

Handbook of successful and innovative practices for a sustainable tourism inside Protected Areas

D.T1.2.3

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Foreword

Sustainable tourism is steadily gaining credibility within the European tourism industry. We hope this handbook will help inform and stimulate ideas for the management of Protected Areas across Europe. We provide Protected Area Managers with tools and success stories to improve environmental management capacities for the protection and sustainable use of natural heritage.

We believe that within Protected Areas (PAs) sustainable tourism can be the most effective tool to valorise natural heritage, contribute to its conservation, and achieve well-being of local communities

This handbook - as part of the CEETO project - therefore aims at expanding knowledge and to contribute to the implementation of an innovative governance system for tourism, based on a participatory planning approach in the whole territory of Central Europe. At the same time, we hope to help PA-managers to improve their ability to realize an actual sustainable use of nature and its assets.



1 Introduction

Analysis of current sustainability policies applied to tourism management inside protected areas (PAs) in Europe (D.T1.1.1.), and Report on the potential socio-economic benefits in applying a sustainable approach to tourism (D.T1.4.2)

This report, on the one hand, summarizes the contents of the supporting and basic research conducted during the first year of the CEETO program and informs about the results. On the other hand, it presents suggestions and ideas on how to gain more knowledge about protected areas and ways to steer touristic developments. As these points are interconnected, the results of the study of sustainability policies and conservation trends in tourism management of the 6 countries participating in the CEETO program and their analysis are discussed jointly as a starting point. Furthermore, the report summarizes and analyses the results of a survey conducted among CEETO Project Partners and stakeholders, emphasizing the specific benefits of sustainable tourism in protected areas.

1.1 Prologue

The research was conducted in the six partner countries of the CEETO Interreg program (Austria, Croatia, Hungary, Slovenia, Germany and Italy), and aims to provide an insight into present trends and processes in relation to tourism/ecotourism as well as sustainable tourism.

Between autumn 2017 and spring 2018 seven surveys were compiled focusing on different target groups in the CEETO partner country. These examined the following topics:

- I. Assessment of competences of CEETO Project Partners and country specific information;
- II. Assessment of tourism/ecotourism practices of CEETO Project Partners and in their countries
- III. Assessment of tourism policies in nature conservation areas in the CEETO Project Partner Countries;
- IV. Analysis of touristic practices in Partner Countries aiding conservation efforts and tasks, including practical experiences;
- V. Assessment of case studies supplied by the CEETO Project Partners;
- VI. Analysis of stakeholder attitudes regarding sustainable tourism/eco-tourism;
- VII. Analysis of possible pilot actions based on stakeholder opinions.

In our report, we will summarize these contents briefly.



1.2 Analysis

1.2.1 Program participants and their background

The surveys were conducted among older and newer EU member states, including older democracies with highly developed industries and economies as well as post-socialist countries that are less developed economically and socially. Respondent organisations evenly represented organisations which deal with sustainable tourism on a local, regional or international level. Therefore, we gain insight into both local information and international processes. In the first survey round government-related actors were mainly questioned, while some NGO initiatives and professional NGOs whose work involves sustainable tourism were also surveyed. Nevertheless, within this round, participants were quite varied, including professional service providers, in one specific case, a catering service provider, advocacy group and organisations focusing on official tourism tasks and education/training. It shows, that half of the time organisations are directly or indirectly involved in touristic developments and connected to services. Their backgrounds including:

- Organisations that are involved in activities of protected areas contributing to local development and consultancy, including tourism;
- Organisations e.g. Federparchi Association that makes agreements with competent bodies and with operators of protected areas, while carrying out studies and research activities on sustainable tourism, and on behalf of other public and private entities;
- Organizations e.g. EUROPARC Federation that develop tourism guidelines, or are involved in networking activities;
- Organizations that draw up regional development plans, and/or are involved in the implementation of tourism-related projects;

In the assessment of the responses, it is worth mentioning that most of the organizations defined themselves as *nature conservation organisations* (70 per cent of respondents chose “basically, nature conservation organizations also interested in ecotourism”), and all the other organizations regard tourism only as a supplementary activity, though it is deemed important. This information is relevant, as answers are mainly given by organizations involved in nature conservation, who see the value of nature as an integral part to secure touristic attractiveness.

Nature conservation competences are examined in a later response (1.3.2) in detail, showing that all organisations are involved in species protection programs in their areas. The majority is however also active in nature conservation tasks, habitat management, environmental impact assessment and research, and activities related to sustainable landscape use. In relation to the analysis, this information is important as we can rely on the conservationist background. However, it also shows a possible bias of the results due to the prevalent one-sidedness of respondents involved.

Advocacy work, another aspect examined with the survey, showed that most organisations are involved in this work. In addition, most of the organizations regards their role and activities as being largely effective professionally, and they achieve this by reaching various target groups with their activities. All organizations directly work with local decision-makers and communities, and more than half additionally reach national level and local level decision-makers, service and training providers.

Within the organizations, there are specific ones e.g. the Federparchi Association, which - throughout the Italian national territory - organizes regional cooperation activities, which contribute to the definition and implementation of the general guidelines and on sustainable tourism. These cooperation activities serve as intermediaries towards the respective Regions and local authorities. In full autonomy and political



independence, Federparchi represents the managing bodies of the protected areas towards the central bodies of the State, Regions and Local Authorities as well as to the European Union, also on the issue of sustainable tourism. Further it promotes training initiatives and exchanges of knowledge and experiences between protected areas, encouraging the implementation of the indications of national and international organizations on sustainable tourism for the protection of natural resources and development.

In the case of all respondents, tourism is highly important from the aspect of conservation, information dissemination and raising awareness as well as sustainable development, while more than half of the organisations also regard this area important for economic development. Beyond this, one of the partners sees a motivation for and a benefit of sustainable tourism in the following:

- It involves working in partnerships and cooperating with all those involved in tourism development and management, in and around the protected areas.
- It includes developing and implementing a sustainable tourism strategy and an action plan for the protected area. It is the responsibility of all the actors to get involved in this.
- It helps to protect and enhance the area's natural and cultural heritage, for and through tourism, and to protect it from excessive tourism development.
- It provides all visitors with a high-quality experience in all aspects of their visit.
- It implies effective communication about the unique characteristics of the protected area.
- It promotes local products and encourages tourism to be linked to these and thus helps to discover the local area.
- It improves awareness by enhancing the knowledge of the protected area and sustainability issues among all the actors involved in the tourism sector.
- It contributes to the quality of life, since it ensures that tourism supports and does not reduce the quality of life of locals.
- It benefits the economy and increases prosperity from tourism.
- It can help the bodies in charge, though monitoring of tourist flows, to manage visitor flows more consciously and to contain negative impacts.

Based on this last point, it is interesting that only one of the interviewees regularly monitors activities that promote sustainable tourism; about half of them monitor tourist flows only occasionally and / or incompletely, while there are organizations that do not monitor all. The availability of several guidelines (IUCN, Natura 2000, CBD, etc.), which include monitoring activities (an instrument that will be adopted also in the pilot actions of the CEETO project), shows how these are considered substantial. Without monitoring, the changes affecting the local community or the protected areas, and the evaluation of the effectiveness of the management initiatives undertaken is extremely difficult.

This is also important because in a subsequent response (1.6 / 14) everyone agreed that the values and standards of sustainable tourism can only be controlled through continuous monitoring. Therefore, stakeholders should consider the possibility of developing an appropriate monitoring strategy.

In general, the survey shows that when monitors activities were conducted a wide perspective is taken and collected data include amongst other things conservation results, business results, number of visitors, number of people using the services, community development results.

Besides this, it is comforting to see that the various organisations, with different scope and operational practices and social background provided almost consensual replies about their professional attitudes: almost all agreed that sustainable tourism needs to be expanded in the Member States and, therefore, even if with less force, have also agreed that sustainable tourism regulation at EU level is needed.



Regarding the *financing of nature conservation* interviewees all agreed that tourism is an important opportunity, and there is even a bigger consensus on the essentiality of sustainable tourism for rural development. Everybody sees that tourism in protected areas has an important role as a mechanism to disseminate information about the environment and nature, thus its development is crucial.

Furthermore, the survey showed a full consensus on sustainable tourism being more than the mere presentation of natural values. It might have other significant social impact, yet each organization sees sustainable tourism to have a vital mission in *decreasing the load on natural areas* with a high ecological value.

In contrast, opinions were divided on the issues of *sustainable tourism having a significant impact on the environment*, and whether it should be developed for environmental purposes. This is a disputable question, though for the study of environmental externalities it is worth discussing it in more depth. The uncertainties might arise due to the fact, that respondents had different views on whether sustainable tourism might be neutral for the environment or not and whether we should limit its growth though most respondents do not believe a limitation to be necessary.

Fortunately, except for one, every respondent agreed that sustainable tourism targeting protected areas cannot exist without the application of environmental impact reducing technologies (green energy, green transport, etc.), and everybody agreed that sustainable tourism cannot work without the inclusion of local communities.

In general, the survey showed the priorities of sustainable tourism: most interviewees believe (90%) that the main objective of it is “to contribute to the livelihood of local communities” and “local products, local food, local services” (80%). Moreover, for the majority (60%) it is important that tourism is able “to financially contribute to the preservation of protected areas”. Besides these opinions, several respondents regarded sustainable tourism as a crucial indicator that shall “be connected organically to nature conservation endeavours”, and provide an “opportunity to present protected areas”, “to provide as much relief as possible to protected areas from visitors”, to establish “eco-friendly (“green”) transport infrastructure” as well as to contribute to “good and innovative information sharing and resourceful display possibilities”.

1.2.2 Sustainability policies and conservation trends

Regarding the countries participating in the program there is a separate ministry for tourism in various states, in others it is a branch of a ministry. All in all, there is a separate government agency dealing with tourism at least. However, within tourism, the organization, development and coordination of ecotourism affecting protected areas paints a different picture. In several countries, there is no government body coordinating it, whereas in others, it belongs to the governmental body involved in conservation. The answers of the survey show that while tourism is a priority on various levels for all the states involved, coordination regarding protected areas is quite dissimilar.

Regarding the question whether there is a connection between state-level, organized conservation and tourism in the country, answers given by the various countries varied.

- Tourism in Croatia is very often one of the most important generators of financing of protected areas’ (PA) management and development. In the context of tourism utilisation, national parks, nature parks and Natura 2000 sites are the most important areas under direct government protection in Croatia. National and nature parks using EU funding for the



development of tourism are obliged to prepare an Action Plan for visitors' management. Law on Nature Protection prescribes the preparation of Management Plans and Annual programs of protection and maintenance. The National Strategy and Action Plan for the Protection of Biological Diversity recognizes sustainable and eco-tourism as an ideal framework for the tourism development, that can be developed through increasing the importance of nature protection in the tourist sector at all levels. The development of tourism can be also acceptable from the aspect of biodiversity protection in PAs and ecological network areas. The provision of visitor education through educational/visitor centres helps to raise awareness about the natural values and importance of conservation of PAs. The "Strategy of Tourism Development in Croatia by 2020" indicates the importance of natural assets like PAs and helped to implement an Action Plan for a greener tourism, which encompasses ecotourism too. The Croatian Strategy for Sustainable Development recognizes as one of its main goals: to achieve balanced and stable growth of the economy, which has a lower impact on further degradation of the environment and waste generation. Measures for achieving the goal are the following: a.) Encouraging the development of organic food production and to secure enough quantities of high-quality food. b.) Attracting tourists and developing ecotourism and ensuring export of recognizable national products. c.) Developing tourism in accordance with building criteria, spatial plans and reception capacity, and efficient adaptation to constraints and opportunities provided by protected areas, with a view to preserve biodiversity, natural and cultural heritage.

- In the Italian national biodiversity strategy, it is indicated that tourism can strongly contribute to the achievement of goals of sustainable development, in line with the Guidelines for Sustainable Tourism of the CBD, by creating the conditions for protecting the territory and being aware of the value of biodiversity. The quality of tourism can be improved through, inter alia, the renovation of tourism structures and incentives for environmental and quality certification, focusing on job creation in the tourist sector and the development of off-season tourism. These are some of the specific actions aimed at minimizing the environmental impact and promoting cultural and educational activities. The specific objectives for this have been identified as follows: 1.) preventing and minimizing the impact on biodiversity components and on the landscape deriving from tourism and facilitating restorative measures; 2.) promoting integration between conservation and the sustainable use of biodiversity and tourism development; 3.) providing basic information, also through specific indicators, allowing users to make assessments and informed decisions at every level on the subject of tourism and biodiversity; 4.) promoting education, training, information and awareness of sustainable tourism and critical consumption of resources; 5.) promoting sustainable tourism, while keeping in mind the national image in the global markets, developing biodiversity, the resources and the characteristics of the different geographical areas.
- In the German Federal State Mecklenburg-Vorpommern, the connection between organised nature conservation and tourism lies in the relationship between nature conservation and regional development. Nature conservation is not limited to the task of safeguarding, development and maintenance of habitats and species but requires integration in other areas of society. Regional development in Mecklenburg-Vorpommern aims at minimizing conflicts between nature conservation and nature users and to increase the acceptance of nature conservation measures. To this end, it is particularly promising to involve regional actors in nature conservation activities and, as far as possible, to participate in the valorisation of nature. In this context, tourism plays a special role, especially in Mecklenburg-Vorpommern,



since the image as a natural and health country is very important. Other relationships between organised nature conservation and tourism include: (i) the free guided nature tours offered by the Foundation for Environment and Nature Conservation Mecklenburg-Vorpommern; (ii) different services related to sustainable tourism are being communicated on the website of the State Office for the Environment, Nature Conservation and Geology of Mecklenburg-Vorpommern (LUNG); and (iii) the establishment of hiking and “theme” trails in the forest and nature reserve “Goor” by the Succow Foundation for the Protection of Nature.

- Nature conservation in Slovenia is under the Ministry of the environment and spatial planning; the directorate for tourism development is under the Ministry of economic development and technology. By the end of 2008, only two protected areas had approved a management plan: The Škocjan caves and Nature reserve Škocjanski zatok. In other areas, either management plans are prepared, but have not been confirmed by the competent authority, or they are in different stages of preparation. Upon approval of the management plan, operators work based on an annual scheme, which makes long-term planning possible but monitoring of performance more difficult. The management plan preparation is a challenging process for managers, because it must be coordinated with all local stakeholders. Currently there is an ongoing project preparation of an effective system for protected areas. The main objective of the project is the implementation of guidelines about how to prepare a management plan. This will facilitate the preparation of plans and is expected to accelerate the adoption of the remaining management plans. The need to develop guidelines and train managers is also included in the recommendations.

For most of the stakeholders, tourism contributes a significant amount to the GPD (between 10-20 per cent), however there is hardly any information anywhere about the share of ecotourism within this. An international initiative to assess this proportion might be considered, as with appropriate indicators it could provide useful feedback in the long run about tourism trends, not forgetting appropriate monitoring. Of course, it is not necessary that the objective should be an increase in visitors in destinations of natural value, however if the development goes towards sustainability it can be beneficial (higher involvement of local communities, more frequent use of green technologies, etc.), regardless of the type of touristic attraction. Partner organizations agreed that all initiatives to save protected areas must include tourism. Natura 2000 sites exist in all the CEETO Project Partner countries as well as additional conservation levels. If we consider only the Natura 2000 sites, they hold significant riches in preserved natural sights. Except for one partner country, Natura 2000 sites represent 16% to 45% of their territory. As it turns out, in almost every country involved, eco-touristic services are connected to the protected areas, however there is no significant data available on what type of eco-touristic services are present. Establishing a uniformed system, on national level, is beneficial in promoting and utilising eco-tourism activities in local level protected areas and Natura 2000 sites. This initiative could be implemented in many of the CEETO Project countries, also in collaboration with the many existing touristic advocacy groups in these countries. Regarding eco-tourism on a national level, some partners provided additional information in the survey. Here are a few examples:

- In Croatia, natural heritage is recognized as an exceptional and insufficiently exploited developmental capital of tourism. Ecotourism and sustainable tourism are targeted through various efforts on national level (strategy framework, expert and scientific events, research and certification, e.g.: <http://www.mzoip.hr/en/environment/eco-labels.html>), and local level, mostly under the initiatives of NGOs. Three protected areas in Croatia have been awarded with ECST, with the support of WWF Adria. An Action plan for Green Tourism presents operationalization of the Strategy for Tourism Development, however an integrated



multi-sectorial model of strategic planning and management of ecotourism is needed. Croatia follows the world and EU trends and often participates in pilot projects testing new tools and practices. Sustainable tourism is largely recognized among the priorities in strategies and plans, but there is incomplete integration into development plans, modest share in the total and diverse offer, unfinished incentive and supportive environment with all standard elements (information, awareness, education, technical assistance, financing, networking, promotion, etc.), but with trend of rapidly growing number of green initiatives, more systematic financing for “greening of tourist offer” projects (eco-labelling, green energy, designing “green” tourism activities, specialisation of tourist agencies dedicated to nature conservation and sustainable development). Systematic work on strengthening the capacity of tour operators to deliver products of “nature tourism” through regular co-operation with nature protection public institutions and institutions with experience of organizing this type of tourist offer is in the pioneering phase. Croatia also actively participates in the EU initiative EDEN.

- In Italy, one can clearly see unused capacities and potentials in sustainable tourism. In the 25 National Parks there are more than 9,700 beds/overnight stays corresponding to 7.7% of the total number of beds in the national tourism industry. From 2002 to 2016 the growth recorded in the national parks has been 8.1%, much lower than that recorded for the rest of the country (+ 21.7%). The data on the level of qualification of the offer should be linked to the ability of the territories to attract tourist spending. Starting from assessments available on the daily expenditure and the level of tourist presences, it is possible to quantify the tourist expenditure attributable to the territories of the 25 national parks compared to the rest of the country. Based on these elaborations, we have a value for the parks of only 6.2% of the total tourism-related expenditure. The comparison with the share of the total number of beds (7.7%) highlights the possibility of improvement for the National Parks.
- The German Tourism Association (Deutscher Tourismusverband e.V.) hosted a federal competition in 2016/2017 for sustainable tourism destinations. This competition awarded regions, sub-regions, as well as cities who implemented holistic or thematic sustainability tourism initiatives (e.g. the Biosphere Area Swab Alb was the winner due to their regional awareness building in terms of sustainable tourism, or the Island of Juist as being specifically energy and resource efficient). In terms of the quantification of sustainable (eco) tourism services in protected areas, there are initiatives taken by the individual national parks or biosphere reserves, however, no quantitative data is available.
- Tourism in Slovenia is based on principles of sustainable tourism. The Slovenian Tourist Board (STO) has decided to name the discussed development strategic complexity with the term Green tourism, which has become the long-term tourism orientation of the state. The Green Scheme of Slovenian Tourism is a tool developed at the national level and a certification programme that carries out the following tasks under the SLOVENIA GREEN umbrella brand: brings together all efforts directed towards the sustainable development of tourism in Slovenia, offers tools to destinations and service providers that enable them to evaluate and improve their sustainability endeavours, promotes these green efforts through the SLOVENIA GREEN brand.
- Staying in Slovenia, there is a lot written about ecologic tourism. It is easy to find information in Slovenia about organic farms and hotels. The following data - that can be found on the web (www.slovenia.info) - demonstrate the potential of green tourism in Slovenia:
 - 850 Agri-tourist farms;



- 37% of Slovenia's area lies within the protected NATURA 2000 area;
- 2,104 farms are involved with organic farming;
- 140,000 bee families;
- 80-90 million litres of wine are produced;
- 8,936 hectares of orchards;
- 400 tonnes of olive oil produced on 1,600 hectares of oil groves;
- 170 distinctive and characteristic dishes
- more than 7,000 kilometres of marked hiking trails.

There is an Institute for sustainable development, and under its auspices there is the European Centre for Tourism on Organic Farming, that was founded in 1998. In recent years, a lot has been done on the subject, but a lot is still missing. For example, the cooperation is still not perfect between individual tourists and the private sector. Some wider, regional, international concepts and their visibility as “eco-regions” or “eco-destinations” should be put in place as well. This goal could be pursued in terms of biodiversity, preservation of cultural landscape, natural and cultural heritage. Politics and tourist societies are key players in this process that can present Slovenia as a top European “Ecotourist” destination.

Regarding the question: “What direction sustainable tourism and ecotourism should take in the near future in the European Union, and what impact this would have on the society of the EU”, the fascinating and varied answers below were given:

Most interviewees do not agree with the statement that “it should be dealt with on a non-EU level”, accordingly the majority agrees that a more detailed EU regulation is necessary in this field. It is slightly contradictory to the answers above that most respondents also agree that the national scope of power must be strengthened. However, it could be interpreted in a way that beyond EU regulation, additionally national legislation must be strengthened almost everywhere. This is important because respondents think that eco-tourism should be given more space in almost every member state. Since respondents have mainly a conservationist background, it is interesting that most see opportunities in eco-tourism developments without an endangerment of protected values. Respondents almost unanimously agree that within the European Union the need for the expansion of eco-tourism must have a representation, and accordingly there is full consensus that significantly more funds would be necessary for eco-touristic developments, and eco-tourism should be more connected to the protected areas. Although there was no consensus, most respondents said a European eco-touristic trademark would be necessary, with an appropriate qualification system and a joint, European-level advocacy group or professional association would also be needed. The initiative for this might be a task for the future; however, it is worth starting negotiations about these propositions in wider professional circles, maybe already in the framework of the CEETO program.

Thus, there is consensus that in all the affected member states touristic developments aiming to present and preserve protected values, and in general the development of ecotourism and sustainable tourism are necessary. Although in member states professional terminology is not uniformed, it is worth reviewing how professionals involved in the program regard the most important indicators for sustainable-and ecotourism. In the survey, respondents provided specific replies to this question, which provide an answer to what good sustainable-and ecotourism looks like, and what is necessary for the implementation.

The answers are meaningful and thought-provoking:



- Practical and financial contribution to conservation of habitats and wildlife, contribution to operating costs, number and involvement of visitors in protected areas - and elsewhere - to conservation; proportion of tourism activities related to sustainability in different respects; employment and contribution to local economies in sustainable aspects.
- In Croatia the methodology used in scientific and professional work is based on the World Tourism Organization (UNWTO) and the European Environmental Agency (EEA) methodology and related indicator systems proposed by the EUROSTAT and Tourism Sustainability Group. The Croatian Environmental Protection Agency (EPA) produced a national list of indicators classified into thematic areas for monitoring of the situation and changes in the environment in Croatia (<http://www.azo.hr/Indicators06>). Indicators proposed for tourism as thematic area are:
 1. tourist arrivals,
 2. tourist overnights,
 3. share of tourists on cruise ships,
 4. number of visitors to national parks,
 5. intensity of tourism,
 6. tourism and space,
 7. water use in tourism,
 8. production of waste in stationary tourism.

The Institute for Tourism in Zagreb monitors and measures indicators related to tourism sustainability through CROSTO - CROatian Sustainable Tourism Observatory, as a long-term international research project of Institute established in cooperation with UNWTO (http://iztztg.hr/en/odrzivi_razvoj/). The Observatory combines the most relevant indicators from UNWTO, ETIS and national (EPA) indicators system.

The most important indicators for sustainable and eco-tourism are described in ETIS (European Tourism Indicator System) launched by the European Commission in 2013. The ETIS was based on 27 core indicators and 40 optional indicators, subdivided into four categories:

1. destination management;
2. social and cultural impact;
3. economic value;
4. environmental impact.

The core indicators present the essential, key or baseline information that a destination needs to understand, monitor and manage its performance. The 43 core indicators cover the fundamental aspects of sustainability monitoring and provide the basis for effective destination management. They also allow for comparison over time and for benchmarking between destinations. Ideally, all the indicators should be monitored regularly, but not all destinations will be able to obtain all the data required at the outset. This should not prevent them from starting the process of sustainability monitoring as collecting some data can help to establish the process, secure a link into the ETIS and lead to better information gathering. See the list of indicators on the attached ETIS document.

The most important factor for good sustainable tourism and its implementation is to develop the destination considering all areas of sustainability (economic, ecological and social aspects). Sustainable tourism can



meet the needs of the tourists and the locals without harming the regions identity and nature and without compromising the ability of future generations to meet their own needs. Sustainable tourism relies on intact nature and culture, therefore resource protection and nature conservation are essential but the well-being of the locals and employees in the field of tourism, as well as economic wealth must not be ignored. Regarding the regional and local resources, it is necessary that people (locals as well as tourists) get an understanding for it. Thus, the most important aspect in the development of sustainable/eco-tourism is to consider the heritage cycle (understand - if they understand they can value it, if they value it, they want to care for it, if they care for it, they will enjoy it, if they enjoy it, they want to understand it). By making people understand you can raise their willingness to take care.

- Effective involvement and contribution to sustainable development in all its aspects:
 1. Nature conservation, for effective contribution to maintaining biodiversity, mitigation of local climate change effects, structured volunteering and financial contribution to conservation, support of protected area (PA) activities related to conservation tasks;
 2. establishing an alternative economy that gives preference to local resources and ensures that local people and businesses benefit;
 3. using sustainable means e.g. mobility;
 4. social aspects such as contributing to inclusion of disadvantaged people, reconnecting people with nature, particularly people living in urban areas;

- Important Indicators in relation to sustainable tourism development are:
 1. Nature and environmental protection: protection of natural resources and paying attention to the carrying capacity; protection of diversity in terms of landscape, flora and fauna.
 2. Recreation: ensuring recreational value of the area; develop sense of responsibility, promotion of health and nature related activities; provision of information about area; environmental education for tourist (e.g.: guided nature walks with ranger in the Biosphere Reserve South east Rügen).
 3. Tourism industry: finding a balance between tourism activity/development and nature conservation, long-term thinking and development of high-quality tourism, increased share of destinations in tourism income, responsible and honest marketing (Statement of commitment of the Biosphere Reserve South east Rügen for the European Charta for Sustainable Tourism <http://www.biosphaerenreservat-suedostruegen.de/>).
 4. Infrastructure: accessibility of areas for tourists and locals (e.g. no private beaches), improvement of road/rail/water infrastructure in line with environmental carrying capacity, promotion of recreational activities with lesser infrastructure needs (e.g. trail network http://lpv-ruegen.de/?page_id=367).
 5. Sustainable regional development including application of polluter pays and precautionary principles in the planning and implementation of tourism projects (environmental impact assessments) and reduction of land use through comprehensive and restrictive land use planning (<http://www.leader-ruegen.de/seite3.html>).
 6. Regional products/brands and partner initiatives: e.g. Rügenprodukte Verein e.V. is an organisation that is marketing locally produced products



(http://www.biosphaerenreservatsuedostruegen.de/de/unsere_partner/partnergemeinden_des_biosphaerenreservates, <http://ruegenprodukte.de/>). Regional cooperation between municipalities to improve quality of tourism services and avoid competition is also important.

7. Population: protection of cultural heritage; education and job opportunities in the tourism sector; maximisation of added value and distribution of revenue for local communities and individuals; strengthening the identity with the region (e.g. <https://www.ruegen.de/nachhaltigkeit>, <https://www.ruegen.de/fischertage>).
 8. Climate change: reduction of resource use; reduction of CO2 emissions through better transport and infrastructure management but also through reduced energy consumption. (e.g. sports and family marina “Imjaich” owns its own block heat and power station and is striving to become self-sufficient, http://www.imjaich.de/fileadmin/content/heimathaefen_yachtservice/presse/hy_lauterbach_02.pdf).
 9. Political participation of people living in target area; supporting individual initiatives (e.g.: Biosphere Reserve South east Rügen advisory council).
- Local prosperity (increasing the contribution of tourism to strengthen the well-being of the area):
 1. the well-being of the community (preserving and improving the quality of life in local communities);
 2. quality of employment (strengthening work positions and quality of working process);
 3. social justice (fair distribution of economic and social benefits from tourism);
 4. Visitor satisfaction; education
 5. local control (planning, management and decision - making on further management and development of tourism);
 6. cultural heritage (respect and strengthening of cultural and historical heritage);
 7. physical integrity (to preserve and enhance the quality and characteristics of the physical landscape);
 8. biodiversity (protect and preserve natural areas, habitats and free live plants and animals);
 9. protect environment (reducing the consumption);
 - Sustainable tourism involves visiting natural areas in order to learn, study, or to carry out environmentally friendly activities. It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and habitats, as well as its local heritage. Sustainable tourism helps community development by providing an alternative source of livelihood to local communities, which is more sustainable. It also contributes to conservation of biodiversity; provides well-being for the local people; involves responsible action on the part of tourist and the tourism industry; promotes small and medium tourism enterprises; requires lowest possible consumption of natural resources; stresses local participation, ownership, and business opportunities, particularly for rural people; and above all includes the learning experiences. The implementation of sustainable tourism requires a plan/strategy, prepared with the involvement of local communities with well-developed monitoring programs for regular discussion of tourism use and the correction of occurring problems. Development of sustainable tourism should be planned carefully. Sustainable tourism, natural resources, cultural heritage, and rural lifestyle are elements of a healthy local economy.



- Another partner pointed out the relationship between sustainable tourism and ecotourism. According to this, sustainable tourism is a wider concept than ecotourism. Well-managed village (Agri-) tourism can also be sustainable tourism and badly-managed “nature discovery”, damaging nature can also be bad ecotourism. Sustainable tourism is basically an ongoing form of assistance to local communities, which ecotourism can be a part of, but it is not a basic requirement. However, good ecotourism is only considered such if it is good sustainable tourism at the same time, therefore every good ecotourism is also good sustainable tourism, but not every good sustainable tourism development has to be ecotourism as well. Good sustainable tourism does not generate substantial environmental impact, it is also suitable for teaching the love of nature, but the main indicator is the interest of local stakeholders, contribution to the livelihood of the local community in a sustainable manner. Ecotourism has the additional features of disseminating information about nature and the environment, presenting the values of nature and educating people about environment protection and nature preservation. Beach tourism can also be sustainable, if “green” means of transport are used, accommodation is in a “green” hotel and meals are provided from local products. At the same time, tourism in a national park can also be “heavy” and bad, if for instance a nature trail, a car park for the training centre is created by pouring concrete on a protected habitat instead of using green technologies.

The third area of the surveys examined professional initiatives related to conservation and the preservation of biodiversity. All countries of the respondents have ratified the Convention on biological diversity (CBD), and almost every organization works on the national level implementation of the CBD. Maybe it is not incidental and shows the professional expertise of respondents that almost every organization is aware of the recommendations of the CBD Guidelines on biodiversity and Tourism development and applies them.

Most of the countries are members of the International Union for Conservation of Nature (IUCN), and there are several examples (4 yes, 6 no) where the respondent organization is member of the IUCN. Half of the organizations have worked together with IUCN, and all respondents except for one are aware of the recommendations of the IUCN Sustainable Tourism in Protected Areas Guidelines for Planning and Management study. Further, all organizations except for one apply the recommendations of the Guidelines, which is very positive. Consequently, it is not surprising that all organizations except for one knows and apply the recommendations of the EU Sustainable tourism and Natura 2000 documents, and more than half of the organizations also participates in their implementation. Unfortunately, only in four of the respondent's countries this document is available in the national language, and the same number of respondents think stakeholders know these recommendations accordingly. This is unfortunate as most professional organizations participating in the CEETO program (except for one) believe this document to be useful for the implementation of the goals of the CEETO program, thus they can identify with its objectives professionally. Therefore, it is worth considering the translation and dissemination of these documents in national languages.

In a later reply (III.5), responding professionals had different views on the effect of ecotourism on the protection of biodiversity: only about half of the respondents (6 organizations) thought the development of this area has a beneficial effect on the protection of biodiversity. In this respect, more detailed opinions were provided:

- In Croatia there are no current regulations and/or current practices directly related to ecotourism. However, the three national parks in Croatia, with WWF support, worked on ECST certification and established forums of stakeholders promoting the importance of nature conservation within tourism development. Many tourist agencies organize various “soft” forms of “nature experience based” tourist activities and only a small number of them are trying to develop “hard” forms for dedicated people with special interests (e.g. guided bird observations). Specialized agencies developed a



cooperation with nature protection and sustainable development associations. Systematic work on strengthening the capacity of tourist operators to deliver "nature tourism" products through regular cooperation with nature protection public sector institutions and institutions organizing this type of offer is in the pioneering phase. The pilot project of this type is "Wildlife Watch" conducted by BIOM association in cooperation with public institutions for protected areas in the Lika-Senj County and the green NGO, which will educate thirty tour guides for tourism in nature. NGOs and county public institutions in Dalmatia cooperate in the promotion of active tourism in protected areas. Croatia cooperates in EU projects aimed at developing ecotourism standards, offers and monitoring tools in protected areas. WWF supported SEA-Med project which aimed at implementing the management plans of Lastovo Islands and Telašćica Nature Parks, developing a sustainable tourism plan, promoting nature-based tourism initiatives, identifying MPA financing mechanisms and promoting sustainable fisheries. It was a continuation of the MedPAN South project where the NGO Sunce and WWF worked on management plans development, capacity building and networking of national and nature parks with marine areas - Brijuni, Telašćica, Kornati, Lastovo archipelago and Mljet.

- In Germany, there is a regional strategy called "Conservation and Development of Biological Diversity in Mecklenburg-Vorpommern", in which there are 13 fields of action mentioned. Within this, 73 goals and proposals for action are implemented primarily in rural areas and in the area of the German coastal waters. However, the success of this strategy will depend on future incentives for biodiversity conservation through the Common Agricultural Policy and the Common Fisheries Policy of the European Union, and on how far biodiversity conservation will be embedded in people's minds as a responsibility of society as a whole.

Beyond this, the survey is informative about what respondents think about the implementation of tourism targeting protected areas in detail. They wrote about this in more detail (IV.4.1). From these replies it is revealed that respondents mostly agree (80%) that "Mixed systems adapting to the conditions of the landscape for presenting the local assets" are beneficial. Besides, more than half of the experts agreed that "Being well-organised, good control, sufficient staff numbers" and "highly trained, well-informed managers, professionals", "good internal transport based on display (e.g. horse-driven cart, boat, group visit vehicles)" are also beneficial.

The following aspects were present to a lesser extent (in the order of priority): hiking routes, bicycle routes; display centres, visitor centres; nature trails, information signs; innovative, interactive devices; practical nature conservation presentations (with the help of staff); lookouts, observation areas, photo huts, good gifts, souvenirs and managers with good writing skills, good self-sufficient opportunities.

Concerning the topic above, respondents provided the following, detailed answers:

- Sustainable tourism ensures longevity of resources it is based on (natural, cultural, environmental...) thus contributing to stable and sustainable development (economic and social) of a certain area. It considers and affirms potentials (natural and social values) of a certain area and proposes its responsible planning and management, conserving local community values. With the development of new/additional (sustainable tourist) services, sophisticated and competitive products and the creation of greater value, it is possible to design a tourist offer that satisfies its guests with its specificity, avoiding mass visits and excessive environmental impacts. Sustainable tourism affects and fosters the improvement of conservation efforts, and biological diversity of a certain area, but only if proper measures are taken in the process of planning and implementation. With the implementation of new approaches (in planning and implementation), primarily through collaboration of all actors, local population can acquire new knowledge and skills from which the whole community, as well as natural environment, in long term can benefit.



When national-level policies are examined, the first surprise may be that there is no official definition of ecotourism in most of the countries of respondents. A definition at legislation-level is missing, however in the countries of more than half of the stakeholders, there is a generally used definition. Unlike to the aforementioned fact, it might be positive that sustainable tourism has an official definition in the countries of half of the respondents. Yet this might not be crucial, as the majority (70%) of the professional organizations do not agree with them even where there are lower level definitions. Of course, each of them has their own, professional opinion, and we can see interesting professional arguments on what each participant considers essential in the defining process. It is worth considering them.

- Official definitions of ecotourism in the partner countries on the highest level:
 - The Action plan for Green tourism uses the World Tourism Organization (UNWTO) definition where ecotourism refers to:
 1. All nature-based forms of tourism in which the main motivation of the tourists is the observation and appreciation of nature as well as the traditional cultures prevailing in natural areas;
 2. It contains educational and interpretation features;
 3. It is generally, but not exclusively organised by specialised tour operators for small groups. Service provider partners at the destinations tend to be small, locally owned businesses;
 4. It minimises negative impacts upon the natural and socio-cultural environment;
 5. It supports the maintenance of natural areas which are used as ecotourism attractions by:
 - Generating economic benefits for host communities, organisations and authorities managing natural areas with conservation purposes;
 - Providing alternative employment and income opportunities for local communities;
 - Increasing awareness towards the conservation of natural and cultural assets, both among locals and tourists (<http://sdt.unwto.org/content/ecotourism-and-protected-areas>).
 - The Croatian Strategy and Action plan for the protection of biological and landscape diversity recognises ecotourism as ideal framework for tourism development: “The concept of ecotourism in some way covers all forms of tourism, and is based on the sustainability of tourism as a human activity in a space that in to the smallest extent affects the changes in the narrower and wider environment.” Institute for Tourism defines: “Eco-tourism focuses on local cultures, wilderness adventures, volunteering, personal growth and learning new ways to live on our vulnerable planet. It is typically defined as travel to destinations where the flora, fauna, and cultural heritage are the primary attractions.” (http://iztztg.hr/en/odrzivi_razvoj/eco_tourism/).
 - The Croatian Ministry of Tourism uses the following definition: “Responsible travel to natural areas that conserves the environment and improves the welfare of local people” (TIES, 1990).
 - The definition used by the Hungarian Ministry of Agriculture: “Ecotourism provides an opportunity for complex solution for those who manage nature preservation areas in order to contain tourist traffic within supervised limits in a way that the benefits of developments are enjoyed not only by nature preservation organizations, but also by local communities to the mutual benefit of the relevant parties. (...) ecotourism is both a collective term and an approach. As a collective term it means the different forms of tourism which are based on the sustainable use of natural-biological resources within the capacity of the given eco-system. Ecotourism is an approach at the same time which aims at making all forms of tourism sustainable in order to contribute to the preservation or



restoration of the eco-system and to ensure that no negative effects are made on natural and cultural resources.”

- According to the definition of the Parliamentary Resolution 97/2005 (XII.25.) OGY (National Area Development Concept): “Ecotourism: environmentally responsible travel and visit to relatively undisturbed natural areas for the purpose of enjoying their natural as well as their present and past cultural values, in a way that they are spared by reducing the impacts of the visit and providing social and economic benefits for the local population. It provides an opportunity for complex solution for those who manage nature preservation areas by sustaining nature preservation values, by the renewal of tourism and local resources, containing tourist traffic within supervised limits. Its main features are the small group character and the benefit experienced by the local community. The types of tourism listed under the collective term of ecotourism are:
 - village,
 - water and
 - waterfront,
 - certain types of active- and
 - nature tourism.

The latter one can be interpreted as the summary of experiences that may be obtained about the flora and fauna found in a natural environment.

- Official definitions of sustainable tourism in partner countries on the highest level are:
 - In Croatia, specifically on the webpage www.odrzivi.turizam.hr, UNWTO definition is used, according to which sustainable tourism is "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (<http://sdt.unwto.org/content/about-us-5>). Institute for Tourism in Zagreb uses the definition: “Sustainable tourism in its purest sense, is an industry which attempts to make a low impact on the environment and local culture, while helping to generate income, employment, and the conservation of local ecosystems. It is responsible tourism that is both ecologically and culturally sensitive. Thus, Sustainable tourism activities have minimal impact on the environment and culture of the host community. (http://iztg.hr/en/odrzivi_razvoj/sustainable_tourism/).
 - On the website of the Federal Agency for Nature Conservation (BfN) - the National Ministry for Nature Conservation of Germany - the following definition concerning sustainable tourism can be found: “Sustainable tourism not only meets the needs of tourists and local people in the destinations, but also helps secure and improve future development opportunities. Resources will be used to meet economic, social and aesthetic needs while preserving cultural integrity, essential ecological processes, biodiversity and vital systems as livelihoods” (Definition UNWTO/WTTC 1992)
 - In Slovenia the term “green tourism” is used as a synonym for sustainable tourism (WTO, 2011b) and it combines the concept of green quality (green Slovenia) and green management (use of resources, regulation of the impact of tourism on the environment, economic efficiency). In this context, green tourism encompasses all the perspectives of sustainable tourism. Applying principles of sustainable development of tourism means development-oriented harmonization of economic, socio-cultural and environmental spatial aspects of the development of tourism (MGRD, 2016). It is directed at the satisfaction of visitors and requires cooperation, formation of consent and critical mass of all (green-informed and targeted) stakeholders (ITEF-STO, 2012). Therefore, sustainable development is not



an isolated or independent sub-strategy or policy, but a concept that is exercised in all sub-strategies and policies, not only in the spatial, natural and cultural spheres.

- Unfortunately, in Hungary there is no general definition; sometimes the expressions mild tourism, sustainable tourism, ecotourism are used as synonyms, although professionals clearly distinguish between them. The concept used by the World Tourism Organization (WTO) is also widespread in our country: “Sustainable development of tourism on the one hand addresses the needs of current visitors and host communities and on the other hand protects and enhances future opportunities. According to this concept it makes optimal use of resources in a way that while mankind can satisfy its economic, social and aesthetic needs, it is able to maintain essential ecological processes, biodiversity, life-sustaining systems and the cultural integrity of different nations and communities.” The scientific world also uses Inskeep’s definition: “it satisfies the needs of current tourism and the host communities while preserving and enhancing future opportunities. In order to achieve this, we have to manage resources in a way that while satisfying economic, social and aesthetic needs, essential ecological processes, biodiversity and cultural integrity must be preserved.” (Inskeep, 1991) A definition of a Hungarian professional: “all forms of tourism development, management and activity which maintains forever environmental, social and economic integrity and the conditions of natural, built and cultural resources.” (Rátz, 1998)

In the cases where there is no definition in the countries of respondents, or where respondents expressed their disagreement concerning the definition, respondents provided the following opinions on the concepts of ecotourism and sustainable tourism and their relationship:

- Convention on Biological Diversity presented a framework for management of tourism activities in a sustainable manner, with a goal to maximize the positive benefits of tourism to biodiversity, ecosystems, and economic social development, and of biodiversity to tourism, while minimizing negative social and environmental impacts from tourism. The European Charter for Sustainable Tourism in Protected Areas (ECST) works in this direction acting as a practical management tool that enables protected areas to develop tourism sustainably and is therefore an important contributor to conservation and sustainable use of biological biodiversity in protected areas. On the level of the EU (http://ec.europa.eu/growth/content/give-your-opinion-tourism-policy-0_en and https://ec.europa.eu/growth/sectors/tourism/offer/sustainable_en) a need for the development and promotion of sustainable tourism is recognized, and it is stressed that the long-term sustainability requires a balance between economic, socio-cultural, and environmental sustainability. When pursuing these objectives, a number of challenges need to be addressed, mainly including sustainable conservation and management of natural and cultural resources, minimising resource use and pollution at tourism destinations including the production of waste, managing change in the interests of the well-being of the community, reducing the seasonality of demand, addressing the environmental impact of transport linked to tourism, making tourism experiences available to all without discrimination, and improving the quality of tourism jobs.
- Eco-Tourism: responsible travel in natural areas, reducing negative environmental and socio-cultural impacts. It contributes to the financing of protected areas, provides income opportunities for the local community and supports the management of protected areas. Sustainable tourism: prerequisites for tourism are intact nature and habitats, environmental management systems (ecological dimension), tourism is an integral part of a sustainable, region-specific economy (economic dimension), the image of the destination is characterized through the dynamics of local culture (cultural dimension). Good working conditions and social satisfaction create quality in tourism (social dimension), while the entire population has access to information regarding tourism policy and is involved (integrative dimension). The definition of sustainable tourism is much wider



than the one of eco-tourism. While eco-tourism focuses more on the development of an environmentally friendly tourist product, sustainable tourism is a more holistic and regional approach, considering the whole regional development. Eco-tourism can be seen as a part thereof, as a specialisation of sustainable tourism.

- The German Authority for the Biosphere Reserve Southeast-Rügen (BRASOR) agrees with the UNWTO/BfN definition of sustainable tourism. However, as BRASOR has been working with local communities on the regional sustainable tourism development in the past years, the scope had to be defined. In cooperation with its stakeholders, BRASOR established the following definition, as part of their mission statement, for the term “Nature Tourism”. In a narrower sense - Nature Tourism means: actively experiencing nature through
 - I. excursions / trips in national parks, biosphere reserves or nature parks;
 - II. nature observation;
 - III. nature information;
 - IV. environmental education / pedagogy;
 - V. geo-tourism. In a wider sense - nature tourism sees the role of “nature” as a backdrop for activities such as
 - a. sporting activities (cycling, hiking, horseback riding, canoeing, sailing, etc.),
 - b. health and wellness treatments;
 - c. Agri-tourism;
 - d. special topics (archaeology, photography etc.).
- In the German language, the term eco-tourism or “Öko-Tourismus” emphasises the ecosystem and prioritises a functioning ecosystem as a development goal of tourism. This however creates a paradox, because strictly speaking, tourism cannot be ecological - it always creates pressures on the environment - and “eco-tourism” therefore is non-existent. The term sustainable tourism is more user-friendly and applicable as it tries to achieve a balance between the local carrying capacity (ecologically, but also culturally) and the tourism development and thus these principles are more easily applicable to tourism development in a Biosphere Reserve.
- Sustainable tourism is a concept that is based on three pillars: economic, social and ecological. It takes into account current and future economic, social and ecological issues and satisfies needs of the visitors, economy, environment and need of the local inhabitants. Principles and practices of sustainable tourism can be applied in all forms of tourism. Ecotourism encompasses the principles of sustainable tourism. The characteristics of ecotourism are that it protects, preserves nature and promotes or improves the prosperity of the local population. The purpose of ecotourism is to establish and preserve the coexistence between nature and tourism. It focuses on individuals and small groups. It gives people an opportunity to experience wildlife, and thus gain a better understanding of wildlife; to know the local environment, which contributes to raising environmental awareness, reduces negative consequences and enables the presentation of local culture and tradition and participation of the locals in the decision-making process.
- Sustainable tourism is a wide concept. There are good sustainable tourism examples of agricultural, bicycle, religious, equestrian etc. tourism services and an important area of sustainable tourism is ecotourism. Sustainable tourism is a form of tourism, which develops local communities in respect of local values and interests, together with the local stakeholders. In no way, does it harm the



landscape, the culture or traditions of local communities but it contributes to their protection by their preservation as a sustainable measure. Sustainable tourism integrated into sustainable development efforts could be a successful segment of the wise use of the landscape. The interests of local stakeholders are important in regards of providing accommodation, hospitality and other services. On the contrary, ecotourism is a form of tourism matching all indicators of sustainable tourism, which is suitable for getting to know the environment and nature better, transferring and enhancing knowledge about the environment and nature, raising awareness and disseminating information about nature and the environment in the wider sense. Whilst it is expected and recommended in respect of sustainable tourism, here it is essential to have green infrastructure, environment-friendly transport, green energy, waste management technologies etc. Perhaps a small room to manoeuvre is that apart from the local community, there must be room for other stakeholders as well: the state, nature conservation groups in order to ensure that tourism revenues can be spent on the protection and enrichment of the values presented.

Concerning comprehensive information on what opportunities and risks the implementation of sustainable and ecotourism have in their countries in the responding experts' opinion, various relevant answers were provided:

- Germany's Biosphere Reserve Southeast-Rügen has probably reached its capacity in terms of number of beds available for tourist. Thus, this is an opportunity to shift away from more main-stream/mass tourism towards attracting more quality and sustainability conscious tourist. Furthermore, the German State Mecklenburg-Vorpommern (MV) is one of the federal states that after the reunification of Germany designated a lot of its terrain to nature conservation. In comparison to other federal states the nature in some areas of MV is still "untouched" and is thus one of its unique selling points in terms of attracting tourist to the region. Because of the importance to protect these intact ecosystems, while giving local communities a possibility to earn an income, sustainable tourism development comes as a great opportunity to help achieve a balance between these different interests.
- In Croatia, World Wildlife Fund's Protected Area Benefit Assessment shows that 45.8 million-euro profit was made by parks from tourism in 2012; 67% of assessed protected areas (PAs) benefit considerably economically from tourism, especially the population living in the vicinity of the PAs. Tourism activities are a source of profit also to service providers not directly situated in PAs and offers employment opportunities. In 2012, 2,6 million tourists visited PAs, which is more than 50% of a Croatia's population.

1.2.3 Sustainable policies in the tourism management of the countries concerned

In the surveys we examined in detail what regulates the implementation and development of ecotourism in the country of the responding experts, on what legal and strategic level they are implemented, the documents on what they are planned and implemented in practice, and in the lack of such documents, what practice they follow in their implementation.

From the replies it became apparent that in none of the countries the conditions are set via legislation, and it only occurred in three cases that they are defined by government documents. In general (60% answers) other type of high-level strategy establishes the conditions, and they are defined by local or regional strategies.

In addition to that, there is an example in Italy where the entire system of tourism strategies, objectives and interventions are collected in one document, called the Strategic Plan for Tourism 2017-2022 (PST).



This plan was designed and implemented in compliance with three transversal principles: Sustainability, Innovation and Accessibility. Sustainability in tourism must therefore actively contribute to the conservation of natural resources and the landscape. This however should include providing incentives and signals for the diversified use of rural resources, giving value to landscapes and biodiversity, as well as stimulating investment in protection and enhancement. In a sustainable vision of tourism, the expected dynamics of tourism development must favour the distribution of opportunities between central and internal areas of the country, bringing employment not only to the already consolidated attractors but also to that Italy, which is still to be discovered and that preserves a widespread heritage of great value and attractiveness. The theme of sustainability is weak in the PST, also in relation to environmental and landscape redevelopment of tourist destinations threatened by over-utilization. In this case, policies can have a positive effect in terms of sustainable tourist flows, the recovery of the environment, the landscape and the attraction of a new and more diversified tourist, sensitive to the values of the landscape, the naturalness and culture. Protected areas are a great heritage in terms of natural beauty, richness of biodiversity, experimental laboratory of good practices, land management, enhancement of local products and their quality, representing an important combination of biodiversity protection and sustainable development of territories. For this reason, the PST will have to promote protected areas as priority areas for the promotion of a sustainable tourism model. They contribute with their excellence to an increase in the integrated offers of territories (landscapes, serial sites, immaterial sites, geoparks) even less-known sites recognized by UNESCO. For destinations - such as rural, protected, inland and parks - characterized by a vast variety of territorial resources, but which have not yet developed adequate tourism supply capacity in the context of the National Biodiversity Strategy, tourism is an important lever for the revival of their economy. It is therefore essential to connect to other "supply chains" present in their respective territories, with particular reference:

- *to the landscape-nature-agriculture-culture supply chain that aims at valorising integrated landscape and natural resources, quality Agri-food production and a recognized cultural heritage;*
- *and the chain of social quality, according to which tourism can become an effective instrument of development when it crosses a vital society, a widespread civil welfare and a welcoming community.*

From an operational point of view, in the short term, the main needs for full integration of these destinations in the national tourism offer are: the development of sustainable activities from an environmental and economic point and the focus on reducing impacts on natural resources, as well as the identification of "slow" travel motivations and their transfer to selected targets (cyclists, active tourism, emotional tourism). In the medium to long-term, the main needs refer to the increase of the operators' skills (useful in this sense also an integration with the provisions of the lines of intervention linked to the competitiveness of the business system), to the monitoring of markets to grasp the orientation and satisfaction of consumers, the redevelopment of the offer also through the enhancement of the natural and real estate heritage for tourism and social animation purposes.

Despite the lack of visible regulations, implementation is performed this way or another coherently, however practices differ. In the vast majority (80%), implementation is basically driven by governmental stakeholders (official, e.g. national parks), but the involvement of NGOs is also significant. Service providers take part to a lesser extent (60%), however respondents think stakeholders are involved to the same extent in the implementation of professional objectives.

Concerning regulation, responding experts had more detailed opinions (III.4) on whether it has an appropriate professional impact on the development of ecotourism:



- In Croatia numerous different efforts have been taken on all levels. On national level, legal and strategic documents recognise the environmental responsibility and sustainable development of tourism as an imperative. Still, a majority of key measures will need to be implemented systematically (monitoring of environmental pressures, carrying capacity estimations, tourism development plans). Promotion of sustainability is done on national level, especially by the Croatian Ministry of Tourism developing a national web portal on sustainable tourism (<http://www.odrzivi.turizam.hr>), organising various conferences, awarding grants for the development of tourist offers based on natural heritage. Annual awards are given out to actors which show an extraordinary involvement in the field of environmental care. Numerous actors are being eco-certified and labelled, following official procedures defined by national level or the level of relevant associations. National level funds are awarded for greening of tourism offers (renewable resources of energy) and for tourism initiatives and projects in tourism underdeveloped areas with an aim of activating unused tourism resources and creating new motives for tourist arrivals especially in pre-and post-season. Initiatives for the development and networking of sustainable tourism offers and joint branding are implemented in joint actions of public institutions managing protected areas and NGOs (WWF). On national level, management plans and annual management programmes are foreseen for protected areas; visitor management plans will need to be developed in case of protected areas receiving EU funding. The United Nations Development Programme (UNDP) funded PARCS project focused on financial sustainability of national and nature parks in Croatia and supported development of new and the expansion of existing tourism products of which some have been dedicated to sustainable/eco-tourism products.
- In an online survey in Germany, 39% of respondents stated that sustainability and mobility (23%) are less well positioned in the State of Mecklenburg-Vorpommern. Together with the German Ministry of Agriculture and Environment and the Mecklenburg-Vorpommern Tourist Board, Mecklenburg-Vorpommern offers locals and tourists a form of compensation for climate-friendly travel. Positive is the tangible connection between climate protection and tourism, the correspondence between brand values and the message, the raising of awareness and the assumption of responsibility for a global topic. On the negative side, however, it is the only visible action to address ecology/sustainability in Mecklenburg-Vorpommern. Looking at ecotourism, one normally finds only “lone fighters” for the cause but no uniform guidelines.
- According to the Regional Development Centre Koper, the current regulation works well, because the Slovenian Tourist Board defined the focus on green, sustainable tourism as the right development opportunity for the country. It puts the integral implementation of sustainability at the very heart of its operations, namely the development and promotion of Slovenian tourism. The range of tourism products represents the key element of the competitiveness. However, the main problems are the poor financing opportunities and the lack of scientific analysis.
- Another Slovenian opinion shows that there is not enough effort made for the development of sustainable tourism, and most development goes in the direction of heavy and mass tourism. The dominant types are entertainment and adventure tourism and the resources are used for the improvement of only 2 or 3 destinations. There are few or no resources for sustainable tourism development tenders and the evaluation of services is superficial. Ecotourism is also going in the wrong direction; sometimes even national parks endanger the values trusted upon them. Such as constructing bus stops on protected areas, concreted nature trails on geological treasures etc. Regulations are non-existent, have no weight and therefore the principle of “anything goes” prevails.



With regard to funding, in the majority of the countries concerned there are EU funds and national, government funds available to improve ecotourism. Though in two/three examples it is not seen as a positive, as development funds do not regard the funding of these development areas as priorities, and there are no other funds to improve ecotourism. It might also raise questions whether it is positive that in spite of available funds service providers mainly finance the development of ecotourism themselves. Further it contradicts earlier responses were the experts interviewed answered that no substantial funding for ecotourism development exist.

Despite this, development policy and funding systems could create the opportunity for a positive direction, as there is accessible data on the services themselves in many places, while in eight countries of the partners there is an ecotourism certificate of quality assurance or label accreditation, which distinguishes these service providers. Based on this experience, the distinction of sustainable and ecotourism service providers could be initiated. However, it is interesting that respondents mostly mention not national level regulations, but primarily local regulations; at the same time there are several types of qualification systems in place, but in most places, there is no relevant feedback mechanism. These countries might take up as a long-term objective the necessity of creating a more uniformed system. Other experiences mentioned:

- The Austrian Ecolabel for Tourism can be obtained by sending a request of interest to the Association for Consumer Information (ACI), they transmit the application documents, then the applicant has to fulfil the guidelines and criteria. After the verification by an independent auditor and the submission of the test report to the ACI, the ACI and the Ministry of Agriculture and Forestry, Environment and Water Management verify the applicant and the award is presented by the federal minister. The criteria include the following topics: General operational management and environmental management; Energy; Water; Waste; Air and noise; Office, print and procurement; Cleaning, chemistry and hygiene; Buildings, building and living, furnishing; Food and kitchen; Traffic and mobility; outdoor area and open spaces.

Beyond these, concerning possible quality assurance on behalf of respondents various more relevant information were mentioned worth considering:

- The Croatian Ministry for Nature Protection established in 2011 the environmental protection label 'Environmentally Friendly' in line with the EU "Ecolabel", intended for producers, distributors, importers, retailers and service providers. In 2015 the Environmental Protection and Energy Efficiency Fund subsidized companies for development of Ecolabel. The Association of Employers in Croatian Hospitality promotes a sustainable business certificate "Sustainable Hotel", developed in 2013 with the support of the Ministry of Tourism. This certificate is to be extended to other accommodation providers such as camps, etc. The Association of Family and Small Hotels developed a certification scheme with the support of the Ministry of Tourism for sustainable tourism "Eco Hotels". The Association "Lijepa naša" awards the "Blue Flag" for beaches and marinas in Croatia. Since 2013 the Association of Croatian Travel Agencies certified a number of travel agencies and managers according to the Travellife Partner model. The Eco Partner programme, focused on the greening of tourism activity of small renters, it is an initiative implemented by green associations "Sunce" and "Green Istria". Any kind of organization involved in the tourism system can embed the EMAS system into its business and confirm its environmental excellence. In Croatia, EMAS is jointly managed by the Croatian Agency for Environment and Nature, the Ministry of Nature Protection and Energy, the Croatian Accreditation Agency and the Environmental Protection and Energy Efficiency Fund. Croatia is a member of EDEN; since 2007 Croatian Tourist Board, in cooperation with the Ministry of Tourism carries out the competition for destinations on various tourism topics. National Park Kornati and Nature park Lonjsko polje and Medvednica ECTS certified parks.



- In Italy, the Ministry of the Environment and Territory Protection realized the project called National Disciplinary for the Concession of the Emblem of the Natural Area Protected in the Tourist Sector. The objective is to define the ways in which protected areas manage the granting of their emblem. A process of harmonization of the criteria for issuing the emblem, according to "quality requirements" attributable to a minimum common standard that guarantees environmental sustainability to the protected territory in which the economic activity of the emblem is manifested. The National Disciplinary establishes common principles and standards for the granting of use of the emblem of national protected areas, aimed at ensuring primarily that the granting of the emblem takes place in favour of tourism-related activities that are consistent with the purposes and are in possession of the following quality requirements:
 - environmental sustainability needs in relation both to the global ecosystem and to the specific features of the protected area;
 - social sustainability needs both for the user-user and for the local community;
 - economic sustainability needs both for the user, the tourist operator and the local community.
- In Slovenia the certification for sustainable tourism is called the Green Scheme of Slovenian Tourism (GSST). This tool is developed at the national level and is basically a certification programme that carries out the following tasks under the SLOVENIA GREEN umbrella brand: it brings together all efforts directed towards the sustainable development of tourism in Slovenia, offers tools to destinations and service providers that enable them to evaluate and improve their sustainability endeavours and promotes these green endeavours through the Slovenia Green brand.

In creating a professional base for ecotourism, on the professional background of stakeholders, trainings, courses and specific training courses within the school system experiences were varied.

It is positive that there is an example (III.3.5) of independent ecotourism training in certain respondents' countries, where higher education courses can be pursued in this field, and there are countries where training courses on nature conservation is being taught. In the majority of the countries participating in the survey, ecotourism is part of training courses in general tourism. Based on the answers the following question may arise: what is more practical, train tourism practitioners in conservation and sustainability, or train conservation experts in touristic marketing and services? Of course, both might be relevant, however, based on the protected areas and their differing types it must be taken into consideration which aspect is more essential in which case. Can there be tourism of high standard in protected areas without well-trained conservation experts, or can there be high standard tourism services without well-trained tourism practitioners? However, it is of concern that for ecotourism service providers it is not compulsory to participate in ecotourism/conservation training. We can suppose from the replies that secondary or supplementary courses are available in some form almost everywhere, however, we could not get an in-depth insight into their attitude and training level.

We might welcome that in the countries of most respondents there are scientific workshops dealing with the area of eco-politics, therefore we may suppose some dialogue in this area has already started in these countries.



1.2.4 The results of the survey with respect to conservational management and tourism

Various international studies and reports prove that tourism contributes not only to global climate change, but the decrease of biodiversity as well. Most respondents are conservationist organizations, who mostly state that they know the relevant CBD and IUCN reports. Therefore, it might be a little surprising that responses to direct professional questions were quite varied and conflicting. The answers to the question whether all forms of tourism are harmful to biodiversity directly or indirectly were dividing. Respondents tended to disagree with the statement that even sustainable tourism negatively affects elements of the environment, and thus biodiversity indirectly. However, everybody agreed that sustainable tourism is the best solution among the many bad options in tourism, and if the conservation of biodiversity is of concern. There was also consensus that due to its nature, sustainable tourism can greatly contribute (e.g. in funding) to biodiversity and the preservation of protected species. There was also agreement among the practitioners on the issue that sustainable tourism is essential in the strategy of the preservation of biodiversity due to its information dissemination potential. Experts also mostly agreed that sustainable tourism, because of its nature can be neutral to biodiversity. To argue for their views, respondents gave the following, specific examples:

- In Croatia, in the Nature Park Medvednica (NPM), the management of Cave Veternica for tourist use - PINPM effectively started to work in 2001. One of the main goals was including cave Veternica in the tourist offer of the NPM. PINPM at the beginning conducted comprehensive inventory of flora and fauna in the cave, developed a protocol for monitoring and put in function monitoring of cave ecosystem (3 components are monitored - environment - water analysis, microclimate; biodiversity - monitoring of 4 key invertebrate species and 18 bat species -8 of them Natura2000 species- also physical state of the cave -litter, graffiti etc.). Carrying capacity of the cave was approximated and visitor number per hour determined. Up until now 12 years in a row of monitoring of Cave Veternica has been done and the main conclusion of yearly monitoring reports is that Cave Veternica is used in a sustainable way.
- In Italy tourism faces a future of continuous growth. Visitors to the parks and reserves of the country are becoming more numerous: the latest estimates speak of 30 million visitors a year for the protected nature complex of Italy. Tourism brings important resources to the local, often marginal, economies of our parks. It stimulates the emergence of new jobs, slows depopulation and the consequent territorial and social degradation, enriches cultural exchanges between visitors and those who are visited. But tourism also carries with it insidious risks: first of all, excessive pressure on delicate ecosystems and homologation of cultural contexts. Federparchi pays special attention to the correct development of tourism in protected areas. Representing them on the occasion of the main events in the sector, coordinating with others the offer but, above all, promoting the European Charter of sustainable tourism, drawn up by EUROPARC, which today is the obligatory reference of tourism policy for the green oases of the European Union. This is a process that involves parks, tourism companies and tour operators in a comprehensive strategy to establish the order of priorities in time and space, the assigned resources, the respective tasks and the control methods to be applied.

There were fewer negative examples for tourism affecting biodiversity, however these are also thought-provoking:

- In Italy, in the National Park of Vesuvius, and in particular in the National Park of the 5 Terre there is a problem with the management of tourist flows. The number of visitors has increased exponentially in recent years, making it difficult to maintain and preserve the territory. The trails



are overcrowded by tourists from all over the world, they are thinking of limiting access by contingent flows. This entails a series of threats to the environment and biological diversity from tourism.

- In Slovenia, the Landscape park Strunjan originally was not so popular because of its untouched nature. Today however, with the popularization of the area as a nature reserve and the recognition of the area through internet and media, the area is dealing with a lot of pressure in the summer on a daily basis. More and more tourists are coming into the park. Smart phones are bringing tourists to the finish line without and additional information about the zone.
- In Hungary such cases unfortunately are not rare. At Lake Balaton under the heading of “development of water tourism” a luxury yacht harbour has been created, destroying 4 hectares of Natura 2000 habitat. In Villany by virtue of building a “green hotel”, a valuable protected flock was destroyed in approximately 5 hectares. Unfortunately, many such examples could be listed.

It can be said that if ecotourism projects would take the professional objectives mentioned earlier (IUCN, Natura 2000, CBD) into consideration, in those cases negative effects can be avoided concerning conservation. Besides conservation, wisely implemented tourist initiatives are valid practices (and might even contribute to the preservation of protected values), however, for this sufficient precaution and professionally grounded implementation are a must. In later phases of the CEETO program professional objectives can be implemented besides the aforementioned recommendations and guidelines, however it is always beneficial to review earlier practices and the efficiency of their application. The CEETO program provides an opportunity for this, and during the exchange of partners many aspects arise.

Beyond conservation aspects, sustainability attributes are taken into consideration mostly with respect to local communities, and in this regard the consensus of the profession was yet again visible. Nobody thinks tourism is harmful for local communities directly or indirectly, the view is rather that sustainable tourism can contribute to the development of local communities (e.g. providing livelihood), which was confirmed by respondents in the replies to two related questions. Further, it was agreed that tourism can contribute to the sustainable use of local natural resources and the protection of local natural values. There are only concerns in relation to cultural aspects, as there was a slight deteriorating effect mentioned, however this question was rather thought-provoking. Based on these, experts usually regard the presence of sustainable tourism as desirable and beneficial for local communities. Quite a few specific examples were mentioned:

- In Croatia in 2017 the WWF’s Protected Area Benefit Assessment (PA-BAT) showed that tourism and recreation are one of major existential benefits for stakeholders within protected areas (PAs), above all for the local community. Apart from PA’s direct profit, tourism and recreation are source of profit to service providers not directly situated in PAs, such as carriers, caterers, hotel managers, travel agencies and others. The potential for the local economy lies in tourism associated with protected nature, which offers a lot of opportunities for women, jobs without high labour market criteria, providing diverse jobs in areas with poorly developed agriculture. The main profit for the business and private sector comes from tourism, and secondly from commercial use of water and forestry, while the local people earn their profit mostly from tourism, jobs in protected areas and from local food products. It was assessed that the main values with the potential for increasing economic values are tourism (77%) and nature protection (56%). The result of PA BAT assessment shows that stakeholders believe that economic development is moving away from a traditional use of natural resources (wood, water, minerals) and that it is focused on cultural and educational values.
- The next example is from Italy: the project “Ecoturismo In Marittime”. In the Natural Park of the Piedmontese Maritime Alps, in 2002 an association was born from the collaboration between tour



operators, local administrations and the park. "Ecotourism In Maritime" has the ambitious objective of reconciling the tourism development of the protected area with the need to protect an environment of extraordinary naturalistic value. All the actors of the territory carry out a daily promotional action, in the institutions as in their own work. Hotels, campsites, farmhouses, refuges, restaurants, bars, pizzerias, various shops (there is also a petrol station and mechanic) that adhere to the initiative and are easy to recognize: display of a plate with the logo of the Federparchi Association and a summary of its statutory purposes. Many initiatives to promote the valleys have been carried out, with the aim of improving reception and tourism promotion in line with the principles of the European Charter for Sustainable Tourism. This process of sensitization and tourism development has helped to increase the local economy of the whole community.

- Groß Stresow is a small village in Germany, at the Greifswalder Lagoon. This village has a special historical significance for Rügen and the whole of Germany, as from its beach the Prussian-Danish sea landing took place in 1715, which put an end to the Swedish rule on Rügen. In connection with the re-construction of a historic building, the community grew together and decided to implement sustainable tourism in their small village. The gain was a strong cohesion in the village community and a lively village life. Another example is the marina Lauterbach "im-jaich". It is a pioneer in regard to sustainable tourism. This sport and holiday marina (with different holiday apartments including some build on poles in the lagoon) introduced their biomethane energy concept in 2011. The marina is trying to become self-sufficient, and by building a block-unit heating power plan and the connected local heating network it took its first significant step towards this goal. The project was supported by the organization "Bioenergy Region Rügen", which hopes that more companies with high energy demand might follow this positive example. There were a lot less negative experiences in this area.

1.3 Recommendations

The survey pointed out that in many respects responding practitioners agree with the opinions of project partner organizations, however, there are a several differences of opinion. Basically, concerning conservation tasks all partners agreed and there is full consensus that without local communities, no wise touristic project can be implemented. At the same time, there are some further requirements and crucial points, which shall be taken into consideration so that they can contribute explicitly to the public benefit of touristic projects and protective measures regarding the efficiency of conservation and environmental policies.

These recommendations might be helpful later for the implementation of pilot project and the establishment of touristic activities targeting protected areas. From various propositions below, it is apparent that they cannot be objectives of the present CEETO program for practical reasons, yet later they might become beneficial as policy aspirations.

It might be worth emphasizing a couple of explicit messages of the research besides the results presented above:

- From the research it is apparent that there are slight differences concerning the interpretation of the concepts "sustainable tourism", "eco-tourism" and "tourism" targeting nature conservation areas. The international terminology is not used in all the countries concerned, although there is international literature in this respect. In the long run, it might be beneficial to establish a uniformed set of definitions and a clear, quantitatively measurable system of indicators.



- Besides uniformed terminology, in order to preserve objectives, such as social policies, global environmental protection and natural values constituting touristic attractions - the necessity to expand a more uniformed, consistently applied monitoring system is increasingly apparent. It might be crucial that the measurability of eco-touristic, sustainability and conservatory-biological indicators should always be present in our work. For their establishment, more uniformed application it might be useful to draft long-term propositions.
- In the project, as well as in sustainable and within it, eco-touristic objectives we need to talk about environmental technology to be applied in development and maintenance. Aspects which did not arise when the Yellowstone National Park was opened (1872), are substantial in the 21st century. Environmentally friendly technologies, which are also suitable for awareness raising in themselves (solar collectors, solar cells, rainwater or compost toilets, active house technologies, environmentally conscious transportation solutions, etc.) are readily available today. Therefore, besides initiatives to measure the global ecological footprint of touristic services we need to use every available green technology.
- It is necessary to expand sustainable tourism extensively in member states, and accordingly, within the tourist industry environmental learning and awareness-raising practices must spread. As long as there is no initiative that within the tourist industry services are distinguished based on methodology (sustainable or heavy tourism), and environmental consciousness is measured based on touristic attraction within a destination (let it be wine tourism, active tourism, or simply tourism based on nature observation), it is not feasible to promote sustainability objectives. An opportunity must be created as soon as possible for qualification systems in tourism to distinguish between services based on an “exploitative”, resource-extensive approach and projects implemented taking sustainable development principles into consideration. For this, decision-makers must be persuaded via policy initiatives to do as much as they can to strengthen the role of sustainable and ecotourism within the industry.
- To realise the previous goal, of course an EU regulation would be beneficial, or at least the introduction of a uniformed trademark/labelling system, however the opportunities offered by the coordination of a joint, international organization might also be worth considering. In Europe, with a little exaggeration there are as many practices and methods as there are national parks. Drafting a more uniformed, European expectation framework would be desirable in order to preserve the joint European natural heritage.
- At present, there is hardly any substantial data on the proportion and presence of ecotourism within tourism, therefore it is unavoidable to cooperate with economists and tourism experts to define, even within the GDP (Gross Domestic Product), or along other aspects, the share of ecotourism and start the reform of the industry. In the near future it should be achieved that tourism targeting protected areas is compatible with sustainability principles, yet beyond these other touristic branches (Agri-tourism, hunting tourism, etc.) should also approach to be sustainable. It is extremely positive that in responses given by mostly conservation practitioners the interest of local communities is highly reflected, thus the presence of wise rural development aspects targeting sustainability, however, this approach should not only be present in tourism targeting protected areas.
- There is no uniform and sufficient data on the presence of eco-tourism in protected areas, although this should be an objective of conservationists as well. Tourism might mean an environmental risk; therefore, it should be crucial that countries have a full picture of the details of tourism targeting protected values. Due to the variety of regulations, viewing protected values is an activity, which is monitored and regulated with various intensity, which is also a risk. It would be important for



conservation authorities or organizations to achieve that they always know about tourism affecting protected areas or protected species and mitigate the risks with appropriate intervention.

- In the European Union member states the strengthening of EU regulations might be considered, however beyond this, the strengthening of national level regulation is also necessary. It would be worth examining the issue within the EU institutional framework with a uniform professional approach so that Natura 2000 recommendations could be transformed into directives, and thus contribute to the preservation of natural values in the EU. It is certain that responding practitioners agree that development in this area might improve the policy of nature conservation.
- As it turns out from the research and on several instances, from the replies of respondents, professional recommendations (not only with respect to the IUCN, CDB, or Natura 2000, but regarding projects similar to CEETO as well) translated into the national languages and their extensive dissemination in the tourism, conservationist, rural development sectors is crucial. Without the dissemination of professional documents, their detailed presentation and inclusion in training materials their professional objectives cannot be fulfilled. Making the translated document, the summary of recommendations or abridged versions accessible for local service providers is a vital task of professional enterprises similar to CEETO in the near future.
- The fallacies due to the lack of training and professional background often point out that a training material in tourism, rural development and nature conservation with a more uniformed approach might be necessary, as well as the training of practitioners. Without knowing the basic principles of sustainable development, the basic approach of conservational biology ecotourism cannot be organized effectively, and for these needs member states need to match good training systems.
- The most important recommendation regarding the CEETO project might be that only projects capable of embracing good professional objectives - that is taking community, nature conservation and rural development goals into consideration, while not endangering natural assets constituting tourist attractions in any form - can be supported by local touristic developments and investments. On the other hand, these developments should always be designed with a global approach. Tourism projects contributing to global environmental problems even partly should not be encouraged, and in every case, green/sustainability aspects must be implemented either in technology, or in the methods of professional implementation.

This research summary cannot be unabridged, and expanding it to every EU member state, magnifying its professional initiatives could be beneficial. The conservation of the natural assets of the European Union, in a manner that the ecosystem preserves the hope of livelihood for people as well, is only possible when sustainability aspects are always integrated. The CEETO project is a part of such initiatives, and its expansion is absolutely necessary.



2 The principles of Sustainable Tourism

Tourism was considered an “innocent industry” for a long time, meaning it was thought that there is no need to measure its negative environmental, socio-cultural and economic impacts¹. In the 1960s and early 1970s, tourism was praised as a driving force for economic development, and an effective tool to promote understanding between nations and cultures. Therefore, many countries invested serious efforts in increasing tourist arrivals and develop the necessary infrastructure. It was only in the mid-1970s that questions were raised concerning the impact of tourism on the ecological, economic and socio-cultural environment.

Travel and tourism now make up the biggest service industry in the world, and it continues to grow. This industry stimulates the growth of the Gross Domestic Product (GDP) in host countries and contributes significantly to government tax revenues. Worth USD 7.6 trillion dollars, the travel and tourism sector accounts for more than 10% of global GDP and represents 7% of all international trade and 30% of the world’s export in services².

Tourism receipts provide an important source of foreign exchange for countries around the world, making economic growth and investment possible in many other sectors. In 2016, tourism grew by 3.1%, outperforming global economy growth of 2.5%³.

Experience shows that the continuous and often uncontrolled growth of the industry can lead to severe degradation of the natural and cultural environment. Raised awareness regarding natural values and beauties together with the degradation and overuse of the classical holiday resorts led to an increased interest in “unspoiled” and less developed exotic destinations with a low tourist density. Today tourism in natural destinations comprises around 50% of all international tourism and is increasing at a rate of 10-30% per year, much faster in comparison to the industry as a whole. Previously neglected remote areas are being “discovered” and becoming more and more visited, imposing an increasing burden on the host area. The faster and more intense tourism development occurs in a natural area, the more it changes the natural and socio-cultural environment in the region affected. It has become obvious that efforts must be made to minimize the adverse impacts of the tourism industry.

2.1 Fundamental Principles

The recognition that the impact of tourism can be both negative and positive led to continuous efforts to make the travel industry a force for good. Today, there is much more interest regarding sustainability issues and caring about local cultures.

Therefore, there seems to be a certain consensus about the principles of sustainable tourism, also used by scientific programs and studies⁴:

1 Anna Iványi: Linkages between biodiversity and tourism - an introduction, 2011, http://www.ceeweb.org/wp-content/uploads/2011/12/bidi_tourism.pdf

2 World Tourism Organization (UNWTO) (2017), World Tourism Barometer, Volume 15, June 2017

3 World Travel & Tourism Council (WTTC) (2017), Travel & Tourism Global Economic Impact & Issues 2017

4 Anna Iványi: Linkages between biodiversity and tourism - an introduction, 2011, http://www.ceeweb.org/wp-content/uploads/2011/12/bidi_tourism.pdf



- **Travel to natural destinations:** These destinations are often remote areas, whether inhabited or uninhabited, and are usually under some kind of environmental protection.
- **Minimizes Impact:** Tourism causes damage. Sustainable tourism strives to minimize the adverse effects of hotels, trails, and other kind of tourism infrastructure. Minimization of impact also requires that the amount and behaviour of tourists should be regulated to ensure limited damage to the ecosystem. This could be done by restricting tourism to the carrying capacity of the area (e.g. limited number of tourists, low consumption of water, energy and other resources, low level of mobility and use of environment friendly transportation, minimal change in landscape-using patterns through constructions etc.).
- **Builds environmental awareness:** Ecotourism means also education, for both tourists and residents of affected communities. The tourists shall “learn about the places and peoples visited” in order to “minimize their negative impacts while visiting sensitive environments and cultures”, in accordance with The Ecotourism Society guidelines. Ecotourism requires well-trained, multilingual environmentalist guides with skills in natural and cultural history, environmental interpretation, ethical principles and effective communication. Ecotourism projects should contribute to the education of the surrounding community and the broader public in the host country.
- **Provides direct financial benefits for conservation:** sustainable tourism should financially support and raise funds for environmental protection, research and education.
- **Provides financial benefits and empowerment for local people:** Stakeholders, including local and indigenous communities must be involved, ensuring their participation in planning, development and operation. They must also receive income and other tangible benefits (potable water, roads, health clinics, etc.) from the protected area and the tourist facilities. Faire working conditions and opportunities must be ensured for local people, and facilities must be run by or in partnership with communities of the destination. Ecotourism must also help shift economic and political control to the local community, village, cooperative, or entrepreneur.
- **Respects local culture:** sustainable tourism strives to be culturally respectful and have a minimal effect on both the natural environment and the human population of the host country. Ecotourism, like all forms of tourism, often involves an unequal and money-driven relationship between the visitor and the host. A responsible ecotourist is learning beforehand about local customs, respecting dress codes and other social norms and not intruding on the community.

As a fast-growing sector, tourism is an increasing source of pressure on natural resources and the environment, affecting social conditions, cultures and local environment of tourist areas. This trend may lead to the reduction of the benefits of tourism to the local and wider economy.

As far as economic benefits are concerned, tourism certainly constitutes an opportunity for economic development, economic diversification and the growth of related activities. Thus, tourism may present a potential for realizing benefits. The ecotourism strategy of Australia states⁵: “ecotourism offers the potential to generate foreign exchange earnings, employment, and other economic and social benefits,

⁵ Tourism, Biodiversity and Sustainable Development: Assessing tourism: impacts in Asia and Pacific, O. P. Kandari Gyan Publishing House, 2004, page 210.



particularly in regional areas. [...] Ecotourism can also provide resources for environmental conservation and management and an incentive for the conservation and sustainable use of private land.”

The main pressures come from transport, the use of water and land, energy use by buildings and facilities, and the generation of wastes. Erosion of soils and impacts on biodiversity are also tourism-related issues. In some popular destinations, these pressures have resulted in irreversible degradation of the local environment.

Tourism is the main driver behind the increase in the demand for passenger transport, with its associated environmental impacts. This demand is expected to continue to grow, including a major contribution to doubling of air traffic over the next 20 years. Cars and planes, the most environmentally damaging modes, remain the most used forms of transport.⁶

2.2 Potential benefits of tourism

- Diversification of economic activities;
- Increase in local income;
- Employment opportunities, potential for qualified, high added-value jobs;
- Multiplier effects, stimulating growth in other economic sectors;
- Improved production through transfer of technology;
- Reduction of spatial and social disparities;
- Infrastructure development;
- Counteracting urbanization tendencies through providing better living conditions for rural communities;
- Financing nature conservation;
- Incentive to the preservation and restoration of natural and cultural values, including traditional knowledge;
- Promotion of cultural exchange and peace;
- Increasing social and environmental awareness;
- Recreation, contribution to well-being of people.

In order to judge the role of tourism in the sustainable use of biological resources and their diversity, it is important that we consider the potential adverse impacts of tourism. These are roughly divided into environmental impacts and socioeconomic effects; the latter generally being those imposed on local and indigenous communities. Although such impacts on biological resources may be less easy to quantify and analyse, they may be at least as important as, if not more important in the long term, than direct environmental impacts.

⁶ Europe's environment: the third assessment (European Environment Agency, 2003) (accessed: 2018.01.04). <https://www.eea.europa.eu/data-and-maps/indicators/tourism-travel-by-transport-modes>



2.3 Possible negative impacts on natural resources⁷

- Direct use of natural resources by tourists (water, energy, etc.): the water consumption of a tourist on holiday might exceed 10-100 times the water consumption of local inhabitants, causing major problems in arid and semiarid areas, such as the Mediterranean;
- Land use for accommodation, transport and other infrastructure construction, taking the land from agriculture and other traditional land use;
- Overexploitation of resources as building materials (wood, stone, etc.);
- Deforestation and intensified or unsustainable use of land;
- Spoiled landscapes, which then are unable to fulfil their ecological role, lose their socio-cultural and intrinsic values and cannot provide recreation or aesthetic pleasure anymore;
- Direct impact on the species composition and on wildlife: a) killing animals for food or to produce souvenirs for tourists or to trade them alive; b) hunting certain species can be the specific aim of tourism; c) for invertebrates and plant species walking and trampling can also be fatal, but cars and vehicles affect larger species as well; d) vehicles often destroy ponds and other wet habitats, which are the breeding places for amphibians, reptiles, etc.;
- Disturbance to the behaviour of animals, through misbehaviour of tourists, missing or inadequate visitor management and exceeded carrying capacity. In certain cases, the mere presence of people is enough to disturb mating, breeding, feeding or any other natural activity of species;
- Alteration to wildlife habitats and ecosystems, fragmentation and loss of habitats; infrastructure developments that are impassable for plants and animals, can cut off breeding and feeding areas or migration routes, or in case of changing circumstances, the population is unable to move to other, more appropriate locations - this makes the preservation of ecological corridors and stepping stones extremely important;
- Risk of introducing alien species, leading to the disturbance or even disappearance of some elements of the local flora and fauna;
- Coastal and soil erosion: the production of the fertile soil layer might take centuries, but if exposed to wind and water (for example in cases where the naturally protecting vegetation is removed), it can disappear during a few seasons;
- Large production of waste;
- Extraction of groundwater;
- Disposal of untreated sewage;
- Disposal of waste;
- Air pollution, primarily from transportation;
- Noise.

⁷ Anna Iványi: Linkages between biodiversity and tourism - an introduction, 2011, http://www.ceeweb.org/wp-content/uploads/2011/12/bidi_tourism.pdf



2.4 Possible negative socioeconomic impacts⁸

- Influx of people seeking employment or entrepreneurial opportunities and related social degradation; due to the seasonality of jobs and income, the all year round employment of these people cannot be ensured, causing insecurity; at the same time traditional livelihoods are disappearing because people leave their lands in the hope of a better life in the tourism industry, leading to the loss of traditional knowledge and cultural values, and also to the displacement of other economic sectors and the loss of traditional employment opportunities
- Sudden loss of income and jobs in times of downturn, in case of mono-structural development and heavy dependence on external factors;
- Earnings from tourism often do not benefit the host region or country, due to the so-called foreign exchange leakage; if hotels and other tourism facilities are owned by foreign investors;
- Unequal distribution of economic benefits among members of local communities; the increase of inequalities leads to relative poverty in communities;
- Neglect of human resource development, providing only unqualified and poorly paid jobs for locals; the visitors meet the local people only in the role of “servants” to the tourists, giving way to superficial, misleading, misinterpreted intercultural encounters;
- Conflicting resource use, tourists or tourism facilities are privileged, even if the basic needs or interest of the local community are not met;
- Distorted infrastructure development, far exceeding local needs; the maintenance of the constructed infrastructure lays a heavy burden on the local population even when the tourists have left (off seasons, or because the destination is not that trendy any more or because of global conflicts detaining travel);
- Increase in land and consumer goods; in the case of a frequented holiday destinations the prices can become so high, that local people cannot afford to buy land or a house for them and their children, or to eat in the restaurant;

It should be taken into consideration that tourism has an important financial aspect for the countries. The tour and activity industry sector has become indeed a multi-billion EUR market. It generated 37,000 million EUR in Europe in 2015, tripling the total market size of car rental (10,000, million EUR) and reaching almost half the total market for hotel reservations (80,000 million EUR).⁹ International tourist arrivals grew by a remarkable 7% in 2017 to reach a total of 1,322 million, according to the latest UNWTO World Tourism Barometer. This strong progress in the sector is expected to continue in 2018 at a rate of 4%-5%.¹⁰ No wonder, the tourism sector is increasingly seen as a key driver in economic development, and it is essential for job creation and the prosperity of communities around the world.

⁸ Anna Iványi: Linkages between biodiversity and tourism - an introduction, 2011, http://www.ceeweb.org/wp-content/uploads/2011/12/bidi_tourism.pdf

⁹ <https://www.treksoft.com/en/blog/travel-tourism-stats-2016> (accessed: 2018.02.04)

¹⁰ <http://media.unwto.org/press-release/2018-01-15/2017-international-tourism-results-highest-seven-years> (accessed:2018.12.03)



However, it is still a great challenge to ensure that this growth and profit benefits every member of every host community, that it is environmentally responsible, universally accessible and in line with the Sustainable Development Goals.

According to the United Nations, there were nearly 1.2 billion international travellers in 2015, unincreasing from 674 million in the year 2000. The latest figure represents nearly one out of seven people in the world and is expected to grow to 1.8 billion people by 2030. The WTO forecasts that the number of international arrivals will reach 1.56 billion by 2020.¹¹

However, it is important to keep in mind that only a quite small percent of the world's population is able to travel abroad, and these are primarily people from well off industrial countries.

2.5 Definitions: Eco-tourism Vs Sustainable Tourism

There have been several attempts to give a clear definition of ecotourism and sustainable tourism, but none of these became broadly accepted and recognized and the existing definitions sometimes vary significantly. There are strong debates even on the terms used, not to mention their exact content or practical implementation. The following definitions may help to distinguish them.

Ecotourism is "...responsible travel to natural areas which conserves the environment and sustains the well-being of local people"¹².

Ecotourism is environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features – both past and present) that promotes conservation, has low impact on the environment, and provides for beneficially active socio-economic involvement of local populations¹³.

Ecotourism is "nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable"¹⁴.

Sustainable tourism "operates within natural capacities for the regeneration and future productivity of natural resources; recognizes the contribution that people and communities, customs and lifestyles, make to the tourism experience; accepts that these people must have an equitable share in the economic benefits of tourism; and is guided by the wishes of local people and communities in the host areas"¹⁵.

Sustainable tourism is "all forms of tourism development, management and activity that maintain the environmental, social and economic integrity and well-being of natural, built and cultural resources in perpetuity".¹⁶

Sustainable tourism is tourism that puts sustainable development into practice in its development, management and integration with the wider economy, society and the environment. It includes the participation of local communities in tourism and ensures that they have an equitable share in its benefits, so as to protect the quality human and natural environments and resources on which tourism

¹¹ <https://www.e-unwto.org/doi/pdf/10.18111/9789284403950> (accessed: 2018.02.04)

¹² The International Ecotourism Society, 1991, <https://www.ecotourism.org/what-is-ecotourism>

¹³ IUCN, 1996, <http://www.ecogo.org/tag/iucn-ecotourism-definition/>

¹⁴ The Australian Commission on National Ecotourism Strategy, 1994, <http://www.greengetaways.com.au/sustainability-in-tourism-in-australia/>

¹⁵ Tourism Concern & WWF, 1992, <http://www.earthsummit2002.org/toolkits/women/ngo-doku/ngo-comm/csd/csd19994.html>

¹⁶ Federation of Nature and National Parks, 1993, http://www.federparchi.it/PDF/Loving.them.to.death_small.pdf



depends; and operating within natural capacities for the regeneration and productivity of natural resources.¹⁷

Sustainable tourism is “any form of development or management of tourist activities, which ensures the long-term protection and preservation of natural, cultural and social resources and contributes in a positive and equitable manner to the economic growth and well-being of individuals living in, working in or visiting the protected area”.¹⁸

¹⁷ UNEP 1999, <http://sdt.unwto.org/content/about-us-5>

¹⁸ The European Charter for Sustainable Tourism in Protected Area, 1995, <https://www.europarc.org/wp-content/uploads/2015/05/2010-European-Charter-for-Sustainable-Tourism-in-Protected-Areas.pdf>



3 Summary of recommendations of the practitioners

Among others, there are four major, internationally accepted professional guides that sustainable tourism managements should consider. Besides, in the end of this chapter we will also mention the United Nation's International Year of Sustainable Tourism for Development as an important milestone.

1. **Convention on Biological Diversity (CBD)** and its guidelines on biodiversity and tourism development;
2. **International Union for Conservation of Nature (IUCN)** guidelines for planning and management of sustainable tourism;
3. **European Commission's guidelines**, initiatives and good practices in Europe for sustainable tourism and Natura 2000;
4. **European Charter for Sustainable Tourism (ECST)**.

Among the several global initiatives that were produced in order to support sustainable tourism, the first important collection of guidelines we mention here is the **Convention on Biological Diversity (CBD)**¹⁹.

3.1 The Convention on Biological Diversity (CBD) guidelines

The Convention was opened for signature at the United Nations Conference on Environment and Development (UNCED) in June 1992. It came into effect on 29 December 1993 and currently has 188 Parties. The principal goals of the Convention on Biological Diversity are:

1. the conservation of biological diversity;
2. sustainable use of its components;
3. the fair and equitable sharing of the benefits resulting from the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, as well as by proper funding.

Tourism has been discussed within the CBD for a number of years. As tourism forms one of the world's biggest economic sectors, the Convention has understood the necessity to get involved in tourism development procedures, which therefore led to the development of international recommendation focusing on sustainability. After years of consultations, the 7th meeting of the Conference of the Parties to the Convention (CBD/COP7), held in Kuala Lumpur, Malaysia, in 2004, adopted the international guidelines for activities related to sustainable tourism development: the CBD Guidelines on Biodiversity and Tourism Development.

It included vulnerable terrestrial, marine and coastal ecosystems and habitats of major importance for biological diversity and protected areas, including fragile riparian and mountain ecosystems.

These guidelines can be seen as supportive documents to all stakeholders of tourism development and biodiversity conservation (including policymakers, managers, whether in national or local government, the private sector, local communities, NGOs or other organizations) as they define areas of application, management processes, tasks and responsibilities of the respective institutions, environmental impact assessment and monitoring. Further the notification process, public relations and equal allocation of benefits are of great importance for the realization of sustainable tourism. As the most successful

¹⁹ Guidelines on Biodiversity and Tourism Development, published by the Secretariat of the Convention on Biological Diversity, Montreal 2004, <https://www.cbd.int/doc/publications/tou-gdl-en.pdf>



multilateral environmental agreement, the CBD constitutes the appropriate framework to work out global guidelines on biological diversity and tourism development.

3.1.1 Elements of the guidelines²⁰

3.1.1.1 Scope

The Guidelines cover all forms and activities of tourism, including but not limited to, conventional mass tourism, ecotourism, heritage tourism, nature- and culture-based tourism, leisure and sports tourism, cruise tourism. These activities should be consistent with the recommendations of conservation and sustainable use of biological diversity. The Guidelines are relevant for tourism and biological diversity in all geographical locations and tourist destinations.

3.1.1.2 The policy-making, development planning and management process:

Framework for management of tourism and biodiversity

Steps of the management process should be undertaken through a multi-stakeholder process, including indigenous and local communities to ensure their participation, government bodies, tourism sector, NGOs to increase their awareness and promote the exchange of information and best practices. The policy-making, development planning and management process consist of the following steps:

- Baseline information and review;
- Vision and goals;
- Objectives;
- Review of legislation and control measures;
- Impact assessment;
- Impact management and mitigation;
- Decision making;
- Implementation;
- Monitoring and reporting;
- Adaptive management.

3.1.1.3 Notification process in relation to such a management framework

All stakeholders, who may be affected, including indigenous and local communities should be provided with full information on the tourism development plans, taking into account local, regional and national impacts. The recommended measures include the list of information to be disclosed to guarantee appropriate transparency.

²⁰ Anna Iványi: Linkages between biodiversity and tourism, 2011, An introduction,
http://www.ceeweb.org/wp-content/uploads/2011/12/bidi_tourism.pdf



3.1.1.4 Public education, awareness-raising and capacity-building concerning tourism and biodiversity.

Education and awareness-raising activities should focus on a wide range of stakeholders, including the general public, the professional sectors and all levels of governments, as well as the tourism sector itself, along with the tourists, to encourage the conservation of natural and cultural heritage, and avoid unfavourable effects. Capacity-building activities should contribute to the effective implementation of the guidelines by allowing stakeholders on all levels to participate in the process.

3.2 The International Union for Conservation of Nature (IUCN) guidelines

The report of the International Union for Conservation of Nature (IUCN) entitled “**Sustainable Tourism in Protected Areas: Guidelines for Planning and Management**”²¹ aims to assist protected area managers and other stakeholders in the planning and management of protected areas based on practical case studies and experience. These guidelines provide a conceptual background for understanding park tourism and its management, providing a theoretical basis for the management, including practical advice.

The report concludes that protected area managers need to make continuous efforts to communicate with all stakeholders. Only with the broad support of the community will the management be successful in the long term. The guidelines suggest that national and international organizations need to encourage governments to make improvements in the following critical areas:

1. Support for effective legislation, with adequate resources for implementation;
2. Creation of national policies on protected areas and the management of tourism (as well as education about the environment and conservation); and
3. Development of a management plan for each protected area, covering all activities, including tourism, to make sure that objectives are achieved, and resources are well-used.

The underlying goal is to ensure that tourism contributes to the purposes of protected areas and does not undermine them. Guidelines are suggested for increasing the benefits of tourism in all kinds of protected areas, whether owned or managed by public, private, voluntary or community bodies, by the following actions:

- Ensure that the measurement of park tourism activities, volumes and impacts is accurate, as complete as possible and that the data are effectively communicated;
- Match the services and products available in the park and locally to tourist travel motives;
- Make products and services available for tourists’ expenditure (e.g. recreation services, accommodation, crafts, and foods);
- Aim for high service quality in all tourist services;
- Develop a constituency of satisfied and supportive park visitors, people who will argue for park objectives in the large political debates in society;

²¹ Sustainable Tourism in Protected Areas: Guidelines for Planning and Management, Eagles, Paul F. J., Haynes, Christopher D., McCool, Stephen F., 2002. http://cmsdata.iucn.org/downloads/pag_008.pdf



- Develop opportunities for park visitors to play a positive role in park management (through membership in Friends Groups, by providing donations to targeted programs, or providing personal assistance to staff);
- Ensure that all information and interpretation programs create appropriate expectations;
- Minimize local leakage (retain local expenditures through maximum local self-sufficiency) by developing linkages with local industries;
- Provide local accommodation options;
- Provide recreation activity options;
- Encourage consumption of locally-grown foods;
- Ensure local participation and control (e.g. local guide services);
- Ensure revenue-sharing or direct payment programs;
- Understand the role of the protected area in regional and national tourism activities;
- Understand the fiscal and economic roles of park tourism;
- Host special events;
- Provide opportunities for local people to celebrate their cultural traditions;
- Where needed, assist in the education of local people in the skills necessary for tourism;
- Evaluate all tourism services provided by the private sector to ensure service quality and adherence to park policy;
- Ensure that the park has staff trained in tourism planning and management;
- Continuously evaluate all tourism programs to ensure that goals are met;
- Ensure that tourism programs are based upon competent financial management;
- Price appropriately;
- Earmark the income from fees appropriately.

In the same time, tourist facilities and programs within protected areas should act as standard-setters in environmentally sensitive design and operations. Good design and sympathetic operations can increase local and visitors' awareness of key park values and demonstrate to all visitors the protected area management's commitment to environmental protection. This can be done by:

- Minimizing the negative environmental impact of visitor support services;
- Creating an atmosphere in which visitors feel they are in a special place;
- Setting an example of environmentally sensitive design and operation practices, to educate and demonstrate the value and practicality of sustainable, innovative and effective solutions.

3.3 The European Commission's guidelines (directives)

Directed by the European Union (EU), the Birds Directive (1979) and the Habitats Directive (1992) a new project was elaborated in 1999 for all stakeholders concerned with the development of sustainable tourism



to shape national laws by directing the conservation of specific species and habitats. Under the Birds Directive Member States select the most appropriate sites and designate them directly as Special Protection Areas (SPAs). These sites then automatically become part of the “Natura 2000”²² network. The aim was to create a coherent ecological network of protected areas in the EU, where habitats and species are maintained and restored at a favourable conservation status in their natural range. The preservation of biodiversity in the designated sites may require human activities to be maintained. The purpose of the Natura 2000 network is therefore not to create nature sanctuaries where all human activity will be systematically excluded. However, human activities must be compatible with the conservation aims of the designated sites. Therefore, tourism activities can be carried out in the Natura 2000 sites, as long as they are properly managed within carrying capacity. The status of being a Natura 2000 site may increase the significance of the area as a destination, and in turn, deriving benefits can be dedicated to preservation and restoration.

The article 6 of the Directive obliges the Member States to set up conservation measures. Management plans specifically designed for the sites concerned or integrated into other development plans seem to be the best way to achieve this. Although there are no appropriate regulations, it would be especially important to include the local community in planning and management, because human activities will remain an organic part of the network. A major problem with the Natura 2000 network is that inhabitants of these areas are not always informed sufficiently and therefore fear restrictions in their home region.

Sustainable tourism and tourists that respect the conservation aims of Natura 2000 sites can contribute to putting Natura 2000 into a better picture.

3.4 Natura 2000 priorities for sustainable tourism in protected natural areas (Strategy - Policy - Planning)

3.4.1 Assessing resources, recognizing vulnerability, choosing appropriate tourism²³

Reflecting existing designations and plans

- Keep in mind the requirements of the designation, such as directives 6.1-6.4 for Natura 2000 sites,
- Integrate the Natura 2000 sustainable tourism strategy into existing management plans.
- Refer to existing regional and national plans and strategies.
- Article 6 is one of the most important articles in the Habitats Directive as it defines how Natura 2000 sites are managed and protected²⁴. Paragraphs 6(1) and 6(2) require that, within Natura 2000, Member States:
 - Take appropriate conservation measures to maintain and restore the habitats and species for which the site has been designated to a favourable conservation status;

²² Sustainable tourism and Natura 2000 - Guidelines, initiatives and good practices in Europe http://ec.europa.eu/environment/nature/info/pubs/docs/nat2000/sust_tourism.pdf

²³ European Commission: Environment - Management of Natura 2000 sites (accessed: 2018.12.04.), page 47. http://ec.europa.eu/environment/nature/info/pubs/docs/nat2000/sust_tourism.pdf

²⁴ European Commission, Environment, Management of Natura 2000 sites (accessed: 2018.12.04.) http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm



- Avoid damaging activities that could significantly disturb these species or deteriorate the habitats of the protected species or habitat types.
 - Paragraphs 6(3) and 6(4) lay down the procedure to be followed when planning new developments that might affect a Natura 2000 site. Thus:
- Any project likely to have a significant effect on a Natura 2000, either individually or in combination with other projects, shall undergo an Appropriate Assessment to determine its implications for the site. The competent authorities can only agree to the project after having ascertained that it will not adversely affect the integrity of the site concerned (Article 6.3);
- In exceptional circumstances, a project may still be allowed to go ahead, in spite of a negative assessment, provided there are no alternative solutions and the plan or project is considered to be justified for imperative reasons of overriding public interest. In such cases the Member State must take appropriate compensatory measures to ensure that the overall coherence of the Natura 2000 Network is protected.

Start by understanding the site

Base all that you do on a full knowledge of the site's needs and sensitivities. Carry out an inventory of natural and human resources, assessing their well-being and need for conservation, and potential to benefit from tourism. Use, for this purpose, the information available in the Natura 2000 form that was filled in the designation of the site.

Undertake further research

If necessary, bring in new expertise to research areas under pressure and endangered species, to have a better idea of their vulnerability.

Know your existing visitors

Use surveys to understand exactly who is visiting the site at the moment, when, why and with what impact.

Be aware of market potential and pressure

Be realistic about the volume and type of visitors who might come in future. Be alert to growing pressures as well as market potential.

Identify capacity limits

Decide whether, where and when there are limits to the number and types of visitor the site should receive in the future, if the environment and heritage is not to be degraded. Consider environment, social and carrying capacity limits.

Select types of tourism to match resources and markets

Based on the assessment of needs, resources and markets, identify the kinds of tourism appropriate to the site in the future.



3.4.2 Creating a strategy based on consultation and partnership²⁵

Involve all stakeholders from the beginning

Involve a wide range of local partners from the beginning. Consider holding an open forum at the outset. Make sure the strategy is based on a wide consultation between site managers, conservationists, tourist operators and local communities.

Establish partnership groups

Take the strategy forward through establishing working groups and seminars. Encourage an association of local tourism professionals to become official partners responsible for the strategy.

Raise awareness and commitment

Promote widespread awareness of the strategy process. Involve local media. Organize field trips locally and to other areas. Ask all stakeholders to formally commit themselves to the strategy, including signing any resulting charter.

Allocate necessary resources

Allow sufficient time to create the strategy (minimum 6 months). If necessary, use external consultants to help with methodology, drafting and evaluation. Designate and train a specialist in sustainable tourism to co-ordinate and oversee the strategy.

Ensure the strategy is simple and clear

Produce a strategy document, which is well-focused, easy to read and understand and well disseminated.

Keep everyone involved and informed

Inform your partners at every stage. Have a wide discussion on early drafts. When finalized, launch the strategy officially through an event and promote early results and visible benefits.

Widen the scope of the protected area

Address strategic issues of tourism management and development in the areas around the site, including buffer zones.

3.4.3 Implementing, evaluating and updating a sustainable tourism strategy, relating it to national policy²⁶

Establish realistic action programs and plans

Prepare annual action programs based on the strategy, which are realistic and can be implemented.

Select monitoring indicators

²⁵ European Commission: Environment - Management of Natura 2000 sites (accessed: 2018.12.04.), page 48. http://ec.europa.eu/environment/nature/info/pubs/docs/nat2000/sust_tourism.pdf

²⁶ European Commission: Environment - Management of Natura 2000 sites (accessed: 2018.12.04.) page 49. http://ec.europa.eu/environment/nature/info/pubs/docs/nat2000/sust_tourism.pdf



At the outset, consider what kind of indicators of performance and impact should be used to monitor the strategy and judge success.

Identify responsibility for action

Through the action program allocate responsibility for specific actions to appropriate partners.

Use a range of direct action, incentives and controls

Include actions to be undertaken directly by the site management, as well as incentives and controls by others. Use relevant local and regional laws and measures such as financial incentives, planning controls, labels and awards. Include corrective measures and actions to rectify problems as well as pursuing new opportunities.

Seek evaluation and recognition for the strategy

Ask external consultants to evaluate the strategy and results or refer to official national or European assessment processes.

Reflect and influence regional/national strategies

Make sure your approach reflects national and regional strategies on sustainable tourism and nature conservation. Through your work, seek to influence policy, laws and actions at these higher levels.

Review the strategy every 3-5 years

See the strategy as a dynamic process. Seek to review it every 3 to 5 years.

3.5 The European Charter for Sustainable Tourism (ECST)

The European Charter for Sustainable Tourism, defined by the EUROPARC Federation, is both a planning tool and a quality label. The 10 Charter principles are the followings:

- Working in Partnership
- **Principle 1:** To involve all those implicated by tourism in and around the protected area in its development and management.
 - Preparing and implementing a strategy
- **Principle 2:** To prepare and implement a sustainable tourism strategy and action plan for the protected area.
 - Addressing key issues
- **Principle 3:** To protect and enhance the area's natural and cultural heritage, for and through tourism, and to protect it from excessive tourism development.
- **Principle 4:** To provide all visitors with a high-quality experience in all aspects of their visit.
- **Principle 5:** To communicate effectively to visitors about the special qualities of the area.
- **Principle 6:** To encourage specific tourism products that guarantee the discovery and understanding of the area.
- **Principle 7:** To increase knowledge of the protected area and of sustainability issues amongst all those involved in tourism.



- **Principle 8:** To ensure that tourism supports and does not reduce the quality of life of local residents.
- **Principle 9:** To increase benefits from tourism to the local economy.
- **Principle 10:** To monitor and influence visitor flows to reduce negative impacts.

3.6 The International Year of Sustainable Tourism for Development

The rapid increase of tourists across the world and Central Europe is exactly why sustainable tourism needs more and more attention. The United Nations has designated 2017 as the International Year of Sustainable Tourism for Development. This was a unique opportunity to raise awareness of the contribution of sustainable tourism to development among public and private sector decision-makers and the public.

At the same time, it aimed at mobilizing all stakeholders to work together in making tourism a catalyst for positive change.

In the context of the universal 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs), the International Year aspires to support a change in policies, business practices and consumer behaviour towards a more sustainable tourism sector that can contribute to the SDGs.

The World Tourism Organization (UNWTO), the United Nations Specialized Agency for Tourism promoted in 2017 tourism's role in the following five key areas²⁷:

1. Inclusive and sustainable economic growth
2. Social inclusiveness, employment and poverty reduction
3. Resource efficiency, environmental protection and climate change
4. Cultural values, diversity and heritage
5. Mutual understanding, peace and security.

At the end of the International Year of Sustainable Tourism for Development, the goal stayed the same, i.e. to answer the following questions:

- how to manage tourism in a responsible and sustainable way beyond 2017?
- How to maximize the social and economic benefits of tourism while minimizing any negative impacts on the environment and the host communities?
- How to bring awareness to responsible travel for the public and - in the same time - improve the level of environmental management of the Protected Areas (PAs)?

²⁷ UNWTO World Tourism Barometer, EXCERPT, Volume 15, December 2017, http://cf.cdn.unwto.org/sites/all/files/pdf/unwto_barom17_06_december_excerpt_.pdf

4 Case studies, examples

The case studies in this chapter will point out several examples how national parks and private tour operators applied the principles of the European Charter for Sustainable Tourism successfully in practice in different protected areas. Following, we look at good practices according to the principles, and sub-principles. As you might notice, sometimes we found more than one good practice for the same principle.

4.1 Principle 1. To involve all those implicated by tourism in and around the protected area in its development and management

4.1.1 CASE STUDY I.

(Maintaining good communication and engagement between local residents, businesses, visitors and the protected area authority)

In Bosnia and Herzegovina's Una National Park²⁸ we can see an excellent example how establishing a tourist cluster, with the aim of creating new tourist products and economic revitalization, can contribute to a better local community life.



Fig. 1 - Strbacki buk, National Park Una, (c) Haris Hadžihajdarević

²⁸ Case study compiled by Haris Hadžihajdarević (Public Company Una National Park), Andrea Štefan (WWF Adria), Zrinka Delić (WWF Adria), Ana Krvarić (WWF Adria)



Una National Park (IUCN II category) is situated in the north-western part of Bosnia and Herzegovina, mostly in the area of Bihać municipality and to a lesser extent in the municipality of Bosanski Petrovac and Drvar. The Park encompasses the valley of the river Una, the canyon of the river Unac, right tributary of Una all the way to the river Krka in the west and the orographic slopes of the mountains Grmeč, Pljesevica and Osječenica. Una River is a compound of important natural resources, diverse and preserved natural landscapes of outstanding beauty, rich cultural and historical heritage.

Due to the lack of a strategic approach and bodies targeting the issue of sustainable tourism development in the context of the protected area, an initiative for the establishment of a tourist cluster was established (in 2017). Tourist Cluster Una is the result of several years of cooperation between the local community, tourist services providers, civil society organizations, sports associations and other stakeholders in the Bihać area, and it is designed to help local businesses and tourist entities to use economic opportunities offered by increasing tourism in the Una National Park. The Cluster was established within the framework of WWF's program "Protected Areas for Nature and People"²⁹, field project Una funded by the Swedish Development Agency.

Members of the Cluster work on building the identity of the destination, standardising and strengthening the quality of services, promoting the overall tourist offers and their expansion, as well as joint planning of activities related to the strengthening of the sustainable development sector and nature conservation in the Una NP.

With the support of WWF, the Cluster organises education for its members on various topics with an aim to promote existing and create new tourism products. It works on branding and labelling of the cluster members' products, standardisation of members' businesses and products and supporting cooperation between cluster members. It also works on the creation of a visual identity for the cluster, promotes tourism in the Bihać area and raise awareness on all levels (the cluster was presented at tourism fairs, as well as on all levels of government, via continuous advocacy). Subsidies for developing new tourism products and to improve the quality of existing products and services are given as incentives, thus supporting economic development in the area. Within the "Eco-aware" programme work is done on raising awareness of the local community regarding the importance of protecting nature.

Some of specific actions are:

- Before the proclamation of the Park, sports activities such as rafting and kayaking on the Una River were performed with no restrictions, thus threatening highly sensitive tufa deposits (potentially NATURA 2000 habitat). Today, zones where those activities can be performed, as well as conditions for their performance, are regulated by the Public Company Una National Park which provides permits and concessions for specialized local agencies, therefore minimizing the impact on the river and tufa beds.
- With the proclamation of the Park, on certain parts of the Una, Unac and Krka fishing districts, a new regulation of the fishing regime has been organized, allowing conditions for further promotion of this sport. Recently, sport and recreational fishing, fly fishing represent the most frequently used amusement for nature lovers who, as tourists, visit the Park. This activity is based on the principle of "catch and release" and has a positive impact on the fish stock, in particular the preservation of autochthonous species of *Thymalsus thymallus* and *Salmo trutta*. Using fishing activity, the pressure of the invasive alien species of *Oncorhynchus mykiss* to the native ones, can be mitigated and managed.

²⁹ Contributing to a better local community life (accessed: 2018.13.01.) https://natureforpeople.org/wwf_examples/local_una/

- There is an excellent cooperation between the Park and local beekeepers (and beekeepers' association) through the development of beekeeping, presentation (and education) to visitors and promotion of products and local fauna and flora. Through cooperation, awareness raising regarding large carnivores is planned, especially through the development of a so called "bear friendly label" aimed for farmers, local companies and craftsmen contributing to coexistence between bears and humans through use of "bear friendly" practices or through active promotion of bear conservation in the local area.



Fig. 2 - Local produces from the river Una area (c) Haris Hadžihajdarević.

4.1.2 CASE STUDY II

(Supporting the economic viability and performance of local tourism businesses and provision of local employment in tourism)

The example of the Galápagos Islands, Ecuador, points out the importance of involving all parties concerned in the successful management of tourism, so that tourism can benefit local residents in one way or another.

The Galápagos Islands are a small chain of thirteen islands 1,000 km from the Western coast of South America, where tourism revenues have helped to finance and protect the archipelago's unique wildlife for decades. Giant tortoises, Galápagos penguins, blue-footed boobies, marine iguanas, the distinctive finch species that informed Charles Darwin's work on evolution all have inspired tens of thousands of visitors and earned the volcanic archipelago one of the very first World Heritage status.

In the Galápagos, tourism has been growing fast during the last couple of decades. On an archipelago with a resident population of about 30 000, annual tourist visitation has topped 200 000 in 2015.³⁰ Besides, large revenues were generated from the fishery that was an important income for lots of locals. The stakes were high: it was important to manage the direction expanding local tourism industry took, while arising conflicts had to be addressed.



Fig. 3 - Dr. Steve Blake and a giant tortoise © Christian Ziegler³¹

Tourism based on sea was the classic way to tour the Islands. After arrival by plane, the typical international ecotourist transfers immediately to a touring ship for one or two weeks. Ships provide excursions to different parts of the islands, mostly within the Galápagos National Park, which occupies 97% of the archipelago's land area. Visitors take short hikes on designated trails and also may snorkel and dive.

Park authorities, scientists, and tour operators have carefully worked out excursion timing and size limits to avoid any undue disruption to wildlife. The Charles Darwin Research Station scientists helped by working on problems with invasive species and the protection of the Galápagos Marine Reserve fauna, such as sharks and tuna. For decades, the Galápagos have been regarded as one of the world's best examples of managing tourism to safeguard natural habitat.

³⁰ Changing Planet, Galápagos Tourism Backfires, Jonathan Tourtellot (accessed: 2015.01.05.)
<https://blog.nationalgeographic.org/2015/01/05/galapagos-tourism-backfires/>

³¹ Sustainable Tourism 4/5: Managing Ecotourism in Galapagos (accessed: 2018.26.04.)
<http://www.discoveringgalapagos.org.uk/discover/sustainable-development/sustainable-tourism/managing-ecotourism-in-galapagos/>



However, there was a major conflict in the islands between the residents and the tourist industry. The problem was that many of the locals were not getting much out of tourism on the islands; they felt they do not get their share from the islands' resources.

Tourists would land and sail off into the park, taking their money with them on the boats, leaving locals without the opportunity to benefit from the revenue of tourism. On the top of it, in the 1990s fishermen rebelled against fishing restrictions, notoriously attacking the national park office and slaughtering several giant tortoises to make their voice heard. Sustainable tourism however requires significant benefit to people living there, and that was not happening.³²

Galápagos is also an example that tourism needs to be well handled. If not, souvenir shops selling cheap T-shirt, unregulated hotels, sport fishing boats, and tour businesses stay without proper regulation, the tourism industry can be its own worst enemy, and finally destroys itself. Mass tourism can outnumber craft stores that sell quality artisanry and scare off visitors with an appreciation for the natural treasures and cultural heritage of the Galápagos.

The problem - the dissatisfaction of residents - was only addressed when local participation was facilitated in conflict resolution, and as part of the solution, tourism by land began too. The need to ensure more tourism revenue for the Galápagos locals has led to the second and fastest growing style of tourism, based on land accommodations and day tours.

The change was fundamental. By now, absolute value - some 45% of tourists are land-based, way up from 10 years ago.³³ In the year 2000 almost all the 69 000 tourists to Galapagos embarked on a cruise. In 2015, of the 225 000 tourists that came to Galápagos (a 326% increase in 15 years), 152 000 were land based tourists, while only 73 000 were ship based. Government figures show a peak of ship-based visitors at 83 000 in 2008 and project a decline to 71 000 in 2021, while land-based visitation is projected to reach 209 000 that year.³⁴

As tourism started to benefit local communities, an increasing number of fishermen have switched to operating tour boats, reducing pressure on the fauna of the sea. Recently more and more Ecuadorians are able to afford to travel to the Galápagos, that is very beneficial as mainland Ecuadorians care more about the protection of the Galápagos' natural heritage, when they have actually seen the islands for themselves.

However, it was only after several local, national and international partners initiated a combination of social, institutional and economic incentive measures that the situation started to get better.³⁵ These steps helped to address the threats to marine biodiversity and brought social peace in the Galapagos. Many of these incentive measures have a long history, but were not implemented before due to a lack of social and political support:

- social incentive measures - conflict resolution and participatory planning;

³² Changing Planet, Galápagos Tourism Backfires, Jonathan Tourtellot (accessed:2015.01.05.) <https://blog.nationalgeographic.org/2015/01/05/galapagos-tourism-backfires/>

³³ Changing Planet, Galápagos Tourism Backfires, Jonathan Tourtellot (accessed:2015.01.05.) <https://blog.nationalgeographic.org/2015/01/05/galapagos-tourism-backfires/>

³⁴ Fodor's: Don't go to Galapagos in 2018, 2017.7.12. (accessed:2018.17.04.) <https://www.cnhtours.com/news/2017/12/7/fodors-dont-go-to-galapagos-in-2018/>

³⁵ Julia W. Novy (WWF-USA): Incentive measures for conservation of biodiversity and sustainability: a case study of the Galapagos Islands (2018.04.17) <https://www.cbd.int/doc/case-studies/inc/cs-inc-ec-galapagos-en.pdf>



-
- institutional incentive measures - the Special Law for Galápagos and the Marine Reserve Management Plan;
 - economic Incentive Measures - Enforcement, Fishery Certification and Conservation Funds.

4.2 Principle 2: To prepare and implement a sustainable tourism strategy and action plan for the protected area.

In Croatia's Nature Park Telašćica and Nature Park Lastovo Islands³⁶ marine protected areas, a sustainable tourism strategy was planned and implemented, with the wide-range involvement of stakeholders.

Telašćica Bay is located in the central part of the eastern coast of the Adriatic Sea, in the south-eastern part of the island of Dugi Otok (Zadar County). For its beauty and importance, this bay surrounded by 13 islands and islets, together with 6 islets inside the bay itself, was proclaimed a Nature Park in 1988. For the Park and the island of Dugi Otok a Sustainable Tourism Plan was developed through the cooperation of national, regional and local level actors, with local stakeholders being recognised as the most important actors in the process and having the most benefits of the sustainable use of resources in the area. In order to improve communication and cooperation with the local community and to stimulate its active engagement in the planning and implementation of the sustainable development of the area, an Advisory Board was established.



Fig. 4 - Cliffs, peaceful coves and the lake Mir in the Nature Park Telašćica.³⁷

The Board is composed of stakeholders, which provide tourist services and plan to do so in the future, as well as other parties interested in the sustainable development of the whole area. Considering numerous preconditions, stakeholders recognised sustainable tourism and Nature Park Telašćica as drivers of the development of the whole area of Dugi Otok. Activities of the Plan therefore have been developed to preserve nature and at the same time contribute to local community and tourism development. They are focused on awareness raising about the preservation of cultural, traditional and nature values of the island, improvement of the visiting system and raising destination quality, improvement of the existing and development of new tourist facilities and strengthening of the co-operation of all actors in the tourism sector on the island. The creation of a good communication network with institutions on the island through the Advisory Board is crucial to solve priority problems of the island in order to develop tourism in a

³⁶ case studies compiled by Andrea Štefan and Ana Krvarić (WWF Adria), Nikolina Baković and Vesna Petešić (Public Institution "Telašćica Nature Park"), Jelena Matoković and Bruna Đuković (Public Institution "Lastovo Islands Nature Park")

³⁷ <https://www.visitadriatic.eu/en/hrvatske-requje/nacionalni-parkovi/park-prirode-telascica/> (accessed: 2018. 08.19.)

sustainable way. With the support of the local government the waste management problem of the whole island is tackled, as well as the development and improvement of new and existing tourism products (raising quality of visitor infrastructure, marketing and branding of local services and products, etc.) in cooperation with the local tourist board and local services providers.



Fig. 5 - The youngest Croatian Nature park with more than 40 islands in the archipelago: Nature Park Lastovo Islands.³⁸

Lastovo Islands are located in the County of Dubrovnik-Neretva in the Municipality of Lastovo, Croatia. Due to their natural beauty, landscape value, dense forests and fertile fields enriched with ponds, high coastal steppes, land and underwater caves, numerous rare marine and land habitats the Lastovo Islands Nature Park was established in 2006. The youngest Croatian nature park occupies 195 km², with the sea surface covering more than 2/3 of the total area of the Park. Lastovo Islands are also rich in cultural and historical heritage. The Park area is part of Natura 2000.

A Sustainable Tourism Plan for the Nature Park Lastovo Islands was developed through the cooperation of the private and civil sector. From the beginning, a wide circle of local stakeholders who dealt with tourism or planned to do so in the future were included in the process, so that the benefit of sustainable tourism development stays within the local community. Within the Plan, the Park is envisioned as a recognizable destination of ecotourism that promotes the preservation of the natural values and traditions of the islands, contributes to the sustainable financing of the local community and offers visitors the opportunity to become the part of the coexistence of man and nature on Lastovo Islands.

³⁸ https://www.solsemestra.com/en/croatia/85/nature_parks_of_croatia/lastovo_islands_nature_park (accessed: 2018. 08.19.)



Work on the development of sustainable tourism continued with the EU co-financed DestiMED project which develops and tests ecotourism standards, offers and monitoring tools in 13 protected areas around the Mediterranean basin forming the quality components of a future destination management organization (DMO)³⁹.

While Telašćica Nature Park is already a well-known touristic destination and faces mass tourism, on the other side, Lastovo Islands Nature Park is still not an affirmed destination and does not have a large number of visitors. A huge step for both protected areas and locals was made during the MedPAN⁴⁰ when Public Institutions which manage the protected areas, started a stronger collaboration with the local community, integrating their opinions and comments into the Management Plan, and thus creating a solid base for future co-management. From 2014 to 2017 both Nature Park Telašćica and Nature Park Lastovo Islands were, among several other protected areas, involved in the project “SEA-Med: Sustainable Economic Activities in Mediterranean Marine Protected Area” aimed at supporting marine protected areas in the south and the east of the Mediterranean in developing their financial self-sustainability. The goal of the project was, with the participation of stakeholders, to develop and implement gradually a sustainable tourism plan for the Parks, increase support and awareness of the public, decision-makers and investors of the ecological, social and economic values of the Parks.⁴¹ On the other hand, it was regarded important to ensure that nature conservation organizations have the capacity, skills and tools to actively engage in planning and developing sustainable economic activities in the Parks. Specifically, support was provided for the implementation of the management plan of the Parks, the development of a sustainable tourism plan, the promotion of tourism based on natural values, and the recognition of financial mechanisms which ensure long-term sustainability.

In the Nature Park Lastovo Islands an ecotourism package was created by the Park’s staff in cooperation with the local community and WWF. The role of WWF in the project was to ensure quality and sustainability and to recommend measures to reduce the impact of tourism on natural resources.

The package includes exploration and learning about the nature of the area through various activities (diving, kayaking, etc.), and local traditions through participation in some of everyday activities of the local economy. Local stakeholders and service providers are included in the implementation of the package, thus ensuring financial sustainability of the local community. The project contributes to the awareness-raising about nature as one of the most important resources, which requires sustainable management. Education of visitors about the natural and cultural values of the area as well as awareness-raising about the importance of nature protection is realised through various activities such as diving, implemented by the authorised diving agencies, or guided boat tours, offered by the Park and accompanied by the Park ranger.

³⁹ WWF - Mediterranean Ecotourism Destination - DestiMED

http://croatia.panda.org/en/what_we_do/seas/mediterranean_ecotourism_destination_destimed/ (accessed: 2018.22.04.)

⁴⁰ WWF, The MedPAN South Project: a visual account, <http://mediterranean.panda.org/?203649/The-MedPAN-South-Project-a-visual-account>

⁴¹ https://natureforpeople.org/sustainable_business/mpa/ (accessed: 2018.23.03.)

4.3 Principle 3: To protect and enhance the area’s natural and cultural heritage, for and through tourism, and to protect it from excessive tourism development.

4.3.1 CASE STUDY I

(Monitoring tourism’s impact)

In Austria’s Trieben Valley we can observe⁴² how human outdoor activities, such as ski tours, affect animal behaviour and how measures can be taken to prevent negative effects.

Ungulates and wildlife in general often avoid areas most frequented by tourists and disappear when human recreational activity gets too intense. Tourists are usually not aware of their impact on nature. Therefore, management of visitor flow, wildlife refuges (voluntary accepted) and information dissemination are necessary to preserve biodiversity.

Trieben Valley is not a specially protected area. However, it is one of the most visited areas in Styria federal state located in the southeast of Austria for skiing tours in winter. It is situated in the lower Tauern area, an area characterized by crystalline rock formations that create perfect habitats for black grouse and chamois (dwarf-shrubs, mosaic landscape etc.).

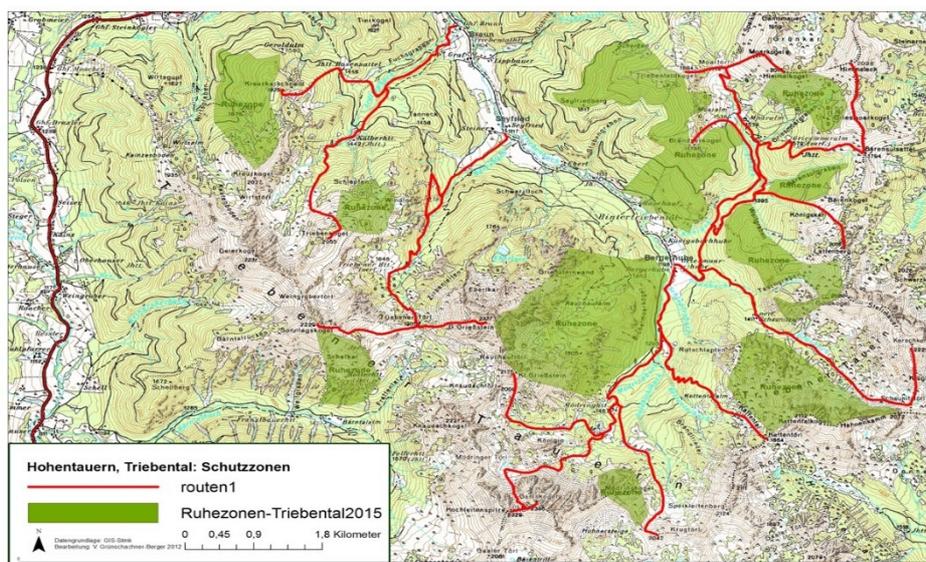


Fig. 6 - green area: refuges for wildlife, red lines: recommended ski routes

Before the start of the Trieben Valley project, ski tours tourism expanded in the recent years, especially in this area, which is close to Graz, the province capital of Styria. There were impacts on local wildlife. Especially chamois stock decreased radically in the last twenty years (like in whole Styria and Austria). In 2013 a new ski tourism guide was published with new areas for ski tourism described, which were refuge for chamois and others. Therefore, the land owner (a big Christian monastery, “Stift Admont”, which holds most parts of the valley) mobilized the Styrian department for animal protection.

⁴² Veronika Grünsachner-Berger (project organizer and coordinator) 2013-2015.

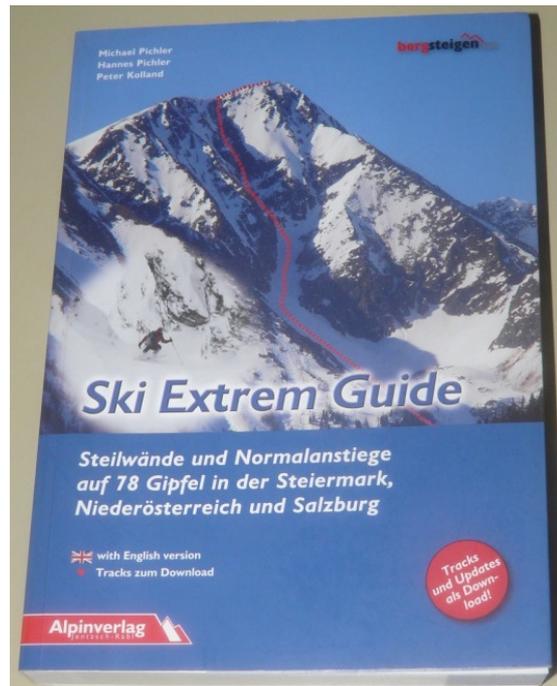


Fig. 7 - The ski tours guide, which provoked the project.

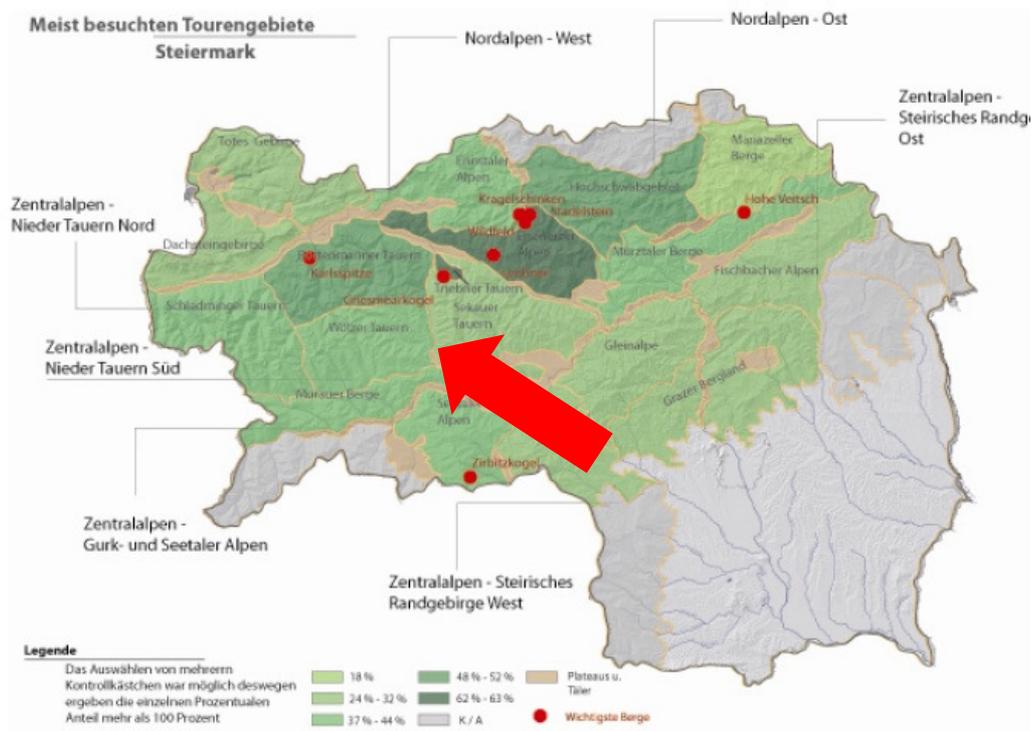


Fig. 8 - Schitter, 2010: most visited areas for ski tour-tourism in Styria: red arrow: Trieben Valley, one of the most visited areas from Styria by ski tour tourists.



Subsequently the following stakeholders were brought to the project:

- Department of Animal Protection of Styria;
- Local tourism association from Hohentauern;
- Alpine associations: Alpine Club Austria, Department of Nature Protection; Austrian Alpine Club “Naturfreunde”, VAVÖ: Union of Alpine Clubs of Austria;
- Hunting association of Styria, with local authority officials;
- Land owner, represented by the site manager, the local hunters;
- Local hosts and tour operators.

The goal of the project was to protect sensible winter territories especially the habitats of chamois and black grouse (wildlife refuges). Additional target was to protect some areas with reforestation from being used by skiers.

The project processes

A “kick off” meeting defined the common goals/questions to be analysed: which are the intensively used areas by Alpine touring? Where are sensible winter areas from black grouse and chamois? How to combine these interests? As a result:

- Lectures about the results of projects concerning the disturbance-biology of Alpine species were held. Maps with the important areas were made.
- Areas of attention have been defined, as they are used by both tourists and wildlife.
- Trips were organized to the difficult “hot spot” areas, where different solutions were discussed on how to separate skiers and wildlife.
- Several conferences were held to learn about the needs of the other stakeholders, and that of wildlife.
- Wildlife refuge areas were selected collectively. Because of the good local knowledge of wildlife, there was no need of special wildlife or tourism monitoring in advance.

At the end of the project, the common routes and the refuge areas for wildlife were agreed upon and all the interested parties respected the sensitive areas thus defined.



Fig. 9 - Some of the stakeholders in the project: Press conference in December 2015, unfortunately without snow.



Fig. 10 - Logo of the project.

Practical measures of management

There are no areas closed for the public (except the red deer feeding stations in the valley bottom). Ski tourists were informed and asked to avoid refuges for wildlife. Handouts were made and distributed to help find the common ski-routes and refuges. These were also available on the

homepage of the local tourism organisation and at the starting points of the tours. Between the seasons, the handouts were revised.

The land owner cut some forest aisles to direct skiers to the right routes.

Three big info-boards were installed at the starts of the tours in autumn 2015. Also signs at difficult crossings were erected in the area. A press conference was held, and a press release was sent to the important local and regional newspapers in December 2015. The information was also displayed in the ski tour-fora of the alpine Clubs. It was intended that ski tour guides get the information about the routes, so they could mention them in their next tour.

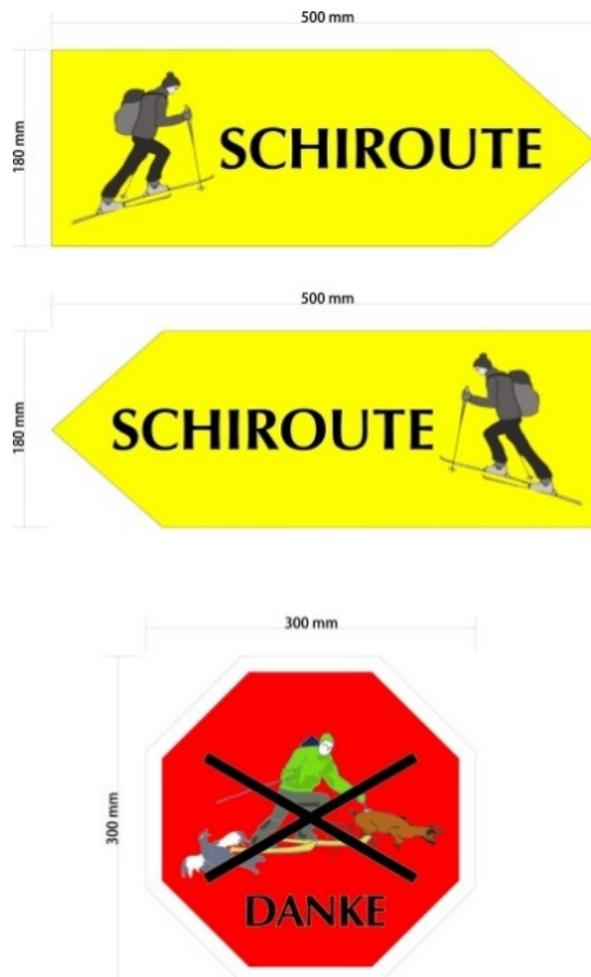


Fig. 11 - The signs on the routes.



Skitouren im Triebental

Bergerhube - Triebental Süd und Moaralm

Tourengerher, Wildtiere und Wald

Gams & Birkhuhn: Wildtiere schützen im Winter ihre Aktivitäten auf das Noverdligte ein, um Energie zu sparen. Dafür brauchen sie ungestörte Aufenthaltsorte. Müssen sie vor Menschen flüchten, verbrauchen sie sehr viel Energie.

Ihre Strategie: Gams können neben der weniger verfügbaren Nahrung von ihrem Fettreserven leben. Sie halten sich gerne an sonnigen und abgewandten Hängen auf.

Birk- und Schneehühner graben sich in Schneehöhlen ein um der kalten Witterung auszuweichen. Müssen sie aus der Höhle flüchten, kostet das viel Energie.

Auch wenn man die Tiere nicht sieht, kann es zu Flächenstörungen kommen, die viel Energie kosten.

Wer so häufig gestört wird, überlebt den Winter nicht!

Tourengerher: Erlebnis Natur, sportliche Betätigung, der Genuss der wunderschönen Alpenregion Triebental!

UNTERSCHIEDLICHE: Halte dich bitte an die Empfehlungen der Routen und Ruhezeiten. So kannst Du sicher sein, dass die Wildtiere nicht gestört werden. Lass Ruhezeit auch Deinen Hund nicht frei laufen!

Bleib ebenfalls auch, dies lautet nicht anders: In Höhle nicht schlafen sondern dort auf der Hauptebene einer jungen Pflanze abgesehen, kann der Baum nur mehr eingeschleift oder gar nicht mehr forstlich genutzt werden.

Naturverträglichen Verhalten und Rücksichtnahme auf wirtschaftlichen Nutzungen helfen den Lebensraum und seine Bewohner zu erhalten!

Ruhezeiten für die Wildtiere: Markiere die orange markierten Ruhezeiten bei Aufstieg und Abfahrt! Bleibe auf den blauen Routen! Wildtiere flüchten bei unvorhergesehenen Begegnungen mit Menschen und verbrauchen dabei viel Energie!

Diese Schilder weisen dich auf Skitouren hin und bitten darum, besonders sensible Gebiete zu meiden.

Team Triebental: alpenverein, NABU, ADAMONT, Das Land Steiermark, waldplan.at

Skitourroute
Wildruhezone

Sicherheit - Alpine Gefahren: Beachte, dass die mit dem orangefarbenen Pfeil markierten Gebiete sich befinden! Auf diesen Gebieten sind weder die Lawenregeln (Landwirtschaftliche) gelten! Gefahrenbewertung: mittlere bis hohe Gefahr! Check vor der Skitour! (Schau! Sonde, Blockier und eventuelle Pass)

Übersicht Moaralm **Übersicht Triebental Süd**

Touren Moaralm

Lattenberg: 10 Kilometer Aufstieg 430 bis 500m. Auf der Forststraße über die Grub bis Punkt 1390m, dann wenige Meter bergab, dann wieder bergauf und nach Trautental, dann nach rechts in das Gelände, über einen Bach zum Gipfel, dann nach rechts in das Gelände, dann im Wald nördlich der Grub, dann im Nordsüd, dann nach links über den Gipfel zum Gipfel. **Abfahrt:** Wie Aufstieg.

Grubhaukeggel: 10 Kilometer Aufstieg 390 bis 700m. Auf der Forststraße südlich des Königlichen Richtung Moaralm, vor der ersten Kurve nach der Höhe von dem Gebirge rechts entlang der Waldgrenze, dann nach Westen zum Gipfel, dann nach Osten über den Rücken zum Gipfel, dann nach Westen in den Gebirge, dann im Nordsüd, dann nach links über den Gipfel zum Gipfel. **Abfahrt:** Wie Aufstieg.

Moarkogel, Himmelkogel, Triebfeldkogel: 10 Kilometer Aufstieg 500 bis 700m. Auf der Forststraße südlich des Königlichen Richtung Moaralm, vor der ersten Kurve nach der Höhe von dem Gebirge rechts entlang der Waldgrenze, dann nach Westen zum Gipfel, dann nach Osten über den Rücken zum Gipfel, dann nach Westen in den Gebirge, dann im Nordsüd, dann nach links über den Gipfel zum Gipfel. **Abfahrt:** Wie Aufstieg.

Brandherkogel: 10 Kilometer Aufstieg 500 bis 700m. Auf der Forststraße südlich des Königlichen Richtung Moaralm, vor der ersten Kurve nach der Höhe von dem Gebirge rechts entlang der Waldgrenze, dann nach Westen zum Gipfel, dann nach Osten über den Rücken zum Gipfel, dann nach Westen in den Gebirge, dann im Nordsüd, dann nach links über den Gipfel zum Gipfel. **Abfahrt:** Wie Aufstieg.

Touren Triebental Süd

Gamskogel, Hochleinspitze: 10 Kilometer Aufstieg 1200m. Auf markiertem Weg nach Süden zur Mitterkogel (1400m), weiter nach Süden zur Mitterkogel, über zwei Geländestufen nach Südosten bis zum Gipfel, dann nach Westen zum Gipfel. **Abfahrt:** Wie Aufstieg.

Wiesner Gaiskogel: 10 Kilometer Aufstieg 1200m. Auf markiertem Weg nach Süden zur Mitterkogel (1400m), weiter nach Süden zur Mitterkogel, über zwei Geländestufen nach Südosten bis zum Gipfel, dann nach Westen zum Gipfel. **Abfahrt:** Wie Aufstieg.

Schnappkogel, Kerschkogel: 10 Kilometer Aufstieg 1200m. Auf markiertem Weg nach Süden über die Grubhaukeggel Richtung Moaralm, dann im ca. 150m nach der Quering des Grubhaukeggel, dann auf der abgewandten Forststraße nach Osten wieder bis zum Gipfel, dann entlang der Forststraße zum Gipfel, über den Gipfel, dann nach Westen zum Gipfel, dann im Nordsüd, dann nach links über den Gipfel zum Gipfel. **Abfahrt:** Wie Aufstieg.

Pumucklsattel, Krugkogel: 10 Kilometer Aufstieg 1200m. Auf markiertem Weg nach Süden Richtung Mitterkogel, vor der Abzweigung zur Mitterkogel nach ca. 100 m auf der Forststraße stehen dann in südlicher Richtung der Mitterkogel, dann nach Süden zum Gipfel, dann nach Westen zum Gipfel, dann im Nordsüd, dann nach links über den Gipfel zum Gipfel. **Abfahrt:** Wie Aufstieg.

Kettenkogel: 10 Kilometer Aufstieg 1200m. Auf markiertem Weg nach Süden, nach ca. 1 km auf der Höhe nach Südosten ab, westwärts zum Gipfel, dann nach Westen zum Gipfel, dann im Nordsüd, dann nach links über den Gipfel zum Gipfel. **Abfahrt:** Wie Aufstieg.

Fig. 12 - One of the big Info-boards at the start of some tours.

Reaching compliance of stakeholders

In order to reach the project goals, it was important to achieve the compliance of skiing tourists and other stakeholders representing ski tourism. They must bring the idea across to their members and demonstrate their acceptance of the project. All partners in the project could have their logo on the handouts and on the big Info-boards in order to motivate them. The project will be evaluated in 2020, when the necessary modifications will be made. Meanwhile, the local hunters observe the compliance of tourists with the new rules. The handouts were taken willingly.

The aim of the project: instead of total prohibition, information and appeal is used to raise awareness about the needs of wildlife and land owners. In this way, the demands of ski tourists, wildlife and the land owner can be harmonized, while the degradation of biodiversity can be avoided. Sports should not lead to extinction of animals.

The project is exemplary because of the excellent collective work of all stakeholders. Emphasis was put on harmonizing of the interests of all project partners. Much time was spent to demount prejudices. Every stakeholder was integrated from the beginning. There was much time allocated to listen to the arguments of each other. These arrangements made a perfect working atmosphere to discuss the problems objectively and to find good solutions.



Fig. 13 - “Iglu”: Droppings of a black grouse in an old snow cave at a descendant route in the area.

Financing

The project was financed by the Styrian hunting association, the Austrian Association of Alpine Clubs (VAVÖ) and the Austrian Tourist Office (copying of handouts and their distribution). The biggest part of the expenses was covered by the land owner. The goal was that every stakeholder should contribute to the costs.

4.3.2 CASE STUDY II

(Monitoring tourism and impacts)

The Egadi Islands are three islands off the western coast of Sicily, Italy, close to Trapani and Marsala. The natural and landscape resources of the islands are the fundamental element for the economic development of the archipelago, which is highly dependent on tourist activity. The conservation of the beaches from erosion caused by waves, and their proper management is therefore crucial.



Fig. 14 - The protected coasts of Favignana, one of the Egadi Islands⁴³

The GERIN project⁴⁴ (Management of Natural Resources) was developed in the Marine Protected Area Egadi Islands by the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA). Among the many environmental goals, such as protection of groundwater and coastal strips as components that are most affected by the flow of tourism, it deals with the accommodation capacity of the smaller islands in the Mediterranean Sea and their sustainable development.

The GERIN project was divided into 3 sub-activities based on the study of the coasts and the seabed, on the hydrogeological study and on the epidemiological study of the territory.

Particular attention has been paid to the characterization and management of marine sediments and stranded plant biomass (*Posidonia oceanica* banquettes), also with a view to their use for redevelopment and compost production. The sustainable management of the *Posidonia oceanica* is crucial, since it is a native aquatic plant of the Mediterranean Sea. This plant has fundamental importance as it protects the beach from erosion caused by waves. In fact, the project made it possible to improve the quality of the

⁴³ <http://www.prolocoegadi.it/area-marina-protetta/> (accessed: 2018. 08. 19.)

⁴⁴ case study compiled by Sergio Cappucci (ENEA) and Paolo Pigliacelli (Federparchi).



seabed. However, the *Posidonia oceanica* prairie showed signs of deterioration, due to the strong interaction with anthropic activities, in particular the anchoring of pleasure boats. The biomass system has allowed the engrafting of new seedlings and has encouraged the re-heating of the prairie.

The objectives of the project were:

- preserving and qualifying existing landscape and natural assets;
- promoting innovative and sustainable landscape planning;
- reducing the phenomena caused by human activities such as landslides, coastal erosion, contaminated sites;
- reducing the consumption of environmental resources and the production of discharges and waste.

The achievements were:

- the protection or restoration of the ecosystem;
- the introduction or improvement of environmental management systems.

In terms of social outcomes, the project, also thanks to the application of illustrative signs and guidance, contributed to the sustainable use of natural resources. The dissemination of the project activities took place through the creation of press releases, posters, mailings, social networks and seminars open to the public. Thus, the project focused on communicating to tourists the importance of *Posidonia oceanica* for the seabed and the need to keep the *prairie* intact for the correct balance of the ecosystem.

4.4 Principle 5: To communicate effectively to visitors about the special qualities of the area.

4.4.1 CASE STUDY I

In Slovenia's Sečovelje Saline Nature Park⁴⁵ (SSNP) the traditional manual gathering of salt in salt fields is a special feature of the cultural heritage of Mediterranean Slovenia. It also provides conditions that enable the conservation of one of the most significant natural heritages of the region. According to the written records, the Sečovlje salt-pans are more than 700 years old.⁴⁶



Fig. 15 - Slovenia's largest functioning salt pans are located in the Sečovelje Saline Nature Park⁴⁷

Sečovlje Salina is a technological facility, which must be constantly maintained in a suitable state. The protective Salina's levees are at the same time protective levees for the Salina's hinterland with its agricultural land, important thoroughfare, airport and other economic activities. The traditional salt-making at Sečovlje salt-pans has created a special space and is retaining, through traditional salt-making procedures, high biodiversity in it.

The SSNP enables its visitors to experience the Park in different manners: through effectively helping visitors' orientation (info centres and points, information boards, park trails), guided tours, workshops in

⁴⁵ Tina Primožič <http://www.kpss.si/en/intro>; <https://share.upr.si/fhs/PUBLIC/diplomske/Primozic-Tina.pdf>

⁴⁶ Sečovlje Salina Nature Park, About Park, (accessed:2018.01.05.) <http://www.kpss.si/en/the-park>

⁴⁷ <https://gaia-s.org/en/2017/10/24/secovlje-saltworks-nature-park/> (accessed: 2018. 08. 19.)



nature itself, creative workshops and various educational programs. Appropriate forms of recreation are those that are subjected to the basic apostolate of the Park. The Salt-pan Festival in the SSNP attracts numerous enthusiasts as well as salt-pan tradition and local food lovers. Research activity also takes place in the Park, in different spheres, within the framework of regular and project work. The acquired data help the management in the preparation of professional backgrounds and further research.

As far as educational work, awareness building plays an important role in the people's understanding of this protected area and thus in their attitude towards it.

The Park's activities in this sphere are the following:

- preparation of various publications;
- planned communication with the public;
- preparation and implementation of different education programs, particularly for the youth; and
- awareness-building actions.

Transportation in the Park goes towards sustainable mobility. Employees and visitors are transported by electric vehicles. The park management cooperates and organizes events with the involvement of the local community, and the employees in the Park are also locals (tourist guides, seasonal workers, project team).

4.5 Principle 6: To encourage specific tourism products that guarantee the discovery and understanding of the area

4.5.1 CASE STUDY I

(Promoting the use of public transport and other alternatives to cars)

The Gran Paradiso National Park is located in North-Western Italy, between the Aosta Valley and the Piedmont regions. The Park takes its name from Mount Gran Paradiso, the highest peak in the area (4'061m high) and is the first Italian National Park founded in 1922. The protected area was initially established to protect the Alpine ibex from poachers' threat.

The sustainable mobility project "A piedi tra le nuvole" (Walking in the Clouds)⁴⁸, promoted by the Gran Paradiso National Park, was among the finalist projects for the 2014 Smart City Award. The Smart City Award is given by the promoters to the most successful experiences and innovative projects in the field of technology and sustainable mobility. "Walking in the clouds" was selected as it provided opportunities to promote the protected area and proved to be a driver of growth and development for the local communities involved.

With the project the Park promotes environment-friendly mobility, regulates the private car traffic during summer along the road that leads to the Nivolet hill, boosts walking, cycling and promotes the use of shuttles.



Fig. 16 - Trekking in the Gran Paradiso National Park.⁴⁹

⁴⁸ Case study compiled by Patrizia Vaschetto (Gran Paradiso National Park) and Paolo Pigliacelli (Federparchi).

⁴⁹ <https://verticalife.it/it/gran-paradiso-tour-escursioni-trekking/tour-gran-paradiso-e-salita-in-vetta-con-guida> (accessed: 2018. 08.19.)



The Park equipped its fleet of vehicles with a new anti-particulate device, called Tre "D" Econovan, capable of reducing consumption and polluting emissions produced by diesel vehicles. This is a pilot experience of which the Park is the first promoter in Italy.

Nivolet is a splendid plateau of peat bogs and wet areas at a height of 2,500 meters, designed by the ebb and flow of the river Dora. It is the habitat of ibex, chamois, marmots, ermines, foxes, migratory and non-migratory birds, and rare species of flowers. It can be reached on foot along the comfortable paths of Valsavaranche and by car from Ceresole Reale. Always a site for cyclists and excursionists, in recent years, especially on Sundays in summer, Nivolet has increasingly turned into a large parking lot in the heights.

As an alternative to using cars, which is not compatible with the mission of a Park, in 2003 a project started that, besides regulating traffic, envisages the enhancement of the whole area by means of quality tourist proposals. All Sundays from the 9th of July to the 29th of August and on the bank holiday of the 15th, the last six kilometres of the road are not accessible by private cars. It is possible to go on foot, by bike or by shuttle. Tourists can reach Serrù Lake with their own car, or take the shuttle, departing from Ceresole Reale, that stops several times along the route. From the Serrù parking lot the departure times to take the shuttle with the Park guides are as follows: 10 am, 11 am, 11:30 am and 2 pm. Led by the Park guides, the shuttle route will become a journey to discover the surrounding environment. Without air and noise pollution generated by cars, these areas are a real paradise, with unique landscapes, scents and colours.

4.5.2 CASE STUDY II

(Astro-tourism)

Great Britain's Dark Skies Festivals⁵⁰ are examples for a specific tourism product: astronomy tourism. The protected area of the Exmoor National Park is home to some of the darkest skies in Great Britain, so it is a great place to gaze at the stars. Exmoor Dark Sky Reserve is the first dark sky reserve in Europe. Much of the region is free from light pollution and rightly claims to have some of the darkest skies in the country. Stargazing in Exmoor Dark Sky Reserve provides tourists with views of the cosmos, is particularly an outstanding experience for visitors coming from urban areas. In an ideal case, the sky is filled with many more stars than one would normally see from a town or city. The glow of the Milky Way can easily be spotted on dark moonless nights.



Fig. 17 - Exmoor Milky Way by Keith Trueman⁵¹.

During an annual two-week festival, a series of events are organized at all levels: from families to enthusiasts and advanced amateurs. Many events are run by the National Park Authority, but others are run by organizations and private businesses.

On clear nights the night sky of Exmoor is simply amazing: many astronomical attractions can be seen with the naked eye but even more can be discovered through binoculars or a telescope.

A number of campsites across the region are dark sky friendly. Several Dark Sky Discovery Sites offer amazing places to stargaze. In Exmoor Dark Sky Reserve good stargazing locations are Holdstone Hill, County Gate, Brendon Two Gates, Webbers Post, Anstey Gate, Haddon Hill and Wimbleball Lake.

⁵⁰ <http://www.exmoor-nationalpark.gov.uk/enjoying/stargazing>

⁵¹ Exmore National Park - Enjoying stargazing, <http://www.exmoor-nationalpark.gov.uk/enjoying/stargazing>

4.6 Principle 7. To increase knowledge of the protected area and of sustainability issues amongst all those involved in tourism.

4.6.1 CASE STUDY I

Bence Máté is a Hungarian wildlife photographer, who pioneered the one-way glass photography technique, now popular among hide-based nature photographers around the world. In 2010, his image “Marvel of Ants” won the prestigious Wildlife photographer of the Year grand title. His aim with his photos is to reflect reality in the most accurate way possible. By today probably he is one of the best-known wildlife photographers of the world, and he uses his fame for encouraging Sustainable Tourism.

He started building hides in the nature for tourists, so that people can also observe wild animals in the environment, as they behave naturally. By that he helped to create new tourist attraction first in Hungary, then in different parts of the globe, and contributed to the working of the “Heritage Cycle⁵²”:

- *Understand* - if they understand they can *value* it,
- if they value it, they want to *care* for it,
- if they care for it, they will *enjoy* it,
- if they enjoy it, they want to *understand* it.
- By making people understand one can raise people’s willingness to *take care*.



Fig. 18 - Bence Mate in one of his photography hides⁵³

⁵² https://www.researchgate.net/figure/Heritage-Cycle-The-village-of-Tchenge-is-located-in-Northeastern-Bulgaria-in-the_fig1_309358284

⁵³ https://itthonadelalfoldon.blog.hu/2014/03/21/fotozz_mate_bence_leseibol (accessed: 2018. 08. 19.)



Bence Máté helped to create habitats for protected species so they could be observed from the hides. He set up his hides outside of the protected areas, so he contributed to take ecotourists out of the PAs, thus making them less crowded. With his photos he helped bring people closer to nature, he contributed to making ecotourism more popular among city dwellers and he helped create jobs as well as livelihoods by building habitats for endangered species.

The popularity of the television series *'The Invisible Bird Photographer'* among children inspired Bence to design wildlife photography playgrounds, introducing children to wildlife photography. The hides are equipped with one-way glass, electric heating and nest boxes as well as monkey bars and slides in order to encourage children take part in outdoor activities. Bence offers his images free of charge to Hungarian national parks to use for conservation purposes. Since 2013, he has been nominated Ambassador of National Parks.

In Africa he proposed an alternative to poaching. He designed exclusive bird and big game hides for Zimanga Private Game Reserve in South Africa, which started a business based on the most extraordinary African photo hides as an alternative to classical safaris.



4.6.2 CASE STUDY II

Environmental education can assist a protected area system in shaping awareness of natural heritage and conservation. In Costa Rica, for example, when the national park and wildlife reserve system was launched in the 1960s, there was little public consciousness of the need for natural heritage conservation. Thus, it was first necessary to develop appreciation of the country's exceptional biodiversity. This was achieved in several ways:

- Encouraging park visitation for residents (valuing through experience);
- Channelled entry to education facilities in prominent national parks (e.g. through construction of an interpretive visitor centre at the entrance to Volcan Poas National Park);
- Interpretation on site (understanding acquired through displays, materials and interpreters);
- A national school environmental education program (ensuring future generations understood the country's natural heritage);
- Encouraging school visits (individual parks introduced active schools' programs).

As a result of several measures, a major sustainable tourism industry was built up, and also a biological research industry emerged in Costa Rica, both in the public and private sector. Both led to increased employment for those with education. Over time, ecotourism development fostered local economic development, together with a strong national appreciation of the importance of the natural resources of the country. Through park visitation, environmental education and private ecotourism development, the national parks and the wildlife reserves are now seen as a fundamental feature of Costa Rican society.



Fig. 19 - logo of Costa Rican certification of sustainable tourism⁵⁴

⁵⁴ <https://destinet.eu/who-who/market-solutions/certificates/fo1442810/certification-for-sustainable-tourism-cst-costa-rica> (accessed: 2018. 18. 19.)



4.7 Principle 9: To increase benefits from tourism to the local economy

4.7.1 CASE STUDY I

(Promoting the provision and identity of local produce and services, their purchase and use by visitors, tourism businesses)

Bosnia and Herzegovina's Una National Park is also a case study for increasing benefits from tourism to the surrounding region. The goal of the cooperation of WWF and the Park's management in this protected area is to ensure a well-managed protected area, and to improve living conditions for the local community to promote sustainable use of natural resources in the area. Nature will be better protected as long as the local community is included in the management process and has direct benefits from protected areas. Thus, awareness is raised among politicians and decision-makers about the necessity of improved natural resource protection. Apart from natural values, cultural values of the area have been promoted, such as traditional knitting of rugs, old recipes for food preparation, making of traditional souvenirs and objects. Also, partners have taken care that minority and vulnerable groups with a limited access to the decision-making processes and employment opportunities are included.

As a result of effort taken, 300 people (members of the Una Tourist Cluster or employees of hotels/restaurants as members of the cluster) have direct benefits and 1000 people (family members with incomes from cluster-related activities) have indirect benefits from the functioning of the Cluster. The local community became aware of the importance of nature conservation, and more and more individuals, enterprises and civil organizations recognize the Park as the basis for development of new activities and sustainable business ideas.

Una National Park is seen as a driver of regional development that for the last couple of years has been making significant progress in park management, and involving local stakeholders in Park activities. A firm partnership is established between Una National Park and local tourist service providers and the number of visits to the Park doubles every year in comparison to the previous year. The Park was awarded the European Charter for Sustainable Tourism (ECST) in 2014 and the cooperation among park management, a local population that understands the park's values, and a business sector that sees opportunities for sustainable investments has grown stronger during the years.

After obtaining the ECST the upper flow of the river Una and Una National Park became recognisable tourist destination on the domestic and international market. The number of tourist and service providers in the recreation and rural tourism sector (family farms, farm households, souvenir shops, tasting facilities and other) increased, as did the capacities and the quality of services provided.



4.7.2 CASE STUDY II

It is worth mentioning the innovative partnership between local ecotourism specialists and smallholder farmers in Costa Rica⁵⁵. Fair Trade Adventures organizes small group tours, to unique destinations in Costa Rica and other Latin American countries that give travellers a rare opportunity to meet the farmers and artisans behind popular fair-trade products such as coffee, chocolate and handicrafts. At the same time, tourists can experience some of the countries' iconic sights and natural heritages. Fair Trade Adventures have been designed to be small-scale and low impact, so that the farmers, artisans, indigenous people and others who act as hosts, can go on and enjoy their traditional way of life while earning a part of their monthly income from sustainable tourism.

Another example from Costa Rica is a personal ecotour operator “Elemento Natural”, that utilizes and takes advantage of the connections between sustainable tourism and local communities⁵⁶. In addition to nature tours they create opportunities for cultural exchange by asking customers to buy local produces, to eat locally, to speak Spanish and to spend time in the communities. Elemento Natural operates on principles of environmental sustainability through its efforts in energy conservation, waste reduction and transportation. The idea is to offer guests what they want through custom tours, which may include all the features Costa Rica is known for, and also an educational, community element which eventually improves the Costa Rica experience.

⁵⁵ Sumak Travel & Cafédirect Producers' Foundation team up to offer Fair Trade Adventures, (2018.16.04)

<http://www.ecotourism.org/news/sumak-travel-caf%C3%A9direct-producers-foundation-team-offer-fair-trade-adventures>

⁵⁶ Roberto Lizano: Embracing the Indigenous Identity in Costa Rica through Tourism (2018.16.04)

<http://www.ecotourism.org/news/embracing-indigenous-identity-costa-rica-through-tourism>

4.7.3 CASE STUDY III

In Italy, in the area of the Tuscan-Emilian Apennine National Park, a mountain village found a way to tackle depopulation with the help of sustainable tourism⁵⁷.

The “Valle dei Cavalieri” (Valley of the Knights), community-based cooperative was created to cope with the depopulation of the village of Succiso, whose population fell from over 1,000 inhabitants in the 1950s to 64 inhabitants in early 1990s. Thanks to the strong participation of the community, innovative and authentic tourism attractions were developed resulting in the development of the tourism activities and the enhancement of the unique cultural identity of the village.



Fig. 20 - Valley of the Knights, Tuscan-Emilian Apennine National Park⁵⁸.

⁵⁷ UNWTO Knowledge Network, Community and Resilience: two villages tackle depopulation, Valle dei Cavalieri, Italy: <http://know.unwto.org/content/community-and-resilience-two-villages-tackle-depopulation-valle-dei-cavalieri-italy>

⁵⁸ <http://www.lavocedelnordest.eu/a-succiso-paese-cooperativa-ogni-giorno-si-cambia-lavoro-chiude-lultimo-bar-e-nasce-un-progetto-di-rilancio-della-comunita-video/> (accessed: 2018. 08. 19.)



The “Valle dei Cavalieri” community cooperative was created in 1991 and, since the beginning, it set the goal of regenerating the local community. To this purpose, the founders developed over the years many activities such as:

- traditional sheep farming;
- cheese production;
- agritourism (hospitality, catering);
- environmental education for schools;
- hiking;
- ecotourism;
- horse-riding;
- a small fitness centre;
- management of one of the information centres of the Tosco-Emiliano National Park;
- alpine hut management and services to the population (transport, entertainment, grocery shop and sporting facilities).

Some activities in the village run at a loss but are compensated for by the profits from others. Some play a valuable social role with economically non-profitable goals, such as the delivery of medicine to ailing people and a school bus service who takes schoolchildren from the village to the distant school. In this way, village residents can benefit from all basic services, such as a grocery store, cafe, school transportation, avoiding long journeys to the closest towns.

Tourists are hosted in a safe and friendly village, where they can taste local products, such as sheep cheese and meat, mushrooms, bread and forest berries, enjoying the mountains, woods and nature from an altitude of 1'000m to over 2'000m a.s.l..

All the local residents are involved in the co-operative creating jobs and generating income and becoming an example to be repeated for all rural and mountain areas that face depopulation.



5 CEETO project experiences related to Sustainable Tourism developments in the protected areas

5.1 Inventory of planning/management/monitoring tools applied within the protected areas (PAs) and success stories of Sustainable Tourism in PAs (D.T1.2.1)

5.1.1 Introduction

This inventory presents planning/management/monitoring tools and success stories of sustainable tourism learned from the experiences of different Protected Areas in Europe.⁵⁹

This inventory is primarily addressed to the partners of CEETO Project (Central Europe Eco-Tourism), but in general to the managers of Protected Areas (local, regional or national public entities, competent agencies) and their stakeholders such as NGOs, research centres and universities or SMEs that might be interested in the interconnection between environmental and biodiversity conservation and development of sustainable tourism strategies.

In the first part, the inventory provides an overview of the main methodologies used to monitor and analyse tourist flows. It helps managers of the Protected Areas to take strategic decisions in order to guarantee the objectives of biodiversity conservation and, at the same time, to plan sustainable tourism that can enhance the natural heritage, contribute to its protection and to the well-being of local communities living in those territories.

In the second part, a collection of good practices exemplifies how some European Protected Areas have applied the methodologies, highlighting their characteristics and results, to be able to both inspire the partners of the CEETO Project in the development of subsequent actions, and to provide users of the Handbook with a practical contextualization of the methods analysed.

The result is a tool useful also outside the CEETO project, as the collection of methodologies and good practices can be suitable in a transversal way to anyone interested in monitoring and management of tourist flows within protected areas or territories with a high naturalistic value.

In order to realise the inventory of the main methodologies for the analysis of tourist flows in protected areas, a bibliographic research was carried out on studies and projects within the European Protected Areas based on existing and freely available literature. For this reason, one of the main pillars on which the research is built was the Monitoring and Management of Visitors in Recreational and Protected Areas (MMV).

5.1.2 Choice of the methodology

In order to better understand which methodology/tool to use and how to implement the planning/management/monitoring tools activity, it is useful to remember some important aspects.

The first question to be answered is why managers need to monitor. It should be clearly defined what the objective of monitoring is, because each objective may involve a different mix of techniques.

⁵⁹ Filippo Lenzerini (external expert - Federparchi), Diego Albanese, (project coordinator - Federparchi).



After defining the objective, the next question to be asked is what it is necessary for the monitoring in order to achieve its purpose, for example what information is required: the precise number of visitors, the flows or the activities they carry out within the Park, etc.

Closely connected to what is necessary there is the question of who should be monitored. This is because not all the people entering a Park are automatically visitors. In fact, in addition to the Park's staff, it should be kept in mind that agriculture and breeding activities are often carried out in these areas and therefore these workers should not be considered as visitors. In other cases, roads used by inhabitants pass through the Park and therefore these should not be included in the visitor count either. Moreover, not all visitors are the same. If we want to understand the impact on the biodiversity of mountain biking, people picnicking should not be considered.

To have correct data, which will not over- or underestimate the result, it is important to choose where the monitoring activity should be carried out. It is crucial to have the objective in mind, because if the interest is knowing the relationship between visitors and nature it should be considered monitoring activities in the core areas of the Park; while if the aim is having a view of tourist flows it will be more useful to adopt counting points.

Finally, the when. Although it is more complex and expensive, both in terms of time and money, proper monitoring should be carried out over a long period of time and possibly covering all seasons. It is important to collect external information such as weather conditions, holidays and national festivities, etc., to set the data into context.

After being able to answer these questions for an efficient and effective monitoring, managers can start to consider which technique can be used to provide more support in making decisions.⁶⁰

5.1.3 Synoptic diagram of the main methodologies

The methodologies identified are a mix of well-consolidated methods, which have been used for many years, and innovative methods, which are gaining importance and credibility in recent years. By doing so it is possible to present a complete overview of tools, able to adapt to the needs of each Protected Area. The following synoptic scheme can be considered as a starting point, which can be further enhanced and developed by introducing other techniques or transformations of the existing ones as they will improve.

5.1.4 Methodologies identified

In this section we introduce with a short explanation the different methodologies identified to monitor tourist flows in PAs to have an overview of what can be done and that will be more specified in the next part of the inventory.

- St. Gallen Method

The St. Gallen Method allows to analyse the strategic flows of visits starting from the knowledge of the stakeholders who design and describe them on maps that are then combined and overlapped to identify the routes made by tourists and, consequently, tourist products that they seek in the territory.

From a practical point of view, the following is necessary to implement this methodology:

⁶⁰ Monitoring and Management of Visitor Flows in Recreational and Protected Areas Conference Proceedings ed by A. Arnberger, C. Brandenburg, A. Muhar 2002, pages 1-6. http://mmv.boku.ac.at/refbase/files/muhar_andreas_arnb-2002-methods_for_visitor.pdf



- Multi-scale maps of the territory
- Orthophotos
- Car counting

This method is based on counting cars passing through established "check points". This helps to gain a good understanding of the level of traffic within a given area, as well as how the level varies over a period of time.

In order to implement this methodology, counting tools (pyroelectrics, tickets, parking lots, video cameras, photocells) are required.
- Person counting

This method is based on counting people passing through established "check points" and leads to knowledge about how many people enter a certain area, as well as how the level varies over a period.

To implement this methodology counting tools are required (pyroelectric, pressure, optical, infrared or magnetic meters, entrance tickets, video cameras, turnstiles).
- Telephone cells

This method is based on Big Data, using data collected by telephone cells and analysing these to obtain information on the movements of visitors within the Protected Area (anonymously because the data are analysed in an aggregated way).

A geo-referenced database provided by a telephone operator is required to implement this technique.
- Interview

This is one of the most commonly used methods because it allows to have specific information about the visitor, outlining it in base of his preferences and needs.

It is sufficient to use a recording device for this methodology.
- Survey

Like interviews, it is one of the most commonly used methods when it is necessary to collect visitors' preferences in order to apply appropriate management strategies.

For this technique, since it is possible to realize it either online or face-to-face, an internet forms or paper cards are needed.
- GPS Tracking

It is one of the techniques that has become more widespread because it allows to "follow" visitors inside the Park, getting to know the favourite routes and the most visited places.

GPS tracker devices are required in order to use this technique.
- Social Media

The use of a large amount of data and information that can be provided by Social Media is one of the methodologies that are most successful because it allows managers to know trends, preferences and behaviours of visitors in a very easy way by checking what they post on the web.
- Statistical models



Statistical models are a set of statistical tools used to obtain an estimate of the object of the study, in this case the flows of visitors. It is applied when not all the information is available or when some changes should be studied.

- Focus Group

The focus group is a useful technique to deepen a theme or aspects of a topic, interviewing a homogeneous group of people.

- Video camera

Using cameras at the entrance of the Parks, or at some focal points may be useful to gather information about the number, flow and behaviour of visitors within the Area.

For this methodology, camcorders and, if available, frame analysis (or video-Analysis) software are required, which would otherwise have to be done manually by an operator.

- Bioacoustics

Bioacoustics is a branch of zoology, strictly related to ethology, that investigates sound production and reception in animals, including man, and how animals communicate by means of sound.

To implement this technique, it is necessary to have a:

- Microphone/hydrophone
- Recorder
- Computer with all necessary programmes to elaborate sounds

5.1.5 Analysis of the methodology

Each methodology is analysed according to nine aspects. It starts at the strengths and weaknesses of each methodology, focusing on their distinguishing features and trying to show practical and useful aspects to help decide, which methods to use.

Next, the complexity and costs of the implementation of the methodologies are analysed, whereas complexity includes aspects related to the implementation of each methodology (installing a sensor, a video camera, implementing participatory processes, etc.), data analysis (data is immediately available or if it has to be processed) and costs focuses on time (considering all the phases to be implemented to arrive at the final information) and money.

The field of applicability represents the limits a methodology may have. For example, counting cars simply requires a passing road, while GPS needs a clear signal. The applicability field is not inserted in the synoptic table because it is an element that must be evaluated case by case.

To help choose the “right” methodology, visitor profiling can be valuable as a decision-making tool as it portrays, i.e. the characteristics (families, guided groups etc.), preferences (hiking, biking or picnicking), needs (what services are visitors looking for?) and opinions of people visiting the Protected Area.

The quality of the collected data depends on the amount of information gathered. For example, the number of people counted has a qualitatively lower value compared to the information gathered in questionnaires which creates a more complete picture about the visitor.



Further, precision is vital for the “correctness” of the data in relation to reality, so data collected via people counting is technically more accurate than telephone cells that may have a certain degree of error.

Flexibility is linked to how much the method can be adapted and modified according to the needs of the analyst. For example, the counting of people is less flexible than a questionnaire because the former only collects a certain type of data, while the latter can potentially investigate different aspects and areas.

The possible combination of multiple method presented was included because their complementary use can provide useful information for a more complete reading of the flow and behaviour of visitors.

Finally, the usefulness of the method was assessed. With this section we wanted to provide a simple overview of how the information obtained with a given technique can be read.

5.1.6 Methodology fact sheets

SAINT GALLEN METHOD	
Strengths	<p>This method allows to collect a large amount of information involving stakeholders of the territory that with their knowledge deriving from their relationship with tourists can draw the movements of tourists within an area on maps.</p> <p>They can provide both qualitative information such as the characteristics of visitors, their reasons for travelling and quantitative data such as numbers and seasonal flows. Moreover, due to the direct contact they have with and knowledge of the territory they can also express evaluations such as the criticality of a given sector (ranging from transport to the situation of paths, etc.) or on the general tourist situation.</p> <p>It is useful when investigating large areas.</p>
Weaknesses	<p>In order to make this method work and get results, it requires a good knowledge of tourists by local stakeholders. In fact, without this element, the ability to describe what the tourist's preferences and needs are, strategies and products consistent with the reality cannot be elaborated. In addition, it can take a long time for the final processing of the results because it is necessary to analyse and overlap many datasets at the same time to get what is called product platforms.</p>
Complexity and costs	<p>It requires the structuring of a series of focus group on the territory to collect information from stakeholders and the subsequent elaboration.</p>
Field of applicability	<p>It is a method that has no spatial or other constraints.</p>
Visitor profiling	<p>It allows a good tourist profiling e.g. characteristics, preferences and needs.</p>
Data quality	<p>High</p>
Possible combination with other methods	<p>The method could be combined with other tools such as questionnaires to get a better knowledge of visitors' characteristics or, for example, with GPS/telephone cells to have more details on the movements that the visitor makes in the territory.</p>
Utility in planning sustainable tourism strategies of conservation measures	<p>The method is functional in knowing the behaviour and interests of tourists through which it is possible to identify the tourist flows present in the territory. Knowing the tourist flows is fundamental because knowing the push factor of a tourist destination is useful to choose which flows to promote in terms of environmental sustainability.</p>
Flexibility	<p>The method can be adapted to better meet the information needs of the decision-maker based on the specificity of the questions asked to stakeholders.</p>



COUNTING CARS	
Strengths	<p>Using auto counting as a monitoring tool is useful when searching for a continuous method over time, because it can be done consistently throughout the year. In addition, knowing the average number of people per vehicle makes it possible to estimate the number of visitors. In this way it is also possible to identify the seasonality of visits throughout the year.</p> <p>It is a fairly simple method to implement and maintain, giving immediate and easy to read data.</p>
Weaknesses	<p>The first point of weakness is linked to the fact that it is connected to the presence of roads which can be used by cars.</p> <p>It depends on an instrument that require a certain level of calibration and maintenance, although not particularly complex. It also has minimal dependence on energy sources.</p> <p>It does not allow a precise counting of people but only an estimate.</p>
Complexity and costs	The complexity and cost depend on the accuracy of the collection and processing of the date and the technology used for counting.
Field of applicability	It is bound to the presence of public roads and a minimum dependence on energy sources.
Visitor profiling	It does not allow the profiling of visitors.
Data quality	Low
Possible combination with other methods	The method can be easily combined with other tools, in particular with questionnaires and interviews, which allow collection of information about visitors.
Utility in planning sustainable tourism strategies of conservation measures	The method is useful to gain knowledge of the trends of visitor flows within the Park, as well as to set access limits in order to respect the conservation objectives of the ecosystem of the area, while reducing at the same time the impacts that these flows cause on the environment.
Flexibility	The method has no flexibility because the data that is collect is only the number of cars passing by.

COUNTING PEOPLE	
Strengths	<p>It is a simple and fast method to apply, useful when you want to carry out a continuous monitoring over time and you are in the absence of an entrance ticket.</p> <p>It can be applied and moved to different points, thus being able to study and analyse different areas of the Protected Area.</p> <p>It is also resistant to different climatic conditions and can be remotely controlled.</p>
Weaknesses	It is a method that requires calibration and maintenance and can give errors in counting e. g. with the passage of large groups or for weather conditions.
Complexity and costs	It can be a relatively inexpensive method both in terms of time and money. Moreover, returning just one type of data it is not particularly complex.
Field of applicability	It has no restrictions or limitations regarding use, other than those related to the energy source.
Visitor profiling	It does not allow the profiling of visitors.
Data quality	Low.



Possible combination with other methods	The method can be easily combined with other tools, questionnaires and interviews, which allow information on visitors to be collected, especially if one considers the use of access gates, for example.
Utility in planning sustainable tourism strategies of conservation measures	Evaluate the number of tourists and the seasonality of the flows, the direction, identify the critical points for the number of visitors that may require an intervention of regulation and protection. It is useful to direct resources for more qualified infrastructure or, on the contrary, to intervene if these flows conflict with conservation objectives.
Flexibility	The method does not have flexibility because it is only possible to collect the number of people passing by.

TELEPHONE CELLS	
Strengths	<p>It is a useful method when you want to investigate visitors' movements in large areas such as parks and it is quite precise in terms of the visitors' position. Accuracy increases as it provides a huge amount of data.</p> <p>It can potentially be a continuous method of analysis because it allows to visualize the trend of tourists throughout the year.</p> <p>It provides more information about visitors than overnight stays.</p>
Weaknesses	<p>It depends on the telephone coverage of a certain territory and may present some errors in the location of visitors based on the positioning of repeaters and proximity to borders with other countries.</p> <p>The data must be purchased by a telephone company that makes them available in raw form.</p>
Complexity and costs	Complexity is closely related to the processing of data and extraction of information that may be most useful to the subject. The cost is linked to the purchase of data from telephone companies.
Field of applicability	It is affected by the coverage of the telephone signal.
Visitor profiling	Profiling of the tourist by origin and movement within the area of interest thanks to the passage of the telephone cells.
Data quality	It depends on the processing level.
Possible combination with other methods	It can be combined with questionnaires and interviews to get more information for visitor profiling or with GPS to verify the accuracy of travel.
Utility in planning sustainable tourism strategies of conservation measures	Highlight the routes made by tourists and identify the most popular and visited places to be able to intervene also with actions of protection. In addition, discover the provenance of visitors to direct investments in marketing. In addition, it is possible to identify critical points within the area considered and, if necessary, to implement restrictions for the use of areas that are particularly sensitive.
Flexibility	The method does not allow much flexibility regarding the database available.

INTERVIEW	
Strengths	<p>It is a simple method that can be easily applied and replicated in different situations.</p> <p>It adapts to the information needs of the PAS managers.</p> <p>They allow the collection of both quantitative and qualitative information.</p> <p>They can be structured on several degrees of difficulty.</p>



Weaknesses	<p>It takes time to collect data and process information.</p> <p>If you commission it, it can become expensive.</p> <p>They require interaction between interviewer and interviewee, so you must do it in person or on the phone and there may be some discretion of the interviewer in collecting and processing information. It requires statistical knowledge.</p>
Complexity and costs	<p>The complexity is linked to the type and structure of the interview that is intended to be carried out and therefore to the type of information that wants to be collected. The cost refers mainly to the time for collection and processing, but also financial costs if done internally (salary) or externally (contract).</p>
Field of applicability	<p>There are no restrictions or constraints.</p>
Visitor profiling	<p>It allows an excellent profiling of the tourist.</p>
Data quality	<p>High</p>
Possible combination with other methods	<p>It can be combined with any of the methodologies presented because it can be used to complement them. For example, associated with the GPS method so that you can also track the route taken by visitors.</p>
Utility in planning sustainable tourism strategies of conservation measures	<p>Have a complete visitor profile, investigating their preferences and needs. Allows visitors to locate their favourite places.</p> <p>It can be useful to test the acceptability of solutions to be adopted for some issues and aspects such as the introduction of an entrance ticket or the closure of a path.</p> <p>Obtain a complete vision on various aspects of interest for the Park to support managerial decisions and management of flows in order to guarantee the satisfaction of the needs of these and respect the nature conservation objectives.</p>
Flexibility	<p>The method can be adapted to the special situation of the PAs.</p>

SURVEYS	
Strengths	<p>It is a simple method that can be easily applied and replicated in different situations.</p> <p>It adapts to the information needs of the managers of the Protected Areas.</p> <p>They allow the collection of both quantitative and qualitative information.</p> <p>They can be structured on several degrees of difficulty.</p> <p>They can also be run remotely (online).</p>
Weaknesses	<p>The difficulty for the respondent changes as the required information increases.</p> <p>It may take time to collect and process responses.</p> <p>It requires statistical knowledge regarding sampling.</p>
Complexity and costs	<p>The complexity is linked to the type and structure of the questionnaire to be carried out and therefore to the type of information to be collected. The cost is mainly in terms of time for data collection and processing.</p>
Field of applicability	<p>There are no restrictions or constraints.</p>
Visitor profiling	<p>It allows an excellent profiling of the tourist.</p>
Data quality	<p>High</p>



Possible combination with other methods	It can be combined with any of the methodologies presented because it can be used to complement them. For example, associated with the GPS method so that you can also track the route taken by visitors
Utility in planning sustainable tourism strategies of conservation measures	<p>To have a complete visitor profile, investigating their preferences and needs. Allows visitors to locate their favourite places.</p> <p>It can be useful to test the acceptability of solutions to be adopted for some issues and aspects such as the introduction of an entrance ticket or the closure of a path.</p> <p>Obtain an accurate view on various aspects of interest for the Park in taking managerial decisions and management of flows in order to guarantee the satisfaction of the needs of these and respect the objectives of nature conservation.</p>
Flexibility	The method can be adapted to the PAs.

GPS TRACKING	
Strengths	<p>It is a simple and precise method that can be easily applied and replicated in different situations and moments.</p> <p>It allows to identify the most widely used routes and thus direct investment choices.</p> <p>It allows to identify critical points on a route.</p> <p>Simple application because a GPS device is enough</p>
Weaknesses	<p>It may have problems with receiving the signal.</p> <p>It can be considered invasive by visitors because they are actually followed.</p> <p>It can be expensive if you choose particularly advanced instruments.</p> <p>Specific programmes are needed for route planning.</p> <p>It may be necessary to build a sample of visitors from the Protected Area to get more complete and correct data.</p>
Complexity and costs	The complexity is related to the processing of the collected GPS data. The cost, on the other hand, depends on type of instrument you decide to use.
Field of applicability	The only constraint for this methodology is the GPS signal strength.
Visitor profiling	It does not allow for visitor profiling.
Data quality	High
Possible combination with other methods	This technique can be combined with any of the methodologies presented. For example, combined with interviews and questionnaires to obtain more information for visitor profiling.
Utility in planning sustainable tourism strategies of conservation measures	Understand the route taken by tourists inside the Park, which are the routes and preferred places, any safety critical points, directing investment decisions and monitor the possible impacts on nature, limiting the use of some particularly sensitive areas.
Flexibility	The method is not very flexible because there are few data that can be collected.



SOCIAL MEDIA	
Strengths	<p>It is an excellent method to be used in a complementary way to others for the collection and integration of information on visitors to a Protected Area.</p> <p>It can be used as a continuous monitoring method, being able to collect information about new trends.</p> <p>A large amount of information is available for the use of this methodology.</p>
Weaknesses	<p>It is problematic with a low number of social media interactions.</p> <p>It is closely related to the willingness of those who post on social media to tag or geotag the post.</p> <p>Low telephone line coverage in some parts of the Park may discourage loading onto social networks.</p> <p>It depends on the social activity of those who visit the Park.</p>
Complexity and costs	Complexity is closely linked to the information you want to collect. From a cost point of view, these are generally very low because potentially a computer with an internet connection is sufficient, but they can increase if you outsource the service.
Field of applicability	It depends on the number of interactions, on the skills and knowledge of those who work there and on the presence of tools that favour this type of analysis.
Visitor profiling	Allows a good level of profiling of the tourist, knowing its characteristics and preferences.
Data quality	High
Possible combination with other methods	It can be combined with any of the methodologies presented, especially in a complementary way. For example, combined with interviews to obtain more information for visitor profiling. Or associated with the GPS method so you can also track your route.
Utility in planning sustainable tourism strategies of conservation measures	To understand the places preferred by visitors, their origins, their movements, the activities carried out and their behaviours to guide investments and communication and marketing initiatives. Moreover, it can help on identifying characteristics, from the weather, to some more specific elements as the state of the environment.
Flexibility	The method is flexible because it can be adapted to the information required by Protected Area managers.

STATISTICAL MODELS	
Strengths	<p>It is a method that allows to have correct estimates of the elements analysed and researched, which can be carried out continuously over time and specially to analyse different possible scenarios.</p> <p>It is a cost-effective technique because it can start from information that the Protected Area already has at its disposal, such as the number of people entering. It also requires less fieldwork than is strictly necessary to calculate the estimation parameters.</p>
Weaknesses	<p>It can be a complex method to implement because it requires statistical and computational expertise for the basic structure and assumptions of the model to be implemented. In addition, specific data analysis programmes are required.</p> <p>To identify the parameters, it is necessary to deeply know the territory of the Protected Area and its characteristics.</p>



	<p>It requires knowledge of the characteristics of visitors and, if not available, they should be investigated. It may require the search of some specific elements useful for the definition of the parameters if not available such as the number of visitors, their characteristics or preferences to set the estimative model (therefore their profiling).</p> <p>If the parameters are not calculated correctly, this can lead to errors in the analysis, which requires a lot of accuracy.</p>
Complexity and costs	The complexity depends on the structure of the estimative model realized, but it is still quite high. On the contrary, costs can also be low, especially if the Protected Area already has some of the necessary data available.
Field of applicability	The model has no limitations or constraints of applicability. However, statistical knowledge is needed.
Visitor profiling	It does not allow the profiling of visitors.
Data quality	With correct parameters, the data quality is high.
Possible combination with other methods	This methodology can be combined with other methods, especially questionnaires for the correct profiling of visitors in order to know their characteristics and preferences, activities carried out etc., or with techniques such as the counting of people or cars for the identification of parameters.
Utility in planning sustainable tourism strategies of conservation measures	<p>It is a method that, if properly implemented, is efficient and effective in making decisions because it can be used:</p> <p>To know the current situation when only some information is available and complete monitoring cannot be applied for complete information.</p> <p>To draw future scenarios for possible impacts on biodiversity or activities within the Protected Area as some variables change.</p>
Flexibility	The method is extremely flexible because it can be adapted to all the information needs of the Protected Area.

FOCUS GROUP	
Strengths	<p>It is a participatory process that is easy to apply if the subjects and an experienced facilitator are available.</p> <p>This is useful when you are looking for information on specific and punctual topics.</p> <p>It can be used in parallel with quantitative procedures.</p> <p>It highlights social and behavioural elements.</p>
Weaknesses	<p>Focus groups are especially suitable for territories that are not very large in order to maintain high quality data (e. g. the core area of a Park).</p> <p>It may require the collaboration of parties outside the Park as experts or stakeholders.</p> <p>It takes a lot of time for its implementation.</p> <p>There is a risk of ineffective information.</p>
Complexity and costs	The complexity and cost depend on the information to be gathered and the outsourcing of the facilitation service.
Field of applicability	There are no limits or constraints.



Visitor profiling	It allows a good profiling of the tourist.
Data quality	Low
Possible combination with other methods	It can be combined with any of the methodologies presented in order to cross the answers with more complete information. For example, combined with interviews to get more information for profiling visitors. Or associated with the GPS method so you can track your route.
Utility in planning sustainable tourism strategies of conservation measures	<p>It allows to have a complete visitor profile, investigating their preferences and needs and knowing their favourite places within the PAs.</p> <p>It can be useful to test the acceptability of solutions to be adopted for some issues and aspects such as the introduction of an entrance ticket or the closure of a path.</p>
Flexibility	The method can be chosen freely according to the demands of the management of the protected area

VIDEO CAMERAS	
Strengths	<p>It is a simple and immediate method that can be easily applied and replicated at different points in the Park to have a complete view of its entire area.</p> <p>It can be used continuously throughout the year.</p> <p>It can be used remotely and continuously.</p> <p>It can be easily applied at different points.</p>
Weaknesses	<p>Loses effectiveness in areas too large.</p> <p>It takes time to process frames.</p> <p>Attention should be paid to privacy issues and therefore the cameras should be positioned and calibrated in a certain way.</p> <p>It can become expensive in terms of purchase and maintenance.</p> <p>Need for a form of energy.</p> <p>It has a fixed position, so it has a limited range, being less and less effective with the distance.</p>
Complexity and costs	The method is not particularly complex, but it takes time to analyse video frames and can be expensive based on the technology used and its maintenance.
Field of applicability	The main constraint is related to the power source for the cameras.
Visitor profiling	It allows a low level of profiling of the tourist.
Data quality	Quite good
Possible combination with other methods	It can be combined with any of the methodologies presented. For example, combined with interviews to get more information for profiling visitors. Or associated with the GPS method so you can also track your route.
Utility in planning sustainable tourism strategies of conservation measures	<p>To know the quantity, preferences and behaviours of tourists, as well as the activities they carry out, in order to direct investment decisions and nature conservation actions such as limiting the use of sensitive areas.</p> <p>In addition, their usefulness in monitoring animal species can be considered.</p>
Flexibility	The method is not particularly flexible because the information that can be gathered from frames is few: number of people, activities carried out, etc.



BIOACOUSTIC	
Strengths	<p>It is a practical and immediate method that can be easily applied and replicated at different points of the Park to have a complete view of its entire area.</p> <p>It can be used continuously throughout the year.</p> <p>It allows to assess the presence and impact that visitors can have on biodiversity.</p> <p>It can also distinguish different sounds according to activities if correctly positioned and calibrated.</p> <p>Low environmental impact in the sense that the microphone can be placed anywhere and not interfere with normal life in the environment.</p>
Weaknesses	<p>It loses effectiveness in areas too large.</p> <p>It takes time to process the collected tracks if no dedicated software is available.</p> <p>It can become expensive in terms of purchase and maintenance.</p> <p>Need for a form of energy.</p> <p>It has a fixed position, so it has a limited range, being less and less effective with the distance.</p>
Complexity and costs	<p>The method is not particularly complex, but it takes time to analyse tracks and can be expensive based on the technology used and its maintenance.</p>
Field of applicability	<p>The main constraint is the connection of a power source to the microphones.</p>
Visitor profiling	<p>It allows a low level of profiling of the tourist.</p>
Data quality	<p>Good data quality</p>
Possible combination with other methods	<p>It can be combined with any of the methodologies presented. For example, combined with interviews to get more information for profiling visitors. Or associated with the GPS method so you can also track your route.</p>
Utility in planning sustainable tourism strategies of conservation measures	<p>It allows to detect the presence of visitors even in more remote areas and possibly also in areas where it is not allowed to enter. This system can be used to monitor certain types of activities such as hunting.</p> <p>It is also useful to assess what impact tourists can have on biodiversity based on the level of the item.</p> <p>In addition, their usefulness in monitoring animal species can be considered.</p>
Flexibility	<p>The method is not particularly flexible as there is little information that can be gathered from records.</p>



5.1.7 Synoptic table

Tool	Strengths	Weaknesses	Functional to sustainable tourism
St. Gallen Method	<ul style="list-style-type: none"> Participatory process Surveys wide areas 	<ul style="list-style-type: none"> Influenced by the knowledge of operators about tourists Long time needed 	<ul style="list-style-type: none"> Knowing the behaviour and interests of tourists Understanding the tourist flows and choosing the sustainable option from the alternatives.
Car counting	<ul style="list-style-type: none"> Continuous analysis Simplicity 	<ul style="list-style-type: none"> Not precise data as far as the number of people is concerned Needs calibration and maintenance It can only work, where cars enter the park's area 	<ul style="list-style-type: none"> Knowing the seasonality of flows Limit use in sensitive areas Reduction of environmental impacts
Person counting	<ul style="list-style-type: none"> Continuous analysis Simplicity 	<ul style="list-style-type: none"> Needs calibration and maintenance 	<ul style="list-style-type: none"> Counting tourists Identify critical points Limited use in sensitive areas
Telephone cells	<ul style="list-style-type: none"> Continuous analysis Investigates large areas Accuracy Large amount of data 	<ul style="list-style-type: none"> Influenced by signal coverage Purchase of data 	<ul style="list-style-type: none"> Knowing where tourists come from Knowing the movements of tourists Improving communication Identify critical points Limit use in sensitive areas
Interview	<ul style="list-style-type: none"> Simplicity Adaptive Different types of information collected 	<ul style="list-style-type: none"> Time is needed Interviewer discrepancy Sampling required 	<ul style="list-style-type: none"> Visitors profile Know favourite places Assessing the acceptability of the solutions to be adopted
Surveys	<ul style="list-style-type: none"> Simplicity Adaptive Different types of information collected 	<ul style="list-style-type: none"> Time is needed Interviewer discrepancy Sampling required 	<ul style="list-style-type: none"> Visitors profile Know favourite places Assessing the acceptability of the solutions to be adopted
GPS Tracking	<ul style="list-style-type: none"> Simplicity Accuracy 	<ul style="list-style-type: none"> Influenced by signal coverage Privacy 	<ul style="list-style-type: none"> Get travel information Identify critical points Limit use in sensitive areas



Tool	Strengths	Weaknesses	Functional to sustainable tourism
		<ul style="list-style-type: none"> • Sampling required 	
Social media	<ul style="list-style-type: none"> • Integrates existing information • Continuous analysis • Information on new trends • Large amount of data 	<ul style="list-style-type: none"> • Influenced by the number of interactions • Influenced by signal coverage • Influenced by the digital profile of the average tourist 	<ul style="list-style-type: none"> • Get travel information • Get information about favourite places • Have information on behaviour and activities
Statistical models	<ul style="list-style-type: none"> • Corrected estimates of the elements analysed • Continuous analysis • Cost-effective 	<ul style="list-style-type: none"> • Statistical competences • Influenced by knowledge of the territory and visitors • Calibrate the analysis parameters 	<ul style="list-style-type: none"> • Know the current situation when only a few elements are available • Verify impacts on biodiversity and visitor flows as some variables change
Focus group	<ul style="list-style-type: none"> • Simplicity • Valid for specific information and tips 	<ul style="list-style-type: none"> • Long time needed • Risk of information effectiveness • Not suitable for general information 	<ul style="list-style-type: none"> • Visitors profile • Know favourite places • Assessing the acceptability of the solutions to be adopted
Video camera	<ul style="list-style-type: none"> • Continuous analysis 	<ul style="list-style-type: none"> • Not suitable for monitoring on large areas • Privacy issues 	<ul style="list-style-type: none"> • Counting tourists • Have information on behaviour and activities • Limit use in sensitive areas
Bioacoustics	<ul style="list-style-type: none"> • Continuous analysis • Practical to place and move • No impact on the environment 	<ul style="list-style-type: none"> • Time consuming 	<ul style="list-style-type: none"> • Presence of visitors in wild areas of the PAs • Impact on biodiversity of visitor activities • Monitor biodiversity



Tool	Complexity	Profiling	Data quality	Possible combination	Flexibility
St. Gallen Method					
Car counting					
Person counting					
Telephone cells					
Interview					
Surveys					
GPS					
Social media					
Statistical models					
Focus group					
Video camera					
Bioacoustics					

Legend:

<ul style="list-style-type: none"> Very easy to do High level of profiling, data quality, accuracy and flexibility 	<ul style="list-style-type: none"> Easy to do Good level of profiling, data quality, accuracy and flexibility 	<ul style="list-style-type: none"> Quite easy to do Medium level of profiling, data quality, accuracy and flexibility 	<ul style="list-style-type: none"> Difficult to do Low level of profiling, data quality, accuracy and flexibility 	<ul style="list-style-type: none"> Very difficult to do A bad level of profiling, data quality, accuracy and flexibility

5.2 Good practices

5.2.1 Mobile Big Data in the Gran Paradiso National Park (ITA) to identify tourist presences and flows in order to understand movements on the territory.

Methodology: Telephone cells

5.2.1.1 Description

Gran Paradiso National Park is an alpine protected area, situated between Val d'Aosta and Piemonte and made up of 6 valleys.

The mountains we see today have been cut and modelled in the past by giant glaciers and by streams which have created the valleys. The most common trees are larches, mixed with spruces, Swiss stone pines and more rarely silver firs in the valley. While, higher up the slopes the trees gradually disappear and are replaced by vast alpine pastures, rich with flowers in late spring. Rising even higher up to 4061 m of the Gran Paradiso the landscape is characterize by rocks and glaciers. The fauna has its emblem in the alpine ibex, symbol of the Park.



Fig. 21 - Landscape of the Gran Paradiso National Park⁶¹

The Gran Paradiso National Park Authority had the tourist turnout data already in its possession, integrating the existing ones with other types of data that allow to count also visitors who do not stay at any accommodation facilities. This was the method that best accomplish this aim and that allowed to obtain

⁶¹ <http://www.parks.it/parco.nazionale.gran.paradiso/par.php>



information useful to implement sustainable tourism strategies in coherence with the characteristic of the territory and tourist flows.

5.2.1.2 Methodology

The study focuses on the Park area and not on the whole territory of the park municipalities.

The analysis is based on data from a well-known Italian telephone network, anonymized aggregated and processed with ad hoc algorithms. In full compliance with the regulations on privacy and protection of personal data, the data used are anonymous and aggregated. The information used relates exclusively to aggregate movement on the network: no information used can be associated directly, indirectly or in any other way with any user of the network.

5.2.1.3 Results

An analysis of the context was carried out which considered the main tourism indicators:

- Presence and intensity of the visit
- Structure by regional/national origin
- Permanence
- Repeatability.

An analysis of the dynamics was carried out to highlight the connections and flows between the places of the region:

- Connectivity between places (total and distinct for North and South)
- Focus on the dynamics of Lombard tourists.

Segment analysis to identify how tourists divide the territory according to their behaviour:

- Partitions characterised by a high homogeneity of visits
- Networks of interconnection between park and neighbouring areas

Analysis of experiences, to verify the centrality of places in the overall visitor experience:

- Overall territorial preferences
- Territorial preferences for visitors from Valle d' Aosta, Piedmont, Liguria and Lombardy

All these results are useful and functional in the first place to orient marketing strategies so that they are consistent with the target audience of visitors to the Park. In particular, the combination with the questionnaire helps to better profile visitors, their needs and preferences by providing more customized services.

To find out more on this good practice, visit the home page of the Gran Paradiso National Park⁶².

⁶² <http://www.pngp.it/notizie/sviluppo-e-strategie-turistiche-nel-parco-i-risultati-dello-studio-con-i-big-data>

5.2.2 Counting cars realised in the Veluwe natural area (NL) by using gateways to monitor and reduce traffic in the area

Methodologies: car counting and questionnaires

5.2.2.1 Contest

Great attention has been paid to solutions for threats to natural resources and recreational uses arising from traffic congestion and parking problems caused by large numbers of visitors in the De Hoge Veluwe National Park.

Veluwe is one of the largest natural areas in the Netherlands and is in the centre of the country. The area includes several villages, campsites and restaurants, agricultural areas, natural areas and two national parks. The area is mainly visited for its landscapes and natural beauty, attracting up to 30 million visitors per year during the analysis period. Car traffic had therefore become a major problem because it contrasted with the expectations of tourists and nature conservation objectives.

The province of Gelderland, within which the Veluwe is located, had in the past already implemented strategies to reduce traffic, for example by closing roads, very low speed limits and, finally, gateways.



Fig. 22 - St. Hubertus Hunting Lodge, Hoge Veluwe National Park⁶³

The gateways were born within the EU Interreg IIIB project “Boundless Parks Naturally!”. Currently tourists visiting the Veluwe use many of the parking lots scattered around the area to park their cars. This has led to a good compromise with traffic on the roads in the area. However, the portals are intended to attract visitors by having them park near the Veluwe border and letting them spend their time there or explore the area by

⁶³ <https://www.flickr.com/photos/fdiotalevi/2811120375>

other means of transport. The gateways are located near motorways and railway stations and offer a variety of services such as restaurants, tourist information offices, visitor centres, and bike or horse-riding routes.

The purpose of these facilities is to attract most visitors, concentrating traffic near gateways and reducing the number of cars within the area. In addition, gateways will also offer new opportunities for the tourism sector. The concentration of tourist facilities in a specific location should attract new tourists and offer additional opportunities for the provision of commercial services.



Fig. 23 - parking areas in Veluwe National Park⁶⁴.

5.2.2.2 Methodology

Two different access points were used to study the recreational use of gateways in Veluwe, Nunspeet and Posbank. Since detailed information on car park behaviour and leisure activities was needed, a visitor monitoring programme was implemented in these two access areas, combining mechanical traffic counting and visitor questionnaires.

In order to study the potential role of a gateway, it was necessary to deepen the recreational use of the areas. Therefore, information was collected on the number of visitors, their background and their recreational behaviour. The visitor monitoring program in Nunspeet took place 18 months after the official inauguration of the portal, while the one in the Posbank area was conducted as part of the visitor monitoring program implementation process.

In both locations the mechanical traffic count was implemented for 1 year. The mechanical traffic counting program not only made it possible to determine the number of cars, but also their fluctuations in time and distribution in the area. This information was important to determine the extent of the traffic problems and

⁶⁴ <http://www.raoulbeunen.nl/pubs/Veluwetransferium%20Posbank.pdf>

when they occurred. Additional manual counting was carried out to determine the accuracy of the mechanical counting and to determine the average occupancy of the vehicle.

The latter was also used to estimate the number of visitors.

The surveys were used to study the behaviour, requests and expectations of visitors and to provide information on the wishes and needs of visitors, as well as the purpose, frequency and appreciation of their visits. Surveys also included questions about why visitors crossed the area, why they parked their cars in a specific car park and how they perceived traffic problems. The surveys were aimed at people arriving in the car.



Fig. 24 - 30-meter-high observation tower in Nunspeet⁶⁵.

5.2.2.3 Results

Take measures to influence visitor behaviour, such as access restrictions and road tolls, but also measures to promote the use of alternative means of transport such as public transport and footpaths. The aim is to encourage people to behave actively, without compromising (and in some cases even improving) visitor satisfaction.

The goal of the gateways is precisely to encourage people to visit a specific place, leaving the car at that point, and going around in other ways, walking, different means of transports, without access restrictions. The access gates are therefore oriented in a way to keep cars outside the park and at the same time creating

⁶⁵ <http://www.raoulbeunen.nl/pubs/Veluwetransferium%20Nunspeet.pdf>



structures that can become real destinations. For this reason, it is necessary to implement some services that can meet the needs and preferences of visitors themselves.

To know more about this good practice, you can visit Raoul Beunen's homepage, who is an Assistant Professor of Environmental Governance⁶⁶.

5.2.3 Harz National Park (DE) used visitor counting to develop a trail management plan.

Methodologies: person counting and surveys

5.2.3.1 Description

Harz National Park covers an area which goes from the low mountain range near Herzberg in the southern part of the mountains, across the Harz massif to its northern slopes near Bad Harzburg and Ilsenburg. Here visitors can find a high variety of characteristic ecological systems, variations in height, slopes and rocks. The Park offers an ecologically complex landscape and contains different vegetation zones.

The Harz National Park needed a monitoring programme to develop a new general management plan and a trail management plan within the next three years, based on validated empirical data of visitors "visits and recreational use".

5.2.3.2 Methodology

The concept is based on automated counting ("Visitor Counting") and questionnaires ("visitor survey"). Both elements have been subdivided into modules to allow maximum flexibility with the monitoring concept.

Technically, visitor counting was based on the combination of pyroelectric meters. In addition, traffic counters were installed to check the relationship between traffic and actual visitors.

⁶⁶ http://www.raoulbeunen.nl/?page_id=32



Fig. 25 - Stream in the Harz Mountain⁶⁷.

Positions for all counters were selected based on an ad hoc workshop with park rangers who have extensive knowledge in the field, having information derived from their experience on what are the most frequented areas. The basic layout for continuous visitor counts includes 25 locations in the national park where:

- 21 are permanent
- 4 seasonal during the summer
- all 25 locations will record hikers.
- 17 locations recorded mountain-bikers,
- 11 locations record skiers.

The survey is also divided into several modules under which data could be collected separately and tailored to need. The basic modules include demographic data, visitor interests, and knowledge about the park. Additional modules include visitor satisfaction with trails, interpretive exhibits and information, and socio-economic data.

⁶⁷ <https://www.nationalpark-harz.de/de/der-nationalpark-harz/lebensraeume/fliessgewaesser/>

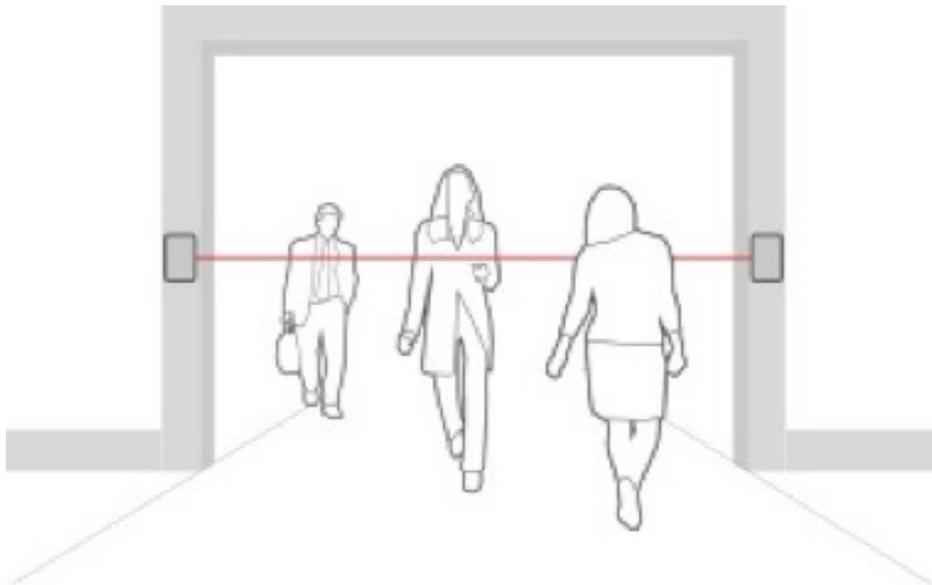


Fig. 26 - Horizontal infrared beam across an entrance, which counts persons passing through⁶⁸.

5.2.3.3 Results

The data needed to develop these plans required a multi-stage approach, using different, mainly quantitative methods to generate information on:

- Number of total visits throughout the park,
- Preferred uses by visitors,
- Distribution of visitors throughout the park,
- Potential conflicts between visitor use and conservation objectives.

To find out more on this good practice, see the article in the footnotes. ⁶⁹

5.2.4 Tatra National Park (PL) developed a system to monitor ski-tourers by GPS tracking.

Methodology: GPS tracking

⁶⁸ https://commons.wikimedia.org/wiki/File:First_Generation_Infrared_Beam_Counter.jpg

⁶⁹ E. Ruschkowski, S. Valdeig, R. J. and S. Homann: Designing a visitor monitoring concept for Harz National Park in Germany (Institute of Environmental Planning at Leibniz Universität Hannover) http://mmv.boku.ac.at/refbase/files/von_ruschkowski_eic-2008-designing_a_visitor.pdf



5.2.4.1 Description

The nature of ski touring is to penetrate wild spaces and to move freely in open terrain covered with snow, which could lead to conflicts in the areas where many species of wild fauna can be met. These conflicts between recreational use of protected areas and nature conservation have been reported worldwide as well as in Tatra National Park (TNP) in Poland. TNP offers a unique opportunity for ski-tourers being the only Alpine-like mountains within the whole country (culminating at 2499 meters above the sea level). Its size (21 164 ha) and very high visitation number (approx. 3,000,000 per year) are often a cause for exceeding the carrying capacity. Along with its Slovak side, the High Tatras constitute the UNESCO Biosphere Reserve since 1993.



Fig. 27 - The beautiful ranges of the Tatra Mountains⁷⁰.

Ski touring traffic is concentrated during the spring period due to a longer day, sunny weather, low avalanche risk and sufficient snow cover. The peak months are March and April. The total number of ski-tourers' visits to TNP have recently reached 10,000 per day (December through May). Ski touring popularity has been growing in the Tatras rapidly, which is a great concern for the park management since it tends to spread above the timber line in an uncontrolled manner. On the other hand, TNP regulations strictly define rules and trails designated for ski-tourers. Some incidents of illegal trespassing have been reported by the Park staff (TNP unpublished data, 2013) but no statistics on spatial nor temporal distribution has been provided.

⁷⁰ <https://www.flickr.com/photos/polandmfa/6126997458>



5.2.4.2 Methodology



In order to create a digital map of ski-tourers' activity within TNP, GPS loggers were distributed at four Park's entry points throughout the winter season of 2011. When the snow cover was melting down during the late spring, distribution points were moved to mountain huts located higher above the sea level. The position of the ski-tourers was registered every 120 sec. and/or every 50 meters. GPS loggers were collected into boxes attached at the entry/exit points in the Park that allowed for 24 hours return time. A total number of 343 tracks were successfully downloaded to a PC, and only 31 GPS tracks failed to be read. Subsequently, it was necessary to clear some errors at the moment of starting up in deep mountain valleys. These kinds of errors -tourer stood still for a longer time.

5.2.4.3 Results

In this study the authors attempted to use the GPS devices in order to recognize the spatial and temporal distribution of ski-tourers in TNP. This led to the creation of a digital density maps, which allowed to define park areas with high concentration of ski-tourers as well as to estimate potential threats to natural environment such as crossing of wild fauna territories.

Furthermore, due to the Park internal regulations it was important to identify the percentage of ski touring traffic outside the designated trails (illegal dispersion).

5.2.4.4 Notes

GPS data can be combined with, for example, graph theory which helps to understand the degree of connectivity existing in the path network. It is believed that the high connectivity of paths contributes to an efficient flow of individuals between different locations.

Assessing the relative importance of network nodes is particularly important from a trail management perspective. Information about key nodes in the trail network can support the design and allocation of sign posts, on-site maps, interpretative trails and other infrastructure. Also, visitor counting devices in the course of a monitoring program would typically be installed on such nodes. Node centralities calculated for the functional network simultaneously consider visitor use and the topological relationships between network components. Therefore, this indication of the most important nodes in the trail network can be particularly valuable. Information about the directions of visitor flows at specific path segments can also support decisions concerning infrastructure as well as social conflict management. It has been shown that the direction of movement has a significant influence on crowding perception.

To obtain GPS data, Voluntary Geographic Information available on platform such as GPSies, Wikiloc, Geobrowser, etc., could be accessed in order to analyse the number, distribution (space and time), profile and preferences of trail users.

To know more on this good practice, read the article in the footnote⁷¹.

71 M. Bielański, P. Adamski and Z. Witkowski: "Usefulness of GPS tracking in monitoring skitourers' activity in Tatra National Park, Poland" http://mmv.boku.ac.at/refbase/files/2014-Bielanski_et_al_Usefulness_of_gps_tracking.pdf

5.2.5 Interviews to detect preferences in Tatra National Park (SK)

Methodology: interviews

5.2.5.1 Description

The National Park of High Tatras (TANAP) was the first established in Slovakia and along with its Polish part, the High Tatras constitute the UNESCO Biosphere Reserve since 1993. The TANAP contains mountain and high-mountain plants such as dwarf pine, pine woods and a wide variety of flora. Rare animal species such as the eagle, bear, or marmot live here as well. The chamois is the symbol of Tatras.

The tallest mountain of Slovakia is one of the peaks of the High Tatras - Gerlachovský štít (2,655 m). The Park contains more than 100 alpine lakes and several waterfalls. The biggest and deepest lake of the Tatras is the Velké Hincovo pleso, while the one situated highest is the lake Modré pleso (2,192 metres above sea level). The most visited lakes are the Štrbské pleso and Popradské pleso. In 2015 “social norms” of hikers were evaluated focusing on preferred and acceptable environmental and social conditions in two nature reserves in Tatra National Park (TANAP) in Slovakia, which are among the most crowded during summer seasons. Information on visitors to TANAP is available mainly in a quantitative form (the number of overnight stays, parking and cable car tickets, etc.). The total number of visitors to TANAP can be only estimated since no complex visitor monitoring system exists. This information is useful to implement strategies of sustainable tourism that can both meet the expectations of visitors and the objective of natural conservation.



Fig. 28 - Landscape in the National Park of High Tatras⁷².

5.2.5.2 Methodology

The survey was carried out on randomly chosen visitors who were proposed to take part in an anonymous on-site face-to-face interview. The main survey period lasted 65 days from late May to September in 2012 and 2013, including weekends and public holidays (9 a.m. - 5 p.m.). The questionnaire was structured in order to obtain information on different topics relevant to visitor management. Social norms of visitors can be measured by aggregating data received from visitors in a survey and calculated for mean (average) or

⁷² <https://pixabay.com/it/tatry-alti-tatra-il-parco-nazionale-2768121>

median values. Acceptability to respondents (visitors) of conditions represented by a set of photographs can be presented in a graph. The photographs are rated using a Likert-type scale, where the conditions under evaluation are displayed on the horizontal axis (i.e. the number of people on the photograph) and the Likert-type scale on the vertical axis. Subsequently the average score of each photograph is then displayed in a graph. The resulting line (connecting the average scores), in the literature referred to as the norm curve, can be interpreted in terms of range of acceptable conditions (positive scores), normative standards (minimum acceptable conditions, where the norm curve cuts the horizontal axis) and unacceptable conditions of visitor impact (negative scores). The level of consensus about a social norm (the dispersion of data around the points defining the curve) is referred to as crystallization. In order to establish such norm curves for crowding and vegetation loss TANAP has created a set of photographs showing an increasing number of people at Skok waterfall and at the waterfalls of Studený stream. Similarly, another set of photos was created to show vegetation loss as a result of trampling in Mlynická Valley. They used a long question format (e. g. we asked the respondents to rate the acceptability of every photograph in each set) and a seven-point Likert-type scale, where +3 = very acceptable condition (optimum) and -3 = very unacceptable condition. The results were interpreted as graphs in terms of preferred (optimum) conditions, normative standard (minimum acceptable condition), range of acceptable conditions and unacceptable conditions requiring management action. For norm crystallization they calculated standard deviations of scores per photograph. In addition, they asked the respondents how many people they had encountered on their trip, which was then compared with the results of visual simulations.

5.2.5.3 Results



Fig. 29 - A set of two photos presented to visitors among they have to choose⁷³.

The management result of this type of study was to set up standards for recreational use. It should be always managed in a way to respect both social and ecological carrying capacities of the protected area. By knowing the preferences of visitors, the Park can structure a series of initiatives to direct them to other part of the Park. Moreover, by comparing tourist carrying capacity and nature carrying capacity, the Park can implement all the actions to maintain the equilibrium and the preservation objectives.

To find out more on the method, see the article in the footnotes⁷⁴.

⁷³ <http://slovakia.travel/en/national-park-of-high-tatras>

⁷⁴ E. Streberová & L. Jusková: Standards of quality for outdoor recreation in Tatra National Park: a contribution to integrated visitor monitoring and management (Journal on Protected Mountain Areas Research, eco.mont - Volume 7, Number 1, January 2015) <http://www.austriaca.at/0xc1aa5576%200x0031dc91.pdf>

5.2.6 Surveys combined with GPS tracks in the UNESCO World Heritage Průhonice Park (CZ) to profile visitors.

Methodologies: surveys and GPS tracking

5.2.6.1 Description

Průhonice Park, classified as UNESCO World Heritage site since 1992, is one of the most important Czech Republic's national historical parks and represents an exceptional example among its style. Covering an area of about 250 hectares, 30 km of trails, the park is situated in a strategical position, just 15 kilometres southeast of Prague city centre, making it easily accessible and a perfect destination both for domestic and international visitors. The park has one of the most unique and interesting characters of landscape in the country, standing out for its special combination of ecological and cultural values, together with an important outdoor recreational component.

5.2.6.2 Methodology

The research combined a system approach consisting of two parts: questionnaires and a GPS survey, which in turn was structurally divided into three main phases, data collection, survey analysis and data synthesis.



Fig. 30 - Pruhonice Castle and lake near Prague, Czech Republic⁷⁵.

On eleven random days in June 2012, visitors were asked to take part in the research survey at the main entrance of the park before registration. If visitors decided to participate, they were introduced to the research purposes and asked to fill in a questionnaire, which took between 5 and 10 minutes. After that, a

⁷⁵ <https://www.prague.eu/en/object/places/2350/pruhonice-park-pruhonicky-park>

GPS-units was delivered to respondents and they were asked to carry it for the rest of their visit. Once they finished their visit, the GPS-units were returned, and all data was recorded into a Geographic Information System (GIS), to be able to conduct all necessary spatial and temporal analyses. A total of 112 visitor surveys were completed. Afterwards, the GPS dataset was linked to equivalent questionnaires, more specifically the visitor profile was related to the visit information, such as most popular places visited, preferred routes, time spent at each attraction, and the length and speed of travelling. In the end, results were overlapped with a GIS inventory of Průhonice Park, containing different values, attractions and facilities.

5.2.6.3 Results

The findings showed that Průhonice Park is mostly used near the main entrance and visitors tend to spend between one and two hours in the park, covering an average distance of 4.2 km per visit.



Fig. 31 - The Průhonice Park in autumn⁷⁶.

The highest visitor use was found near important cultural and natural attractions, such as the castle complex, Podzamecký pond, alpine and botanical garden. Therefore, it was possible to identify different park areas according to their susceptibility of being crowded and zones where potential ecological impacts can appear due to human activities and relate them with the different visitor profiles. The surveys were used to profile visitor types and needs.

This can allow to realise investment directed at protecting or restoring nature and to better take into account tourists' preferences and thus increase satisfaction.

To find out more on this method, see the article in the footnote⁷⁷.

⁷⁶ <https://www.prague.eu/en/object/places/2350/pruhonice-park-pruhonicky-park>

⁷⁷ L. Monteiro, K. Svobodova, P. Sklenička: Monitoring the patterns of visitor use at World Heritage sites (Czech University of Life Sciences Prague) http://mmv.boku.ac.at/refbase/files/2014-Monteiro_Monitoring_the_patterns_of_visitor_use.pdf

5.2.7 The Saint Gallen Method to analyse cross-border strategic tourist flows in the Maritime Alps Natural Park (IT) and Parc National du Mercantour (FRA)

Methodology: Saint Gallen Method

5.2.7.1 Contest



Fig. 32 - Landscape in Maritime Alps Natural Park in Italy⁷⁸.

The Saint Gallen Method was used within the Strategic Tourism Plan of the Mediterranean Alps as part of the Cross-Border Cooperation Programme "Interreg V-A France - Italy (Alcotra) 2014 - 2020" between the Maritime Alps Natural Park and the Parc National du Mercantour.



Fig. 33 - The French Parc national du Mercantour is one of the richest natural spaces⁷⁹.

⁷⁸ <http://en.parcoalpimarittime.it/>

⁷⁹ <http://www.mercantour.eu/index.php/nature-et-culture/vallees-et-villages/vallee-du-haut-verdon>

A strategic analysis of the visitor flows was required in order to identify the market segments, their products and the most appropriate marketing actions to apply to attract these segments. Aiming to achieve this result, the St. Gallen Method was used, which provides the identification of visitor flows starting from those who know them best, tourist operators. Through this model it has been possible to draw the flows of strategic visits, i.e. a space area defined by the tourist, able to generate business, which has a strategic importance for the destination. This method allows to put attention on the type of tourism that is preferred, sustainable tourism in this case, identifying ways to implement it and supporting the managements that already realized it.

5.2.7.2 Methodology

To implement the Saint Gallen Method, it was decided to involve a good representation of the operators of the offer, trying to give space to the different sectors and trades of tourism: accommodation facilities, shelters, restaurants, guides, transport, trade, tourist reception agencies, municipal administrators.



Fig. 34 - Example of a stakeholders meeting.

In several focus groups, maps of the territory have been distributed to the participants on different scales in order to give the possibility to represent both the "macro" flows, which cross a very large territory (such as long distance itineraries, or bike and e-bike tours) and the "micro" flows, those that concern very precise portions of the territory and are linked to very specific activities or resources: visiting a castle, climbing cliffs, visiting a biotope, events, etc.

For each flow, the participants described the geographical locations involved, the resources and territorial services requested by guests, actors and operators involved in the provision of the services, but also the challenges related to that flow and the possible interventions to improve the territorial experience. For each flow the level of maturity (development, maturity, decline) was reported to understand what strategic expedients are necessary, that is whether to support their development or manage their maturity, trying out forms of innovation in the product. Then, similar maps were aggregated to build a homogenous product platform such as bike tours, hiking trails etc.

5.2.7.3 Results

With this methodology, 75 tourist operators from different sectors and with different skills (accommodation structures, shelters, guides, restaurants...) were involved, who shared their knowledge of the tourism



phenomenon by collecting 130 strategic flows that then allowed the construction of six "product platforms" collected in three macro-groups: Outdoor (Alpin and Active&Family), Nature (Tourism and Natural Wellness) and Heritage (Rurality and History and Culture).

For each product platform, detailed data sheets were produced for the main experience-products. Each sheet contains the information obtained from the flow analysis: potential, problems, priority interventions and system heads or subjects involved in the project.

For each platform, in fact, different actions and consequently different tasks and responsibilities are identified throughout the marketing process, which can be entrusted to one or more subjects based on the skills and availability of the subject in question, but also based on the type of activity to be performed. There are also products that require interventions at the strategic level, for which a strong direction and coordination in the hands of a supra-territorial body is necessary, which can manage and direct the process of creation of the offer.

Platforms are design containers in which relevant information, key actors and promotional actions are brought together and systematized to provide decision makers of the destination with a control panel to:

1. develop the desired tourism products
2. to improve the tourist experience through structural measures or on services linked to the flow of visits
3. more effectively define marketing actions related to the product
4. increase awareness and knowledge of the product through the various online / offline channels
5. define the most appropriate channels of trade for each product, to access the demand concerned by the purchase

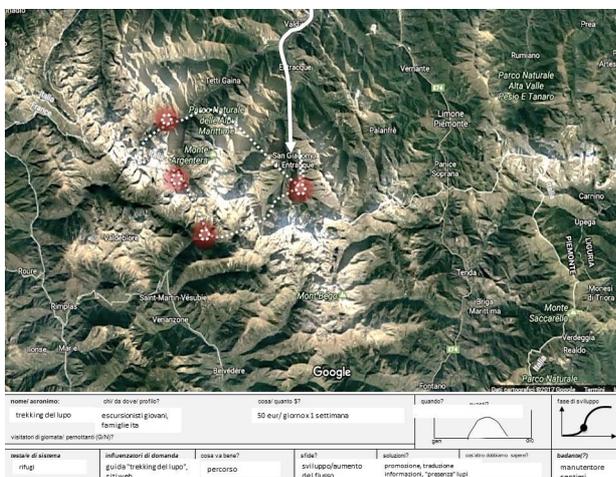


Fig. 35 - Here a tourist flow identified by the stakeholders that represent a specific track near the town of Entracque.



Fig. 36 - Here all the tourist flow identified from the stakeholder representing all the tracks near the town of Entracque.

To find out more on this method, read the article in the footnote⁸⁰.

80 "Piano Turistico Strategico delle Alpi del Mediterraneo" by Interreg ALCOTRA Project and Mercantour National Park, <http://it.maritimercantour.eu/media/b7d23fa.pdf>

5.2.8 Social media used to identify preferred places in Pallas-Yllästunturi National Park (FIN)

Methodology: social media

5.2.8.1 Description

User-generated content is rapidly being recognized as a complementary source of data for traditional spatial datasets. Location-based social media provide constant feeds of content-rich data generated by users of different platforms sharing their experiences and observations online. These data have the potential to enrich existing data collection methods for mapping spatial-temporal activity patterns and location-based experiences of people. By using as case study area, the most popular national park in Finland, Pallas-Yllästunturi National Park (PY), researchers have examined the potential of social media data in providing relevant information about visitation to a national park. Pallas-Yllästunturi National Park is a conservation site for a major part of the Western Lapland Great Fells chain, the forests and mires which surround the fells. There are almost 100 km of fell chain in the National Park.

The study's objective was to compare social media data content and the results derived from traditional national park visitor surveys. Moreover, they find complementary information that could be derived from social media data regarding visitation patterns and activities in the park. In addition, this method has proved to be economically and time efficient.

5.2.8.2 Methodology



Fig. 37 - The third-largest national park in Finland, located in Lapland. 81

81 https://en.wikipedia.org/wiki/Pallas-Yll%C3%A4stunturi_National_Park



Data for geotagged social media posts were collected from the Instagram API (www.instagram.com/developer) using as media search endpoint in spring 2016. Data collection was conducted using a customized tool written for the Python programming language.

All publicly available posts geotagged within a 10 km buffer zone of the Pallas-Yllästunturi National Park from the period of January 2014-May 2016 were requested from the API using the centre points of 2x2 km grid cells (collection centroids) as input coordinates in the query. All posts geotagged inside or within 100m radius from the National Park border were taken into account for within park analysis and were subject to manual classification. In addition, there were 246 posts geotagged to location ‘Pallas-Yllästunturin kansallispuisto/Pallas-Yllästunturi National Park’ which was attached to coordinates 4 km outside the park borders. These posts were included in park-level statistics but filtered out when detecting most tagged sub-regions within the park. The location information of the Instagram posts at the time of data collection was attached to pre-defined points-of-interest. In practice, Instagram-users have chosen a predefined location from a list when geotagging their photo and thus, the exact coordinates in the dataset are aggregated to these points-of-interest. Instagram was chosen as the source of social media data because of its popularity in the study area and data availability at the time of designing the study.

Then, geotagged social media data were aggregated to surveyed sub-regions based on their coordinates. The content of pictures posted on Instagram was manually classified according to main subject of the picture:

- Relevance for the study;
- Classified according to six main categories defined by the presence or absence of people, activities, landscape, animals and infrastructure.
- Sub-classification of these categories, for example single person, couple, group, people doing activities, etc.

5.2.8.3 Results

The comparison between visitation surveys and the amount of social media posts from the same areas showed the possibility to identify most popular areas in the park from social media data. In less-popular sub-regions, the number of social media users was relatively small compared to the two most popular sub-regions.

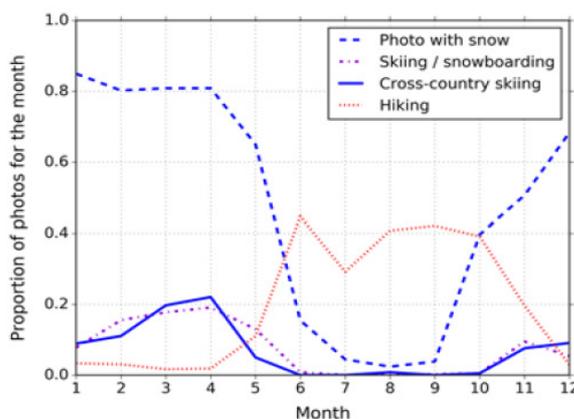


Fig. 38 - Most popular activities as resulted from social media data.

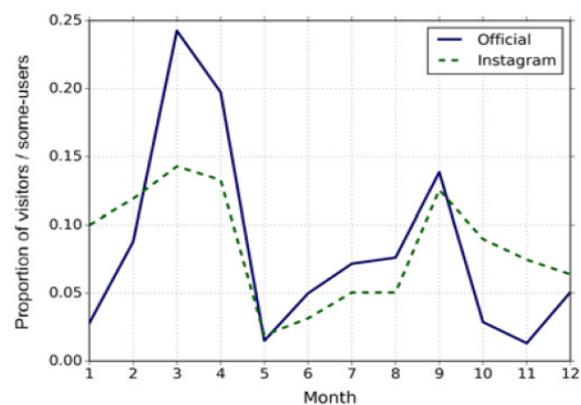


Fig. 39 - Official visitor counts and active daily users in Instagram.



Social media data has proved to be able to reflect the overall monthly variation in the number of visitors in the park, and the temporal patterns of activities. Social media content revealed similar temporal patterns for the most popular activities; snow sports were most popular in winter, hiking during summer. In addition to surveyed activities, social media data contained seasonal information of the observed environment, for example, the presence/absence of snow in the landscape.

In this study researchers found that social media data can potentially have important implications in informing visitor monitoring and protected area management and provide a rapid and cost-efficient alternative to traditional surveys in a continuous and repetitive way. Continuous monitoring of social media would, for example, allow conservation authorities to better understand spatial-temporal changes in visitor preferences; help assess visitors' profiles and socio-economic backgrounds; understand visitors' sentiments via content analysis; and identify emerging activities, which cannot be captured by pre-defined surveys.

5.2.8.4 Notes

Social media can be used to estimate the number of visitors, in general however, it is rather useful to understand the flow of tourists during the year. Social media can be used also to send online survey by ads if you can segment people by where they are/were.

To find out more about this good practice, visit the article in the footnotes⁸².

5.2.9 Using time-lapse video recording to count visitors and understand recreational uses in the Danube Floodplains National Park (AT).

Methodology: video cameras

5.2.9.1 Description

The Danube Floodplains National Park is situated in the east of Austria and stretches from the city of Vienna, along the Danube River to the Slovakian border. In 1996, the area was declared as a National Park. The National Park covers an area of about 9300 hectares. The Lobau, the Viennese section of the National Park, covers an area of 2400 hectares. Since several decades, the Lobau has been a traditional recreational area for the Viennese population as well as for the inhabitants of the surrounding communities. Visitor counting resulted in an annual use of around 0.6 million (2007) visits to the Lobau.

5.2.9.2 Methodology

The video monitoring unit consisted of a weatherproof black-and-white video camera with integrated heating and two time-lapse video recorders. In order to avoid vandalism, the video camera was fixed to a fenced building inaccessible for visitors. The time-lapse video recorder took images of the trail every 1.6 seconds during daylight. With the low resolution of the black and-white camera and a minimum distance between visitor and camera ensured the anonymity. Data were captured and recorded on a MS Excel spreadsheet: date and day of the week, time of visit, direction of movement, number of persons, group size, activity type and number of dogs.

82 V. Heikinheimo, E. Di Minin, H. Tenkanen, A. Hausmann, J. Erkkonen and T. Toivonen: "User-Generated Geographic Information for Visitor Monitoring in a National Park: A Comparison of Social Media Data and Visitor Survey" <http://www.mdpi.com/2220-9964/6/3/85>



Fig. 40 - View of the Danube Floodplains National Park (AT)⁸³.



Fig. 41 - Surveillance video-cameras⁸⁴.

5.2.9.3 Results

With a well-structured monitoring strategy with video cameras, park management can identify:

- Amount of public use
- Temporal distribution of public use
- Spatial distribution of public use
- Length of routes
- Influence of weather

Moreover, management can control and study some specific type of public use such as, dog walker, or bike, etc.

To find out more on this good practice, read the article in the footnotes⁸⁵.

⁸³ http://www.orth.at/Seiten/050_Kultur/02_NationalPark/00_NationalP_ENGL.html

⁸⁴ <https://pixabay.com/it/fotocamera-rotante-monitoraggio-1316677>

⁸⁵ A. Kahler and A. Arnberger: A comparison of passive infrared counter results with time lapse video monitoring at a shared urban recreational trail (University of Natural Resources and Applied Life Sciences, Vienna, Austria)
http://mmv.boku.ac.at/refbase/files/kahler_albert_arnb-2008-a_comparison_of_pass.pdf

5.2.10 Estimating flows by using geotagged photos and gravity theory in the Dolomites UNESCO WHS (IT)

Methodology: statistical model

5.2.10.1 Description

The Dolomites UNESCO World Heritage Site, located in north eastern Italy, was recognized in 2009 for the aesthetic and geomorphologic value of dolomitic mountains, it is composed of nine different units for a total surface of 141,903 ha and an additional 89,267 ha of buffer areas. The site presents 18 peaks over 3000 m of elevation and beautiful mountain landscapes characterised by vertical walls and deep valleys. In Dolomites people can find a very extended trail network (hundreds of kilometres), well maintained and infrastructure. Every year it is explored by hundreds of thousands of visitors, though numbers vary greatly both between and within units. Presences are mostly concentrated in July and August (which corresponds to high season), while it is much lower in June and September (low season).

Dolomites UNESCO WHS has no systematic monitoring programme although some visitor flows are measured at some locations, where visitor counters are installed.



Fig. 42 - Landscape of the Dolomites⁸⁶

5.2.10.2 Methodology

This technique uses a GIS-based methodology to estimate visitor flows in natural areas exploiting geotagged photographs to identify popular destinations, and a gravity model to approximate flow volumes as a function of popular access and destination points and considering the effort required to go from one point to another.

⁸⁶ <https://pixabay.com/it/dolomiti-montagne-italia-alto-adige-2348579/>

Gravity model: assumptions used in this example state that visitors generally move from various access points (parking lots or bus stops) to a broad spectrum of destinations (natural attractions, huts, etc.). Moreover, the volume of this movement is supposed to be:

- proportional to the tourist presence at the access point and the attractiveness of the destination,
- inversely proportional to the distance between the access point and the destination (metric value, effort needed, etc.).

The application of this equation is not straightforward in the context of natural area management due to some peculiar features of visitor movement in natural areas: the wide range of routes; the variety of potential access points and destinations; and the complexity of the terrain. In particular, the approach presents four main challenges:

- the identification of access points and destinations (for this study access points were identified by roads as well as cable car and chairlift mountain stations);
- the estimation of the popularity of access points (number of beds in the municipality where the access point was situated and the adjacent municipalities) and destinations (density of geotagged photographs);
- the estimation of travel times, the time required to go from the point of departure to the point of arrival depending on the characteristics of the trail.
- the calibration of the model's parameters.

The geotagged photograph database for the study area included 3656 images available on Google Panoramio® and posted on Google Earth®. Photographs were downloaded individually and checked for geographical consistency.

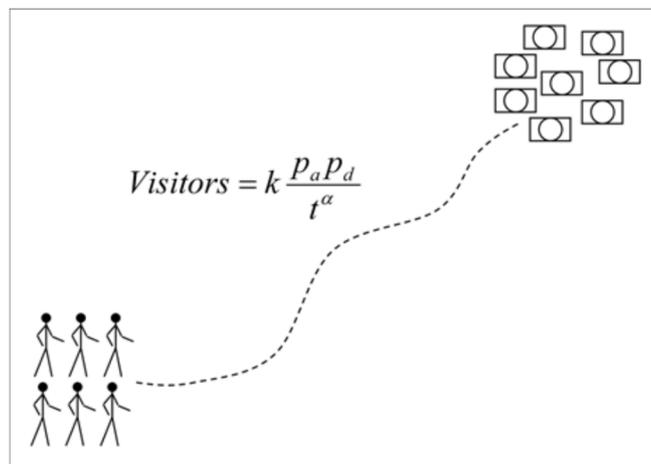


Fig. 43 - The number of visitors moving on a path is assumed to be proportional to the population at the starting point and the popularity of the destination point (as measured by density of geotagged photographs), and inversely proportional to the travel time between those points, by means of constants k and α ⁸⁷

⁸⁷ http://mmv.boku.ac.at/refbase/files/mmv6_392_393.pdf



5.2.10.3 Results

The main result of this analysis is a map showing the expected level of crowding in the different section of a path network. Although numbers reported in the map do not represent real numbers, they provide an accurate picture of expected visitor flows. This can be useful to park managers to identify the overcrowded areas which need proper measures of visitor flows redirecting so that standards of quality are met.

The advantage of the methodology used in this case deals with its simplicity and minimal requirement of data from field works. For this reason, it is suitable for large natural areas where data collection can be expensive and time consuming.

To find out more on this good practice, read the article in the footnotes.⁸⁸

5.2.11 Using bioacoustics to detect human activities in natural environments.

Methodology: bioacoustics

5.2.11.1 Description

This case study was elaborated in the LIFE+ Program AMIBIO “Automatic Acoustic Monitoring and Inventorying of Biodiversity” in order to detect human activities in natural environments by analysing their acoustic emission. With this methodology researchers wanted to propose a technic able to carry out a systematic and non-intrusive audio surveillance exploiting remote monitoring station.

The aim of their work was to detect sound of human activities such as speech, gunshot, car and motorcycle in natural reserves based on the signal captured by a single microphone. Moreover, they considered also bird-call, rain and wind sounds.

5.2.11.2 Methodology⁸⁹

Parameterization

Parameterization following three groups of acoustic parameters:

- a) Mel Frequency Cepstral Coefficients (MFCC)
- b) MPEG-7 Audio Standard Low Level Descriptors
- c) Perceptual Wavelet Packet integration (PWP)

Sound recognition

Sound recognition is based on the assumed that each sound source has a proper acoustic pattern with a specific way of distributing its energy and its frequency content. This inimitable pattern can be discovered and modelled using a statistical pattern recognition algorithm. For this study researches have followed an

⁸⁸ F. Orsi and D. Geneletti: On the use of geotagged photographs and GIS analysis for detecting travel patterns in protected areas, (University of Trento) http://mmv.boku.ac.at/refbase/files/mmv6_392_393.pdf

⁸⁹ Ntalampiras S., Potamitis I., Fakotakis N.; Acoustic Detection of Human Activities in Natural Environments, Journal of Audio Engineering Society, 2012

HMM approach where each state is modelled by a Gaussian mixture model (GMM) with a diagonal covariance matrix.



Fig. 44 - Example of installation of bioacoustics recording equipment⁹⁰.

Model test

In order to find the topology which offers the highest classification accuracy, they designed an experiment consisting of two phases. Initially they utilized the MFCCs and conducted a simple experiment with respect to two different classification topologies:

- The first one is consisted of one-stage and the second one uses a hierarchical schema which first discriminates the sound events which appear in the case of human presence vs the rest.
- Then another stage follows where the exact class of the novel sound event is predicted.

The motivation behind experimenting with the two-stage approach lies in the fact that it limits the problem space as well as that the division is in line with the scope of this work as regards to identifying sound events related to human activities. One of the main burdens that sound recognition systems have to face is the decrease in their performance as the number of categories increases. Using the two-stage topology the largest number of categories that the system has to identify is four while in the case of the one-stage topology the corresponding number of classes is seven.

Simulation

Situations which include human activities in natural environments were artificially created by merging the corresponding audio signals. The merging of the audio signals was conducted at different energy ratios in order to observe the way that the system responds even at particularly difficult conditions. After merging

⁹⁰ <http://www.frontierlabs.com.au/shop/bioacoustics/bioacoustic-audio-recorder.html>



each output is normalized by its maximum value in order to adjust the overall volume of the specific recording so that the strongest peak is at full level (gain normalization).

Subsequently the respective sequence of feature coefficients is extracted and fed to the statistical models which provided the highest recognition accuracy during the previous experimental phase. The detection experiment was conducted in the following manner: they merged every recording which is associated with human activities with a part of an environmental sound of equal size which is chosen randomly from the respective sound classes. This process is repeated 50 times for each recording so that all the recordings are merged with different and dissimilar parts of environmental sounds (for example for the motorcycle class they have $79 \times 50 = 3950$ different test samples). This ensures that the results are reliable and representative of the detection capabilities of the proposed system. The Detection Error Trade-off (DET) curves which comprise an adapted version of Receiver Operating Characteristic (ROC) curves were used for evaluation. DET curves try to present the trade-off between missed detections and false alarms. The point where the average of the missed detection and false alarm rates is minimized is the optimal point, i.e. the one that should be used during the operation of the system. When a large number of target events (in our case human activities) is available in combination with an almost equal amount of non-target events (environmental sounds), the performance of the system is demonstrated accurately.

During the first phase of the simulation experiments, target and non-target events were given as input to the two-stage probabilistic framework and the log-likelihoods outputted by the human activities Hidden Markov Model used for designing the respective DET plot. The specific plot is illustrated in Figure 2 for different SNR values and provides a picture of the detection capabilities of the system for all the sound events which are indicative of human activities (car, motorcycle, speech and gunshot) when merged with all the kinds of environmental noise (bird call, rain, wind). They observe that even under extremely noisy conditions (SNR=0dB), the proposed framework demonstrates quite good performance. As the SNR increases the detection rate is rapidly increased. By conducting listening tests with respect to the merged signals, it was derived that when the SNR is equal to 5dB, the real-world conditions are represented adequately. At the ratio, our system provided a relatively low EER which shows reliable detection of the sound events of interest. They conclude that the results analysed are very encouraging and underline the importance of the selected statistical architecture in which features that capture diverse aspects of the audio structure were incorporated.

5.2.11.3 Results

Detection of human activities like trespassing, hunting, etc., in natural environments can play a very important role toward their preservation. That is why the tool of automatic acoustic detection of human presence is useful for the protected areas.

To find out more on this good practice, read this article.⁹¹

91 S. Ntalampiras, I. Potamitis and N. Fakotakis: "Acoustic Detection of Human Activities in Natural Environments"
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.653.448&rep=rep1&type=pdf>

5.2.12 Focus group to identify VERP principles in Gesaeuse National Park (AT)

Methodology: focus groups

5.2.12.1 Description

The National Park is located in the Ennstaler Alpen, which are part of the North eastern Limestone Alps in Austria. With an area of 11 054 hectares, the Gesaeuse National Park is the third largest of the six Austrian National Parks. The size of the planning area comprises 12 400 hectares and the Natura 2000 site consists of 14 500 hectares. 86% of the National Park is designated 'Natural Zone', where the virgin landscape is subject to nature protection. The rest is a so-called 'Conservation Zone'. Here the central protective concern is an area of natural land which has been cultivated by man.

The objective of the visitor management was the conservation of characteristic animals and plants of the region, the maintenance of a favourable conservation status of Natura 2000 habitats and species as well as a high quality of visitor experience on recreation and education are the main purposes of the National Park.



Fig. 45 - the Ennstaler Alps in Styria, Austria, part of the Gesäuse National Park in Austria⁹².

5.2.12.2 Methodology

The visitor management concept is mainly based on the VERP - Visitor Experience and Resource Protection Framework - principles currently used in many US National Parks but was adapted to the needs of the National Park Gesaeuse, considering the legal situation of the protected area, as well as the resource and tourist background. In addition, the Natura 2000 standards must be included. On this behalf the risk analysis concept for Natura 2000 species and habitats of PROEBSTL et al. (2007) was adapted. VERP is a process which deals with the carrying capacity concerning the natural resources and the quality of visitor experience. It contains standards for desired future conditions of resource and tourism and defines which intensities of use are appropriate where, when and why.

⁹² https://www.flickr.com/photos/bernd_thaller/29401870764



5.2.12.3 Results

The National Park management plan is an instrument to fulfil the strategies and goals of the National Park, which includes all aspects of management. For this reason, the visitor management concept takes into account all other plans for the National Park, i.e. wildlife management, research, education, etc. With this method they were able to:

- Description of visitor experience and resource conditions
- Impact assessment of visitor use on sensitive habitats and species (risk analysis)
- Designation of management zones and areas of conflicts
- Definition of indicators and standards for each zone
- Definition of management actions
- Monitoring of resource and social indicators

These elements are useful to implement a successful visitor management plan that can promote strategies of ecotourism.

5.3 Report on (D.T1.3.1) - Site-specific analysis of needs/priorities identified by PAs involved in pilot actions

5.3.1 Introduction

The adverse environmental impacts of tourism on conservation and biodiversity, and often on the culture of local communities and societies in general can only be avoided by selecting sensible local projects. The fact that tourism projects have a global impact is not questioned by anyone today.

Biodiversity is threatened by, besides industrial environmental pollution, transport and communal waste, as well as tourism. Intact Landscapes, dominated by nature and local communities, now differ less and less from traditionally popular and deteriorated tourist attractions due to the appearance of millions of “eco-tourists”. Almost 10 years ago, the UN Environmental Program (UNEP) pointed out that the multiplication of visitors in protected areas wishing to view the natural assets had caused dramatic changes in certain areas. Cambodia and Laos are visited by twenty times more tourists than in the previous decade, while the number of visitors to South Africa increased sevenfold. Four times more tourists arrived in Brazil, Nicaragua and Salvador, while in the Dominican Republic this increase was 128 per cent.

It is not incidental then that, according to the UNEP report, tourism has an increasingly dominant role in the destruction of biodiversity as annually over 700 million people travel for leisure. From this enormous number, more and more wish to go into nature as “eco-tourists”, and accordingly, so far undisturbed places appear to be changed greatly by civilizational developments and their adverse effects: paved roads, airports, shopping centres, gift-shops, which might have been rainforests a few years earlier.

However, beyond these, tourism project aggravates global problems further, as tourism is responsible for 8 per cent of all carbon dioxide emissions. One might wonder whether those countries that attract tourists or those whose citizens increase their ecological footprint by travelling to the former will in future take greater responsibility for reducing these emissions.



Researchers today can calculate carbon dioxide emissions quite accurately, and according to the results published in Nature Climate Change their extent is a lot higher than the earlier calculated 5 per cent. This is how we know that the sector is responsible for 8 per cent of total CO₂ emissions. Researchers of Sidney University, Queensland University and the Chinese National Cheng Kung University found this result after examining the total supply chain of tourism (including transport, accommodation, catering, buying souvenirs, clothing and personal care products) and the consumer habits of 160 countries.

In 2016 not less than 1.2 billion people visited other countries, and 6 billion travelled domestically. The already 3 billion USD tourism market is forecast to increase by 4 per cent annually, more dynamically than international trade, for instance.

Based on the research, tourism-related CO₂ emissions increased in the period examined approximately four times more dynamically than they predicted: from 3.9 gigatons (Gt) of CO₂ equivalent to 4.5 gigatons, which is an increase of about 15 per cent. The rise was mostly due to the increase in spending on transport, shopping and catering. Researchers forecast the amount of emissions will reach 6.5 Gt in the sector by 2025, taking into consideration that travelling is increasingly popular as revenues rise, and considering our travelling habits will not change during this period.

Tourism produces 13 per cent of the world GDP. While in 1950 there were only 25 million tourists, this number increased to 700 million by the beginning of the second millennium. In 2016 the number of tourists reached 1.2 billion, and these are served by about 400 million. Within tourism, interest in hiking and adventure tours to exotic places are the most popular, and subscribers to this tour are the most damaging to nature. In order to establish tourist bases, rainforests are cut down, paved roads and airports are constructed, while mostly in the developing world sewage treatment and waste management are non-existent.

In 37 developing countries of the world the most important revenue source comes from the tourist industry. Although the CEETO Project is implemented in the most developed part of the world, it is essential to eliminate any negative environmental externalities in its pilot programs, which might be risky either globally or locally.

5.3.2 Development proposals in pilot actions

5.3.2.1 Soelktaeler Nature Park (Naturpark Sölktaaler), Austria

Soelktaeler Nature Park is willing to implement a tourism related pilot project in the framework of CEETO project, namely in the area of the Natura 2000 site AT 2209000. The site was designated because of the presence of Black grouse, Ptarmigan, Hasel grouse, Eagle, Chamois, Ibex, *Glauclidium passerinum*, *Aegolius funereus*, *Aquila chrysaetos*.

The main objective of the pilot action is to contribute to nature conservation management and the financial sustainability of nature preservation, it would have a capacity building effect and it would create an opportunity for more active involvement of the local population. Other potential benefits of the implementation of the pilot project is that it would improve contribution to economic sustainability, it would help make the infrastructure more environment-friendly and it would improve public relations and expand the opportunities for dissemination of information and raising awareness. The pilot project would also improve the accessibility of ecotourism products.

While improving existing ecotourism services and develop new services, the local population would have more opportunities to get engaged in the processes of local development. The pilot project would also bring significant environmental benefits in terms of reducing the environmental pressures of tourism in general,



strengthening opportunities for awareness raising, contributing to soil protection locally, contributing to air quality protection efforts locally and it could help to promote more environment-friendly behaviour. With regards to nature conservation, it would contribute to the expansion and growth of protected species locally, to gaining experiences about the preservation of protected species and it would improve knowledge of nature preservation and biological diversity in general. It would reduce the risk of endangering natural resources.

The pilot project would also provide opportunities for economic growth, by increasing revenues that contribute to financial sustainability. The project could yield benefits for the local population. Local conflicts created by the large number of visitors could be reduced, and development could generate revenues from accommodation and other service providers. Local development could create jobs indirectly and contribute to the realization of sustainable land use.

The following outputs can be expected from the pilot project: planning of the sustainable tourism strategy, balancing out the attendance at the different areas of the park, biological monitoring data, expansion of knowledge of local stakeholders about the assets of the park. The monitoring tools will be selected based on the simplicity of implementation and obtaining qualitative information.

There are existing regulations on nature protection that should be considered during the implementation of the pilot project, though there are no current information available on the carrying capacity of the area, and there are no current limitations on the number of visitors arriving to the destination. Nevertheless, the impact of the pilot project on the environment could be measured by monitoring potential effects of tourism on wildlife, perhaps also botanical surveys.

The pilot project would ensure the involvement of the local community, following a bottom up approach, in cooperation with local tourism management and other stakeholders (for example alpine clubs). The local community is mostly supportive already and they expressed the need for participating in tourism planning and development. The project will be very likely implemented with the support and satisfaction of the local community, and it could act towards equality, and a more even distribution of costs and benefits at the local level.

The successful implementation of the project will be ensured by the commitment of the local staff, who received training on ecotourism principles and other relevant information regarding ecological and social developments.

The nature park implementing the pilot project is participating in professional networks that could help to further expand the information and experiences gained through this project. The current pilot project would also build on and integrate other tourism related activities, such as local rural hospitality, Agri-tourism (including equestrian and wine tourism), hunting or fishing tourism, tourism related to visual arts, creative arts, cultural, historical tourism, active tourism. The area in question is accessible by car, by bicycle, on horseback, or by horse-driven cart, therefore it provides great opportunities for various types of ecotourism services.

After the implementation of a possible pilot program it will contribute to the increased level of satisfaction of tourists, it will enhance tourism appeal, it will reduce the environmental risks resulting from tourism and it will prevent and mitigate damages, it will contribute to the improvement in the quality of the environment, to the expansion of local job opportunities and to the extension of demand for local products and services, as well as to the development of visitor-friendly products.

The planned target group for the project includes families, children's groups, university students, young people, senior groups - the target group is mixed, a wider group of people will be reached with marketing activities.



The actions and activities planned in the framework of the CEETO pilot program include visitor stream management, especially in winter together with common awareness raising (for example of the needs of wildlife in winter), sensitization of tourists for the area, the special habitats and old cultural agriculture (making workshops for the local people who come in contact with tourists (rooms rent, farmer, guides, hunter, and other).

The mainly affected species are different grouse species, which are indicators for special sensible habitats, and with their management the whole biodiversity of these habitats are protected.

The timeframe of the project is 24 months.

5.3.2.2 UNESCO Biosphere Reserve Salzburger Lungau, Austria

UNESCO Biosphere Reserve Salzburger Lungau, Austria, has a proposal for the implementation of a pilot project related to ecotourism in Natura 2000 areas, namely the sites AT32-05021, AT32-07020, AT32-10001 and AT22000. These sites have been designated because of the following species: *Saxicola rubetra*, *Lycaena helle*, *Lagopus*, *Aquila chrysaetos*, *Tetrao tetrix*, *Cinclus cinclus*, etc., *Petula nana*, *Alauda arvensis*, *Eriophorum*, *Drosera*, *Ertrichium nanum*, *Swertia perennis*, etc. The sites cover various habitat types, including moor, dry grassland, marshes, species-rich extensive meadows, larch-pine forests, etc.

The most important objective of the pilot project is its contribution to conservation management. The project would create an opportunity for more involvement of the local population, as well as provide opportunities for environmental education and raising awareness. It would result in the expansion of ecotourism services and also the improvement of existing services.

Further, environmental benefits of the project include the reduction of local environmental pressures of tourism in general, strengthening awareness raising activities, the promotion of a more environment-friendly behaviour, and the reduction of pollution.

The project would lead to more knowledge and information about habitats of protected wildlife and it would also contribute to the preservation of protected species locally. It would result in more scientific data in relation to natural values and biological diversity in general, and it would reduce the risk of endangering natural resources.

With regards to its financial sustainability, the pilot project would contribute to economic development by generating alternative income sources for the local population. Regional economic processes have an indirect impact on the local conditions, but the pilot project could still trigger positive changes, as tourism services usually have a multiplying effect in various economic sectors.

For the local population, the pilot project could yield revenues through accommodation, catering and other local service providers, and it also has the potential to create employment opportunities directly. By providing more diverse sources of income, the project could reduce social conflicts, while also promoting more sustainable land use.

The expected outcomes of the pilot project include planning of the sustainable tourism strategy, balancing out the attendance at the different areas of the park, planning the activities aimed at preservation of biodiversity, biological monitoring data, and expansion of knowledge of local stakeholders about the assets of the park

When selecting the indicators that could appropriately reflect the result of the pilot project, the main aspects are the contribution of the indicator to the achievement of goals and its potential to obtaining qualitative information.



The pilot project would be implemented in accordance with all the current strategies, regulations and policies relevant to tourism development in protected areas, and hopefully it could even contribute to more efficient and improved regulations.

The local population will be actively engaged in the implementation of the pilot project. The Biosphere Reserve is responsible for regional development of the area; therefore, they are already working in close cooperation with local communities and several stakeholders (tourism sector, farmers and others). Well established relations with relevant stakeholders are an important asset that could help the successful implementation of the CEETO project. Though the local population is mainly neutral at the moment regarding the planned project, they will be given the opportunity to get more involved.

Within this project the Biosphere Reserve would like to implement a training program for locals. Awareness raising, sensitization, and knowledge transfer regarding nature, sustainable and respectful behaviour in nature, the meaning of nature for humans and health will be the main points in this part of the pilot action, so that the locals can act as a model for tourists regarding a respectful treatment of nature. Furthermore, there should be real, sustainable and respectful nature experience offers for tourists developed, which address the topic of “living in and with nature” (guided tours, events, and so on).

The main topic that should be addressed within the pilot action is to raise awareness and transfer knowledge regarding sustainable tourism and nature. The biosphere reserve was established 2012 but the acceptance and identification with this “award” so far is not really anchored within the local population. So, first of all it is necessary to raise the awareness for the region and the protected areas with the local population, so that they can explain it to the guests and to function as a model for living, acting and behave in nature in a sustainable manner.

In the end this pilot action should contribute to sustainable behaviour in nature, to more understanding for the meaning and importance of nature, to more understanding and acceptance of the necessity of nature protection but also to visitor steering and visitor management, as well as to regional added value. An additional point will be the cross-border activity. The pilot action will be developed and implemented in cooperation with project partner 3 - Nature Park Sölktäler.

The main topic for the tourism development is “Be Real”. It deals with sustainable tourism, coming down to, living in and with nature, the healing power of the Alps with the focus on sustainable nature experiences and raising awareness for the natural assets of the region.

The staff of the Biosphere Reserve is educated and trained in the field of ecotourism principles and other relevant areas of ecology and biology - the dedication and expertise are also key elements in the long-term success of ecotourism development projects.

Thanks to the wide professional network of the Biosphere Reserve, the pilot project could positively influence the activities of other stakeholders on the local level, national level and EU level as well.

The planned timeframe for the project is 24 months.

5.3.2.3 Authority for the Biosphere Reserve Southeast-Rügen, Germany

The Authority of the Biosphere Reserve Southeast-Rügen will implement the CEETO project on the following Natura 2000 sites: DE 1647-401, DE 1649-401, DE 1747-402, DE 1648-302, DE 1647-303, DE 1747-301, DE, 1646-302, DE 1547-303, FFH-Marin 5. The actual pilot action of the CEETO Project focusing on visitor monitoring and management will be conducted in the Zicker Berge, which is characterized by dry grassland habitats and the coast of the Bay of Greifswald.



The main objective of the CEETO Project in the Biosphere Reserve is to set up a sustainable tourism action plan for the coming years as well as to get re-certified as “European Charter Park for Sustainable Tourism”. It is expected, that the Forum, local communities and different stakeholders will participate in this process and other CEETO actions. Actors of the initiative “Partner of the Biosphere” which was part of the first certification process as a “European Charta Park for Sustainable Tourism” have been actively involved in the past years in activities of the Biosphere Reserve from an organizational as well as participatory point of view. This existing cooperation will be fostered and strengthened throughout the CEETO project.

Thus, the Biosphere Reserve Southeast-Rügen expects the following outputs of the CEETO Project:

- development of a sustainable tourism strategy and sustainable tourism action plan
- management activities to better direct tourism flows in the pilot action areas as well as a better understanding of tourist needs and flows
- expansion of knowledge of local stakeholders about the assets of the Biosphere Reserve
- evaluation and implementation of the park’s development/communication activities.

In terms of feasibility, the most important challenge for the project is to generate enough resources to effectively finance and manage the planned activities in the future. It is important that the proposed activities are implementable and easily grasped by supporting partners to ensure that the discussed goals can be reached - thus goals need to be set in such a way that they can be attained within the scope of responsibility of the Biosphere Reserve and its partners. As a public authority, the main activity of the Authority of the Biosphere Reserve is to create a network and inform the local partners/actors about sustainability issues; however, the Authority is not directly involved in the management of tourism activities.

The objectives of the pilot project in the Zicker Berge are to contribution to conservation management, its capacity-building effects, and the opportunity for more involvement of the local population. Further, the pilot will contribute to promoting the dissemination of information and raising awareness as well as to the cooperation of stakeholders, to reduce social conflicts, to contribute to the development of local democracy, and to promote sustainable land use (by tourists as well as locals).

The environmental benefits of the pilot project include the reduction of environmental pressures; regarding nature conservation, the pilot project will increase the available knowledge regarding the touristic use of protected habitats and ecosystems in the Zicker Berge and will lead to better management that in turn has a positive impact on the protection of species. The pilot action also enhances environmental governance to protect land/water-based ecosystems. It influences (directly and indirectly) the (1) reduction of land degradation and loss of biodiversity, (2) development of lifelong learning opportunities in relation to sustainable development and climate change, (3) representation of locally produced products and thus a sustainable use of local resources.

The target group of the proposed pilot project is mixed (landowners, farmers, municipality, tourism centre, etc.); it is expected that all activities will be developed and planned together with these stakeholders.

As a public authority, the main goal of the Biosphere Reserve is to make tourism more sustainable in the area, to create a knowledge exchange about good practices among the different stakeholders and expand a sustainable tourism development. Thus, with the pilot activity the Biosphere Reserve would further widen its network and strengthen the cooperation between different stakeholders and actors.

The timeframe of the proposed project is 16 months.



5.3.2.4 Emilia-Romagna Region - Protected Areas, Forestry and Mountains Development Department (Ente di Gestione per i Parchi e la Biodiversità Emilia Centrale), Italy

The Protected Areas, Forestry and Mountains Development Department of Emilia-Romagna Region is willing to implement a pilot project under the framework of the CEETO program on the Natura 2000 sites of SIC-ZPS IT4040001 and SIC-ZPS IT4040002.

The objectives of the proposed program are the following: the project would contribute to conservation management and to the income-generating capability of protected area management. It would contribute to capacity-enhancement and to the increased involvement of the local population, as well as to economic sustainability. The project could promote the use of green, more environment-friendly solutions in transportation and infrastructure, it could expand the opportunities for dissemination of information and raising awareness, it could widen the range and improve the quality of ecotourism products and services.

The project would reduce environmental pressures of tourism in general, it would improve local waste management services, it would contribute to the promotion of environment-friendly infrastructure, and it would reduce the risks of pollution. The pilot action would also contribute to the preservation of habitats and protected species and support data collection on these species, at the same time reducing the risk of threatening natural resources.

The proposed project would contribute to financial sustainability by making better use of available financial resources, by creating a more balanced development, and by increasing alternative income sources that could lead to further developments.

The project could help to eradicate or mitigate local conflicts created by the large number of visitors; it could create jobs indirectly and generate additional income for different service providers. The project would also contribute to sustainable land use and it would foster the cooperation among various stakeholders.

The project would be implemented in accordance with relevant legislation and policies, and it could also help to improve these regulations in the future. Currently there is no information available regarding the carrying capacity of the area in terms of tourism-related disturbance, but as a part of the project video surveillance methods will be applied for the monitoring of tourist activities, that could help to determine unrespectful behaviours and find the solutions to retain visitors on the paths.

An expected result of the project is to make the management of Protected Areas more efficient and to create more sustainable funding for nature conservation objectives.

The pilot project includes a system for monitoring the presence in parking lots to improve the way in which protected areas are used and reduce the pressure on the habitat, as well as a video analysis system to detect the invasion of particularly sensitive protected areas, not only by tourists but also by domestic and wildlife. Such systems would help to optimize the conservation actions of the areas, contributing directly to the protection of habitats and species.

The timeframe of the proposed project is 12 months.

5.3.2.5 Tosco-Emiliano Apennine National Park (through the Emilia-Romagna Region - Department for Protected Areas, Forests and Mountain Development), Italy

The Tosco-Emiliano Apennine National Park includes in its territory 7 SIC-ZPS, 8 SIC and 1 ZPS sites of the Natura2000 Network. As part of the CEETO Project, the Park has planned to carry out pilot actions in two of these: the SCI IT4030008 (Pietra di Bismantova) and the SCI-ZPS IT4020020 (Parma Apennine Ridges).



Although most of the park's territory is characterised by broadleaf and, subordinately, coniferous forests, there is an incredible variety of natural environments and habitats, such as hills and mountains, meadows and moorlands, forests, high peaks and glacial lakes. There are also traces of ancient and traditional human activities (metati, mills, peasant houses).

Important plant species are silver fir, juniper, Apennine primrose, narcissus, blueberries while the fauna is characterized by wolf, golden eagle, bats, salamander glasses, peregrine falcon, kestrel, buzzard, owl, deer, roe deer, wild boar, fox, hedgehog, brown trout, Italian barbel, Mediterranean barbel, beetle hermit, deer flying, reddishorn.

The park also protects some of the most important geological sites in Italy such as the Bismantova Stone and Triassic Gypsums in the Emilian part of the Park and the Pania di Corfino and Sassorosso in Garfagnana (Tuscan side of the Park).

The Park is already awarded by the European Charter on Sustainable Tourism and is also included in the MaB UNESCO Reserve "Tuscan-Emilian Apennines" but wants to take advantage of the project to strengthen the conservation actions planned in two areas that see among the most important tourist influxes of the Park itself: Pietra di Bismantova and Lagdei Plain (Parma's Saint Lake).

The main objective of the pilot project is to contribute to the management of conservation and to reduce the pressure of tourist fluxes that tend to heavily concentrate in short periods of the year. The project will also contribute to enhancing environmental education, knowledge and awareness in the field of nature conservation. In addition, the project could expand the offer and improve the quality of ecotourism products and services, improve the capacity to generate income in the management of protected areas, promote economic sustainability and social cohesion. In the past, in fact, tourism was not one of the main factors of economic development of this area and was only a "seasonal" resource (for example in summer or winter). The growth of tourism in the last decade has shown how it can be an important source of income throughout the year and the resulting revenue can counteract the depopulation of these areas and at the same time encourage actions to protect the natural environment and the historical and cultural heritage.

The project could help solving or mitigating local conflicts created by high visitor numbers, create indirect jobs and generate additional revenue for different service providers. The project would also contribute to sustainable land use and promote cooperation between the various stakeholders.

The process of stakeholder involvement in the creation of the Strategy and Action Plan was born thanks to a close relationship between the National Park and local stakeholders. The Park strategy aims to strengthen some tourist sectors of interest for the territory such as cycling, horseback riding, hiking (thanks to a good network of paths - for example the Park's High Trail), while concrete actions must also be carried out to evolve towards greater sustainability also snow tourism.

The pilot actions will develop the monitoring of tourist flows (cars and people), awareness raising and education actions, to correct the behaviour that does not respect the environment, seasonal adjustment and relocation of tourist flows to other areas of the Park, also worth visiting but still under-exploited.

5.3.2.6 Po River Delta Regional Park (through the Emilia-Romagna Region - Department for Protected Areas, Forests and Mountain Development), Italy

The Regional Park of the Po Delta involves a territory fragmented into discontinuous polygons that cover an area of about 600 km². It includes about 18 Natura 2000 Network sites and protects transition environments between land and sea, river deltas, lagoons, salt lakes, embankments, salt marshes, residual edges of ancient lowland forests, etc., where more than 300 species of birds and another large number of terrestrial



animals live. The park also contains important testimonies of cultural heritage dating back to the Byzantine era.

The Po Delta Regional Park has never defined its own specific strategy for the sustainable development of tourism, although in recent years several projects have been carried out on this subject. Taking advantage of the opportunity offered by the CEETO project, a reflection on the objectives that the Park intends to pursue as a matter of priority in relation to the development of tourism in the area has therefore begun. Although these objectives cannot be defined as a real strategy, they guide the activities within the CEETO project and are pursued by the Po Delta Regional Park in the development of its functions.

Regarding the sustainable tourism development, the Regional Park of the Po Delta aims to: 1) guarantee the sustainable tourist development of the Park by safeguarding the environmental and cultural qualities of the Po Delta (which are also the elements that attract tourists), maintaining its ecological characteristics and aesthetic qualities; 2) reduce the overall environmental pressure that tourism generates on the territory, supporting local authorities in territorial planning and promoting in particular a more effective environmental management of mobility, waste, water and energy consumption; 3) contribute to make the Po Delta a destination of excellence in terms of sustainable tourism and ecotourism, especially by encouraging the development of forms of "slow" use and mobility (such as trekking, cycling, canoeing) that allow an immersive experience in the territory of the Park and a connection between the various locations and natural emergencies that make up it; 4) stimulate and support the tour operators of the territory so that they understand and follow the principles of sustainable tourism, both by qualifying structures and services from the point of view of eco-efficiency, and by characterizing their offer on the naturalistic and cultural values of the Po Delta; 5) favour the seasonal adjustment of tourism and a more balanced distribution of tourist flows on all areas of the Park, so that sustainable tourism can become a significant economic sector for the local community; 6) encourage the attendance of the Po Delta by visitors interested in living ecotourism experiences offered by the territory; 7) strengthen the link between the functions and activities of environmental education put in place by the Park and sustainable tourism development; 8) inform and involve visitors regarding the rules of conduct to be maintained within the Park (specifying the differences between the various areas) in order to minimize the impact on ecosystems and biodiversity existing in the Po Delta. 9) monitor how the effects of climate change can have impacts in the Po Delta also in terms of tourist use, favouring in this sense a process of adaptation and resilience of local communities and tourist operators.

Environmental awareness and education for tourists can become an important vehicle to convey to them the principles and values of sustainable development and the importance of conservation of Protected Areas. In fact, by promoting the qualification of the experience of visiting the natural areas of the Po Delta in terms of knowledge of ecological values, tourists will be more sensitized and involved in the objectives of conservation of these values, thus becoming "important allies" for the proper management of protected areas.

The objective of the pilot action will therefore be to define and test shared solutions to better manage the tourist flows that characterize two experimental areas: the Mesola Wood and the Cervia Salt Pans. In particular, the pilot action will aim to encourage: 1) a more balanced and distributed attendance of the two areas in all seasons; 2) the distribution of tourist flows, in peak periods, even to neighbouring areas currently little frequented and known although equally attractive in terms of nature tourism.

The pilot action will be developed by carrying out a preliminary survey of tourism flows, which will be followed by the application of the St. Gallen method for the "Analysis of strategic visitors flows", through which the action plan will be defined.

The proposed project duration is 24 months.



5.3.2.7 Public institution Nature Park Medvednica, Croatia

Nature Park Medvednica (Croatia) is planning to implement a pilot project under the framework of CEETO program on the Natura 2000 site HR2000583, which has been designated due to 20 target species and 9 habitat types. The main phenomena of the Park are well preserved forests and forest communities. The pilot area consists of peak zone and nearby peak zone area of the Park and the ski slope.

The main objective of the pilot project is contribution to the conservation preservation management and to reduce visitation pressure. The project will also contribute to improve education, awareness-raising and outreach of nature conservation.

In order to determine monitoring of tourism impact of ski resort, and to resolve problems with traffic congestions in peak area of the park, PINPM participates in CEETO project as one of the pilot areas. PINPM will try to implement and test new tools and practices primarily using LAC methodology. Developing monitoring for peak area of the park (including ski resort), using LAC methodology (Limits of acceptable change) means that PINPM together with relevant stakeholders will define and test indicators for three big components (environment, visitors and nature) and set standards for each indicator. Also, in order to reduce traffic congestions during winter season in the peak area of the Park, traffic counters and cameras are going to be installed, and also communication measures between relevant bodies developed.

Other benefits of the project include: reduction of CO₂ emission of tourism infrastructure, more environment-friendly infrastructure, increased awareness raising, the protection of water resources and improvement of air quality.

The proposed project will also contribute to the preservation of habitats and species, it will help in gathering information and knowledge on nature conservation and biological diversity, concerning the environmental and climatological impacts on the pilot area. With the results and improved management, proposed action will reduce the risk of threatening natural resources.

Planned proposed project can contribute to the expansion of professional services and the cooperation of stakeholders and it can reduce social conflicts amongst stakeholders.

For now, there are no limitations on the number of visitors to the protected area, though it might become necessary in the long term, in accordance with the carrying capacity and within the limits of acceptable change of the site. With cable car, as a part of the public transport, part of the visitation pressure will be reduced.

The target group of the proposed pilot project is mixed. The pilot area is an important destination for skiers, but in the summer season bikers, hikers and other visitors could also be targeted.

The pilot project aims to implement the tourism governance model inside the Nature Park Medvednica, characterized by the proximity of the city of Zagreb which causes constant and growing pressures from the inhabitants and the urbanization, and a growing number of visitors of Zagreb. The need to find innovative solutions for tourism management is a priority. Considering the fact, that it is planned to make an Action plan on visitor management for the complete Park area, this pilot action is good beginning as an example for reducing visitation pressure on small areas.

Primary goal is to develop smart monitoring scheme for ski area. In order to develop one, first the indicators need to be identified and also a baseline research of area should be conducted.



The project has the potential to create employment opportunities indirectly and act as a catalyst for economic growth. The project also promotes cooperation among stakeholders and helps to establish a network of tourism services.

The project will result in better monitoring of tourism-related activities in the area, by getting more information about the visitors of the park, their habits and needs, and also more data on the number of visitors. Another expected result of the project is a more balanced attendance at the different areas of the park, and a more manageable and controllable tourist flow. More monitoring data will be available, that can serve as a feedback and can be channelled to the adaptive management cycle of nature conservation. Local stakeholders will also have more information and knowledge about the natural values of the protected area.

There are limited options for the involvement of the local population, as the local community is rather displaced from the targeted pilot area. Relevant stakeholders for ski centre are going to be involved in implementation as well as stakeholders like infrastructure/service providers and national public authority.

Staff participating in project implementation already received training in the field of ecotourism and nature conservation. Their dedication and expertise are key assets in the realization of the planned pilot action. Integral approach to management in the Park is ensured through collaboration with various partners from local community, public institutions (ministry, agencies, and local government) and other institutions, all included in the Stakeholders Forum, an important communication tool that has been established during ECST process (2013).

The timeframe of the proposed pilot project is 15 months.

5.3.2.8 Public institute Landscape park Strunjan, Slovenia

The Landscape Park Strunjan is willing to implement a tourism-related pilot project under the framework of the CEETO project in the Natura 2000 sites 3000249 and 5000031. The affected habitats are sea reefs 1170, annual vegetation on drift lines 1210, Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp. 1240, Associations with *Cystoseira* sp. (not Natura 2000 but protected on international level and locally very important). Affected species include *Phalacrocorax aristotelis Desmarestii* A392, *Sterna sandvicensis* A191, *Pinna Nobilis* (not Natura2000 but protected on national and international level), *Cymodocea nodosa* (not Natura2000 but protected on international level), *Nanozostera noltii* (not Natura2000 but protected on international level), *Zostera marina* (not in Natura2000 but protected at international level).

The most important objective of the planned pilot program is its contribution to conservation management. Further objectives include more active involvement of the local population, the opportunity for a more environment-friendly infrastructure, the expansion of awareness-raising activities, the development, expansion of new tourism services and the improvement of existing tourism services.

Additional benefits of the project could be the reduction of local environmental pressures of tourism in general, a more environment-friendly mobility infrastructure, strengthened opportunities for awareness raising, contribution to the protection of water resources locally and the promotion of a more environment-friendly behaviour.

From the point of view of nature preservation, the project would contribute to the preservation of habitats and species and it would reduce the risk of threatening natural resources.

With regards to the economic benefits, the pilot project could increase revenues from services, and at the same time it could improve and more efficiently use available financial resources. By enhancing cooperation



among stakeholders and providing more diversity in income sources, the project could foster a more balanced and stable economic development.

The project has the potential to reduce local conflicts created by the large number of visitors and to directly create employment opportunities. Services of different service providers will be improved and expanded, and cooperation among various social actors will be enhanced. The project will also take steps towards a more sustainable land use.

Further outputs expected from the pilot project include a more balanced distribution in different areas of the park and more thorough planning of the activities aimed at the preservation of biological diversity.

Within the framework of the pilot project, the project partner would like to establish a catalogue of activities in the pilot program area from which tourist could choose the activities they would like to implement there. The catalogue would give us the information about the sort of activities the visitors wish to do and the number of chosen activities in the park and consequently the information on pressures on the area.

The involvement of the Municipality of Izola (local municipality), which is the owner of the land in the pilot area, is foreseen. Collaboration is necessary, because spatial planning and planning of the activities implemented in the pilot area must be coordinated. Local community will be involved regarding ecological moorings on the sea. The sea is under state ownership; however positive feedback of the local community regarding the activities is necessary to move forward with the proposed pilot project.

Activities of the pilot project could relate to other activities, such as Agri-tourism (including equestrian and wine tourism), cultural, historical and active tourism.

The expected results of the pilot project include increased level of satisfaction of tourists, reduction of environmental risks resulting from tourism, expansion of local job opportunities, increased demand for local products and services, and serving as a leverage point in order to close the gap for an underdeveloped area.

The top priority of the proposed pilot project is to promote sustainable visiting of the protected area, by developing a plan for reducing the pressure on nature on the sea and in the buffer zone of the protected area. In the first case it is intended to organize visits by boats on the marine part of PA, in the second case to build up a set of green infrastructures for sustainable visits and education of visitors.

The objective of the possible pilot program is to cooperate with all local stakeholders and develop a model of cooperation in the design of spatial solutions of the area with authentic green infrastructure, supported by educational and interpretative content, which will also provide the opportunity for long-term cooperation.

By the management of visitor flow, pressure can be alleviated in certain zones of the protected area, with a view to help the preservation of natural values.

Activity related to pilot project will provide project documentation for temporary ecological mooring, which would operate during tourist season, which could help to preserve the biodiversity of the seabed.

The timeframe of the proposed pilot project is 24 months.



6 Summary

6.1 Propositions for the implementation of CEETO pilot programs.

Our research reveals that potential implementers and stakeholders of pilot programs all think the development of tourism requires wise, long-term consideration and control. During the implementation of pilot programs environmental protection and nature conservation regulations and the interests of local communities must be observed and prioritized. Besides local communities, the crucial interest of successful Interreg-CEETO Project is the contribution to the sustainable use of the ecosystem. Tourist organizations, conservation authorities and tourists are all responsible for social and environmental issues; therefore, preliminary studies must all have a wide scope, investigating interactions and indirect impacts. It gives us hope that in all the concerned regions respondents have realized that environmental protection and conservationist attitudes and measures are needed during the implementation of the programs. Pilot programs must restrain hard tourism, counteract the development of fake green qualifications/labels, decrease mass tourism, seasonality and luxury. It is crucial to develop indicators and monitoring of touristic impacts in the long run. “Green” qualification of services can be given quality assurance by involving local communities and setting up commissions. In the meantime, the proportion of environmentally friendly services, green hotels and soft tourism should be increased, as well as the support for and development of eco-tourism. Furthermore, tourism in nature including trekking, canoeing, cycling, where no natural assets are endangered, should be supported. Even horse-riding and Agri-and hunting tourism, as well as locally health/wellness and cultural tourism opportunities should be made greener. Concerning tourism targeting protected areas, it must be taken into consideration that revenues are spent on the protection of natural assets and contribute to the funding of conservation activities.

During the development of soft tourism via pilot programs most of the principles of environmental protection and nature conservation should be taken into consideration. During the implementation of the programs, partners need to take into consideration the needs of the landscape, local residents and tourists in a way that the maintenance and protection of the landscape should be prioritized.

Landscape protection, landscape maintenance, environmental and nature conservation supervision shall have supremacy; developments should be made in cooperation with nature conservation managers and stakeholders in landscape use. If possible, during development “greenfield” investments must be avoided, and land must be treated sparingly. Existing natural conservation areas must be preserved at all costs; thus, developments can only be implemented after the assessment of the landscape in terms of loading capacity, and only developments limiting the load on the landscape can be executed. For instance, limiting the number of tourists in time or space by regulating pre-purchased tickets, allocating timeslots, limiting parking spaces or barriers to park. Besides, the research result point out that locals must be involved in planning, their ideas must be embedded, and their needs and rights must be taken into consideration.

Through pilot programs non-motorized tourism must be supported and promoted. Tourists, mostly motorists must be encouraged or pressed to leave their cars as soon as possible and spend their time using the services of the pilot area. It is beneficial when pilot programs contribute to environmental and nature knowledge, however the development of pedestrian tourism, green transport and even public transport is equally important. Besides the development of walking areas, parks, cycling routes and services, road closures or even a ban on parking cars can also be positive. By pilot programs, the seasonality of tourism should be reduced, e.g. by offering services available during the whole year and programs during the dead season. The standard of touristic research must be improved locally, monitoring should be established for nature conservation, local economy and society and cultural impacts. The better training of employees can be



important in a pilot program, mostly training in the fields of environmental protection and nature preservation, sustainable development and soft tourism in all touristic trades. In pilot programs appropriate information dissemination and ethical, accurate marketing should be promoted. The promotion of soft services with environmental quality assurance qualifications, the banning of untrue marketing promises, and the improvement of local cooperation should all be encouraged. The implementation of pilot programs targeting the implementation of soft tourism needs an environmentally responsible attitude, and the environmentally friendly lifestyle must be conveyed to all stakeholders.

It is important to understand that pilot programs must serve public goals, primarily from the aspect of nature conservation and local communities, thus eco-tourism in itself cannot be developed without taking these into consideration, as tourism and the preservation of values and assets cannot be conciliated every time. The results of attempts to preserve nature and the environment while developing tourism can be quite mixed even in the case of ecotourism, and in several studies, we can see incoherency. In spite of the positive tone of answers we must be concerned to be cautious and critical in implementation and assess the individual cases and decide on development or limitation. This decision must be made by the managing bodies and administrations of natural areas, which shall supervise eco-tourism. Where this is not in place, eco-tourism cannot contribute to the protection of nature, thus it is not substantiated. Eco-tourism and good pilot programs can minimize the load on the environment, however business goals can only be achieved when monitored closely by nature conservation and cannot be the main motivation. Part of the revenue must be returned into funding nature conservation. During research it became apparent that at each pilot program venue the development of tourism targeting protected areas can be implemented without generating adverse effects like mass tourism does. If there is a possibility of significant revenue, it may contribute to efficient nature conservation and create jobs and revenues in the region. Therefore, it is worth considering the implementation of pilot programs when future revenues may contribute to the conservation of natural assets.

6.2 Risks to be avoided in prospective pilot programs

- Only such pilot programs can be implemented which are associated with the principles of sustainable development, a nature conservation attitude and wise rural development goals promoting sustainability, and contribute to conservation treatments, the sustenance of natural attractions, the funding of nature conservation, which have capacity building/developing effects rooted in sustainability, create an opportunity for local participation, improve usability and economic sustainability, create and develop services with greener and more environmentally friendly solutions, improve presentation of attractions, information dissemination and awareness raising.
- The implementation of developments and pilot programs shall not damage biodiversity directly or indirectly. The project must take into consideration the harmful effects of partitioning of their living spaces (roads regarded as obstacles from a bio-geographical point of view), the spreading of weed species (import, spreading near lines, edge effect), running over animals (mostly insects, but also vertebrates: amphibians, reptiles, birds, small mammals) and most of all, disturbing animals (by noise or observation, etc.).
- The venue of the development shall not put protected natural assets at risk, there should be no landscape destruction (roads, car parks, filling stations, decrease of green surfaces), it should not grow the background industry (mining of raw materials, energy industry, metal and chemical industry) and should not contribute to the worsening of global environmental and social problems.



- Air traffic growth should be avoided. This can be prevented most of all by marketing, thus preventing air pollution (together with the background industry), releasing toxic materials in the Air, contribution to global climate change and warming, making the local and urban climate more extreme (expansion of asphalt on the expense of green surfaces, noise pollution, vibration, etc.). The optimal number of visitors must be found who use already existing infrastructure, which does not increase the emission of harmful materials and can be used as a green mode of transport.
- Programs targeting seasonal visits should not cause environmental shock waves, shall not use an increased amount of water and generate more sewage, and there should be no change in water balance due to water exploitation, and the programs should not increase energy use or waste production.
- Pilot programs should build on local stakeholders as much as possible, use local service providers and food producers, promote local products and should also contribute, besides funding nature conservation, the preservation of local communities as well.
- Programs should not implement intensive or unsustainable land use with increased effect, in construction activities shall not transform surface shapes, and the partitioning of the landscape, the damaging, pillaging or destruction of inanimate natural assets and habitats must be avoided at all costs. Besides, damages caused by touristic facilities, constructions and the occupation of areas, movement and behaviour of tourists in living natural assets, such as deforestation, decrease of natural habitats, change of cohabitations, the decrease of biodiversity and the population of species, selective extinction of species, genetic deterioration, the spreading of alien and weed species, disturbing the behaviour of animals should be avoided at all costs.

The survey for the preparation of pilot programs pointed out that everything is in place at every partner for a successful, professionally grounded, good pilot program. Each partner is professionally suitable and well-prepared to implement such a pilot program, and the local communities are also open to such initiatives. However, there is risk everywhere, every development has its perils, thus attentiveness, a wide perspective, the importance of avoiding expected risks are all essential everywhere. Based on studies of various fields, during the implementation of developments and pilot programs CEETO partners must take into consideration that the development of tourism, especially tourism targeting protected areas is not a GOAL, but a TOOL, one option to protect and support local communities and preserve and defend protected assets.



7 Epilogue

Proponents of Sustainable Tourism within protected areas believe that tour design and interpretation can help moderate the negative human and environmental impacts of tourism and build an educated and motivated community that supports environmental conservation. In other words: conservation and sustainable use of biodiversity by such measures that reconcile short-term needs with long-term benefits.

This handbook has investigated the efforts and management tools of different national, regional and nature parks, biosphere reserves and other tour operators, to explore whether sustainable tourism products - through cooperation and openness - can influence tourists' educational outcomes and support of environmental conservation. We attempted to share practices and principles of Sustainable Tourism that can be applied by PA-managers to benefit others.

However, results suggest that the exact methods used should be always adapted to local characteristics; specific to the social, political, cultural, environmental, geographical background, circumstances and business capacities available on the spot. If applied circumspectly, Sustainable Tourism can achieve positive changes in tourists' environmental knowledge, attitudes and behaviours, as well as exert a constructive impact on local society and on economic development.

While there are unique characteristics of different countries of the world, there is no doubt that some of the experiences discussed in this handbook are transferable to other places, where Protected Areas managements are engaged in using incentive measures to enhance biodiversity conservation and sustainable use. Finally, conflict resolution, involvement, participation, motivation and voluntary desire to achieve common goals are of fundamental importance.



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