved?
- Management measures → Did the undertaken measures reach the expected results?
- Business management → Did the administration work efficiently?

At the end of the workshop four main objectives were identified: nature and landscape protection, cultural landscapes and traditional activities, communication and environmental education, regional development and implication of the local stakeholders.

In May 2007 a second workshop on the same theme was held in Cogne. During this session a first common methodology was developed, which provides for three different evaluation steps:

- Output
- Outcome
- Impact

The results of the previous workshop in Dobbiaco were implemented and adapted to the new methodology. At the end a first version of the table of indicators was compiled, with 26 objectives and 30 indicators.

In 2009 the cooperation among the Task Force Protected Areas, Network of Swiss Parks and the Federal Office for the Environment began. In an early stage the aims of the project were discussed: verify the effectiveness of management measures with regards to the different kind of protected areas in the Alps. Subsequently, a steering group was established, which worked on the glossary, methodology and list of objectives. A new main objective was added and, after this, the list of indicators has been readjusted to the new criteria proposed in the methodology.

In March 2011 the Marbach workshop on “Indicators of management effectiveness” has been held. During this workshop terminology has been discussed again, with the conclusion to substitute the term “impact” with “vision”, as well to add new indicators and outcomes, obtaining a final list of 58 objectives and 203 indicators.

Because of the large number of indicators, it was decided to simplify the catalogue by reducing the number of indicators at 25, but, due to the wide variety of the Alpine

protected areas with their dissimilarities and therefore their different requirements of indicators, it was decided to keep the global indicator list (203 indicators) in [Annex 2](#). This procedure allowed taking into account the different needs of various types of protected areas. The process of simplification was made in two steps: in the first stage the participants of the Workshop in Marbach made a selection of 60 indicators; from this selection, then, the steering group created the definitive list of 25 recommended indicators, which is reported in a specific chapter of this publication (see [25 recommended indicators](#)). In [Annex 2](#) it is possible to find these two selections, thanks to a specific highlighting: the 60 selected indicators are highlighted in light blue, while the 25 recommended indicators are in green.

4. How does the catalogue work?

First of all, a clear understanding of the different terms used is needed. For this purpose a glossary with a few examples could be helpful (see [Glossary](#)).

The indicators are classified into five key objectives and a number of subordinate objectives. The key objectives are:

1. *Nature conservation and landscape protection*
2. *Sustainable regional development*
3. *Communication, participation and education*
4. *Management of protected areas (strategic, functioning)*
5. *Research and monitoring activities*

The catalogue is structured in the form of tables (see [Annex 2](#)). A list of 25 recommended indicators, instead, is reported in specific factsheets (see [25 recommended indicators](#)). Each table is organised as follows:

- **OBJECTIVE:** The aims of a programme or project run by the protected area management.
- **OUTCOME:** Medium-term results of a programme or project in relation to the objectives and generated by the partners' outputs.
The OUTCOME is divided into three parts:
 - *Expected outcome:* the intended outcome;
 - *Actual outcome:* the outcome achieved;
 - *Outcome indicator:* the indicator for measuring whether the expected outcome has been achieved.
- **VISION:** Results of a programme or project, which are expected/desired to be achieved in long term.

- **OUTPUT:** The products (goods, services, etc.) generated under a programme or project in order to achieve the objectives.
- **COST:** The expenses incurred in the process of producing the output.

The catalogue also contains two other elements:

1. **Methodology implementation/data source & availability:** defines the source and availability of the data used.
2. **Experiences and applications:** can be used to provide examples of existing applications of the indicators.

The structure of the catalogue and data has been defined in accordance with international standards and simplified as much as possible.

5. How to create new indicators?

New indicators can be created, taking into account the specificities of the protected area, by filling some of the fields proposed respecting the following steps:

- Step 1:* → First, define the **expected outcome** and the **outcome indicator** for each objective.
- Step 2:* → Define the **vision**, which should be a long-term objective (over 10 years).
- Step 3:* → Define the **output** required in order to achieve the stated OUTCOME.
-
- Step 4:* → Detail the **costs** (as a feasibility indicator).
- Step 5:* → Develop a methodology protocol by taking into account the data sources and availability.
- Step 6:* → Report other experiences, applications and monitoring (“lessons learned”).

GLOSSARY³

1. Main definitions

English	OUTPUT The products (goods, services, etc.) generated under a programme or project.	OUTCOME Medium-term results of a programme or project in relation to the objectives and generated by the partners' outputs.	VISION Results of a programme or project, which are expected/desired to be achieved in the long term.
Deutsch	LEISTUNGEN Die Produkte (von der Parkverwaltung angebotene Güter oder Dienstleistungen) eines Programms oder Projekts.	WIRKUNG Mittelfristig erreichte Ergebnisse eines Programms/Projekts im Verhältnis zu den gesetzten Zielen, welche durch die Leistungen verschiedener Partner erzielt werden.	VISION Ergebnisse eines Programms/Projekts, die langfristig erreicht bzw. erwartet / erwünscht werden.
Français	PRESTATION/MESURE/PRODUIT Les produits (biens ou services réalisés par l'organisme de gestion d'une aire protégée) dans le cadre d'un programme ou projet = ce sont les réalisations.	RÉALISATION/EFFECT DIRECT Résultats d'un programme/projet accompli à moyen terme en relation avec ses objectifs et qui ont été générés par les prestations/mesures des divers partenaires.	VISION Résultats d'un programme/projet que on s'attend/désire que seront accompli à long terme.
Italiano	PRESTAZIONE/MISURA/REALIZZAZIONE I prodotti (beni e servizi realizzati dall'organismo di gestione dell'area protetta) nell'ambito di un programma o di un progetto.	ESITO Risultati di un programma/progetto conseguiti nel medio termine, in relazione agli obiettivi iniziali e che sono stati generati (i risultati) dalle prestazioni/misure dei diversi partner del progetto.	VISIONE Risultati di un programma/progetto che ci si aspetti/si desidera siano conseguiti nel lungo termine.

³ Nb. The following glossary, unless otherwise specified, matches closely with the updated glossary of the Swiss agency for Development and Cooperation (SDC) and the Organisation for Economic Co-operation and Development (OECD)'s one.

2. Examples

<p>English</p>	<p>OUTPUT</p> <ol style="list-style-type: none"> 1. Information campaign for walkers on littering 2. Creation of educational tools for schools 3. Signature of partnership conventions with local producers 	<p>OUTCOME</p> <ol style="list-style-type: none"> 1. Improving water quality in a river (80% reduction of household waste in the water) 2. Pupils of local schools are familiar with the park (target: around 70% of pupils) 3. 20% increase in zones of ecological interest within the agricultural zone 	<p>VISION</p> <ol style="list-style-type: none"> 1. Stabilisation of the water ecosystem; improved environment for inhabitants 2. Better understanding of the local environment; sense of geographical identity; changes in local population's behaviour 3. Higher added-value for the region; development of regional expertise and innovation
<p>Deutsch</p>	<p>LEISTUNGEN</p> <ol style="list-style-type: none"> 1. Informationskampagne für Wanderer zum Thema Müll 2. Erstellung von pädagogischen Hilfsmitteln für Schulen 3. Unterzeichnung der Partnerschaftskonventionen mit lokalen Produzenten 	<p>WIRKUNG</p> <ol style="list-style-type: none"> 1. Verbesserung der Wasserqualität eines Flusses (Reduzierung von 80 % der Haushaltsabfälle im Gewässer) 2. Der Park ist bei lokalen Schülern bekannt (geschätzter Wert: 70 % der Schüler) 3. 20-prozentige Erhöhung der ökologisch bedeutsamen Flächen im landwirtschaftlichen Bereich 	<p>VISION</p> <ol style="list-style-type: none"> 1. Stabilisierung des Ökosystems Wasser; Verbesserung des Lebensraums für die Bevölkerung 2. Erhöhtes Verständnis für die unmittelbare Umwelt und Heimatgefühl; Veränderungen des Verhaltens der lokalen Bevölkerung 3. Erhöhung der regionalen Wertschöpfung und Entwicklung des regionalen Know-hows sowie von Innovationen
<p>Français</p>	<p>PRESTATION/MESURE/PRODUIT</p> <ol style="list-style-type: none"> 1. Campagne d'information pour les promeneurs sur les détritux jetés par terre 2. Création d'outils pédagogiques pour les écoles 3. Signature des conventions de partenariat avec les producteurs locaux 	<p>RÉALISATION/EFFECT DIRECT</p> <ol style="list-style-type: none"> 1. Amélioration de la qualité de l'eau dans une rivière (réduction de 80% des déchets ménagers dans l'eau) 2. Le parc est connu par les élèves des écoles locales (estimée à 70% des élèves) 3. Augmentation de 20% de zones d'intérêt écologique dans la zone agricole 	<p>VISION</p> <ol style="list-style-type: none"> 1. Stabilisation de l'écosystème aquatique ; amélioration du cadre de vie pour la population 2. Stabilisation de l'écosystème aquatique ; amélioration du cadre de vie pour la population 3. Augmentation de la valeur ajoutée dans la région et valorisation des savoir-faire régionaux et des innovations
<p>Italiano</p>	<p>PRESTAZIONE/MISURA/REALIZZAZIONE</p> <ol style="list-style-type: none"> 1. Campagna d'informazione per gli escursionisti sull'abbandono dei rifiuti 2. Creazione di strumenti pedagogici per le scuole 3. Sottoscrizione di convenzioni di associazione con i produttori locali 	<p>ESITO</p> <ol style="list-style-type: none"> 1. Miglioramento della qualità delle acque di un fiume (riduzione dell'80% di rifiuti domestici nell'acqua) 2. Il parco è conosciuto come entità dagli alunni delle scuole locali (stimato al 70% degli alunni) 3. Aumento del 20% delle zone di interesse ecologico nelle zone rurali 	<p>VISIONE</p> <ol style="list-style-type: none"> 1. Stabilizzazione dell'ecosistema acquatico; miglioramento dello stile di vita per la popolazione 2. Comprendere l'ambiente vicino e sentirsi bene a casa propria; il comportamento della popolazione è cambiato 3. Incremento del valore aggiunto della regione e valorizzazione dei know-how locali e delle innovazioni

3. Other definitions

English	Deutsch	Français	Italiano
<p>ACTIVITY</p> <p>Action taken or work carried out to mobilise inputs, such as funding, technical assistance and other resources in order to produce specific outputs.</p>	<p>AKTIVITÄT/ MAßNAHME</p> <p>In die Wege geleitete Aktionen oder Tätigkeiten, durch die Inputs wie finanzielle Mittel, Leistungen der technischen Zusammenarbeit und andere Arten von Ressourcen mobilisiert werden, um spezifische Outputs zu erzielen.</p>	<p>ACTIVITÉ</p> <p>Actions entreprises ou travaux menés en vue de produire des réalisations spécifiques. L'activité mobilise des ressources telles que des fonds, une assistance technique et d'autres types de moyens.</p>	<p>ATTIVITÀ</p> <p>Azioni intraprese o lavoro svolto, con l'utilizzo di risorse (fondi, assistenza tecnica o altro), per produrre determinate realizzazioni.</p>
<p>BENEFICIARIES</p> <p>Individuals, groups or organisations that benefit either directly or indirectly from the programme or project.</p>	<p>BEGÜNSTIGTE/ NUTZNIEBER</p> <p>Die Personen, Gruppen oder Organisationen, die direkt oder indirekt vom Programm/Projekt profitieren, ob sie von vornherein dafür ausgewählt wurden oder nicht.</p>	<p>BÉNÉFICIAIRES</p> <p>Individus, groupes ou organisations qui bénéficient du programme/projet, directement ou non, intentionnellement ou non.</p>	<p>BENEFICIARI</p> <p>Individui, gruppi od organizzazioni che, indipendentemente dal fatto che siano stati identificati come destinatari del programma/progetto, ne traggono benefici diretti o indiretti.</p>
<p>EFFICIENCY</p> <p>Measure of how effectively resources or inputs (funding, expertise, time, etc.) have been used to achieve results.</p>	<p>EFFIZIENZ</p> <p>Ein Maß dafür, wie effektiv Ressourcen/Inputs (Finanzmittel, Fachwissen, Zeit usw.) in Ergebnisse umgewandelt wurden.</p>	<p>EFFICIENCE</p> <p>Mesure selon laquelle les ressources (fonds, expertise, temps, etc.) sont converties en résultats de façon économe.</p>	<p>EFFICIENZA</p> <p>La misura dell'economicità con cui le risorse (fondi, competenze tecniche, tempo, ecc.) sono convertite in risultati.</p>
<p>GOAL</p> <p>The overarching objective to which a project or programme is intended to contribute.</p>	<p>ÜBERGEORDNETES (ENTWICKLUNGS-)ZIEL</p> <p>Übergeordnetes Ziel, zu dessen Erreichung eine Maßnahme beitragen soll.</p>	<p>FINALITÉ</p> <p>Objectif global vers lequel l'action de développement doit contribuer.</p>	<p>FINALITÀ</p> <p>L'obiettivo di livello superiore al raggiungimento del quale l'intervento di sviluppo dovrebbe contribuire.</p>
<p>IMPACT</p> <p>Positive and negative, primary and secondary, long-term changes or effects produced by a programme or project whether direct or indirect, intended or unintended.</p>	<p>IMPAKT/WIRKUNG/EINFLUSS</p> <p>Positive und negative, primäre und sekundäre langfristige Wirkungen (Folge- und Nebenwirkungen) eines Programms/Projekts, die direkt oder indirekt, beabsichtigt oder nicht beabsichtigt, erwünscht oder nicht erwünscht sein können.</p>	<p>IMPACT</p> <p>L'ensemble des changements/effets positifs et négatifs, primaires et secondaires à long terme, générés par un programme/projet, directement ou non, intentionnellement ou non.</p>	<p>IMPATTO</p> <p>L'insieme dei cambiamenti/effetti positivi e negativi, primari e secondari a lungo termine, generati da un programma/progetto, direttamente o indirettamente, intenzionalmente o no.</p>

English	Deutsch	Français	Italiano
<p>EFFECTIVENESS</p> <p>The extent to which the programme or project achieve its objectives, or can expect to do so, bearing in mind the priorities.</p> <p><i>Note:</i> Also used as a global measure (assessment) of the merit or worth of a development activity, i.e. whether a programme or project has achieved or is expected to achieve, its main objectives in an efficient and sustainable manner and with institutional development benefits.</p>	<p>EFFEKTIVITÄT</p> <p>Ausmaß, in dem die Ziele eines Programms/Projekts unter Berücksichtigung ihrer relativen Bedeutung erreicht worden sind oder voraussichtlich erreicht werden.</p> <p><i>Hinweis:</i> Der Begriff wird auch als Gesamtmessgröße (oder Beurteilung) des Nutzens oder Wertes einer Entwicklungsmaßnahme verwendet, d.h. des Ausmaßes, in dem eine Entwicklungsmaßnahme ihre wichtigsten relevanten Ziele auf effiziente und nachhaltige Weise und mit positiver Wirkung auf die institutionelle Entwicklung erreicht hat oder voraussichtlich erreichen wird.</p>	<p>EFFECTIVITÉ</p> <p>Mesure selon laquelle les objectifs du programme/projet ont été atteints, ou sont en train de l'être, compte tenu de leur importance relative.</p> <p><i>Remarque:</i> terme également utilisé comme système de mesure globale (ou comme jugement) du mérite et de la valeur d'une activité; mesure selon laquelle une intervention a atteint, ou est en train d'atteindre, ses principaux objectifs pertinents, de façon efficiente et durable, et avec un impact positif en terme de développement institutionnel.</p>	<p>EFFICACIA</p> <p>La misura in cui gli obiettivi di un programma/progetto, tenuto conto della loro importanza relativa, sono stati raggiunti o si prevede che possano essere raggiunti.</p> <p><i>Nota:</i> termine utilizzato anche come misura aggregata (o come giudizio) del merito o del valore di un'attività, ovvero la misura in cui un intervento ha raggiunto, o si prevede possa raggiungere, i propri principali obiettivi in maniera efficiente e sostenibile e con un impatto positivo in termini di sviluppo istituzionale.</p>
<p>INDICATOR</p> <p>Quantitative or qualitative factor or variable that provides a simple and reliable way of measuring achievement or the changes linked to an action, or to assess the performance of a development actor.</p>	<p>INDIKATOR</p> <p>Variable oder Faktor (quantitativer oder qualitativer Natur) in Form eines einfachen und verlässlichen Instruments, mit dem Fortschritte gemessen, durch eine Entwicklungsmaßnahme bedingte Veränderungen wiedergegeben oder auch Leistungen eines Entwicklungsakteurs beurteilt werden können.</p>	<p>INDICATEUR</p> <p>Facteur ou variable, de nature quantitatif ou qualitatif, qui constitue un moyen simple et fiable de mesurer et d'informer des changements liés à l'intervention ou d'aider à apprécier la performance d'un acteur du développement.</p>	<p>INDICATORE</p> <p>Fattore o variabile qualitativa o quantitativa che fornisce uno strumento semplice e affidabile per misurare le acquisizioni, per riflettere i cambiamenti imputabili a un intervento o per aiutare a valutare le prestazioni di un attore di sviluppo.</p>
<p>INPUTS</p> <p>Financial, human and material resources used for the programme or project.</p>	<p>INPUTS/RESSOURCEN</p> <p>Finanzielle, personelle und materielle Ressourcen, die für ein Programm/Projekt eingesetzt werden.</p>	<p>RESSOURCES/MOYENS/INTRANTS</p> <p>Moyens financiers, humains et matériels utilisés pour le programme/projet.</p>	<p>INPUT</p> <p>Le risorse finanziarie, umane e materiali utilizzate in un programma/progetto.</p>
<p>LONG-TERM</p> <p>Over more than 10 years.</p>	<p>LANGFRISTIG</p> <p>Ein Zeitraum von mehr als 10 Jahren.</p>	<p>LONG TERME</p> <p>Période de temps supérieure à 10 ans.</p>	<p>LUNGO TERMINE</p> <p>Periodo di tempo superiore ai 10 anni.</p>
<p>MEDIUM-TERM</p> <p>Between 5 and 10 years.</p>	<p>MITTELFRISTIG</p> <p>Ein Zeitraum zwischen 5 und 10 Jahren.</p>	<p>MOYEN TERME</p> <p>Période de temps entre 5 et 10 ans.</p>	<p>MEDIO TERMINE</p> <p>Periodo di tempo compreso tra i 5 e i 10 anni.</p>

English	Deutsch	Français	Italiano
<p>MANAGEMENT EFFECTIVENESS EVALUATION⁴</p> <p>Assessment of how well the protected area is being managed - primarily the extent to which it is protecting values and achieving goals and objectives. The term management effectiveness reflects three main themes:</p> <ul style="list-style-type: none"> - design issues relating to both individual sites and protected area systems; - adequacy and appropriateness of management systems and processes; - delivery of protected area objectives including conservation of values. 	<p>BEWERTUNG DER WIRKSAMKEIT VON MANAGEMENT⁴</p> <p>Die Beurteilung, wie gut das Schutzgebiet verwaltet wird - vor allem das Ausmaß, in den Ressourcen geschützt und die Zwecke und Ziele erreicht werden. Der Ausdruck Wirksamkeit von Management spiegelt sich in drei Hauptthemen wieder:</p> <ul style="list-style-type: none"> - Planungsfragen über sowohl einzelne Stellen als auch Schutzgebietssystemen; - Eignung und Angemessenheit von Management-Systemen und Prozessen; - die Wahrung der Schutzgebietsziele und darin inbegriffen der Schutz ihrer Werte. 	<p>EVALUATION DE L'EFFECTIVITÉ DE LA GESTION⁴</p> <p>Il s'agit de l'estimation de la qualité de la gestion de l'espace protégée - d'abord de la mesure dans laquelle elle en protège les valeurs et elle atteint ses buts et ses objectifs. Les termes efficacité de la gestion reflètent trois thèmes principaux:</p> <ul style="list-style-type: none"> - les questions de conception liées aux sites particuliers et aux systèmes d'aires protégées; - la pertinence et l'adéquation des systèmes et des processus de gestion; - l'atteinte des objectifs de l'aire protégée y compris la conservation de ses valeurs. 	<p>VALUTAZIONE DELL'EFFICACIA DELLA GESTIONE⁴</p> <p>Valutazione di come l'area protetta sia gestita - soprattutto la misura in cui ne sta tutelando i valori e raggiungendo i propri scopi ed obiettivi. Il termine efficacia della gestione riflette tre temi principali:</p> <ul style="list-style-type: none"> - problemi di progettazione connessi sia ai singoli siti sia ai sistemi di aree protette; - adeguatezza e appropriatezza dei sistemi di gestione e dei processi; - conseguimento degli obiettivi dell'area protetta, inclusa la conservazione dei suoi valori.
<p>PARTNERS</p> <p>The individuals and/or organisations that work together to achieve common objectives.</p> <p><i>Note:</i> The concept of partnership implies shared goals, shared responsibility for outcomes, clear accountability and reciprocal commitments. Partners may include governmental organisations, civil society, non-governmental organisations, universities, professional and trade associations, multilateral organisations, private companies, etc.</p>	<p>PARTNER</p> <p>Personen und/oder Organisationen, die zusammenarbeiten, um gemeinsam vereinbarte Ziele zu erreichen.</p> <p><i>Hinweis:</i> Das Partnerschaftskonzept impliziert gemeinsame Ziele, gemeinsame Verantwortung für die direkten Wirkungen, eine klar abgegrenzte Rechenschaftspflicht sowie gegenseitige Verpflichtungen. Partner können u.a. sein: staatliche und zivilgesellschaftliche Einrichtungen, Nichtregierungsorganisationen, Universitäten, Berufs- und Wirtschaftsverbände, multilaterale Organisationen, privatwirtschaftliche Unternehmen usw.</p>	<p>PARTNERAIRES</p> <p>Personnes et/ou organisations qui collaborent pour atteindre des objectifs convenus en commun.</p> <p><i>Remarque:</i> le concept de partenariat évoque des objectifs conjoints, des responsabilités partagées en ce qui concerne les réalisations, des engagements réciproques et une obligation de rendre compte de manière claire. Les partenaires peuvent être des organisations gouvernementales, de la société civile, des ONG, des universités, des associations professionnelles, des organisations multilatérales, des entreprises privées, etc.</p>	<p>PARTNER</p> <p>Individui e/o organizzazioni che collaborano al conseguimento di obiettivi concordati.</p> <p><i>Nota:</i> il concetto di partenariato implica condivisione di obiettivi, responsabilità comuni in relazione ai risultati, rendicontazione separata e impegni reciproci. Possono essere partner: governi, società civile, organizzazioni non governative, università, associazioni professionali e imprenditoriali, organismi multilaterali, aziende private, ecc.</p>

⁴ Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. (2006). Evaluating Effectiveness: A framework for assessing management effectiveness of protected areas. 2nd edition. IUCN, Gland, Switzerland and Cambridge, UK. xiv + 105 pp.

English	Deutsch	Français	Italiano
<p>OBJECTIVE</p> <p>The intended physical, financial, institutional, social, environmental, or other development results to which a project or programme is expected to contribute for a society, community or group of people.</p>	<p>ZIEL</p> <p>Angestrebte materielle, finanzielle, institutionelle, soziale, ökologische oder sonstige Entwicklungsergebnisse, zu deren Realisierung ein Projekt oder Programm für eine Gesellschaft, Gemeinschaft oder Gruppe von Menschen beitragen soll.</p>	<p>OBJECTIF</p> <p>Résultats que le programme ou le projet est supposé contribuer à générer en termes physiques, financiers, institutionnels, sociaux, environnementaux ou autres au bénéfice d'une société, d'une communauté, d'un groupe de personnes.</p>	<p>OBIETTIVO</p> <p>I risultati attesi, in termini fisici, finanziari, istituzionali, sociali, ambientali o di altra natura, al raggiungimento dei quali si prevede che un progetto o un programma possa contribuire a favore di una società, di una comunità o di un gruppo di persone.</p>
<p>PURPOSE</p> <p>The stated objectives of the programme or project.</p>	<p>ZWECK</p> <p>Öffentlich erklärte Ziele des Programms/Projekts.</p>	<p>BUT</p> <p>Objectif énoncé relatif au programme/projet.</p>	<p>SCOPO</p> <p>Gli obiettivi del programma/progetto pubblicamente dichiarati.</p>
<p>REACH</p> <p>The beneficiaries and other stakeholders in a programme or project.</p>	<p>ADRESSATEN</p> <p>Die Begünstigten/Nutznieser und andere an einem Programm/Projekt beteiligten Parteien.</p>	<p>PUBLICS CONCERNÉS/ATTEINTS</p> <p>Bénéficiaires et autres parties prenantes concernés par un programme/projet.</p>	<p>DESTINATARI</p> <p>Beneficiari e altri soggetti interessati a un programma/progetto.</p>
<p>SHORT-TERM</p> <p>Under 5 years.</p>	<p>KURZFRISTIG</p> <p>Ein Zeitraum von weniger als 5 Jahren.</p>	<p>COURT TERME</p> <p>Période de temps inférieure à 5 ans.</p>	<p>BREVE TERMINE</p> <p>Periodo di tempo inferiore ai 5 anni.</p>
<p>STAKEHOLDERS</p> <p>Agencies, organisations, groups or individuals with a direct or indirect interest in the programme or project and/or evaluation.</p>	<p>BETEILIGTE PARTEIEN/STAKEHOLDERS</p> <p>Einrichtungen, Organisationen, Gruppen oder Einzelpersonen mit einem direkten oder indirekten Interesse an einem Programm/Projekt oder seiner Evaluierung.</p>	<p>PROTAGONISTES/PARTIES PRENANTES</p> <p>Agences, organisations, groupes ou individus qui ont un intérêt direct ou indirect dans le programme/projet ou dans son évaluation.</p>	<p>PARTI INTERESSATE</p> <p>Enti, organizzazioni, gruppi o individui che hanno un interesse diretto o indiretto in un programma/progetto o nella sua valutazione.</p>
<p>TARGET GROUP</p> <p>The individuals or organisations that the programme or project is intended to benefit.</p>	<p>ZIELGRUPPE</p> <p>Personen oder Organisationen zu deren Gunsten ein Programm/Projekt durchgeführt wird.</p>	<p>GROUPE/POPULATION CIBLE</p> <p>Personnes ou organisations au bénéfice desquelles le programme/projet est entreprise.</p>	<p>GRUPPO BERSAGLIO</p> <p>Gli individui o le organizzazioni a favore dei quali viene intrapreso il programma/progetto.</p>

English	Deutsch	Français	Italiano
<p>SUSTAINABLE DEVELOPMENT⁵ The whole process of change whereby use of resources, the investment focus and institutions are on an equal basis and enhance the potential for satisfying current and future needs.</p>	<p>NACHHALTIGE ENTWICKLUNG⁵ Der gesamte Veränderungsprozess bei dem die Nutzung der Ressourcen, die Ausrichtung der Investitionen und die Institutionen im Gleichgewicht sind und die potentiellen aktuellen und zukünftigen Bedürfnisse befriedigen.</p>	<p>DÉVELOPPEMENT DURABLE⁵ L'ensemble des processus de changement grâce auxquels l'exploitation des ressources, l'orientation des investissements et des institutions se trouvent en harmonie et renforcent le potentiel actuel et futur de satisfaction des besoins des hommes.</p>	<p>SVILUPPO SOSTENIBILE⁵ Insieme di processi di cambiamento per i quali lo sfruttamento delle risorse, l'orientamento degli investimenti e delle istituzioni sono in armonia e rinforzano il potenziale attuale e futuro della soddisfazione delle esigenze.</p>

⁵ United Nations World Commission on Environment and Development (1987). *Our Common Future*. Oxford University Press. Oxford - New York. 400 pp.

EXAMPLE OF TABLE COMPILATION

In the context of the objective “general biodiversity conservation”, the success of the reintroduction of brown bear is wished to be assessed. This example is based on the Project “LIFE96 NAT/IT/003152 - Ursus/Brenta - URSUS Project : Brenta brown bear conservation plan.” carried out by Adamello Brenta Nature Park (I), between 1996 and 2004.

Step 1: Define the expected outcome and the outcome indicator

In this case the expected outcome is the reconstitution of a vital population of brown bear within 10 years. A good indicator could be the number of reproductive bears.

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
Reconstitution of a vital population of <i>Ursus arctos</i> within 10 years (30 reproductive specimens)	Number of reproductive bears						
Methodology protocol / Data source & availability							
Experiences and applications							

Step 2: Define the vision

The long term objective of this reintroduction is to achieve a viable and stable population of brown bears along the Alps.

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
Reconstitution of a vital population of <i>Ursus arctos</i> within 10 years (30 reproductive specimens)	Number of reproductive bears				Viable and stable population along the Alps		
Methodology protocol / Data source & availability							
Experiences and applications							

Step 3: Define the output

One of the output could be the number of bears released.

	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
OBJECTIVE	Reconstitution of a vital population of <i>Ursus arctos</i> within 10 years (30 reproductive specimens)	Number of reproductive bears			Viable and stable population along the Alps	Reintroduction of 9 specimen of brown bears (3 males and 6 females)	
Methodology protocol / Data source & availability							
Experiences and applications							

Step 4: Detail the costs

The project of bear reintroduction cost 100,000.00 €.

	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
OBJECTIVE	Reconstitution of a vital population of <i>Ursus arctos</i> within 10 years (30 reproductive specimens)	Number of reproductive bears			Viable and stable population along the Alps	Reintroduction of 9 specimen of brown bears (3 males and 6 females)	100,000.00
Methodology protocol / Data source & availability							
Experiences and applications							

Step 5: Methodology and data sources and availability

The reintroduction of brown bears is realized on the basis of studies on brown bears' ecology, preliminary studies of feasibility and individuation of potentially favourable areas. Data can be collected from Life Natura, Life + and Life co-op projects.

	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
OBJECTIVE	Reconstitution of a vital population of <i>Ursus arctos</i> within 10 years (30 reproductive specimens)	Number of reproductive bears			Viable and stable population along the Alps	Reintroduction of 9 specimen of brown bears (3 males and 6 females)	100,000.00
Methodology protocol / Data source & availability	Studies on brown bears' ecology; preliminary studies on feasibility; individuation of potentially favourable areas. Life Natura, Life + and Life co-op projects.						
Experiences and applications							

Step 6: Other experiences

Some protected areas have already launched projects of reintroduction, as Adamello Brenta Nature Park, the Slovenian Forest Service and WWF Austria.

	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
OBJECTIVE	Reconstitution of a vital population of <i>Ursus arctos</i> within 10 years (30 reproductive specimens)	Number of reproductive bears			Viable and stable population along the Alps	Reintroduction of 9 specimen of brown bears (3 males and 6 females)	100,000.00
Methodology protocol / Data source & availability	Studies on brown bears' ecology; preliminary studies on feasibility; individuation of potentially favourable areas. Life Natura, Life + and Life co-op projects.						
Experiences and applications	Project "Life Ursus" Adamello Brenta Nature Park, Project "Priority measures for the conservation of large carnivores in the Alps" University of Udine, Project "Integrated plan of action to protect two NATURA 2000 sites" University of Udine; Project "Conservation of large carnivores in Slovenia - Phase I (brown bear)" Slovenian Forest Service, Project "Bear protection programme for Austria" WWF Austria, Project "Conservation and management of the brown bear in Austria" WWF Austria						

Once filled the information in the table, it is possible to proceed with the effectiveness assessment.

The first step is to report the actual outcome, namely what it has been measured by the indicator. In this example, after 8 years from the reintroduction 15 reproductive specimens of brown bear have been registered.

	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
OBJECTIVE	Reconstitution of a vital population of <i>Ursus arctos</i> within 10 years (30 reproductive specimens)	Number of reproductive bears	15 reproductive specimens		Viable and stable population along the Alps	Reintroduction of 9 specimen of brown bears (3 males and 6 females)	100,000.00
Methodology protocol / Data source & availability	Studies on brown bears' ecology; preliminary studies on feasibility; individuation of potentially favourable areas. Life Natura, Life + and Life co-op projects.						
Experiences and applications	Project "Life Ursus" Adamello Brenta Nature Park, Project "Priority measures for the conservation of large carnivores in the Alps" University of Udine, Project "Integrated plan of action to protect two NATURA 2000 sites" University of Udine; Project "Conservation of large carnivores in Slovenia - Phase I (brown bear)" Slovenian Forest Service, Project "Bear protection programme for Austria" WWF Austria, Project "Conservation and management of the brown bear in Austria" WWF Austria						

Comparing the actual outcome with the expected one, it is possible to note that the expected outcome hasn't been achieved. Hence it is necessary to verify why it hasn't been attained. The reasons could be several, and have to be reported in the table.

	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
OBJECTIVE	Reconstitution of a vital population of <i>Ursus arctos</i> within 10 years (30 reproductive specimens)	Number of reproductive bears	15 reproductive specimens	Difficulties on the released bears; local population didn't accept the presence of bears	Viable and stable population along the Alps	Reintroduction of 9 specimen of brown bears (3 males and 6 females)	100,000.00
Methodology protocol / Data source & availability	Studies on brown bears' ecology; preliminary studies on feasibility; individuation of potentially favourable areas. Life Natura, Life + and Life co-op projects.						
Experiences and applications	Project "Life Ursus" Adamello Brenta Nature Park, Project "Priority measures for the conservation of large carnivores in the Alps" University of Udine, Project "Integrated plan of action to protect two NATURA 2000 sites" University of Udine; Project "Conservation of large carnivores in Slovenia - Phase I (brown bear)" Slovenian Forest Service, Project "Bear protection programme for Austria" WWF Austria, Project "Conservation and management of the brown bear in Austria" WWF Austria						

➤ In this way, then, it is possible to assess effectiveness, individuate weak links and finding solution to improve management measures.

25 RECOMMENDED INDICATORS

In this chapter the 25 recommended indicators, with their respective objectives, are described. The complete list of objectives is available in [Annex 1](#), while the complete list of indicators (203) is in [Annex 2](#).

These 25 indicators are the final result of a process of simplification of the catalogue, made after the Workshop in Marbach 2011.

Each indicator is presented in a factsheet, which was realised on the basis of the Alpine Convention's indicators factsheet and the EUROSTAT's ones.

The factsheets are structured in the following way:

1. *Objective*

This section contains the objective which has to be assessed.

2. *Expected outcome*

Here it is reported the expected outcome of the objective.

3. *Indicator*⁶

In this section there are reported the name of the indicator and a brief description of it.

4. *Unit*⁷

Here the unity of measurement is reported.

5. *Elaboration method*⁷

In this section a brief description of indicators calculation and a suggestion about thematic content of a study case or a qualitative description are reported

6. *Overall assessment of accuracy and comparability*⁷

The assessment of accuracy and comparability is made on the basis of the Eurostat Quality Grades:

- Grade A → Data are collected from reliable sources applying high standards with regard to methodology/accuracy and are well documented.
- The underlying data are collected on the basis of a common methodology for the European Union and, where applicable, data for US and Japan can be considered comparable; major differences being assessed and documented.
- Data are comparable over time; impact of procedural or conceptual changes being documented.

⁶ Schönthaler *et al.*, 2004

⁷ EUROSTAT, 2011

- Grade B → Data are collected from reliable sources applying high standards with regard to methodology/accuracy and are well documented.
- There are EITHER some serious shortcomings with regard to comparability across countries (including the lack of data) OR breaks in series for several countries which seriously hamper comparison over time (including the lack of data).
- Deficiencies with regard to assessing and documenting the impact of these shortcomings might be identified.
- Grade C → Data might have to be interpreted with care as methodology/accuracy does not meet high quality standards.
- There are some serious shortcomings with regard to comparability across countries (including the lack of data) AND breaks in series for several countries which seriously hamper comparison over time (including the lack of data).
- Indicator to be developed → The indicator has to be tested and eventually developed.

Source: EUROSTAT (Last update 27.01.2011). Sustainable development indicators. Web page.
URL: <http://epp.eurostat.ec.europa.eu/portal/page/portal/sdi/indicators>

7. Objective and relevance of the indicator⁷

Here are reported the purpose and usefulness of the indicator for decision-making (i.e., policy relevance), international targets where these are available and the relevant international conventions, if the indicator is primarily of global significance.

8. Restriction of indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting⁷

Here are reported the main factors that may lead to restriction in using the indicator.

9. Comparability across countries⁷

In this section is stated whether the data from different countries may be entirely compared or not, and the reasons of eventual comparability lack.

10. Comparability over time⁷

Here is stated whether the data from different times may be entirely compared or not, and the reasons of eventual comparability lack.

11. Development process and researches dedicated to indicator⁶

a. Evaluation

In this section are reported the reason of the indicator choice, remarks on data sources and deduction of the indicator from other indicators systems, comments on interpretation possibilities of the indicator.

b. Indicator's origin

Here it is reported a listing of indicators systems and reports on environment status with designation of concrete indicators, from which the indicator was derived.

c. Data sources

In this section are reported institutions, organisation and data base from which data could be exploited.

d. Advantages and disadvantages

Advantages depend on data availability and quality, pertinence of the indicator and so on. Disadvantages, instead, derive from a low data quality/availability, an incomplete harmonisation or a limited possibility of interpreting the indicator.

12. Examples

Examples of existing applications of the objective and/or indicator are reported in this section.

Most part of the indicators has been elaborated by the participants at the different workshops. These indicators are new and still have to be tested and develop. Therefore the factsheets cannot be completely filled out yet. Other indicators, instead, have been resumed from other already existing indicators, so their factsheet is more completed. These indicators are marked with a specific coloured border. Each colour refers to a specific quotation, reported in the following list:

- - Alpine Convention (Schönthaler *et al.*, 2004);
- - EUROSTAT (EUROSTAT, 2011);
- - FRAGSTATS (McGarigal, 2000);
- - MCPFE (MCPFE, 2003).

FACTSHEETS OF THE 25 RECOMMENDED INDICATORS

Some indicators are marked with a specific coloured border. Each colour refers to a specific quotation, reported in the following list:

- - Alpine Convention (Schönthaler *et al.*, 2004);
 - - EUROSTAT (EUROSTAT, 2011);
 - - FRAGSTATS (McGarigal, 2000);
 - - MCPFE (MCPFE, 2003).
-

Objective: 1.1.2

Management of endangered and/or endemic species

The objective relates to fauna and flora specific to a protected area and for which it is known among the general public, experts and other regions beyond the protected area. In some cases, these species may even have been the reason to accord protected status to the area.

Expected outcome: Endangered species are less threatened and endemic species are conserved

Indicator (definition)	Number of observed species or populations and sites of endangered or endemic species
Unit	Number
Elaboration method (proposal)	It is the total number of species/populations/sites which are endangered or endemic. The selection of the species should be fixed as soon as possible with the help of experts (universities). The local stations of endangered or endemic species should be mapped at least during the first five years of the creation of the protected area.

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

This indicator aims to measure the conservation status of endangered and endemic species.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Absence of data collected.

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator

Evaluation

The classification of species into the "endangered" category is an expression of the current state of biodiversity at the species level. Information on the status of threats can be found in regional databases, EUNIS and IUCN databases. The two latter, however, include only data on species threatened simultaneously in several countries.

In addition in the Alps there is a high proportion of endemic species, which constitute a characteristic element of biological diversity among species. Moreover, endemic species have a high ecologic specialization and for this reason are very sensitive to climatic changes.

Indicator's origin

Alpine Convention's indicator C8-3 (Proportion of endangered species by total number of species) and C8-4 (Number of endemic vegetal and animal species).

Data sources

Inventory or census of species and populations, red lists, studies on endangered/endemic species.

Advantages and disadvantages

Advantages:

The indicator is quite simple to use.

Disadvantages:

The spatial resolution is coarse because of the spatial ranking of studies and classification of threats. A more detailed resolution could be achieved by assessing the actual situation of the selected species' populations, so the indicator requires a good level of data collection.

Examples

Protected areas with management plans for more than 10 years.

01

Objective: 1 Nature conservation and landscape protection
1.1 Biodiversity conservation

02

Objective: 1 Nature conservation and landscape protection
1.1 Biodiversity conservation

Objective: 1.1.3

Habitat conservation

The most traditional element of protected area management: habitat is seen as the foundation for all biodiversity and conservation measures (choosing not to act also constitutes a management strategy).

Expected outcome: Conservation of all habitats listed in official programmes, like the European Council of the EMERALD Programme and the directive 92/43/EC

Indicator (definition)	Number and surface of different habitats presenting a favourable conservation status
Unit	Number, hectares
Elaboration method (proposal)	It is the total amount of habitats presenting a favourable status of conservation. At the same time the total surface (ha) is reported. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation and its evolution in at least the last 50 years.

Overall assessment of accuracy and comparability

A B C To be developed

Objective and relevance of the indicator

This indicator aims to assess the status of conservation priority habitats.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

The indicator requires a first categorisation of habitats in habitats with a favourable conservation status. Errors in mapping the habitat.

Comparability across countries

High Restricted

The comparability across countries is high.

Comparability over time

High Restricted

The comparability over time is high.

Development process and research dedicated to indicator

Evaluation

The networks NATURA 2000 and EMERALD are the most complete projects on biodiversity conservation in Europe. Habitats are identified by EUNIS Habitat Classification System, which provides a relatively differentiated distinction of habitat type and is clearly available for all the Alpine states. Although the representation is limited to geographic punctual data, it still provides extensive statistical information.

Indicator's origin

Alpine convention's indicator C8-1 (Surface of natural/close to natural state biotopes) and C8-2 (Surface of designated priority habitats).

Data sources

Technical-scientific factsheet of NATURA 2000/EMERALD sites, Corine Biotopes.

Advantages and disadvantages

Advantages:

Due to the obligation of State signatories to designate priority habitats, data are regularly updated and available in digital format; moreover the indicator provides a uniform classification system and a homogenous database.

Disadvantages:

CORINE biotopes are relatively coarse due to data resolution and can't reach the level of detail of mapping land, moreover the indicator can only represent the officially designated areas.

Examples

NATURA 2000 and EMERALD sites.

Objective: 1.1.7

Enable natural processes

Conserving natural processes is a major task for many protected areas. This may include a policy of permitting processes such as fire, avalanches and rock falls, as opposed to preventing such occurrences, which is often the policy adopted in non-protected areas.

Expected outcome: Maintaining and restoring natural processes in significant portions of the territory

Indicator (definition)	Surface without human intervention where natural processes can occur
Unit	Hectares
Elaboration method (proposal)	It is the total surface (ha) of wilderness areas. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation and its evolution in at least the last 50 years.

Overall assessment of accuracy and comparability

A B C To be developed

Objective and relevance of the indicator

This indicator aims to assess the status of conservation of natural processes.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High Restricted

The comparability across countries is high.

Comparability over time

High Restricted

The comparability over time is high.

Development process and research dedicated to indicator

Evaluation

The representation of wilderness areas should illustrate how the conditions of strict protection and the possibility to maintain ecological processes are carried out in protected areas of the Alpine region. To indicate the extent of the areas concerned, it is essential to know the applicable protection obligations, assess their comparability and have data of the perimeter of which they are applied.

Indicator's origin

Alpine convention's indicator B12-2 (Surface of strictly protected core areas within protected areas).

Data sources

Management plan of the protected area.

Advantages and disadvantages

Advantages:

Disadvantages:

To interpret this indicator correctly, concrete information on the terms of use or protection of the central area will be essential to ensure data comparability.

Examples

03

Objective: 1 Nature conservation and landscape protection
1.1 Biodiversity conservation

04

Objective: 1.2

Establishment and conservation of ecological networks

Large protected areas often require or offer potential for connectivity.

This entails establishing links with neighbouring protected areas or other areas of special interest in terms of migration or biodiversity.

Expected outcome: Habitat fragmentation reduction in order to guarantee continuity

Indicator (definition)	Degree of habitats fragmentation
Unit	Patch density: number per hectare
Elaboration method (proposal)	Is the number of patches (N) in the landscape, divided by total landscape area (A; hectares): $\frac{N}{A}$

Overall assessment of accuracy and comparability

A



B



C



To be developed

Objective and relevance of the indicator

Patch density is a measure of spatial heterogeneity (McGarigal and Marks 1995), and gives information on habitat fragmentation.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Data availability.

Comparability across countries

High



Restricted

The comparability across countries is high.

Comparability over time

High



Restricted

The comparability over time is limited by the year of the most ancient aerial photo or use of soil map.

Development process and research dedicated to indicator

Evaluation

Indicator's origin

FRAGSTATS 3.3 Landscape metrics.

Data sources

Aerial photos, use of soil maps.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Partners of ECONNECT and the Continuum Initiative; large protected areas of the Alps and especially the inhabited ones.

Conservation of cultural landscapes and landmarks

05

This objective covers all existing features of traditional landscapes such as stone walls and old agricultural buildings.

Ideally, an evaluation should establish the potential of each cultural landscape in order to establish and optimise conservation measures.

Expected outcome: Authentic cultural landscapes are conserved and maintained

Indicator (definition)	Surface of authentic cultural landscapes
Unit	Hectares
Elaboration method (proposal)	It is the surface of well-preserved authentic cultural landscapes. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.

Overall assessment of accuracy and comparability

A B C To be developed

Objective and relevance of the indicator

The indicator aims to quantify the proportion of authentic cultural landscape which is preserved.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Data availability.

Comparability across countries

High Restricted

The comparability across countries is high.

Comparability over time

High Restricted

The comparability over time is restricted.

Development process and research dedicated to indicator *No available data at this moment*

Indicator's origin

Data sources

Landscape analysis, maps associated to photos.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Hohe Tauern National Park (A); Paneveggio - Pale di San Martino Nature Park (I); Southern Tyrol Nature Parks (I).

Objective: 1 Nature conservation and landscape protection
1.3 Landscape conservation

06

Objective: 2.2.1

Maintaining and enhancing regional cycles

This objective is intended to maintain and develop regional cycles especially in order to enhance value chain, cooperation and service chain.

Expected outcome: In the protected area there are numerous value chains

Indicator (definition)	Number supported/enhanced/maintained/created value chains
Unit	Number
Elaboration (proposal) method	The number of existing local chains. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.

Overall assessment of accuracy and comparability

A B C To be developed

Objective and relevance of the indicator

The indicator aims to give an assessment on the policy of encouraging and improving local production.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin

Data sources

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Extensive farming

Evaluating the importance of extensive farming and promoting this model.

Expected outcome: Farms within the protected area practice extensive farming

Indicator (definition)	Surface of extensive agriculture
Unit	Large Livestock Units (LLSU) per hectare
Elaboration method (proposal)	<p>The LSU is a reference unit which facilitates the aggregation of livestock from various species and ages. The aggregated species in the LSU total, for the purpose of this indicator, are: equines, cattle, sheep, goats, pigs, poultry and rabbits. The LSU is a measure of the impact of agricultural practices and breeding.</p> <p>The livestock density is the number of livestock units (LSU) per hectare of utilised agricultural area (UAA).</p> <p>A definition of over- and under grazing has to be established by the protected area according to local characteristics.</p> <p>The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.</p>

Overall assessment of accuracy and comparability

A B C To be developed

Data is collected from reliable sources applying high standards with regard to the methodology and ensuring a high degree of comparability.

Objective and relevance of the indicator

The indicator is used as a proxy of agricultural intensification in animal husbandry. It implies the degree of pressure exerted on the environment due to livestock, since they can have effects on biodiversity, soil and water quality and landscape.

The distribution of all indicators according to altitude levels could be very interesting.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Some aspects of livestock raising such as input use (fertilisers, concentrate feed, extensive grazing, etc.) and management practices (storage and use of manure, etc.) which influence the final effect of stock farming on the environment are only partially encompassed by the indicator.

Comparability across countries

High Restricted

The comparability across countries is high. The same data are available for all countries and the concepts are in line with the FAO recommendations.

Comparability over time

High Restricted

The comparability over time is high.

Development process and research dedicated to indicator

Evaluation

Eurostat Livestock density index.

Indicator's origin

Data sources

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

States members of the European Community.

08

Objective: 2.3.2 - 2.3.3

Conserving the diversity of local varieties and breeds

The objective seeks to determine how diverse agricultural production is in the area and to identify measures to promote the greatest possible diversity. In addition, traditional local crops and breeds should be rediscovered and reintroduced.

Expected outcome: In the protected area all the local varieties and breeds are currently used in farming

Indicator (definition)	Percentage and number of local varieties and breeds on the whole farming production
Unit	Percentage and number
Elaboration method (proposal)	The number of local varieties and breeds used and/or reintroduced and the proportion of use of local varieties and breeds on the global farming production. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

The indicator aims to assess the efforts to reintroduce and preserve local crop varieties and local farm animal breeds.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability across countries is high.

Development process and research dedicated to indicator

Evaluation

Existing studies of the Monitoring Institute for Rare Breeds and Seeds in Europe on the "agricultural genetic resources of the Alps" (1992-93, 2001) are a very good and comprehensive overview, where it is possible to deduce some fundamental analysis of the problem and trends.

Indicator's origin

Alpine Convention's indicator C8-5 (Evolution of livestock per selected farm animal breeds endangered in the Alps).

Data sources

Monitoring Institute for Rare Breeds and Seeds in Europe, Arca-Net, Association Pro Specie Rara, Society Arche Noah.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Association Pro Specie Rara (CH): project of reintroduction and preservation of local varieties and breeds; Dolomiti Bellunesi National Park (I): recovery of the local crop varieties: apple "prussiana", barley "agordino", bean of Lamon, bean "gialet", mais "sponcio", potato "cornetta", potato of Cesiomaggiore and the pumpkin "santa bellunese"; Luberon Regional Nature Park (F): Pertuis' potato; Prealpi Giulie Nature Park (I): cultivation and valorisation of Resia's red garlic; Society Arche Noah (A): project of reintroduction and preservation of local varieties and breeds; UNESCO Biosphere Reserve Entlebuch: cow dog (Sennenhunde) of Entlebuch; Val d'Hérens Nature Park (CH): recovery of the local cow breed; Verdon Regional Nature Park (F): Haut-Provence's saffron.

Sustainable use of forest resources

Sustainable forest use means that forests and woodland are managed in such a way as to maintain biodiversity, productivity, regeneration capacity, vitality and the potential for fulfilling existing and future ecological, economic and social functions, whether local, national or international, without damaging other ecosystems.

Put simply, this entails achieving a balance: a balance between society's growing demand for forestry products and benefits and maintaining healthy forests and diversity. This balance is critical to the survival of forests.

Sustainable use of forestry resources gives an economic value to forestry products which also takes into account environmental issues such as conservation of species and resources. It is intended to improve the quality of life for local residents.

Expected outcome: 90% of total annual wood consumption in the protected area is local wood

Indicator (definition)	Percentage of local wood on total annual wood consumption in the protected area
Unit	Percentage or cube metres
Elaboration method (proposal)	It is the proportion of local wood consumed on the annual consumption.

Overall assessment of accuracy and comparability

A B C To be developed

Objective and relevance of the indicator

The indicator aims to give a measure of how much local wood is consumed.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High Restricted

The comparability across countries is high.

Comparability over time

High Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*

Evaluation

Indicator's origin

MCPFE Improved Pan-European Indicators for Sustainable Forest Management.

Data sources

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

10

Objective: 2.5.1

Promoting sustainable tourism

Low impact tourism based on the USPs (Unique Selling Point) of the park. The protected area should identify the range of products and services on offer and develop measures to promote this type of tourism (Health, Agro tourism, Culture).

Expected outcome: An increasing number of visitors attend a soft tourism programme

Indicator (definition)	Number of visitors attending a soft tourism programme
Unit	Number
Elaboration method (proposal)	The number of tourists which asks and attend a soft tourism programme. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

The indicator aims to assess how well the soft tourism offers are promoted.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Data availability.

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin**Data sources**

Questionnaires, participation forms.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Adamello Brenta Nature Park (I); Alpine Pearls (A); EUROPARC's European Charte for Sustainable Tourism in Protected Areas; Gesäuse National Park (A); Hohe Tauern National Park (A); Ticino's Nature Park (I); Vercors Regional Nature Park (F); Verdon Regional Nature Park (F).

Key ecological constructions

This is a major issue for all inhabited protected areas. Supporting and promoting ecological construction should be a core element in all protected area work programmes. Targeted measures should be developed in order to achieve this goal.

Expected outcome: Ecological constructions are increasingly carried out within the protected area

Indicator (definition)	Evolution in percentage of this type of construction
Unit	Percentage
Elaboration method (proposal)	<p>It is the trend of the realisation of ecological constructions, calculated as follows:</p> $\frac{(Nc_x - Nc_0)}{Nc_0} \cdot 100$ <p>Where Nc_x is the number of ecological constructions at the year x, and Nc_0 is the number of ecological constructions at the year 0. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.</p>

Overall assessment of accuracy and comparability

A B C To be developed

Objective and relevance of the indicator

The aim is to verify if ecological constructions are incentivized or not.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High Restricted

The comparability across countries is high.

Comparability over time

High Restricted

The comparability over time is high.

Development process and research dedicated to indicator

Evaluation

Indicator's origin

Data sources

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Fanes - Senes - Braies Nature Park (I); Kilma:Aktiv Initiative (A); Konstruktiv Prize (FL); Nagelfluhkette Nature Park (D); Verdon Regional Nature Park (F).

12

Objective: 2.7.1

Sustainable mobility

Sustainable transport provides for the basic mobility needs of individuals and societies safely and in a way that promotes human wellbeing and healthy ecosystems. It should be inter-generational, affordable, efficient, offers a range of transport options and promote a flourishing economy. Moreover the transport should only produce manageable levels of emissions and waste, minimise use of non-renewable resources, require sustainable quantities of renewable resources, reuse and recycle components, minimise land use of land and keep noise to a minimum.

The purpose of sustainable transport is to reduce pollution, whilst promoting efficient and environmentally-friendly public transport.

Expected outcome: In the protected area there is a good quality of means of transport

Indicator (definition)	Quality of means of transport (e.g.: availability of public transportation, number of rides per day, possibility of package offers, etc.)
Unit	Grades (poor, fair, very good)
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

The aim is to give an assessment of the quality of the services of public transport and soft mobility.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is restricted due to subjectivity.

Comparability over time

High

Restricted

Comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*

Evaluation

Indicator's origin

Data sources

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Binntal Landscape Park (CH); Hohe Tauern National Park (A); Paneveggio - Pale di San Martino Nature Park (I); Queyras Nature Regional Park (F); Soft Mobility and Alpine Protected Areas - Projects and experiences (www.alparc.org).

Information for the local population

The local population is a key target audience in terms of information and awareness. We advise developing specific measures.

Expected outcome: Local people participate increasingly and actively at the events organized by the protected area

Indicator (definition)	Number of local people participating in protected area events organized within 3 years
Unit	Percentage
Elaboration method (proposal)	<p>It is the trend of the number of local participants at the protected area's events, calculated as follows:</p> $\frac{(Np_3 - Np_0)}{Np_0} \cdot 100$ <p>Where Np_3 is the number of people at the year 3, and Np_0 is the number of people at the year 0. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.</p>

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin

Data sources

Registration forms.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

14

Objective: 3.1.2

Visitor information

Visitor information strategies include traditional visitor centres, excursions, leaflets, films, slide shows, etc. These tools need to be combined with a strong message within a clear communications strategy.

Expected outcome: Visitors participate increasingly and actively at the events organized by the protected area

Indicator (definition)	Number of visitors participating in protected area events organized within 3 years
Unit	Percentage
Elaboration (proposal) method	<p>It is the trend of the number of visitors participating at the protected area's events, calculated as follows:</p> $\frac{(Nv_3 - Nv_0)}{Nv_0} \cdot 100$ <p>Where Nv_3 is the number of visitors at the year 3, and Nv_0 is the number of visitors at the year 0. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.</p>

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin**Data sources**

Registration forms.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Raising awareness of sustainability among people by developing special offers

15

Different audiences require different communication methods. Protected areas should establish targeted communication models for each target group. Educational programmes should be provided by professional staff. Protected areas should develop programmes and offers for people in order to: raise the sensibility and comprehension for environment, biodiversity, cultural heritage and sustainable development and enable future decision makers to act in a responsible and sustainable way.

Expected outcome: People participate increasingly and actively in projects of raising awareness to sustainability

Indicator (definition)	Number of people who participated in projects of raising awareness to sustainability within 3 years
Unit	Percentage
Elaboration method (proposal)	<p>It is the trend of the number of people participating at the protected area's educational projects, calculated as follows:</p> $\frac{(Np_{e_3} - Np_{e_0})}{Np_{e_0}} \cdot 100$ <p>Where Np_{e_3} is the number of people at the year 3, and Np_{e_0} is the number of people at the year 0. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.</p>

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin

Data sources

Registration forms.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Dolomiti Bellunesi National Park (I), Ecrins National Park (F).

Objective: 3 Communication, Participation & Education
3.2 Education for sustainable development

16

Objective: 4.1.1

The protected area has a management plan

Implementation of the management plan.

Expected outcome: The management plan is implemented at 80-100%

Indicator (definition)	Degree of implementation of the management plan
Unit	Percentage
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Existence of a management plan.

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*

Evaluation

Indicator's origin

Data sources

Management plan.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Objective: 4 Management of protected areas (strategic, functioning)
4.1 Strategic level

Objective: 4.1.2

Key planning and visions (building a common understanding)

17

Establishing a creative process, involving staff members and stakeholders, to develop a long-term vision of the nature conservation and regional development goals.

Expected outcome: An increasing number of projects are developed in cooperation with stakeholders

Indicator (definition)	Number of projects for the protected area developed per year in cooperation with stakeholders
Unit	Number per year
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*

Evaluation

Indicator's origin

Data sources

Collaboration contracts, activity reports.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Objective: 4 Management of protected areas (strategic, functioning)
4.1 Strategic level

18

Objective: 4.1.5

Ensure long term finances and fundraising

Developing a long-term financing structure including a diversification model to ensure funding comes from a range of sources.

Expected outcome: The budget is stable or increased

Indicator (definition)	Budget volume and evolution over time distinguishing public and private partner sources
Unit	Total amount of budget money (local currency) and its trend over the years (percentage)
Elaboration (proposal) method	<p>The total amount of finances and fundraising. The evolution of the budget is calculated as follows:</p> $\frac{(B_x - B_0)}{B_0} \cdot 100$ <p>Where B_x is the budget amount at the year x, and B_0 is the budget amount at the year 0. The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.</p>

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is restricted because the budgets of the protected areas are influenced by the economic situation of their country.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin

Data sources

Annual financial report.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Objective: 4 Management of protected areas (strategic, functioning)
4.1 Strategic level

Cooperation with other protected areas

Protected areas in the Alps should not work in isolation. Cooperation with other national protected areas is crucial. Some countries have developed national cooperation networks (Switzerland, France) and need to develop a clear model for input and participation. International cooperation is equally important. Alpine and European networks are vital for sharing information and organising cross-border projects. Protected areas should define the objectives associated with participation in international activities and projects.

Expected outcome: The protected area has a wide collaboration with other protected areas

Indicator (definition)	Number of common action with other protected areas at national or international level
Unit	Number
Elaboration method (proposal)	The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation.

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin

Data sources

Annual activities report.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

20

Objective: 4.2.2

Sufficient and qualified staff to fulfil the tasks

Establishing long-term staff to perform essential functions within the protected area. Developing a pool of skilled workers for special projects within the protected area.

Expected outcome: There is sufficient staff to fulfil all the tasks

Indicator (definition)	Percentage equivalent full-time jobs and external mandates according to the tasks
Unit	Percentage
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*

Evaluation

Indicator's origin

Data sources

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Objective: 4 Management of protected areas (strategic, functioning)
4.2 Operational level

Fulfilment of national and international engagements or obligations

21

Protected areas should produce a catalogue of national and international commitments and requirements which contains a description of how to achieve them (EU programmes, etc.).

Expected outcome: The protected area is not only active at the local level, but also at the national/international level

Indicator (definition)	Number of participation in national and/or international projects to fulfil national or international engagements
Unit	Number
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*

Evaluation

Indicator's origin

Data sources

Annual activity report.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Objective: 4 Management of protected areas (strategic, functioning)
4.3 Mission and project implementation

22

Objective: 4.3.4

Assessment of project implementation

Developing a process with fixed methods and indicators in order to be able to produce a real-time assessment of the project results and objectives.

Expected outcome: 80-100 % of projects are completed/succeeded

Indicator (definition)	Percentage of succeeded/completed projects
Unit	Percentage
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

The comparability across countries is high.

Restricted

Comparability over time

High

The comparability over time is high.

Restricted

Development process and research dedicated to indicator *No available data at this moment*

Evaluation

Indicator's origin

Data sources

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Research responding to the needs of the protected area

Protected areas should draw up and regularly update a list of research activities in the fields of natural, economic and social sciences in accordance with the management plan and the long-term objectives.

Expected outcome: The protected area is not only active at the local level, but also at the national/international level

Indicator (definition)	Number of research fields that are covered by documented activities
Unit	Number
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A B C To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High Restricted

The comparability across countries is high.

Comparability over time

High Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin

Data sources

Annual activities report.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

24

Objective: 5.2.1

Monitoring responding to the needs of the protected area

Protected areas should draw up and regularly update a list of monitoring activities related to natural, economic and social sciences in accordance with the management plan and the long-term objectives.

Expected outcome: Monitoring is done at least 10 times per year

Indicator (definition)	Frequencies of monitoring
Unit	Number per year
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin

Data sources

Protected areas scientific factsheets.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Objective: 5.3.1

25

Development of a monitoring and scientific concept

Establishing a scientific and monitoring strategy. Defining the how the two fit together, where appropriate with the help of a scientific council or consultancy.

Expected outcome: Monitoring and research are implemented at 90-100%

Indicator (definition)	Degree of implementation of monitoring and research according to the concepts, within 2 years
Unit	Percentage
Elaboration method (proposal)	

Overall assessment of accuracy and comparability

A

B

C

To be developed

Objective and relevance of the indicator

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

Comparability across countries

High

Restricted

The comparability across countries is high.

Comparability over time

High

Restricted

The comparability over time is high.

Development process and research dedicated to indicator *No available data at this moment*
Evaluation

Indicator's origin

Data sources

Protected areas' scientific factsheets.

Advantages and disadvantages

Advantages:

Disadvantages:

Examples

Objective: 5 Research and monitoring activities
5.3 Management of research and monitoring activities

CONCLUSIONS

This document has been developed for use across the Alps and therefore provides an open-ended catalogue of indicators whereby protected areas can choose the indicators the most relevant to their own specificities. However, we recommend adopting a minimum set of indicators ([25 recommended indicators](#)) to be used by all protected area managers in the Alps to facilitate having a global view of the Alps. Individual indicators can be used for internal evaluations of management effectiveness within a given protected area (e.g. as part of a FOEN project).

This list should be considered as a starting point and will need to be tested, developed and expanded. The procedure described here provides a structure and an approach to developing indicators for helping managers of protected areas to evaluate the effectiveness of their management measures. In fact, this practical tool allows managers of protected areas to plan their management measures in order to answer to European and national quality criteria. It also allows managers to monitor the contribution of each measure over time.

Additional information will be identified during the process of defining outcome indicators for the objectives listed in [Annex 1](#). Several objectives are closely related or appear to be duplicated. This permits a degree of flexibility which is needed in order to allow each protected area to adapt the objectives to reflect its specific mission and means, so it is possible to cover the full range of protected areas in the Alps.

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ANNEX 1

List of Objectives

This document outlines the issues covered by the objectives. The comments are not exhaustive. Individual objectives may relate to more than one heading.

The objectives are intended to effectively improve management, development and activities in protected areas.

The titles in green represent the **25 recommended indicators**; the light blue ones represent the **selection of 60 indicators** made by the participants of the Workshop in Marbach.

1. Nature conservation and landscape protection

1.1. Biodiversity conservation

1.1.1. General conservation and biodiversity

This refers to biodiversity as a whole within the protected area and the conservation measures required. Rather than specific measures for indigenous or endangered species, this section looks at overall biodiversity as an essential element of the protected area.

1.1.2. Management of endangered and/or endemic species

The objective relates to fauna and flora specific to a protected area and for which it is known among the general public, experts and other regions beyond the protected area. In some cases, these species may even have been the reason to accord a protected status to the area.

1.1.3. Habitat conservation

The most traditional element of protected area management: habitat is seen as the foundation for all biodiversity and conservation measures (choosing not to act also constitutes a management strategy).

1.1.4. Water and wetlands protection

A very specific field of nature conservation, this refers to rivers, lakes, underground water (notably in protected areas in karst regions), glaciers, wetlands and marshes.

1.1.5. Forest protection

Many protected areas are forested or contain large tracts of this valuable natural resource. Protected area management and activities may include conservation measures, conversion measures, the reintroduction of indigenous species and measures to prevent erosion, landslides and avalanches in forest areas.

1.1.6. Dry grassland protection

Dry grasslands are valuable areas for many species and are often classified as priority habitats (see Directive 43/92/EEC - Annex I). They contain the greatest density of small species and are home to rare and threatened species (such as orchids and butterflies). The objective encompasses all conservation and preservation measures.

1.1.7. Enable natural processes

Conserving natural processes is a major task for many nature parks. This may include a policy of permitting processes such as fire, avalanches and rock falls, as opposed to preventing such occurrences, which is often the policy adopted in non-protected areas.

1.2. Establishment and conservation of ecological networks

1.2.1 Creating or preserving connectivity within the protected area

Large protected areas often require or offer potential for connectivity.

1.2.2 Creating or preserving connectivity outside the protected area

This entails establishing links with neighbouring protected areas or other areas of special interest in terms of migration or biodiversity.

1.3. Landscape conservation

1.3.1. Local identification with the landscape

It is important to be aware of how local residents perceive their surroundings. Protected areas can then adapt measures and activities accordingly.

1.3.2. Conservation of cultural landscapes and landmarks

This objective covers all existing features of traditional landscapes such as stone walls and old agricultural buildings.

Ideally, an evaluation should establish the potential of each cultural landscape in order to establish and optimise conservation measures.

2. Sustainable regional development

2.1. Regional cycles

2.2.1. Maintaining and enhancing regional cycles

This objective is intended to maintain and develop regional cycles especially in order to enhance value chain, cooperation and service chain.

2.2. Regional industry and services

2.2.2. Enhancing sustainable production and use of regional products and services

The objective is intended to raise awareness among the local population of local regional products and to encourage them to favour local products and services. In addition, the

objective is designed to develop economic cooperation between the protected areas and local producers.

2.2.3. Devising new sustainable services and products for the region

This objective seeks to encourage the emergence of new local sustainable products and services, which could generate new growth and opportunities within the local economy. Protected areas should identify key agriculture outputs and the potential for promoting a sustainable agriculture building on high-quality products and organic farming.

2.3. Agriculture

2.3.2 Extensive farming

Evaluating the importance of extensive farming and promoting this model.

2.3.3 Conserving the diversity of local crop varieties

The objective seeks to determine how diverse agricultural production is in the area and to identify measures to promote the greatest possible diversity. In addition, traditional local crops should be rediscovered and reintroduced.

2.3.4 Conserving the diversity of local animal breeds

Identifying the range of different regional farm animals together with measures to promote the greatest possible diversity.

2.4. Forestry

2.4.1 Sustainable use of forest resources

Sustainable forest use means that forests and woodland are managed in such a way as to maintain biodiversity, productivity, regeneration capacity, vitality and the potential for fulfilling existing and future ecological, economic and social functions, whether local, national or international, without damaging other ecosystems.

Put simply, this entails achieving a balance: a balance between society's growing demand for forestry products and benefits and maintaining healthy forests and diversity. This balance is critical to the survival of forests.

Sustainable use of forestry resources gives an economic value to forestry products which also takes into account environmental issues such as conservation of species and resources. It is intended to improve the quality of life for local residents.

2.4.2 Maintaining of ecosystem services

Keep the protection-function of a forest like cleaning the water or protection against floods and avalanches; depending on the regional situation.

2.5. Tourism

2.5.1. Promoting sustainable tourism

Low impact tourism is based on the USPs (Unique Selling Point) of the park. The protected area should identify the range of products and services on offer and develop measures to promote this type of tourism (Health, Agro tourism, Culture).

2.5.2. Working with networks of tourist facilities and partners

Identifying where cooperation would be beneficial and establishing cooperation strategies.

2.5.3. Making local infrastructures an integral part of protected area policies

This refers to a plan for how to make use of the existing infrastructure and how that infrastructure can be incorporated into the protected area's development strategy. Thought should also be given to how to improve the infrastructure.

2.6. Construction and renewable energies

2.6.1. Key ecological constructions

This is a major issue for all inhabited protected areas. Supporting and promoting ecological construction should be a core element in all protected area work programmes. Targeted measures should be developed in order to achieve this goal.

2.6.2. Preserving traditional skills, knowledge and architecture

Skills are needed in order to feed into sustainable development. This objective is designed to identify traditional skills and knowledge and to define how to integrate them into a holistic strategy.

2.6.3. Energy savings and energy efficiency

The PA enhances, with adequate strategies, the efficient use of energy in its territory.

2.6.4. Providing local sustainable energy

A strategic objective: targeted measures such as promoting alternative and local energy resources should be included in a broader policy base.

2.6.5. Integrating public buildings and infrastructure

Public buildings should be used to achieve other objectives (ex: keep traditional know how, favourite ecological constructions, make local energy available) Under this objective, protected areas should define how public buildings will fit into its policy on ecological construction and local energy use.

2.7. Mobility and flux of visitors

2.7.1 Sustainable mobility

Sustainable transport provides for the basic mobility needs of individuals and societies safely and in a way that promotes human wellbeing and healthy ecosystems. It should be inter-generational, affordable, efficient, offers a range of transport options and promote a

flourishing economy. Moreover the transport should only produce manageable levels of emissions and waste, minimise use of non-renewable resources, require sustainable quantities of renewable resources, reuse and recycle components, minimise land use of land and keep noise to a minimum.

The purpose of sustainable transport is to reduce pollution, whilst promoting efficient and environmentally-friendly public transport.

2.7.2 Flux of visitors

It is a question of watching that the flow of the visitors in the protected area is the most sustainable possible by favouring for example the mobility of the visitors by the means of public transportation or by creating paths to improve the flow and circulation of people within the protected areas.

2.8. Social Aspects

2.8.1. Social wellbeing

Protected area must become a territory where the basic needs of the populace are met. This is a society where income levels are high enough to cover basic wants, where there is no poverty, where unemployment is insignificant, where there is easy access to social, medical, and educational services, where people feel a regional identity and a secure community, and where everyone is treated with dignity and consideration.

3. Information, Participation & Education

3.1. Protected area information policy

3.1.1. Information for the local population

The local population is a key target audience in terms of information and awareness. We advise developing specific measures.

3.1.2. Visitor information

Visitor information strategies include traditional visitor centres, excursions, leaflets, films, slide shows, etc. These tools need to be combined with a strong message within a clear communication strategy.

3.1.3. Stakeholder information

As the success of a protected area depends to a large extent on input from stakeholders (political, economic, NGOs, etc.), a good information policy is essential. Targeted measures and tools are strongly recommended.

3.1.4. Participation

The protected area permits and enhances the participation of the local population and actors.

3.1.5. Media involvement

Customised documentation (press folder, etc.) should be provided for the media and protected areas should develop a structured network of contacts.

3.2. Education for sustainable development

Different audiences require different communication methods. Protected areas should establish targeted communication models for each target group. Educational programmes should be provided by professional staff.

3.2.1 Raising awareness of sustainability among people by developing special offers

Protected areas should develop programmes and offers for people in order to:

- raise the sensibility and comprehension for environment, biodiversity, cultural heritage and sustainable development;
- enable the future decision makers to act in a responsible and sustainable way.

3.2.2. Raising awareness of sustainability among children by developing special offers for schools

Protected areas should develop programmes and offers for schools (children and teachers) in order to:

- raise the sensibility and comprehension for environment, biodiversity, cultural heritage and sustainable development;
- enable the future decision makers to act in a responsible and sustainable way.

3.2.3. Raising awareness of sustainability among residents

A wide range of communication activities with a common goal are needed, in order to build acceptance of the protected area and to get the local population engaged.

Further it is important to raise the sensibility and comprehension for environment, biodiversity, cultural heritage and sustainable development and to enable the population to act in a responsible and sustainable way.

3.2.4. Raising awareness of sustainability among visitors

Visitors tend to already value the protected area and are interested in different issues. We recommend developing a specific visitor education programme.

3.2.5. Raising awareness of sustainability among stakeholders

It is important to raise the sensibility and comprehension for the protected area, environment, biodiversity, cultural heritage and sustainable development and to engage the stakeholders.

4. Management of protected areas (strategic, functioning)

4.1. Strategic level

4.1.1. The protected area has a management plan

Implementation of the management plan.

4.1.1.1. Acceptance of the measures defined in the management plan among the different target group

The management plan and its measures are understood by local people and different target groups.

4.1.2. Key planning and visions (building a common understanding)

Establishing a creative process, involving staff members and stakeholders to develop a long-term vision of the nature conservation and regional development goals.

4.1.3. Developing internal procedures

Establishing a set of procedures to create an efficient and effective internal workflow.

4.1.4. There is a plan of action for engaging external stakeholders

Establishing a set of procedures for efficient and effective workflows and processes involving the protected area and external players.

4.1.5. Insure long term finances and fundraising

Developing a long-term financing structure including a diversification model to ensure funding comes from a range of sources.

4.1.6. Involving an advisory board

Protected area acceptance will be dependent on genuinely involving stakeholders: specific committees are just one way of achieving this goal but need a clear mandate.

4.1.7. Strengthen participatory process of the population

Strategy and measures for organising events that will involve the general public in the decision-making process.

4.1.8. Cooperation with other protected areas on national level

Protected areas in the Alps should not stand alone. Cooperation with other national protected areas is crucial. Some countries have developed national cooperation networks (Switzerland, France) and need to develop a clear model for input and participation.

4.1.9. Cooperation with other protected areas on international level

International cooperation is equally important. Alpine and European networks are vital for sharing information and organising cross-border projects. Protected areas should define the objectives associated with participation in international activities and projects.

4.1.10. Establishing procedures, formalities, official appointments

Establishing an official schedule for Memoranda of Understanding, cooperation agreements, official work programmes, national and international appointments and mandates.

4.2. Operational level

4.2.1. Internal organisational structure (staff and responsibilities)

Establishing an organisation structure which defines responsibilities and work distribution.

4.2.2. Sufficient and qualified staff to fulfil the tasks

Establishing a long-term staff to perform essential functions within the protected area.

Developing a pool of skilled workers for special projects within the protected area.

4.2.3. Staff motivation with the work

Defining a suitable incentive process and programme to increase staff effectiveness.

4.2.4. Improvement of effectiveness due to staff training and evaluation

Integrating an internal and external evaluation process for all work processes, workflows and outputs.

4.3. Mission and project implementation

4.3.1. Effective conflict management

It is impossible to avoid conflicts of interest when creating and managing a protected area so it can be useful to have a process for responding to and resolving difficulties. This also includes appointing skilled staff.

4.3.2. Fulfilment of national and international engagements or obligations

Protected areas should produce a catalogue of national and international commitments and requirements which contains a description how to achieve them (EU programmes, etc.).

4.3.3. Assessment of project implementation

Developing a process with fixed methods and indicators in order to be able to produce a real-time assessment of the project results and objectives.

5. Research and monitoring activities

5.1. Definition of need for research

5.2.1. Research responding to the needs of the protected area

Protected areas should draw up and regularly update a list of research activities in the fields of natural, economic and social sciences in accordance with the management plan and the long-term objectives (mainly fundamental research).

5.1.1. Overview about on-going and planned monitoring activities in the protected areas

Protected areas should draw up and regularly update a list of research activities containing information about the field of study, duration, objectives and the person responsible (contact).

5.2. Need for monitoring activities

5.2.2. Monitoring responding to the needs of the protected area

Protected areas should draw up and regularly update a list of monitoring activities related to natural, economic and social sciences in accordance with the management plan and the long-term objectives (mainly fundamental research).

5.2.3. Overview about on-going and planned monitoring activities in the protected areas

Protected areas should draw up and regularly update a list of current and planned monitoring activities, giving information about the field of study, duration, objectives and the person responsible (contact).

5.3. Management of research and monitoring activities

5.3.1. Developing of a monitoring and scientific concept

The aim is to establishing a scientific and monitoring strategy. Defining the how the two fit together, where appropriate with the help of a scientific council or consultancy.

5.3.2. Establishment of a scientific council

Defining the remit, composition, recruitment process and input to be provided by a scientific council and where it fits into the internal and external processes.

5.3.3. Cooperation with universities and scientific networks

Developing a plan for cooperation with external stakeholders such as universities and for participation in national or international scientific networks.

5.3.4. Internal organisation of monitoring

Each protected area should draw up a schedule and methodology for monitoring activities. Monitoring procedures, if possible, in line with international standards to facilitate comparisons between protected areas and regions.

5.3.5. Valorisation of documentation, databases, GIS

Each protected area should define the tools it requires, such as databases, geographic information systems (GIS), etc. Technical specifications should be based on international standards. Each protected area should carry out a technical and financial feasibility study and ensure that it has access to these tools. Experts and scientists must be consulted.

ANNEX 2

List of indicators

In this section is reported the complete list of 203 indicators.

The cells highlighted in green represent the 25 recommended indicators; the light blue ones represent the selection of 60 indicators made by the participants of the Workshop in Marbach.

Notes:

The definition of the expected outcome depends on the site and should be fixed by experts knowing the local situation and its evolution in at least the last 50 years.

Some indicators reported in the tables are a citation, other ones a revision of already existing indicators. These indicators will be marked with a specific apex. Each apex corresponds to the following quoting:

- 1 - Alpine Convention (Schönthaler *et al.*, 2004);
- 2 - EUROSTAT (EUROSTAT, 2011);
- 3 - OECD (OECD, 2003);
- 4 - FRAGSTATS (McGarigal, 2000);
- 5 - MCPFE (MCPFE, 2003);
- 6 - FSC (FSC, 2009);
- 7 - UN CSD (UN CSD, 2001).

1. Nature conservation and landscape protection

1.1. Biodiversity conservation

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.1.1 General conservation of biodiversity	1-2. Protection of 99% of the biodiversity within 10 years	1. Pool of representative habitats and species which can be measured (number of species and surface of habitats) ¹			Viable and stable populations	Regulatory disposals in an officially approved document according to regional or national law	Investment/regular yearly costs
		2. Loss of species/populations					
	3. Improvement of the biodiversity	3. Successful conservation and restoration of habitats					
	4. Excluding invasive species	4. Absence of invasive species in selected habitats					
	5. Response to climate change	5. Altitudinal migration of species					
Methodology protocol / Data source & availability	Definition of species pool according to local circumstances and biological situation; umbrella species.						
Experiences and applications	See programmes of nature protection administrations of the NUTS 2 and 3 or equivalent territorial units. Swiss National Park, Gran Paradiso National Park.						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.1.2 Management of endangered and/or endemic species	1. Endangered species are less threatened	1-2. Number of observed species or populations and sites of endangered or endemic species ¹			Viable and stable populations of those species	Concept for the long term protection of these species including integral reserves (biotope regulation), seed bank, etc.	
	2. Conservation of endemic species						
	3. Preservation of genetic variability <i>ex situ</i>	3. Number and genetic variability of species in the seed bank/zoological gardens					
	4. Favourable conditions for natural return of autochthonous species	4. Number of species that returned and reproduced					
Methodology protocol / Data source & availability	The selection of the species should be fixed as soon as possible with the help of experts (universities). The local stations should be mapped at least during the first five years since the creation of the protected area.						
Experiences and applications	Protected areas with management plans since more than 10 years.						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.1.3 Habitat conservation	1. Conservation of all habitats listed in official programmes	1. Number and surface of different habitats presenting a favourable conservation status ¹					
	2. Conservation of all habitats listed in the 92/43/EC directive	2. Number and surface of different habitats, listed in the 92/43/EC directive presenting a favourable conservation status ¹					
	3. Conservation of all habitats listed in the European Council of the EMERALD programme	3. Number and surface of different habitats, listed in the European Council of the EMERALD programme, presenting a favourable conservation status ¹					
	4. Reduction of threats on habitats	4. Type, number, etc. of reduced threats and the amount of reductions of negative impacts					
Methodology protocol/Data source & availability	The data should be based on EU criteria and correspond to the official definition of the Habitat directive and the NATURA 2000 network.						
Experiences and applications	Experiences could be taken especially from NATURA 2000 and EMERALD sites.						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.1.4 Water and wetlands protection	1. Favour natural processes in rivers	1. Evolution of length of non-modified rivers or other streams within 10 years					
	2-3. Increase the number of oligotrophic stretches of water	2. Number of lakes or other water spots with oligotrophic water quality ¹					
		3. Number of springs with oligotrophic water quality ¹					
	4. The surface of wetlands is preserved	4. Evolution of the surface of wetlands within 10 years					
Methodology protocol/Data source & availability	<p>The number of indicators for water protection can be increased and adapted to the local situation (presence of lakes, rivers, geological situation like karst regions or marshes etc.).</p> <p>The water quality issue should be based on an internationally recognised system like the "Sarprobic" system or another system of scientific standard.</p> <p>The topic could be linked to climate related questions, especially if there are glaciers.</p>						
Experiences and applications	Berchtesgaden National Park, Vercors Nature Park, Gesäuse and Kalkalpen National Park, ...						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.1.5 Forest protection	1. Preservation of natural processes in forests	1. Surface of mixed forests exposed to natural evolution ¹					
	2. Conservation of forests	2. Surface of protected forest ⁵					
	3. Pastures under forest are reduced	3-4. Evolution of under forest pastures in the next 10 years					
	4. Pastures under forest are increased						
	5. A small surface of forest is under parasite attack	5. Evolution of surface of forest under parasite attack ⁵					
Methodology protocol/Data source & availability	Official data from forest administration.						
Experiences and applications	Berchtesgaden National Park, Kalkalpen National Park.						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.1.6 Dry grasslands protection	1. Conservation of dry grasslands	1. Surface of protected dry grasslands (in % and m ²)					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.1.7 Enable Natural Processes	1. Maintaining and restoring natural processes in significant portions of the territory	1. Surface (ha) without human intervention where natural processes can occur ¹					
		2. Rate of surface cover changes due to natural processes					
Methodology protocol/Data source & availability							
Experiences and applications							

1.2. Establishment and conservation of ecological networks

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.2 Establishment and conservation of ecological networks	1.Habitat fragmentation reduction in order to guarantee continuity	1. Degree of habitats fragmentation ⁴					
	2. Large understanding of the need of connectivity within the local population and decision makers	2. Number of legal decisions and other actions in favour of connectivity					
Methodology protocol/Data source & availability	The indicators should be expressed in surface (ha) or length (km) according the species' requirements.						
Experiences and applications	Partners of ECONNECT and the Continuum Initiative; large protected areas of the Alps and especially the inhabited ones.						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.2.1 Creating or preserving connectivity within the protected area	1-2. Habitat fragmentation reduction in order to guarantee continuity	1. Degree of habitats fragmentation ⁴					
		2. Surface of habitats for selected species of the protected areas					
	3-4. Increase of the connectivity among habitats	3. Length of eliminated obstacles such as fences, roads, high tension lines, canals, etc.					
		4. Creations of connections					
	5-6. Large understanding of the need of connectivity within the local population and decision makers	5. Number of involved stakeholder groups					
		6. Number of legal decisions and other actions in favour of connectivity					
Methodology protocol/Data source & availability	The indicators should be expressed in surface or length according the species' requirements.						
Experiences and applications	Partners of ECONNECT and the Continuum Initiative; large protected areas of the Alps and especially the inhabited ones.						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.2.2 Creating or preserving connectivity outside the protected area	1-2. Habitat fragmentation reduction in order to guarantee continuity	1. Degree of habitats fragmentation ⁴					
		2. Surface of habitats for selected species of the protected area					
	3-4. Increase of the connectivity among habitats	3. Length of eliminated obstacles such as fences, roads, high tension lines, canals, etc.					
		4. Creations of connections					
	5-6. Large understanding of the need of connectivity within the local population and decision makers	5. Number of involved stakeholder groups					
		6. Number of legal decisions and other actions in favour of connectivity (especially for selected pilot regions)					
Methodology protocol/Data source & availability	The indicators should be expressed in hectares and kilometres.						
Experiences and applications	Partners of ECONNECT and the Continuum Initiative; large protected areas of the Alps and especially the inhabited ones.						

1.3. Landscape conservation

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.3.1 Local Identification with the landscape	1. The landscape is appreciated and attracts people	1. Number of people living in the region because of the landscape or its special elements (as lakes, forests, mountains, ...)					
	2. Local denominations are commonly used	2. Use of toponyms of local landscape elements in the written and spoken language					
	3. The protection of landscape is important also for people not working in the protected area	3. Number of associations and people involved in the protection of the local landscape					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
1.3.2 Conservation of cultural landscapes and landmarks	1-3. Authentic cultural landscapes are conserved and maintained	1. Surface (ha) of authentic cultural landscapes					
		2. Percentage of authentic cultural landscapes					
		3. Number of actions, and work time of the protected area spent for the conservation of authentic cultural landscapes					
	4-6. Authentic cultural landscapes are improved in a sustainable way	4. Professionals land users conserving the cultural landscapes in the region					
		5. Specialists conserving the cultural landscapes					
		6. The size of the landscape that is part of a contract					
	7. New components are integrated in an sustainable and respectful way	7. Number of associations dealing with the conservation of authentic cultural landscapes					
Methodology protocol/Data source & availability							
Experiences and applications	Hohe Tauern National Park (A); Paneveggio - Pale di San Martino Nature Park (I); Southern Tyrol Nature Parks (I).						

2. Sustainable regional development

2.1. Regional cycles

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.1.1 To maintain and enhance regional cycles	1. Regional cycles are improved	1. Number of value chains within the protected area					
	2. In the protected area there are numerous value chains	2. Number of supported/enhanced/maintained/created value chains					
Methodology protocol/Data source & availability							
Experiences and applications							

2.2. Regional industry and services

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.2.1 Enhancing sustainable production and use of regional products and services	1. Local products and services are increasingly sold and requested	1. Added value of selected local products and services ¹					
	2. The protected area enhances sustainable local production	2. Number of programmes to support local production					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.2.2 Devising new sustainable services and products for the region	1-2. The protected area promotes the creation of services and products	1. Number of new regional and sustainable services and products					
		2. Number of labelled products and services brought by protected area					
Methodology protocol/Data source & availability							
Experiences and applications							

2.3. Agriculture

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.3.1 Extensive farming	1-3. Farms within the protected area practice extensive farming	1. Surface of extensive agriculture (LLU/ha) ²					
		2. Distribution between SLU (small livestock unit) and LLU					
		3. distribution in % between SLU and LLU per hectare					
	4. An adequate proportion of agriculture land is dedicated to pastures	4. Percentage of the agriculture land dedicated to pastures ¹					
Methodology protocol/Data source & availability	<p>The distribution of all indicators according to altitude levels could be very interesting.</p> <p>→ 1. The definition of average number refers to delimited territories of the protected area presenting a special interest for the PA management. A definition of over- and under grassing has to be established by the protected area according to local characteristics.</p>						
Experiences and applications	States members of the European Community.						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.3.2 Conserving local crop varieties diversity	1. In the protected area all the local crop varieties are currently used in farming	1. Number of local crop varieties on the whole agricultural production					
	2. A large number of people participates to programmes/measures to maintain local varieties	2. Number of participants of programmes or measures to maintain local varieties					
Methodology protocol/Data source & availability	→ 2. This indicator could be more based on a motivation process linked to local identity.						
Experiences and applications	Association Pro Specie Rara (CH); Dolomiti Bellunesi National Park (I); Luberon Regional Nature Park (F); Prealpi Giulie Nature Park (I); Society Arche Noah (A); Verdon Regional Nature Park (F).						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.3.3 Conserving the diversity of animal breeds	1-2. In the protected area all the local breeds have been recovered	1. Evolution of number of local or regional domestic animals ¹					
		2. Reintroduction of farm animals disappeared in the past					
	3. In the protected area all the local breed are currently used in farming	3. Number of local farm animal breeds on the whole agricultural production					
Methodology protocol/Data source & availability							
Experiences and applications	Association Pro Specie Rara (CH); Society Arche Noah (A); UNESCO Biosphere Reserve Entlebuch; Val d'Hérens Nature Park (CH).						

2.4. Forestry

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.4.1. Sustainable use of forest resources	1. 80 - 90% of forests/wooded lands are under a management plan	1. Proportion of forests and other wooded land under a management plan or equivalent ⁵					
	2. Forest dependent species have been augmented	2. Number of forest dependent species at risk ⁵					
	3. 90% of total annual wood consumption in the protected area is local wood	3. Percentage of local wood on the annual consumption in the protected area ⁵					
	4. The wood-economy offers a wide employment availability	4. Number of persons employed and labour input in the forest sector, classified by gender and age group, education and job characteristics ⁶					
	5. The most part of forests are certified	5. % of forest area certified (FSC or PEFC)					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.4.2 Maintaining of ecosystem- services		1. Area of forest and other wooded land, classified by forest type and by availability of wood supply, and share of forest and other wooded land in total land area ⁵					
	2. Half of the forest are designated to conservation of biodiversity, landscape and specific natural elements	2. Area of forest and other woodland designated to conserve biodiversity, landscape and specific natural elements ⁶					
Methodology protocol/Data source & availability							
Experiences and applications							

2.5. Tourism

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.5.1 Promoting sustainable tourism		1. Number of soft tourism programmes and/or offers					
	2. The number of visitors of the protected area is augmented, because of sustainable tourism offers	2. Acceptation (use) of soft tourism offers compared to the whole touristic offer					
	3. An increasing number of visitors attend a soft tourism programme	3. Number of visitors attending a soft tourism programme					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.5.2 Working with networks of tourist facilities and partners	1-2. The presence of the protected area enhances the local tourism	1. Percentage of overnights sold because of the presence of the protected area					
		2. Percentage of package offers from the protected area including overnights compared to the whole number of overnights					
	3. There is a cooperation between local tourist office and the PA	3. Part of common offers between the local tourist office and the protected area					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.5.3 Making local infrastructures an integral part of protected area policies	1. An increasing number of projects of the protected area includes existing infrastructures	1. Number of projects of the protected area including existing infrastructure					
	2. [amount and currency] are designated to renovate or extend existing infrastructures with green-buildings techniques	2. Financial volume used to renovate to "green" or to extend existing infrastructure					
Methodology protocol/Data source & availability							
Experiences and applications							

2.6. Construction and renewable energies

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.6.1 Key ecological constructions	1. In the protected the construction of ecologic/passive houses is increasing	1. Number of new energy efficient (and/or ecological) constructions per year					
	2. Ecological constructions are increasingly carried out within the protected area	2. Evolution in % of this type of constructions					
	3. There are some incentive to realize ecological constructions	3. Volume of financial support or special programmes for these constructions					
	4. The protected contributes to raise the awareness on ecological constructions	4. Number of trainings, excursions or programmes launched by the protected area to favourite ecological constructions					
		5. Development of the shares of used energy and energy sources in the protected area compared with population					
Methodology protocol/Data source & availability							
Experiences and applications	Fanes - Senes - Braies Nature Park (I); Kilma:Aktiv Initiative (A); Konstruktiv Prize (FL); Nagelfluhkette Nature Park (D); Verdon Regional Nature Park (F).						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.6.2 Preserving traditional skills, knowledge and architecture	1. The protected area promotes the traditional know-how	1. Number of initiatives promoting the traditional know how					
	2. In the protected area's territory there is a large part of constructions based on traditional know-how	2. Number of constructions and/or projects based on traditional know how					
	3. A large number of people/organisms deal with traditional know how	3. Number of people dealing with traditional know how in the protected area, evolution in 10 years					
Methodology protocol/Data source & availability	→ 2. Constructions don't mean necessarily houses. It could be as well dry stone walls, barns, other functional buildings or cultural landscape elements.						
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.6.4 Providing local sustainable energy	1. The major part of energy consumption in the protected area is locally produced	1. Percentage of locally produced energy on the whole consumption of energy on the protected area territory ¹					
	2. In the protected area there is a large number of local production of energy sites	2. Number of local production sites of energy (water power stations, sun power, central heating based on wood, ...)					
	3. Short distance from the production site to the consumer	3. Average length in km to bring the energy from the production site to the consumer					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.6.5 Integrating public buildings and infrastructure	1-2. The majority of public buildings are constructed/renovated with energy efficient/ecological concept	1. Percentage of public buildings constructed on energy efficient and/or ecological concept					
		2. Percentage of public passive houses and buildings, evolution in 10 years					
	3. The protected area promotes the integration of ecological construction in local politics choices	3. Number of public awareness raising activities or lobbying to political stakeholders to integrate ecological constructions in their policy					
Methodology protocol/Data source & availability							
Experiences and applications							

2.7. Mobility and flux of visitors

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.7.1 Sustainable mobility	1. The main part of tourist uses public transport	1. Rate of visitors arriving with public means of transportation ¹					
	2. There is a wide offer for alternative mobility within the protected area	2. Number of programmes and offers for alternative mobility within the protected area					
	3. In the protected area there is a good quality of means of transport	3. Quality of means of transport (ex: number of rides per day, possibility of package offers, etc.)					
	4. All the public transport use renewable fuels	4. Non-renewable resource consumption in the production and use of vehicles and transport facilities ²					
Methodology protocol/Data source & availability							
Experiences and applications	Binntal Landscape Park (CH); Hohe Tauern National Park (A); Paneveggio - Pale di San Martino Nature Park (I); Queyras Nature Regional Park (F); Soft Mobility and Alpine Protected Areas - Projects and experiences (www.alparc.org).						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.7.2 Flux of visitors	1. The protected area offers a large number of well-held pathways and bicycle paths	1. Quality of walking and cycling conditions					
Methodology protocol/Data source & availability							
Experiences and applications							

2.8. Social Aspects

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
2.8.1. Social well-being	1. More than 90% people are employed	1. Employment (%) ^{1,2}					
	2. More than 70% adults have at least a middle-school diploma	2. Adult literacy rate ⁷					
	3. more than 90% of children passes 1 year of age	3. Life expectancy at age 1 ⁷					
	4. There is a huge recreation offer	4. Recreation: offer					
	5. Less than 20% of resident people doesn't receive an income support	5. Residents not receiving income support ⁷					
Methodology protocol/Data source & availability							
Experiences and applications							

3. Information, Participation & Education

3.1. Protected area information policy

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.1.1 Information for the local population		1. Number of direct communications towards the local population					
		2. Number of events for the local population organised by the protected area					
	3. Local people participate increasingly and actively at the events organized by the protected area	3. Number of local people participating on protected area's events organized within 3 years					
		4. Number of articles in local or regional newspaper and magazines					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.1.2 Visitor information		1. Number of information offers for visitors/tourists					
		2. Number of leaflets or documents designated for visitors					
		3. Number of special events for visitors organised by the protected area					
		4. Number of articles in over regional newspapers and magazines					
	5. Visitors participate increasingly and actively at the events organized by the protected area	5. Number of visitors participating on protected area's events organized within 3 years					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.1.3 Stakeholder information	1-2. The protected area informs actively stakeholders	1. Number of communications designed to the political stakeholders					
		2. Number of special events for stakeholder target groups					
	3. A large number of stakeholders is involved	3. Number of stakeholders directly involved in such events					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.1.4 Participation	1. Most part of meetings are opened to local population	1. Number of project meeting where local people where invited					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.1.5 Media involvement	1. There is at least one article/year on over regional newspapers and magazines	1. Number of articles in regional and over regional newspapers and magazines					
Methodology protocol/Data source & availability							
Experiences and applications							

3.2. Education for sustainable development

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.2.1 Raising awareness of sustainability among people by developing special offers for schools	1. People participate increasingly and actively in projects of raising awareness to sustainability	1. Number of people who participated in projects of raising awareness to sustainability within 3 years			The inhabitants have more and more environmentally conscious behaviour and better social comporment		
Methodology protocol/Data source & availability							
Experiences and applications	Dolomiti Bellunesi National Park (I), Ecrins National Park (F).						

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.2.2 Raising awareness of sustainability among children by developing special offers for schools	1. The protected area enhances children's awareness	1. Number environmental awareness projects for children					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.2.3 Raising awareness of sustainability among residents	1-2. The protected area enhances local people's awareness	1. Number of actions, developed to raise public awareness					
		2. Number of events and meetings in the protected area opened to general public					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
3.2.4 Raising awareness of sustainability among stakeholders	1. The protected area enhances stakeholders' awareness	1. Number of actions, developed to raise stakeholders awareness					
Methodology protocol/Data source & availability							
Experiences and applications							

4. Management of protected areas (strategic, functioning)

4.1. Strategic level

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.1 The protected area has a management plan	1. The management plan is implemented at 80-100%	1. Degree of implementation of the management plan					
	2. Update every 10 years	2. Degree of management plan's updating					
	3. The management plan allows a participative process	3. Management plan is shared to the stakeholders					
	4. The management plan works in a long term perception	4. Own of a mid-term work plan					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.1.1 Acceptance of the measures defined in the management plan among the different target groups	1. The management measures involves local stakeholders	1. Number of local partners					
	2. The measures are accepted from stakeholders	2. Number of actions that cannot be implemented because of conflicts with the stakeholders					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.2 Key planning and visions (building a common understanding)	1. An increasing number of projects are developed in cooperation with stakeholders	1. Number of projects for the protected area developed in cooperation with stakeholders per year					
	2. [number] people participates into the development of projects	2. Number of staff participating in the development of projects					
	3. The management is dynamic and provides for new needs	3. Number of new supporting sectors/groups per year					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.3 Development of internal procedures	1. The procedures are organized following a precise workflow	1. Existence of an organisation scheme for internal workflows					
	2. All the activities are regularly reported	2. Frequency of reporting the protected area activities					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.4 There is a plan of action for engaging external stakeholders	1. Some procedures involve the collaboration with partners	1. Presence of procedures in place for working with existing partners					
		2. Presence of a plan for engaging new partners					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.5 Ensure long term finances and fundraising	1. The protected area has a sufficient number of partners to ensure a long term financing	1. Number of partners ensuring a long term financing					
	2. The protected area has a reserve capital	2. Amount of money to ensure a long term financing					
	3. The project-related financing amounts to [number and currency]	3. Amount of money for project related financing					
	4. The budget is stable or increased	4. Budget volume and evolution over time distinguishing public and private partners sources					
		5. Number of started, but unfinished projects because of financial problems					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.6 Involving an advisory board	1. There is an advisory board	1. Advisory board established					
		2. Board members are valued by staff					
	3. The advisory board participates actively in the decision-making process	3. Board members are active					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.7 Strengthen participatory process of the population	1-2. The protected area promotes activities to enhance participation	1. Number of public events					
		2. Number of working groups					
	3-4. People participates actively to public events	3. Number of participants at public events					
		4. Number of members in working groups					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.8 Cooperation with other protected areas	1. The protected area has a wide collaboration with other protected areas	1. Number of common actions with other PAs at national and/or international projects ¹					
	2-4. The protected area cooperates in a large number of projects with other protected areas	2. Number of topics filled by cooperation with other protected areas in national level					
		3. Number of common actions with the national/international level ¹					
		4. Number of common meetings and planning sessions					
	5. The protected area undertakes a large number of agreements	5. Number of official agreements of cooperation (e.g. MoU)					
		6. Participation in national and/or international networks ¹					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.1.10 Establishing procedures, formalities, official appointments	1. The protected area organizes at least 1 event/year including national official appointments	1. Number of events included in national official appointments					
Methodology protocol/Data source & availability							
Experiences and applications							

4.1. Operational level

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.2.1 Internal organisational structure (staff and responsibilities)	1. The actions are adequate to staff's competences	1. Work plan with individual competences, responsibilities and control mechanism					
	2. There are some guidelines for staff members	2. Number of terms of references (guidelines) for staff members					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.2.2 Sufficient and qualified staff to fulfil the tasks	1. There is sufficient staff to fulfil all the tasks	1. Percentage of equivalent full-time jobs - equivalent and external mandates according to the tasks					
	2. There is qualified staff to fulfil the tasks	2. Qualification of the staff					
		3. Distribution of the seniority of the staff					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.2.3 Staff motivation with the work	1. There is a system of incentives and rewards	1. Presence of a system of incentives and rewards					
	2. Staff is enthusiast to work in the protected area	2. Degree of satisfaction of the work					
	3. Staff recognizes itself as a member of the protected area	3. Degree of identification with the protected area and the mission					
		4. Seniority					
		5. Numbers of days being sick per person					
		6. Level of active participation in the protected area development					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.2.4 Improvement of effectiveness due to staff training and evaluation	1. There is an adequate time dedicated to training	1. Hours of staff training					
	2. 80% of the staff has a successful cooperation	2. Quota of evaluation indicating a successful cooperation					
Methodology protocol/Data source & availability							
Experiences and applications							

4.2. Mission and project implementation

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.3.1 Efficient conflict management	1. The protected area has a protocol for conflict management	1. Realisation of the protocol for conflict management					
	2 .The protocol foresees [number] measures	2. Number of measures foreseen in the protocol					
		3. Number of use of the protocol within 3 years					
		4. Existence of a protocol for conflict management					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.3.2 Fulfilment of national and international engagements or obligations	1. The protected area is not only active at the local level, but also at the national level	1. Number of participation in national projects					
	2. The protected area is not only active at the local level, but also at the international level	2. Number of participation in international projects					
	3. Fulfilment of reporting duties, especially NATURA 2000	3. Number of reports					
	4. There is at least 1 official visitor/year	4. Number of official visitors welcomed in the PA (from national or international official organisations)					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
4.3.3 Assessment of project implementation	1. Most part of final reports are handed in within the deadlines	1. Number of final reports of projects within the deadlines					
	2. The majority of projects have no delay	2. Number of delayed projects					
	3. The project has [number] control mechanisms	3. Number of control mechanism of the projects					
	4. 80 - 100 % of projects are completed/succeeded	4. Percentage of succeeded projects					
Methodology protocol/Data source & availability							
Experiences and applications							

5. Research and monitoring activities

5.1. Definition of need for research

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.1.1. Research responding to the needs of the protected area	1. There is a research plan, which is regularly updated	1. Frequency of existing research plan's updating					
	2. At least the main research fields for the protected area are covered by documented activities	2. Number of research fields that are covered by documented activities					
	3. A part of the protected area's budget is designated to research	3. Presence of a research budget					
	4. The protected area has [number] research partners	4. Number of research partners do exist					
	5. There is a database which collects data and issues	5. Existence of a research database including the publications and data					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.1.2 Overview about on-going and planned research activities in the protected areas	1. The protected area has [number] on-going research activities	1. Number of on-going and planned research activities					
Methodology protocol/Data source & availability							
Experiences and applications							

5.2. Need for monitoring activities

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.2.1. Monitoring responding to the needs of the protected area	1. [number] monitoring activities are connected to management plan	1. Number of links of monitoring activities and management plan					
	2. Monitoring covers at least the main fields	2. Number of fields covered by monitoring					
	3. Monitoring is done at least 10 times per year	3. Frequencies of monitoring					
	4. A part of the protected area's budget is designated to monitoring	4. Percentage of the budget dedicated to the monitoring					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.2.2 Overview about on-going and planned monitoring activities in the protected areas	1. The PA has [number] on-going monitoring activities	1. Number of on-going and planned monitoring activities in the protected area					
Methodology protocol/Data source & availability							
Experiences and applications							

5.3. Management of research and monitoring activities

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.3.1 Development of a monitoring and scientific concept	1. The protected area has a monitoring concept	1. Realisation of a concept of monitoring and research for the protected area within 2 years					
	2. Monitoring covers at least the main topics	2. Number of topics threatened in the concept					
	3. The majority of topics are covered by both research and monitoring	3. Number of comparable topics between the monitoring and the scientific concept parts					
	4. Monitoring and research are implemented at 90-100%	4. Degree of implementation of monitoring and research according to the concepts, within 2 years					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.3.2 Establishment of a scientific council	1-3. The protected area has an operative scientific council	1. Scientific council established within two years including the definition of its tasks					
		2. Number of active members					
		3. Number of topics handled (research fields) permanently by the council					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.3.3 Cooperation with universities and scientific networks	1. The protected area has a cooperation plan	1. Establishment of a cooperation concept within 2 years					
	2. There is a large number of partners for the cooperation	2. Number of partners for the cooperation					
	3. The protected area is involved at least in 2 research networks	3. Number of involvements in national and international research networks					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.3.4 Internal organisation of monitoring	1. The majority of topics are covered by monitoring	1. Number of topics covered by the monitoring activities of the protected area					
	2. The observations are done regularly	2. Frequency of data catching or observation of the phenomena on the ground					
	3. There are different monitoring protocols	3. Number of monitoring protocols					
Methodology protocol/Data source & availability							
Experiences and applications							

OBJECTIVE	OUTCOME				VISION	OUTPUT	COSTS
	Expected	Indicator	Actual	Reasons	> 10 years	activities	€
5.3.5 Valorisation of documentation, databases, GIS		1. Realisation of a concept within 2 years					
		2. The protected area has made a study on technical and financial feasibility					
		3. The protected area has a data frame					
		4. The protected area has a system of geographic information					
		5. In five years have been created [number] GIS layers	5. Number of GIS layers within 5 years				
Methodology protocol/Data source & availability							
Experiences and applications							

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⁸ Swiss Academy of Sciences

Expert Review

“In general, I think at the level of Objectives, the indicators are sound. Some are very pertinent and, if properly used, will stimulate thought and action on issues that are still not the norm within the global protected area community. For example, giving as much weight to ‘the conservation of cultural landscapes, and their typical components’, as to species conservation, is particularly relevant in many situations. This methodology also has its strength in that it favours as much ‘Sustainable regional development’ (objective 2) as it does ‘Nature conservation and landscape protection’ (objective 1). The vision of measuring progress in ‘conserving the diversity of local varieties and breeds’ (objective 2.3.2 - 2.3.3) is particularly impressive, as is the focus on ecological construction (2.6.1).”

Liza ZOGIB

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