

Project co-funded by the European Union and national funds of the participating countries



**Deliverable. 3.6.3**

**Guidelines for the sustainable capitalization of cultural services related to tourism and recreation**

**BIOPROSPECT:** Conservation and sustainable capitalization of biodiversity in forested areas

<b>Project title</b>	Conservation and sustainable capitalization of biodiversity in forested areas (BIOPROSPECT)
<b>Call identifier</b>	Interreg V-B "Balkan-Mediterranean 2014-2020" Transnational Cooperation Programme
<b>Project acronym</b>	BIOPROSPECT
<b>Starting date</b>	October 20th, 2017
<b>End date</b>	October 19th, 2019
<b>Funding scheme</b>	European Regional Development Fund (ERDF), Pre-Accession Assistance (IPA) Fund / National Funds
<b>Contract no.</b>	BMP1/2.1/2336/2017
<b>Deliverable no.</b>	3.6.3
<b>Partner</b>	6
<b>Deliverable name</b>	Guidelines for the sustainable capitalization of cultural services related to tourism and recreation
<b>Work Package</b>	3
<b>Date</b>	2/9/2019

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## Deliverable Title

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## VERSION HISTORY

Version	Completion date	Modifications
1	2/09/2019	



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## **EXECUTIVE SUMMARY**

Forests are full of beauty and a variety of tourist destinations. By targeting the sustainable capitalization of cultural services related to tourism and recreation, the negative impact of tourism activity on the natural and socio-cultural environment can be reduced. In addition, conservation of ecosystems in conjunction with appropriate guidelines may be involved in the operational plans of policy makers.



## 1 CAPITALIZATION OF ECOSYSTEM SERVICES

Ecosystem services are the direct and indirect contributions of ecosystems to human well being. They support directly or indirectly our survival and quality of life. Ecosystem services can be categorized in four main types:

- **Provisioning services** are the products obtained from ecosystems such as food, fresh water, wood, fiber, genetic resources and medicines.
- **Regulating services** are defined as the benefits obtained from the regulation of ecosystem processes such as climate regulation, natural hazard regulation, water purification and waste management, pollination or pest control.
- **Habitat services** highlight the importance of ecosystems to provide habitat for migratory species and to maintain the viability of gene-pools.
- **Cultural services** include non-material benefits that people obtain from ecosystems such as spiritual enrichment, intellectual development, recreation and aesthetic values.

Climate regulation is one of the most important ecosystem services both globally and on a European scale. European ecosystems play a major role in climate regulation, since Europe's terrestrial ecosystems represent a net carbon sink of some 7-12% of the 1995 human generated emissions of carbon. Peat soils contain the largest single store of carbon and Europe has large areas in its boreal and cool temperate zones. However, the climate regulating function of peatlands depends on land use and intensification (such as drainage and conversion to agriculture) and is likely to have profound impacts on the soil capacity to store carbon and on carbon emissions (great quantities of carbon are being emitted from drained peatlands).

Water purification by ecosystems has a high importance for Europe, because of the heavy pressure on water from a relatively densely populated region. Both vegetation and soil organisms have profound impacts on water movements: vegetation is a major factor in controlling floods, water flows and quality; vegetation cover in upstream watersheds can affect quantity, quality and variability of water supply; soil micro-organisms are important in water purification; and soil invertebrates influence soil structure, decreasing surface runoff. Forests, wetlands and protected areas with dedicated management actions often provide clean water at a much lower cost than man-made substitutes like water treatment plants.

Pests and diseases are regulated in ecosystems through the actions of predators and parasites as well as by the defence mechanisms of their prey. One example of these regulating services is provided by insectivorous birds in farms that use most of their land for agriculture.

Soil biodiversity is a major factor in soil formation, which supports a range of provisioning services such as food, fiber and fuel provision and is fundamental to soil fertility, being a highly important ecosystem service in Europe. In addition, a diverse soil community will help prevent loss of crops due to soil-borne pest diseases.

Cultural services provided by ecosystems are also very important to EU citizens. Evidence can be found in the scale of membership of conservation organizations. For example, in the United Kingdom the Royal Society for the Protection of Birds has a membership of over one million and an annual income of over £50 million.

Although most people associate them mainly with nature conservation and tourism, well managed protected areas can provide vital ecosystem services, such as water purification and retention, erosion control and reduced flooding; they support food and health security by maintaining crop diversity and species, play an important role in climate change adaptation and contribute to mitigation through the storage and sequestration of carbon.

A new classification of ecosystem services is under development at international level, the Common International Classification of Ecosystem Services (CICES) to facilitate integration of ecosystem services in environmental accounting.

At EU level, a conceptual framework for Mapping and Assessment of Ecosystems and their Services (MAES) has been developed to steer a more harmonized approach to ecosystem and ecosystem services assessments across EU Member States.

## **2 TYPOLOGY OF CAPITALIZATION MECHANISMS FOR ECOSYSTEM SERVICES**

Our increasingly globalized world is characterized by the distant interchange of people, goods, information, and ecosystem services (ES, contributions of ecosystems to human wellbeing). Interregional ES flows are a direct result of the physical links, policies, trade, and resource management decisions in one geographical region that can have significant impacts on ecosystems and biodiversity elsewhere (Kissinger et al., 2011). Sustainability challenges are associated with interregional flows, such as the distribution of benefits derived from nature, globally associated costs and interregional dependencies, and broader considerations of equity and responsibilities for sustained ES management.

In ecological economics, a discourse on interregional sustainability focuses on accounting for biophysical flows of natural resources, using ecological footprints or the human appropriation of net primary production framework. Further, political ecology is addressing societal effects of change in land tenure (termed 'land grabbing'). In the policy arena, national and international biodiversity strategies are calling for ecosystem assessments (European Commission, 2011, UNEP, 2010). However, most ecosystem assessments have ignored or underappreciated interregional ES flows. Considerable progress has been made to prioritize and structure ES research or policy action, and to support communication about ES among disciplines and sectors. Ever since the Millennium Ecosystem Assessment, conceptual frameworks for ES have acknowledged the distinction between ecosystems and social systems, and the need for a connection between these subsystems to attain actual benefits of ES. The ES cascade frames the service itself as this connection and several studies have acknowledged different scales in ecosystem service research, and others have quantified or conceptualized flows from providing to benefitting areas. Yet linkages between providing and benefitting areas have mainly been studied at smaller scales and there is little knowledge on the magnitude, drivers and effects of interregional ES flows, in particular for regulating and cultural ES, with a few notable exceptions. For instance, López-Hoffman et al. (2010) described provisioning, regulating and cultural ES flows between Mexico and the U.S., and Liu et al. (2016) analysed the telecoupling of water-related ES across China. The UK national ecosystem assessment analysed biomass trade with other world regions and estimated the land requirements in exporting countries (UK NEA, 2011), while Yu et al. (2013) provided virtual land flow analyses for traded crops and timber indicating flows of provisioning services.

Biophysical flows of traded goods, derived from provisioning services in one region, are distributed via trade on global markets (Kastner et al., 2011). Examples are movements of food, fibre, biomass for energy use, medicinal, ornamental, and genetic resources. For this flow type, a carrier actively (intentionally) transports an ES using manmade capital such as infrastructure or technology. These carriers include humans, roads and railroads, shipping routes, aviation routes, and other commercial networks (Bagstad et al., 2013).

Flows mediated by species through migration and dispersal comprise various services. Mobile ES providers link sending and receiving systems. Some take part in regulating processes, others are enjoyed by people, or are harvested. Examples are fish harvested as they migrate, pollination, pest control, and seed dispersal through bats or pollination through hummingbirds, and aesthetic

enjoyment of the monarch butterfly (*Danaus plexippus*) and leatherback sea turtles (*Dermochelys coriacea*). For this flow type, a carrier moves between two systems using its own energy.

Passive biophysical flows occur through biotic and abiotic processes such as river, oceanic and atmospheric currents. This type includes both the provision of beneficial flows and the prevention of detrimental flows. The relative provision of the flow to human wellbeing is determined by the sending system that regulates energy and matter potentially causing harm in the receiving system. An example is provision of clean freshwater downstream. The prevention of detrimental flows may benefit distant receiving systems through, e.g., reduced flood risk, prevented erosion and hazards, increased carbon storage, or the retention of water (see Box 1). Passive biophysical flows are mediated by the biotic components of ecosystems without active human interference. The magnitude of a flow of matter and energy is changed as a result of an ES delivered in the sending system, which can act as a sink, a source, or a transformer of matter or energy (Bagstad et al., 2013).

Information flows entail information transport from a sending to a receiving system where this information is received by a beneficiary through cognition. They comprise flows of immaterial ES typically related to knowledge, artistic, or spiritual benefits, e.g., the benefits of knowing about the existence of certain species, of gaining artistic inspiration, or spiritual wellbeing from distant natural characteristics, such as certain species or landscapes. For this flow type, a carrier actively transports an ES using manmade capital, such as communication channels, including different media (newspaper, magazines, TV documentaries, internet, social media, and books).

### **3 SUSTAINABILITY OF THE ECOSYSTEM SERVICES**

We are currently witnessing unprecedented loss and degradation of the natural environment, freshwater, marine and terrestrial, as a consequence of human actions. Climate change and a growing human population are putting increasing pressure on the earth system. Many sectors of society, including scientists, policymakers and industry, are realizing the importance of investing in natural capital: ecosystems and the services they provide to humankind, such as food, water, disease and climate regulation, recreational value and spiritual fulfilment.

Ecosystems are being degraded owing to a lack of understanding of the value of the earth's natural capital. There is a need to bring environmental values into decision making in an attempt to reduce the conflict between conservation goals and human aspirations. Society has to understand the value of nature, particularly the ecosystem services on which it depends, in order to facilitate a greater investment in its conservation and sustainable use.

To achieve this, a number of developments need to take place across society. There is clearly enthusiasm from politicians and policymakers to place monetary values on ecosystem goods and services, to illustrate their value in comparison to other tradable commodities, and hence create a common language for negotiation. Nature is valued in a myriad of ways by society and realizing these values, from market to spiritual and future use values, is an important challenge.

The primary goals of ecologically sustainable forest management are:

- ✓ maintaining the vitality of the forest ecosystem (i.e. ecological processes within forests, including the formation of soil, energy flows and the carbon, nutrient and water cycles);
- ✓ maintaining the biological diversity of forests;
- ✓ managing the net social benefit derived from the mixture of forest uses within ecological constraints for many years.

#### **4 SUSTAINABLE TOURISM IN PROTECTED AREAS**

Each protected area is different. Strategic priorities and action programs should be determined locally.

- Protection and enhancement of natural and cultural heritage: A fundamental aim of the strategy and action plan is to protect and enhance the area's natural and cultural heritage, for and through tourism, and to protect it from excessive tourism development.
- Improving the quality of the tourism experience: A key goal is to provide all visitors with a high-quality experience in all aspects of their visit. The protected area will carry out a program with its partners to improve the quality of the tourism.
- Raising public awareness: The protected area will seek to communicate effectively to visitors about the special qualities of the area.
- Development of tourism specific to the area: The protected area will encourage specific tourism products which enable discovery and understanding of the area, by providing and supporting activities, events and packages involving the interpretation of nature and heritage.
- Training: Training will be an essential tool for implementing the sustainable tourism development strategy in the area. The aim is to increase knowledge of the protected area and sustainability issues amongst all those involved in tourism.
- Protection and support of the quality of life for local residents: The tourism strategy will seek to ensure that tourism supports and does not reduce the quality of life of local residents.

- Social and economic development: The protected area will aim to increase benefits from tourism to the local economy, encouraging initiatives which will have a positive impact on various economic sectors.
- Control of tourist numbers: Visitor flows will be monitored and influenced to reduce negative impacts on the environment, landscape and heritage of the area.

## **5 DEVELOPMENT OF A PLAN CONCERNING TOURIST ACTIVITIES IN NATIONAL PARKS**

Any negative impacts of tourism on traffic and infrastructure are to be reduced through arrangement of public and commercial transport to the protected area from the nearby urban centers with buses vans and taxis. Traffic in the area can also be relieved by offering transport with reconstructing cycle tracks and pathways, and building parking lots outside or on the edge of the Park.

As far as visitors are concerned, we recommend implementation of the following procedures that could contribute to a smaller negative impact of the high number of visits on the natural environment and the local population:

- limitation or reallocation of seasonal visit
- setting up of info centre in the Park,
- providing of guided tourist visits
- setting up of gates/barriers at places where irregular parking normally occurs, as well as in sensitive/vulnerable areas where regular supervision by nature-conservationist inspectors is taking place
- supplying more information about the Park via fliers, brochures, websites, radio and other means of promotion
- systematic awareness building of the local population and tourists about the significance of the Park for nature conservation and local development.

In view of the fact that some 50 environmental labels and certificates that provide for the supply of products and services in compliance with certain criteria are already known in Europe and that modern tourists increasingly appreciate quality environment in the place in which they spend their holidays, the tourist industry (hotels, camps, tourist agencies, etc.) should do more in terms of acquiring environmental labels and certificates

Considering that the protected areas are very vulnerable entities indeed, the carrying capacity of the Park for tourism should be estimated with an analysis of the key factors and for the planned

extent of sustainable tourism. Such an analysis will serve as a suitable professional background for the preparation of the Park's management plan.

When preparing the plan, the tourist companies have to ally with other branches of economy as well. Furthermore, new tourist nature-friendly capacities, should be formed accompanied to a professionally trained guide, setting up of an educative trail under the leadership of a (professionally trained) guide, and guided tours for all age groups. The number of groups, however, should be limited and adapted to the carrying capacity of the vulnerable natural environment.

With the introduction of new capacities, however, education of the people employed in tourism, tourists and local inhabitants should be closely associated as well. Education and informing of the visitors as well as employees increase understanding of the protected area's values and have an impact on the attitude towards conservation measures.

As far as marketing of tourism in the protected area of a Park is concerned, an integral image and brand should be made and the Park included in the wider tourist capacities offered as an independent product of natural history tourism and as part of integral products of this destination.

In conclusion, tourism can be seen as one way by which communities can resume or strengthen their traditional stewardship role in natural areas. Recognizing the crucial role rural and coastal communities play in conserving biodiversity, they must be incorporated as stakeholders into protected area planning and management processes. At the same time, given the added value that community participation brings to ecotourism products and the benefits of participation for sustainable community development, active community participation in ecotourism is good for business and good for conservation.

## **6 TYPES OF TOURISM WITH MAIN MOTIVATION THE CONSERVATION OF NATURE**

Tourism takes place in a diverse range of environments; a landscape to observe and enjoy, activities to participate in, and experiences to anticipate or re-member. Three broad approaches towards developing typologies that encompasses ideographic, organisational, and cognitive perspectives had identified. The first and most important of these frameworks is the ideographic approach, which focuses on the concrete uniqueness of "environment" and, as such, stresses the differences between nature-orientated and human orientated attractions. The organisational approach focuses on the spatial characteristics of size and scale, carrying capacity, and the temporal nature of attractions. Finally the cognitive approach stresses classifications relating to tourist perceptions and experiences. Each of these three main bases of classification reveals important

characteristics of tourism environments, which in turn can contribute to understanding of developments and their impacts on the ecosystem.

### **6.1 Mass tourism**

According to Williams and Shaw (1997) mass tourism involves the movement of large numbers of tourists with relatively little surplus income. High gross income is yielded from relatively low expenditure per capita. Mass tourists are seeking more and more exotic holiday destinations. Given the income constraints, these can only be provided at relatively minimal levels of services and facilities.

### **6.2 Urban tourism**

Tourists and visitors approach cities with definite expectations of their signs and attractions. Such expectations are formed not only by a variety of social experiences and information sources which produce distinct images of urban areas, but they also vary with the type of visitor.

It was not before the 90s that both tourism researchers and urban studies specialists distinguished the field of "urban tourism". Urban tourism can be an ideal source of attraction for foreign tourists to experience its cultural and social heritage. Such trend will enable the country to create more jobs for locals and enhance local communities participation in achieving tourism growth.

Policy-making process surrounding urban tourism projects is led by the demands of private investment. A shift towards urban tourism and leisure schemes becoming more institutionalised as they become strongly linked with economic policy.

Tourism is not viewed by many researchers as a distinctive attribute associated with the main function of the city but as a seasonal phenomenon without straight links to the urban economic structure. It is true that although large cities have always been important tourist destinations, it was only during the 1980s that many urban centres realised the great importance of tourism industry and tried to encourage the development of this sector. Although travel industry functions with many peculiarities, it seems that it follows the development practices of the post fordism industrial model.

Being a form of industry, tourism retains the idea of trade with the objective of revenues. The products provided for tourists by a city shape what we call "urban experience". According to Jansen-Verbekeet. al. (1990), this notion includes historic buildings, urban landscapes, museums and art galleries, theatres, sports and events. Among the tourist destinations, cities are multi-functional in nature attracting tourists with their genuine urban characteristics such as night-life, shopping and business. This is the reason why tourist market in urban areas is less homogeneous than, for instance in coastal or ski-resorts.



Consequently, the provision of the necessary services and facilities together with the promotion of the specific destination are more complex. As tourism is an industry developing through competition, cities have to respond to the demand for comfort, reliability and quality in their tourism experience and at the same time advertise their abilities adequately. In addition, the emergence of cultural exploitation as the main scheme for the development of urban tourism in Europe is the alibi for the local authorities to promote projects which combine the allocation of cultural resources with physical and environmental renewal. For example, in many situations tourism is used as the rationale in order for historic areas in the inner-city to be preserved and also for the revitalisation of old ports projects that enhance the quality of urban life for the inhabitants.

### **6.3 Peri-urban tourism**

Peri-urban areas are transition zones from urban landscape to rural landscape. In these areas lots of different competing land uses (urban, agricultural, forest) exist. Current policy and institutional tools, such as regional and urban planning, have not always paid the necessary attention.

Peri-urban areas have enormous potential to play a positive role in enhancing urban sustainability at the global level. With the variability of the notion in mind we can say that peri-urban areas are generally to be found at the urban fringe along the edges of the built-up area and tend to comprise a scattered pattern of lower density settlement and urban concentrations around transport hubs. Peri-urban areas may be predominantly large green open spaces such as urban woodlands, farmland and nature reserves in the urban periphery with a lower population density but belonging functionally to the urban area. Peri-urban may be a zone of smaller settlements, industrial areas and other urban land-uses within a matrix of functional agriculture (Nilsson et al., 2013).

Tourism has not always been seen by scholars as a most likely activity for the peri-urban area, apart from the weekend recreation activities, despite the fact that the peri-urban areas with a recreational vocation exist since the XIX<sup>th</sup> century. During the '60s and the '70s the tourism was rather seen as a function of remote rural areas, the concept of tourism in periurban areas, as well as the concept of urban tourism being virtually ignored. One possible explanation could be offered by the difficulties of separating the periurban area from the city. However, over the past three decades, there has been an increase of interest for tourism development in periurban spaces. Starting with the '80s, a large and growing body of literature has investigated the different patterns and forms of tourism development in urban areas, including the development of tourism in periurban areas or in close proximity of the cities. Weaver and Lawton (2001) list three forms of tourism well established for the periurban areas: a) theme parks which need a large amount of land; b) tourism orientated "boutique

strips” and c) natural areas for outdoor recreational activities .However, this list does not exclude other possible types of tourism activities suitable and profitable for periurban areas.

Rapid population growth in urban centres which is usually accompanied by a significant degradation in the quality of life (e.g. air pollution, high density building areas, reduced opportunities for social life etc), has led to an increase in the demand for green spaces within and around urban centres and, therefore, to the development of the urban forestry science.

Urban space is usually characterized by overpopulation, air and noise pollution, frequent flooding incidents, solid waste build up, and increasing demand for transportation, all resulting in negative impacts on the quality of life. Additionally, in large urban concentrations people’s alternatives for participating in open-space recreational activities as well as for making social contacts are very limited.

#### **6.4 Urban and peri-urban forests’ contribution to the improvement of the quality of the environment**

Urban and especially peri-urban forests offer protection to people, buildings and infrastructure from natural disasters such as soil erosion, flooding, avalanches, land sliding and alluvial sediment deposition etc. In order to maintain peri-urban forests’ protective role as well as to protect and enhance their numerous valuable functions (biodiversity conservation, air pollution reduction, recreation etc.), we should secure their ecological stability as ecosystems and their ability to evolve. Therefore, it is essential that their management focuses on safeguarding: species diversity; adequate natural regeneration rates and the best possible forest structure.

Sustainable forest management (SFM) should recognize, satisfy and guarantee environmental, economic and social values, while anthropogenic manipulations upon forestland in urban and peri-urban areas should always take into consideration recreational issues associated with urban and peri-urban forests on a sustainability basis. Public participation and conflict mitigation are two key considerations of current planning and management approaches to natural resources and protected areas policy formulation.

Forests comprise 25.4% of the total area of Greece, making it the fourth largest country in Europe with respect to forest resources. The majority of the Greek forests are natural and not technical. They are characterized as Mediterranean. These are ecosystems that have adapted to dry, hot summers and cold winters. The fauna in the Greek forests are characterized by high biodiversity. Other than the numerous kinds of birds, reptiles and insects, there is also a remarkable variety of mammals which live in the Greek forests, with the most notable being the brown bear (*Ursus arctos*),

the wildcat (*Felis silvestris*), the jackal (*Canis aureus*), the wolf (*Canis lupus*) and the badger (*Meles meles*).

Greece is also full of National parks and aesthetic forests. National Parks are proclaimed (natural regions) and their boundaries specified by Presidential Decree, based on Legislative Decree 996/1971, with a total area of 68,732 hectares, of which 34,378 hectares comprise the core. Aesthetic forests (a total of 19), with a total area of 33,109 hectares, have been demarcated based on L.D. 996/1971 ).

## **6.5 Rural tourism**

In the late twentieth century the growth of incomes, leisure time and mobility amongst all except the underclass has led to more intense demands being made on rural areas as locales for recreation and tourism. At the same time, the social construction of rural areas has undergone further, often subtle changes. As a result, the conflicts over the use of the wilderness and national park areas are being replicated more widely throughout the tourist destinations.

The construction of the countryside as a zone of consumption necessarily results in a number of sharp contradictions. The first of these is the reality that in most tourist destinations, the vast majority of rural lands are in private ownership, which severely constrains accessibility. Second, there are many social constructions of rural areas. Such factors provide a potential for host- guest conflicts.

Concerning the demand for rural tourism, it must be stressed that during the 1970s and the early 1980s, in Greece, a Mediterranean country with long tradition in seaside tourism, rural tourism did not, actually, exist. In this respect, it is important to point out three important facts:

- In the Mediterranean countries, the dominant trend has always been the seaside tourism. The international tourist agents who polarised the interest of tourists, whether local or foreigners, towards the coastal regions rather than the interior rural areas further reinforced this trend.
- The strong desire of urban populations to "return to nature" and "discover a place" emerged only in the 1990s.

Given that the rural exodus has taken place recently in Greece (after the 2nd World War), to date the city dwellers have not cut the painter with their home towns and always go back to their villages on holidays. Therefore, they have never felt a strong need "to go back to their roots" or seek "the authenticity of the rural world". From the late 1980s onwards, within the emerging framework of integrated rural development, many local experts were convinced that there was a need to start

planning new forms of tourism in Greece. This was mainly due to the fact that mass tourism had already reached saturation point, and new forms of tourism were increasingly in demand. Social interest was aroused in safeguarding threatened landscapes and helping them reveal their identity through their cultural values. Such an interest spurred the Greek agencies to start planning the development of rural tourism in Greece.

The authorities viewed rural tourism as a local or regional activity to secure supplementary income for rural families, improve their standard of living and maintain rural population. In addition, it was considered to be a local or regional activity aimed at revitalising the rural environment and reducing desertification. Such an activity was also maintained to offer an alternative solution to the severe social and economic problems affecting less favoured regions, whose resources were mainly exploited in the primary sector of the economy.

Rural Tourism development was organised essentially around two axes. The first related to private initiative undertaken by individuals, whose main occupation was farming (agritourism) and the second to, private or collective initiative taken by permanent residents of the countryside or Women's Agrotourism Co-operatives (agrotourism). Even though agritourism remains underdeveloped, because of the structure of Greek agriculture and the attitudes of Greek tourists towards agritourism, agrotourism still represents the most original form of rural tourism in the country.

There is no official record of the number of rural tourism enterprises. According to the estimations of the Greek Ministry of Agriculture (2000), there exists a discernible network of over 1000 accommodation facilities run by Greek farmers (agritourism). A significant percentage is located on the islands (65%) and in seaside areas (9%); such areas can hardly be characterised as rural with respect to some features such as their settling pattern, the structure of employment and incomes, as well as the consuming patterns. These establishments are quite isolated, that is, they are not integrated in a global area development plan of which agritourism might be an integral part. Therefore, one can reasonably claim that this kind of agritourism has diverted from the original aims of the utilisation of rural resources within a sustainable development framework, the linking of urban and rural areas through cultural exchanges and the mobilisation of the rural populations. As regards the Women's Agrotourism Co-operatives, from a total number of 99 co-operatives, 10 offer accommodation along with leisure activities whereas the others are involved in the production of local traditional products. Most of these co-operatives are found in rural areas of Northern Greece, i.e. the regions of Macedonia (19), Thrace (11) and Epirus (10); the regions of Thessaly (16) and Central Greece (10); in the Aegean islands (15) and Crete (12). Women's co-operatives contributed to adding several

rural communities to the Greek map of "alternative tourism". The participation of rural women in co-operatives has enabled them to value their skills and render them productive. Furthermore, the co-operatives succeeded in guaranteeing an income to rural women. As a result, they favoured women's independence, self-esteem, self-confidence and the improvement of their social status in the local communities. Finally, the co-operatives had an influence on the development of other sectors of the local economy, namely agriculture, trade, small enterprises etc.

## **6.6 Agrotourism**

By the 1980s, Middleton (1982) had made the link between the massive, popular movement or 'consumption' of rural areas and the notion of 'the good life' that had developed in the 1960s and 1970s. This conceptual shift was associated with the 'rediscovery' of the rural in the 1980s. Rural spaces have traditionally been associated with specific economic, social and environmental functions: agriculture, sparsely populated areas, geographically dispersed settlement patterns and 'nature', among others. Their 'rediscovery' was linked with rising living standards and motor car ownership, mostly for the middle class and skilled manual workers and higher income groups. Karampelaet. al. (2016) evaluated the impact of agritourism on local development in small islands. This impact led to an increasing recognition of tourism development in rural communities based on the expansion and marketing of outdoor recreation opportunities. Early rural tourism was mainly characterized by small, scattered and unorganized enterprises, but studies suggested it could contribute to local socio-economic development as an 'alternative' solution to sub-employment in rural areas. There seems to be a growing consensus that rural tourism is a broader spatial term encompassing a diversity of activities offered in rural settings (Rogerson&Rogerson, 2014). Barbieri and Mshenga (2008) reflect this consensus by conceiving agritourism as any practice, activity or service developed on a working farm with the purpose of attracting visitors which includes a wide variety of activities, e.g., tours, overnight stays, special events and festivals, on-farm stores, fee fishing and hunting, birdwatching, hiking, horse-riding, and self-recreational harvesting. The importance of tourism in development at the national and local levels increases in the literature, among other approaches as a so-called 'pro-poor strategy' (Ashley & Roe, 2002), or through externally driven processes as a major replacement of other economic activities. Critical to the success of such undertakings is the degree to which a locality can market itself to potential investors and tourists through 'place marketing' in order to achieve tourism-based economic growth. Identifying and marketing new conceptualizations of space and place is key in this regard, with activities such as festivals, heritage sites and capitalization on locally available natural resources.

Agritourism is increasingly being viewed as a 'desirable diversifier' in this context for local and regional economies, not least because one positive externality of tourism growth is its role in increasing the supply of local services as well as the less obvious social contribution of tourism to expanding local leisure spaces, especially in marginalized, peripheral regions (Butler & Rogerson, 2016). Among locals, tourism development and agritourism is positively labeled, with such employment often regarded as a 'good job', although achieving these aspirations requires a good fit between the types of service which tourists demand and those which local people are willing to provide. The challenge is how such agritourism can contribute to local and regional revival and intersect with other non-tourism initiatives.

As for tourism in general, positive economic impacts of agritourism can be direct, including supplementing individual earnings, community income and non-financial elements such as improved infrastructure; indirect or secondary, including increased earnings from nontourism sectors linked to tourist activities; and dynamic or induced, e.g., tourism workers' consumption (Butler, & Rogerson, 2016).

But, what is agritourism today? The exploration of definitions and conceptualizations provides a rough guide to the type of approach taken to map agritourism as an economic activity, a social practice and a growing industry. In general, most of the available research is related to the types of farms and the services and products offered. Less research considers agritourism demand.

There are five different types of agritourism:

(i) Non-working farm indirect interaction agritourism (NWFII): are not physically based on working farms but make a connection to agriculture or agricultural heritage in terms of imagery or location rather than having a direct connection to farm animals, crops, machinery, or processes (e.g. former farm house accommodation),

(ii) Non-working farm direct interaction agritourism (NWFDI): based in off-farm or ex-farm locations, such as farming demonstrations, farm heritage attractions, agricultural shows, and agricultural sales marts,

(iii) Working farm indirect interaction agritourism (WFII): include farm-based accommodation (e.g. farmhouse bed and breakfast, self-catering cottages, camping sites); farm shops, cafés and food-processing attractions; outdoor activities (e.g. horse riding, country field sports); leisure facilities (e.g. golf driving ranges, fishing ponds, bike tracks); and visitor attractions (e.g. children's play parks, nature attractions) based on farm land,

(iv) Working farm direct staged interaction agritourism (WFDSI): direct interaction with agriculture, whereby interaction with farm animals, crops, machinery, or processes are ‘staged’ (i.e. reproduced or organized) for the benefit of tourism (e.g., such as farm attractions, open farms and farm tours),

(v) Working farm direct authentic interaction agritourism (WFDAI): visitors have an authentic working involvement in the farm and ultimately make a physical investment in the farm economy (e.g. participation in farm tasks).

## **7 ECOSYSTEM CONSERVATION PROPOSALS WITH THE CONTRIBUTION OF POLICY MAKERS**

As an intervention affecting multiple sectors – including agriculture, rural development, environment, energy, health, water and commerce – ecosystem conservation is often subject to policy conflicts and omissions, creating gaps or adverse incentives that work against its development. Therefore, the contribution of policy-makers to the preservation of ecosystems, is of paramount importance.

In a highly fragmented industry like tourism where issues overlap different ministerial responsibilities and levels of government, industry interests are diverse and often uncoordinated. The process of setting out and gaining a degree of consensus on the current situation faced by tourism and tourism destinations, the development of a longer-term vision, and the setting of goals, objectives and measurable outcomes can be highly valuable in bringing key stakeholders together, sharing knowledge, ideas and concerns, and helping to raise awareness generally within and across government and in the wider community.

Traditional tourism industry strategies have tended to focus on the demand side of tourism and the need to market to the visitor in order to draw them to particular destinations. While this remains a valid component in strategic industry planning, an increasing number of strategies have been widened in order to include issues such as destination management and questions of industry “leadership” and direction. As a result there have emerged new frameworks for policy action leading to policy objectives that include integration and collaboration across different agencies and different levels of government, as well as partnerships with industry.

Planning strategies for tourism increasingly have to take into account the environmental issues discussed earlier in this chapter, and also demand consultation with industry interests. Thus the planning process involves both many layers of government at national ministerial levels, as well as



partnerships with industry and the private sector whose representatives are often best placed to identify those areas where government policy interventions can be of most assistance. Tourism strategies are therefore increasingly reflecting the need for an integrated approach to tourism development across a wide spread of government ministries. In order for such an approach to succeed, a number of criteria need to be met and some important questions asked. For example, does the strategy have a commitment from all of the relevant agencies and levels of government to its goals and objectives and to the specific programs and measures proposed? Who is responsible for ensuring the implementation of measures which fall under the purview of non-tourism areas of government? How will the implementation of these measures be ensured and evaluated? Clearly the most desirable outcome is that the strategies have authority across all relevant government ministries and are coordinated across levels of government.

It is also apparent that in many member countries the process for maintaining consistent and mutually supportive policy frameworks vertically between different levels of government presents particular problems. This is highlighted where central government authority over state or provincial governments is limited or opposing political parties are in power in each. The situation is further complicated by significant differences in the nature of responsibilities and policy focus. A national government may have very little responsibility for land use planning issues which may be critically important at the level of local government. Regional and local tourism bodies may see little relevance for them in high level cross-government policy issues. This issue of co-operation and consistency between the levels of government in tourism strategic policy making and implementation of specific programs and measures would appear to be one of the next significant challenges for governments at all levels in improving the effectiveness of tourism strategies and planning.

Competitiveness in tourism relates to several different issues, such as the position of the country concerned as a tourism destination vis-à-vis its competitors, price and value for money issues for the visitor, productivity and profitability within the industry, and the extent to which a given tourism sector is able to innovate and refresh its products and services in order to present high quality to the visitor – quality at least as high as its closest competitors.

Sustainability goes hand in hand with competitiveness because tourism growth needs to balance economic development with social, cultural and environmental goals to ensure a long-term future for the sector. Sustainability is therefore to be considered as an important driver for competitiveness, especially in the context of concerns about climate change and environmental conservation.



The rising importance of green practices also has implications for the sustainability, and therefore for the competitiveness of the tourism sector. The various policy approaches – removing subsidies on energy, removing trade barriers to environmental goods and services, addressing market failures, reforming policies with environmental objectives and actively promoting green collar jobs – have important implications for tourism, but also offer great potential. Tourism planners need to be aware of these priorities and ensure that the tourism industry both plays its full part in their realization and also positions itself to derive maximum benefit from policy changes and green initiatives.

Since tourism affects and is influenced by many other sectors across an economy, competitiveness is an all-embracing notion for policy makers at national, regional and local levels. Perhaps most important, improving competitiveness through policy interventions, including those related to the green agenda, requires programs and resources to be better integrated across tourism and non-tourism policies. Tourism policies on their own may not address the wider obstacles and constraints facing the sector, since improving the sector's competitiveness does not sit within one ministry or policy directorate: it requires cross-cutting policies and co-ordination across the public and private sectors to generate successful policy outcomes for the tourism sector.

The sustainability of tourism destinations is more than a convenient concept. It is central to the longer-term development of the tourism sector and to the understanding of the motivation of tourists to visit a given destination. Many tourism strategies refer to sustainability in tourism, and outline strategies to ensure that sustainability criteria are respected. Additionally, it is in this area that a greater commitment on the part of the tourism industry to green principles needs to be included. Energy consumption, the importance of transport industries to tourism and global concerns about climate change all present tourism policy makers with opportunities to take proactive measures in support of the tourism sector.

The volatility of fuel prices for an industry that has developed historically on the basis of cheap energy raises many policy issues for governments, especially in countries dependent on long-haul markets where energy cost reductions in new aircraft technology are unlikely to mitigate fuel price increases. The International Energy Agency forecasts that 20% of the growth in energy demand to 2030 will be due to increasing demand for transport, a proportion of which will derive from tourists. Tourism remains overly dependent upon oil as an energy source, reinforcing the need for the tourism sector to consider alternative energy sources to maintain its supply, particularly green energy sources such as solar panels and wind power.

The relationship between climate change and tourism has become one of the key areas of policy debate. While some positive impacts may arise for certain destinations, climate change is arguably one of the greatest threats to tourism (e.g. altered seasonality, heat stress for tourists from warmer temperatures, a wider geographical distribution of infectious disease vectors, the threat to small island states from sea level rises and the increasing frequency of extreme weather events and flooding).

Policy attention has been directed at the options available to reduce the negative effects of climate change. The two major options available in relation to tourism are: adaptation (i.e. accepting the inevitability of climate change and the identification of steps to restrict its negative effects); and mitigation (i.e. measures to curtail the production of greenhouse gases to reduce the speed of climate change). A policy that promotes sustainable tourism development will be created when the efforts and active participation are coordinated in one joint enterprise. A new political paradigm of developing countries requires each sector to play a well-defined role in the planning and policy development process and that the combined efforts of all sectors be integrated into policy. If tourism leaders from all sectors work together they will eventually mobilise the human re-sources necessary to design and implement a series of tourism development policies and plans which truly address the enormous tourism potential of developing countries.

### **7.1 Consumer awareness and education**

Although the average consumer has been sensitised to environmental issues, such as global warming, depletion of ozone layer, more needs to be done to develop an awareness of tourists' responsibility to preserve and enhance environmental quality of the destination. It is essential to promote ethical standards concerning the use of natural and cultural resources and to assist consumers in choosing tour operators who follow conservation guidelines.

### **7.2 Tourism industry action**

The private sector is responsible for delivering the products and services to tourists and therefore, they should take the responsibility for the protection of biosphere by minimizing pollution, which causes environmental damage.

The industry should also work together to develop guidelines for resort developments and concession operations which utilize low-impact design criteria and the latest technologies for recycling and conserving resources.

### 7.3 Destination planning and development

Government and non-government organizations need to share responsibilities for ecotourism development. Listed below are some of the responsibilities that should be assigned to the government and non-government organizations.

#### *Governments:*

- Undertake research into the environmental, economic and cultural areas of tourism.
- Support the development of tourism economic models to help define appropriate levels of economic activities.
- Assist and support lower levels of government to develop their own tourism development strategies.
- Apply a sectoral and / or regional environmental accounting system for the tourism industry.
- Educate the public on issues of sustainable tourism development.
- Regulate and control tourism in environmentally and culturally sensitive areas.

#### *Non-government:*

- Be part of sustainable tourism advisory boards at all levels.
- Seek local support for appropriate sustainable development.
- Promote education of the public on the economic importance of sustainable tourism development and environment protection.
- Be encouraged to identify and communicate to the appropriate agencies those issues related to sustainable development as well as solutions to those problems.

An extended concept of marketing ecotourism has been described as the four Ps.

1. *Price:* assigned to the product or service offered to tourists
2. *Promotion:* a range of communication and sales activities are needed to stimulate actual potential customers to become aware of ecotourism products and buy it.
3. *Place:* the distribution system in which the customers buy ecotourism products. This includes for-profit and non-profit organizations.
4. *Product:* is a mixture of benefits, products and services.

The World Tourism Organization defines sustainable tourism as “tourism which leads to management of all resources in such a way that economic, social and aesthetic needs can be filled

while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems (WTO Report 2002:7). During the 1980s, it became apparent that major global environmental changes were occurring suddenly and silently and that these changes had not been predicted by scientists. The world also became more aware that there was an element of uncertainty and risk in relation to the effect of a range of human activities on global environments. To rectify these problems, fundamental changes were required in our style of living. Sustainable tourism is really an issue of how best to encourage tourism growth while minimizing costs (McKrecher, 2003). Sustainable tourism entails adequate utilization and management of resources to achieve economic, social and cultural needs while maintaining social, cultural integrity, ecological processes as well as biological diversity for the present as well as for the future generations. Therefore, modern tourism with its trends and characteristics cannot be promoted without considering the environmental management as a main component of the economic aspects of tourism. The principles of sustainable tourism are various one of which is the ecological sustainability, which entails the implementation of development that is compatible with the maintenance of essential ecological processes, biological diversity and resources. As a result of the significant dependence of tourism on environment, maintaining the attractions of the tourism destination and its natural assets contributes to tourism growth and increases the popularity of the destination. Tourism through its ability to generate income is able to enhance environment, provide fund and preserve the cultural heritage of the destination. On the other hand poor tourism planning can destroy vegetation, create overcrowding, pollute beaches, eliminate open space, and ignore locals' interest. Various approaches have been introduced to maximize the tourism's consideration to nature to retain popularity as an attractive tourism destination, these approaches include: ecotourism, nature tourism, sustainable development and carrying capacity.

In general, the tourism industry should engage in promoting sustainability as a hallmark for investors. More specifically, the investors in tourism should strive to adopt environmentally sound technologies or other measures to minimize the consumption of the local ground water. Using various types of resources in a sustainable manner is of course also crucial.

There is a need to use ecological materials and installation of renewable sources of energy systems (solar energy) in all new buildings and new constructions. Furthermore there should be an acceleration of installation of solar/wind power in all public work projects of communities where tourism will be introduced. Pollution of ground and coastal waters must be prevented, and recommendations made (perhaps even legislation) for tourism investors to invest in proper sewage treatment facilities. Appropriate waste disposal systems and ways to separate garbage into organic

and non-organic waste should be developed. Organic waste can be composted and possibly reused on hotel gardens or even for local farming. This could be done through collaboration with local residents. Residents could organize themselves and manage the allocated dumping sites and hence benefit from the system in receiving payment from the hotel for services rendered. A system to separate the different materials, and recycle some should be in place at the landfill site thus reducing the waste even further.

To avoid degradation of the natural environment, tourism projects can help finance protected areas and safeguard ecologically sensitive regions against further environmental deterioration. By empowering local populations and have them participating in the entire process, sustainability will be ensured as it becomes accepted by and adjusted to the local communities. A protected area may certainly also be a suitable tourist-attraction, where tourists can experience amazing nature and learn about conservation and traditional uses of natural resources in the area.

Investors in tourism should always respect the traditional land tenure system in the area and the traditional user-right systems of resources. In regard to this the communication and consultation with the local communities about resource-use are important. Tourism investors should not exclude local people from using local resources, and thus take away what they depend on for maintaining their well-being.

The tourism industry can and must take initiatives to implement the polluter-pays principle for pollution related to tourism operations. This may be organized and carried out through local tax systems or through funds established by the tourism industry for local community development. The polluter-pays principle should be applied for minor pollution only and should not be developed into a possibility for investors to pay a symbolic fine for imposed irreversible negative impacts on the local environment.

## **8 PROPOSED ACTION PLAN FOR SUSTAINABLE TOURISM DEVELOPMENT**

A proposed action plan includes:

- Promoting, at the national, regional, and community levels, the development of tourism in harmony with the natural and cultural environment, through development, education and training programs.
- Developing tourism strategic development plans that promote environmentally sound and economically, culturally, and socially sustainable development.
- Drawing up strategic plans to protect the health and safety of tourists, in close collaboration with health authorities, tourism operators and security service providers and the police in all

areas, as an essential component of good service offered at different sites, as well as designing promotional activities that take into account the social-cultural and economic conditions of the country.

- Developing, adopting, and implementing legislation to promote responsible practices in tourism development.
- Collaborating with the private sector and local communities in formulating criteria for the sustainable use of natural resources.
- Involving local communities to design programmes aimed at raising awareness for the development of sustainable tourism at all levels of society, promoting and facilitating their full participation.
- Elaborating environmental impact studies for the design of tourism projects, in order to ensure sustainable development.
- Working with national authorities to use tourism earnings as one of the means to alleviate poverty and generate employment in the country.

Tourism is considered a mean for income generating for the local communities. Actually the government has been considering helping the local government to develop income generating at the conservation area as an Eco-tourism base on the local community participation with exploring the potential ecosystem. Hopefully through these Eco-tourism activities the income generating for local communities will be increased and the ecosystem will be more protected with sustainable resources.

The government should manage the activities of local communities to achieve Eco-tourism by introducing recycling of domestic waste to a consumption product.

Proposed activities:

1. Encouraging public awareness of local communities and private tourist agencies.
2. Organizing local communities in order to engage effectively in tourism and encourage them, such as utilize their house as a cottage for tourists.
3. Cooperation with partner and donor countries to develop the sustainable tourism
4. Identification of interesting objective of sustainable tourism.
5. Providing information of sustainable tourism with producing leaflet, advertisement and present of website.
6. Building the infrastructure to conduct sustainable tourism in the tourist areas including health sanitation, emphasis on renewable resources and other facilities to support the areas.

7. Launching Eco-tourism as a national program.
8. Training, workshops and comparative study of Eco-tourism.
9. Engaging in exhibitions, competitions in the tourist areas without deteriorate of ecosystem.
10. Policies for capitalization of the ecosystem services targeted at global, EU, BalkanMed and national level (i.e. regulative services, cultural services)
11. Links among conservation drivers, pressures, ecosystem services and economic importance

## **9 CASE STUDIES OF CAPITALIZATION OF THE ECOSYSTEM SERVICES**

### **9.1 Flood protection as regulating service along the Danube River**

The Danube River Basin is the second largest river basin in Europe, and the most international worldwide, connecting 19 countries along its course. The occurrence of flood events, triggered by upstream precipitation and exacerbated by effects of manmade alteration of river morphology and land use, has had dramatic impacts on the countries located along the basin, exposing their social, cultural, and economic capital to increased risks (Petrow and Merz, 2009). In response, upstream and downstream countries in the Danube watershed have adopted the Danube Flood Risk Management Plan (DFRM) that facilitates transboundary flood risk management collaboration (under the International Commission for the Protection of the Danube River, ICPDR). Additionally, the European Union's Water Framework and Flood Directive fosters cooperation, prescribing a river basin approach to European countries to protect and enhance aquatic ecosystems.

### **9.2 Cultural services provided by giant pandas**

Giant pandas (*Ailuropodamelanoleuca*) are a globally known iconic species, a national treasure of China, and beloved by people around the world. The current distribution of wild pandas is limited to three provinces in China, and the Chinese government has established 67 nature reserves to conserve the panda. As one of the largest and first reserves, Wolong Nature Reserve is increasingly well-known nationally and internationally due to news outlets such as The New York Times and BBC, publication of books and articles, and visitors from around the world. For example, there were a total of 806 articles containing the term "Wolong Nature Reserve" in the international news media in English between 1980 and 2012 (Liu et al., 2015). Information flows from Wolong and their pandas have also generated many feedbacks, such as attracting financing for panda conservation projects,

e.g., by the World Wildlife Fund (WWF), or donations for disaster relief after the 2008 Wenchuan earthquake that affected Wolong people and panda habitat.

### **9.3 The case of river Tamar- UK**

The main stem of the River Tamar is approximately 80 kilometres in length, rising close to the north Cornwall coast around 6.5 kilometres to the south of the town of Bude. The Tamar then runs predominantly north to south, forming a natural boundary between Devon and Cornwall for much of its length. Various tributaries join the river's main stem from source to sea, including the rivers Ottery and Inny from Cornwall and the Tavy and Thrushel from Devon. The Tamar reaches the sea at Plymouth Sound in south-west Devon, a large ria (or drowned estuary) in which the Tamar merges with the rivers Tavy, Plym and Lynher. The city of Plymouth and the associated Devonport dockyard is the only substantial conurbation in the catchment, though the town of Launceston is situated in the middle catchment and Tavistock straddles the River Tavy in Devon.

#### *Provisioning services*

- River water is of a generally high quality. The catchment is the dominant source of water for the city of Plymouth and the south Devon/Cornwall coast area.
- Location and climate have historically made the Tamar Valley an important area for market gardening. Apple orchards were once extensive, and cherries, strawberries and daffodils have also been produced both for local consumption and serving wider markets. Market gardening in the Tamar valley currently occurs at a far smaller scale.
- There was a long history of mineral extraction, which was formerly the key industry in the Tamar Valley dating back many centuries. In 2006, the Cornwall and West Devon's Mining Landscape won World Heritage Site status. Tin, silver, lead, granite and copper were all mined in areas like Lopwell, Bere Alston and Morwellham.
- The Tamar remains a significant salmonid fishery, including Atlantic salmon, sea trout and brown trout as well as grayling. Some of this resource is taken for domestic consumption.
- The estuary also supports a sea fishing industry and holds good fish stocks.

#### *Regulating services*

- The upland, low nutrient zone of the Tamar catchment allows peat formation, while lowlands are affected by drainage but also restoration initiatives.



- There are flood risk concerns in the catchment, for which a Catchment Flood Management Plan is in place.
- The Tamar is also a 'Making Space for Water' focus catchment. Cultural services
- Together, the Tamar, Tavy and Lynher form a designated Area of Outstanding Natural Beauty.
- At the mouth of the Tamar, on the Devon side, there is the port city of Plymouth, and Devonport Dockyard.
- The Tamar valley has historical importance, with evidence of Stone and Bronze Age settlements especially on the Cornish side of the river.
- The Tamar is spanned by a number of medieval stone arch bridges along its course, some over 500 years old. Isambard Kingdom Brunel's iconic Royal Albert Bridge spans the lower Tamar. It was completed in 1859 and built to bear the weight of three express trains. It remains the main rail link between Cornwall and the rest of the country.
- The Tamar Bridge, opened to road traffic in 1961, was then the longest suspension bridge in the UK. This toll bridge has been more recently widened.
- Devonport Dockyard's origins date back to 1691, when William of Orange commissioned the building of a new dockyard to support the Royal Navy in the Western Approaches.
- The Tamar Valley is now a World Heritage Site for its mining landscape. Morwellham Quay, on the Devon side of the river, was a centre for shipping minerals for 1,000 years. The Quay is now a visitor attraction.
- The minerals were transported down the river to the sea until the advent of the railways.
- A succession of Torpoint ferries have operated during the past 200 years. Today, there are three: the Plym, the Lynher and the Tamar.
- The Tamar is a popular recreational venue supporting visitor attractions, walking, boat trips, angling, and taking in the scenery and wildlife. It remains one of the most distinctive county boundaries in England. It is one of the major tourism centres of the South West of England, with high visitor numbers.
- The Tamar is a popular salmonid fishery (Atlantic salmon, sea trout and brown trout as well as grayling) of significant recreational angling value
- The sum of all annualised ecosystem service benefits of the Tamar 2000 scheme are therefore £3,875,307. Assessed over 25 years with a discount rate of 3.5%, this equates to a gross
- Benefit of £65,284,893:63. On the basis of the full suite of ecosystem services addressed in this case study, the Tamar 2000 scheme yields a very favourable benefit to cost ratio of 108.98.

## 10 CASE INTERVENTIONS FOR SUSTAINABILITY OF THE ECOSYSTEM SERVICES

### 10.1 The case of Troodos in Cyprus

Cyprus became a popular sun and sea destination in the Mediterranean after it gained its independence from Britain in 1960. Over the years, the increasing demand for Cyprus as a tourist destination was met by an increase in the supply of accommodation and tourist facilities. Most of the tourism development was concentrated in the coastal areas of the island and mass tourism coupled with the spatial development brought negative impacts such as environmental pressures and a reliance on the 'sea and sun' product, which created seasonal unemployment. At the same time, the coastal regions were the only ones benefiting from the economic contribution of tourism development and the infrastructural improvements associated with tourism development, leading to the hinterland suffering from economic and social decline (Sharpley, 2002).

As a result, the Cyprus Tourism Organisation initiated a rural tourism development programme in the early 1990s to spread the benefits of tourism in rural areas and extend the seasonality of the tourism product of Cyprus. The agrotourism programme, as it was coined, aimed to attract tourists that were interested in alternative holidays and in activities such as hiking, bird watching, cycling and visiting traditional cultural sites.

Even though agrotourism units were developed across the island, the heart of agrotourism development in Cyprus lies in the Troodos region. According to the manager of the Troodos Tourism Development and Promotion Company "the Troodos region has the advantage of being far away from urban areas and also at a distance from the coastal areas that are traditionally associated with mass tourism". With Mount Olympus standing at 1952 m high, the Troodos mountain range stretches across most of the western side of the island. Troodos Mountains have become highly popularised by the beautiful byzantine churches and monasteries that can be found in the area, the breathtaking scenery of the mountains that offer several nature trails and waterfalls and the 80 traditional villages whose authentic character has been attracting visitors for years. In fact, before the independence of Cyprus, the majority of tourist arrivals – primarily British – have been attracted in the area whereby accommodation units were confined to small-scale, family-run enterprises (Christodoulou, 1992). Gradually, Cyprus acquired a 'sea and sun' character as tourism development was primarily concentrated in coastal areas. Much of the promotion surrounding agrotourism in Cyprus revolves around the activities that can be performed in Troodos, ranging from skiing to visiting wineries although emphasis is being placed on nature-based and culturally-oriented activities such as walking,

cycling, and visiting religious and cultural heritage sites. Recently, festivals and events have been created to attract tourists; these festivals primarily emphasise local crafts and products. Indeed, the Troodos region has been actively promoted.

## **10.2 The case of Kosovo**

Kosovo has an area of 1.1 million hectares of which 53 percent is cultivable while 41 percent are forest lands. It is a geographical basin, situated at an altitude about 500 meters surrounded by mountains and divided by a ridge north/south into two sub-regions with similar size and population. The population is estimated to be between 2 and 2.2 million, including 82 percent to 90 percent ethnic Albanians. The population of Kosovo is the youngest in Europe (much younger), where more than the half of population is approximately aged under 25 years. Kosovo is divided into 30 municipalities and about 1.500 villages. Agriculture is the main economic activity and also the sector that provides most in postwar Kosovo.

As a result of the war of 1998-1999, many farms are left empty; infrastructure is partially damaged, in some cases totally destroyed. After 1999, most farmers have returned, rebuilt their houses and have begun work on their farms so that in 2000, about 86 percent of the land is privately owned while the rest is owned by cooperatives (1 percent) and social enterprises 13 percent, with an area between 500-1.500 ha. Most of farms work to ensure living for their households.

As an objective is the establishment of trade and fiscal policies that are at least neutral for agriculture and rural development. There is an urgent need to remove the present practices that are taxing local agricultural producers and hamper the development of domestic production as well as the capacity of local producers to compete with subsidized imports at extremely low prices. At the same time there is a need to regulate the cost and quality of domestic producers to increase their capacity to compete in local and international market. At the same time Government's budgetary and fiscal policies should be directed towards supporting agricultural producers and food products with international competitive potential in less favorable areas.

Kosovo shall aim to improve basic infrastructure and regional market integration and in particular will aim towards integration into the European Union (EU). Regarding this will be taken efforts to improve transport links, food processing industry, trade and storage capacities as a relief of a major barrier to trade agricultural products.

Planning for sustainable management is greatly neglected for many years. For this reason there is an urgent need to train foresters in management planning and the introduction of effective tools for capturing, storing and presenting data. Training should include the whole chain, from data

collection in the field, recording, processing, and planning process and placement. The project should be based on results and experience gathered from the forest inventory that will constitute a continuation of this project. The project, in coordination with project staff development of the forestry sector will focus on capacity building that will include job training, oversees training of key personnels, establishing institutional structures and installations of appropriate planning softwares.

The values of non-wood products from forest lands such as mushrooms, berries, medicinal plants, ecotourism, hunting and fishing will play an increasingly important role in Kosovo and could contribute up to 20 percent of the total value of forests in Kosovo. The reasons are both poverty factor towards many other countries, then rich flora and fauna as well as increasing number of people who will require different conditions of recreation that forests can provide. Unemployment in rural areas is a major social problem and is contributing the most rapid urbanization in Kosovo, but with many negative effects.

The improved commercial exploitation of non-wood products can provide a very good source of incomes for many families in rural areas. This project will be attached to non-wood products sector in the Kosovo Forest Agency and will play an important role in building of function and resources of this sector, will include the necessary research work and capacity building.

Management of national parks is a source of conflict in Kosovo. The reasons are due to misunderstanding of the concept of protection and involment of various factors, roles and confusing responsibilities of park management, unclear procedures in the establishment of parks and disability management. To solve these problems and this potential source of conflict is suggested to launch a project with the main objectives of setting criteria for establishment of different types of protected areas, which describes the planning procedures, setting of standards and rules for managing the park.

Investments in forest industry have been uncoordinated, which has caused over-investment and investment in less profitable areas. In order to help in the process of privatization and reorganization, the timber industry should establish a professional forum respectively Wood Industry Association of Kosovo (some are already established). The objective of this association shall be to promote and protect the interest of private sawmills workers and other woodworking companies. Since there is a need also for technical support and training, the Association should actively participate in these matters.

Since it is anticipated that the private sector will (should) play an important role in the future in forestry and forest industry, this group should show high attention from government. Based on the objectives and strategies two main activities are outlined and suggested: Establishment of an

association of forest owners and timber industry association. It's proposed the appropriateness of establishing an association that supports private forestry in relation to the wood market, technology development, property issues, lobbying, etc. Forest owners' association have been established in most countries to represent and support the private forestry sector. Models and systems are well developed, and support can vary from complete management actions to provision of appropriate services, or specifically areas. Association which works well, by coordinating the supply of wood from many owners will increase the value of timber in which will benefit owners of forest and wood industry.

Other private sector associations have already been established in Kosovo, so it is recommended that the establishment of the Forest Owners Association should be built based on the accumulated experience. This project may allow to assess the opportunities for higher value-added wood processed (collected panels, furniture, etc.) for local and export market.

## **11 RECOMMENDATIONS FOR CONSERVATION AND SUSTAINABLE CAPITALIZATION OF ES**

An increased understanding of interregional ES flows could inform decision making that better supports sustainability. For instance, information on interregional flows can raise awareness of the dependence of a receiving system on other countries' ecosystems, making cross-border ecosystem impacts visible and transparent. We use a definition of sustainability as an ideal state in which justice exists in relation to ES use within ecological limits and over the long term (Schröter et al., 2017). Interregional ES flows add complexity to sustainability assessments, as different regions are involved, encompassing different systems including concerned stakeholders (often having different norms, values, and economic and political interests). Interregional dependencies can arise, in which the sustainability of one system depends on the sustainability of systems elsewhere. Principles or strategies can support efforts to reach sustainability goals or evaluate whether ES appropriation is sustainable (Schröter et al., 2017). We outline five such principles in relation to interregional ES flows below.

First, equitable intragenerational distribution plays an important role in achieving sustainable ES flows between systems. Distribution relates to the benefits derived from ecosystems, the opportunity costs of conservation ensuring sustained ES provision, and costs of ES that have been impacted or lost through degradation or land-use change. Benefits derived from ES include income from exporting cash crops and increases in wellbeing from consumption. A fair distribution of opportunity costs of conservation comes into play when one country compensates another to protect

land that sustains ES like carbon sequestration or ES provided by pintail ducks. Further, equity would entail fair compensation for people in sending regions related to the costs of ES that they are deprived of due to land-use change. ES valuation can be an important tool for highlighting value and designing policy instruments to maintain critical international ES flows. However, due to spatial discounting (respondents typically placing a greater value on locally produced ES) and the income-constrained nature of willingness-to-pay approaches, scientists and practitioners should be aware of the potential to undervalue ES in developing nations and under compensate these regions, which raises equity concerns.

Second, fair procedures and recognition for people in sending, receiving, and external systems are a prerequisite to attaining sustainable interregional ES flows. This comprises ensuring fair procedures in interregional capital flows, such as payments for ES (Pascual et al., 2014). Power relations between actors that underpin governance mechanisms for ES management and access are crucial to consider in this respect (Berbés-Blázquez et al., 2016).

Third, efficiency may contribute to sustainability by allocating resources to minimize waste in production, reducing negative externalities. In the receiving system, this would also imply improving transparency of the impacts of consumer and producer buying decisions through the supply chain. Interregional ES flows can increase overall efficiency as many provisioning services are produced with lower costs in sending systems as compared to local provision (Schmitz et al., 2012).

Fourth, persistence requires interregional ES flows to be kept within ecological limits. For instance, natural capital stocks need to be maintained within a safe operating space, both regionally and globally and hence leakage, displacement and indirect land use change need to be considered. Persistence also includes consistency, which refers to how ES are coproduced, and whether regrowth and absorption rates match extraction of resources and input of pollutants. Persistence comprises the protection of panda habitat sufficient to keep viable populations in order to continue to provide existence value and opportunities for aesthetic appreciation.

Finally, sufficiency relates to the question of how much ES should be transferred via interregional flows in order to satisfy basic needs and a good quality of life. This relates to preferences of beneficiaries on ES from other systems, e.g., certified coffee from Colombia. Sufficiency also asks questions about overconsumption and its consequences for equitable ES distribution between regions.

Three broad research frontiers currently emerge around interregional flows of ES. These include:

- (1) improved understanding and analysis of interregional flows with methods and indicators,
- (2) information translation for decision-makers at the science-policy interface, and
- (3) how governance can address sustainability of interregional ES flows.

While there is considerable knowledge on global flows of provisioning services, it is yet unclear how flows can be measured particularly for regulating and cultural services, due to questions of data availability, methods, and indicators. Along with reviewing existing indicators, new methods to analyse drivers and impacts for complex causal relationships in interregional ES flows need to be developed. This involves the identification of relevant elements in ES sending and external systems, of flow paths, and of beneficiaries in receiving systems. This is particularly challenging for complex interactions and flow paths or when preferences for ES change over space, time, and across cultures or different actors. Such information could be fed into the development of scenarios that predict future interregional ES flows and their land-use impacts that may result from changing consumption and trade patterns.

Interregional ES flows are currently largely omitted in national ecosystem assessments in Europe (Schröter et al., 2016), and in natural capital accounting (European Commission, 2013). Questions arising in this context are how countries can specifically adapt methods for national assessments and ecosystem accounting exercises. For national purposes, such assessments could focus on questions of system interconnections and dependency on ecosystems of other countries as well as on impacts of these flows in other regions. While national statistical reporting is advanced on provisioning ES, similar statistics are missing for regulating and cultural ES. Future research in this field should investigate what level of detail is relevant and feasible, given current data availability and methodological limitations, and suggest key variables that should be incorporated in future national reporting schemes. The question how to assess trends and scenarios must also be addressed. It is important to develop national indicators or indices to measure the externalisation of consumption pressures, as a prerequisite towards developing policies and management tools to reach interregional sustainability. The ongoing assessments of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), in which several of the authors are involved, are prominently considering the issue of interregional ES flows (IPBES, 2016, IPBES, 2017). We hence expect the topic to gain importance at the science-policy interface in the future.

Management and policy strategies can be informed by scientific insights on interregional flows. In particular, an analysis of underlying (foreign and domestic) policy drivers, interests of specific actor groups, and trade relations pertaining to a broader range of ES is needed. Further, assessments on the (current and future) extent to which interregional ES flows might support or undermine existing



conservation and sustainability targets (Aichi biodiversity targets, Sustainable Development Goals), e.g., how consumption of ES in one region impairs ES in other places, are required. Extending national ecosystem accounting (European Commission, 2013) with interregional ES flows will provide essential information on distant interrelations between regions. Such information opens a research avenue on rights and responsibilities across space and between regions as well as equity and trade-offs between societal groups involved in interregional ES flows.

Established governance mechanisms that address interregional ES flows between regions are still limited. Nevertheless, some aspects of the interregional dimensions discussed here can be identified in some established and emerging governance mechanisms. Countries have long worked together to reduce cross-boundary pollution. Such efforts include bilateral and multilateral pollution prevention agreements such as between the U.S. and Canada to limit acid rain; the China-Russia agreement to limit pollution of the Amur-Heilong River; and the UN Economic Commission for Europe Water Convention. In recent years, acknowledgment of trade-related environmental implications has advanced the development of trade in sustainability-certified products. These include forest products that require producers to adopt improved long-term management strategies and fair trade in various agricultural commodities (e.g., coffee) to ensure that an adequate share of the consumer price goes to the primary producers. Still, such telecoupled implications for governance should be further developed. Further governance research could address the question of the extent to which future conventions that address transboundary environmental problems can be designed specifically for interregional ES flows, similar to or amending the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, <http://www.unece.org/env/eia/>). Governance options include the development of international conventions, transfer of technology and knowledge, and collaborative and network governance (Lenschow et al., 2016).

Information on interregional ES flows can be useful to optimise global ES provision and consumption. Thus, we need to identify assessment tools to address different environmental and social impacts, and provide optimisation tools to improve allocation of ES provision and consumption that allow to depict social, cultural and economic impacts across spatio-temporal scales and allow for the development of mitigation strategies for the emerging trade-offs.

### **11.1 Biodiversity conservation and forest management in European forest ecosystems under changing climate**

Climate change scenario projections and forest ecosystem models provide us with the expected directions of changes in climate and outline possible impacts. Even though concrete and



reliable information about future developments cannot be made, it is still possible to derive some general conclusions regarding forest management and biodiversity conservation. The current biodiversity conservation strategies are not designed to cope with changing environmental conditions, and it is urgent to include likely impacts of climate change in adaptive forest management strategies.

Climate change is already evident and affects forest ecosystems in Europe. For example, Scots pine has declined in areas close to its dry distribution limit (Rigling et al. 2013), beech forests recently showed growth depressions in Belgium (Kint et al. 2012) and lost habitats in mountainous forests in Spain (Penuelas et al. 2007), whereas the species expands its range following storm disturbances at its Northern range margin (Bolte et al. 2013). Projections indicate that climate change will continue its gradual warming trend, whereas changes in average precipitation sums will be quite variable regionally. It is likely that Northern Europe will receive more precipitation on average, while the Mediterranean forests will become significantly drier, especially during the summer months. In addition, it is expected that the climate will become more variable and that forests will more often be subject to extreme events such as extended drought periods and devastating wildfires or storms.

Future conservation efforts should be fully aware that the distribution of biodiversity, and species of concern, will be dramatically altered by climate change and that increased extinction risk is one of the possible outcomes. Conserving biodiversity will require approaches above and beyond those that are currently implemented in Europe.

All these changes will affect species distributions. Species at the rear edge of their distribution range will become more vulnerable and subject to increased mortality. On the other hand species are likely to expand their distribution towards higher elevations and northern latitudes.

Other disturbances, including storms and pests, are also affected by climate change. Since 1990, severe storm events have frequently caused widespread damage across Europe. While the overall storm frequency in Europe is expected to decline, the return-time of high intensity storm events is very likely to become shorter under climate change (Gardiner et al. 2010).

Forests and forest related species will not only have to adapt to long-term changes in climate but also to increased variability with more extreme weather events, such as prolonged drought, devastating storms and floods. Additionally, combinations of direct climate stresses (e.g. heat waves) and indirect climate-induced pressures (e.g. pest outbreaks) will exacerbate the situation.

Up to now, biodiversity conservation focused strongly on the protection of flagship species (e.g. *Tetraourogallus*, *Rosaliaalpina*). Protected areas were often established to conserve species that depended on traditional landscape features and that became threatened by intensive or changing

land use practices. Many prominent species with high conservation value would not survive without management interventions because they do not belong to the natural climax vegetation of the region. Over the past decades, the share of unmanaged strictly protected areas has increased. But active conservation management has also remained a common strategy in biodiversity conservation. With the changing climatic conditions, many flagship species are likely to lose their habitats. Conservation management will have to consider that target conservation species not only require specific management intensities, but that they may additionally be suffering from declining climatic suitability.

Under climatic change not all of a species historic range remains suitable habitat. Plans and assumptions about protected areas will have to be reconsidered. There is a multitude of forest management measures available that support adaptation of forests to better cope with climate change. Many of these measures can be combined, but some are incompatible with each other (or in strong conflict with other management objectives). In general, these adaptive measures can either aim to reduce negative climate change impacts or they can aim to increase the adaptability of the forests to the changing conditions. Increasing species diversity at the stand level as well as more diverse combinations of management systems at the landscape level are particularly useful approaches to increase the adaptive capacity of the forests and simultaneously support conservation management objectives.

This can be done with a focus on establishing core areas, buffer zones, and corridors to develop improved protected area networks. Core protected areas should be designed to be large enough since extended areas are more likely to contain viable populations of species, and the species are less affected by fragmentation. Large latitudinal or longitudinal coverage and/or topographic diversity within the protected area will provide local variation in climatic, edaphic, and hydrologic habitat features, thus increasing the likelihood of species to find suitable habitats under changing conditions. High habitat diversity therefore enhances resilience of forest biodiversity. Within such core protected areas it should be possible to restore populations of threatened and endangered species and/or to increase population size and genetic diversity. Core protected areas may also serve to manage and reduce future stressors such as invasive species, pests, and diseases. The reduction of browsing pressure would also be important in these areas as browsing prevents plant species from shifting their ranges and migrating to higher latitudes.

Traditional conservation policies are not suitable under changing environmental condition, thus there is a need for a paradigm shift in conservation management. Consequently, future biodiversity protection policy needs to be adapted and planned across borders. Conservation

management under climate change should reclassify existing conservation areas to improve conservation outcomes. It is likely that new conservation areas will be needed and the facilitation of species movements will require an improved integrated management of landscapes to support biodiversity conservation under changing climate.

## 12 POTENTIAL FOR IMPROVEMENT AND REMAINING CHALLENGES

Although the ecosystem service concept is based on an ecological understanding of ecosystems, ecologists are confronted with a range of challenges when researching ecosystem services. This is partly explained by the wide variety of terms and definitions from different scientific disciplines as well as a lack of generally accepted assessment methods, difficulties with analytical and modeling methods and mismatches of spatial and temporal scales between service provision and anthropogenic interventions. Ecologists need to adapt their perspective and methods to a larger societal context for the improvement of ecosystem service research. Particular emphasis needs to be directed toward supporting decision makers with relevant information about service-providing units and mechanisms underlying the provision of services at appropriate temporal and spatial scales. To conclude, ecosystem service research is challenging for ecologists, but developing a multifaceted understanding of how nature promotes human well-being is crucial for the sustainable use of the earth's resources. Ecosystem service research offers ecologists the unique opportunity to act as promoters for the understanding of how to conserve and sustain benefits gained from nature.

Understanding interactions between ecosystem properties and processes is a basic domain of ecology and is crucial to map and manage final ecosystem services. However, there are major challenges facing ecologists engaged in this field. First, ecosystem services are by definition determined by the interaction between ecological and social systems, because only ecosystem processes that contribute to the fulfillment of human needs are ecosystem services. This requires ecologists to work with scientists from other disciplines when trying to understand how ecosystems contribute to human welfare. Second, attempts to use the concept to quantify management consequences on ecosystem functions and resulting changes in the economic value of goods and services may oversimplify complex interactions in social-ecological systems some services may also fail to become incorporated into an optimization framework, such as conservation of biodiversity per se, because they are not transactable. A fundamental understanding of the ecosystem processes responsible for ecosystem services, including the contribution of organisms to these processes, is a necessary part of ecosystem service research and involves both challenges and opportunities to ecologists.

## 12.1 Challenges and Opportunities

By understanding the links between natural and social systems, ecosystem service research aims at developing more sustainably managed ecosystems. Although this framework may appear oversimplified, and ecological-economic modeling may better represent social-ecological systems, it shows the inherently cross-disciplinary character of ecosystem service research.

Ecosystems that are managed to produce food, fuel or fiber or local public infrastructure comprise large proportions of the world's terrestrial surface, e.g., almost half is used for agricultural areas, and almost half of the human population inhabits urban ecosystems (FAOSTAT, 2014). The consequences of human impact for biodiversity and ecosystem service delivery vary both qualitatively and quantitatively depending on system properties and land-use intensities. Consequently the management options to sustainably supply ecosystem services vary as much, requiring ecologists to widen the kind of ecological systems studied beyond the traditional domain of ecology. To increase final service delivery, but also to compensate for the loss of intermediate services, anthropogenic management is often intensified. Given the negative environmental externalities of some intensive management strategies (e.g., groundwater pollution and resource depletion), alternative management strategies that integrate intermediate services by promoting service-providing units are an opportunity to sustainably ensure crop production and to reduce reliance on anthropogenic interventions. Only a comprehensive perspective, that considers the response of all components of agricultural systems (biodiversity, intermediate, and final ecosystem services) to management will help to communicate the overarching importance of ecosystem service management. Urbanization, as a second example, may lead to increases in plant diversity as a consequence of increased habitat heterogeneity, but due to habitat fragmentation negatively affect species that rely on large habitats. Urban planning that considers the installation of green infrastructure in cities such as street trees and parks may benefit biodiversity and numerous ecosystem services. Ecologists can directly contribute to ecosystem service research and support policy decisions, not only by evaluating human impact, but also by proposing anthropogenic interventions to benefit service-providing units and ecosystem services.

To account for complex interactions with complementary habitat types or non-linear relationships to habitat area, a simple mapping from the extent of different habitat types may not suffice, but instead a spatially explicit landscape perspective on ecosystem services is needed.

## 12.2 Assessing Ecosystem Services

Instruments for assessing ecosystem services, including quantification, mapping and modeling, are a matter of debate in ecosystem service research. From the perspective of an ecologist challenges in assessing ecosystem services arise from the need (i) to evaluate relationships between services and the kind of measures usually collected in ecological studies (e.g., species richness) and (ii) to account for the characteristics of ecological processes (e.g., dynamics, feedbacks, and uncertainties) in statistical models focusing on service provision.

Final ecosystem services are often directly assessed, but such assessment does not provide information about contributing ecological processes or how management could be adapted to increase service provision. A mechanistic understanding of relationships between management and ecosystem services is required to transfer management recommendation outside the context where data were collected. This includes the assessment of the contribution of intermediate ecosystem services and how they are affected by management. The assessment of intermediate services is often more costly and time-consuming than for final services. During the past decade, there has been considerable effort in developing instruments to perform assessments of ecosystem services, but measuring ecosystem services based on scientific standards is still not trivial. Ecologists, in collaboration with agricultural and forest scientists, thus need to identify scientifically sound ecological measures that are reliable indicators of ecosystem service provision.

As a first and simple step to account for the characteristics of processes underlying service provision, it is suggested here to choose among a small set of measures that form joint, reliable indicators of an individual service.

Ecosystem service research is particularly focused on predicting the consequences of future management options. Statistical models can be used to identify driving forces of changes in service provision and to predict system shifts and fluctuations in service provision as a consequence of environmental change and anthropogenic intervention (Evans et al., 2014). Mechanistic models are never better than the theories and empirical data underpinning them and the development of models with predictive power is a challenge for ecologists. The evaluation of uncertainty, the integration of knowledge about evolutionary aspects and human impacts into the development of process-based models and their coupling with socio-economic models are important fields of future research to which ecologists need to contribute.

### 12.3 Analyzing Relationships between Ecosystem Services

Ecosystem services may demonstrate joint variation, either synergistic or antagonistic, in space and time. The interpretation of such patterns between multiple ecosystem services (more than two) has become an intensively debated subject and multi-ecosystem service models that link service provision and trade-offs are rapidly emerging. Such joint variation may also concern relationships between beneficial ecosystem services and so called ecosystem disservices, for example environmental externalities such as water pollution. Ecologists can contribute to the analyses of joint variation of services and disservices by identifying the underlying mechanisms that explain relationships between services and their response patterns to environmental change.

Improving the understanding of the relationships between ecosystem services poses two major challenges to ecological research: (i) drawing conclusions about relationships between ecosystem services by understanding if relationships are indirect through shared environmental drivers or direct because one ecosystem services causally affects another and (ii) solving issues of visualization and statistical testing when analyzing relationships between multiple (more than two) ecosystem services.

To be able to predict the consequences of environmental change as drivers of changes in ecosystem services, it is important to distinguish between indirect and direct relationships. Both direct relationships (if services are related to each other) and indirect relationships (if services are related through a driver) can lead to synergies and trade-offs between the services. Ecosystem services may be directly and causally linked, because one ecosystem service directly interacts with another ecosystem services.

Although the ecosystem service concept is based on an ecological understanding of ecosystems, ecologists are confronted with a range of challenges when researching ecosystem services. This is partly explained by the wide variety of terms and definitions from different scientific disciplines as well as a lack of generally accepted assessment methods, difficulties with analytical and modeling methods and mismatches of spatial and temporal scales between service provision and anthropogenic interventions. Ecologists need to adapt their perspective and methods to a larger societal context for the improvement of ecosystem service research. Particular emphasis needs to be directed toward supporting decision makers with relevant information about service-providing units and mechanisms underlying the provision of services at appropriate temporal and spatial scales. To conclude, ecosystem service research is challenging for ecologists, but developing a multifaceted understanding of how nature promotes human well-being is crucial for the sustainable use of the

earth's resources. Ecosystem service research offers ecologists the unique opportunity to act as promoters for the understanding of how to conserve and sustain benefits gained from nature.

#### **12.4 Tourism in Cyprus Challenges**

Despite its evident contribution to the island's development, tourism in Cyprus is characterised by a number of challenges that collectively point to dependency both on and within the tourism sector and, hence, a lack of longer term sustainability. The challenges include:

- (1) Arrivals.
- (2) Main markets
- (3) Mode of travel
- (4) Seasonality.
- (5) Accommodation trends
- (6) Social/environmental impact

Since the early 1980s Cyprus has emerged as a relatively expensive (owing to its distance from its main markets) yet mass-market, summer-sun destination, highly dependent on traditional markets. At the same time, the island's economy as a whole has become increasingly dependent upon the tourism sector which, in recent years, has suffered erratic demand, low profit margins and dependence on dominant overseas tour operators.

These challenges have not, of course, gone unrecognised by the Cypriot tourism authorities. Indeed, both the contribution of tourism to socioeconomic development and the need to control and manage tourism development effectively have long been recognised since 1975, tourism has been prominent in national development plans, as have proposals with respect to the scope, scale and nature of tourism development.

Initial tourism policies focused on rebuilding the industry in the immediate post-invasion period, underpinned by various forms of financial support and incentives to encourage tourism development (Ioannides, 1992). However, by the early 1980s, it was evident that the re-development of tourism was too successful – the rapid development of accommodation and facilities and the equally rapid growth in arrivals was not being matched by associated infrastructural development or the provision of ancillary tourist facilities. Moreover, planning controls to protect the environment were proving to be inadequate. Accordingly, a number of measures were introduced which, in effect, sought to limit the development of mass tourism on the coast, with 'the highest attention being paid to the protection and enhancement of the environment'. These included a variety of financial incentives to encourage hotel and other tourism-related development in the hinterland and the

controlled development of luxury hotels in selected coastal areas. At the same time, marketing policy re-focused on attracting higher spending, 'quality' tourists, the purpose being to increase the value, rather than the scale, of tourism in order to reduce the island's increasing dependence upon the mass, summer-sun market. Efforts were also made to attract niche markets, such as conference/incentive tourism, special interest tourism and winter tourism, in order to address the problem of seasonality. In other words, the policy called for a more balanced, sustainable approach to tourism.

Despite this apparent failure to control tourism, the authorities continue to pursue a quality / sustainable tourism development policy. The current strategy focusing on the development of quality tourism, sets out a number of objectives.

These include:

- ✓ maximising the income from tourism through balancing a growth in arrivals with increasing visitors length of staying spending
- ✓ reducing seasonality,
- ✓ increasing competitiveness by re-positioning Cyprus as a tourism destination; in particular, less emphasis to be placed on sun-sea-sand tourism, whilst attention is to be focused on developing products, such as agrotourism, that are based around the island's culture, natural environment and people
- ✓ attracting 'quality' tourists (defined in the strategy as older, better off, more culturally/environmentally aware and demanding flexibility, higher levels of service, better value for money) through more effective targeting and segmentation
- ✓ marketing the island as 'a mosaic of nature and culture, a whole, magical world concentrated in a small, warm and hospitable island in the Mediterranean at the crossroads of three continents, between West and East, that offers a multidimensional qualitative tourist experience.

Consequently, tourism is a cultural service that has to be properly managed to achieve protection of the environment. Additionally, cooperation of public makers with tourism is of paramount importance in order to establish new guidelines for the conservation of the ecosystem.



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